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Advancing Environmental Rights in South Africa

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5 July 2019
Our ref: CER 34.26

Dear Mr Matshediso

OBJECTIONS TO THE 22 MAY 2019 PROPOSED AMENDMENTS TO THE LIST OF ACTIVITIES AND ASSOCIATED MINIMUM EMISSION STANDARDS IDENTIFIED IN TERMS OF SECTION 21 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT 39 OF 2004

1. We address you as the Life After Coal campaign, a joint campaign by the Centre for Environmental Rights (CER), groundWork (gW), and Earthlife Africa Johannesburg 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. As you are no doubt aware, the Campaign has particular interest and expertise in issues of air pollution and the implementation and enforcement of the minimum emission standards (MES).

2. We also address you on behalf of the Highveld Environmental Justice Alliance Network (HEJN), the Vukani Environmental Justice Movement in Action, the Khuthala Environmental Care Group, and the Vaal Environmental Justice Alliance (VEJA). These organisations represent and work closely with affected communities in the Mpumalanga Highveld whose health and well-being has been detrimentally impacted by air pollution in the area

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over a long period of time. A dominant source of this air pollution is Eskom's existing fleet of 12 coal-fired power stations and Sasol's Synfuels (coal-to-liquid) plant in the Highveld Priority Area (HPA).

3. The CER and our clients have been integrally involved in the various processes in relation to the development, implementation, and enforcement of the MES contained in the List of Activities published in terms of the National Environmental Management: Air Quality Act, 2004 (AQA).[1]

4. In this correspondence, we make submissions in relation to the proposed amendment to the List of Activities to weaken the new plant Sulphur Dioxide (SO_2) MES limit for sub-category 1.1 facilities. The proposed amendment was published for comment in Government Notice 687 in Government Gazette No 42472 on 22 May 2019, and the Department of Environment, Forestry and Fisheries ("the Department") granted us an extension to make submissions by 5 July 2019.

5. Our clients vehemently object to the proposed amendment to weaken the SO_2 MES limit to come into effect on 1 April 2020. South Africa's MES are already lax, as described below, and air pollution in many parts of South Africa exposes people to dire health impacts. SO_2 pollution, and its contribution to the formation of fine Particulate Matter ($PM_{2.5}$), causes severe impacts on human health and wellbeing, and in some cases, long-term exposure can be fatal. Allowing major industrial polluters which fall within sub-category 1.1 of the List of Activities, from 1 April 2020, to emit SO_2 at double the concentration set for 2020 SO_2 MES when the MES were first published on 31 March 2010 would exacerbate this already-dire situation and amplify the existing violations of section 24 of the Constitution of the Republic of South Africa, 1996 (the "Constitution").

6. This is made worse by the fact that, given the postponements of MES already granted to them, Eskom and Sasol coal facilities will, in any event, only by required to comply with the new plant SO_2 MES by 1 April 2025 (and will not be required to comply at all for those facilities which may be granted once-off suspension of compliance). In fact, as the Department is aware, Eskom persists with its argument that it will not even meet the new plant SO_2 MES by April 2025, and still essentially seeks illegal exemptions from 2020 SO_2 MES compliance for all of its facilities except for Kusile and Medupi (which will, we understand, eventually comply with 2020 SO_2 MES, but not by April 2025, as is legally required). In this regard, we point out that by the application deadline of 31 March 2019, only the following Eskom facilities have sought a once-off suspension of compliance – the outcome of which applications is still awaited: Kriel; Arnot; Hendrina; Camden; and Komati.

7. Substantiated further below, the reasons why this proposed amendment should be rejected are summarised as follows:

    7.1. we dispute that the Department is empowered to weaken the MES at all. Furthermore, the weakening of already lax standards would be contrary the AQA objects to ensure that South Africa's air quality is not harmful to human health or well-being, and the general duty on all organs of state to enhance air quality. The MES were promulgated for the legitimate government purpose of limiting and reducing toxic atmospheric emissions that have or may have a significant detrimental effect on society. Given the crucial purpose and Constitutional import of the MES, any decision to weaken the SO_2 MES limit cannot be justified in any circumstances and would be unlawful and invalid;

    7.2. if the proposed amendment were to be passed, the 1000 mg/Nm^3 SO_2 standard would be approximately 10 times weaker than the equivalent standard in India and 28 times weaker than the equivalent standard in China. This will exacerbate the dire impacts of air pollution in many parts of South Africa, having severe impacts on human health and wellbeing. Allowing major industrial polluters to emit double the current new

[1] Listed Activities and Associated Minimum Emission Standards Identified in terms of Section 21 of the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) GN 893 in *GG* 37054 of 22 November 2013.

plant SO_2 MES would also derogate from the Department's guiding principle of employing the Best Practicable Environmental Option (BPEO), amounting to a violation of section 24 of the Constitution;

7.3. Eskom's coal-fired power stations and Sasol's coal boilers are all located in South Africa's priority areas, the HPA, the Vaal Triangle Airshed Priority Area, and the Waterberg-Bojanala Priority Area. All 3 priority areas remain in non-compliance with South Africa's weak National Ambient Air Quality Standards (NAAQS). Any decision taken to weaken these standards would likely perpetuate the ongoing non-compliance with NAAQS and the deadly atmosphere in which disadvantaged communities currently reside. The only amendment that can and should be made in relation to the MES is to strengthen the emission limits;

7.4. SO_2 emissions are harmful to human health and well-being, and short-term and long-term exposure to moderate and high levels of air pollution can cause significant harm to human health and wellbeing; including: decreased lung function; the accelerated deterioration of the lungs and heart; and the development of diseases such as asthma, emphysema, bronchitis, tuberculosis, and cancer. An expert study commissioned for the purposes of these objections, shows that the doubling of the SO_2 2020 emission limit for Eskom coal-fired power stations would lead to a projected 680 excess premature deaths in 2025, and a cumulative total of 4000 deaths over the remaining lifetime of the stations; and

7.5. doubling the SO_2 2020 MES limit would be an irrational and unreasonable decision as it would be *ultra vires* the Constitution, AQA, the List of Activities, the 2017 National Framework for Air Quality Management, and the National Environmental Management Act, 1998 (NEMA).

8. Our submissions are set out below and address the following issues in turn:

A. Introduction and legislative framework
B. Factual background
C. Nature and effect of the proposed amendment to the SO_2 MES
D. Available abatement technologies to reduce SO_2 emissions
E. Conclusion

9. We reserve our rights to supplement these objections.

A. INTRODUCTION AND LEGISLATIVE FRAMEWORK

Constitution and National Environmental Management Principles

10. Section 24 of the Constitution 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. As the Constitution is the supreme law of the Republic, any law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled.[2] Therefore the implementation of the provisions of the AQA and all associated conduct must be consistent with, and give effect to, the right to an environment that is not harmful to health or wellbeing ("the environmental right").

11. There are a number of other guaranteed Constitutional rights that are dependent on the protection and fulfilment of the environmental right; such as the right to life and the right to dignity. Similarly, emission limits are set, and must be enforced, for polluting activities that have or may have a significant detrimental effect not only on the environment, but also on people's health, social conditions, economic conditions, ecological conditions or their

[2] Section 2 of the Constitution.

cultural heritage. In terms of section 7(2) of the Constitution, the state is obliged to take reasonable and effective legislative and other means to protect and promote the Bill of Rights.

12. The overarching environmental legislation which gives effect to section 24 of the Constitution is NEMA,[3] and its National Environmental Management (NEM) Principles as contained in section 2 of NEMA, which must be adhered to by any organ of state in all decision-making and when exercising its functions. Some of these *binding* directive principles are as follows (our emphasis):

    12.1. 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");[4]

    12.2. a risk-averse and cautious approach must applied, which takes into account the limits of current knowledge about the consequences of decisions and actions[5] ("precautionary principle");

    12.3. 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");[6]

    12.4. pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied ("preventive principle");

    12.5. 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;[7]

    12.6. responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its lifecycle;[8]

    12.7. 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;[9]

    12.8. 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"); [10]

    12.9. 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;[11] and

    12.10. the participation of all interested and affected parties in environmental governance must be promoted.[12]

[3] Section 2(1) of NEMA.
[4] Section 2(4)(n) of NEMA.
[5] Section 2(4)(a)(vii) of NEMA.
[6] Section 2(4)(a)(viii) of NEMA.
[7] Section 2(4)(c) of NEMA.
[8] Section 2(4)(e) of NEMA.
[9] Section 2(4)(r) of NEMA.
[10] Section 2(4)(p) of NEMA.
[11] Section 2(4)(a)(v) of NEMA.
[12] Section 2(4)(f) of NEMA.

The Air Quality Act

13. AQA is one of the various "reasonable legislative measures" promulgated to give effect to this environmental right, in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and wellbeing of people.[13] AQA's preamble recognises that:

    13.1. "*the quality of ambient air in many areas of [South Africa] is not conducive to a healthy environment for the people living in those areas let alone promoting their social and economic advancement*";

    13.2. "*the burden of health impacts associated with polluted ambient air falls most heavily on the poor*";

    13.3. "*air pollution carries a high social, economic and environmental cost that is seldom borne by the polluter*"; and

    13.4. it must provide reasonable measures to: protect and enhance air quality; prevent air pollution and ecological degradation; and secure ecologically sustainable development while promoting justifiable economic and social development.[14]

National Framework for Air Quality Management in the Republic of South Africa

14. AQA makes provision for a National Framework for Air Quality Management in the Republic of South Africa to achieve the objects of AQA.[15] The current version of National Framework for Air Quality Management in the Republic of South Africa ("the 2017 Framework") was published in October 2018.[16] The 2017 Framework – first established in 2007 and amended twice since then – 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 ensure compliance with NAAQS[17] – which we note are significantly weaker than those recommended by the United States or the World Health Organisation (WHO) (which are themselves very outdated and under review). The 2017 Framework forms part of the definition of "this Act" in AQA,[18] and "*binds all organs of state in all spheres of government*".[19]

15. 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 Air Quality Act] or any other legislation regulating air quality management*".[20] However, almost 13 years since AQA was promulgated, and nearly 11 years since the initial 2007 Framework was established, many of AQA's objects continue to be largely unrealised in parts of South Africa, particularly in the three priority areas declared in 2006, 2007, and 2012, respectively.[21] The purpose of these priority areas includes to reduce point source emissions, such as those from solid-fuel combustion activities required to comply with the MES, in order to achieve compliance with the NAAQS and reduce the health impacts caused by air pollution.

16. In order to uphold the constitutional right to an environment that is not harmful to health and well-being, the setting of NAAQS is mandatory. Section 5.4.3.2 of the Framework provides the following in relation to the setting of AAQS:

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[13] Section 2(b) of AQA.
[14] Section 2(a) of AQA.
[15] Section 7 of AQA.
[16] The 2017 Framework is available at: https://cer.org.za/wp-content/uploads/2018/10/National-Environmental-Managerment-Air-Quality-Act-39-2004-the-2017-National-20181026-GGN-41996-01144.pdf
[17] Section 7(1) of the AQA.
[18] Section 1(1) of the AQA.
[19] Section 7(3)(a) of the AQA.
[20] Section 7(4) of the AQA.
[21] Vaal Triangle-Airshed Priority Area (VTAPA) was declared in in 2006, the Highveld Priority Area (HPA) in 2007, and the Waterberg-Bojanala Priority Area (WBPA) in 2012.

16.1. The Integrated Pollution and Waste Management policy (IP&WM, 2000) defines AAQS as "*targets for air quality management and establish the permissible amount or concentration of a particular substance in or property of discharges to air, based on what a particular receiving environment can tolerate without significant deterioration*";

16.2. "*In line with the World Health Organisation's position, the primary aim of [AAQS] is to provide a uniform basis for the protection of public health and ecosystems from the adverse effects of air pollution, and to eliminate or reduce to a minimum, exposure to those pollutants that are known or likely to be hazardous*"; and

16.3. AAQS are used to "*objectively define what quality of ambient air South Africans agree is not harmful to their health and well-being; to inform decisions on what type of developments are appropriate in specific areas*".

List of Activities and Minimum Emission Standards

17. South Africa's NAAQS are directly impacted by the release of industrial emissions into the atmosphere. In an effort to control 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, the Minister first published the List of Activities and associated MES, in terms of section 21 of AQA on 31 March 2010. The MES prescribe the permissible amount, volume, emission rate, or concentration of the pollutant or mixture of pollutants, as well as the manner in which measurements of such emissions must be carried out.

18. The List of Activities first came into force on 1 April 2010 and prescribes MES for various polluting activities, including those for solid fuel combustion installations (sub-category 1.1 in the List of Activities) such as Eskom's coal-fired power stations and Sasol's 17 coal boilers. For these facilities, the List of Activities sets MES for Particulate Matter (PM), Sulphur Dioxide (SO_2), and Oxides of Nitrogen (NOx) for both "new plants" and "existing plants". Existing plants, including all of Eskom's stations (including Medupi and Kusile, still under construction) and all of Sasol's facilities, had to comply with more lenient "existing plant" standards by 1 April 2015 – a transitioning period – so that they could adhere to stricter "new plant" standards by 1 April 2020. In essence, since the List of Activities was published on 31 March 2010, existing plants were given a transitioning lead period of 5 years to come into compliance with a more lenient 2015 standard, and then a further 5 years to come into compliance with a stricter standard by April 2020. In the case of solid fuel combustion installations, these facilities have had certainty of the applicable MES since 31 March 2010.

19. With regard to the manner in which the MES are set, section 4(2)(b) of NEMA requires that "*environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the [BPEO]".* Section 5.4.3.4 of the 2017 Framework states that the Department shall rely on the BPEO when setting standards in relation to listed activities. As set out above, the BPEO has been defined as "*the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society in the long-term as well as in the short-term".* The Framework expands on this and cites that the BPEO test for a decision as comprising the following components:

19.1. **Best** – meaning "*state of the art*", most effective or most beneficial. "Best" is informed by information provided in peer-reviewed local and international literature;

19.2. **Practicable** – meaning feasible, realistic, possible, workable, practical, viable or doable, i.e. it is the opposite of impossible. "Practicability" is informed by cost-benefit analyses (CBA), accessibility, cost effectiveness, availability, and other information provided in peer-reviewed local and international literature; and

19.3. **Environmental option** – meaning that the option must be measured in terms of its impact on the environment, where the environment means the surroundings within which humans exist and that are made

up of: (i) the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; any part or combination of (i) and (ii) and the interrelationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

20. The 2017 Framework further provides that "the "best" component of BPEO principle "*will be informed through the use of the Best Available Technology/Technique (BAT) approach. BAT implies the consideration of technologies or techniques that deliver pollution controls to the best degree technologically possible, without economic or other considerations. In this regard BAT is measured with reference to best practice documentation published internationally*".

21. In addition to the above, the List of Activities and the associated MES were developed in a multi-stakeholder process over several years, in which both Eskom and Sasol – South Africa's two largest polluters – actively participated. In this regard, we refer to the following press statement published by the Department on 4 December 2013, which states:

"*It is important to note that the development of the Section 21 Notice constituted an elaborate consultation and participation processes in terms of Section 56 and 57 of the AQA. All affected stakeholders (including Eskom) were part of these processes and they made contributions regarding limits that are achievable with the view of upholding the constitutional right of all people in the country to an environment that is not harmful to health and well-being.*
….
An extensive consultation process was followed in setting these emission standards over a 5 year period. This process:

- *continuously engaged with all stakeholders around the identification of listed activities and their associated minimum emission standards; and*
- *reviewed current national and international work related to the identification of activities and their related minimum emission standards. Eskom participated directly in this process, and standards seek to balance the economic, social and environmental imperatives*." [22]

22. Importantly, the initial MES-setting process provided for the establishment of an expert panel for the development of standards, including but not necessarily limited to representatives from: the national department, affected national departments, provincial and municipal government, industry, business, civil society, and academia. When the List of Activities was amended in 2013, a similar process was followed. This process determined that the SO_2 MES of 500mg/Nm^3 for solid fuel combustion installations – set in March 2010 – was appropriate and feasible, based on the BPEO approach.

23. AQA objects include to ensure that South Africa's air quality is not harmful to human health or well-being, and there is a general duty on all organs of state to enhance air quality. The MES were promulgated for the legitimate government purpose of limiting and reducing toxic atmospheric emissions that have or may have a significant detrimental effect on society. Given the crucial purpose and Constitutional import of the MES, any decision to weaken the MES is, we submit, contrary to the BPEO, inconsistent with the Constitution, NEMA and AQA, and cannot be justified in any circumstances.

B. FACTUAL BACKGROUND

Recent amendments to the List of Activities

24. After the MES were first published on 31 March 2010, they were repealed and replaced on 22 November 2013, and amended again on 12 June 2015. groundWork participated in all of these processes of setting and amending the List of Activities. On 25 May 2018, the late Minister Ms. Edna Molewa proposed amendments to the List of

[22] https://www.environment.gov.za/mediarelease/atmospheric_emissionlicense_krielpowerstation

Activities, which were published for public comment. On 25 June 2018, we submitted comments on the draft amendments to the List of Activities, a copy of which is attached as **Annexure "1"**.

25. In our comments, we commended the Department for proposing that the following amendments be made:

    25.1. the elimination of any further opportunities to postpone compliance with existing plant MES; and

    25.2. the elimination of what Eskom has referred to as "rolling postponements" i.e. re-applying for postponements of compliance every 5 years until eventual decommissioning of its stations. We have consistently argued that these so-called rolling postponements are the equivalent of illegal exemptions from the MES. The proposed amendment made clear that only one postponement of new plant MES is permitted, for a maximum of 5 years. The effect of this is that all plants that cannot comply with new plant MES by 1 April 2025 (assuming they have received a 5 year postponement of compliance) must be shut down by that date; unless they have timeously applied for and been granted a once-off suspension of compliance (in which event they are required to be decommissioned by the date set out in their decommissioning plan, which cannot be later than 31 March 2030).

26. However, when the amended List of Activities was published on 31 October 2018, by Acting Minister Hanekom, it contained an amendment relating to existing solid fuel combustion installations (including all of Eskom's stations and Sasol's 17 coal boilers) that was not included in the notice circulated for comment, as is required by the AQA. This amendment purported to double (weaken) the 2020 SO_2 limit from 500 milligrams per Normal cubic meter (mg/Nm^3) to 1000 mg/Nm^3 as follows:

> **Amendment of Category 1 of the List**
>
> 6. Subcatagory 1.1 of Category 1 of the List is hereby amended by the addition of the following special arrangement under subparagraph (a):
>
> "(iii) Existing plants shall comply with a new plant emission standard of 1000 mg/Nm^3 for sulphur dioxide (SO_2)."

27. This amendment was published in item 6 of the "Amendments to the Listed Activities and Associated Minimum Emission Standards", in Government Notice 1207 in Government Gazette No 42013 on 31 October 2018.

28. As indicated above, the Acting Minister took this decision without publishing any prior notice of the amendment as required by section 57(2)(b) of AQA, which provides that any proposed substantive amendment to the List of Activities (which includes the MES) must be published for public comment in the prescribed manner and "*must contain sufficient information to enable members of the public to submit meaningful representations or objections*". The State's failure to provide for an adequate public participation process deprived community stakeholders and all other interested and affected members of the public of sincere, meaningful engagement and an opportunity to discuss and submit concerns.

29. Following the unlawful amendment and failure to provide for adequate public participation, several attempts were made to engage with the former Minister, Nomvula Mokonyane, and the Department in order to withdraw the unlawful amendment and to allow for proper notice, consideration and comment as required by section 57(2)(b).[23]

[23] Please see the following examples: CER letter to DEA requesting the urgent withdrawal of the provision in the list of activities regarding the weakening of the SO2 new plant minimum emissions standards for existing plants (8 November 2018) and CER letter to Minister Mokonyane requesting the urgent withdrawal of the provision in the list of activities regarding the weakening of the so2 new plant minimum emissions standards for existing plants (23 November 2018).

30. However, these attempts proved futile and on 5 March 2019, a letter of demand was issued to the former Minister, calling on her to withdraw the amendment by 12 March 2019.[24] In response to this, a meeting was scheduled for 28 March 2019 and rescheduled for 1 April 2019 – in both instances, the former Minister was unable to attend and a meeting did not transpire.

31. To remedy the unlawful amendment, the only recourse available was to institute litigation to set it aside.

High Court application to review the unlawful amendment to the SO_2 MES

32. On behalf of groundWork, CER launched an application at the North Gauteng High Court to review and set aside Acting Minister Hanekom's decision. The application was launched on 10 April 2019, in terms of the Promotion of Administration of Justice Act 3 of 2000 (PAJA); alternatively, the constitutional principle of legality.

33. The review application was concerned solely with the procedure adopted by the Acting Minister in effecting the impugned amendments and not with the substantive merits – our clients' opposition to which is addressed in these objections. It was also acknowledged in the application papers that it is necessary that the matter be finally determined without delay, well before the 1 April 2020 deadline for compliance with new plant MES, to ensure that proper planning, budgeting, and management of SO_2 emissions is timeously in place.

34. On 30 April 2019, the State Attorney filed a notice of intention to oppose on behalf the Minister and requested an extension until 31 May 2019, apparently to file answering papers. On 28 May 2019, we received notification from the State Attorney that:

    34.1. the Minister had deleted the impugned amendment of 31 October 2018; and

    34.2. on 22 May 2019, the Minister published a notice of intention to amend the List of Activities as pronounced in "Amendments to the Listed Activities and Associated Minimum Emission Standards", Government Notice 686 in Government Gazette No 42472, which solely included a proposed amendment to the SO_2 emissions for existing solid fuel combustion installations from 500 to 1000 mg/Nm^3. Our comments relate to this draft notice.

C. NATURE AND EFFECT OF THE PROPOSED AMENDMENT TO THE SO_2 MES

Unlawful to weaken the MES

35. South Africa is founded on a number of democratic values, including the supremacy of the Constitution and the rule of law.[25] In terms of section 1(a)(ii) of PAJA, the powers to exercise administrative action are derived from and only extend insofar as the legislation, in this case AQA, allows. It also requires all organs of state, juristic persons and individuals to comply with the laws promulgated to give effect to the Constitution. Compliance with the rule of law is mandatory and not subject to negotiation or discretion.

36. We refer to our 5 March 2018 letter attached as **Annexure** "**2**", addressed to the Department in opposition to the establishment of an expert panel on SO_2 abatement solutions. In addition to the reasons for opposing the establishment of the expert panel, it is submitted that there is no legislative provision which entitles the Department to weaken the MES and any such attempt will continue to be vigorously opposed by our clients. Our clients clearly stand by this statement, as evidence by the institution of litigation, as a last resort, in response to Acting Minister Hanekom's amendment weakening the 2020 SO_2 MES limit.

[24] CER letter to Minister Mokonyane requesting the urgent withdrawal of the provision of the list of activities regarding the weakening of the SO2 new plant minimum emission standards for existing plants (5 March 2019).
[25] Section 1 (c) of the Constitution.

37. Despite this public participation process, induced by our client's High Court review proceedings, we submit that the Department is still not entitled to weaken the MES for the following reasons, among others:

    37.1. Reading AQA and the relevant sections of the 2017 Framework together,[26] and holistically, there is no provision that empowers the Minister to weaken the MES, once set in terms of the extensive multi-stakeholder consultation and participation process referred to above.

    37.2. The 2017 Framework states that a "*lower limit can be set for activity, throughput or production rate, or uncontrolled emission rate to prevent the inclusion of a large number of small facilities, which would be more appropriately controlled under Section 23 (Controlled Emitters)*".[27] This is a separate category of activities entirely.

    37.3. By way of comparison, section 10 (Provincial standards) and section 11 (Local standards) of AQA, which deal with AAQS, only permit the establishment of stricter AAQS for the province or municipality. The MES are already <u>minimum</u> standards – they cannot be further weakened.

    37.4. We and our clients have been arguing, for several years, that, in fact, emission standards for facilities in priority areas (which are home to every single one of Eskom's coal-fired power stations and Sasol's facilities) should be <u>stricter than the MES</u>. At the very least, postponements of MES compliance should not have been – and should not be – granted in areas such as the priority areas, where there is non-compliance with the NAAQS.

    37.5. In short, the MES were set to limit and reduce emissions with detrimental impacts on the public, in order to achieve the objects of AQA, thereby giving effect to the Constitution. Weakening already lax standards, as detailed below, would be contrary to the objects of AQA and NEMA, inconsistent with the Constitution, and therefore unlawful and invalid.

38. In developing the MES, the Department acknowledged that its task was informed by section 24 of the Constitution. In an affidavit signed by the National Air Quality Officer on 20 May 2014, in answer to an application by Sasol to review and set aside the majority of the MES applicable to its operations, she stated that:

    ". . . [a]chieving ambient air quality standards (in the sense of bringing ambient air quality down to below the prescribed levels) is not an exercise in economics nor is it a matter for negotiation with the Applicants: that fundamental right [section 24 of the Constitution] may not be infringed by Sasol or any of the other Applicants and their argument or defence, that they are infringing that environmental right because it costs too much to adapt their existing plants and bring them up to standard, must be rejected out of hand. . ."[28]

39. To weaken the SO_2 MES, which we reiterate would be unlawful, or establishing an expert panel with the mandate to consider SO_2 abatement solutions other than technologies to achieve compliance with the existing limit of 500 mg/Nm^3 (or a stricter limit), directly contradicts the Department's firm stance and its Constitutional obligations.

40. On this note, we are uncertain as to how the SO_2 expert panel appointed by the former Minister in May 2019 relates to this proposed amendment to the SO_2 MES. *We request that the Department clarify whether consideration of the proposed weakening of the 2020 MES SO_2 limit is part of the panel's mandate*. In any event, irrespective of the panel's mandate, we submit that the weakening of the 2020 SO_2 limit would be unlawful.

[26] 5.4.3.4 'Standard-setting process for listed activities'.
[27] See page 59 of the 2017 Framework.
[28] See: https://cer.org.za/wp-content/uploads/2019/05/SO2-litigation_founding-papers-2.pdf

South Africa's comparatively weak MES

41. We note that before the Acting Minister's impugned decision, existing solid-fuel combustion installations, which include all major coal burning installations in the country, were required to reduce their SO_2 emissions to comply with the new plant MES of 500 mg/Nm^3 by the deadline of 1 April 2020 (unless the installation had been granted a postponement of compliance – which, we reiterate, appears to be the case for Eskom's coal-fired power stations and Sasol's facilities).

42. South Africa's MES are already very weak when measured against emission limits even of other developing countries. For comparative purposes:[29]

'Existing Plant' ratios: SA/ country		
	SO2	PM
SA/ China	17.5	3.3
SA/ Germany	17.5	5.0
SA/ India	5.8	1.0
SA/ Indonesia	4.7	0.7
SA/ Thailand	1.7	0.6
SA/ EU IED	17.5	5.0

'New Plant' ratios: SA/ country		
	SO2	PM
SA/ China	14.3	5.0
SA/ Germany	3.3	5.0
SA/ India	5.0	1.7
SA/ Indonesia	0.7	0.5
SA/ Thailand	1.0	0.6
SA/ EU IED	3.3	5.0

43. For instance, the SO_2 existing plant (2015) MES are 17.5 times weaker than those in China, Germany, and the European Union (EU)'s Industrial Emissions Directive (IED), nearly 6 times weaker than India's, almost 5 times weaker than Indonesia's, and almost double as lax as Thailand's. The current new plant SO_2 MES are more than 14 times weaker than China's, 5 times weaker than India's, and more than 3 times weaker than in Germany and the EU IED.

44. If the proposed amendment were to be passed, the 1000 mg/Nm^3 standard would be approximately 10 times weaker than the equivalent standard in India and 28 times weaker than the equivalent standard in China. We submit that amending this standard would violate the Constitution, NEMA and AQA.

45. Rather than making our emission laws weaker, it is clear that South Africa's MES and its NAAQS require review and updating for purposes of making these stricter in order to provide better protection for people's health and well-being. Indeed, the 2017 Framework requires that the MES and NAAQS are reviewed every 5 years. We submit that any decision taken to weaken these standards would be unlawful and defeat the purpose for which the MES were promulgated, especially in the priority areas, which would be worst impacted by weakening the MES. Accordingly, the only amendment that can and should be made in relation to the MES is to strengthen the emission limits; in other words to make them stricter – any amendment that fails to do this cannot be justified and remains inconsistent with the Constitution, AQA and NEMA.

46. Despite Eskom's relaxed emission standards in its various atmospheric emission licences (AELs) as a result of previous postponements of compliance with the MES, it regularly exceeds these weaker AEL limits, with impunity. We refer in this regard to an updated assessment of Eskom's own monthly emissions data for 1 April 2016 to 31 March 2017, by Dr. Ranajit Sahu, which demonstrates the regular exceedances of Eskom's AEL limits at 13 of its

[29] See https://www.iea-coal.org/wp-content/uploads/2017/12/South-Africa-emission-standard.pdf . Comparisons and ratios are approximate due to differences between jurisdictions with respect to: a) the reference oxygen content (for example, the MES reference value is 10% oxygen; the EU and China reference value is 6% oxygen); b) the averaging period (for example, the MES is based on daily averages; shorter averaging periods may apply in other jurisdictions; and c) applicable boiler size. Due to these factors, the calculated ratios are generally conservative or understated.

coal-fired power stations. Despite this, as far as we are aware, no enforcement action has been taken against Eskom in response to this exceedance report.[30]

Impact of the proposed amendment on South Africa's priority areas

47. We note that an amendment to this sub-category applies to large coal-burning installations, including Eskom's coal-fired power stations, Sasol's coal boilers, the Kelvin power station, and various coal boilers at other facilities – such as Mondi and Sappi. In total, an estimated 25 facilities in the country are covered by this provision. If this estimate is inaccurate, we invite the Department to provide the true figure and a full list of the solid-fuel combustion installations covered by this provision.

48. Eskom's coal-fired power stations and Sasol's coal boilers are all located in South Africa's priority areas, the HPA, the Vaal Triangle Airshed Priority Area, and the Waterberg-Bojanala Priority Area. 12 of Eskom's 15 coal-fired power stations are located in the HPA; Lethabo coal-fired power station is located in the VTAPA; and Medupi and Matimba power stations are located in the WBPA. All 3 priority areas remain in non-compliance with South Africa's NAAQS.[31] The Department's 2018 State of the Air report states that "*many South Africans may be breathing air that is harmful to their health and well-being especially in the priority areas*". Based on the evidence before us, none of the 3 priority areas has any reasonable prospect of being withdrawn in the foreseeable future – in other words, of reaching compliance with NAAQS and remaining in compliance for at least 2 years.[32] In our clients' objections to Eskom's current applications to postpone and/or suspend compliance at 11 coal-fired power stations (10 of which are in the HPA), our clients have opposed the applications as they do not satisfy the requirements in the List of Activities, read with the 2017 Framework, and granting the applications will only exacerbate the air pollution in these areas and worsen the health impacts.[33] Similarly, our clients submit that allowing these facilities to emit double the new plant SO_2 MES by 1 April 2020 (or later, given various postponements) would perpetuate the deadly air pollution in the 3 priority areas and the severe health impacts and injustice experienced by communities in this areas. This would clearly be contrary to the Constitution, NEMA, and AQA, and to all of the air quality management plans (AQMPs) for the priority areas.

49. It is also critical to note that Eskom's pending postponement and suspension of MES compliance applications are based on the unlawfully-doubled (now withdrawn) limit of 1000 of mg/Nm^3. Despite the doubled limit, it is clear from these applications that Eskom only intends to comply with the 2020 SO_2 MES limit at Kusile and Medupi (which will not comply by April 2025, as is legally required) power stations, and it has no intention of complying, even with a doubled SO_2 limit of 1000 mg/Nm^3 at the remaining stations.[34] This makes a mockery of South Africa's air quality legislation.

50. The HPA AQMP, in particular, makes clear that power generation, followed by mining haul roads and mines (some of which supply the power generating plants), are by far the largest contributor to air pollution in the Highveld - power generation accounts for 73% of all NOx and 82% of SO_2 in the HPA . The Department's mid-term review of the HPA AQMP[35] indicates that:

[30] See: https://cer.org.za/wp-content/uploads/2019/02/Annexure-2-2.pdf
[31] See the 2018 State of Air Report; the VTAPA MSRG meeting on 28 June 2018 confirmed that ambient air quality in the VTAPA is not in compliance with the NAAQS; the WBPA MSRG meeting on 27 June 2018 confirmed that the ambient air quality in the WBPA is not in compliance with the NAAQS.
[32] S18(15) of AQA.
[33] https://cer.org.za/wp-content/uploads/2019/02/LAC-Eskom-MES-Postponement-Submissions_4-February-2019.pdf
[34] See https://cer.org.za/wp-content/uploads/2019/02/LAC-Eskom-MES-Postponement-Submissions_4-February-2019.pdf
[35] https://cer.org.za/wp-content/uploads/2016/07/HPA-AQMP-Midterm-review-Draft-Report_February-2016.pdf

50.1. "*industrial sources in total are by far the largest contributor of SO_2 and NOx in the HPA, accounting for approximately, 99.57 % of SO_2 and 95.97% of NOx, while mining is the largest contributor of PM_{10} emissions*"; [36]and

50.2. "*there has not been a significant decrease in emissions of industrial and mining sources… Nonetheless, industrial sources are still the largest contributors of SO_2 and NOx in the HPA with mining being the main contributor of PM_{10}*".[37]

51. Allowing this category of installation to emit double the current new plant SO2 MES by April 2020 (or later) would fail to address the already overwhelming SO_2 emissions in the HPA, and it is submitted that it would become even less likely for the HPA AQMP to achieve its objectives, specifically reducing industrial emissions to comply with the NAAQS by 2020 in terms of Goal 2 in the AQMP.

52. Furthermore, SO_2 and NO_x, as primary pollutants, are also transformed through chemical and physical processes in the atmosphere, to secondary $PM_{2.5}$. This formation contributes significantly to total ambient $PM_{2.5}$, causing severe health impacts. Eskom itself is aware of and acknowledges this in its current set of MES compliance postponement and suspension applications before the National Air Quality Officer.[38] The effect of this accumulation will be an increasing health risk for a large part of the Highveld, and, we submit, this will more than likely only sustain the state of non-compliance with NAAQS in the HPA and other priority areas, and the continued breach of section 24 of the Constitution.

53. The dire air pollution in the 3 priority areas and implications for human health and for the environmental right will only be exacerbated in the event that the 2020 SO_2 MES limit is weakened, let alone made double as weak, as is proposed. This includes an alarming number of resultant fatalities based on a health assessment study by Lauri Myllyvirta, described below. We submit that the Department cannot allow this.

Health impacts caused by SO_2 emissions

54. SO_2 emissions are harmful to human health and well-being, and cause severe environmental impacts, hence the regulation of SO_2 in terms of section 21 of AQA, emitted from activities that have "*a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage*".

55. As you are aware, short-term and long-term exposure to moderate and high levels of air pollution can cause significant harm to human health, including: decreased lung function; the accelerated deterioration of the lungs and heart; and the development of diseases such as asthma, emphysema, bronchitis, tuberculosis, and cancer. In support of this, a recent report compiled by Dr. Peter Orris[39] reviewed the health risks from pollutants emitted by coal-fired power stations within the Mpumalanga Highveld region and documented the effects of exposure to PM SO_2, NOx, and mercury. The report confirmed that air pollutants from coal combustion have profound effects on health, especially vulnerable individuals including: children, the elderly, pregnant women, and those suffering from asthma, heart, and lung disease.

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[36] Page 2 of Broken Promises Report, available here: https://cer.org.za/news/broken-promises-the-failure-of-south-africas-priority-areas-for-air-pollution-time-for-action

[37] Page 85 of Broken Promises Report, available here: https://cer.org.za/news/broken-promises-the-failure-of-south-africas-priority-areas-for-air-pollution-time-for-action

[38] Eskom's Summary Motivation Report used in support of its 2018 application to apply for the suspension, alternative limits and/or postponements with the MES for 10 of its coal fired power stations is available here: http://www.naledzi.co.za/assets/documents/019dd09e24d4c389c3210ca8204e09f3.pdf

[39] Dr Orris is Professor and Chief of Service, Occupational and Environmental Medicine at the University Of Illinois School Of Public Health, with over 35 years of training and experience in exposure assessment, epidemiology, toxicology, and in diagnosing and treating environmentally-related diseases. A copy of his report is available here: https://cer.org.za/wp-content/uploads/2019/06/Peter-Orris-Report.pdf

56. In relation to SO_2, specifically, the report highlights the following:

    56.1. short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. Children, the elderly, and those who suffer from asthma are particularly sensitive to SO_2;

    56.2. for adults and children who are susceptible, inhalation of SO_2 causes inflammation and hyper-responsiveness of the airways, aggravates bronchitis, and decreases lung function;

    56.3. community-level SO_2 concentration is associated with hospitalisations for asthma and other respiratory conditions, as well as emergency department visits for asthma, particularly among children and adults over 65 years; and

    56.4. a review of epidemiological studies in cities in Italy, Spain, France, and the Netherlands found that short-term exposure to low concentrations of SO_2 (less than 10 parts per billion / 24-hour average) are associated with increased risk of death from heart and lung conditions.

57. We reiterate that SO_2 emissions contribute to the secondary formation of fine $PM_{2.5}$. According to Dr Orris's report, the health impacts caused by $PM_{2.5}$ include the following:

    57.1. breathing the fine particles from $PM_{2.5}$ can cause premature death in people with heart or lung disease, aggravated asthma, decreased lung function, and increased respiratory symptoms, like irritation of the airways, coughing, or difficulty breathing;

    57.2. recent research has also found that $PM_{2.5}$ correlates with neurological impacts, Alzheimer's and dementia, delinquent behaviour, diabetes, kidney disease, and hypertension; and

    57.3. epidemiological evidence from Australia, New Zealand, Mexico, Canada, and Europe concluded that exposure of communities to $PM_{2.5}$ increases emergency department visits and hospital admissions for respiratory-related symptoms such as infections and chronic obstructive pulmonary disease. Long-term exposure to $PM_{2.5}$ is also causally linked to the development of lung cancer. In addition, paediatric intensive care unit admissions for asthma increase with $PM_{2.5}$ and children exposed to $PM_{2.5}$ have decreased lung function growth at age 18.

58. Dr Orris concluded that "*…the high levels of air pollution in and around the Highveld Priority Area constitutes an immediate and significant public health hazard that should be remedied to save lives and allow the current and future generations of South Africa to live longer and healthier*".

59. CER also recently commissioned Dr. Andy Gray, an atmospheric scientist and dispersion modelling expert with over 40 years of experience, to conduct an air pollution dispersion study to assess contributions to ambient pollution from 12 Eskom coal-fired power stations, Sasol's Synfuels facility in Secunda, and the NatRef refinery, all within 50 km of the HPA boundary.[40] Consistent with the HPA AQMP, Dr. Gray found that the 14 facilities are responsible for the lion's share of air pollution in the region in 2016 allowed by the NAAQS: In particular, the study found that:

    59.1. cumulative emissions from the 14 facilities created acute exposures in 2016 that exceeded the WHO's guidelines for daily or hourly averages for all pollutants. The highest 24-hour average exposure of $PM_{2.5}$ was 45 µg/m3, nearly twice the WHO guideline of 25 $\mu g/m^3$;

    59.2. all of the 120 sensitive sites (primarily schools and hospitals) analysed in the model exceeded the WHO's 24-hour average SO_2 guideline (20 $\mu g/m^3$) in 2016 due to emissions from the 14 facilities. Implementing the

[40] The study used 2016 data in the monthly and annual reports from the facilities available at the time of preparing the study. A copy is available here: https://cer.org.za/wp-content/uploads/2019/06/Andy-Gray-Report.pdf

2020 MES at the facilities would bring SO_2 exposures at 93% of the sensitive sites (all but 9) to within the WHO guideline;

59.3. in 2016, emissions from the 14 facilities accounted for:

- 92% of the daily ambient SO_2 limit;
- 85% of the hourly ambient SO_2 limit;
- 82% of the hourly ambient NO_2 limit; and
- 68% of the daily ambient $PM_{2.5}$ limit;

59.4. these levels of contribution indicate that NAAQS cannot be achieved without reducing pollution from these sources. If these sources were to comply with the 2020 MES, their contribution to ambient air pollution would substantially decrease, accounting for:

- 20% of the daily ambient SO_2 limit (79% reduction from 2016);
- 21% of the hourly ambient SO_2 limit (75% reduction from 2016);
- 53% of the hourly ambient NO_2 limit (35% reduction from 2016); and
- 28% of the daily ambient $PM_{2.5}$ limit (59% reduction from 2016);

59.5. major reductions of SO_2 emissions from the 14 sources are necessary to reduce the high levels of secondary $PM_{2.5}$ (from sulphate particles) contributing to $PM_{2.5}$ NAAQS exceedances in and around the HPA. Compliance with the 2020 MES would result in SO_2 emissions from the facilities being reduced by 78% relative to 2016 emissions. NO_2 emissions from the facilities would be reduced by 43%. PM_{10} emissions from the facilities would be reduced by 51%.

60. In relation to what impact the doubling of the SO_2 MES standard would have on South Africa, Lauri Myllyvirta, lead analyst at Greenpeace Global Air Pollution Unit, was commissioned to conduct an assessment of the air quality and health impacts of doubling the standards for SO_2 emissions from power plants. This report, attached as **Annexure "3"**, specifically focuses on Eskom's coal-fired power plants, "*by far the largest emitter of SO2 in South Africa*". Mr. Myllyvirta notes that "*if other industrial sectors and private power plants were included as well, the implications would be larger*". In relation to the impacts on air quality, the assessment found that:

60.1. "compared against a scenario of full compliance with the current limit of 500mg/Nm^3, the weakened emissions standard would allow Eskom to emit an excess 280,000 tonnes of SO_2 per year, for a total of 5.5 million tonnes over the lifetime of the plants";

60.2. "the failure to install SO_2 scrubbers would increase mercury emissions by an estimated 15,000 kilograms per year or 200,000 kilograms over the remaining operating life. These estimates are based on the assumption that all units retire after 50 years of operation - a longer operating life would mean larger excess emissions";

60.3. "*based on these atmospheric modeling results, doubling the SO_2 emissions limit would increase population exposure to $PM_{2.5}$ caused by Eskom's coal-fired power plants by 70%, as most of the $PM_{2.5}$ exposure is due to secondary sulfate formation*";

61. In relation to health impacts caused by doubling the SO_2 MES limit, the assessment found:

61.1. We project that, over time, the higher SO_2 MES limit of 1000mg/Nm^3 will lead to the following avoidable health impacts, compared with compliance with the current regulation:

- ***950 premature deaths due to increased risk of lower respiratory infections, including in young children***
- ***350 premature deaths due to increased risk of stroke***
- ***320 premature deaths due to increased risk of death from diabetes***

- ***560 premature deaths due to increased risk of chronic obstructive pulmonary disease***
- ***720 premature deaths due to increased risk of ischaemic heart disease, and***
- ***520 premature deaths due to increased risk of lung cancer associated with chronic PM2.5***
- ***exposure***

61.2. *In total, an estimated 3,300 premature deaths (95% confidence interval: 3,000 to 3,500 deaths) would be caused by doubling the SO2 emissions limit. Annual excess health impacts peak at 170 premature deaths in 2025-26. Of the 3,300 excess deaths projected from weakening the MES, approximately 1,000 would take place in Gauteng. Most of the health impact is due to emissions from Medupi, followed by Matimba, Kendal and Majuba* (our emphasis).

62. As set out above, given the impact that the amendment would have on human health and South Africa's overall air quality, we reject the doubling of the SO_2 MES from April 2020 (or later for those facilities with postponements) as it is an irrational and unreasonable decision. Should the amendment be effected, it would be *ultra vires* the Constitution, AQA, the List of Activities, the 2017 Framework, and NEMA.

D. AVAILABLE ABATEMENT TECHNOLOGIES TO REDUCE SO_2 EMISSIONS

63. On behalf of the Life After Coal Campaign, the CER commissioned Dr Ron Sahu to critically assess the Department's proposal to double the MES from 500 mg/Nm^3 to 1000 mg/Nm^3. In his report, attached as **Annexure "4"**, Dr Sahu addresses some of the statements or assumptions relating to SO_2 pollution controls in the former Minister's media release, on 23 May 2019, regarding her intention to amend the 2020 SO_2 MES limit.[41]

64. In particular, Dr Sahu's report demonstrates that the following assumptions made by the Department are false:

64.1. that consumptive water use of the technology required to meet the lower standard of 500mg/Nm^3 (flue gas desulphurisation – FGD) is significant;

64.2. that the proposed alternative technology for meeting the relaxed standard (dry-sorbent injection (DSI)) is significantly cheaper; and

64.3. that there are no adverse impacts to using DSI to achieve SO_2 reductions of around 70%, as contemplated by the weaker standard of 1000 mg/Nm^3.

65. In summary, Dr Sahu makes the following observations:

65.1. "***FGD and water consumption****: There is no justification for doubling the MES to the proposed higher limit based on a broad-brush (i.e., without plant by plant assessment) indictment of FGD technology, simply by presuming that it has high consumptive water needs. Consumptive water needs of FGD are not large compared to other water uses in a power station if the thermal cycle relies on water cooling. And, focusing on just the water use by FGDs while minimising or not weighing the tremendous SO2 reductions that they can achieve – 99% or more – is misleading and unbalanced. If, in some cases, even the small additional consumptive water needs of wet FGD plants would be problematic, dry-FGD designs can provide the requisite 85% reductions needed to achieve the 500 mg/Nm3 MES. Dry-FGDs, while not as efficient as their wet counterparts, can still easily achieve reductions in the range of 90-95%.*

65.2. ***Impacts associated with Direct Sorbent Injection (DSI)****: DSI was initially developed and is mostly applied in order to remove a range of acid gases such as hydrochloric acid (HCl), hydrofluoric acid (HF). Any SO2 reductions were an ancillary co-benefit as a result. DSI was not developed to be a primary SO2 reduction*

[41] The media release is available at https://www.environment.gov.za/mediarelease/mokonyane_amendslegislationtoimproveairqualityinSA.

technology as the DEA media release suggests. The DSI process results will cause an increase in Particulate Matter (PM) emissions from electro-static precipitators (ESPs); will adversely affect ESP ash handling systems; cause increases in toxic mercury emissions; and result in adverse impacts from the disposal of ESP sorbent wastes. Mitigating these dramatically raises the costs of implementing DSI.

65.3. ***Costs**: capital costs of FGD appear to be significantly inflated. Recent, mass application of FGD, in countries such as India (presently upgrading a large fraction of its coal-fired units with FGD) show that FGD capital costs can be significantly lower, if proper procurement strategies are followed. While capital costs for DSI are indeed lower than FGD, the operating costs (including costs to mine/produce the sorbent, transport it to the coal-plant, properly condition it including reducing its size to fine power by grinding, storing it onsite without exposing it to moisture, etc.) are sizeable, especially to achieve the presumed 70% SO2 reduction. Based on this, and coupled with mitigating the adverse DSI impacts noted in the previous paragraph, government's expectation that DSI would be a much cheaper option than FGD is not only not unsupported, but is incorrect.*"

66. Dr Sahu's report concludes with the following remarks:

> *"Based on the foregoing, it is my opinion that the MES should not be doubled to 1000 mg/Nm3, as proposed. Not only will this allow significantly more emissions and adverse harm to exposed populations, the proposal is premised upon assumptions that are false: that FGD consumptive water use is significant; that DSI is significantly cheaper; and that there are no adverse impacts to using DSI to achieve SO2 reductions of around 70% as contemplated by the weaker proposed standard of 1000 mg/Nm3.*
>
> *Instead, for coal-fired plants that intend to continue to operate in South Africa, I recommend that the 2020 stack MES should be reduced to levels in the range of 200 mg/Nm3, the norm in most other jurisdictions around the world, and a level that can readily and cost-effectively be achieved by implementation of FGD. This will result in the actual improvement of air pollution in South Africa, including in the various priority areas declared in terms of South Africa's air quality legislation."*

67. As far back as the process of setting the initial list of activities which started in about 2006, FGD was acknowledged as the BAT to control SO_2 emissions. The operators of installations required to comply with the 2020 SO_2 MES limit of 500 mg/Nm^3 have had sufficient notice and lead-time to prepare for and install/retrofit FGD plants. The Department acknowledges this in the 2017 Framework, noting "*that the year 2020 marks 10 years since the publication of the 2010 AQA Section 21 notice (Listed activities and minimum emission standards). Therefore, sufficient time has been afforded to industry towards compliance with the initial MES by 2020. In upholding the objectives of the AQA, the Department provides certainty regarding postponement or suspension of compliance timeframes ...*".[42]

68. Our clients submit that there is no justifiable basis for the Department to retreat from this position by weakening the 2020 SO_2 MES limit. Installations that have not satisfied the criteria for a postponement or suspension of compliance application, must either comply with the existing 500 mg/Nm^3 or be decommissioned in a lawful, just and inclusive manner. We reiterate that the proposed amendment would not "*uphold the objectives of the AQA*" and would be ultra vires to the Constitution and NEMA.

E. CONCLUSION

69. Given the devastating impacts that the proposed amendments stand to have on human health, well-being, and the environment, in circumstances where air pollution and its health impacts are already severe, we submit that any decision taken to weaken the MES – let alone double the already-lax SO_2 2020 MES – would negatively impact

[42] See page 61 of the 2017 National Framework.

some of the most disadvantaged and vulnerable sectors of South African society. We submit that this would result in a series of human rights violations; including of the rights to life, dignity, and the environmental right.

70. We strongly argue that the MES should not be weakened, and request clarity on the following issues that have been highlighted in our comments:

    70.1. scope and effect of the amendment: whether the Department could provide the true figure and full list of the solid-fuel combustion installations covered by this provision? We refer in this regard to our estimate of 25 facilities which include Eskom's coal-fired power stations, Sasol's coal boilers, the Kelvin power station, and various coal boilers at other facilities – such as Mondi and Sappi; and

    70.2. appointment of SO_2 panel: whether the Department could clarify the manner in which – if at all - the proposed weakening of the 2020 MES SO_2 limit forms part of the SO_2 expert panel's mandate.

71. In your consideration of these submissions, we draw your attention to section 5.9.1 of the 2017 Framework, which points out that "*government plays a crucial role in achieving and maintaining clean air in South Africa, but it cannot reach this goal alone. 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*". It is therefore clear that, the Ministry and the Department must give due consideration to all representations or objections received from or presented by the public before exercising various powers, and that a failure to do so would be procedurally irregular and result in breach of the principles of public participation as contained in the Constitution, NEMA, AQA and PAJA.

72. We look forward to hearing from you in relation to this amendment process and are available to meet with the Department and to answer any questions on these submissions.

73. We once again reiterate that our clients' rights remain reserved, including the right to supplement or amend these submissions.

74. We thank the Department for the opportunity to comment and look forward to your response to our questions above, and to being kept updated on this and all air quality-related processes.

Yours sincerely
CENTRE FOR ENVIRONMENTAL RIGHTS
per:

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