



# Centre for Environmental Rights

## Advancing Environmental Rights in South Africa



**Honourable Minister Barbara Creecy**

Minister of Forestry, Fisheries and Environmental Affairs

By email: [mndamase@environment.gov.za](mailto:mndamase@environment.gov.za)

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**For the attention of:**

**The Director-General: Environment, Forestry and Fisheries**

Care of: Mr Anben Pillay

Private Bag X447

Pretoria

By email: [apillay@environment.gov.za](mailto:apillay@environment.gov.za)

Our ref: NL/RH

Date: 16 September 2019

Dear Minister

### **OBJECTIONS TO ESKOM'S APPLICATIONS TO EXCLUDE COAL ASH FROM THE DEFINITION OF WASTE FOR THE PURPOSES OF BENEFICIAL USE**

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 (ELA) that aims to: discourage the development of new coal 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. The Campaign has a particular interest and expertise in relation to Eskom's compliance with air pollution laws and the lawful, just and inclusive decommissioning of its coal-fired power stations, including the rehabilitation of its ash storage facilities.
2. We also address you on behalf of the:
  - 3.1 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, some of which are in proximity to, and are affected by, the existing ash storage facilities located at each of Eskom's 12 coal-fired power stations operating in the area; and
  - 3.2 Federation for a Sustainable Environment, a prominent environmental activist stakeholder in the mining industry with extensive knowledge in acid mine drainage.

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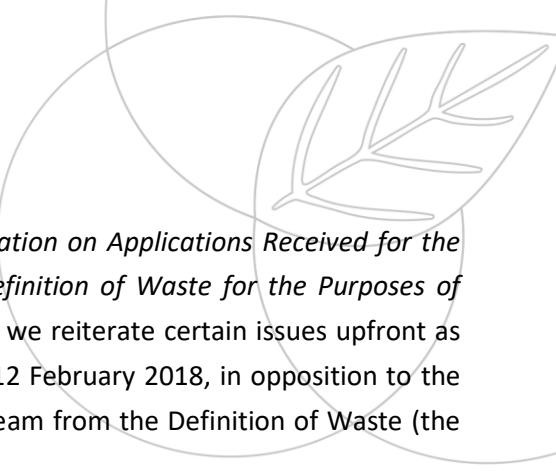
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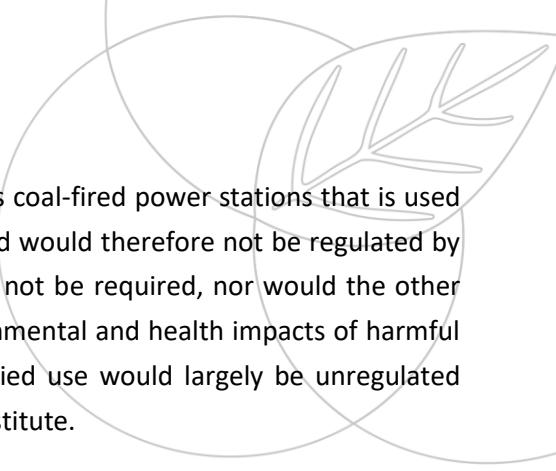
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3. We hereby submit comments on the Government Notice titled "*Consultation on Applications Received for the Exclusion of Waste Streams or a Portion of Waste Streams from the Definition of Waste for the Purposes of Beneficial Use*", published on 16 August 2019 (the "Notice"). In so doing, we reiterate certain issues upfront as raised in the abovementioned organisations in comments submitted on 12 February 2018, in opposition to the Draft Regulations to Exclude a Waste Stream or a Portion of a Waste Stream from the Definition of Waste (the "Waste Exclusion Regulations"):<sup>1</sup>
    - 3.3 We do not support the exclusion of any type of hazardous waste from the definition of waste, in terms of the National Environmental Management: Waste Act, 2008 (NEMWA), for any purpose whatsoever.
    - 3.4 We emphasise that our clients have extensive concerns over the current management and implementation of the existing waste management laws in South Africa. In our experience, we have seen numerous instances of non-compliance with waste management licences or other provisions of NEMWA with little monitoring and enforcement of compliance by government. Despite this current reality, these applications now seek to exclude hazardous waste streams from the application of NEMWA, which will only exacerbate this poor state of regulatory implementation and enforcement, with further adverse impacts on the environment and human health.
    - 3.5 The time period of 30 days is woefully inadequate to allow for meaningful consideration and participation by members of the public, given the far-reaching environmental and health implications associated with excluding a toxic waste such as coal ash. We have had to confine these comments to Eskom's applications insofar as they seek to exclude weathered ash, and fresh and weathered ash, for the purposes of mine backfilling, the treatment of acid mine drainage and soil amelioration (i.e. application number 12/9/11/L18110719295/2/3 - although there are four applications with the same number, only three of these applications list at least one of the abovementioned uses).
  4. While we, and our clients, agree with the responsible, lawful and beneficial use of ash to minimise pollution and harmful impacts on the environment, this **must** strictly be regulated and done in accordance with the principles of the National Environmental Management Act, 1998 (NEMA), which require, *inter alia*, that environmental management must place people and their needs at the forefront of its concern; that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied; that a **risk-averse and cautious approach** is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; that **negative impacts on the environment and on people's environmental rights be anticipated and prevented**, and where they cannot be altogether prevented, are minimised and remedied; and environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.<sup>2</sup>

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<sup>1</sup> See the 12 February 2019 comments at <https://cer.org.za/wp-content/uploads/2018/02/CER-comments-on-Draft-Waste-Stream-Regulations-12-2-18.pdf>

<sup>2</sup> See section 2 of NEMA.

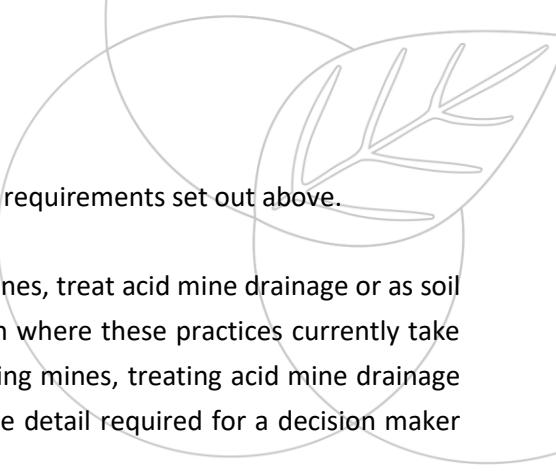
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5. If Eskom's applications were to be granted, coal ash generated at Eskom's coal-fired power stations that is used for the specified 'beneficial' use, would no longer be defined as waste and would therefore not be regulated by the NEMWA – meaning that a waste management licence (WML) would not be required, nor would the other legitimate controls provided for in NEMWA to protect against the environmental and health impacts of harmful waste, be applicable. Instead, as explained more fully below, the specified use would largely be unregulated because a risk assessment plan is neither an adequate nor acceptable substitute.
  6. In our view, to permit hazardous waste (and in particular coal ash) to be excluded completely from the application and regulation of NEMWA, would be a violation of the section 24 constitutional right to an environment not harmful to health or wellbeing. In particular, this is so for the purposes of mine backfilling and the treatment of acid mine drainage, which, as detailed below, both have the potential to cause environmental pollution and degradation and devastating effects on human health and wellbeing
  7. In support of our objections to Eskom's applications to exclude coal ash in terms of the Waste Exclusion Regulations, we address the following issues in turn:
    - 7.1 Eskom's applications are defective as they do not comply with the minimum criteria set out in the Waste Exclusion Regulations;
    - 7.2 there are inadequate provisions for compliance monitoring and enforcement; and
    - 7.3 there are significant environmental and health risks associated with mine backfilling, acid mine drainage and soil amelioration, which are not actually beneficial uses of coal ash.

### **Eskom's defective applications**

8. Any decisions to exclude waste streams must be based on sound science, consistent with the rule of law, and guided by the precautionary principle in an open and democratic process.
9. Regulation 7 of the Waste Exclusion Regulations sets out the minimum criteria to be contained in an application for exclusion and provides as follows:

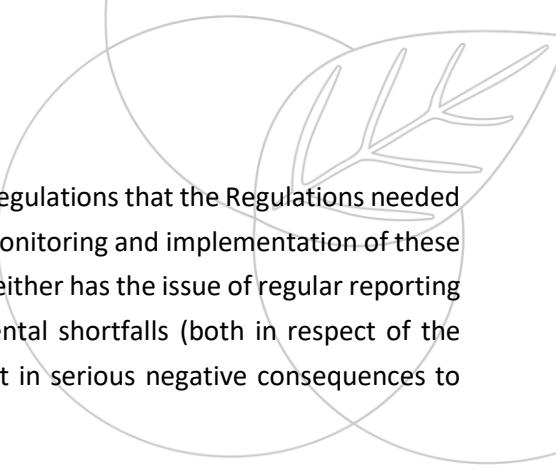
*"The Minister may exclude a waste stream or portion of a waste stream, from the definition of waste for the purposes of beneficial use provided that the –*

- (a) *application demonstrates that the waste is being or has been or will be used for a beneficial purpose either locally or internationally;*
- (b) *applicant undertakes a risk assessment and submits a risk management plan demonstrating that the intended beneficial use of the excluded waste can be managed in such a way as to ensure that the intended beneficial use will not result in significant adverse impacts on the environment; and*
- (c) *risk management plan developed and responding to the risks identified in the risk assessment undertaken in terms of paragraph (b) above accompanies any delivery of the excluded waste to the user.*

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10. Eskom's applications are defective in that they fail to address, at least, the requirements set out above.
  11. Eskom's applications do not demonstrate how the use of ash to backfill mines, treat acid mine drainage or as soil additive are beneficial purposes in South Africa, and they do not mention where these practices currently take place and whether this has been successful or not. In relation to backfilling mines, treating acid mine drainage and soil amelioration, in particular, the risk assessments are devoid of the detail required for a decision maker rationally and reasonably to approve the applications.
  12. In addition, because Eskom's risk assessment, upon which the risk management plan is based, is defective so too is the risk management plan. This plan primarily addresses, at a high level, the delivery of the ash to the so called beneficial user (or off-taker) and storage on the beneficial user's site. It does not provide adequate safeguards in terms of how the waste will be used by the off-taker or properly managed thereafter to ensure that no adverse environmental impacts would occur.
  13. As submitted in the February 2018 comments, Regulation 7(b) should explicitly include impacts to *human health*. Notwithstanding this glaring omission in the Regulations, and even though not explicitly included, these health impacts are, by necessary implication, required to be considered in the light of section 24 of the Constitution of the Republic of South Africa, 1996 (the "Constitution"), which guarantees the right to environmental not harmful to health and wellbeing. We note in Eskom's risk assessment, that fly ash is characterised as presenting a risk to human health and submit that the defective risk management plan does not provide sufficient measures properly to mitigate the contamination of soil and surface or groundwater sources.
  14. Accordingly the applications do not meet the minimum criteria for consideration by the Minister and must be rejected on this basis alone.

#### **Compliance monitoring and enforcement**

15. As cautioned above, when a waste stream is excluded that waste stream is no longer regulated by the NEMWA and relevant waste regulations. Instead, it appears that the off-taker would need to comply with the conditions, if any, set by the producer of the waste (i.e. Eskom) in the risk management plan, which formed part of the application. It would then, it seems, be up to the producer (i.e. Eskom) to monitor that the off-taker complies with any conditions set out in the risk management plan.
16. Regulation 14(1)(e) makes it an offence for a person to contravene or fail to comply with any permitted use of waste granted in terms of these Regulations. It seems that where a 'beneficial' user or off-taker fails to comply with the conditions set out by the producer in the risk management plan, that person commits an offence. However, this is by no means clear. If this is the case, it is not understood how a competent authority would monitor compliance and institute enforcement action, given that it is supposedly the producer's responsibility to monitor compliance with the risk management plan. Presumably the producer, upon detection of non-compliance has a duty to report this to the authorities, however, this is also not clear. It is additionally unclear if the producer's responsibilities under their WML end when the waste is removed by the end-user.

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17. It was submitted in our February 2018 comments on the Waste Exclusion Regulations that the Regulations needed to clarify who the competent authority in relation to the administration, monitoring and implementation of these Regulations is intended to be. This has not properly been addressed, and neither has the issue of regular reporting of compliance with the risk management plan. These are both fundamental shortfalls (both in respect of the content and implementation of these Regulations) which will likely result in serious negative consequences to human health and the environment.
  18. It is evident from the National Environmental Compliance and Enforcement Report (NECER) dating back from 2011 to date,<sup>3</sup> a recent assessment of Eskom's non-compliance with its atmospheric emission licences (AELs),<sup>4</sup> and its admission that Kendal coal-fired power station has been non-compliant with its AEL since January 2018,<sup>5</sup> that Eskom is a perpetual contravener of the environmental laws that apply to its operations. It is astounding that a perpetual contravener could be given the task of monitoring compliance by off-takers when Eskom, itself, is in non-compliance with the law on a regular basis. We submit that this is a blatant violation of section 24 of the Constitution, against public policy and cannot be permitted.
  19. We reiterate our position that hazardous waste should be excluded from these Regulations and, in addition, we submit that entities which are in a state of non-compliance with applicable environmental laws, such as Eskom, should be disqualified from submitting an application, for any waste stream, in terms of these Regulations which require Eskom to monitor the compliance of off-takers.
  20. We now consider, in more detail, the purported beneficial uses which we, and our clients, strongly oppose.

#### **Mine backfilling and the treatment of acid mine drainage**

21. We note that one of the purposes under Regulation 2 is to "*promote diversion of waste from landfill disposal to its beneficial use*". It is our submission that, in effect, mine backfilling and treating acid mine drainage still result in the disposal of coal ash without the necessary conditions that would be imposed by a WML. In the case of treating acid mine drainage, Eskom's own risk assessment and risk management plan reveals that "*The treatment of AMD with ash will result in the formation of secondary sludge which will require proper disposal. Improper disposal could lead to the contamination of soil, surface and ground water*".<sup>6</sup> According to Eskom's risk management plan, the responsibility of 'proper disposal' of this secondary sludge is placed on the off-taker, allowing Eskom to shift the burden and associated cost. This also means that the toxic sludge will be managed outside of the waste legislation that would otherwise be applicable, with no safeguards necessary to prevent significant negative impacts on human health and the environment.

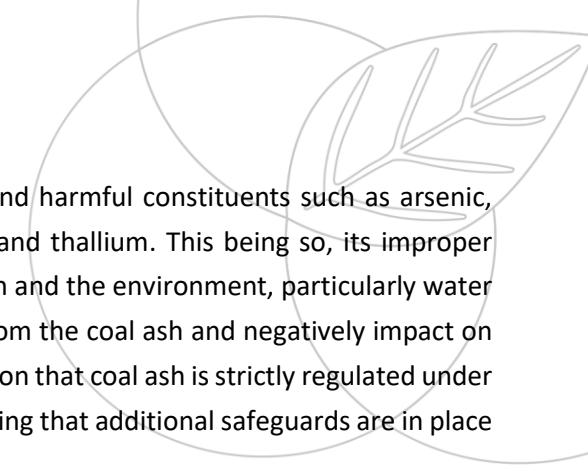
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<sup>3</sup> Since 2011, a number of Eskom's coal-fired power stations have appeared in the 'Compliance Inspection' section of NECERs. In fact, the 2011 Report describes Eskom as "*the organ of state with the highest rate of non-compliance with environmental Legislation*".

<sup>4</sup> <https://cer.org.za/wp-content/uploads/2019/04/Ron-Sahu-Eskom-Exceedances-Report-updated-March-22-2019.pdf>

<sup>5</sup> <https://cer.org.za/wp-content/uploads/2019/07/CER-letter-to-Minister-Creecy -Kendal-enforcement-action 22-July-2019.pdf>

<sup>6</sup> Page 18 of Eskom's Risk Assessment.

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22. Coal ash, also referred to as coal combustion residue contains toxic and harmful constituents such as arsenic, boron, cadmium, chromium, cobalt, lead, lithium, mercury, selenium and thallium. This being so, its improper placement and/ or disposal poses a serious threat to both human health and the environment, particularly water resources, because these toxic chemicals have the potential to leach from the coal ash and negatively impact on any water with which they come into contact.<sup>7</sup> It is precisely for this reason that coal ash is strictly regulated under the NEMWA and its regulations. It is classified as hazardous waste meaning that additional safeguards are in place in order properly to regulate its lifecycle and disposal.
  23. Essentially, what this means is that before a person can handle coal ash a WML is required. This WML is obtained only after an environmental impact assessment has been conducted to ensure that the coal ash is managed in such a way as to limit its negative impact on human health and the environment. The assessment is site specific and takes into consideration the particular characteristics of the affected environment to ensure that it is adequately safeguarded.
  24. However, Eskom claims that ash can be excluded from the application of NEMWA, and the need for a WML, at least in circumstances where it is backfilled into mines, where it supposedly treats acid mine drainage and as a soil additive. Although Eskom's applications are completely devoid of any benefits of using ash in this specific manner, promoters of backfilling mines with coal ash generally argue that dumping alkaline ash into mines will neutralize the acidic runoff that results from mining (i.e. acid mine drainage or AMD).<sup>8</sup> This is not correct. Indeed, studies have shown that far from being a solution to the treatment of AMD, coal ash exacerbates the problem. In addition, ash is not always alkaline and the pH can vary from 4.5 to 12.
  25. When coal ash is placed in the mined out areas, the hazardous constituents contained in the coal ash dissolve easily and infiltrate the highly fractured sites. The potential for adverse impacts to water is compounded by the location of mining with respect to groundwater. Furthermore, as a practical matter, dumping large quantities of coal ash directly into water tables in these highly fractured sites under massive quantities of mine overburden makes the prospect of cleaning up the resulting contamination far more daunting than halting leakages from conventional landfills and ash ponds.<sup>9</sup>
  26. In Pennsylvania in the United States of America, for example, backfilling mines with ash has been common practice for some twenty years. However, studies have shown that in the majority of mines studied where coal ash was placed or backfilled, acidity of the water actually increased over time.<sup>10</sup> While the coal ash temporarily remediated AMD in a few cases, in two-thirds of all the mines studied, the introduction of coal ash resulted in more severe, long-term water quality contamination than had ever existed at these sites from the mining operation itself. Studies in respect of the remaining one third were inconclusive as it was impossible to attribute the contamination to a precise source.<sup>11</sup>

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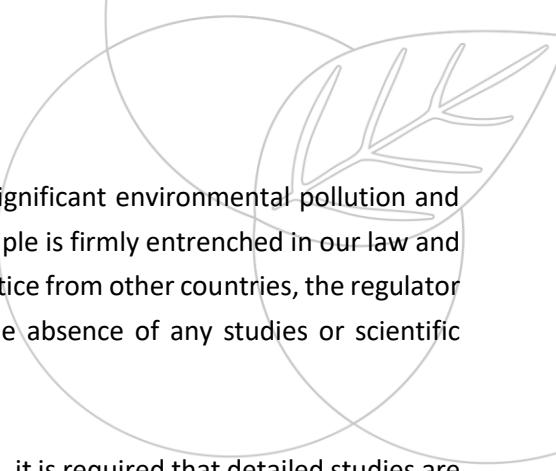
<sup>7</sup> Page 13 of Eskom's Risk Assessment.

<sup>8</sup> Page 8 of Waste Deep available at [https://earthjustice.org/sites/default/files/library/reports/earthjustice\\_waste\\_deep.pdf](https://earthjustice.org/sites/default/files/library/reports/earthjustice_waste_deep.pdf)

<sup>9</sup> Page 8 of Waste Deep available at [https://earthjustice.org/sites/default/files/library/reports/earthjustice\\_waste\\_deep.pdf](https://earthjustice.org/sites/default/files/library/reports/earthjustice_waste_deep.pdf)

<sup>10</sup> Page 8 of Waste Deep available at [https://earthjustice.org/sites/default/files/library/reports/earthjustice\\_waste\\_deep.pdf](https://earthjustice.org/sites/default/files/library/reports/earthjustice_waste_deep.pdf)

<sup>11</sup> Page vi of Impacts On Water Quality From Placement Of Coal Combustion Waste In Pennsylvania Coal Mines <https://earthjustice.org/sites/default/files/files/PAMinefillreport2006.pdf>

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27. It is clear therefore, that this use, far from being beneficial, has caused significant environmental pollution and degradation in areas where it has been practiced. The precautionary principle is firmly entrenched in our law and in circumstances where there is evidence of harmful impacts from this practice from other countries, the regulator should not allow the same mistakes to be made here, particularly in the absence of any studies or scientific evidence which demonstrate otherwise. Eskom's applications fail to do so.
  28. We re-emphasise that when ash is disposed of in accordance with NEMWA, it is required that detailed studies are done in respect of the site specific area where the ash is to be disposed and requirements as to where to place the ash, what safeguards to put in place – such as liners and or water monitoring requirements. If this exclusion is allowed, ash will essentially be disposed of in mines with absolutely no safe guards being in place to protect our water resources and human health. Far from being a beneficial use, we contend that this is simply a way to dump coal ash disguised as beneficial use in order to avoid compliance with the law and the cost associated with responsible waste disposal methods. Furthermore, there is no detail in respect of how these purported beneficial uses, in particular, have the potential to uplift previously disadvantaged companies or create jobs.

### **Soil amelioration**

29. In some cases, coal ash has been proposed as an amendment (or additive) for soils. Proponents of coal ash for soil amendment argue that it can increase productivity by providing plants with macro and micronutrients including K, Na, Zn, Ca, Mg, and Fe. Fly ash can stabilize soils, increase moisture holding ability, and reduce clumping. When alkaline, it can buffer soil acidity and reduce uptake of certain elements.<sup>12</sup>
30. The finer the fly ash particle size, the greater the leachable toxic trace elements are concentrated in it.<sup>13</sup> Coal ash changes the physical properties including soil structure and moisture holding capacity, and chemical properties, including pH, nutrient availability, and salinity (electrical conductivity).<sup>14</sup>
31. While studies on coal ash as a soil amendment are few, they have identified important risks. This include the following:

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<sup>12</sup> N.L. Ukwattage et al, *The use of coal combustion fly ash as a soil amendment in agricultural lands (with comments on its potential to improve food security and sequester carbon)*, Fuel Vol. 109 (July 2013) p. 402  
<https://www.sciencedirect.com/science/article/pii/S001623611300104X>.

<sup>13</sup> Ibid at page 403.

<sup>14</sup> N.L. Ukwattage, et al., *The use of coal combustion fly ash as a soil amendment in agricultural lands (with comments on its potential to improve food security and sequester carbon)*, Fuel Vol. 109 (2013), page 402.  
<https://www.sciencedirect.com/science/article/pii/S001623611300104X>; S. Brake, R. Jensen, J.M. Mattox, *Effects of coal fly ash amended soils on trace element uptake in plants*, Environmental Geology, Vol. 45 No. 5 (Mar. 2004) pages 680-689  
[https://www.researchgate.net/publication/225454292\\_Effects\\_of\\_coal\\_fly\\_ash\\_amended\\_soils\\_on\\_trace\\_element\\_uptake\\_in\\_plants](https://www.researchgate.net/publication/225454292_Effects_of_coal_fly_ash_amended_soils_on_trace_element_uptake_in_plants); M. Cimtile, *Coal Ash in Soil a Good Idea?* Scientific American, Is (2009) <https://www.scientificamerican.com/article/coal-ash-in-soil/>; A. Singh et al., *Effects of Fly Ash Incorporation on Heavy Metal Accumulation, Growth and Yield Responses of Beta vulgaris Plants*, 99 Bioresource Tech. 7200 (2008); R. Sahu & R. Padhy, *Growth, Yield and Elemental Status of Rice (Oryza Sativa) Grown in Fly-Ash Amended Soil*, 16 Ecotoxicology 271 (2007); A. Gupta & S. Sinha, *Growth and Metal Accumulation Response of Vigna radiata L. var PDM 54 (Mung Bean) Grown on Fly-Ash Amended Soil: Effect on Dietary Intake*, 31 Envtl. Geochem. & Health 463 (2009).

- 31.1 with higher surface to volume ratios, these toxic elements are also more bio-available;<sup>15</sup>
- 31.2 many toxic metals are found in higher concentrations than in soil, thus increasing the amended soil's concentration of<sup>16</sup> those metals.<sup>17</sup> Mercury, nickel, chromium, lead, molybdenum, selenium, boron, cadmium, zinc, titanium and aluminium, may all damage plants or accumulate in them, passing on dangerous levels of toxins to people or animals that eat them.<sup>18</sup> It also contains a high amount of soluble salts, increasing salinity;<sup>19</sup>
- 31.3 the cementitious properties can reduce crop growth over long application periods and fugitive dust of fly ash has been shown to decrease soil health through increased heavy metals and decreased soil enzymatic activity;<sup>20</sup>
- 31.4 a study has found that boron phytotoxicity and salinity were the main problems of fly ash as a soil amendment, while another study found that basil and zucchini grown in soil amended with 5% to 20% fly ash absorbed toxic levels of arsenic and titanium.<sup>21</sup> When ash percentage increased, the crops absorbed higher concentrations of metals;<sup>22</sup> and
- 31.5 sludge resulting from Flue-gas Desulphurisation (FGD) emissions abatement technology is also used as a soil amendment because of its high calcium and sulphur content. As with fly ash, however, the heavy metals in FGD sludge will leach heavy metals into groundwater or surface water.<sup>23</sup>

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<sup>15</sup> N.L. Ukwattage, et al., *The use of coal combustion fly ash as a soil amendment in agricultural lands (with comments on its potential to improve food security and sequester carbon)*, Fuel Vol. 109 (2013), page 403.

<sup>16</sup> N.L. Ukwattage, et al., *The use of coal combustion fly ash as a soil amendment in agricultural lands (with comments on its potential to improve food security and sequester carbon)*, Fuel = 109 (2013), page 407  
<https://www.sciencedirect.com/science/article/pii/S001623611300104X>.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid. For mercury, see K. Schroeder and C. Kaires, *Distribution of Mercury in FGD byproducts*, 2005 World of Coal Ash (2005), <http://www.flyash.info/2005/100sch.pdf>.

<sup>19</sup> Ibid, at page 402.

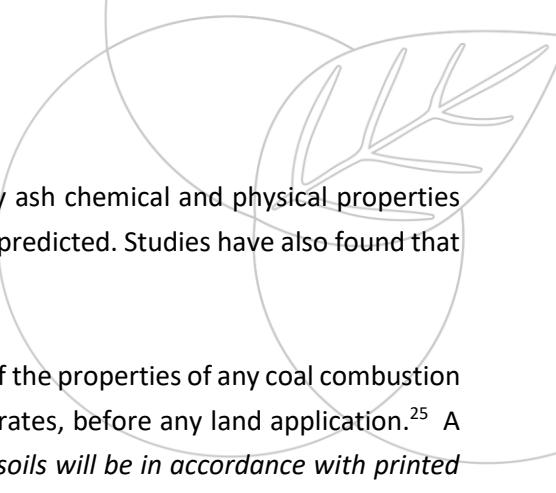
<sup>20</sup> M. Cimitile, *Is Coal Ash in Soil a Good Idea?* Scientific American (2009) <https://www.scientificamerican.com/article/coal-ash-in-soil/>; and R. Raja et al., *Impairment of soil health due to fly ash-fugitive dust deposition from coal-fired thermal power plants*, Environmental Monitoring and Assessment 187 (2015), <https://www.ncbi.nlm.nih.gov/pubmed/26450689>.

<sup>21</sup> S. Brake et al., *Effects of coal fly ash amended soils on trace element uptake in plants*, Environmental Geology, Vol. 45 No. 5 (Mar. 2004) pp. 680-689  
<https://www.researchgate.net/publication/225454292> Effects of coal fly ash amended soils on trace element uptake in plants; for other crops see also A. Singh et al., *Effects of Fly Ash Incorporation on Heavy Metal Accumulation, Growth and Yield Responses of Beta vulgaris Plants*, 99 Bioresource Tech. 7200 (2008); R. Sahu & R. Padhy, *Growth, Yield and Elemental Status of Rice (Oryza Sativa) Grown in Fly-Ash Amended Soil*, 16 Ecotoxicology 271 (2007); and A. Gupta & S. Sinha, *Growth and Metal Accumulation Response of Vigna radiata L. var PDM 54 (Mung Bean) Grown on Fly-Ash Amended Soil: Effect on Dietary Intake*, 31 Envtl. Geochem. & Health 463 (2009).

<sup>22</sup> S. Brake et al., *Effects of coal fly ash amended soils on trace element uptake in plants*, Environmental Geology, Vol. 45 No. 5 (Mar. 2004), pages 680-689  
<https://www.researchgate.net/publication/225454292> Effects of coal fly ash amended soils on trace element uptake in plants; see also M. Cimitile, Scientific American, *Is Coal Ash in Soil a Good Idea?* (2009)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2704332/>

<sup>23</sup> K. Schroeder and C. Kaires, *Distribution of Mercury in FGD byproducts*, 2005 World of Coal Ash (2005), <http://www.flyash.info/2005/100sch.pdf>; M. Cimitile, *Is Coal Ash in Soil a Good Idea?* Scientific American (2009) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2704332/>.

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32. Soil amelioration using coal ash also comes with great uncertainty as fly ash chemical and physical properties can vary dramatically, so the effects of soil amelioration cannot easily be predicted. Studies have also found that impacts of fly ash on soil properties change over time.<sup>24</sup>
  33. All of these risks underscore the importance of thorough understanding of the properties of any coal combustion residue, as well as the properties of the soil, climate, crops and dosage rates, before any land application.<sup>25</sup> A vague risk management plan stating that the "*The application of ash to soils will be in accordance with printed specifications. The specifications must be strictly adhered to. All staff involved in the application of the ash must complete training on the product specifications*"<sup>26</sup> is simply inadequate in light of the risks associated with soil amendment.
  34. Given the lack of rigorous research into impacts of use of coal ash as a fertiliser and limited information about the risks that soil amendments pose to the environment and public health, we submit that the precautionary principle demands that this purported beneficial use is summarily rejected.<sup>27</sup>

## Conclusion

35. Based on the aforementioned objections, our clients call on the Minister to:
  - 34.1 summarily reject Eskom's applications to exclude hazardous coal ash from the definition of waste, in terms of Regulation 6(2)(d); alternatively
  - 34.2 if the Minister decides to consider Eskom's applications, she must exercise her powers in terms of Regulation 6(2)(b) requiring Eskom to amend its application by deleting mine backfilling, AMD treatment and soil amelioration as potential uses; and require that Eskom, in terms of Regulation 6(2)(c) and the NEMA Principles, submit additional information demonstrating that the remaining beneficial uses will not cause adverse impacts on the environment or human health.
36. Furthermore, we request that the Minister clarify who the competent authority in relation to the administration, monitoring and implementation of these Regulations is intended to be, and how users/off-takers will periodically (at least annually) report their compliance against risk management plans. We reiterate that these compliance reports must be made publicly available on request and online. This must be provided for in order to uphold the rights of access to information<sup>28</sup> and to an environment not harmful to health or wellbeing.

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<sup>24</sup> N. Ukwattage et al. 2013, *citing L. Sale et al. Temporal influence of fly ash on select soil physical properties*, Can J Soil Sci 1997;77:677–83.

<sup>25</sup> N.L. Ukwattage et al. *The use of coal combustion fly ash as a soil amendment in agricultural lands (with comments on its potential to improve food security and sequester carbon)*, Fuel Vol. 109 (2013), page 402. <https://www.sciencedirect.com/science/article/pii/S001623611300104X>.

<sup>26</sup> Page 11-12 of Eskom's Risk Management Plan.

<sup>27</sup> Ibid. M. Cimitile, Scientific American, *Is Coal Ash in Soil a Good Idea?* (2009) <https://www.scientificamerican.com/article/coal-ash-in-soil/>.

<sup>28</sup> Section 32 of the Constitution.

37. Kindly contact us should you have any queries. We would also be happy to meet with the Department to discuss these objections and/or provide further information in support of our position.

Yours faithfully  
**CENTRE FOR ENVIRONMENTAL RIGHTS**

per:



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