



# Centre for Environmental Rights

Advancing Environmental Rights in South Africa

Dr. Mathys Vosloo  
Zitholele Consulting  
By email: [mathysv@zitholele.co.za](mailto:mathysv@zitholele.co.za)

Copies to:

Lebo Petlane  
Zitholele Consulting  
By email: [Lebop@zitholele.co.za](mailto:Lebop@zitholele.co.za)

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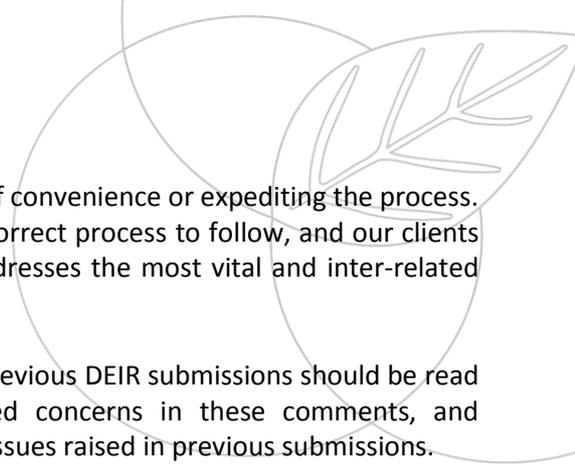
Date: 15 June 2018

Dear Sirs

## **COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT REPORT AND WASTE MANAGEMENT LICENCE VARIATION APPLICATION FOR THE PROPOSED RETROFITTING OF A FLUE GAS DESULPHURISATION SYSTEM AT MEDUPI POWER STATION, LEPHALALE, LIMPOPO PROVINCE**

1. We act for groundwork, Earthlife Africa (ELA), and Concerned Citizens of Lephalale (“our clients”). Our clients are interested and affected parties (I&APs) in Eskom’s integrated environmental authorisation process for the Medupi Power Station Flue Gas Desulphurisation (FGD) Retrofit Project (“the FGD Retrofit Project”).
2. In this document, our clients submit their comments on the Final Environmental Impact Report (FEIR) as well as on the Application for Variation on the Waste Management Licence (“the WML Variation Application”) for the proposed retrofit project. Our clients have submitted comments in several earlier phases of this consultation process, including:
  - 2.1. comments on the Draft Scoping Report (DSR), dated 12 December 2014;
  - 2.2. comments on the Final Scoping Report (FSR), dated 13 July 2015;
  - 2.3. comments on the first Medupi FGD Retrofit Environmental Impact Assessment (EIA) Bridging Document Report, dated 31 October 2016; and
  - 2.4. comments on the DEIR and WML Variation Application, dated 19 April 2018.
3. We reiterate that whilst installation of FGD is necessary, it should be done in a manner that is consistent with the law, and that takes into account all the impacts of the FGD process. The three most important considerations of this project therefore are: the technology selection which minimises water usage; water impacts and water availability; and waste impacts and minimisation of waste. In respect of the waste minimisation, it is necessary to conduct an updated gypsum (one of the waste streams of the FGD) commercialisation study, to determine if disposal can be avoided and resale adopted. These issues cannot be dealt with in a piecemeal fashion, since the availability of water effects directly on the FGD technology selection, with the volume of waste stream also having

Cape Town: 2<sup>nd</sup> Floor, Springtime Studios, 1 Scott Road, Observatory, 7925, South Africa  
Johannesburg: 9th Floor, Southpoint CNR, 87 De Korte Street, Braamfontein, 2001, South Africa  
Tel 021 447 1647 (Cape Town) | Tel 010 442 6830 (Johannesburg)  
Fax 086 730 9098  
Email [info@cer.org.za](mailto:info@cer.org.za), [www.cer.org.za](http://www.cer.org.za)



an impact on water. These issues should not be separated for the sake of convenience or expediting the process. The Integrated Environmental Impact Assessment therefore is still the correct process to follow, and our clients maintain their objection to the separate application process, which addresses the most vital and inter-related issues pertaining to FGD in a piecemeal fashion.

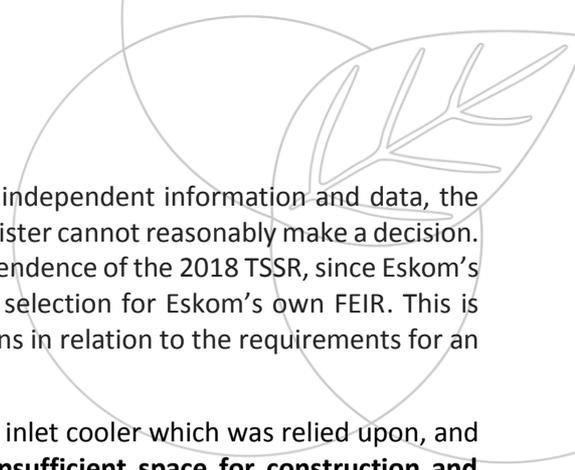
4. As many of the concerns have still not been addressed in the FEIR, the previous DEIR submissions should be read in conjunction with this document. Although we reiterate selected concerns in these comments, and notwithstanding the responses in Appendix F7, we stand by the various issues raised in previous submissions.

#### **FEIR does not meet the EIA standards due to missing information**

5. Regulation 7 of the Environmental Impact Assessment Regulations (“the EIA Regulations”), 2010, requires that “*a competent authority is entitled to **all information** that reasonably has or may have the **potential of influencing any decision** with regard to an application*”
6. We note that numerous reports, assessments, and/or information referred to and relied on in the FEIR and specialist reports are not provided as part of the FEIR. This hinders one’s ability to fully assess and engage with the contents of the FEIR. We, and our clients, have not had access to the below mentioned information, which should have accompanied the FEIR and WML Variation application. Not only does this contravene the public participation requirements in National Environmental Management Act, 1998 (NEMA) and the EIA Regulations, but it also infringes on the rights to fair administrative process (section 33 of the Constitution of the Republic of South Africa, 1996, and the Promotion of Administrative Justice Act, 2000) and the right of access to information (section 32 of the Constitution). It also impacts on the ability of the competent authority to make an informed decision, and will potentially affect his/her decision-making process. The following information has still not been disclosed:
  - 6.1. data pertaining to Chinese, European and USA plant site visits which apparently informed the FGD technology selection: The importance of choosing the correct technology which minimises water usage cannot be over-stressed, since utilising FGD with an inlet cooler (as opposed to FGD without an inlet cooler) has significant water savings, to the extent that reliance on the Moloko Crocodile Water Augmentation Project (MCWAP) 2 may potentially be avoided. This aspect was dealt with extensively in paragraph 11-28 of the DEIR submissions, and is reiterated. In respect of the technological assessment, Eskom has rejected the inlet cooler in the DEIR and FEIR on the claimed basis of the lack of feasibility in the implementation, lack of space, increased cost and material selection, and maintenance issues, among others. In doing so, Eskom quotes the FGD Technology Selection Study Report (“the 2018 TSSR”), which, in turn, relies heavily on Eskom’s site visits to Europe and China, to conclude that the inlet cooler was not a technologically-feasible option. We have therefore requested vital details of the 2018 TSSR pertaining to the plants visited, as well as the full site visit report/s from the respective plants (particularly in relation to the Chinese plants) to verify the information provided in the DEIR and 2018 TSSR. This should contain sufficient details such as: methodologies for the selection of the five plants; the respective commissioning dates; the full specification of each of the plants; dates, and nature of the problem experienced, as well as how it was resolved, amongst others. Furthermore, **independent data from the 5 respective plants should also be provided to support these assertions.** However, despite this request, our comment was unheeded and the information was not included in the FEIR, nor were the requested details provided. It now appears that Eskom also travelled to the USA to visit the plants there.<sup>1</sup> The results from USA were also not included in the 2018 TSSR – this should be explained. Technical reports need to provide independent and verifiable results, as a necessary component of decision-making process. However, the **2018 TSSR report relies on data lacking in detail and which cannot be provided or verified.** Ultimately, the results of Eskom’s site visits to China and Europe (and now USA), led to the conclusion on the choice of technology in the 2018 TSSR, DEIR, and the FEIR, and this **information should be provided and verified by the various plants visited, and site visit reports should be**

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<sup>1</sup> FEIR, page 100.



**made available for public comment.** Without this verifiable and independent information and data, the 2018 TSSR report, DEIR, and FEIR cannot be relied upon, and the Minister cannot reasonably make a decision. The failure to produce these documents call into question the independence of the 2018 TSSR, since Eskom's site visits are, in effect, informing the outcome of the technology selection for Eskom's own FEIR. This is inconsistent with the requirements of NEMA and the EIA Regulations in relation to the requirements for an EIA;

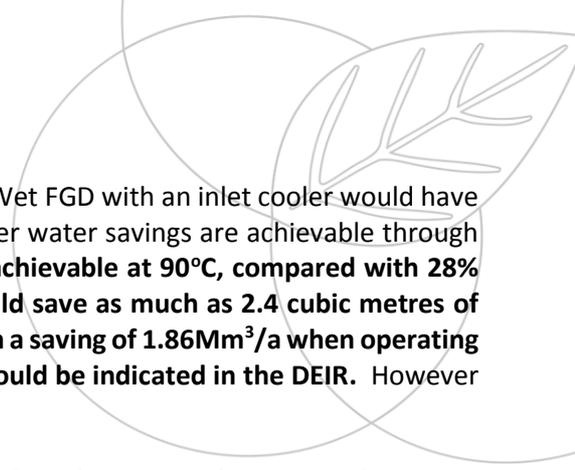
- 6.2. **detailed engineering study of the design and layout of the FGD and inlet cooler** which was relied upon, and **which supports the 2018 TSSR and FEIR findings that there is insufficient space for construction and maintenance of FGD with inlet cooler.** If Eskom has not conducted this (which the response on page 30 seems to indicate), then the 2018 TSSR report cannot be supported and any findings reached therein should be removed from the FEIR. The Environmental Assessment Practitioner should obtain an independent specialist report on the technology selection with verifiable data and results. Further, reference to insufficient space for the FGD inlet cooler in the FEIR should be removed;
  - 6.3. **updated Gypsum Market Feasibility Study:** we have, in our previous comments, requested an updated market feasibility study for gypsum to be conducted – to evaluate means to minimise waste. According to the FEIR, it appears that a Gypsum Commercialisation Strategy study was conducted in 2017,<sup>2</sup> however this was not made available in the DEIR and FEIR, and should be made available for public comment, and included in the FEIR.
  - 6.4. Knight and Piesold, Storm Water Management Report, 2017 referred to on page 84 and 90 of FEIR;
  - 6.5. confirmation of Limestone availability, as well as the confirmation of quantity and quality and duration of supply.
7. I&APs and the competent authority must be given timeous access to **all** specialist reports and data underpinning the FEIR and WML Variation application. Currently, these documents do not provide sufficient or adequate information to assess the appropriateness of the FGD technology selected, nor its waste and water impacts, thereby hindering the public and the public's ability to scrutinise and comment on whether the proposed project and its amendments are consistent with the standards and objectives of NEMA. We hereby reserve the right to supplement and revise the comments and objections made herein upon the public disclosure of the withheld documents.
  8. Further, it should be noted that during the DSR, FSR, and DEIR process, several documents have been missing and not provided at the appropriate time of the various commenting stages, as is evident from our previous submissions. Kindly find attached, a list of appendices from the Eskom website at the time of the DEIR, which indicates that appendices D1-12 and F2, were indeed missing from Eskom's website. This is contrary to the submission in the FEIR and Comments and Response report that the information had been available on Zithole and Eskom's website, therefore these statements should be removed. During much of the FEIR process, the FEIR documents could not be accessed from Eskom's website, although these were available on the Zithole's website. Please note that it is not for the public to ensure that the two websites have accurate and full documentation at the appropriate time of the public participation process, and that the two websites have the same information. The response provided in the FEIR (as well as elsewhere in the FEIR indicating that information had been and continues to be available) in respect of the missing documentation in our previous comments is therefore inappropriate and incorrect.

#### **FGD technology selection and use of a flue gas cooler in the wet FGD process concerns remain unaddressed**

9. Throughout the DSR, FSR, and DEIR process, our clients submitted that water availability and water use is one of the most significant impacts relating to the project, and as such, water minimisation interventions to abolish (or

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<sup>2</sup> FEIR, pg76



at least reduce) reliance on the MCWAP should be fully supported. The Wet FGD with an inlet cooler would have significant water savings and the 2018 TSSR seem to indicate<sup>3</sup> that further water savings are achievable through operating the plant at 90°C. **It appears that water savings of 36% are achievable at 90°C, compared with 28% when operating at 100 °C. The inlet gas cooler operating at 90 °C would save as much as 2.4 cubic metres of water per annum (Mm<sup>3</sup>/a) Mm<sup>3</sup>/a compared to Wet FGD, compared with a saving of 1.86Mm<sup>3</sup>/a when operating at 100°C - a difference of 0.5Mm<sup>3</sup>/a.<sup>4</sup> It was recommended that this should be indicated in the DEIR.** However this comment was not addressed, and is still not indicated in the FEIR.

10. In the FEIR, the most water-intensive wet FGD is still indicated as the preferred option in the FEIR, and wet FGD with inlet cooler is indicated as not technologically feasible, based on 2018 TSSR report. We have previously addressed detailed submissions related to the technology selection in paragraphs 11-28 of our DEIR comments, however, none of the concerns were addressed adequately in the Eskom's response (Annexure F7), or the FEIR. Eskom's response on page 31-32 of the FEIR, as well as the amendments on page 99-104 of the FEIR merely repeat the finding in the 2018 TSSR and gaps identified in the 2014 TSSR. However, as was discussed in our DEIR submissions as well as paragraphs 6.1-6.2 above, the 2018 TSSR lacks the necessary details, and independent data to reach its conclusion, and therefore the findings cannot be supported. The missing information as identified in our DEIR comments and outlined above in paragraph 6 should be made public and included in the FEIR. Should no such verifiable information and data exist, the TSSR 2018 report should be disregarded, and FEIR findings pertaining to the technology selection should also be disregarded. An independent technology selection report with verifiable independent data will need to be commissioned; alternatively, findings in the 2014 TSSR, recommending the inlet cooler option should be recommended in the FEIR.
11. With regard to the alternative technology mentioned in page 101-103 of the FEIR, the cost (CAPEX and OPEX, which includes cost of lime and water), the total water required for the full duration of the operation, and how much water is needed from MCWAP 2, should be clearly indicated in each of the technological options. This should ideally be presented in a table format so that the information can be compared side by side. In respect of the inlet cooler alternative option, these aspects (cost, water requirement, and reliance on MCWAP2) should also be considered for operating the plant at 90°C and 100 °C.
12. Alternatives should also include abandoning the remainder of the units; however this was rejected by Eskom on the basis that Medupi Power Station is *"driven by the requirements of the Integrated Resource Plan (IRP)"*<sup>5</sup> for Electricity. We point out that the IRP 2010 is hopelessly outdated, which Eskom themselves admit in the Comments and Response Report (Appendix F7).

### **Objection to a separate WML variation process**

13. The FEIR comments provided an outline of the objectives of the environmental authorisation process as envisaged in NEMA. Based on these provisions, our clients maintain that the applicant cannot defer important considerations relevant to the EIA in a piecemeal fashion, irrespective of whether other legal provisions currently apply. The applicant is still bound, by the provisions of NEMA, to consider the full scope of effects before actions are taken.<sup>6</sup>
14. In the 'Comment and Responses Report' (Appendix F7), the EAP's response to our objections to the separation of the WML variation process, is that the *"[t]he applicant can only operate within the confines of the legislation and within the vehicles that are provided to obtain authorisation"*.<sup>7</sup> The following legislative context is also emphasised in the EAP's response:

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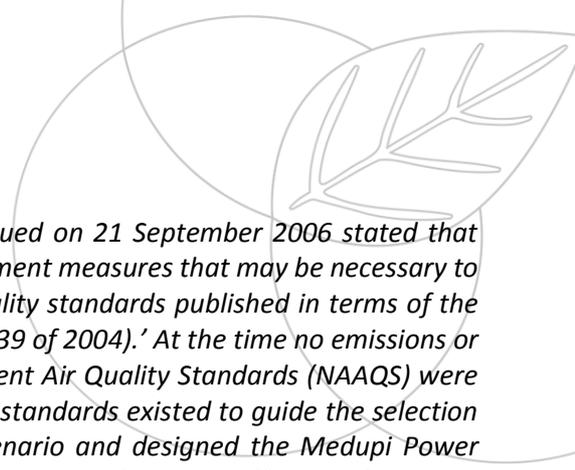
<sup>3</sup> TSSR 2018, Table 10.

<sup>4</sup> TSSR 2018, Table 10.

<sup>5</sup> Appendix F-7: Comments and Responses Report, page 4.

<sup>6</sup> DEIR at paras 4-8.

<sup>7</sup> Appendix F-7: Comments and Responses Report, pages 2 and 22.



*“The original RoD for the Medupi Power Station (12/12/20/695) issued on 21 September 2006 stated that ‘Eskom shall install, commission and operate any required SO<sub>2</sub> abatement measures that may be necessary to ensure compliance with any applicable emissions or ambient air quality standards published in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).’ At the time no emissions or ambient air quality standards were promulgated (the National Ambient Air Quality Standards (NAAQS) were only promulgated in December 2009). As no promulgated air quality standards existed to guide the selection of SO<sub>2</sub> abatement technology, Eskom opted for the worst-case scenario and designed the Medupi Power Station to be Wet Flue Gas Desulphurisation (WFGD) ready. WFGD was the most efficient abatement technology with the highest SO<sub>2</sub> removal efficiency at the time. . .”<sup>8</sup>*

15. It is well-known and not disputed that FGD is the Best Available Technology (BAT) required to meet the new plant SO<sub>2</sub> minimum emission standards (MES). The cost parameters and other negative impacts of FGD, and methods to mitigate these i.e. flue gas cooler, are also well-known. In terms of “standard setting process” in the 2007 National Framework for Air Quality Management in the Republic of South Africa, there was a lengthy and comprehensive stakeholder deliberation in setting the MES, and all affected stakeholders (including Eskom) were part of these process.
16. On this basis, Eskom has been reasonably aware of the mandatory requirement to install FGD since the late 2000’s. This is in addition to the FGD retrofit condition in the World Bank loan agreement that all FGD units would be installed and fully operational by 31 December 2021. Despite the advanced notice and timeframe in which to strategically plan and commence with the integrated environmental authorisation process, in accordance with the objectives of NEMA, the FGD Retrofit Project has been substantially delayed, as evidenced by the Bridging Reports. The current plans are for Medupi only to be fully fitted with FGD by 2026. As a consequence of these delays, Eskom now attempts to defer the consideration of the waste impacts in relation to the FGD - which should be considered in the initial EIA - to another platform, in order to “fast track” the EIA.
17. In light of this, we submit that the current situation in which Eskom has resorted to this piecemeal approach to the EIA process is self-imposed. It is not the legislation that has “confined” it to this course of action. Contrary to NEMA, this approach means that the decision-maker will be unable to consider the full implication of the project, including key aspects for the sustainability of the FGD Retrofit Project, as set out in the DEIR comments and reiterated in this document.<sup>9</sup> Our clients maintain that this is unacceptable.

#### **FEIR does not assess the full impacts of the FGD**

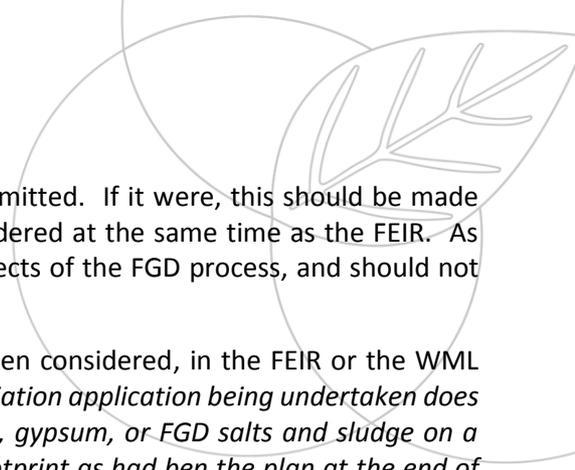
18. As mentioned in the previous DEIR submission, environmental authorisations have to give effect to the general objectives of the environmental management,<sup>10</sup> which among others include the mandate *to ensure that the “effects of activities on the environment receive adequate consideration before actions are taken in connection with them”* and that *“risks and consequences and alternatives and options for mitigation of activities with a view to minimising negative impacts, maximising benefits and promoting compliance with the principles of environmental management set out in section 2”*. This means that full impacts of the FGD has to be considered before actions are taken.
19. Currently however, many of the impacts are deferred or unknown in order to fast track this process, and thus the full risks are not identified in the FEIR. The following risks, alternatives and mitigation activities still have not been considered in the FEIR:

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<sup>8</sup> Appendix F-7: Comments and Responses Report, pages 4 and 22.

<sup>9</sup> DEIR comments at para 8.

<sup>10</sup> Section 24 (1) of NEMA

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- 19.1. water use licence application presumably has not yet been submitted. If it were, this should be made available, together with specialist reports) and should be considered at the same time as the FEIR. As submitted above, water impacts and availability are crucial aspects of the FGD process, and should not be dealt with separately;
  - 19.2. the waste impacts for the full operation of the FGD has not been considered, in the FEIR or the WML Variation application. For example, Eskom states that *“WML variation application being undertaken does not consider impacts associated with the future disposal of ash, gypsum, or FGD salts and sludge on a greenfields site located outside of the Medupi Power Station footprint as had been the plan at the end of the Scoping Phase”*<sup>11</sup>;
  - 19.3. gypsum storage facility only caters for the gypsum in a closed facility for 3 days, and no separate long term storage facility exists;
  - 19.4. water has not been secured for all 6 units of FGD, and latest data on MCWAP2 not provided;
  - 19.5. availability of high quality lime is not confirmed. As mentioned in the DEIR, this is important to produce high quality gypsum to maximise its commercial value, and Eskom has stated in the FEIR that, to maximise the value and market for FGD gypsum, it should be of consistent quality and above 95% purity (for the plasterboard sector). This implies that the limestone used in the FGD process should have a purity of greater than 93-95%.<sup>12</sup> In response, Eskom has stated that *“the procurement of suitable limestone is subject to the finalisation of commercial contracts”*<sup>13</sup> This does not address our concerns. Eskom should produce documentation from the companies that they have identified, stating the quantity it can produce, the period of production, and the quality (purity of the product) that it produces;
  - 19.6. salt and sludge waste disposal is only catered for 5 years (out of 50 years);
  - 19.7. ash waste is only catered for, for the first 20 years (out of 50 years);
  - 19.8. climate change impact (which should, among others, comment on the water availability for the 6 FGD units’ operation for the full duration of the plant, as well as the impact of water pollution produced from the plant and FGD waste) has not been done, as well as the health impact assessment;
  - 19.9. alternatives and impacts of not completing the last 3 units of Medupi have not been considered; and
  - 19.10. the alternatives and the implication of operating the FGD with an inlet cooler at 90°C, and the possible water saving implication of not requiring MCWAP 2 (as the 2018 TSSR report seems to indicate), is not addressed.
20. In respect of most of this missing information, Eskom states that these will be considered at a later stage, or that a separate EIA application will be undertaken.<sup>14</sup> This is unacceptable. It is submitted therefore that the full risks, alternatives and mitigation activities have not been considered in the FEIR, and therefore the FEIR is deficient.

### **Waste management and resale of by-products**

21. As mentioned elsewhere in this document as well as in the DEIR submission, it is important to address all the primary effects of the FGD (such as waste and water issues) in a holistic manner, and not address them separately in a piecemeal fashion, and at a later stage. The full environmental impacts should also be understood before any action is taken. For instance, with regards to waste, it should be noted that disposal of gypsum to landfill significantly increases the solid waste disposal requirements, by 1.8 million tons per year, and ash only disposal

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<sup>11</sup> Appendix F-7: Comments and Responses Report, page 3.

<sup>12</sup> FSR comment page 10; FSR, Appendix J, Over the Moon, 3 April 2009, PED Marketability Study Report, pg 22.

<sup>13</sup> FEIR, page 29.

<sup>14</sup> Appendix F-7: Comments and Responses Report, pages 1, 3, 6

requirements, around 5 million tons per year.<sup>15</sup> The waste minimisation and waste disposal for the full life-cycle of the FGD is a vital aspect of the FEIR and should not be deferred to a later stage.

22. Our clients reaffirm that it is important to conduct and finalise updated assessments of large-scale commercial uptake and resale of gypsum and ash. Whilst the 2009 Gypsum Market report was included in the FSR, the same Gypsum Market Report (or an updated version) was not included in the DEIR or the FEIR. Three years, (and almost 9 years after the 2009 Gypsum Market Report was published) this has still not been adequately assessed, and Eskom has defaulted to the co-disposal of gypsum and ash.
23. In the DEIR comments, we referred to the potential benefits of gypsum, reinforced by Eskom's Gypsum Market Study of 2009.<sup>16</sup> It was cautioned, however, that to maximise the value and market for FGD gypsum, the limestone used in the FGD process should have a purity of greater than 93-95%.<sup>17</sup>
24. We reiterate that NEMA (particularly the section 2 principles, section 28 duty of care principles, and sections 23 and 24) and section 16 of the National Environmental Management Waste Act, 2008 (NEMWA) require a generator of waste to take all reasonable measures to prevent waste generation as a first measure, and if it cannot be avoided, it should be minimised. Disposal is the last measure. This waste management hierarchy is also acknowledged in the Comments and Responses Report (Appendix F7).<sup>18</sup>
25. In addition to the extracts noted in the DEIR comments relating to co-disposal of gypsum and ash in the existing ash disposal facility (ADF), and the absence of a market for commercial offtake, we note the following in the WML Variation Application Technical Report (Variation Report)<sup>19</sup>:
  - 25.1. *"at the gypsum transfer house 1, gypsum is either transferred onto gypsum link conveyors that will transport gypsum to the gypsum storage building, or onto a gypsum link conveyor that will link the gypsum stream to the overland ash conveyor that transports ash to the existing ADF." "A direct gypsum offtake area will be constructed. . . for small scale off-take of gypsum by off-takers."*<sup>20</sup>; and
  - 25.2. *"Depending on the demand and off-take potential from commercial off-takers, infrastructure to convey gypsum from the gypsum transfer house 1 to the gypsum storage building and rail way yard for transport of large volumes of gypsum via rail will be constructed at a future date."*<sup>21</sup> (Our emphasis).
26. We further note the *"inclusion of infrastructure associated with gypsum handling and disposal"* in the Variation Report, and gypsum storage facility, specifically. Again, it is explicit that this facility and conveyors associated with it will not be constructed until such time as a viable market for off-take of gypsum has been established or developed.<sup>22</sup> In the interim, Eskom contends that *". . . in the absence of a significant market demand it remains pointless to dispose of ash and gypsum, which is both classified as type 3 wastes, separately."*<sup>23</sup>
27. In the Comments and Responses Report (Appendix F7), our clients are advised that *"Gypsum Market Research Study, which is most likely outdated in terms of the figures it states."*, and that *"[i]t is furthermore argued that expecting Eskom to undertake an updated market research study which will result in significant further delays in*

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<sup>15</sup> Appendix C-1. FGD Technology Study Report. Table 6

<sup>16</sup> Please refer to DEIR comments at paras 40-41.

<sup>17</sup> Ibid at para 42.

<sup>18</sup> Appendix F-7: Comments and Responses Report, pages 8-9

<sup>19</sup> Application for Variations to the Existing Waste Management License (12/9/11/L50/5/R1) for the Medupi Power Station Ash Disposal Facility, Limpopo Province.

<sup>20</sup> Variation Report, page 4.

<sup>21</sup> Ibid, page 5.

<sup>22</sup> Ibid, page 15.

<sup>23</sup> Ibid, page 9.

*implementation of the FGD infrastructure is unreasonable at this stage, especially considering the fact that Eskom has included design of all infrastructure required to support commercial offtake of gypsum.”<sup>24</sup>*

28. We are also advised that *“Eskom developed an updated Gypsum Commercialisation Strategy in 2017 in order to guide the commercial strategy it should pursue for its gypsum production.”<sup>25</sup>* This 2017 Strategy, has not been provided as part of the DEIR or FEIR. Reportedly, *“Eskom’s strategy concluded that building and commencement of a declassification strategy for gypsum must be undertaken, as well as preparing and releasing a Request for Information (RFI) for possible off-takers.”*, and *“due to the timing of the commissioning of Kusile and Medupi’s units and the time and capital required to build the required infrastructure, there are limited actions that can be taken at present.”*
29. It is therefore clear that although ash and gypsum are produced separately, Eskom proposes to dispose of ash and gypsum mixed together on the existing ADF, until a market develops for either of these wastes. It is also clear that the majority of gypsum disposed of during the initial operating period of the FGD Retrofit Project will not be recoverable for re-use and avoidance of costs and impacts associated with disposal. In light of the context provided above, our clients are not persuaded that Eskom, in adopting this approach, has taken all reasonable measures to minimise the volume of gypsum waste and to enable its re-use.
30. Eskom emphasises that it cannot be expected to drive commercialisation (i.e. beneficiation of waste) alone and require commercial stakeholders to come onboard, but is available to support such initiatives, as appropriate. We submit however, that given the scale of gypsum to be generated by Eskom (Medupi and Kusile), as a necessary by-product of its compliance with the Air Quality Act, 2004, it is in fact well-positioned as South Africa’s power utility to drive the commercialisation of gypsum. It would appear that the 2017 Strategy document, to a large degree, requires exactly this – *“building and commencement of a declassification strategy for gypsum, as well as preparing and releasing a RFI for possible off-takers”*. We repeat that this Strategy has not been provided for review and comment. Again, we reiterate that prevention and minimization of waste is the responsibility of the waste producer, and disposal is the last resort.
31. Eskom should provide a justification for why there was 8 year delay (between 2009 Gypsum Market Strategy and 2017 Strategy), to ascertain the market offtake and commercialisation of gypsum. In the FEIR, the uncertainty of whether or not there is sufficient market is cited as a reason for many issues pertaining to storage and disposal of waste. However, this uncertainty was created out of Eskom’s own making. We also reiterate that if Eskom wished to expedite the environmental authorisation process, it could easily have conducted and finalised the waste minimisation study, market study for the various waste streams, as well as finalised investigation for sourcing the high quality lime. It has not done so, and the commercialisation of gypsum has been sidelined as a ‘variable’ alternative to disposal, while the exact specification of the limestone required for the WFGD is apparently still unknown.<sup>26</sup>

### **Impact of the FGD on surrounding water systems**

32. Our concerns related to the impact of the ADF on the waterways, health impact on water users downstream, the issues 1:100 year floodline, and outdated rainfall data and loss of wetlands and watercourses remain unresolved, and our DEIR submissions is still applicable. In respect of the 1:100 floodline, the findings in the Surface Water Report (SWR) still indicate that the ADF area encroaches on the 1:100 year floodline (is approximately 10km<sup>2</sup> in size)<sup>27</sup>. Therefore any changes made to the FEIR which indicates that this is not the case, should be deleted. The so-called “updated floodline assessment” should be assessed and verified by the specialist who prepared the SWR,

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<sup>24</sup> Ibid, page 10.

<sup>25</sup> Ibid, page 20.

<sup>26</sup> Appendix F-7: Comments and Responses Report, page 20.

<sup>27</sup> Appendix G4: Golder & Associates, Surface Water Impact Assessment and Baseline Report for Medupi Power Station - FGD Project, page 4.

and necessary changes reflected in the SWR before FEIR is amended. The SWR still has outdated rainfall data as well as confirmation that there is insufficient capacity for dirty water containment. It appears therefore that there are several deficiencies or outdated information in the SWR, and consequently the FEIR does not reflect accurate information related to the surface water.

33. On the rainfall data, Eskom has stated in the Comments and Responses Report that *“CER is reminded that the rainfall data represents almost a decade of rainfall data and since the surface water and floodline assessment is based on averaged monthly and yearly data, the dataset is more than adequate to provide an accurate representation of rainfall patterns and storm event peaks.”* Regardless of the rainfall data for 1903-2000, the last 18 years is still almost two decades of outstanding rainfall patterns and storm event peaks. It is important to have the most recent data since the rainfall patterns may have changed drastically in the last 18 years (especially in light of climate change). This may, in turn, change the findings of the report dramatically. Considering that climate change is likely to increase the severity and frequency of floods and droughts, as well as rainfall patterns, and since ADF site encroaches on the floodline, it is imperative that accurate information be included in the specialist Surface Water Report. In respect of wetlands, they have the capacity to absorb large volumes of water especially in flooding events, and therefore loss of wetlands also interferes with the ability to adapt to effects of climate change events. This aspect was also not considered in the report.

34. In respect of dirty water storage capacity issue, the Responses and Comments Report indicates the following:

*“It is also confirmed that when the surface water report was updated the statement that the existing Dirty Water Dam (102 000m<sup>3</sup> capacity) will have insufficient capacity to store new dirty water runoff volumes were erroneously not updated. The detailed design of the WWTP is based on a ZLED philosophy, therefore, dirty water will be returned to the WWTP for re-use or otherwise evaporated through the technology proposed for the WWTP. Eskom has, therefore, confirmed that no additional dirty water storage capacity is required, thus all required water storage facilities have been catered for in this application.”<sup>28</sup>*

35. The above assertion should be rejected, as the “updates” referred to above is not reflected in the SWR attached to the FEIR. Any changes made to the FEIR reflecting the above statement therefore should be removed, since SWR does not support it. The FEIR also seems to indicate that Piesold 2017 report findings (on which the SWR relies) has since been “superseded” by another 2018 report by Zitholele consulting,<sup>29</sup> and that there have been various changes which impact the surface water system<sup>30</sup>, which is not currently reflected in the SWR. Any errors or subsequent information that came to light which impact the findings in the SWR, should therefore be made available to the specialist who compiled the report so that the SWR report can be updated. Only then can the FEIR be “updated” with such information.

36. Until such time that the SWR is amended, the finding therein related to floodlines, encroaching of the ADF on the 1:100 floodlines, and insufficient dirty water dam capacity, etc. remain. The SWR also recommends that several catchments should be changed from clean to dirty water, thereby increasing the volume of dirty water. Unless the findings in the SWR are updated, this should still be reflected in the FEIR. Eskom should provide the previous report as mentioned in paragraphs 6.4 and 35 above, as this was not made available. Again we reiterate that any so-called updates should be verified and reflected in the SWR first, then added to the FEIR. Otherwise the FEIR should reflect what is in the SWR as it currently stands.

37. The importance of accuracy as well as the most recent data on specialist reports cannot be overemphasised since the contamination of water has serious implication for impacts on health of the people and the receiving environment. It is also worth noting here that Eskom also has not conducted a climate change impact assessment and health impact assessment, which may have shed light on these water issues.

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<sup>28</sup> Appendix F-7: Comments and Responses Report, page 18.

<sup>29</sup> FEIR, pages 90-91.

<sup>30</sup> FEIR, pages 82-94.

## Conclusion

38. As most of our previous DEIR comments still remain unresolved, we stand by our previous submissions and conclusions. Further, due to the missing information, and inadequate risk assessment outlined above, the FEIR remains deficient and not in compliance with the objectives of the Constitution, NEMA, and the EIA Regulations. We request that the FEIR be rejected and urgently resubmitted for comment once these issues have been addressed.

Yours faithfully

**CENTRE FOR ENVIRONMENTAL RIGHTS**

per:



**Michelle Koyama**

**Attorney**

Direct email: [mkoyama@cer.org.za](mailto:mkoyama@cer.org.za)