94. Limpopo also comprises of numerous game farms due to the pristine land in the region, and the economic impact assessment states, in one line, that tourism may be impacted due to noxious industries being so nearby. It does not calculate how many people are employed in, and otherwise benefit from, the tourism sector, and how many jobs will be lost as a result.

95. The economic impact report is therefore highly deficient, as it is more of a market analysis in favour of the project. It does not assess in detail the existing economy and how the social welfare of communities will be impacted in the future as a result of the EMSEZ The findings in relation to DEIR are therefore equally deficient in this regard.

V. CONCLUSION

96. The numerous material deficiencies and gaps present in the current assessment, and the process followed, which should result in the EA being refused.

97. Furthermore, the DEIR indicates that there are serious negative impacts of the project which far outweigh any perceived benefits. The negative impacts in the region due to the project and those which are associated with climate change, water security, food security, tourism, health and well-being are extensive and irreversible. Theses impacts are contrary to, and will infringe, numerous fundamental rights enshrined in our Constitution.

98. The project therefore is not consistent with the objectives of the Constitution, NEMA and other applicable laws.

99. On the above basis, this project the EA should be rejected.

100. We request that you respond to the requests for information in paragraph 33 of these submissions.

101. Kindly advise if you have any questions or require any further information.

Yours sincerely
CENTRE FOR ENVIRONMENTAL RIGHTS

per: 

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Copied to:

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By email: frankshang@emsez.com

Our ref: CER 57.2/RN/NL
1 November 2019

Dear Sirs

OBJECTIONS TO THE FINAL SCOPING ASSESSMENT REPORT OF THE PROPOSED MUSINA- MAKHADO SPECIAL ECONOMIC ZONE, LOCATED WITHIN THE VHEMBE DISTRICT MUNICIPALITY OF THE LIMPOPO PROVINCE

1. We address you as the Centre for Environmental Rights (CER)[1] on behalf of our clients groundWork[2] and Earthlife Africa[3] – who have particular interest and expertise in environmental justice issues, and a long-standing history of working with, and representing, the interests of historically disadvantaged communities within the Limpopo Province.

[1] The Centre for Environmental Rights is a non-profit organisation of activist lawyers who help communities and civil society organisations in South Africa realise our constitutional right to a healthy environment, by advocating and litigating for environmental justice. See more information at: www.cer.org.za.
[2] groundWork is a non-profit environmental justice service and developmental organisation working primarily in Southern Africa in the areas of Climate & Energy Justice, Coal, Environmental Health, Global Green and Healthy Hospitals, and Waste. See more information at www.groundwork.org.za.
[3] Earthlife Africa is a non-profit organisation that seeks to encourage and support individuals, businesses and industries to reduce pollution, minimise waste and protect natural resources. See more information at: www.earthlife.org.za.

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2. We submit these comments on the final scoping assessment report (FSR)[4] for an environmental impact assessment (EIA) process in respect of the proposed Musina-Makhado Special Economic Zone (SEZ), to be managed and facilitated by the Limpopo Economic Development Agency (LEDA), also called the Energy Metallurgical Special Economic Zone (EMSEZ), which the Minister of Trade and Industry designated as a SEZ in 2016.

3. We refer to our letter to you of 4 September 2019, a copy of which is attached as "**A**", wherein we recorded:

   3.1. our concerns in relation to the EMSEZ project proponent's failure to register the CER and its clients as interested and affected parties (I&APs) despite our repeated requests;

   3.2. the inadequate public participation held to date in relation to the EIA process; and

   3.3. our clients' preliminary concerns about the impacts of the EMSEZ to human health, wellbeing, and the environment, and reserved all rights to submit formal, detailed objections in relation to this process at a later stage.

4. We record that we initially requested to be registered as I&APs as far back as 7 December 2018 upon first becoming aware of the EMSEZ project, but were not registered until 28 July 2019, on confirmation from the appointed environmental assessment practitioners (EAP), Delta Built Environmental Consultants ("Delta BEC"). As such:

   4.1. we were not made aware of the scoping assessment process or provided with any information in relation to the developmental status of the EMSEZ, until July 2019 – despite this being requested in December 2018;

   4.2. we were not provided with a copy of the draft scoping assessment report or any opportunity to comment thereon prior to its approval; and

   4.3. it was only after numerous attempts at following up with Delta BEC and LEDA, that we were notified, on 19 August 2019 – almost 8 months after our initial enquiry – that the FSR had already been approved by the Limpopo Department of Economic Development, Environment & Tourism (LEDET) on 31 March 2019. A copy of the approval is attached as **"B"**.

5. Given the nature of our clients and the interests we collectively represent, a failure to provide for an opportunity to consider and comment on the FSR undermines the right to an adequate, fair and reasonable public participation process, as enshrined in section 33 of the Constitution of the Republic of South Africa, 1996 ("the Constitution") in relation to crucial planning documents that will have far-reaching implications for the people of South Africa.

6. Although the deadline for commenting on the scoping phase for the EMSEZ EIA has passed. For the above stated reasons, and in light of the significant and far-reaching human health, climate and environmental impacts of the EMSEZ, we request that:

   6.1. our comments on the FSR herein and below be considered despite the time period for comment on the FSR having lapsed;

   6.2. the FSR be withdrawn;

   6.3. both the scoping and EIA for the EMSEZ be postponed until a thorough Strategic Environmental Assessment (SEA) is conducted with full and proper public participation, taking into account our clients' comments made herein, and any comments by other I&APs; and

[4] LEDET REF: 12/1/9/2-V709, Revision 03 of August 2019 hereafter referred to as the Final Scoping Report or FSR.

6.4. the Minister of Environment, Forestry and Fisheries must be designated as the competent decision-making authority for any EMSEZ EIA processes.

7. A failure to take the above steps would, render the current EIA process, for which the FSR has been approved, unlawful and inadequate given the fatal flaws of the FSR and public participation process followed thus far.

8. In summary, our clients' key concerns in relation to EMSEZ and FSR process are as follows:

8.1. **an SEA for the Musina-Makhado region[5] must be completed prior to the scoping and EIAs for the listed activities of each individual facility associated to the EMSEZ** due to its massive scale and the far-reaching implications that the many projects associated with it would have. Without an SEA, this EIA, which purportedly focuses only on the clearing of land, should not proceed because it is not capable of assessing the full breadth of cumulative impacts of EMSEZ and its associated projects;

8.2. the **incorrect competent authority has been appointed to oversee the scoping assessment and the other EIA processes** in relation to the EMSEZ. We submit that this is a matter of national importance and one which cannot proceed without the consultation and approval of the Department of Environment, Forestry and Fisheries (DEFF). Further, the EMSEZ EIA process falls within the scope of section 24C(2)(d)(iii) of the National Environmental Management Act, 1998 (NEMA) by virtue of the fact that the activities are being undertaken by a statutory body i.e. the LEDA. Therefore, it is the Minister of Environment, Forestry and Fisheries – and not LEDET – which must be regarded as the competent authority for the EIA process currently being undertaken for the EMSEZ, and for all future EIA processes for EMSEZ;

8.3. EMSEZ is **not in the public interest** as it will have severe and irreversible impacts on water resources, climate change, food security, agriculture, air quality and soil quality. There is also no discussion of – or proposal to assess in the EIA – the risk that the entire EMSEZ and all of its associated infrastructure will become a **stranded asset;**

8.4. the FSR's discussion of **need and desirability** for EMSEZ is narrow and flawed, as it fails to take into account the potential significant environmental and human rights impacts of EMSEZ;

8.5. the FSR does not adequately provide for an assessment and consideration of the **climate change impacts** *of* EMSEZ, or the impacts of climate change *on* EMSEZ. We submit that the EIA must calculate direct, indirect and cumulative greenhouse gases (GHG) emissions from construction, operation and decommissioning of EMSEZ and associated activities arising from the EMSEZ. This will undoubtedly impact significantly on South Africa's international commitments under the Paris Agreement and Constitutional obligations to reduce GHG emissions and the impacts of climate change. Adequate assessment must include the full life-cycle of fuels, and the environmental, ecological and social costs of GHG emissions from the EMSEZ. The EIA must also evaluate the impacts of climate change on the EMSEZ, including severe water shortages, heatwaves, and flooding over the anticipated lifespan of EMSEZ, and how these impacts will affects its operations;

8.6. the FSR's analyses of **water use and water availability** in the region are extremely flawed;

8.7. the FSR lacks **basic facts** about the proposed projects that will be part of EMSEZ, including: what each component will entail; the amount and type of fuel to be used; annual water requirements during construction and operation; wastewater volumes; solid waste volumes; and annual air pollution emissions, including mercury and other heavy metals, and it fails to include an adequate baseline assessment of air, soil and water quality in the region;

[5] We suggest that an adequate scope of assessment for a SEA would include an overall geographic extent of at least 100 km in all directions due to the transboundary effects of air pollution, and to include all areas downstream of diverted and/or polluted surface water.

8.8. the FSR **fails to sufficiently consider the various EMSEZ projects' impacts on biodiversity, heritage and ecological function.** In particular it fails to assess impacts in the Vhembe Biosphere Reserve (a United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserve), Kruger National Park, Nzehlele Nature Reserve and Mapungubwe National Park (a UNESCO World Heritage site);

8.9. the FSR does not adequately provide for the assessment of **alternatives** to the EMSEZ, including the "no-go" option, which is legally required to be assessed during the EIA process;

8.10. the FSR fails to consider the **cumulative impacts** of the project including the environmental, health and climate impacts of the **many new coal and mineral mines** that will supply EMSEZ. According to the FSR, over 104,000 ha of new coal mines are proposed for the region, including Mopane Project, Chapudi Project, Makhado Project, Generaal Project, and Vele Project, with no assessment of, or reference to, their environmental impacts. The SEA and EIA processes must assess the impacts of these new coal mines that will supply EMSEZ – in particular no provision is made for the assessment of impacts of these mines and associated projects on **protected areas, endangered species, and ecosystems**;

8.11. the FSR's **assessment and evaluation of impact significance and risk is wholly inadequate** as it seeks to draw conclusions on impacts prior to any assessments actually being done, and is therefore speculative at best;

8.12. the FSR **failed to adequately identify the scope of specialist studies required** to comprehensively assess the EMSEZ's impacts and promote informed decision-making; and

8.13. the **public participation** process related to the FSR has been wholly inadequate. Many people, particularly those who will potentially be impacted by the project, did not have access to the scoping assessment records, or an adequate opportunity to consider and comment on these records, which are in any event, very technical in nature and would require additional expertise, resources and assistance for meaningful participation. The EMSEZ will have significant implications in terms of its scale and range of harmful impacts for communities living within the areas where the project will be based. In the circumstances, we also note that the EMSEZ's proponents failed in the legal duty to provide meaningful opportunities for public participation as, despite several requests made in this regard and a clear expression of our interest in the EMSEZ, we were not afforded any notification as to the project's developmental status and opportunities for engagement.

9. On 21 October 2019, we wrote to the Minister of Environment, Forestry and Fisheries to raise some of the above concerns, in particular the requirements for an SEA to be conducted and for the Minister to be appointed as the competent authority for this, and other, EIA processes relating to the EMSEZ. A copy of this letter is attached as **"C"**.

10. The 2014 EIA Regulations[6] under NEMA, state that the purpose of the scoping process is, *inter alia*, to**:**

10.1. *"identify the relevant policies and legislation relevant to the activity";*

10.2. *"motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location";*

10.3. *"identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks";*

10.4. *"identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks [assessment process] inclusive of identification of cumulative impacts and*

[6] See Appendix 2, Regulation 1 of the EIA Regulations, 2014.

a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment";

10.5. *"identify the key issues to be addressed in the assessment phase";*

10.6. *"agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site"; and*

10.7. *"identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored".*

11. In light of the above, we submit that the FSR, in its current form and based on processes currently undertaken by the EAP, does not meet these regulatory requirements. Without addressing the above concerns, the FSR is flawed, and any further environmental review based on the FSR would be similarly flawed.

12. These comments are structured under the following headings:

A. Background;
B. South Africa's overarching environmental framework;
C. The need for an SEA to precede any EIA for the EMSEZ;
D. The Minister of Environment, Forestry and Fisheries must be designated as the competent decision-making authority for any EMSEZ EIA processes;
E. Objections to the Scoping Report and the EMSEZ more broadly;
F. Inadequate, unreasonable, unfair public participation and stakeholder engagement; and
G. Conclusion

A. BACKGROUND

13. On 8 July 2019, the CER received access to the Background Information Document (BID) of the project (attached as "**D"**) for the proposed SEZ, which highlighted the following:

13.1. "*the Limpopo Economic Development Agency (LEDA) has appointed Delta Built Environment Consultants (Delta BEC) to undertake the environmental authorisation process and the change of land use for the proposed Musina-Makhado SEZ. The proposed Musina-Makhado SEZ is situated within the Makhado and Musina local municipalities under jurisdiction of the Vhembe District Municipality within the Limpopo Province*";

13.2. "*the main strategic objective of the LEDA is to accelerate industrial diversification through strategic economic development interventions. The metallurgical cluster zone of the SEZ's primary focus will be the beneficiation of minerals endowed in the Vhembe district and its neighbouring areas. Coking coal and other minerals, which are key inputs into the steel and iron production process will be part of the upstream and downstream value adding process, in line with the country's national industrialisation objectives and mineral beneficiation strategy*";

13.3. "*other land uses envisaged to complement the energy and metallurgical complex will comprise bulk infrastructure, light industries, intermodal facilities, housing, retail centres, business uses, community facilities and telecommunication services. The zone will generate job opportunities for the skilled, semi-skilled and skilled labour market*";

13.4. "*the proposed Musina-Makhado SEZ is located on eight farms across the Makhado and Musina local municipalities, which fall under jurisdiction of the Vhembe District Municipality in the Limpopo Province. The nearest towns are Makhado (located 31 km south) and Musina (located 36 km north) of the proposed SEZ*";

13.5. "*the Musina-Makhado SEZ will comprise an offering of mixed land uses and infrastructure provision to ensure the optimal manufacturing operations in the SEZ*"; and

13.6. "*it is envisaged that the energy and metallurgical complex shall consist of various industrial components*[7] *which includes a 3 300 MW thermal power station that will rely primarily on coal*".

14. Although the FSR purportedly concerns the EMSEZ's application for environmental authorisation for clearance of the southern EMSEZ site and a change in land use, the FSR also discusses (in general terms), the various projects associated with the EMSEZ and the potential benefits of a fully operating industrial zone.

15. Some of the key environmental concerns around the EMSEZ include that:

15.1. it proposes using, and will require, vast amounts of water in a water-scarce area;

15.2. its various components are likely to emit significant GHGs – with irreversible climate impacts and would also impact South Africa's international climate commitments;

15.3. it will exacerbate the Limpopo area's current vulnerability to the impacts of climate change by using and polluting already-limited water and land, clearing natural vegetation and carbon sinks;

15.4. throughout its lifespan, it will pollute the surrounding area's air and water – with related impacts for health and the surrounding environment; and

15.5. it will irreversibly impact on natural ecosystems and species, as well as cultural heritage sites.

16. In light of the above, it is expected that each industrial component and related infrastructure under the EMSEZ will require its own scoping report and EIA process, if, after an SEA has been conducted it is recommended and decided that the EMSEZ should proceed. We herein reserve our clients' rights to comment on all of those assessments as and when they become available, and request that we be duly notified.

B. SOUTH AFRICA'S OVERARCHING ENVIRONMENTAL FRAMEWORK

The Constitution

17. As a project with far-reaching impacts for health, climate, well-being, and the environment, the EMSEZ will impact numerous fundamental rights enshrined in the Bill of Rights in the Constitution. Government must therefore ensure that the proposed development – along with its associated activities and requisite EIA processes – respects, protects, promotes and fulfils these rights.

18. In particular, the Constitution guarantees a right to an environment that is not harmful to health or well-being; and to have the environment protected, for the benefit of present and future generations.[8] The state has a duty to take reasonable legislative and other measures to give effect to that right. Therefore, all law – which includes

[7] These industrial components include a ferrochrome plant, coke plant, lime plant, pig iron plant, stainless steel plant, ferromanganese plant, silicon manganese plant, calcium carbide plant, carbon steel plant and metal silicon plant. See page 3 of the BID document for further information.

[8] See section 24 of the Constitution of RSA.

EIA-related activities taken in terms of environmental legislation – must be consistent with and give effect to the right to an environment that is not harmful to human health and well-being.

19. We point out that the Freedom Charter of the African National Congress also recognises the need to protect the well-being of the people of South Africa from the harmful impacts of industrial activity, stating that "*(a)ll other industry and trade shall be controlled to assist the well-being of the people*".[9]

20. Other Constitutional rights that are relevant include: the right of access to water;[10] the right to equality;[11] the right to human dignity;[12] to just administrative action;[13] and of access to information.[14] The state has a clear legal obligation to ensure that there is adequate public consultation and engagement with the public at all stages of the project.

National Environmental Management Act and National Environmental Management Principles

21. The overarching environmental legislation which gives effect to section 24 of the Constitution is the NEMA.[15] The National Environmental Management (NEM) Principles in NEMA's section 2, 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:

    21.1. 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");[16]

    21.2. **a risk-averse and cautious approach must be applied**, which takes into account the limits of current knowledge about the consequences of decisions and actions[17] ("precautionary principle");

    21.3. **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");[18]

    21.4. **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**;[19]

    21.5. **responsibility for the environmental health and safety consequences** of a policy, programme, project, product, process, service or activity **exists throughout its lifecycle**;[20]

    21.6. "***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*" (emphasis added);[21]

[9] See http://www.historicalpapers.wits.ac.za/inventories/inv_pdfo/AD1137/AD1137-Ea6-1-001-jpeg.pdf.
[10] See section 27, the Constitution.
[11] See section 9, the Constitution.
[12] See section 10 of the Constitution.
[13] See section 33, the Constitution.
[14] See section 32, the Constitution.
[15] See section 2(1), NEMA.
[16] See section 2(4)(n), NEMA.
[17] See section 2(4)(a)(vii), NEMA.
[18] See section 2(4)(a)(viii), NEMA.
[19] See section 2(4)(c), NEMA.
[20] See section 2(4)(e), NEMA.
[21] See section 2(4)(r), NEMA.

21.7. **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");**[22]

21.8. use and exploitation of non-renewable natural resources must be responsible and equitable;[23] and

21.9. the participation of all I&APs in environmental governance must be promoted.[24]

22. It is therefore evident that the Constitution recognises the interrelationship between the environment and development, and envisages that all environmental considerations be balanced with justifiable socio-economic considerations through the principles of sustainable development. Therefore, socio-economic development that does not adequately account for environmental considerations can neither be deemed consistent with the Constitution nor with NEMA's principles of sustainable development.

EIAs and the requirements for scoping

23. In the context of giving effect to section 24 of the Constitution, and the NEM Principles, EIAs are meant to facilitate environmentally-sound and informed decision-making in relation to proposed activities and their environmental impacts.[25]

24. Section 24 of NEMA – which explicitly deals with environmental assessments and authorisations – lays down the general rule that in order to give effect to the objectives of integrated environmental management (described above) "*…**the potential consequences for or impacts on the environment** of listed activities or specified activities must be considered, investigated, assessed and reported on to the competent authority*" (emphasis added).

25. The EIA Regulations[26] set out the procedure and criteria for carrying out EIAs. The objective of the EIA regulations is to establish the procedures that must be followed in the consideration, investigation, assessment and reporting of the activities that have been identified.

26. The purpose of the scoping process, according to the EIA Regulations, is already set out above at paragraph 10. It includes: to motivate the need and desirability of the proposed activity – including the need and desirability of the activity in the context of the preferred location; to identify and confirm the preferred activity and technology alternatives through an identification of impacts and risks and ranking process of such impacts and risks; to identify the key issues to be addressed in the assessment phase; to agree on the level of assessment to be undertaken, including the methodology to be applied; and to identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

27. As described below in our submissions, the FSR fails to satisfy the legal requirements for a scoping report, as set out above.

C. THE NEED FOR AN SEA TO PRECEDE ANY EIA FOR THE EMSEZ

28. The FSR purports to be limited to an EIA for the site clearance of the southern EMSEZ site. It makes clear that each project under the EMSEZ will have its **own separate** EIA, and that technical details about these specific projects are not available for this environmental review process. In other words, the FSR is limited to the assessments of the impacts of the site clearance and intended only to provide a limited assessment of potential impacts of the EMSEZ, yet at the same time attempting to receive authorisation to clear the entire EMSEZ site, without first

[22] See section 2(4)(p) of NEMA.
[23] See section 2(4)(a)(v), NEMA.
[24] See section 2(4)(f), NEMA.
[25] DEAT, Strategic Environmental Assessment, Integrated Environmental Management Information Series: Volume 10. Available at: https://www.environment.gov.za/sites/default/files/docs/series10_strategic_environmental_assessment.pdf. See page 2.
[26] Environmental Impact Assessment Regulations, 2014

assessing the impacts of the various EMSEZ components and necessary approvals for them to go ahead. The FSR specifies:

> *"This EIA is only applicable to site clearance for the Musina-Makhado SEZ southern site. Each investor within the Musina-Makhado SEZ southern site will require their own site-specific EIA and application to the relevant Competent Authority for authorisation, permits and licensing. Considering the development approach cognisance must be taken of the fact that the proposed SEZ development will take place in stages or phases. The first phase primarily involves the external bulk services provision, as well as the onsite land development infrastructure development. The subsequent phases will involve further bulk services upgrades as well as the development of site specific land uses such as temporary human settlement or industrial activities. These activities will in its own right trigger the need for infrastructure and site specific environmental authorisations, requirements that will need to be implemented at the time. The detail design of the respective phases and infrastructure is not available yet and remain a function of the specific project phasing and investor confirmation and designs information that is not known or available at this stage of the process"*.[27]

29. The FSR only broadly and generally discusses the various projects under the EMSEZ, and the EIA will likely do the same. In light of the massive scale of the EMSEZ and the potential for significant harm throughout the region, such an approach is flawed and unlawful. We therefore submit that the EMSEZ must undertake an SEA prior to any EIA processes for EMSEZ, and before any further steps under this EIA process are taken.

30. Although NEMA does not address SEAs in great detail, it does enable the Minister to make regulations prescribing the procedures to be followed for an SEA.[28]

31. In 2004, the then Department of Environmental Affairs and Tourism (DEAT) issued an information document on SEAs, which followed its 2000 guideline document on SEAs.[29] The information document noted several other bases for an SEA in South African laws and policy, noting "*role of SEA … is to allow for the decision maker to proactively determine the most suitable development type for a particular area, **before** development proposals are formulated … [an] EIA is used to evaluate the impacts of development on the environment and socio-economic conditions, while SEA can be used to evaluate the opportunities and constraints of the environment and socio-economic conditions on development*" (emphasis added).[30]

32. The International Union for the Conservation of Nature (IUCN) is an Advisory Body to the United Nations Educational, Scientific and Culture Organization's (UNESCO) World Heritage Committee (WHC). In its guidance document on Environmental Assessment & World Heritage, the IUCN defines an SEA as a tool that *"applies to policies, plans and programmes (i.e. multiple or very large projects) [that] have the advantage of assessing impacts at a strategic level and at a landscape scale **before** individual projects are decided upon"* (emphasis added).[31]

33. An Environmental and Social Impact Assessment (ESIA), on the other hand - according to the IUCN guidance document - "*applies to individual projects – because ESIAs generally apply to individual projects that have already been designed, they often focus on assessing different design options for a particular project and are therefore **not***

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[27] See page 104, FSR.
[28] Section 24(5), NEMA.
[29] DEAT, Strategic Environmental Assessment, Integrated Environmental Management Information Series: Volume 10. Available at: https://www.environment.gov.za/sites/default/files/docs/series10_strategic_environmental_assessment.pdf . See page 6
[30] [30] DEAT, Strategic Environmental Assessment, Integrated Environmental Management Information Series: Volume 10 Available at: https://www.environment.gov.za/sites/default/files/docs/series10_strategic_environmental_assessment.pdf. See page 2.
[31] IUCN, *IUCN World Heritage Advice Note: Environmental Assessment & World Heritage* (June 2013),https://cmsdata.iucn.org/downloads/iucn_world_heritage_advice_note_environmental_assessment_draftfinal_060613rev.pdf. See page 1.

well suited to assess the cumulative impacts of multiple projects (existing and planned) at a landscape scale or to identify strategic alternatives" (emphasis added).[32] The IUCN's guidance notes:

> *"IUCN strongly recommends that Strategic Environmental Assessments are undertaken for large-scale proposals, proposals comprised of multiple projects or landscape-scale land use proposals (e.g. large dams, multiple road development proposals, and large-scale commercial agriculture development). The cumulative impacts of these types of proposals may have a serious negative effect […] and are best assessed early on through a process that is designed to consider 'high-level' strategic alternatives. For example, multiple proposals for the development of a regional road network are best assessed through a single comprehensive SEA than through several project-specific ESIAs, which are unlikely to consider the cumulative effects of the proposals as a whole, or alternative routes for the road network*." [33]

34. The same applies here. The EMSEZ is a large-scale proposal comprised of multiple polluting projects that could each and cumulatively have serious negative effects on the environment and human rights. It is proposed in a highly water sensitive region and could have disastrous consequences on water and food security in the area. In addition, a large amount of mining will be associated with the EMSEZ, potentially wreaking havoc on air and water quality, and human health. Moreover, the region surrounding the EMSEZ is an intact and ecologically critical ecosystem, which has the potential to provide economic development and valuable services in a sustainable way. The area also has cultural and heritage significance. Yet despite these widespread potential harms, the current FSR and environmental review is limited to only clearance of one of two sites for EMSEZ, and does not and will not consider thoroughly the potential impacts of all actions associated with the EMSEZ. In other words, the project proponents are seeking to begin site clearance for a potentially disastrous project without first holistically assessing the true risks of the EMSEZ.

35. NEMA provides for the development of procedures for the assessment of the impact of policies, plans and programmes, [34] and 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 best practicable environmental option****"* (added emphasis).[35]

36. In light of the above, due to the sheer scale of the EMSEZ and its cumulative and anticipated harmful impacts, we submit that a SEA would be the "*best practicable environmental option''* here as EMSEZ is broader than a 'single project'. The SEA process would enable the proactive consideration of the objectives of sustainability at the earliest and most important stages of decision-making, and allow for the full assessment of EMSEZ and all its associated activities against the Constitution and NEM principles.[36]

37. Indeed, many other similar large-scaled projects have undertaken SEAs at early stages, pursuant to the 2000 DEAT guidelines.[37] A notable example includes the Tubatse SEZ[38] where it was stated that "*[t]he introduction of SEA has*

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[32] Ibid.
[33] Ibid, see page 8.
[34] Section 1, NEMA.
[35] Section 2 (4) (b), NEMA.
[36] DEAT, Strategic Environmental Assessment, Integrated Environmental Management Information Series: Volume 10. Available at: https://www.environment.gov.za/sites/default/files/docs/series10_strategic_environmental_assessment.pdf. See page 4
[37] Various examples include: the Port of Cape Town SEA, Coega IDZ, the East London IDZ, uMhlathuze Municipality, and a number of IDPs and SDFs.
[38] LEDA Report, June 2017. Tubatse SEZ. Available at: https://projects.gibb.co.za/DesktopModules/Bring2mind/DMX/Download.aspx?language=en-ZA&Command=Core_Download&EntryId=5635&PortalId=3&TabId=484

resulted from the limitations of project specific [EIA's] and the need to ensure that environmental issues are proactively addressed in policies, plans and programmes."

D. THE MINISTER OF ENVIRONMENT, FORESTRY AND FISHERIES MUST BE DESIGNATED AS THE COMPETENT DECISION-MAKING AUTHORITY FOR ANY EMSEZ EIA PROCESSES

38. In the letter to the Minister of 21 October 2019, referred to above and attached as **"C"**, we asserted that LEDET was **the incorrect competent authority appointed to oversee this and other EIA processes** in relation to the EMSEZ, and that the Minister of Environment, Forestry and Fisheries should instead be designated as the competent authority. We reiterate this submission.

39. The EMSEZ EIA process falls within the scope of section 24C(2)(d)(iii) of NEMA by virtue of the fact that LEDA, the project proponent, is a statutory body governed by the Limpopo Economic Development Agency Act 5 of 2016. In this regard, section 24C(2)(d)(iii) NEMA states that "*[t]he Minister must be identified as the competent authority … if the activity … (d) is undertaken, or is to be undertaken, by … (iii) a statutory body, excluding any municipality, performing an exclusive competence of the national sphere of government".*

40. On this basis alone, the Minister must be the competent authority with respect to the EMSEZ EIA processes, including this EIA process in respect of which the scoping has been conducted.

41. Notwithstanding the legal requirements of section 24C(2)(d)(iii), we submit that given its far-reaching environmental and human rights impacts, the EMSEZ and the industrial development plans associated with it are a matter of national importance, which cannot proceed without the consultation and express approval of the DEFF, among other Departments, at a national level.

E. OBJECTIONS TO THE SCOPING REPORT & THE EMSEZ PROJECT MORE BROADLY

42. Notwithstanding the requirements that an SEA precede this EIA process and the Minister be appointed as competent authority, there are numerous additional reasons why the FSR should not have been approved and why, we submit, it would be in the interests of justice for the scoping approval to be set aside and the scoping phase to begin afresh. These reasons are set out below as objections to the FSR.

EMSEZ is not in the Public Interest

43. EMSEZ is not in the public interest due to the extensive negative impacts it will have on, *inter alia*: the climate and water availability; air quality and health; and the social wellbeing and livelihoods of communities in the area and the economy.

Climate impacts and water availability

44. Government has confirmed the urgent need to reduce South Africa's GHG emissions[39] and the country's extreme vulnerability to the impacts of climate change.[40] The industrial components of the EMSEZ would individually and cumulatively emit significant GHG emissions, given the intensive nature of their processes, such as coal boilers and the indirect emissions of the supplying coal mines.

45. In addition to our obligations under the Paris Agreement, the UN Secretary General (Mr Antonio Guterres) has repeatedly pleaded that no new coal plants be built after 2020,[41] if we have any intention of securing a viable

[39] See http://www.dirco.gov.za/docs/speeches/2019/cram0923.htm.
[40] See page 8, National Climate Change Response Policy.
[41] Statement from the United Nations Secretary-General, António Guterres of 18 May 2019, which states that: "*We must understand that the battle against climate change requires the political will for transformational policies in energy, mobility, industry and agriculture. This is why in the Pacific I have consistently conveyed three urgent messages to world leaders. First, we must shift taxes from salaries to carbon. We need to tax pollution, not people. Second, we must stop subsidizing fossil fuels. Taxpayer money should not be used to boost hurricanes, spread*

climate for the future, as per the findings and recommendations of the UN Intergovernmental Panel on Climate Change (IPCC) in its October 2018 Special Report,[42] which include that:

45.1. the risks and consequences of allowing temperature increases to reach even 1.5 degrees Celsius are dire;

45.2. limiting global warming to 1.5°C would require rapid and far-reaching transitions in land, energy, industry, buildings, transport, and cities;

45.3. the global net human-caused emissions of carbon dioxide ("CO2") must fall by about 45% from 2010 levels by 2030, reaching 'net zero' around 2050; and

45.4. a 60-80% reduction in the use of coal by 2030 and negligible use of coal by 2050 are necessary.

46. We have, in many instances, pointed out that the reduction of South Africa's GHG emissions is not merely an international obligation but a Constitutional imperative. We submit that allowing the EMSEZ to go ahead would be a flagrant violation of, *inter alia*, the Constitutional rights: to human dignity; to life; and to an environment not harmful to health or well-being and to have the environment protected for the benefit of present and future generations, on the basis of the immense climate change impacts that the EMSEZ will have.

47. The international community, including South Africa, has committed to limiting the global average increase in temperature to "*well below 2*°C *above pre-industrial levels*" and to "*pursue efforts to limit the temperature rise to 1.5* °C *above pre-industrial levels*". This requires South Africa to take urgent action to drastically reduce its fossil fuel emissions, not ramp them up. The EMSEZ would move South Africa very far in the wrong direction, particularly with a proposed 3 300MW coal-fired power station, cement plant, other proposed industrial processes, and associated mining activities.

48. The EMSEZ, with its heavily carbon polluting projects is clearly out-of-line with mitigation pathways to prevent global warming of more than 1.5 °C.

49. The EMSEZ developments would also likely significantly exacerbate South Africa's extreme vulnerability to the impacts of climate change, and climate change impacts could have serious consequences on the EMESEZ and its project components.[43] For example, investigations at a national level have confirmed that climate change will reduce the water yield throughout the region.

50. According to the 2016 LEDET Provincial Climate Change Response Strategy[44] ("LEDET Strategy"):

> "*…the region is likely to experience greater variability in rainfall, and will almost certainly* ***witness an increase in evaporation rates, implying a drier future even in the presence of greater rainfall and heavy rainfall events****. Limpopo Province would therefore experience regular droughts and heat intensity, water shortages, spread of diseases with adverse effects on the economy, natural resources, infrastructure, human health and community livelihoods.* ***Water shortages are already a key feature in the drier Limpopo Province and the situation is going to become even more severe as a result of climate change. Important water use***

drought and heatwaves, melt glaciers and bleach corals. ***Third, we must stop building new coal plants by 2020. We need a green economy not a grey economy***" (emphasis added). Available at: https://www.un.org/press/en/2019/sgsm19584.doc.htm.

[42] The report can be accessed here: https://www.ipcc.ch/sr15/

[43] See page 8, National Climate Change Response White Paper.

[44] LDEDET, Provincial Climate Change Response Strategy (2016-2020). Available at: http://www.ledet.gov.za/wp-content/uploads/2016/11/Limpopo_Climate_Change-Response_Strategy_-2016_2020_Final.pdf.

sectors such as agriculture and electricity generation (i.e. the energy sector) will face severe effects from climate change" (emphasis added).[45]

51. Furthermore, the LEDET strategy finds:

> " *[a] detailed climate change vulnerability assessment for Limpopo revealed that sectors such as human health, agriculture, plant and animal biodiversity, water resources, and water and road infrastructure, livelihoods as [sic] areas showing the highest vulnerability to climate change mainly because the Province comprises predominantly rural areas that are dependent on rain-fed agriculture with a low economic development, low levels of human and physical capital, poor infrastructure standing, and therefore very low adaptive capacity*."[46]

52. The strategy concludes: "*in most climate change scenarios projected for the Limpopo river basin in South Africa, future water supply availability will 'worsen considerably' by 2050*."[47]

53. A May 2017 report by the Academy of Science of South Africa entitled 'First Biennial Report to Cabinet on the State of Climate Change Science and Technology in South Africa' highlights the key climate change challenges and impacts in South Africa over the next 30 years.[48] The report states that *"[t]he strongest impacts of climate change in South Africa in the first half of the 21st century will be on the security of freshwater supplies to industry, towns and agriculture; on crop and livestock agriculture, due to less favourable growing conditions; on human health, due to heat stress and disease spread, particularly in urban areas; and on biodiversity, due to shifting habitat suitability*."[49]

54. The project would be built in an area of Limpopo that is already so water- stressed that the Department of Human Settlements, Water and Sanitation, and the FSR concede that a *"definite source of sustainable water for the SEZ is still under investigation*". [50] As shown from the reports above, climate change will exacerbate the stress on water resources in the region. Without a guaranteed supply of water, the EMSEZ would not be able to function, nor would it be able to contribute towards long-term regional "development" goals without having severe consequences for other water-users and ecosystems. This could have country-wide repercussions, particularly if water resources from other parts of the country are to be relied on.

Air Quality and Public Health

55. The EMSEZ will be located within a province where the government has declared much of the area as a non-attainment priority area under the National Environmental Management: Air Quality Act, 2004. The threat assessment for the Waterberg-Bojanala Priority Area published by the then Department of Environmental Affairs (DEA) in April 2015, as part of the draft air quality management plan for the priority area, pointed out that the planned expansion of energy-based projects and coal mining in the region threatens ambient air quality, and poses threats to human and environmental health.

56. Already parts of the Waterberg in the Limpopo province are exceeding ambient air quality standards as a result of industrial and mining activities in the area.[51]

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[45] LDEDET, Provincial Climate Change Response Strategy (2016-2020), see page 19.
[46] Ibid, see page 4.
[47] Ibid, see page 27.
[48] The Academy of Science of South Africa (ASSA) The State of Climate Change Science and Technology in South Africa (May 2017), available at http://www.dst.gov.za/index.php/media-room/latest-news/2236-report-investigates-climate-changescience-and-technology
[49] Ibid, at page 15.
[50] See 11.9, FSR.
[51] Dr Thuli N. Khumalo, National Air Quality Officer, "2018 State of the Air Report and National Air Quality Indicator", 1 October 2019. See slides 29 to 31. Available at: http://www.airqualitylekgotla.co.za/assets/2019_1.5-2018_state_of_the_air_report-_and_naqi.pdf

57. It is certain that the EMSEZ will contribute to the worsening of air quality and human health impacts in the area.

58. Industrial emissions, particularly from coal-fired power generation, are major sources of South Africa's air pollution – and its attendant health impacts. The proposed industrial components of the EMSEZ, as well as its associated mining operations, will emit harmful air pollutants such as particulate matter, sulphur dioxide, nitrogen oxides, poly-aromatic hydrocarbons, dioxins and heavy metals which including chromium, mercury, cadmium and lead.

59. The FSR gives highly incomplete lists of pollutants by facility type. It fails to describe best available technologies or to adequately discuss the health impacts of the project. In this regard, the EIA must:

    59.1. estimate the amount of air pollutants generated by type from each proposed facility;

    59.2. assess wind and weather patterns that would affect dispersal and deposition of pollutants; and

    59.3. address best available technologies to control air pollutants by facility type, and how captured pollutants would be disposed of safely without harming local surface or ground water. We submit that an EIA would need to address this deficiency.

60. The FSR also fails to discuss the health impacts of any pollutants, either individually or cumulatively, and the EIA would need to thoroughly assess such impacts.

61. The World Health Organisation has confirmed that air pollution, both ambient and indoor, is one of the largest causes of death worldwide. Poor air quality is closely correlated with non-communicable diseases – as approximately a quarter of all heart attack deaths, and about a third of all deaths from stroke, lung cancer, and chronic obstructive pulmonary disease are due to air pollution exposures. Health impacts are largest among women, children, older people, and the poor. [52]

62. Coal-fired power stations are a significant contributor to these negative health impacts. The 2017 study commissioned by groundWork, conducted by Dr Mike Holland[53] finds that air pollution from Eskom's coal-fired power stations:

    62.1. costs (in terms of quantifiable economic impacts)[54] South Africa around **R35.7 billion**[55] each year;

    62.2. causes a total equivalent of **2 239** attributable human deaths each year; and

    62.3. causes approximately **12 314** attributable cases of bronchitis and related respiratory diseases in adults and children each year.

63. Outside of air quality, these emissions also threaten water resources and sensitive ecosystems, as, criteria pollutants (such as sulphur, oxides of nitrogen and particulate matter) which are released into the atmosphere

[52] See, for example: http://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health; https://ehp.niehs.nih.gov/ehp299/

[53] Dr Michael Holland has been involved in the quantification of the impacts of air pollution from power systems since 1990, when he worked at the heart of the influential EC-US Fuel Cycles Study funded by the European Commission, EU Member States and the US Department of Energy. Following completion of the initial study in 1995 this work continued in Europe as the ExternE Study until 2005. Since 1996 Mike has provided cost-benefit analysis of air quality and industrial policies for a variety of organisations including not only the European Commission, but governments in the UK, France, Sweden, China and a number of other countries. He has also provided analysis for international organisations including the Organisation for Economic Cooperation and Development (OECD) and the World Bank. The report is available at:https://cer.org.za/wp-content/uploads/2017/04/Annexure-Health-impacts-of-coal-fired-generation-in-South-Africa-310317.pdf

[54] This is made up of impacts in terms of early death, chronic bronchitis, hospital admissions for respiratory and cardiovascular disease, and a variety of minor conditions leading to restrictions on daily activity, including lost productivity

[55] $2.37 billion calculated at an exchange rate of $1 = ZAR 15.09 on 1 November 2019.

lead to: excess amounts of acid in water resources (lakes and rivers); damage to trees and forest soils; and harm to fish and other aquatic life when deposited on surface waters.

Social impacts on livelihoods and the risk of the EMSEZ

64. Industrial facilities and coal-fired power plants are disproportionately located in low-income communities—making this an environmental justice issue.[56]

65. The negative health and environmental impacts are therefore typically disproportionately borne by poor and marginalised communities living in these areas – as are the negative costs of these impacts. This is in contravention of the NEMA 'polluter pays' principle,[57] as referenced at paragraph 21.7 above.

66. Further, the failure to regulate, and ensure timely, speedy cleanup, and prevention of hazardous waste at coal-fired power plants and other industrial facilities places the health and safety of these communities at disproportionately higher risk.

67. The above issues – particularly the anticipated impacts on health and water availability and exacerbation of climate change impacts – mitigate strongly against any public benefits of the EMSEZ. We submit that, instead of being beneficial, the EMSEZ would:

    67.1. negatively affect the livelihoods of local communities – through affecting land and/or water use of key sectors and not delivering sustainable jobs or alternate forms of sustained employment; and/ or

    67.2. have major negative impacts on public health and wellbeing – as a consequence of pollution of air, land and/ or water resources and climate change.

68. The FSR fails to discuss the impacts of the EMSEZ on existing and potential tourism in the region, which is the main economic activity along with agriculture.[58]

69. In light of the above, the EMSEZ would aggravate - rather than improve - the wellbeing of local communities, reducing their resilience and adding pressure on local resources and governmental capacity to support people who have migrated to or settled in the vicinity of the SEZ in search of work.

70. Since the purpose of the EMSEZ is to deliver long-term benefits, and employment is a top priority of government,[59] it is not clear why – and highly inadequate that – the FSR only considers employment during the construction phase of the EMSEZ.[60] This approach provides a skewed and short-term view of socio-economic expectations from the EMSEZ. Moreover, an influx of people settling in the area during the construction phase is expected. These people would need to be employed or their employment sustained post-construction.

71. Within the context of employment, the EIA must also address the extent to which employment will be sourced locally and skills training will target local people, rather than skilled personnel being brought into the area. In this regard, the FSR states that:

    71.1. the development of the SEZ southern site 'will improve' the unemployment situation, without providing any supporting information;[61] and

[56] See page 8, B. Gottlieb, et al., *Coal Ash: The Toxic Threat to Our Health and Environment*, Physicians for Social Responsibility & Earthjustice, 2010.
[57] Section 2(4)(p) of NEMA.
[58] See http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/africa/south-africa/vhembe/
[59] See page 107, FSR.
[60] See Table 4-1, FSR.
[61] See section 7.3.1, FSR.

71.2. 'jobs, internships and bursaries' are – without supporting information – assessed as having 'high' 'significant' 'regional' and 'permanent' benefits.[62] On this basis, skills development is questionably assumed to target local communities and South African nationals.

Failure to adequately and accurately motivate the need and desirability of the project

72. The EIA Regulations state that the objective of the scoping process is to, *inter alia*, motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location.[63] The FSR does not do this.

73. The FSR explains that the EMSEZ is needed and desirable for the following reason:

> *Musina-Makhado SEZ Project is proposed in specific response to a national government initiative, namely the Department of Trade and Industry (DTI) in an effort to reposition itself in the world economy, established the Industrial Development Zones (IDZ) programme. The Programme's main focus was to attract Foreign Direct Investment and export of value-added commodities. Although there are major achievements with the IDZs there were weaknesses that led to the policy review and the new SEZ policy. As a result the need and desirability of the project from a national perspective can largely be assimilated from the project's alignment with national government policies, plans and programme which have relevance to planning and production*.[64]

74. This is in no way a motivation of the need and desirability of the EMSEZ. Alleged alignment with policy is not evidence of necessity, nor of desirability for a particular project.

75. The FSR seeks to base the need and desirability of the project on national development policies – such as South Africa's National Development Plan (NDP) 2030.[65] This limited and narrow and fails to assess many factors that should also be considered in a project-specific need assessment.

76. For example, DEA's 2017 Guideline on Need and Desirability ("the DEA Guideline") sets out a list of questions that should be answered when considering need and desirability of a proposed development. These questions include:

76.1. how will this development (and its separate elements/aspects) impact on the ecological integrity of the area, including how will this development impact on non-renewable resources? What measures were explored to firstly avoid these impacts?[66]

76.2. how were the global and international responsibilities relating to the environment i.e. RAMSAR sites, climate change etc. taken into account?[67]

76.3. what is the socio-economic context of the area, and in considering the socio-economic context, what will the socio-economic impacts be in relation to the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?[68]

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[62] See section 7.3.2 and Table 10-1, FSR.
[63] See Appendix 2, 1(b), EIA Regulations, 2014.
[64] See page 142, FSR.
[65] National Development Plan 2030 Our Future-make it work. ("NDP"). Available at: https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf
[66] See 2017 Guideline on Need and Desirability at 1.6.
[67] See 2017 Guideline on Need and Desirability at 1.1.8.
[68] See 2017 Guideline on Need and Desirability at 22.

77. The DEA Guideline further states that:

> "*[d]uring screening and "scoping" the abovementioned questions must be used to identify the key issues to be addressed as well as to identify alternatives that will better respond to the considerations (i.e. that will firstly avoid the negative impact or better mitigate the negative impact, or that will better enhance the positive impact). The "scoping" process might find that many of the questions have clear answers and that no further information has to be gathered related to the specific question. In this regard [what] would be required is for the relevant report (first part of the Basic Assessment Report or the Scoping Report) to clearly answer all the questions including a clear indication which questions do not require further information to be generated during the assessment."*[69]

78. The FSR does not evaluate the need and desirability of the EMSEZ considering any of the above factors, particularly around ensuring ecological sustainability and integrity. On this basis alone, the FSR should not have been approved, as it does not meet the requirements of the law.

79. In any event, the NDP itself recognises that South Africa's market and policy failures have resulted in the global economy entering a period of 'ecological deficit' as natural resources – such as groundwater, terrestrial biodiversity, freshwater ecosystems, crop land and grazing – are being degraded, destroyed, or depleted faster than they can be replenished.[70] Towards this end, the NDP 2030 recognises that, the country needs to:

- *"Protect the natural environment in all respects, leaving subsequent generations with at least an endowment of at least equal value.*
- *Enhance the resilience of people and the economy to climate change.*
- *Extract mineral wealth to generate the resources to raise living standards, skills and infrastructure in a sustainable manner.*
- *Reduce greenhouse gas emissions and improve energy efficiency".*[71]

80. Moreover, we submit that the FSR cannot sufficiently consider the need and desirability of EMSEZ without considering, in detail, compliance with the NEM Principles. Table 6-4 of the FSR, which purports to demonstrate compliance with the NEM Principles, only speaks to compliance with these principles in general and broad terms. Other statements in the FSR cannot be supported by the evidence. For example, the FSR states that "*SEZ will make use of green technology and green infrastructure that will reduce emissions, conserve water, reduce waste and consume less energy, resulting in a reduced level of impact on the environment*." [72] However, this statement has no support and is contradicted by the nature of the proposed noxious industries operating under the EMSEZ and their wide range of potentially significant environmental, human rights, and social impacts. Likewise, the FSR fails to address the issue of ecological resilience entirely, focusing solely on job creation and economic benefits.

81. Furthermore, the FSR makes numerous general assertions concerning the economic benefits of the EMSEZ, however, it does not specify:

    81.1. what these benefits actually are and how they will be quantified; and

    81.2. how the alleged benefits weigh up against the negative external impacts.

82. In light of the above, we submit that the need and desirability for the EMSEZ must consider more than just the general economic benefits of the EMSEZ projects, and must consider any such benefits in light of the climate

[69] See Guideline on Need and Desirability at page 18.
[70] See page 90, NDP.
[71] See page 47-48, NDP.
[72] See 6.6.4, FSR.

change, human rights, environmental, social and other impacts. In this respect, the following points are also noted:

82.1. cognisance must be taken of strategic concerns such as climate change, food security, as well as sustaining the limited supply of natural resources and preserving the status of our ecosystem. In other words, to achieve our Constitutional goal of a better quality of life for all now and in future, through equitable access to resources and shared prosperity, it is essential that society improves on the efficiency and responsibility with which we use resources – which involves a complete transition away from using fossil fuels;[73]

82.2. South Africa faces urgent developmental challenges in terms of poverty, unemployment and inequality, and will need to find ways to "decouple" the economy from fossil fuels, to break the links between economic activity, environmental degradation and carbon-intensive energy consumption as recent economic reports have stated that "*the economic results show that it* ***is possible to both meet climate change targets and grow the economy***" (emphasis added);[74] and

82.3. considering the merits of a specific application in terms of the need and desirability considerations, it must be decided which alternatives represent the "*best practicable environmental option*", which in terms of the definition in NEMA and the purpose of the EIA Regulations is that option that provides the most benefit and 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 EMSEZ would not be aligned with this requirement.

83. In summary, the FSR has not given adequate and full regard to these considerations, and has not satisfied the requirements for a "need and desirability assessment" through, *inter alia*, failing to adequately identify key issues[75] and questions to be addressed in the EIA. The FSR cannot reasonably make, nor has it made any determinations on need and desirability[76] – as required by the NEMA EIA Regulations. For this reason the FSR is flawed and must be withdrawn.

84. We note further that the submissions above at paragraphs 43 to 71, highlight that in considering the impacts of EMSEZ for human health; livelihoods; the climate and the environment more broadly, the project would not be in the public interest. It is therefore unlikely that – on proper and holistic consideration – it could be found to be necessary or desirable.

The need for an adequate and comprehensive Climate Change Impact Assessment

85. Alarmingly, the FSR makes no mention of the need for a climate change impact assessment (CCIA).

86. In line with the judgment in ***Earthlife Africa Johannesburg v the Minister of Environmental Affairs & Others***,[77] the EIA process for EMSEZ must ensure that a thorough CCIA is conducted, which analyses the direct climate impacts from the GHG emissions of the EMSEZ as well as indirect and cumulative climate change impacts from the growth in coal mines and other industries that would be enabled by, and linked to, the proposed EMSEZ project. The FSR, however, does not address climate change or even identify it as an area requiring further assessment under the EIA. A major and unacceptable shortcoming.

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[73] We refer again to the statement from the UN secretary general which states that we must "*meet the Paris commitments to bend the emissions curve by 2020*" and that "*this will take unprecedented changes in all aspects of society – especially in key sectors such as land, energy, industry, buildings, transport and cities".*

[74] See https://coaltransitions.org/publications/implementing-coal-transitions-insights-from-case-studies-of-major-coal-consuming-economies/ at page 6.

[75] Such issues include, inter alia, the following: climate change effects; the (national and international) drive for a lower-carbon future, and the considerable constraints with regard to water resources and health and wellbeing risks in relation to air quality within the proposed development area.

[76] See 7.1-2, FSR.

[77] Earthlife Africa Johannesburg v Minister of Environmental Affairs and others [2017] 2 All SA 519 (GP).

87. The EIA must provide for a CCIA, which must be a comprehensive and accurate assessment of the climate change impacts of the proposed NEMA activities. The CCIA must consider several aspects of the relationship between the proposed project and climate change, including:

    87.1. the project's direct impacts on climate change, specifically, a full assessment of EMSEZ's GHG emissions. In addition to simply considering the extent of GHG emissions to arise from the project, this must include an assessment of: indirect and full lifecycle emissions; cumulative emissions; and the environmental and social cost of the project's GHG emissions;

    87.2. the ways in which the effects of climate change will impact on the project, including the effect on the water resources necessary for the project and the likelihood of the project being unable to operate for its full expected lifespan; and

    87.3. how predicted climate change effects on the environment and society – at both national level and at the scale of Musina and Makhado – will be aggravated by the project's impacts. This would include the ways in which the proposed project would impact on the area's own capability of adapting to a changed climate. This is a particularly fundamental consideration, given the area's high vulnerability to the impacts of climate change as outlined above.

88. LEDA proposes a 3 300 MW power station which – notwithstanding its associated infrastructure – would emit significantly high volumes of GHG emissions. We submit that the only means to substantially avoid these unacceptable GHG emissions would be through carbon capture and storage technology, which is neither technically nor financially feasible for South Africa.

89. It is therefore imperative that the EIA assesses the direct, as well as indirect and cumulative, GHG emissions associated with the project, and make this information available so that I&APs, authorities and relevant decision-makers can properly consider these significant impacts and provide appropriate comments.

90. As stated above, this is particularly important considering that South Africa has committed to reduce its GHG emissions through its ratification of the Paris Agreement.[78] Taking steps to guard against the harmful impacts which climate change has on our environment and human health is required by our international obligations under the Paris Agreement as well as the national obligations to realise the environmental right in our Constitution and the duty of care contained in section 28 of NEMA.[79]

91. Further, there is a real risk that the new coal-fired power plant or other high-emitting facilities forming part of the EMSEZ, will be unable to operate for their intended operational lifespans as South Africa's commitments would require significant GHG emission reductions by 2035. South Africa's Nationally Determined Contribution (NDC) under the Paris Agreement recognises that "near zero" GHG emissions are required by the second half of the century to avoid even greater impacts that are beyond adaptation capability.
92. The EMSEZ will be based in a water-scarce area – where water availability is predicted to be severely impacted by climate change. This is a fundamental consideration, which needs to be considered in all the project's EIA processes.

93. The FSR fails to consider predicted **climate change trends** in relation to potential water sources, both in South Africa and with regard to apparent plans to obtain water from Zimbabwe. There is **no proposed analysis of how**

[78] See page 1, Nationally Determined Contribution, available at http://www4.unfccc.int/ndcregistry/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf - recognising that a 2 °C temperature increase translates to a 4 °C increase for South Africa by the end of the century.

[79] Section 28 of NEMA requires that every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

climate change scenarios will impact water availability in the region. Surface temperatures are projected to increase, and precipitation is projected to possibly become heavier but less frequent in the region.

94. According to the IPCC Fourth Assessment Report (2018), water stress in Southern Africa is projected to increase under at least six different climate change scenarios, with significant loss of runoff in parts of South Africa.[80] The Department of Human Settlements, Water and Sanitation's report, entitled, "Climate Change Risk and Vulnerability Assessment of Water Resources in the Limpopo WMA" states that:

> *"**Water resources are key to socio-economic development and environmental sustainability for South Africans livelihood**. Despite remaining uncertainties regarding the exact nature, magnitude and pattern of future rainfall changes in South Africa, **it appears likely that water resources will be under pressure.** This is a result of growing water demand in relation to a finite and limited supply, added to the expected climate change impacts. This is a result of three factors:*
>
> - *the projected decrease in rainfall over much of the country,*
> - *increased evaporation resulting from higher temperatures, and*
> - *the amplifying effect that the hydrological cycle has on climate change".*(emphasis added)[81]

95. Moreover, given the existing crisis with water resources in South Africa, shifting available water from such sectors as agriculture, as proposed by the EMSEZ, i.e. reducing food security as well as cutting back on people's and ecosystems' basic water needs, would increase vulnerability to climate change instead of improving resilience to such impacts – which would be inconsistent with the NDP 2030, the NEM Principles and the Constitution.

96. In light of the above, and in an effort to avoid placing the burden and costs associated with the EMSEZ's contributions to the climate crisis, on the general public, we submit and recommend that:

    96.1. the externalities of the EMSEZ and its various projects must be internalised to ensure that neither the public nor government bears the costs of mitigating and remedying the negative impacts that climate change will have; and

    96.2. the climate change effects of the associated GHG emissions of all the projects and activities under the EMSEZ will need to be rigorously assessed in the EIA, together with all carbon tax implications.

The FSR's analyses of water use and water availability in the region are extremely flawed

97. It is clear that an adequate and stable water supply is crucial to the EMSEZ; however, the FSR states that a *"definite source of sustainable water for the SEZ is still under investigation*".[82] Without a guaranteed supply of water, the EMSEZ – which is intended to be located within a water scarce region – would not be able to:

    97.1. function adequately or at all;

    97.2. meet the requirements of so-called ecologically "sustainable development"; and

[80] IPCC AR4 WG 2, Africa,(2018) https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg2-chapter9-1.pdf at 444; *and see* M. New et al., Evidence of trends in daily climate extremes over southern and West Africa, J. Geophys Res. (2006), http://etccdi.pacificclimate.org/papers/New_etal_2006.pdf.

[81] See page 3, Department of Water and Sanitation's, entitled, "Climate Change Risk and Vulnerability Assessment of Water Resources in the Limpopo WMA", 2018.

[82] See 11.9, FSR

97.3. contribute towards long-term regional "development" goals without having severe consequences for other water-users and ecosystems.

98. In general, the FSR's estimations of water availability in the region are inaccurate, vague, and significantly overstated. There is a very strong likelihood that there will not be sufficient water to meet the EMSEZ's water needs.

99. The FSR includes incorrect or incomplete information in relation to the water requirements of the EMSEZ, that must be corrected or reconciled in the EIA, as:

99.1. the FSR contains typographical errors within the water requirement estimate. The values for water use *for construction alone* over 9 years is written as **13 910.5 10k m^3**.[83] If this number is for construction alone, water use of 139,105 m^3 for 12 facilities seems theoretically plausible. However, this value is written incorrectly in three other places in the report, as **13 910.5 10km^3**.[84] Water requirements for industrial facilities are commonly expressed in million cubic meter units or less, not km^3, let alone 10km^3. Divided over 9 years, that means over **15 *trillion* m^3** of water each year for construction. To illustrate, Lake Tanganyika is **17 trillion m^3**.[85] On page 60, the report states the water requirement for the construction period is 13 910,5 **km^3**, or **1.5 trillion m^3** per year for 9 years. Considering that the Limpopo River's annual flow is only **153 million m^3** [86] this value is also clearly an error and must be addressed;

99.2. the FSR provides no supporting evidence that the "*Musina-Mukhado SEZ […] requires a total of 123 million m^3 of water for its operation*".[87] This appears to be the only place in the FSR that water *for operations* is estimated, and it does not specify the timeframe. Assuming the report meant to state 123 million m^3 of water per year, there is simply no identified source of such water volumes anywhere in the region. The FSR states *that total permissible surface and groundwater abstraction available for the SEZ is 0.377 million cubic meters per year*,[88] leaving a shortfall of 122.6 million m^3 of water needed per year. Even If 30 million m^3 of water is provided by the Limpopo Department of Water Affairs[89] and an additional 30 million m^3 per year is taken from below the Zhove Dam in Zimbabwe,[90] **over 62.6 million m^3 of water are still needed, with no identified source***;*

99.3. it is inexplicable why the FSR would include only water use for construction over a 9 year period and not include water use during operations by facility type. Thus, the estimate of 123 million m^3 (presumably annual) water requirement[91] is not credible. The EMSEZ electricity resources webpage states that a 1 200 MW coal-fired power plant will use 76 million m^3 of water per year. If the 3 300MW plant is built, as proposed,[92] **the thermal plant alone could use 209 million m^3 water/year**. So shortfalls far greater than 62 million m^3 of water per year seem likely even without any other facilities; and

99.4. there is no estimation of water requirements during the operation of at least 5 new coal mines that will extend over 1 000 km^2 in the region (Mopane, Chapudi, Makhado, Generaal and Vale).[93] Despite taking up a large part of the FSR, there is no analysis of the mines' potential impacts to groundwater and surface water in the region, which could alter the amount of water available for use in EMSEZ facilities, as well as all other uses.

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[83] See page 196, FSR.
[84] See page 39 and 60 (Table 4-1), FSR.
[85] https://www.thoughtco.com/largest-lakes-in-the-world-4158614
[86] https://repository.up.ac.za/bitstream/handle/2263/54430/Thopil_20_2016.pdf?sequence=1
[87] See page 61, FSR.
[88] See page 61, FSR.
[89] See page 62 of FSR.
[90] See page 61, FSR.
[91] See page 61, FSR.
[92] See page 38, FSR.
[93] See pages 86 to 93, FSR.

100. The EMSEZ webpage "Hydraulic Resources" lists water sources—although it is not clear that these are intended to supply EMSEZ—that are not described in the FSR, including Limpopo Province Woke Mountain Area, Mutara, Mutare Luvuvhu, Luvuvhu Limpopo River, Leita Taba, and Fragrance Lake ("one of South Africa's largest freshwater lakes").[94] The website goes on to state, "*[p]lans are under way to further import water to the Limpopo River in support of mining development."*[95] If these water resources would supply EMSEZ, they need to be assessed in the EIA.

101. The Executive Summary of the FSR notes that the "*[h]igh water requirements of the development in a water scarce area where much of the existing water resources are required for agriculture and thus food security*". Therefore, any sale or transfer of water rights from agriculture to industry will have irreversible implications for future water allocations – which will also negatively impact food security. The EIA must thoroughly assess impacts on existing water uses.

102. Zimbabwe is proposed as a 'potential water supply source'. The FSR states that "*[r]aw water could also be purchased from the Zimbabwe National Water Authority Zimbabwe, which has available at least 30 million m^3 per annum, when agreements are in place*".[96] However, the FSR remains largely silent on the need to assess potential impacts of taking water from a neighbouring state, other than from a legal and practical perspective, it merely notes that this action would necessitate cross-border water transfers and international water user agreements, and that "*the implications of sourcing water from across the border in terms the health and safety, contamination and carrying capacity as well as the exact position above or below the soil surface for the laydown of the pipeline or channel to the southern site*"[97] would need to be addressed.

103. The FSR goes on to state that the project envisages taking water from the Zhove Dam in Zimbabwe,[98] where water is abstracted from a tributary of the Limpopo. This requires a full study of the effects on: the Limpopo River; the Reserve;[99] water users in Zimbabwe and downstream users. The potential impacts of taking water from Zimbabwe – on land use, people's livelihoods and ecosystems – must be addressed before any such assumption on water availability, and its acceptability, can be made.

The lack of basic facts about the proposed EMSEZ projects

104. The FSR fails to include basic facts around the EMSEZ and its associated industrial projects, which limit the scope of issues that have been identified and will be needed to inform the EIA. In this regard we point out the following:

104.1. **nature of fuel sources**: the FSR fails to include any estimates of the fuel use by type for each EMSEZ facility. The many coal mines described in the FSR are presumably to provide fuel to EMSEZ facilities, but no estimate of fuel use is provided;

104.2. **existing status of air, soil and water quality in the region**: the FSR fails to include an adequate baseline assessment of air, soil and water quality in the region. Without a baseline assessment, it is unlikely that the EAP would be able to accurately assess, identify and mitigate against potentially significant environmental impacts – this must be addressed;

[94] See http://emsez.com/en/tqys.php?id=39&lm=15.
[95] See http://emsez.com/en/tqys.php?id=39&lm=15.
[96] See page 61, FSR.
[97] See page 233- 234, FSR.
[98] See page 60, FSR.
[99] In terms of the National Water Act, 36 of 1998, the "Reserve" means the quantity and quality of water required – (a) to satisfy basic human needs by securing a basic water supply, as prescribed under the Water Services Act, 1997 (Act No. 108 of 1997), for people who are now or who will, in the reasonably near future, be – (i) relying upon; (ii) taking water from; or (iii) being supplied from, the relevant water resource; and (b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant water resource. Refer to definitions section.

104.3. **annual water requirement during construction and operation**: as stated above, the FSR fails to adequately discuss the annual water requirements for the EMSEZ during key phases of its development and operation. This oversight is deeply problematic as the region is already water-scarce, the proposed operations are water-intensive and without a stable supply of water the EMSEZ would not be able to function;

104.4. **waste management**: the FSR fails to include basic facts around the volumes of waste water to be produced each year or the volume of solid waste that will be produced each year, including from each project under the EMSEZ. This includes coal ash, which contains toxic metals and radioactive elements, and poses significant public health risks. By failing to do so, the scoping assessment process has neglected a serious consideration that will have lasting impacts on the surrounding environment if not managed properly; and

104.5. **annual air pollution emissions**: the FSR lacks basic information in relation to the projected annual air emissions for the EMSEZ and its associated infrastructure. This is an important consideration as air quality has been flagged as a threat to human health and an air quality "priority area" has already been established within the region. Without an assessment of the expected emissions nor any baseline assessment of existing air quality within the development region/site, it would be impossible to accurately determine the individual and cumulative impacts that the EMSEZ (as well as its associated infrastructure) would have on human health and the issues that the EIA process would need to consider in further detail.

Insufficient consideration of the project's impacts on biodiversity, ecological function and cultural heritage

105. The FSR fails to consider the impacts of the EMSEZ on biological diversity, conservation of endangered species, and ecological processes. The EMSEZ and its associated mines would carve up the very centre of the Vhembe UNESCO Biosphere Reserve, called "land of the baobab", which is home to 250 species of butterfly, 44 species of amphibians, 140 species of reptiles, 542 species of birds and 152 species of mammals.[100] The Biosphere Reserve includes a UNESCO World Heritage Site, the Mapungubwe Cultural landscape and a RAMSAR site, the Makuleke Wetlands. The FSR recognizes that the area includes protected areas known for baobab trees (Musina Nature Reserve), endangered Cape Vultures (Blouberg Nature Reserve), gemsbok (Langjam Nature Reserve), and giraffe, antelope, and white rhino (Nwanedi Nature Reserve).

106. According to the website of Vhembe Biosphere Reserve:

> Within the context of a Biosphere Reserve, "development" is defined as: "*the fostering of economic and human development which is socio-culturally and ecologically sustainable". This is a fundamental objective of any Biosphere Reserve and particularly relevant in the case of the Vhembe Biosphere Reserve. The challenge is to establish a development framework and strategy that is aimed at conserving the bio-diverse environment while at the same time creating socio-economic opportunities for the people of the area*." [101]

107. The FSR notes that EMSEZ is located in the "transitional zone" of the Biosphere Reserve, which "*support/contains a diversity of sustainable activities*".[102] But there is no analysis in the FSR that defines "sustainable activities" and whether EMSEZ meets that definition.

[100] See http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/africa/south-africa/vhembe/
[101] https://www.vhembebiosphere.org/development
[102] See page 70, FSR.

108. EMSEZ would affect a Critical Biodiversity Area 2,[103] and Ecological Support Area 2,[104] and – depending on the area of influence of EMSEZ activities – the project could also negatively affect one of the world's largest Cape Vulture colonies,[105] as well as a number of protected and priority biodiversity areas, including areas earmarked for Protected Area Expansion.

109. These potential impacts are of national and international importance, given that they relate directly to South Africa meeting its global conservation commitments and national biodiversity targets. The EIA must thoroughly address all of the above potential impacts.

110. With specific reference to heritage resources and objects of cultural significance, we submit that the potential impacts of the EMSEZ to the UNESCO World Heritage Site: Mapungubwe Cultural Landscape[106] has not been considered. We find this deeply concerning, as:

    110.1. the Mapungubwe Cultural Landscape is legally protected through the World Heritage Convention Act 49 of 1999 – which incorporated the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage[107] (The World Heritage Convention) into South African Law. The World Heritage Convention recognises that the Mapungubwe Cultural Landscape is "…***of outstanding interest and therefore need[s] to be preserved as part of the world heritage of mankind as a whole***" (emphasis added). We submit, with such interests in mind, that this should necessitate - at the bare minimum - a basic assessment of the EMSEZ's potential impacts on the Mapungubwe Cultural Landscape given its status as an object of international significance;[108]

    110.2. NEMA's definition of the "environment" encompasses not only components of the natural environment (air, land and water)[109] but also "*the physical, chemical, aesthetic and* ***cultural properties and conditions of the foregoing that influence human-health and well-being***"(emphasis added);[110] and

    110.3. the NEM Principles specifically refer to the "**nations cultural heritage**" in applying the 'preventative principle'[111] and that "*[d]ecisions must take into account the* ***interests, needs and values of all interested and affected parties****, and this includes* ***recognising all forms of knowledge, including traditional and ordinary knowledge*****"** (emphasis added).**[112]**

111. In light of the above, we submit that destruction or deprivation of cultural properties and heritage resources – especially in instances where such impacts were not assessed adequately or at all – would be unconstitutional, as international and national legal mechanisms demand the protection of world heritage sites for the benefit of the international public. Therefore, a comprehensive assessment of any potential impacts to this area must be included in the EIA process.

Insufficient consideration of alternative options

112. The EIA process is intended to shape and influence the proposed development in a way that ensures that it meets the requirements of the Constitution and NEMA.

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[103] "The most critical area of biodiversity conservation is located within the southern portion of the SEZ site and is categorised as Critical Biodiversity Area 2 (CBA 2). CBA 2's represent areas where there are spatial options for achieving targets and the selected sites are the ones that best achieve targets within the landscape design objectives of the plan" – see page 76, FSR.

[104] The remainder of the proposed Musina-Makhado SEZ southern site is on Ecological Support Area 2 (ESA 2) which are areas no longer intact, but potentially retain significant importance from a process perspective (e.g. maintaining landscape connectivity) – see page 76, FSR.

[105] For example, Blouberg International Bird Area and within the area earmarked for Protected Area expansion.

[106] See https://whc.unesco.org/en/list/1099/

[107] Available here: https://whc.unesco.org/archive/convention-en.pdf

[108] See preamble of the World Heritage Convention.

[109] See section 1(1)(xi) of NEMA which refers to land, water and the atmosphere of the earth as well as the inter-relationships between them.

[110] See section 1(1)(xi)(iv) of NEMA.

[111] Section 2(4)(a)(iii) of NEMA.

[112] Section 2(4)(g) of NEMA

113. The identification and confirmation of alternatives is a critical element of the scoping phase, and is at the heart of EIA – ensuring that sustainable development is achieved. The DEAT's "*Criteria for determining alternatives in the EIA*" states that "*[d]ue consideration of alternatives ensures that the EIA is not reduced to defence of a single project proposal that is the desire of the proponent. Rather, it provides the opportunity for an unbiased, proactive consideration of options, to determine the optimal course of action*".[113]

114. The FSR states:

> "*The following alternatives have been mentioned throughout this Consultative Scoping Report and will be further investigated during the EIA phase of the proposed development:*
> *• Design or Layout alternatives (based on the Hoi-mor Master plan)*
> *• Demand alternatives (Demand and need in terms of socio-economic and job creation)*
> *• Technology Alternatives (There are different technologies involved as well relating to the plants itself but, we are not applying for that now and hence it is not discussed here – it is however important since the ultimate development will have these technologies aimed at better environmental mitigation*
> *• 'No-Go' Option*"[114]

115. The description of these alternatives are vague and general, and without additional information, it is impossible to determine the scope of alternatives that will be addressed in the EIA. For example, it is unclear as to why the layout design alternatives are limited to, and constrained by, the Hoi-mor Master plan, and/or what this master plan comprises, as it is not described in the FSR.

116. The FSR also fails to adequately identify site alternatives or alternative industrial components or activities within the EMSEZ. Furthermore, it does not present alternatives that respond to the range of potentially "highly significant" negative impacts that have been identified, such as:

    116.1. the irreplaceable loss of agricultural land, wetlands, river, groundwater, GHG emissions[115] (assumed to recognise that climate change effects will lead to irreplaceable loss); and

    116.2. Critical Biodiversity Areas, fauna and flora, and soil erosion (assumed to mean that there would be irreplaceable loss of soils) and cultural heritage.[116]

117. In summary, any alternatives – including any "no-go" options – that could feasibly be supported in this particular landscape and satisfy the need to create employment through the leveraging of lower-impact industries, technologies and components must be thoroughly considered, considering the significant potential harms of the project, as this could meet the overarching objectives of the EMSEZ without undermining the long term social ecological resilience of the region.

118. We submit that without an adequate consideration of alternatives, neither the EAP nor the competent authority is in a position to advise or reach an informed decision in relation to a project of this magnitude and the significant socio-economic, environmental and human health impacts likely to be suffered.

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[113] See DEA&T 2004. Criteria for determining alternatives in EIA. IEM Information Series 11 at page 4.
[114] See section 9, FSR.
[115] It is assumed to imply that climate change impacts will lead to irreplaceable loss.
[116] See Table 10-1, FSR.

The EIA must thoroughly consider cumulative impacts of all activities associated with the EMSEZ

119. The FSR has a short section on cumulative impacts and recognizes that this EIA process "*should be considered along with all other applications and activities in the area*."[117] Other language through the FSR contradicts this statement, however, noting that because each project under the EMSEZ will develop its own EIA. Therefore, the current FSR and EIA process cannot adequately assess these other potential impacts.[118]

120. As mentioned, the EIA must thoroughly consider cumulative impacts of all actions and projects associated with the EMSEZ, along with other existing and proposed activities in the region. Without doing so, the EIA would present a significantly flawed and incomplete assessment of the potential harms of the EMSEZ.

Inadequate assessment and evaluation of impact significance and risk in the FSR

121. The accurate assessment of impact significance and risk involves deciding whether a project is likely to cause significant negative environmental impacts and is therefore central to the practice, administration and decision making processes of the EIA.[119] In this regard, Table 10.1 of the FSR presents a "preliminary impact assessment" of the EMSEZ, which, among other things:

    121.1. describes the nature, duration, significance, extent and probability of various impacts;

    121.2. provides a significance rating for each impact (e.g. medium low, medium high, high, etc.);

    121.3. determines the degree to which the impacts can be reversed;

    121.4. determines the degree to which the impact may cause irreplaceable loss of resources;

    121.5. determines the degree to which the impacts can be avoided, managed, or mitigated; and

    121.6. concludes with a determination of risk, taking into account the preceding three factors (e.g. low, medium, high, etc.).

122. We submit that Table 10.1 and the FSR's approach for assessing preliminary impacts is highly flawed and all conclusions should be disregarded. This is so for the following reasons:

    122.1. the FSR has presented only a general assessment of potential impacts, with vast amounts of missing information about the EMSEZ associated projects. It has not considered major areas of concern, such as climate change impacts or harm to human health. Nor has it accurately submitted any information on baseline conditions in the region, including on air quality or water availability or quality. Without this vital information, any assessment on potential risks and impacts is fatally flawed, and presents a substantially incomplete and misleading assessment;

    122.2. the impact assessment inappropriately does not consider the cumulative impacts of all the projects in the EMSEZ;

    122.3. impact reversibility is a separate concept from irreplaceable loss of resources, and should therefore be addressed separately;

[117] See section 10.6, FSR.
[118] See page 104, FSR.
[119] See DEA&T 2002. Impact Significance. IEM Information Series 5 at page 4. Available at: https://www.environment.gov.za/sites/default/files/docs/series5_impact_significance.pdf

122.4. the FSR inappropriately groups 'avoidance', 'mitigation' and 'management' together. Since these are three very different concepts and no measures are actually specified in the FSR, this approach is misleading and has limited valid application;[120]

122.5. the criteria for assessing the 'likelihood of impact' is incorrect as it includes the "sensitivity of the receiving environment", which we understand to be a consideration that is taken into account when assessing the "severity" of impact rather than its "likelihood"; and

122.6. the table's conclusions are not rationally connected to or supported by any facts or evidence. For example, the table describes the probability of pollution and disruption of the ecological integrity of groundwater as highly likely, significant and permanent. It is also "likely" to cause irreplaceable loss of resources. Yet, the FSR conveniently determines the risk to groundwater after avoidance, mitigation, and management as "low". In many other instances, the table identifies impacts as irreversible and definite, yet the risk after avoidance, mitigation, and management is medium. In no instance has the FSR observed a high risk of any potential impact, despite impacts being identified as irreversible and definite. With respect to projects at the scale of the EMSEZ, these outcomes are unlikely and cannot be supported by evidence.

123. In summary, the failure to adequately ascribe and quantify impacts – through a flawed and improper assessment, which seeks to draw conclusions on impacts prior to any assessments actually being done – is arbitrary, speculative and threatens the integrity of the EIA process by promoting uninformed decisions.

Concerns and shortcomings with the proposed special studies and plan of study for the EIA

124. We maintain that the scope of specialist studies set out in section 11, entitled "*Plan of Study for EIA*" is inadequate. We submit that:

124.1. **a "human health impact assessment" must be carried out**, given the spectrum of likely harmful emissions and toxic wastes associated with the projects associated (noxious) industries;

124.2. **the "socio-economic assessment" should be separated into a social and economic assessment**,[121] in which the social component of the impact assessment specifically includes an assessment of impacts on land use, both directly and indirectly i.e. through pollution and other pathways such as through the sale of water rights;

124.3. **all information in relation to employment during the construction phase and the operational phase of the SEZ must be made available**, specifically, information on skills development and target groups as this information is critical to properly evaluating the project's alleged benefits;

124.4. **all information in relation to waste management**[122] **must be made available** to enable assessment of associated impacts on water, air, land, biodiversity and human health;

124.5. **the proposed 'wetland and aquatic assessment' should be conducted as a separate study** as it addresses the fundamental issue of water supply;

124.6. **the potential impacts of water supply options must be assessed**; taking into account predicted climate change effects on water resources, along with the associated impacts on land use, people's livelihoods and ecological impacts;

[120] Avoidance is the first step in the mitigation hierarchy (mitigation), which covers impact minimisation, restoration and compensation or offsets. It is possible to 'mitigate' or 'manage' impacts to some extent, but unless there is an explicit statement about significant residual negative impacts it is unlikely

[121] Generally, these assessments tend to be combined into a singular "socio-economic" assessment, however, these are also different concepts that require independent analysis - conducting a separate assessments would allow for deeper insights into any potential impacts.

[122] Which includes all information in relation to disposal, the location of waste dumps and proposed disposal facilities.

124.7. **the 'soil classification and land capability' specialist study must address the land use issues** as part of an independent specialist assessment;

124.8. **separate hydrological and geo-hydrological specialist studies should be carried out** – as the 'water' specialist study[123] conflates surface water and groundwater issues and impacts. These must be separated in light of the potential for groundwater extraction as a water source and consequences for local groundwater-dependant users/ecosystems, and the potential pollution from the project's industries' waste management practices;

124.9. **the 'critical biodiversity areas' specialist study[124] must also assess the impacts associated with solid waste pollutants, ground pollutants, ecological process impacts, and changes in water flow and quality** due to alterations and disturbances;

124.10. **further information must be provided on "aquatic bird studies".** As it stands, little is provided in relation to terrestrial birds, including highly threatened species such as the Cape Vulture that lives, nests and breeds in close proximity to the project site. The associated impacts of the proposed development i.e. pollution, expanding settlements and edge effects that will impact on their flight paths, roosting and feeding areas presents an increased risk to their survival and must be addressed;

124.11. as stated above, **an extensive CCIA must be undertaken,** ensuring that the study, satisfies the requirements of NEMA and section 24 of the Constitution, whilst comprehensively assessing the project's climate change impacts;

124.12. the **requirement to remedy impacts through compensation or offsets must also be addressed by specialists**; and

124.13. **an epidemiological baseline survey must be undertaken** to monitor and manage future impacts.

F. INADEQUATE, UNREASONABLE, UNFAIR PUBLIC PARTICIPATION AND STAKEHOLDER ENGAGEMENT

125. We note with concern that the public consultation and participation process conducted to date in relation to EMSEZ has been woefully inadequate. This is highly problematic as it threatens I&APs' rights to a fair process and access to information. These issues and concerns include, *inter alia*:

125.1. "national" advertisements of the EIA process were only placed in in the Citizen newspaper on one date – 24 August 2018 (distributed mainly in Gauteng, but also in Mpumalanga, Limpopo and the North West provinces) and on two dates in the Limpopo Mirror (24 August and 31 August 2018). This limits notification to a restricted pool of I&APs, and considerably curtails input into the EIA process. We submit that an advertisement should have also been placed in an official Gazette that is published specifically for the purpose of providing public notice in terms the EIA Regulations.[125] We submit further that the proposed placement of only one English advertisement and one Venda advertisement to notify potential I&APs of the availability of the EIA Reports is wholly inadequate for this SEZ, given its scale, range of potentially significant impacts, and national, if not global significance.

125.2. there appears to have been little to no representation of affected landowners and civil society organisations in the public participation processes conducted to date for the EIA; and

[123] See Table 11 -12, FSR.
[124] The 'water specialist study' covers 'flora and fauna present within the impact zone' and damage to terrestrial biodiversity due to 'effluents and gaseous emissions'.
[125] See Regulation 41(2)(c)(ii), EIA Regulations.

125.3. it is recorded that only two purported "civil society organisations" participated in the consultation process for the FSR, namely Anglo-American Platinum and representatives of the Tubatse Municipality. Clearly Anglo-American is **not** a civil society organisation nor is the Tubatse Municipality. There has thus been no civil society organisation participation to date.

126. In addition, many people, particularly those who will be impacted by the project, do not have access to the resources and expertise required to access, consider and comment on the records relating to the project, which are voluminous and technical in nature. Yet this project will have significant implications in terms of its scale and range of potentially significant impacts - which include climate change and health impacts – particularly for communities living in the areas where the project will be based. In order to ensure access to a reasonable, adequate and fair public participation process, the project's proponents should have used (and must in future use) reasonable alternative methods to inform affected communities of the significant adverse health, climate and environmental impacts that this project could have on them.

127. We remind you that the proposed development is situated across historically disadvantaged areas. These people must be afforded a reasonable opportunity to consider, understand, and provide input into the proposed development and its associated processes, which will undoubtedly have a direct impact on their daily lives, health and well-being. These are the people who bear the brunt of the impacts of proposed development and we submit that environmental justice demands that their voices be heard. A process which does not provide for this or does not adequately consider their input will be unfair and flawed.

128. In light of the above, we remind you that NEMA's section 2 principles; in particular section 2(4)(f), make clear that "*[t]he participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and* ***participation by vulnerable and disadvantaged persons must be ensured***" (emphasis added).

129. We remind you that the CER has, since its establishment in 2010, advocated for greater transparency in environmental governance and for swift and easy access to environmental information, and accordingly disputes the failures to register our clients as I&APs and make information available despite repeated requests. In this regard, we refer you to the following judgments that confirm that there is no room for secrecy in relation to the environment:

129.1. ***Uzani Environmental Advocacy v BP Southern Africa (Pty) Ltd***[126] – "*NEMA not only requires a transparent administration but recognised the contribution that can be made to the protection of the environment by a vigilant and committed public which has most to lose…[s]ecuring protection is therefore no longer the exclusive preserve of those engaged in these activities, nor of an opaque administration or an under capacitated and potentially inhibited law enforcement agency which cannot claim the number of successful convictions one would have expected despite clear evidence of historic degradation to our environment*."; and

129.2. ***Company Secretary of Arcelormittal South Africa and Another v Vaal Environmental Justice Alliance***[127] – where the court confirmed that civil society organisations are entitled to exercise and protect the right to a healthy environment by seeking information to enable them to assess environmental impacts, and to exercise a watch-dog role. The Supreme Court of Appeal went on to hold that "*…industrial activities, impacting as they do on the environment, including on air quality and water resources, has an effect on persons and communities in the immediate vicinity and is ultimately of importance to the country as a whole. Translated, this means that the public is affected and that … activities and effects thereof are matters of public interest*" and "*Corporations operating within our borders, whether local or international, must be*

[126] See footnote 9 at paragraph 88 of the above judgment, available at: http://saflii.org/za/cases/ZAGPPHC/2019/86.pdf
[127] See the above judgement generally at: http://www.saflii.org/za/cases/ZASCA/2014/184.pdf

left in no doubt that in relation to the environment . . . there is no room for secrecy and that constitutional values will be enforced."[128]

130. It is therefore essential that adequate public participation takes place early in the process – when key options are still open. This will ensure that all perspectives are captured and can be properly assessed at the outset. It will also ensure that all stakeholder groups have equal opportunities to convey their views.

131. We note that, with the annexures, the FSR (in its current form) is approximately 600 pages. Given the magnitude of the project, its associated impacts as well as the length of the report, I&APs should have been initially afforded a longer period of time for commenting. Although now passed, the one-month time period allowed for the public to comment on the scoping report was in any event too short to allow the public to meaningfully evaluate and comment on the contents.

132. The CER has long contested the Constitutionality of the short timeframes prescribed by NEMA's EIA Regulations for commenting on EIA documents. The requirement for an applicant to, within 44 days of receipt of the application, submit to the competent authority a scoping report, which has been subjected to a public participation process of at least 30 days[129] – is too short to allow for adequate and meaningful assessment and participation, as required by the Constitution and the Promotion of Administrative Justice Act, 2000 (PAJA). We submit that arrangements should have been made for more time for both comment, and consideration of the comments, before submission of the scoping report.

G. CONCLUSION

133. In the light of the significant negative impacts that the proposed EMSEZ stands to have on the climate as well as on the health and well-being of the people of South Africa, we and our clients oppose, and will continue to oppose, the development in order to protect Constitutional rights and the realisation of environmental and social justice in South Africa.

134. We submit that, the FSR does not meet the requirements of NEMA and the EIA Regulations, and as the EMSEZ fails to satisfy the basic principles of sustainable development – at its earliest stage of impact assessment – any socio-economic benefits perceived are short-sighted, likely to dissipate in the long term and significantly outweighed by its negative impacts. This would cause irreplaceable harm to the environment, human health and well-being – which would be inconsistent with the Constitution.

135. In light of the above, it is our recommendation that:

135.1. our comments above regarding the need for an SEA and the appropriate competent authority as well the objections on the FSR are duly considered;

135.2. the FSR be withdrawn on this basis;

135.3. both the scoping and EIA for the EMSEZ be placed in hold until a thorough SEA is conducted with full and proper public participation, taking into account our clients' comments made herein, and any comments by other I&APs; and

135.4. the Minister of Environment, Forestry and Fisheries must be designated as the competent decision-making authority for this, and any further EMSEZ EIA processes.

136. Please ensure that adequate consideration is given to these comments.

[128] See *Company Secretary of Arcelormittal South Africa and Another v Vaal Environmental Justice Alliance*, at paragraph 82.
[129] Regulation 21, EIA Regulations.

137. A failure to take the above steps would render the EIA process fatally flawed and susceptible to legal challenge.

138. We reserve our clients' rights fully, including the right to supplement these comments and/or to make further submissions.

Yours faithfully
CENTRE FOR ENVIRONMENTAL RIGHTS

per:
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22 October 2020

Dear Sirs,

Objection to the development of the 8000 hectares Musina Makhado Special Economic Zone (EMSEZ) in terms of Section 24 and Section 31 of Bill of Rights.

My name is Stephen Fritz and I am a Khoisan Senior Chief.

I hereby place on record, my formal objection to the development of the Musina Makhado Special Economic Zone. I fully endorse the submission from the Centre for Environmental Rights.

The permission for development of the eight thousand-hectare Musina Makhado Special Economic Zone was given the go ahead at the end of March 2000 during South Africa's stringent lockdown, a response to the global pandemic known as COVID_19.

Permission was granted despite the many concerns highlighted in the sixteen risk assessment[1] evaluations that were carried out.

The proposed development includes the building of hotels in an area defined by the impact assessments "highly sensitive" and "intact". This sensitive environment will be threatened with permanent, irreversible damage.

Amid growing global concern for the future of mankind and the environment, this development includes a controversial 3000 megawat coal-burning station.

This industrial expansion includes numerous mining operations, the development of ferrochrome and steel industry, a vanadium plant, a cement plant, a manganese plant. All these industries will impact on the Limpopo River. Eighteen million people depend on the Limpopo River across four countries.

The impact assessments highlight tangible, critical risks for the long-term availability of water as the region is severely water strained. They indicate the critically sensitive multiple wetlands located across the eight farms. The assessments indicate major impacts with no room for mitigation. They indicate high impacts on the adjoining protected areas as the

The UNESCO Vhembe Biosphere Reserve, the National Parks, including Kruger and Mapungupwe and important ecological corridors will be permanently and irreversibly compromised if this development should be allowed to proceed.

The impact assessments indicate the severity of impacts on human health on both short and long term and prospected high risks of impacts to the 689000ha agricultural and grazing land due to water competition, pollution, air pollution, water contamination.

I formally object to the irreversible alteration and destruction of intact and indigenous heritage sites. In particular, I refer to the environment which is sacred to us, the indigenous people of South Africa. We Khoisan are identified as direct descendant of the hunters and gathers.

The prospected area has been indicated by your Heritage Impact Assessment[2] as highly sensitive to alteration, with high risk of permanent, irreversible loss of cultural resources. The area contains Stone Age materials, burial sites and includes areas of cultural significance and of paleontological sensitivity. In addition the report disclaims that "*archaeological and palaeontological resources commonly occur at subsurface levels and these types of resources cannot be adequately recorded or documented by assessors without destructive and intrusive methodologies and without the correct permits*". The report indicates that hominids have inhabited the Limpopo Province since the Stone Age (ancestral value) and the area is closely associated with hunter-gatherers.

[1] https://deltabec.com/eia-musina-makhado-special-economic-zone/
[2] file:///C:/Users/S%20Falcon/Downloads/Fauna%20and%20Flora%20Impact%20Assessment%20(2).pdf

Furthermore it indicates that "*This period is further defined by evidence of ritual practices and complex societies*"[3] and that this is commonly expressed through rock art. The report also highlights that burial grounds and graves have specific connections to communities or groups for spiritual reasons and the significance is universally accepted. "*Damage to or destruction of these heritage resources will be permanent and cannot be reversed and intervention is defined as extremely detrimental".* In addition indicates that these heritage resources have internationally-recognised significance and, as such, their damage or destruction may have international implications.

It continues that "*the construction of the proposed project infrastructure will add to the existing and proposed infrastructure in the area and will contribute to the degradation of the sense-of-place of the cultural landscape".*

We Khoisan are among the most persecuted people of South Africa with our history of cultural genocide and deliberate destruction of our heritage and disrespect for our beliefs. We have strict connection with the environment and with all wildlife which have great spiritual significance for us. Rocks and water are both sacred to us and rock sites have particular religious significance being, rocks, the harbours of Great Spirits and having water, regenerative and healing significance.

I appeal to our Constitution and the Bill of Rights, in particular section 24, to have our environment protected for the benefit of our present and future generations, and environment that is not harmful to our health or well-being.

My appeal is also linked to section 31, our right of cultural and religious practices, indicating the Musina Makhado proposed development as a highly harmful and unjustifiable project, causing irreversible destruction of irreplaceable environmental and cultural resources.

I am requesting formal acknowledgment of my submission.

Senior Chief Stephen Fritz
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Translation facilitated by Stefania Santaga

[3] Deacon & Deacon, 1999

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22 October 2020

WWF thanks you for the opportunity to comment on the draft EIA, and requests that the communicating author, James Reeler, be registered as an I&AP on behalf of the organisation going forward.

WWF supports the sustainable development of South Africa's resources to enable the upliftment of the population and to realise a future in which the needs of humans and nation are adequately addressed. WWF is fully committed to enabling a just transition to a low-carbon future, and supports efforts to enable improved livelihoods and wellbeing for all people both through our own operations, and through the efforts of others. Moreover, WWF is cognisant that the transition to a low-carbon economy entails the use and beneficiation of

However, WWF submits that the proposed Makhado Musina Special Economic Zone is not in the public interest, and that the findings of this EIA, whilst inadequate in many respects, nevertheless indicate that the long-term impacts are too great to be overlooked. Moreover, WWF considers that the economic benefits are overstated, and that much of the output is at risk of becoming stranded assets as the world moves to a low carbon future, effectively undermining the benefits that might be reaped by the project.

WWF notes that overall the EIA stipulates a high negative environmental impact for the SEZ, with concomitant low to medium positive economic and socioeconomic impact. WWF furthermore submits that for several of the studies under review the environmental impacts are understated, and the mitigation measures overstated, such that the overall environmental impacts should be considered the overriding issues: in many cases the environmental impact undermines potential positive socioeconomic impacts. Moreover, the EIA does not adequately consider the alternative to the operation of the SEZ.

Nevertheless, despite these shortcomings, WWF believes that the EIA supports the position that this development is not in the public interest. The international implications of water extraction and carbon dioxide emissions linked with strongly negative ecological and biodiversity impacts in an IUCN-approved Biosphere Reserve transitional zone are huge. WWF therefore urges in the strongest possible manner that the SEZ not be developed as proposed.

We detail below some of the issues identified with the EIA process, report, and specific conclusions. However, due to time constraints we have not been able to review in full all aspects of the assessment, and reserve the right to provide the competent authority and EAP with additional information or responses as we finalise them.

Scope

WWF notes that this EIA is specifically for the clearance and preparation of the southern site alone. However, it is also noted that this site cannot operate without concomitant approval of the operations of a large number of additional sites, so the footprint is far beyond the stipulated 8,000ha of this site. The assertion that each of these must undergo a separate EIA and factors linked to other sites need not be considered is disingenuous. Since the sites are linked through a long-term extendable lease through the SEZ, the functioning of the SEZ is contingent on all sites meeting environmental conditions. This is the rationale for CER's proposal for an SEA; whilst WWF is cognisant that SEAs are not mandatory, in the absence of an SEA site-specific EIAs to consider not only the direct impact of the site, but also the impacts on additional areas essential for the functioning of the operation, including upstream and downstream impacts.

In light of this, WWF views the EIA in light of the full impact of the SEZ, and considers that in some respects (climate, water, biodiversity, heritage and socioeconomic impacts) the spatial boundaries and stipulations are insufficient.

Water assessment and implications

1. South Africa is highly water-constrained, with more than 98% of all available supplies allocated. Water is therefore a critical element to consider in all development scenarios.
2. WWF reminds the competent authority that in terms of the National Water Act[1] there must be provision made for the Reserve, for international obligations, and for projected future water needs.
3. The Limpopo Water Management Area North Reconciliation Strategy specifies that groundwater abstraction in the Limpopo Water Management Area is already too high. Moreover, the proposed abstraction levels within the Trans-Boundary Aquifer are in excess of the aquifer recharge rate. There are also already significant interbasin transfers into the Limpopo catchment as detailed in the EIA, evidencing the limited availability of water.
4. The mitigation measures proposed make significant assumptions about the outcomes of a number of studies and international negotiations. WWF agrees that in many cases, should the outcome of these mitigation measures be as proposed, the risk would be reduced. However, we do not agree that in most cases the mitigation measures are practicable, and consequently cannot agree with the overall

[1] RSA. 1998. *National Water Act (Act 36 of 1998)*. (Government Gazette no. 19182). Pretoria: Republic of South Africa.

risk rating. As an example: the potential impacts of reduced river yields due to global warming are cited as high (19.5), and whilst the prescribed climatological study might give more clarity as to the extent of the risk, it is not clear that it would reduce the risk in any significant way. The low impact cited for the mitigation scenario is thus unwarranted.

5. Moreover, in the risk and mitigation measures, there is no consideration of the impacts on downstream users and environmental reserve.
6. In light of regional projections for reduced rainfall in an already over-abstracted aquifer and catchment, with both upstream and downstream nations making claims on the water flow as negotiated through the Limpopo Water Course Commission (LIMCOM), and particularly where downstream users in Mozambique are already concerned about reductions in flows and salinisation of the river, progressing with development of a large SEZ dependent on this resource may be considered a "water grab" by neighbouring countries.
7. Inasmuch as this EIA has reference specifically to the southern site alone, this implies securing a supply of 110 million cubic metres of water per annum (whilst still ensuring the Reserve is maintained), WWF believes that such supply is unlikely to be available.
8. WWF submits therefore that no further progress on the SEZ is warranted unless the potential for addressing water needs is adequately addressed through full hydrological assessment, climatological review and **finalisation of negotiations with neighbouring countries regarding allocations**.
9. WWF therefore supports the recommendation of the EIA, with the additional caveat that securing of adequate and affordable water supply be a **precondition** for approval, and that such adequate supply also consider protection of the Reserve.

Climate assessment and implications

1. The timeline of 2030 in the EIA climate impact scope is inadequate. The projected lifetime of the SEZ is at least 30 years, and more likely 40 to 50 years in line with the lifetime of such plants. As such, any recommendation for intensity targets by 2030 is inadequate, because actual emissions must continue to be reduced to zero by 2050, well within the operational lifetime of the plants.
2. EIA climate change impact does not consider loss of environmental carbon from land clearance, mining operations, and construction, as well as avoided sequestration from the loss of functional ecosystems. These amounts are not negligible, particularly when considering the full spatial footprint should all SEZ operations proceed as envisaged.
3. Reduced water availability in the catchment may lead to increased extraction of groundwater and irrigation, including areas downstream and outside of South Africa's borders. These activities will also have secondary climate impacts.
4. RCP 8.5 is not a "business as usual scenario", but rather a worst-case scenario.
5. South Africa has presented an ambition to achieve net zero emissions by 2050 ≪REF≫. This implies that by this point, all emissions either be reduced to zero, or that enhanced physical removal and sequestration of carbon be at least equal to the total of emissions.
6. Removals. In light of the current IRP and "locked in" emissions, this implies that the country will already have enhanced physical removals nationally to a significant level.
    a. This EIA implies that the SEZ will, in a best case scenario, emit 24 million tonnes of CO_2 per annum (or more likely over 33 $MtCO_2e/yr$), and the likely life expectancy of the plants means that these emissions will continue beyond 2050.

   b. As such, it should also be required that all EIAs for individual activities should secure land areas capable of sequestering the carbon associated with emissions to align with the net zero target. For removals of 24 $MtCO_2e$, this area is considerable; given countervailing developmental needs and the implied additional sequestration area linked to the IRP, land may well not be available.
   c. Failing this, it would be necessary to specify that all emissions must cease by 2050.
7. The EIA does not consider reputational risks for South Africa associated with new long term high-carbon investment, nor does it consider the political risk associated with undermining South Africa's negotiating position internationally with respect to mitigation.
   a. Both these risks are high, with a weakened negotiating position potential delaying global mitigation action and compounding the direct warming impact of SEZ operations.
   b. Additionally, there is a significant possibility of assets becoming stranded, resulting in challenges to export high-carbon products as the world makes a transition to a low-carbon future.
   c. Carbon price assumptions relating to transitional risk are based on South Africa's current carbon price. However, the real risk is driven by international carbon prices (and border carbon adjustments imposed by importing nations), which will likely be one or two orders of magnitude higher by 2050.
8. Carbon budget:
   a. The cited budget of 7,572 $MtCO_2e$ for South Africa is predicated on an IPCC global budget of 1,010 Gt CO_2e for a 66% chance of remaining under 2 °C. This budget is not consistent with national goal of 1.5 °C or the Paris Agreement ambition to pursue all available efforts to remain below 1.5 °C. The actual budget is currently lower.
   b. The total emissions are related to a 2050 time horizon. However, it is likely that operations would extend considerably beyond this period, making the total emissions assessment inadequate.
   c. International guidance is that to remain within the total atmospheric carbon limits for remaining under 2°C, no additional carbon-emitting infrastructure can be built, and early retirements are required [2].
   d. Consequently, a necessary mitigation measure to allow these emissions would be accelerated curtailment of national emissions in other areas, or otherwise avoidance of emissions associated with this development.
9. Mitigation measures:
   a. No alternative to thermal coal is seriously considered in either the climate EIA or the Energy Assessment. In line with South Africa's international commitments and section 24 of the Constitution of South Africa, these approaches should be given a more comprehensive analysis as an alternative case.
   b. Mitigation measures proposed are marginal, and implementation in full does not affect the climate impact of the SEZ.
   c. The carbon intensities assumed for mitigation are not deliverable in some cases, and in others there is no evidence that such measures are being planned.

[2] Tong, D., Zhang, Q., Zheng, Y., Caldeira, K., Shearer, C., Hong, C., Qin, Y. & Davis, S.J. 2019. Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target. *Nature*. (July, 1):1. DOI: 10.1038/s41586-019-1364-3.

d. Even so, the climate impact is unconscionable even with the mitigation measures.

WWF therefore submits that the SEZ operations are not in line with South Africa's constitution or international commitments, that they increase the risk to all citizens through enhanced climate impacts (particularly, those within the Limpopo region, which is likely to see the worst impacts of climate change), and that the SEZ should not progress as it stands. A condition of authorisation should therefore be that adequate provision for environmental sequestration of carbon emissions be demonstrated and secured beforehand, or that emissions be reduced to a level where the climate risk is low (see below).

Energy assessment and implications

1. The assessment does not adequately consider the implications of carbon dioxide emissions. It does, however, provide a price point for ultra-supercritical thermal coal as the preferred option.
2. When combined with carbon capture and storage (CCS) to address carbon dioxide emissions, the price point for the preferred technology is comparable with PV and lithium battery storage, a technology ruled out as too expensive in this assessment
3. Since CCS is itself an unproved technology, and the current method of sequestration is principally for enhanced extraction of oil, the net climate benefit of CCS is doubtful. AS such, ultra-supercritical coal with CCS may well be inadequate to address the climate implications.
4. In contrast, PV with 12 hour lithium battery storage is currently viable (and highlighted in the EIA) and can be phased in rapidly and in stages, enabling early implementation where necessary, and for later builds as necessary to realise reduced overnight costs as the technology matures.
5. Additionally, it is not necessary for a single technology to be used to provide power, where several low-carbon options can be used to ensure both constant supply and dispatchability. Combination of wind, PV and solar thermal can provide complementary options with a lower climate impact, and importantly, with a lower water impact as well.
6. Moreover, the socioeconomic impact of a large scale build of renewable energy options has proven to be a larger scale employer and more efficient option globally than thermal coal[3].
7. WWF therefore submits that the recommendation of this study to make use of ultra-supercritical thermal coal is incorrect and inadequate, in light of the negative consequences of the linked emissions and increased water use. A more complete investigation of the alternative renewable energy options is necessary, particularly in light of South Africa's necessary just transition to a low carbon economy. The EIA proposal that other energy sources be further investigated before granting approval is supported, with the caveat that adequate costing and consideration of climate and water impacts be included in such an assessment.

Biodiversity assessment

1. Since the biodiversity assessment was limited to the southern site, WWF directs its comments specifically to this assessment. However, WWF also submits that a broader assessment of the biodiversity implications relating to the full SEZ should be undertaken in line with an SEA, since the

[3] Ferroukhi, R., Khalid, A., Lopez-Peña, A. & Renner, M. 2015. *Renewable Energy and Jobs - Annual Review 2015*. Abu Dhabi, UAE: IRENA - International Renewable Energy Agency. Available: www.irena.org/DocumentDownloads/Publications/IRENA_RE_Jobs_Annual_Review_2015.pdf [2015, June 15].

footprint of the implied operations is considerably larger than any individual site. It is not possible to provide an adequate biodiversity offset strategy where all operations within a site are not considered.

2. Biodiversity impacts are poorly scoped (appendix K), and consideration of the combined effects of multiple linked developments should be considered.
3. The reports fail to apply the mitigation hierarchy. Offsets are to be used as a last resort, and considerations for avoidance, minimisation and remedy should be considered first. Since these options are not presented in Appendix J, WWF considers that it fails to meet the core criteria for a biodiversity impact assessment.
4. Critically, the offset report specifies that offset sites must be identified if the authorisation is given. In light of the scale of proposed development in the region, finding such offset sites will be challenging, and it is therefore essential that mitigation measures be implemented, offset sites be identified and secured, and adequate finances set aside for management before operations be allowed to continue. Failure to do so risks implementation with no mitigation being undertaken.
5. The proposed activities fall within the transition zone of the Vhembe Biosphere Reserve. Whilst the transition zone does allow for the greatest impact of human activity within a biosphere reserve, the development does not align with the conceptual characterisation of a transition zone as an area in "which ecologically sustainable development is permitted". Indeed, it is hard to imagine, given the implied footprint of clearance of hundreds of thousands of hectares beyond this specific site for the upstream mining, of a set of activities least aligned with this concept. LEDET (nominated as the competent authority) is responsible for the maintenance, promotion and protection of the Biosphere Reserve, and permitting such a development would be a significant failure to fulfil its mandate.
6. WWF does not support the EIA recommendation for biodiversity, but rather submits that more adequate assessments following the specifications of NEMA and the draft offsets strategy be undertaken, a new mitigation and offsets strategy and implementation plan be developed, and that approval of the plan and adherence to the specifics (i.e. **prior** implementation of mitigation measures and offsets) be a precondition for the EIA approval.

Socioeconomic assessment and implications

It is noted that there are considerable employment opportunities and GDP growth potential associated with the MMSEZ. However, there is no consideration of the impacts on food security and tourism, despite these being highlighted as key current activities within the region.

The socioeconomic assessment does not consider the no-go or any alternative impact. This means that no cost-benefit analysis can be adequately undertaken. Moreover, since input-output analysis only looks at multipliers, but cannot assess the losses associated with reductions in natural capital or downstream effects, it is a poor tool for considering the long-term implications of such a development.

Procedural issues

<u>1. Competent authority</u>

LEDET is specified as the competent authority. However, DEFF should be the specified competent authority, because in terms of NEMA:

24(2) "*The Minister must be identified as the competent authority in terms of subsection (1), unless otherwise agreed to in terms of section 24C(3), if the activity—"*

...

(c) has a development footprint that...traverses international boundaries;

(d) is undertaken, or is to be undertaken, by—

...

(ii) a statutory body, excluding any municipality, performing an exclusive competence of the national sphere of government;"

It is noted in the response from the EAP that LEDET has been specified as the competent authority by DEFF in terms of NEMA section 24(3), but no official notice of this has been published or provided as evidence. Moreover, it is not clear at what date this confirmation was provided. In the absence of such formal notification, all EIA procedures undertaken to date under the auspices of LEDET as the competent authority are thus in contravention of NEMA. WWF therefore suggests that in the absence of such formal notification, this EIA should be held in abeyance pending proper public consultation on the part of DEFF.

Notwithstanding the legal requirements of NEMA, WWF moreover submits that the potential national and international implications of the MMSEZ should require formal approval on the part of line ministries in government (including DEFF, DWS and DMRE), and not just provincial authorities.

2. Public consultation

The public consultation does not appear to be adequate in light of the current circumstances and the scope of the operations.

1) Period: Whilst it is noted that the period for comment was expanded from the regulation 30 days to 50 days, WWF believes that the period is insufficient in light of the extent of the EIA, and the impacts of the current COVID crisis. WWF proposes that the comment period should be extended to allow additional I&APs to provide adequate commentary.
2) Notice: the placement of adverts and invitation for comments in local newspapers may be adequate for a project with local impacts. However, in light of the potential international scope of the operations, both from the water footprint and the climate change impacts, it is clear that potential I&APs include a large number of individuals and entities nationally and internationally. As such, WWF suggests that notice should be in newspapers with a national footprint.
3) Public meetings: Again, given the national and international footprint of the SEZ, public consultations should not be limited to local town halls. In addition, given restrictions on travel and potential health implications for vulnerable individuals unable to attend the meetings under conditions of COVID-19, virtual town hall meetings should be held and advertised to enable inputs from I&APs throughout the country and region.

3. Alternative options

a. With the exception of a brief counterfactual no-go (EIA report, pg 233), no serious consideration of alternative options is undertaken. A more appropriate analysis that investigates options closed out by this development is necessary. For instance, South Africa's commitment to enhancing biodiversity-linked employment, restoration economies and carbon sequestration implies the potential for additional opportunities to be developed in this areas that are linked to the renewable resources and natural beauty of the region.

b. The assertions that

"** Coking coal and other minerals of the region will continue to be mined and exported for beneficiation in other regions or locations with the associated environmental cost of transport where it could co ntribute to employment creation.*

** The environmental consequences of the beneficiation process will be transferred to such regions or locations*."
is predicated on the assumptions that a) such a transfer in the long term remains viable, and b) that the impacts in another area are the same as for the specific MMSEZ sites and Limpopo catchment. Neither of these assumptions is substantiated. If all areas were so commensurable, there would be little need for EIAs for any such development, since a single EIA might suffice for all such developments. Environmental consequences are contingent upon local environmental conditions and WWF considers that the heart of a Biosphere Reserve with considerable natural resources presents a clear case of a priority area for protection.

c. No cost-benefit analysis has been undertaken of alternative options for the resources and features both used in the MMSEZ proposal, and foregone through degradation or loss as a result of the proposed activities.

WWF therefore submits that the EIA requirement for adequate consideration of the no-go alternative is not adequately addressed.

Registration as I&AP

We request that you include WWF in the list of I&APs, with the contact person designated as:
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0216506688

Moreover, we request that you provide I&APs with access to a complete copy of the final BAR, inclusive of the EMPr, I&AP Comments & Response Report and all other appendices that will be submitted to the LEDET for consideration, indicating the wording that has been inserted or amended in the final version of the reports in a different coloured text for ease of reference.

Conclusion

In light of the significant impacts on the climate, water availability and biodiversity within South Africa and the region, as well as the concomitant impacts on the people of South Africa, WWF opposes the development of the SEZ as proposed. Locking South Africa into high-carbon developments at this critical juncture in our history is short-sighted and dangerous, and alternative means of enabling beneficiation for the local communities should be sought.

The SEZ does not meet the criteria of sustainable development, nor does it align with the principles of the Vhembe Biosphere Reserve in which it is situated. Full development as proposed will violate South Africa's commitments under the Paris Agreement to the UNFCCC, the Convention on Biological Diversity, and our own constitution. Moreover, by causing irreparable harm to the local environment with significant downstream impacts, it impacts on the long term wellbeing of generations, and prejudices our children from the ability to live well and in harmony with nature. We have highlighted a number of issues, including the lack of water availability which is essentially insurmountable, and others such as climate impacts which are subject to only moderate reduction potential. Overall, therefore, whilst some of the impacts may be subject to remedy or mitigation, it is WWF's opinion, largely borne out by the findings of the EIA, that the SEZ should not go ahead.

WESSA
PEOPLE CARING FOR THE EARTH

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21 October 2020

To all of the above persons

RE: DRAFT EIA REPORT AND SPECIALIST REPORTS FOR THE MUCINA-MAKHADO SPECIAL ECONOMIC ZONE

Introduction to objections

The main point of this objection centres around evidence that the specialist reports do not seem to have been afforded adequate time or been critically reviewed. In the short review time available numerous mistakes and poorly thought out recommendations have been made. For example, on page 724 where it is stated: "The total number of species recorded in the area was 109034", is a typical undergraduate mistake muddling number of individual trees with number of species. Even available literature for the area has not been carefully reviewed by the authors of the report. We would urge LEDET to insist that a knowledgeable person reviews the Fauna and Flora studies of the Vhembe District and the consultants submit quality work. In some instances, fieldwork should be repeated where sampling method was inadequate to identify the species in the area. If this area were to be developed at the very least, we should know what we are losing.

For example, local respected ornithologist Joe Grosel commented that avifaunal study (a mere four pages) was inadequate as it only recorded a paltry 27 bird species during the summer season within a huge area of pristine sub-tropical habitat. Similarly, only 19 invertebrates were recorded showing that insufficient effort was put into these studies. In the draft EIA's overall conclusion and recommendations by the EAP the following was stipulated "An avifauna assessment is also to be undertaken for the designated site to verify flight paths and raptors which may nest on the project site and be collected for relocation to a suitable new site as an integral part of the Biodiversity Offset Strategy". This is unacceptable as a detailed Avifaunal assessment should have been conducted and submitted prior to the EIA being approved. Joe Grosel took a quick look at the SABAP2 online data for the area of the proposed development and came up with at least 23 threatened and near-threatened species including 3 critically endangered species.

It is also a concern that no alternatives other than "extensive industrial and manufacturing cluster" have been considered by the consultant. As very little mining and other polluting activities occur in the Vhembe District this is a major land use change and compromises other activities such as agriculture, tourism and rural livelihoods reliant on an intact environment.

The following objections to the Mucina-Makhado Special Economic Zone (MMSEZ) have been put together on a *pro deo* basis by environmental scientists that have worked with local communities in the Vhembe District that are utilizing Indigenous Knowledge Systems to sustainably use fauna and flora. The reports put together by DeltaBEC and their specialists have not discussed this alternative land use which is a more a sustainable and climate change resilient alternative to the MMSEZ and would benefit a greater proportion of local people.

Experiences of mine workers and discussions with the National Union of Mine workers in other mining areas in South Africa indicate that people from other areas and countries migrate to the area and profits and benefits are minimal in the area of operations while pollution and socio-economic instability increase. MMSEZ will increase the poverty gap between rich and poor and destroy a natural ecosystem that has much untapped potential to promote sustainable development initiatives that can be applied to use natural resources for the direct benefit of the people of Vhembe District.

Baobab economic model

Dr Sarah Venter has conducted research into the sustainable use of baobab products such as oil, fruit pulp and textiles. In 2005 she started a company in Makhado to produce baobab products which sources directly from rural women and is an incentive to maintain natural habitats. This business has proven itself nationally and internationally and could be replicated in the greater Mucina-Makhado area and directly benefit poor rural women.

Baobab trees produce a fruit that can be processed into a "superfood" known for its unsurpassed nutritional makeup and becoming increasingly popular on the organic food market. A secondary product is a high value cosmetic oil, known as baobab seed oil.

The combined value of the baobab powder and oil that can be generated from the trees on the SEZ site alone totals R2 800 000.00 per annum. Regional climatic conditions have resulted in the baobab trees at this site taking 200 years to grow to a size where fruit can be produced. The number of trees the SEZ plans to remove constitutes a total loss to the economy in the region of R569 700 600.00 much of which would have gone directly to local residents and not distant shareholders.

The suggestion to relocate almost half the baobab trees is ludicrous for two reasons. Firstly, where would these trees be relocated to as they have a very narrow environmental niche that they occupy and thrive in. Surely the relocation area requires an EIA before it is disturbed. Secondly the cost of relocating a baobab is dependant on its girth and the price ranges from R 20 000 to R 100 000 per tree. How would the project budget for the extraordinary cost that the proposed relocations would incur?

A preliminary business plan for the MMSEZ area indicates:
That income from harvesting baobab fruit alone could potentially:

- Benefit up to 250 women per year with a total income generation of R870 000 per annum
- The processing of the fruit would provide up to 40 seasonal and permanent jobs per year.
- Baobabs are ecological keystone species that provide important roosting and nesting sites for many species of bats (P. Taylor), birds (Mottled spinetail, Meyers parrots, Red-billed Buffalo Weaver, Red-headed Weaver, Yellow-billed Hornbill, Red-billed Hornbill, Grey Hornbill, Spotted Eagle Owl, Barn Owl) and reptiles and mammals, such as Small Spotted Genet (*Genetta genetta*) Lesser Bushbaby (*Galago moholi*) and greater bushbaby (*Otolemur crassicaudatus*), Baboon (*Papio ursinus*) and Vervet Monkey (*Chlorocebus pygerythrus*).
- Baobab fruit and flowers provide a food source for Egyptian fruit bat (*Rousettus egyptiacus*), Petersons' epauletted fruit bat (*Epomorphorus crypturus*) and Wahlberg Eppiletted Fruit Bat (*Epomorphorus wahlbergi*), lesser bushbaby (*Galago moholi*) and greater bushbaby (*Otolemur crassicaudatus*), baboon (*Papio ursinus*) Vervet Monkey (*Chlorocebus pygerythrus*), humans and hawk moth species such as *Nephele comma, Agris convolvuli, Hippotion rosae* and non-sphingid moth *Sphingamorpha chlorea* as well as many insect species.

Missing Mopane Worm

Although the MMSEZ is proposed in Musina Mopane Bushveld which is dominated by the preferred food, leaves of the Mopane tree (*Colophospermum mopane*), of the mopane worm (*Imbrasia belina*) the invertebrate study failed to mention this regionally important edible insect. Indeed, no edible insects were identified in the invertebrate list; not even a single termite species which are visible throughout the year due to their conspicuous termite mounds. The invertebrate study relied on chance encounters and sweep netting, but the reader is not provided with any details on the time of the year or the day that this was done. None of the insect species harboured by baobab trees and listed in the previous section were mentioned indicating that this study was inadequate and done as a greenwashing exercise rather than to improve knowledge of and decision making around biodiversity. This sub-standard attempt to understand the invertebrate community on the site resulted in a trifling 19 invertebrates being listed. A full insect list for this area would be in the region of 100 plus invertebrates.

Numerous studies indicate that over-harvesting of the mopane worm and the destruction of the mopane woodlands are threatening the survival of the mopane worm and its use as a cultural delicacy and important food source. There is extensive trade in mopane worms within sub-Saharan Africa and although people have attempted to farm with mopane worms, they have had limited success which makes all wild locations even more precious. Research and field observations indicate that outbreaks of mopane worms are negatively affected by climate change and the resulting prolonged heat waves and drought. Furthermore, they appear to have very specific requirements to emerge from their underground pupae and are directly affected by the development of roads. In areas such as Rustenburg which have developed as mining sites, they have become locally extinct where they previously were abundant. This could also be related to air pollution. Should this hypothesis be found to be correct then all other known mopane worm harvesting sites in the Vhembe District could be affected as such pollution is distributed by air currents.

The economic value of mopane worms is most evident at the informal level where the poorest of the poor are collecting this free and nutritious food and then eating it themselves or selling it on to generate an income. Mopane worms can be found at many urban centres including Johannesburg, Potchefstroom and Tzaneen. Selfridges in the United Kingdom has even offered online sales of tinned mopane worms as high protein, organic or paleo diets have become popular in Europe. Although there are no local economic models, we do have two case studies to draw upon on two farms near Mucina:

- Farm 1 during the mopane worm season 127 women and 2 men travelled from the Mutale area to camp out on the farm, collect mopane worms and process them for sale in their communities. During this study people from Mucina were also encountered that had come on a weekend to find mopane worms along the roadsides (Cathy Dzerefos, pers. comm, North-West University)
- Farm 2 during the mopane season 50 women were found camping for an unspecified time and there to collect worms (Zwannda Nethavhani, pers. comm, University of Stellenbosch).

Environmental legislation

With so few natural tracts of woodland remaining in Africa and bearing in mind the recommendations of the Limpopo Conservation Plan compiled by LEDET, the destruction of 8 022 ha of landscape to make way for mining and industrial development is non-sensical and should not be authorised by LEDET.

The draft EIA suggests that a large number of protected trees (i.e. baobabs, leadwoods, shepherds trees and marula trees) could be translocated to unspecified locations thereby altering the ecosystem processes elsewhere. The draft EIA fails to mention the exorbitant cost of relocating a baobab (R20 000 to R 100 000 per tree) nor that the success rate of transplanting a shepherd's tree is less than 10% and that of marula and leadwoods about 10% and baobabs about 50% success rate.

Prof. E.T.F. Witkowski, University of the Witwatersrand, comments that offsets have been abused in the past, mainly by transplanting threatened species from specific habitats (which often hold the minerals to be mined) to other habitats, which in the end are unsuitable for the plants. It should be clear that such spurious solutions will fail from the start. It is therefore important that the offset sites are identified before this project is approved and that studies are done to determine what species are presently on those sites and whether it makes sense to disturb them, especially considering the low rate of survival reported by people that have transplanted these trees in the Mucina area.

Conclusions

Indigenous Knowledge Systems have over centuries led to sustainable use of natural resources such as mopane worms, marula and baobab fruit for food and woodworking material from leadwood. Only in recent years have entrepreneurs begun to capitalise on added value products such as baobab oil which has the proven potential to assist the most vulnerable in the Vhembe District of the Limpopo Province. It would be a travesty not to develop these natural products in favour of a polluting activity that will require inter-catchment water transfers, contribute to climate change and cause social disruption.

Recommendation:

- A potential accounting for ecosystem services and asset value assessment needs to be commissioned for this area before any part of the environment is disturbed.
- Specialist reports on flora, avifauna and invertebrates and have been found to be full of errors and need to be reviewed by independent specialists in these fields.
- Interrogation of the specialist reports have shown that alternative socio-economic use of the area has not been considered. The draft EIA does not recognize the unique ecosystem that will be annihilated. It suggests glibly that keystone species such as baobabs can simply be moved to another area. If the option of offsets is to be considered further investigation and site identification should be provided.

Best Regards

Dr Cathy Dzerefos (Pr. Sci. Nat.)

Comments on MM SEZ focused on biodiversity and offsets

To: Errol Moeng MoengET@ledet.gov.za
Laurence Fenn Laurence.Fenn@lieda.co.za

cc. Pam Kershaw, Seoka Lekota, DEFF B&C
Kallie Naude, DEFF Protected Areas
Mulalo Sundani, Chester Ngobeni, Izak van der Merwe, DEFF Forestry.
Wietsche Roets, Paul Meulenbeld, DWS.

By email

From: S Brownlie *Pr Sci Nat* (Susie.Brownlie@dbass.co.za), M Botha *Pr Sci Nat.* (mark@ecological.co.za)

09 October 2020

Thanks for the opportunity to comment on the MM SEZ EIA. Although not registered as IAPs, we offer these comments for consideration by the competent and commenting authorities. We are professional ecologists and biodiversity offset practitioners.

1. Scope

It seems fundamentally flawed to only assess the notional impacts of establishing the SEZ, and not the likely impacts that will be associated with the constituent industrial developments. We understand that the ToRs were only to produce a biodiversity offset strategy for the SEZ, but this is extraordinarily difficult if the actual scope, nature and scale of impacts are not known.

Further, it seems that the EIA itself is flawed in not including within its scope the required inputs for the SEZ, especially water, and the associated impacts of sourcing, conveying and disposing of the resultant effluent. This is a fatal flaw in our estimation. It is impossible to derive a defensible offset strategy without the full spectrum of listed activities being catered for.

Therefore, the Offset Strategy delivered cannot hope to satisfy the requirements laid out in the Draft National Policy on Offsets.

2. Biodiversity Impacts

According to Appendix K (Digby Wells Environmental), 177 ha of Limpopo Ridge Bushveld, 4 422.2 ha of Musina Mopane Bushveld and 145 ha of Riparian vegetation will be permanently lost. Four protected tree species, three Red List mammals and one with regional threat status occur in the affected area, and there are 13 Red List birds which could occur in the area of influence[1].

Appendix K states the need to "investigate the potential to establish or contribute to an ecological offset area, if the residual impact after mitigation is significant" (p72). However, the approach taken in this Appendix is confusing: Table 10.3 recommends offsets in mitigation of impacts of high significance due to direct and permanent loss of natural habitat (Mopane Bushveld, Ridge Bushveld, Riparian Vegetation), including plant and animal Species of Conservation Concern (SCC), and to mitigate impacts of moderate significance on ecological services (i.e. loss of wetlands and Riparian Habitat services). All of these 'after mitigation' significance ratings, seemingly having taken into account biodiversity offsets, are said to be of 'moderate' significance – which suggests that they too would need to be remedied or offset, in line with the draft National Policy on Biodiversity Offsets (DEA 2017).

The scoping of cumulative impacts is weak, especially considering the likely scale of additional impacts from the large industrial activities proposed for the SEZ. There is little exploration of the cumulative impacts from other biodiversity-incompatible land uses in the region, especially mining.

[1] 9.5.3 of Appendix K

3. Offset Strategy

Appendix J (Mamadi and Company 2020) is deeply flawed and, although it lists core principles on offsets (6.1), it fails to apply them. It erroneously gives offset ratios which are incorrectly and misleadingly cited as being from the gazetted national biodiversity offsets policy (2017). In accordance with the national environmental management principles (s2 of NEMA), impacts on biodiversity must be avoided, or minimised and remedied. While there are many figures illustrating the mitigation hierarchy, with offsets as a final option, no attempt is made to avoid impacts on priority areas for biodiversity; e.g. on CBA2 areas. These areas aren't even effectively mapped on site. That is, offsets here are not being used as a 'last resort' which is required in terms of draft national policy (DEA 2017) and international good practice, but rather as an upfront mitigation measure – which is not legally permissible under the NEMA principles.

Reference to offset ratios in DEA 2017 are without exception incorrect. It is important to note in this respect that there is no reference to offsets for adult trees in the gazetted draft policy (ecological compensation or offsets for protected tree species is covered separately by the DAFF's policy principles and guidelines – especially the 2010 Guideline on Development Control in Natural Forests); wetland offsets must be calculated using the national wetland offset guideline using the wetland offset calculator; and the draft national policy does not specify offset ratios for impacted SCC populations[2].

- An estimated 109 034 trees of four protected tree species would be affected. 6.2.1.3 in Appendix J states that "An Offset Ratio of 1 - 2:1 i.e. offset should be 1 - 2 times the impacted area (DEA, 2017[3])". There is no basis for this offset ratio in the gazetted draft national policy on biodiversity offsets. It is also non-sensical how this would be applied? Does this proposed stratagem mean that twice the number of impacted protected trees would need to be secured on the "Offset site"? This is unlikely to be supported by DEFF Forestry Branch.

- For residual negative impacts on faunal species, 6.2.2 of Appendix J states that "The Offset Ratio to be targeted for the SCC (sic) should be at 1-2:1 i.e. offset should be 1 to 2 times the impacted population (DEA, 2017)". No such guidance is given in the draft national biodiversity offset policy.

- It is noted in the EIA that there are a 'large number of pan systems present' (p285), which are likely to trigger the need for wetland offsets. In Appendix J, Figure 13 in 6.2.3 states that "The offset ratio to be targeted for the wetland ecosystem should be at 2-5:1 i.e. offset should be 2 to 5 times the impacted area or population (DEA, 2017)". No such guidance is given in the draft national biodiversity offset policy. The application of the Wetland Offset calculator and principles applied by DWS would undoubtedly require a different approach. It is unclear why the pan systems could not easily have been avoided in the internal SEZ layout, especially if one of the recommendations in the "Offset strategy" is to avoid the large protected trees – which is likely impossible in an industrial complex such as that proposed.

The SEZ will impact negatively on Critical Biodiversity Area 2 (3.8.2) for which an offset ratio of 20:1 is given in the gazetted policy, as well as on an existing nature reserve (the southern SEZ site is located within the Nzhelele Nature Reserve (p789)). It is unclear whether these impacts will be permissible in the Nature Reserve, and even if they were, what actions would be required to offset this impact.

The SEZ is in close proximity to Important Bird and Biodiversity Areas and other regional/ national protected areas; Mapungubwe, Soutpansberg and Blouberg Important Bird and Biodiversity Areas 'surround the site' (BirdLife South Africa, 2015). Important Bird Areas within Limpopo Province house the two largest breeding colonies of *Gyps coprethes* (Cape Vulture) in the world at Blouberg IBA. No clear offset (or ecological compensation) strategy is mentioned for these impacts.

Any offset would need to be planned and designed, with a potential portfolio of suitable sites, making provision for both their protection and effective management over at least a 30-year timeframe (i.e. making associated financial provision), in close engagement with the provincial

[2] Offsets for species must be determined by the relevant taxa specialist on a case by case basis.
[3] It is assumed that the DEA 2017 reference is the gazetted policy; however, it is missing from the reference list in the Appendix.

conservation agency. (6.3.4 of Appendix J addresses the 'offsets funding model', but does not specify that finances for the offset must be adequate to provide for ecological management for at minimum 30 years.) The scope for finding suitable offset sites is limited in the region, particularly given the cumulative impacts scoped in Appendix K (Digby Wells Environmental – map extract below) and the likelihood of other listed activities also requiring offset sites.

According to the report "…the next step, should Environmental Authorisation be granted, would be to identify suitable land, similar in nature, geology and vegetation (biomes) and to follow the biodiversity offset framework and policy" (p8). The offset to compensate for residual negative impacts on biodiversity must be designed, and an implementation plan shown to be feasible, with associated financial and management assurance, before any decision on the proposed development can be made – not after authorisation is granted.

Without these assurances that an offset could and would be successfully provided, there would be a considerable risk of not meeting the NEMA principles; i.e. being unable to remedy impacts on biodiversity that could not be avoided or minimised. Ideally, and for a scheme of this scale, the offsets should be in place before any development and conversion of habitat begins.

The recommendation in the EIA that an environmental authorisation should only be considered if an avifauna assessment is undertaken 'to verify flight paths and raptors which may nest on the project site and be collected for relocation …as an integral part of the biodiversity offset plan' refers. This statement is wholly inappropriate: relocation of raptor nests is not an offset activity; even if it was ecologically sensible (which it is not), it is a move to reduce impacts. It is essential that such assessment be done to inform a decision and to enable the mitigation hierarchy to be applied: avoidance of impacts on Red List bird species must be prioritised.

Appendix J only looks at the direct footprint impacts of the SEZ on terrestrial ecosystems and species, and on wetlands. It does not consider impacts on the affected river systems (Sand, Limpopo) and their aquatic biota as a result of using the Limpopo as a proposed water source. Potential impacts on **this system, including on downstream ecosystems, must form part of the biodiversity offset's scope** (i.e. all potentially significant negative impacts, including direct, indirect and cumulative impacts, remaining after avoidance and minimisation must be remedied by the biodiversity offset).

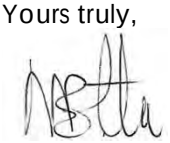
4. Summary

The Offset impacts are insufficiently identified and assessed. The offset strategy is wholly deficient and doesn't meet the requisite criteria in the draft Offset Policy. This perspective is based on:

- the failure to apply the mitigation sequence
- incorrect scoping of biodiversity impacts and ecosystem considerations
- inappropriate mitigation actions being recommended which make quantification of residual biodiversity impact almost impossible to determine
- faulty application of offset ratios and other metrics
- inadequate specificity of the nature of offset interventions, especially where they might be located, what must be achieved, who would be best placed to implement them, and how they must be funded
- no assurance of effectiveness of offset implementation or successful outcomes being achieved, or the funds being provided to guarantee this over an appropriate timeline.

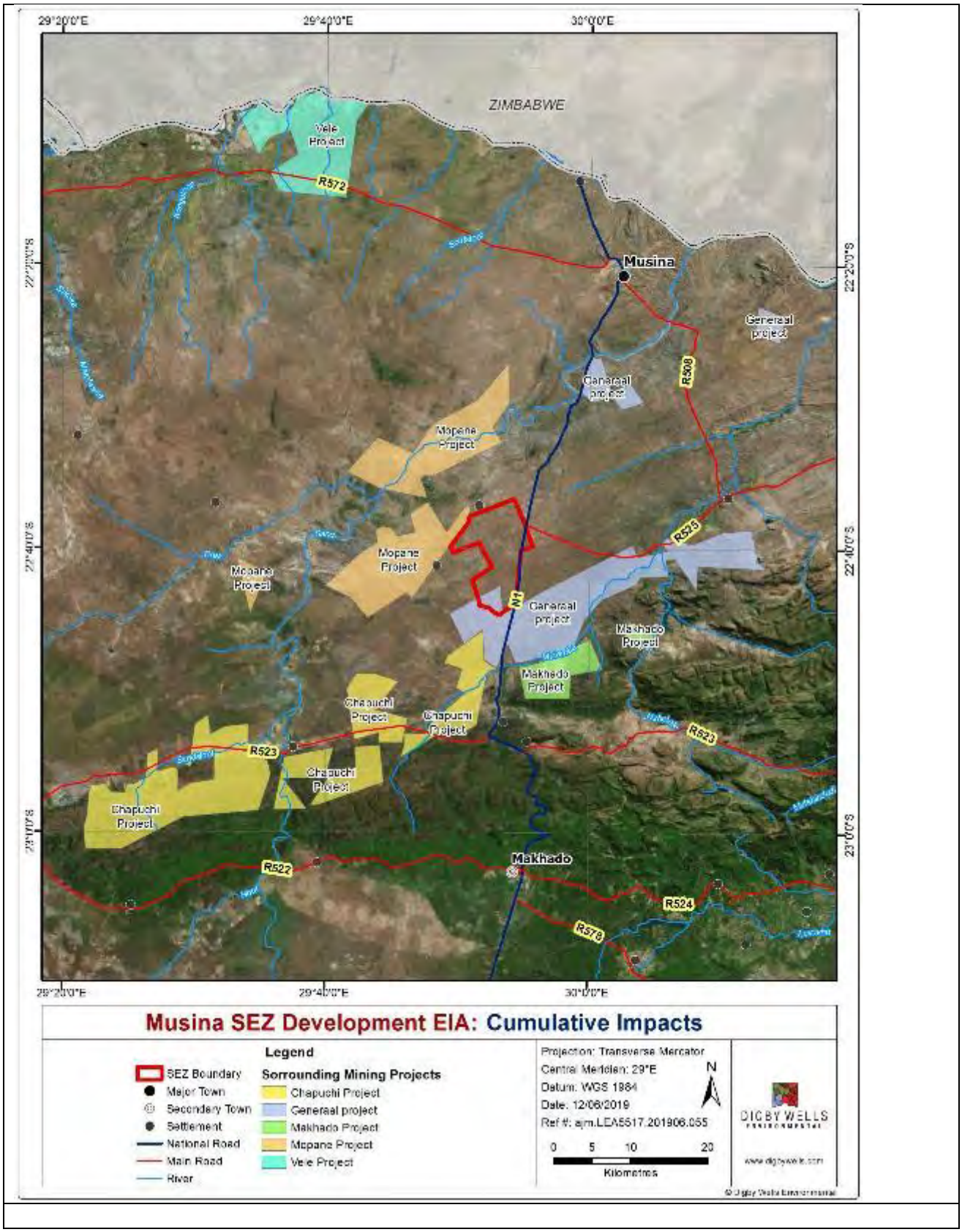
We urge LEDET to reject this Offset Strategy as it stands, and certainly to not allow it to inform their decision on the mitigation of biodiversity and related impacts from the proposed SEZ. To do so would set a dangerous precedent and likely result in legal challenge and jeopardise the appropriate use of biodiversity offsets elsewhere.

Yours truly,



Pr Sci Nat.

Map From Appendix K (Digby Wells Environmental)



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