



Centre for Environmental Rights

Advancing Environmental Rights in South Africa

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Your ref: 10580/20180301
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11 April 2018

Dear Sir

COMMENTS ON THE DRAFT SCOPING REPORT FOR THE PROPOSED MOKOLO AND CROCODILE RIVER (WEST) WATER AUGMENTATION PROJECT (PHASE 2)

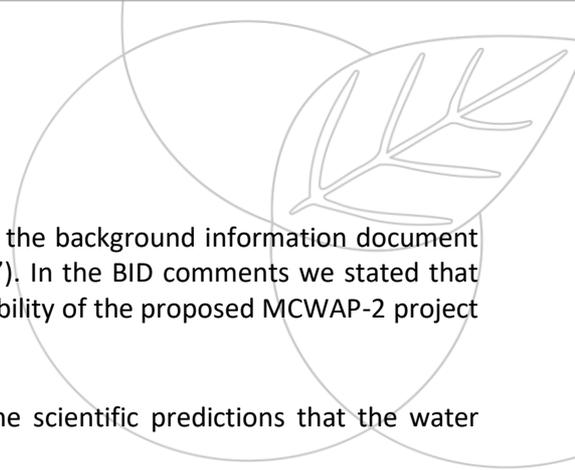
- 1 We act for Earthlife Africa NPC (“Earthlife”)¹ and groundWork² (“our clients”). The Centre for Environmental Rights (CER), Earthlife and groundWork, form part of the Life After Coal Campaign, a campaign which aims to discourage investment in new coal-fired power stations and mines; accelerate the retirement of South Africa’s coal infrastructure; and enable a just transition to renewable energy systems for the people.³
- 2 We confirm that our clients have been duly registered as interested and affected parties (I&APs) in relation to this project.
- 3 We submit these comments in response to the notification of 1 March 2018 titled “notice of review of draft scoping reports and public meetings in respect of the proposed Mokolo and Crocodile River (West) Water Augmentation Project (Phase 2)” (“MCWAP-2”, or the “project”).
- 4 We note that the notification refers to three separate components of MCWAP-2, namely: “*Water Transfer Infrastructure - transfer of water from Crocodile River (West) to the Steenbokpan and Lephalale areas; Borrow Pits - sourcing of construction material for the water transfer infrastructure; and River Management System - manage abstractions from, and the river flow in, the Crocodile River (West) between Hartbeespoort Dam and Vlieëpoort Weir, the Moretele River from Klipvoor Dam to the confluence with the Crocodile River (West), the stretch of Elands River from Vaalkop Dam to Crocodile confluence, and also the required flow past Vlieëpoort*”, but that the Scoping Report only deals with the first component – the water transfer infrastructure. Since these components are all intricately linked – especially the assessment of impacts on the giving and receiving water systems – we submit that they should not be separated in this manner and we reserve our clients’ rights to comment and make submissions on all the components of MCWAP-2.

¹ Earthlife is a registered non-profit company (NPC) with registration number 2017/449921/08. It was founded in 1988 to mobilise civil society around environmental issues in relation to people. Earthlife challenges environmental degradation and aims to promote a culture of environmental awareness and sustainable development in South Africa.

² groundWork is a non-profit environmental justice service and developmental organization working primarily in Southern Africa in the areas of Climate & Energy Justice, Coal, Environmental Health, Global Green and Healthy Hospitals, and Waste. groundWork is the South African member of Health Care Without Harm and Friends of the Earth International.

³ <https://lifeaftercoal.org.za/>.

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- 5 On 24 June 2016, we submitted comments, on behalf of Earthlife, on the background information document (BID) for MCWAP-2, published on 16 May 2016 (“the BID comments”). In the BID comments we stated that Earthlife had significant reservations about the feasibility and sustainability of the proposed MCWAP-2 project based on, *inter alia*:
- 5.1 the current water shortages throughout South Africa, and the scientific predictions that the water shortage will worsen;
 - 5.2 the impending and increasing impacts of climate change; and
 - 5.3 the communities and the agricultural industry which are dependent on water sources such as the Crocodile River, which will be negatively impacted and affected by MCWAP-2.
- 6 We pointed out that Earthlife is concerned about the impacts that the proposed MCWAP-2 poses for human health and the environment, and stated that all potential health and environmental impacts of MCWAP-2 must be **fully** assessed as part of the requisite assessments.
- 7 We stand by the BID comments, and make the following additional submissions on behalf of our clients and in relation to the Scoping Report, below.

I Summary of main points

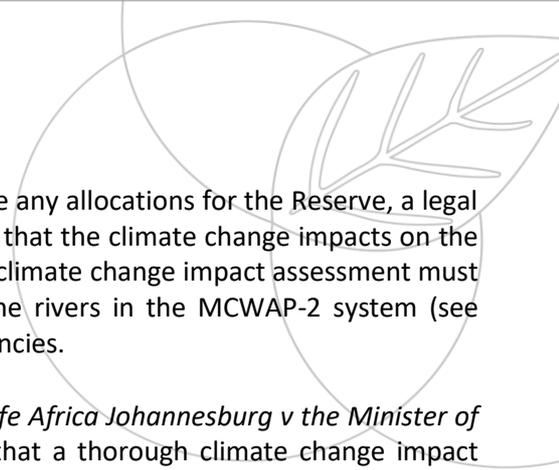
- 8 Under MCWAP-2, the Department of Water and Sanitation (DWS) proposes to spend R 13 billion⁴ to transfer 75 million m³ per annum of water from the Crocodile West catchment to the Mokolo catchment - beginning in 2023⁵ - in order to meet purported shortfalls in the Lephalale area. However, **DWS plans to implement this costly and risky inter-basin transfer to supply water primarily to proposed coal mines and coal-fired power plants⁶ in the Waterberg that are no longer necessary to meet South Africa’s energy or development requirements, would significantly increase South Africa’s greenhouse gas (GHG) emissions, and would further deteriorate the poor limited water resources and air quality in the region.** We have identified numerous deficiencies in the Scoping Report which must be addressed in the Environmental Impact Assessment (EIA) for the project.
- 9 The need and desirability of the project is based on incorrect assumptions around the need for additional coal-based electricity capacity.
- 10 The Scoping Report relies on outdated and faulty assumptions to estimate future water requirements in the MCWAP-2 receiving-system. For example, the Scoping Report estimates that a large proportion of the future water requirements in the Waterberg would be for new coal-fired power generation.⁷ However, as discussed further in paragraphs 18 to 26, circumstances around electricity demand and prices have changed significantly and new coal-fired power is not only **not** necessary, but it is expensive. Clean alternative energy options are available, which are cheaper and can meet South Africa’s energy needs. There is no need for additional coal-powered energy and the EIA should not assume that these energy projects are needed or that they all (or even any) will be built.

⁴ Department of Water and Sanitation, Republic of South Africa “For Written Reply Question No 3111” Date of Publication 13 October, 2017 (Internal Question Paper No. 36), Reply (a)(i)(bb)-(a)(ii)(bb).

⁵ 9.9, p94, Scoping Report.

⁶ Table 3, p 9, Scoping Report.

⁷ See Scoping Report, Table 3.

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- 11 The Scoping Report's projected water requirements also do not include any allocations for the Reserve, a legal requirement that takes precedence over all water uses. It is also vital that the climate change impacts on the water resources to supply MCWAP-2 be **fully assessed** in the EIA. The climate change impact assessment must study the effects of climate change on river flows throughout **all** the rivers in the MCWAP-2 system (see discussion in paragraphs 64 to 74). The EIA must address these deficiencies.
- 12 As discussed further below, in line with the recent judgment in *Earthlife Africa Johannesburg v the Minister of Environmental Affairs & Others*,⁸ the EIA process must also ensure that a thorough climate change impact assessment is conducted, which analyses the indirect and cumulative climate change impacts from the growth in coal mines, coal-fired power stations, and other industry that would be enabled by MCWAP-2. Such an assessment is critical because these developments would exacerbate South Africa's extreme vulnerability to the impacts of climate change,⁹ and because South Africa, and most of the world, has committed to capping and reducing GHG emissions under the Paris Agreement. However, MCWAP-2 would move South Africa in the wrong direction.
- 13 The EIA must also thoroughly assess other indirect and cumulative impacts from the growth in coal mining, power plants, and industry enabled by MCWAP-2; including water, air quality, and socio-economic threats, as these developments would likely harm the environment and human health (see discussion in paragraphs 83 to 94) and also further impact on the area's resilience to climate change. By way of an example, the projected industrial growth that would occur in the Waterberg-Bojanala Priority Area (WBPA) should be assessed: this air pollution priority area was designated by the Minister of Environmental Affairs in 2012 because of concerns regarding non-compliance with National Ambient Air Quality Standards (NAAQS). The EIA must assess the effect of this growth on the WBPA and its prospects of meeting its aim of ensuring compliance with NAAQS – where NAAQS, in certain areas, are already not being complied with.¹⁰ It is worth pointing out that, more than 11 and 10 years since the declarations of the Vaal Triangle and Highveld Priority Areas, respectively, there is regular non-compliance with the NAAQS - with attendant health impacts and violations of constitutional rights - largely as a result of industrial emissions. There is no reason to assume that the WBPA will not face the same fate if the extensive planned developments proceed.
- 14 In summary, without addressing these and other concerns identified below in the EIA, the Department of Environmental Affairs (DEA) cannot make an informed and rational decision about the potential need for, risks and benefits from MCWAP-2. A failure to do so will make the process susceptible to legal challenge.

II The Scoping Report fails to adequately and accurately motivate the need and desirability of the project

- 15 The EIA Regulations 2014 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.¹¹
- 16 Under the heading of need and desirability in the Scoping Report, it is stated that “[t]he IDP for the Lephalale LM (2016) acknowledges the need for MCWAP and specifically states the following: “It is imperative to note that the outcome of the MCWAP project need (sic) to be implemented to address expected water shortages **before any development in node area 1 will be viable**, as currently the area does not have sufficient water resources to **sustain any new development**”” (emphasis added).¹² However, it is not made clear to what extent such new development is needed.

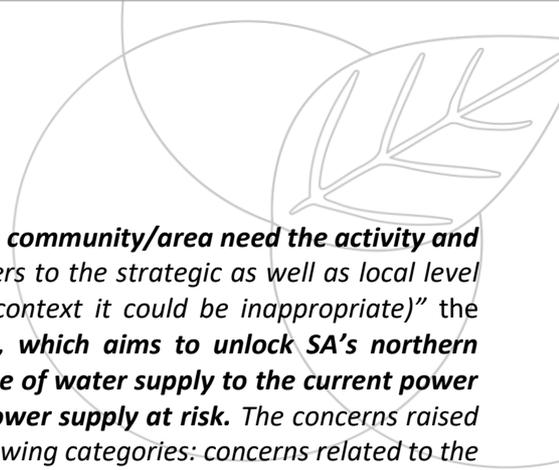
⁸ *Earthlife Africa Johannesburg v Minister of Environmental Affairs and others* [2017] 2 All SA 519 (GP)

⁹ Page 8, National Climate Change Response White Paper.

¹⁰ See 2017 State of the Air Report. http://www.airqualitylekgotla.co.za/assets/2017_1.3-state-of-air-report-and-naqi.pdf.

¹¹ Appendix 2, 1(b), EIA Regulations, 2014.

¹² Table 7, p 36, Scoping Report.



In response to the following question in the Scoping Report: **“Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate)”** the Scoping Report stated **“MCWAP-2A features prominently on SIP 1, which aims to unlock SA’s northern mineral belt in one of the poorest provinces (Limpopo). The assurance of water supply to the current power stations near Lephalale is not acceptable and places the country’s power supply at risk. The concerns raised by IAPs with regards to the proposed project primarily fall into the following categories: concerns related to the footprint of the physical infrastructure and associated impacts to land use as well as existing structures and infrastructure; concerns related to water availability in the Crocodile River (West); and concerns related to the cumulative impacts associated with the various developments that are linked to the Waterberg Coalfields.”**¹³ The alleged needs of the communities therefore only relate to an apparent need to “unlock the northern mineral belt”, but no mention is made of the communities requiring the additional water to come from MCWAP2. In fact, as shown above, water availability in the Crocodile River (which will be used by MCWAP-2) is highlighted as a concern from I&APs.

- 17 The Scoping Report’s inaccurate assessment that coal-fired power, and demands for electricity and more coal mining, will increase is based on, among other things, the outdated Integrated Resource Plan for Electricity 2010 – 2030 (promulgated in 2011) (“IRP 2010”).¹⁴ However, it is unreasonable to rely on the IRP 2010 to justify any projects because it is based on outdated and inaccurate assumptions about electricity demand, energy pricing, and feasibility of alternative electricity sources.
- 18 The IRP is supposed to be a “living plan”, which is updated every 2 years,¹⁵ but it has yet to be revised since it was published in early 2011. Draft IRP updates were published for comment in 2013 and then again in 2016 – but a revised IRP has not yet been published. The latest in the media is that the IRP update has been sent back to Cabinet for reprocessing, and that it will be finalised “very soon”¹⁶ and that it is a “high priority” for the Department of Energy.¹⁷
- 19 The IRP 2010 assumptions on projected energy demand are too high. For example, the IRP 2010 estimated electricity demand in 2016 to be approximately 310 terawatt-hour (TWh) per year, whereas actual demand was significantly lower, at just above 250 TWh per year.¹⁸ The IRP 2010 estimated demand in 2020 to be about 350 TWh per year, whereas the Council for Scientific and Industrial Research (CSIR) has forecast it to be 288 TWh per year.¹⁹
- 20 Moreover, although Eskom was facing an energy crisis at the time of the IRP 2010, it now has excess supply of electricity capacity. In January 2017, Eskom confirmed that it had a surplus of 5 600MW at peak and could meet any increase in demand until 2021.²⁰ In a statement of August 2017, Eskom Chief Executive Officer said: “[w]hereas security of power supply was the key concern two years ago, the focus has now shifted to managing surplus capacity”.²¹ Eskom’s Medium Term System Adequacy Outlook for October 2017, concludes

¹³ Table 7, p 37, Scoping Report.

¹⁴ Scoping Report, sections 3.4, 5.3.

¹⁵ P7, IRP 2010.

¹⁶ Para 13, <http://www.energy.gov.za/files/media/speeches/2018/Speech-by-Minister-at-the-REIPPPP-Bid-Windows3.5-and4Contractual-Close-signing-ceremony-04042018.pdf>.

¹⁷ See http://m.miningweekly.com/article/high-priority-irp-update-to-be-published-soon-2018-04-10/rep_id:3861.

¹⁸ Council for Scientific and Industrial Research (CSIR), *Least-cost electricity mix for South Africa by 2040 Scenarios for South Africa’s future electricity mix* (3 November 2016), http://www.ee.co.za/wp-content/uploads/2016/11/RE-Futures-Windaba-CSIR-3Nov2016_FINAL.pdf at 10.

¹⁹ Ibid.

²⁰ See <http://www.eskom.co.za/news/Pages/Jann24.aspx>.

²¹ See <http://www.eskom.co.za/news/Pages/Augg10.aspx>.

that “the system is adequate in the short- to medium-term to meet demand from 2017 to 2022 in all the scenarios studied”.²²

- 21 In addition, renewable energy sources from solar photovoltaic (“PV”) and wind are now much cheaper than they were when the IRP 2010 was promulgated. The IRP 2010 estimates that the cost of solar PV and wind energy would be between approximately 1-2 rand per kWh in 2015 and 1 rand per kWh respectively, while the actual cost – in the latest rounds of the renewable energy independent power producer (IPP) procurement programme - was 0.62 rand per kWh for both.²³ The price for new renewable capacity is also much cheaper than new coal. For example, the price of Thabametsi’s electricity, should the power plant be built, will be R1.03 per kilowatt hour (KWh).²⁴
- 22 Recent studies have concluded that there is no need for additional coal-fired power to meet South Africa’s energy needs, and that Eskom can also retire many of its old plants. For example, a November 2017 report by Meridian Economics (“the Meridian report”),²⁵ relying on modelling by the CSIR, found that in a 34 year, least-cost optimised, power system operation and expansion plan, no new coal-fired power capacity is built after Eskom’s Kusile power station. It stated, “**new coal and nuclear plants are simply no longer competitive. When new capacity is required, demand is met at lowest cost primarily from new solar PV and wind**” (emphasis added).²⁶
- 23 The Meridian report also concluded that Eskom should accelerate the decommissioning of three of its older coal-fired power stations (Hendrina, Grootvlei, and Komati) and curtail the completion of Kusile units 5 and 6 in order to save costs. The report found that these interventions can be achieved without affecting security of supply and could save Eskom up to R17 billion. Notably, CSIR’s system analysis for the study found that all of South Africa’s projected energy demands in both moderate and high demand scenarios can be met by new solar PV and wind, and without any new coal or nuclear energy, **including, Thabametsi power station**. The Meridian Report concluded:
- “[i]n both demand scenarios, coal-fired power stations provide most electrical energy until about 2025, after which coal’s contribution starts to decline (as older coal-fired plants are decommissioned). No new coal-fired power is built after Kusile (which is taken as committed in the reference scenarios), **as new coal is simply no longer competitive**. Demand is met primarily from new solar PV and wind generation. Renewable energy is supplemented by flexible technologies; storage (pumped storage and batteries) and open-cycle gas turbines for peaking. In the high demand scenario, combined cycle gas turbines are deployed after 2040. No new nuclear plants are built in any scenario either. **Coal and nuclear are no longer a part of South Africa’s least cost electricity mix**” (emphasis added).²⁷*
- 24 The Energy Systems, Economics, and Policy Group based at the Energy Research Centre (ERC), University of Cape Town, conducted a similar study that focused on the proposed Thabametsi and Khanyisa IPP power stations. ERC presented the findings of its study at the 27 March 2018 generation licence hearing for the proposed Thabametsi and Khanyisa coal IPP power stations. The presentation is attached as **Annexure A**. The study found that Thabametsi and Khanyisa would:

²² See section 6, page 12 at http://www.eskom.co.za/Whatweredoing/SupplyStatus/Documents/MTSAO_Oct2017Report.pdf

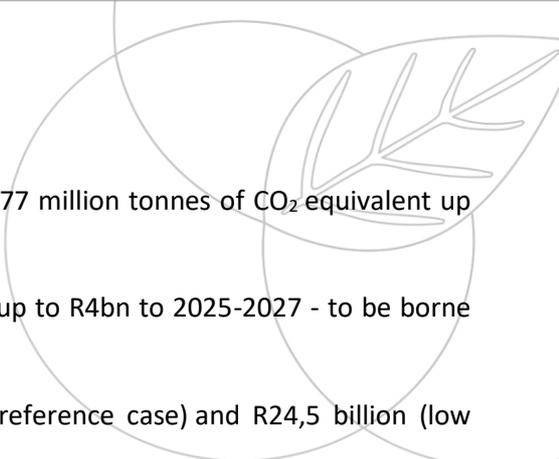
²³ *Ibid.*, at p. 6.

²⁴ See http://www.ee.co.za/wp-content/uploads/2016/10/New_Power_Generators_RSA-CSIR-14Oct2016.pdf at page 7.

²⁵ Available at http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskom-financial-crisis-and-the-viability-of-coalfired-power-in-SA_ME_20171115.pdf.

²⁶ P3, Executive Summary, Meridian Report.

²⁷ Meridian Study, p. 28.

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- 24.1 increase South Africa's GHG emissions by approximately 155-177 million tonnes of CO₂ equivalent up to 2050;
- 24.2 result in additional costs in the electricity sector every year of up to R4bn to 2025-2027 - to be borne by consumers; and
- 24.3 increase the overall system costs by between R19,3 billion (reference case) and R24,5 billion (low demand scenario) in present value terms.²⁸
- 25 The ERC study concluded that, because South Africa has a major surplus of baseload generation, further new capacity (from Medupi, Kusile, and renewables) is coming online, and electricity costs have risen and are putting the economy and citizens under increasing pressure, Thabametsi and Khanyisa should not be built as they would not provide least-cost, or even necessary, electricity to South Africa, and would prevent cheaper investments later. Importantly, the power stations would exacerbate the situation of oversupply in the short- and medium-term. This would lower the load factors at Eskom plants and put those plants and jobs at risk, exacerbating the "utility death spiral". The study further noted that future energy demand could be met mostly by renewable energy options.
- 26 The findings in these studies should, our clients submit, make DWS reconsider its plans for a costly water infrastructure project which assumes that coal-fired power and coal mining in the Waterberg will increase significantly up to 2030.²⁹ DWS must comprehensively assess whether the remaining unbuilt units for Medupi and any new coal-fired power plants in the receiving area, such as the Thabametsi power station, are necessary and likely to be completed.
- 27 DEA's 2017 Guideline on Need and Desirability sets out a list of questions which should be addressed when considering need and desirability of a proposed development. These questions include:
- 27.1 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?³⁰
- 27.2 How were the Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.) taken into account?³¹
- 27.3 What is the socio-economic context of the area, and considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?³²
- 28 The Guideline 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 would be required is for the relevant report (first part of the Basic Assessment Report or the Scoping Report) to

²⁸ P32, ERC Presentation (Annexure A to these comments).

²⁹ See Scoping Report, Table 3.

³⁰ 1.6 p 12, 2017 Guideline on Need and Desirability.

³¹ 1.1.8,p 11, Guideline on Need and Desirability.

³² 2.2., p 15, Guideline on Need and Desirability.

clearly answer all the questions including a clear indication which questions do not require further information to be generated during the assessment.”³³

- 29 We submit that the Scoping Report has not given adequate and full regard to these considerations, and has failed to adequately identify key issues and questions to be addressed in the EIA.
- 30 For the reasons set out above, we submit that the questions around need and desirability for MCWAP-2 must be seriously reconsidered in light of: the fact that there is no need for additional coal electricity capacity or coal mines in the country; the high climate, health and environmental impacts of MCWAP-2; and the high costs of implementing MCWAP-2.
- 31 As mentioned above, to the extent that the envisaged development entails new coal plants and coal mines, this cannot serve as an adequate justification for the project being necessary nor desirable given the current circumstances of excess supply and the ability of alternative electricity sources to provide electricity which is cheaper than coal, with less environmental impacts.
- III The EIA must reassess future water demand for MCWAP-2 because the Scoping Report’s projections are based on outdated and flawed assumptions concerning the growth of coal-fired power plants and mines and do not allocate water for meeting the Reserve or propose an adequate assessment of climate change impacts on water availability**
- 32 As discussed above and below, the Scoping Report predicts a major expansion of coal-fired power stations and mining in the Waterberg, which would require a significant increase in water supply. However, these projections are not accurate because they are not reflective of current realities around: South Africa’s electricity demand (which is much lower than initially projected); Eskom’s excess capacity; and alternative and technically feasible energy sources which are much cheaper than coal-fired electricity and also less water-intensive. As such, coal-fired power is no longer necessary to meet South Africa’s energy demands. As a result, the Scoping Report substantially overestimates future water requirements for coal-fired power stations and coal mines (which primarily supply power plants) in the Waterberg.
- 33 In addition, the Scoping Report does not allocate water for the Reserve, a significant and unlawful omission, and it is unlikely to adequately assess the impacts of climate change on the water systems to supply MCWAP-2 – both of these factors will significantly impact on the availability of water for MCWAP-2.

The Scoping Report’s stated motivation for MCWAP-2 and projected water requirements

- 34 The Scoping Report claims that MCWAP-2 is needed to meet primarily the growing water demands of coal mines and coal-fired power plants in the Lephalale area. According to the Scoping Report:

“[D]emand will increase in the Lephalale area due to the following planned and anticipated consequential developments due to the Waterberg coalfields: Construction of Eskom’s Medupi Power Station; Possible development of further Eskom power stations; Possible development of power stations by Independent Power Producers (IPPs); Extension of the Grootegeeluk mining operations and further mines; Possible exploitation of gas; and accelerated growth in the population in the area.”³⁴

³³ P 18, Guideline on Need and Desirability.

³⁴ Scoping Report, section 3.2. See, also, p. 136 (“The need for MCWAP-2A stems from satisfying the water requirements of the following (including strategic water users): Power generation in Waterberg; Coal for power generation in the Waterberg; Coal to support power stations in Mpumalanga; Industrial/mining for other purposes; and Urban use by Lephalale Municipality”).

- 35 Based on meeting the above and other “needs”, Table 3 of the Scoping Report sets out the combined water requirement projections for the MCWAP-2 project until 2050.³⁵ For example, the Scoping Report projects that water requirements for Eskom coal-fired power plants and Exxaro coal mines³⁶ will increase from approximately 24 m³ per annum in 2019 to 43 million m³ per annum in 2030.³⁷ The Scoping Report projects that “*Department of Energy future users*”, which include “*CF3 Mines*”, “*IPP Other*”, and “*CF3 Power Generation*” (it is not clear what these projects are), will increase their water requirements from approximately 6 million m³ per annum to 40 million m³ per annum during this same time period.³⁸ It predicts that Lephhalale Municipality’s water use, which the Scoping Report refers to as “*Social Users*”, will increase from approximately 12 million m³ per annum to 14.4 million m³ per annum over the same time period.³⁹ There is no mention of supplying water for agriculture.
- 36 The Scoping Report also indicates (in discussing the implications of the “no go” alternative) that, if the project is not built, it would have the following implications:
- 36.1 under-utilisation of the Waterberg coal reserves;
 - 36.2 the development of new power stations is of high strategic importance with tight timeframes. Without a suitable source of water, the new power stations will not be possible, with potential future energy shortages;
 - 36.3 the absence of water will suppress development, with associated socio-economic implications on a national scale; and
 - 36.4 without MCWAP-2A, Eskom will not be able to implement the Flue-Gas Desulphurisation (FGD) technology at the Medupi Power Station to reduce sulphur emissions, which will violate the related condition in Eskom’s World Bank loan.⁴⁰
- 37 As mentioned above, the Scoping Report’s assessment that coal-fired power will increase is based on, among other things, the outdated IRP 2010.⁴¹ The result is that the Scoping Report overestimates both the need for coal-fired power and the need for coal mines.
- 38 It is our clients’ assertion that FGD for the Medupi power station (for those units that are completed) can be the only justifiable proposed use of water listed above as this will have a positive public health benefit (in addition to domestic water use, insofar as MCWAP-2 is intended for this) and given Eskom’s **legal obligations** to meet the minimum emission standards prescribed under the National Environmental Management: Air Quality Act, 2004. It must be assessed, however, whether MCWAP-2 is needed for Medupi’s FGD alone, given that the need for new coal-fired power and for the expansion of coal mining in the Waterberg has been significantly overestimated in the Scoping Report (as explained further below). Furthermore, it is worth pointing out that although the FGD proposed by Eskom does require additional water, the amount of additional water depends on the technology used. The amount of FGD water can be reduced by about 30% with technology widely used in Europe, and potentially up to 100% with emerging new technology.

³⁵ The water requirements of users in the MCWAP System used in Table 3 were obtained from the Post Feasibility Bridging Study Report, which has not been made available to the public.

³⁶ Defined as committed commercial users (Eskom & Exxaro), and this includes the Matimba Power Station, Medupi Power Station, the IPP Exxaro Initiative, Exxaro Mine for Matimba and Medupi, Mpumalanga, Export and other Industrial use. See, Scoping Report, at p. 9 Table 3.

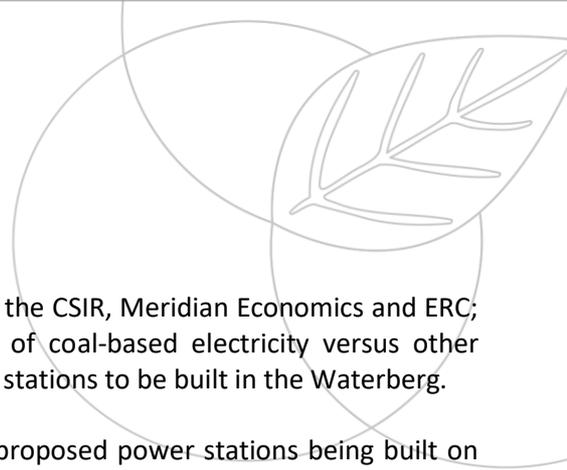
³⁷ *Id.*

³⁸ *Id.* (emphasis added).

³⁹ *Id.*

⁴⁰ Scoping Report, section 10.3.2.

⁴¹ Scoping Report, sections 3.4, 5.3.



The Scoping Report overestimates the need for new coal-fired power

- 39 As explained in detail above, and based on: the research of, *inter alia*, the CSIR, Meridian Economics and ERC; Eskom's statements around excess capacity and the current prices of coal-based electricity versus other sources of electricity, there is simply no need for new coal-fired power stations to be built in the Waterberg.
- 40 The Scoping Report and EIA must reconsider the likelihood of these proposed power stations being built on this basis.
- 41 As discussed in paragraph 81 below, the Scoping Report and EIA must also thoroughly consider whether South Africa's international and domestic obligations to curtail its GHG emissions could force the country to abandon or move away from coal-fired power in the near future. It is submitted that this is clearly the case. This would also reduce the future demand for costly MCWAP-2 water.

The Scoping Report overestimates the expansion of coal mining in the Waterberg

- 42 The recoverable coalfield reserves in the Waterberg are estimated to be 15,847 million tonnes, with 13,111 million tonnes of that amount being low-grade bituminous coal that cannot be exported.⁴²
- 43 A study in the Journal of the South African Institute of Mining and Metallurgy concluded that: *"the low-grade Waterberg coals with their high ash content and low yields are a significant stumbling block to further development of the coalfield. Any new exploitation will only be financially feasible if a market can be found for the vast quantities of low-grade coal that will be produced."*⁴³
- 44 According to the study, the market for this low-grade coal is domestic coal-fired power plants, as well as gas, steel, and chemical production. The study concluded that:

"Sufficient water is the primary key to enabling exploitation, together with an adequate market for the large volumes of lowgrade coal. As the most likely consumer of this coal will be either a power station or a petrochemical complex, the need for additional energy will be a driving force in the development of this coalfield" (emphasis added).⁴⁴

- 45 As discussed above, the Scoping Report assumes an increase in the water requirements for mines from 2019 to 2050.⁴⁵ As there is no need for new coal power generation, the development of Waterberg coalfields would also be significantly curtailed. Thus, the Scoping Report's projected water requirements also potentially significantly overestimate the need for expanded and new coal mining in the area.

The Scoping Report's projected water requirements do not include the Reserve

- 46 The National Water Act, 1998 (NWA), section 16 states that *"[a]s soon as reasonably practicable after the class of all or part of a water resource has been determined, the Minister must, by notice in the Gazette, determine the Reserve for all or part of that water resource ... A determination of the Reserve must – ... ensure that adequate allowance is made for each component of the Reserve."* Furthermore section 18 states that *"[t]he Minister, the Director-General, an organ of state and a water management institution, must give effect to the*

⁴² Jeffrey, L. (July 2005). "Challenges associated with further development of the Waterberg Coalfield" (PDF). The Journal of The South African Institute of Mining and Metallurgy 105, p. 453

⁴³ Ibid, p. 454.

⁴⁴ Ibid, p. 453 (Emphasis added).

⁴⁵ Table 3, p9 Scoping Report, and p4.

Reserve as determined in terms of this Part when exercising any power or performing any duty in terms of this Act.”

- 47 The Minister of Water and Sanitation has – as of yet – only determined the reserve for one water resource in South Africa - the Olifants-Doorn⁴⁶ catchment.
- 48 Although the Scoping Report recognises that the “Reserve is central to water resource management and enjoys priority of use according to the National Water Act (No. 36 of 1998)”,⁴⁷ the Report’s projected water requirements fail to allocate **any** water to the Reserve or anticipate any determination of the reserve in the future, even though this is legally required by the NWA. Nor is any indication given on what the reserve for the relevant catchments actually is and/or how it will be accounted for in the MCWAP-2 EIA.
- 49 Moreover, the Scoping Report indicates that **the EIA will not discuss meeting Reserve requirements, but vaguely asserts that this discussion will be part of the licensing process of DWS**. It notes: “The Reserve will assist DWS to make informed decisions regarding the authorisation of future water use as well as the operation and management of the water resource. The Reserve requirements (EWR) will ultimately feed into the licensing process of DWS and the operation of the system.”⁴⁸
- 50 This is an **unacceptable omission**, as the determination of the Reserve is a legal requirement and will undoubtedly impact on the water available for MCWAP-2 – it must be given priority.
- 51 The DWS has noted that:

“[c]urrently, water availability and water use are in balance [in the Mokolo catchment]. However, within the provisions of the National Water Act as stipulated in the National Water Resources Strategy, **there is a need to meet the water requirements of the Reserve (Basic Human Needs and Ecological) in terms of water quantity and quality. Taking these requirements into account there is insufficient water to maintain the current balance. Added to this, it is anticipated that water demand will increase with new developments in the Mokolo Catchment, such as new or expanded mining activities and new power stations**” (emphasis added).⁴⁹

- 52 Similarly, the Draft Limpopo Water Management Area North Reconciliation Strategy noted that meeting the ecological reserve in the Mokolo River catchment would **reduce yield in the Mokolo Dam by 57%**.⁵⁰ The Draft Reconciliation Strategy provides:

“[I]t is evident that **the impact of implementing [the ecological reserve] has an adverse effect on the available yield. Almost all of the major dams within the study area will not be able to meet their current allocations if the desktop [ecological reserves] are implemented. More detailed studies have to be conducted to better quantify the [ecological reserve] and subsequent impact on the yield of large dams for the following phases of the Draft Reconciliation Strategy. It might be that a compromise can be made between the [ecological reserve] and the impact on the available yield**” (emphasis added).⁵¹

⁴⁶ See <https://cer.org.za/wp-content/uploads/2018/02/Olifants-Doorn.pdf>.

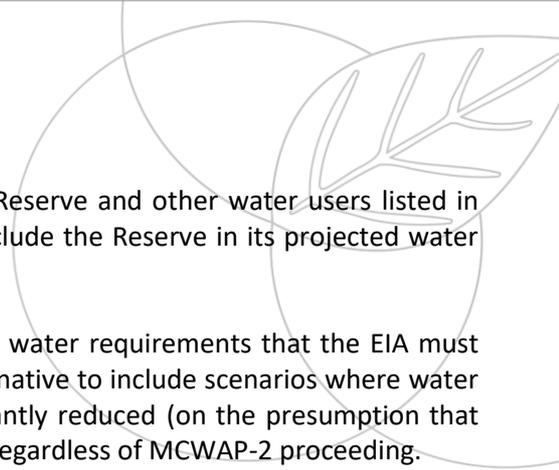
⁴⁷ Scoping Report, p. 137

⁴⁸ Scoping Report, p. 141.

⁴⁹ Department of Water Affairs, CLASSIFICATION OF SIGNIFICANT WATER RESOURCES IN THE MOKOLO AND MATLABAS CATCHMENT: LIMPOPO WATER MANAGEMENT AREA (WMA) AND CROCODILE (WEST) AND MARICO WMA: WP 10506 INFORMATION ANALYSIS REPORT: MOKOLO AND MATLABAS CATCHMENTS: LIMPOPO (March 2012), p 1, [http://www.dwa.gov.za/rdm/WRCS/doc/Gap%20Analysis%20Report Mokolo WRC Final 29%20Mar%202012.pdf](http://www.dwa.gov.za/rdm/WRCS/doc/Gap%20Analysis%20Report%20Mokolo%20WRC%20Final%2029%20Mar%202012.pdf) (emphasis added).

⁵⁰ DWS, Limpopo Water Management Area North Reconciliation Strategy (Draft), (September 2016), Figure 4.2.

⁵¹ Limpopo Water Management Area North Reconciliation Strategy (Draft), section 4.1.1.

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- 53 MCWAP-2 is unlikely to be able to meet requirements for both the Reserve and other water users listed in Table 3 of the Scoping Report. It is thus critical that the EIA must include the Reserve in its projected water requirements.
- 54 In summary, there are major flaws in the Scoping Report's projected water requirements that the EIA must address. The EIA must also re-assess the Scoping Report's no-go alternative to include scenarios where water requirements for coal-fired power plants and coal mines are significantly reduced (on the presumption that these projects cannot and do not proceed), as this is a likely outcome regardless of MCWAP-2 proceeding.
- 55 Failing to adequately assess the full impacts of climate change on water resources will also affect the water available for MCWAP-2. This is, however, addressed in further detail below.

IV The EIA process must require that a comprehensive climate change impact assessment is conducted

- 56 The 8 March 2017 judgment in the case of *Earthlife Africa Johannesburg v the Minister of Environmental Affairs & Others*⁵² ("the Thabametsi judgment") confirmed that project proponents must conduct a comprehensive climate change impact assessment (CCIA) as part of the EIA process in accordance with EIA Regulations and the requirements of the National Environmental Management Act, 1998 (NEMA).⁵³ In that case, Earthlife had challenged the Minister's decision to grant the Thabametsi coal-fired power plant its environmental authorisation without first considering the climate impacts of the project. The Court held that climate impacts were not adequately considered by the DEA or the Minister prior to granting the environmental authorisation.
- 57 Importantly, the Court held that a CCIA requires more than just a quantification of projected GHG emissions. Project proponents must consider broader impacts such as, in the case of Thabametsi, that the power station would be based in a water-stressed region, thereby "*aggravat[ing] the impact of climate change in the region by contributing to water scarcity, raising in turn questions about the viability of the power station over its lifetime.*"⁵⁴ It also stated that such an assessment would be best done by means of a professionally-researched report.⁵⁵
- 58 The Scoping Report's discussion of climate change does not meet the requirements of NEMA and the EIA Regulations as confirmed and set out by the Court in the Thabametsi judgment. Its discussion of climate change impacts is limited only to general comments on the potential threat from climate change to the water yield in the system. Section 11.3.2 notes:

"As is common accepted practice, the potential impact of climate change to river flows has been considered in the hydrological modelling, where a margin for error in the future predictions has been considered. This is

⁵² *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* [2017] 2 All SA 519 (GP), available at: <https://cer.org.za/wp-content/uploads/2017/03/Judgment-Earthlife-Thabametsi-Final-06-03-2017.pdf>.

⁵³ The court papers are available on the CER website at <https://cer.org.za/programmes/pollution-climate-change/litigation/the-proposed-thabametsi-ipp-earthlife-africa-johannesburg-v-department-of-environmental-affairs-thabametsi-power-project-pty-ltd-and-others>.

⁵⁴ Para 44, Thabametsi judgment.

⁵⁵ The Court also held that the mere existence of policy calling for new coal-based electricity (such as the IRP or a Ministerial Determination in terms of section 34 ERA) does not exempt the decision-maker from exercising its independent discretion on the assessment of the impacts, stating that the "assertion that the instruments constitute binding administrative decisions not to be circumvented to frustrate the establishment of authorised coal-fired power stations is unsustainable, as is the notion that their mere existence precludes the need for a climate change impact assessment in the environmental authorisation process. Policy instruments developed by the Department of Energy cannot alter the requirements of environmental legislation for relevant climate change factors to be considered." See paras 95 – 96, Thabametsi judgment.

based on historical data of wet and dry periods for the area, as well as all known water use that affects river runoff.”

59 It further states:

“Studies conducted where various global climate models were used to estimate the likely implication on water availability (yield) of system showed widely varying results and found that either increases or decreases will occur in water availability as a result of Climate Change. Due to these observations it has been acknowledged that Climate Change adds another layer of uncertainty to water resource assessment and planning. Considering the recent advances made in developing methods of assessing uncertainty in water resource analysis there are proposals under consideration by DWS and other funding organisations to expand the uncertainty assessment methodology by also incorporating the effects of Climate Change. The key in achieving this is by integrating available research products of Climate Change and uncertainty. This will require developing procedures (including software systems) and establishing analytical techniques that can be used in studies such as this. The water resource analysis that was carried out for this study should be reviewed once the proposed analytical techniques and procedures have been developed to account for Climate Change as an uncertainty.”⁵⁶

60 This discussion is insufficient and flawed because, among other things:

60.1 the hydrological model referred to above was not provided to the public, making it impossible to evaluate how the model assessed the potential impacts of climate change to river flows. The vague methodological description provided in the Scoping Report provides no further clarity (i.e., *“where a margin for error in the future predictions has been considered ... based on historical data of wet and dry periods for the area, as well as all known water use that affects river runoff”*);

60.2 although the Scoping Report recognises that climate change *“adds another layer of uncertainty to water resource assessment and planning”*, it suggests that no *“procedures”* or *“analytical techniques”* are available to *“account for Climate Change as an uncertainty.”* The Scoping Report notes that the water resource analysis should only be reviewed for climate change impacts once *“analytical techniques and procedures have been developed to account for Climate Change as an uncertainty.”* This is incorrect, and suggests that the EIA may not complete a comprehensive CCIA. As the report of Bradley Udall, attached to these comments as **Annexure B**, and the Thabametsi Power Plant climate resilience report, attached to these comments as **Annexure C**, demonstrate, it is possible to predict, with a high level of certainty, the potential threats from climate change to water yield of the Crocodile West River and Mokolo River catchments; and

60.3 in addition, the Scoping Report avoids any discussion of the manner in which MCWAP-2 might aggravate the Waterberg’s resilience to climate change, or of indirect or downstream GHG emissions that would be enabled by MCWAP-2.

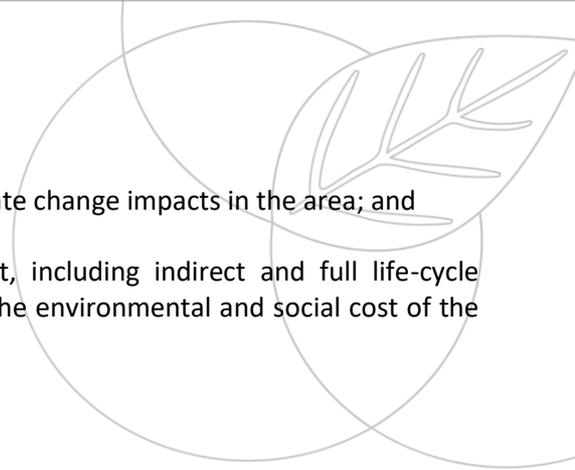
61 Moreover, the list of specialist studies in the Scoping Report to be conducted as part of the environmental review does not include a CCIA.⁵⁷

62 The EIA must complete a comprehensive CCIA that is consistent with the Thabametsi decision and which includes the following elements:

62.1 an assessment of the potential threats to the system water yield from climate change;

⁵⁶ See also, Scoping Report, Table 53.

⁵⁷ Scoping Report, section 14.4.4.

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- 62.2 a discussion of how the project might aggravate potential climate change impacts in the area; and
- 62.3 an assessment of GHGs that would result from the project, including indirect and full life-cycle emissions, cumulative emissions, climate health impacts and the environmental and social cost of the GHG emissions.

63 These elements are discussed in turn.

The EIA must assess the potential threats to the MCWAP-2 system's water yield from climate change

64 Recent reports have found that climate change would reduce the water yield throughout the MCWAP-2 system.

65 According to the 2016 Limpopo Department of Economic Development, Environment and Tourism (LDEDET) Provincial Climate Change Response Strategy (2016-2020):

*"...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 sectors such as agriculture and electricity generation (i.e. the energy sector) will face severe effects from climate change**"(emphasis added).⁵⁸*

66 Furthermore, the LDEDET report found:

" [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 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."⁵⁹

67 The report concluded: *"in most climate change scenarios projected for the Limpopo river basin in South Africa, future water supply availability will 'worsen considerably' by 2050."*⁶⁰

68 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.⁶¹ 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;*

⁵⁸ Limpopo Department of Economic Development, Environment and Tourism Climate Change Response Strategy (2016 to 2020), available at http://www.ledet.gov.za/wp-content/uploads/2016/11/Limpopo_Climate_Change-Response_Strategy_-2016_2020_Final.pdf, p. 19.

⁵⁹ LDEDET, p. 4

⁶⁰ LDEDET, p. 27

⁶¹ The Academy of Science of South Africa (ASSAf) 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-change-science-and-technology>.

on human health, due to heat stress and disease spread, particularly in urban areas; and on biodiversity, due to shifting habitat suitability.”⁶²

- 69 Thabametsi’s Climate Resilience Assessment Report (CRAR) found that climate change is a high risk to the availability of water resources in the Mokolo Catchment.⁶³ It noted that climate change projections for the region indicate a likely increase in drought conditions and higher temperatures, which would reduce water availability. The CRAR explained “that climate-related variables will have an impact on water resources; notably, higher temperatures are likely to bring about increased evaporation losses from dams and rivers, and increased irrigation water requirements.”⁶⁴
- 70 Importantly, the CRAR noted that climate change “risks and impacts do not appear to be considered in the context of basin-level programs, including the Crocodile West River Reconciliation Strategy 2012 and the draft Limpopo WMA North Reconciliations Strategy 2016, both relevant to this project, **adding uncertainty in the extent to which proposed allocations will be met in the context of a changing climate**” (emphasis added).⁶⁵
- 71 The report of Bradley Udall, Senior Water and Climate Research Scientist/Scholar at the Colorado Water Institute in Colorado State University, attached as annexure B, is consistent with the findings of the CRAR. It concludes that the strong preponderance of scientific evidence indicates that flows in the Mokolo and Crocodile (West) Rivers will likely significantly decline as the 21st century warms due to higher evaporation and evapo-transpiration and increased incidents of flash droughts.⁶⁶ Udall cautioned: “**South African water and infrastructure planners and government should prepare for significant Mokolo and Crocodile (West) River flow reductions and refrain from actions that will increase the risks of undesired outcomes. Maladaptive actions would include increasing the demands on these already over-allocated water systems, and contributing to additional warming by increasing emissions of greenhouse gasses through the construction of long-lasting, new coal-fired power plants**” (emphasis added).⁶⁷
- 72 In summary, there is resounding agreement that climate change threatens water flow throughout the MCWAP-2 system. The EIA must assess the potential threats to the MCWAP-2 system’s water yield from climate change, including on the Vaal, Crocodile (West), and Mokolo catchment areas. The potential for climate change to reduce flow in these catchments is a major risk to the long-term viability of the project and the EIA must assess the feasibility of MCWAP-2 to deliver the committed amounts of water in light of predicted climate change reduced flows.

The EIA must assess how MCWAP-2 might aggravate climate change harms in the area

- 73 As mentioned, MCWAP-2 would enable the significant growth of new polluting coal mines, power stations, and other industry. Not only will these industries contribute significantly to climate change (nationally and globally) through their GHG emissions, they will exacerbate the impacts of climate change in the Waterberg area by utilising, and potentially polluting, scarce and limited water resources, which are needed by communities and the environment for climate adaptation and resilience, and which will be (and are being) significantly reduced as a result of climate change.
- 74 The EIA must, therefore, assess how MCWAP-2 will impact the surrounding area’s resilience to climate change.

⁶² *Ibid.* at p. 15.

⁶³ CRA pp. 31, 56 and p. xi.

⁶⁴ CRA, p. 31.

⁶⁵ CRA, p. 31.

⁶⁶ Udall Report, p. 27.

⁶⁷ Udall Report, p. 28.

The EIA must assess the indirect or downstream GHG emissions that would result from the project

75 The Scoping Report concedes: “MCWAP-2A will enable developments associated with the Waterberg coalfields to proceed”.⁶⁸ This will include the development and/or expansion of coal-fired plants, coal mines, and other industry.

76 These developments will significantly increase South Africa’s GHG emissions.

77 For example, Thabametsi power station, which would rely on MCWAP-2 water for its water requirements, would have very high GHG emissions. Thabametsi’s final CCIA found:⁶⁹

“the Project’s GHG emissions are estimated to be 5 186 749 t [Carbon dioxide equivalent] CO₂e annually during operations on completion of Phase 1, and 9 879 522 t CO₂e annually on completion of Phase 2. Using benchmarks of international lender standards with respect to the magnitude of annual emissions from a development ... the magnitude of this Project’s GHG emissions is considered to be ‘Very Large’ – the highest possible rating, which translated to an overall significance rating of ‘High (Negative)’.”⁷⁰

78 A fully operational Medupi Power Station would emit 26.7 Mt per year before FGD and 26.0 Mt per year, after FGD.⁷¹

79 In addition, there are several other power stations and coal mines proposed in the Waterberg that would rely on MCWAP-2 water and would individually and cumulatively emit significant GHG emissions, given the nature of their processes as coal plants and coal mines. **All** coal-fired power stations emit high volumes of GHGs by virtue of burning coal for electricity. The only means to substantially reduce these emissions would be through carbon capture and storage technology, which is neither technically nor financially feasible for South Africa.

80 The EIA must assess these indirect and cumulative GHG emissions.

81 This is particularly important considering that South Africa has committed to reduce its GHG emissions through its ratification of the Paris Agreement.⁷² There is a real risk that new coal-fired power plants will be unable to operate for their intended operational lifespan as South Africa’s commitments would require it to reduce its emissions significantly by 2035, and 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.⁷³ All NDCs are required to become progressively stricter, with South Africa’s next intended NDC due in 2020.⁷⁴

82 In summary, the Scoping Report’s discussion of climate change – and intended assessment of climate change in the EIA - is wholly inadequate and legally flawed. The EIA must conduct a comprehensive CCIA which

⁶⁸ Scoping Report, p 175.

⁶⁹ Thabametsi’s CCIA consists of a Summary Report for the CCIA and PIA (“the Summary Report”) and annexures, including a GHG Assessment Report (appendix D to the Summary Report); Climate Resilience Assessment Report (appendix E to the Summary Report); and a Water Resource Report (appendix E1 to the Summary Report). The relevant CCIA reports can be accessed at <https://cer.org.za/programmes/pollution-climate-change/key-correspondence>. The other documents that make up the CCIA, as well as the PIA and EMP, can also be made available on request.

⁷⁰ P18, Summary Report.

⁷¹ Figure 3, 2014 Medupi Atmospheric Impact Report.

⁷² P1, 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).

⁷³ P1, NDC. Available at

<http://www4.unfccc.int/ndcregistry/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf>.

⁷⁴ Adoption of the Paris Agreement, para 23 at p4.

includes: the potential threats to the system water yield from climate change; how the project might aggravate potential climate change impacts in the area; and an assessment of GHGs that would result from the project, including indirect and cumulative emissions.

V The Scoping Report's discussion of potentially significant environmental issues does not address indirect threats

83 In addition to climate change, the Scoping Report does not adequately discuss indirect threats from the project to air quality, land/soil, water resources, and associated human health, and the socio-economic environment.

84 Section 13 of the Scoping Report addresses potentially significant environmental issues that will be assessed during the EIA. The Scoping Report describes several *“general [terms of reference] that will apply to all the EIA specialist studies to be undertaken for the proposed project”*, including that the EIA will:

“6. Assess the impacts (direct, indirect and cumulative) in terms of their significance (using suitable evaluation criteria) and suggest suitable mitigation measures. In accordance with the mitigation hierarchy, negative impacts should be avoided, minimised, rehabilitated (or reinstated) or compensated for (i.e. offsets), whereas positive impacts should be enhanced. A risk-averse and cautious approach should be adopted under conditions of uncertainty.”⁷⁵

85 The Scoping Report, however, does not follow its own terms of reference because it does not discuss any indirect impacts from the project, including to air quality, water resources, human health, and the socio-economic environment.

86 As mentioned, MCWAP-2 would allow for the development of many power plants, coal mines, and other industry in the Lephalale area (although it is not clear what the additional industrial developments might be, nor when they would be constructed and when they would operate). These developments have the potential to significantly pollute air and water, as well as harm human health and the socio-economic environment.

87 The air quality impacts from power plants and coal mines are notoriously bad. For example, in the Highveld Priority Area, DEA found that Mine Haul Roads account for 49 percent of the particulate matter (PM¹⁰) emissions, while power plants accounted for 12% of PM¹⁰, 73% of nitrogen oxide (NO_x), and 82% of sulphur dioxide (SO₂) emissions.⁷⁶ Moreover, elevated levels of these pollutants seriously threaten human health. For example, a 2017 study commissioned by groundWork⁷⁷ links the air pollution from PM2.5 particulate matter of Eskom's coal-fired power stations to 2 239 equivalent attributable deaths annually. It also states that these pollution impacts cost South Africa more than USD 2,3 billion annually, through premature deaths, hospital admissions, and lost working days.⁷⁸ Despite these potential threats, there is no indication in the Scoping Report that the EIA will assess the air quality and health impacts which will indirectly result from the project.⁷⁹

88 Coal-fired power plants and mines also threaten water quality. Mining pollutes water in many ways.⁸⁰ One of the most damaging sources of water pollution is acid mine drainage (AMD) from both active and abandoned

⁷⁵ Scoping Report, Section 14.4.2.

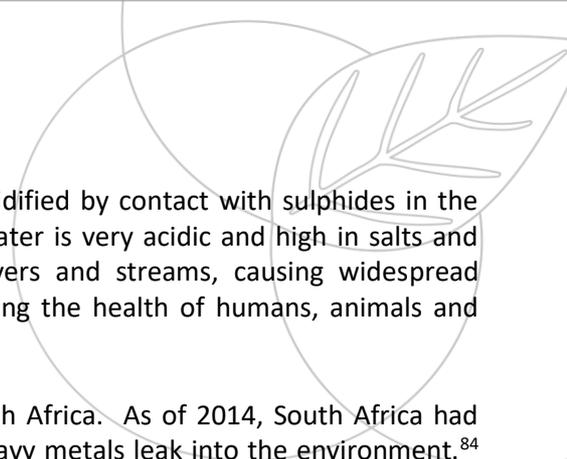
⁷⁶ DEA, Highveld Priority Area Air Quality Management Plan (2011), Table 5.

⁷⁷ Available at <https://lifeaftercoal.org.za/wp-content/uploads/2017/04/Annexure-A4.pdf>.

⁷⁸ Holland Report, p15, <https://lifeaftercoal.org.za/wp-content/uploads/2017/04/Annexure-A4.pdf>.

⁷⁹ Scoping Report, section 14.4.

⁸⁰ See e.g. Bench Marks Foundation, pp. 39-42; World Wildlife Fund South Africa, *Coal and Water Futures in South Africa* (2011), p. 41, available at <http://www.wwf.org.za/?4981/coalwater>.



mines.⁸¹ AMD is water flowing from mine sites that has become acidified by contact with sulphides in the mining waste rock that have been exposed to air.⁸² The resulting water is very acidic and high in salts and heavy metals. AMD often leaches into aquifers or flows into rivers and streams, causing widespread devastation by sterilising soils, contaminating food crops, and harming the health of humans, animals and plants.⁸³

- 89 Abandoned and closed mines are the biggest source of AMD in South Africa. As of 2014, South Africa had approximately 6000 abandoned mines from which acid water and heavy metals leak into the environment.⁸⁴ Active mining operations also contribute to the problem. For example, in 2012, a storm event caused run-off ponds at coal-handling facilities to overflow with AMD into the Boesmanspruit Dam near Carolina in Mpumalanga, contaminating the water in the reservoir and leaving the people of Carolina and the Silobela Township without a safe water supply for seven months. The community members had to purchase water from alternative sources at their own expense.⁸⁵
- 90 The storage of post-combustion waste from coal-fired power plants and its dispersion into the water and air also threatens human health and ecosystems. In South Africa, Eskom alone produces 25 million tons of solid waste residue (referred to as coal ash) annually.⁸⁶ Coal ash residue is made of very fine particles that are corrosive and contain toxic metals and soluble salts which can leach into the environment, polluting surface and ground water.
- 91 Coal ash leachate will commonly escape the ash and enter and contaminate natural groundwater and surface water systems. Numerous researchers have observed worldwide the adverse environmental impacts caused by the leaching of coal ash to groundwater and surface waters from both old and new ash deposits.⁸⁷ Leaching takes place from both old and new sites, and peak leaching of hazardous chemicals occurs **many decades after disposal** and can **persist for hundreds of years**.⁸⁸ Thus, ash disposal sites are potential sources of groundwater and surface water contamination for many decades after ash deposition has ceased.⁸⁹ Many researchers have also documented the potential harm from coal ash contamination in drinking water to human health. Some of these health impacts include cancer and damage to the nervous systems and other organs, especially in children.⁹⁰
- 92 However, the terms of reference included in the Scoping Report for the Aquatic Impact Assessment neglect to address any of these indirect threats from the project.⁹¹

⁸¹ See Centre for Environmental Rights, *Zero Hour: Poor Governance of Mining and the Violation of Environmental Rights in Mpumalanga*, (May 2016) ("Zero Hour"), p.1, available at <http://cer.org.za/wp-content/uploads/2016/06/Zero-Hour-May-2016.pdf>, p. 4.

⁸² WWF South Africa, *Coal and Water Futures in South Africa* (2011), p. 40, http://awsassets.wwf.org.za/downloads/wwf_coal_water_report_2011_web.pdf.

⁸³ Zero Hour, p. 4.

⁸⁴ Bench Marks Foundation, *South African Coal Mining: Corporate Grievance Mechanisms and Mining Impacts* (2014), p. 34, available at http://www.bench-marks.org.za/research/policy_gap_9.pdf.

⁸⁵ Zero Hour, p. 5.

⁸⁶ See <http://www.eskom.co.za/news/Pages/Feb20.aspx>.

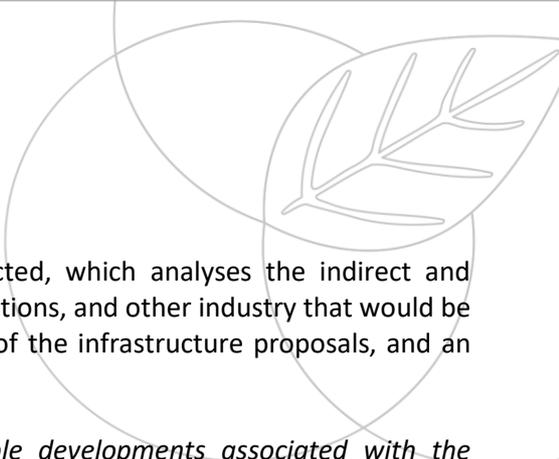
⁸⁷ See Office of Solid Waste & Emergency Response, EPA, Human and Ecological Risk Assessment of Coal Combustion Wastes 2-4 (draft) (Apr. 2010) at 4-11.

⁸⁸ Ibid.

⁸⁹ Sandhu, S.S., Mills, G.I., Sajwan, K.S. (1993). "Leachability of Ni, Cd, Cr, and As from Coal Ash Impoundments of Different Ages on the Savannah River Site." In Keefer, R.F., Sajwan, K. S. [eds.], *Trace Elements in Coal and Coal Combustion Residues*. Lewis Publishers: Boca Raton.

⁹⁰ See e.g., Physicians for Social Responsibility, *Coal Ash: Hazardous to Human Health*, <http://www.psr.org/resources/coal-ash-hazardous-to-human-health.html>; Physicians for Social Responsibility and Earthjustice, *Coal Ash: The toxic threat to our health and environment* (September 2010), <http://www.psr.org/resources/coal-ash-the-toxic-threat-to-our-health-and-environment.html>.

⁹¹ Scoping Report, section 14.4.3.1.

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- 93 We submit that a health impact assessment (HIA) must be conducted, which analyses the indirect and cumulative impacts from the growth in coal mines, coal-fired power stations, and other industry that would be enabled by MCWAP-2. An HIA should include a cost benefit analysis of the infrastructure proposals, and an economic assessment of health impacts from the proposed projects.
- 94 Although the Scoping Report concedes that “MCWAP-2A will enable developments associated with the Waterberg coalfields to proceed”, it does not discuss the potential socio-economic threats and harms from those developments.⁹² These would include: harm to human health from water and air pollution; the financial burden of the health costs as well as reduced productivity as a result of the health impacts; harm from water pollution on the environment and natural resources including wildlife, which will threaten sectors such as agriculture and tourism; and reduced water available for communities, farmers, and the environment as a result of the water being utilised and contaminated by coal mines, power plants, and other industries. The EIA must **fully** consider these issues. This is a legislative requirement and a failure to do so will make the EIA open to legal challenge.

VI Conclusion

- 95 In light of the above, it is our recommendation that the Scoping Report be significantly amended before it is submitted to DEA, and made available again for public comment, to address the deficiencies highlighted above.
- 96 The proposed schedule for finalising the EIA allows the DWS and its consultants approximately one week to address public comments before submitting the final Scoping report to the DEA.⁹³ This is an unreasonably short amount of time to meaningfully take into account all public comments, especially considering the cost, complexity and scale of the project, the potential significant environmental impacts, and the sensitive and complex nature of water distribution in a water-stressed area.
- 97 Moreover, the one-month time period allowed for the public to comment on the Scoping Report is inadequate and does not allow the public to meaningfully evaluate the Scoping Report – nor is this amount of time adequate for comment on an EIA and the many technical reports that would be submitted as part of the draft EIA. The CER has on, numerous occasions, made submissions on unreasonable timeframes provided for in the NEMA EIA Regulations for the EIA process. 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 – 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 final Scoping Report. Our clients’ rights in this regard are reserved.
- 98 Please ensure that adequate consideration is given to these comments, and keep us updated on the progress of this matter.

Yours faithfully

CENTRE FOR ENVIRONMENTAL RIGHTS

⁹² Scoping Report, p 175.

⁹³ P 229, Scoping Report.

per: 

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