

COMMENTS RECEIVED ON THE DRAFT CLIMATE CHANGE AND PALAEOLOGICAL IMPACT ASSESSMENT REPORT: 27 JANUARY 2017 – 27 FEBRUARY 2017

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SUBMISSION FROM THE SOUTH AFRICAN HERITAGE RESOURCES AGENCY (SAHRA), DATED 17 FEBRUARY 2017		
1.	<p>An appeal to the EA was lodged because of complaints raised about the adverse effects on the climate the coal-fired power stations create. The appeal was declined, but 2 resolutions were passed as part of the Appeal resolution. The first was to submit Climate Change Impact Assessment report followed by a PIA report. A PIA was conducted in 2014 for the project area and SAHRA commented on the report however, the PIA was not included in the Environmental Impact Assessment. A new assessment has been made as a condition of the Environmental Authorisation to be conducted and sent out for public review within 6 months of receiving the new Environmental Authorisation.</p> <p>The 2014 PIA report was summarised by SAHRA's 23/07/2014 comment as follows:</p> <p><i>"Millsteed, B., July 2014. Full palaeontological heritage impact assessment report on the site of the proposed new Thabametsi power station and three associated alternative power line routes, near Lephalale, Limpopo Province.</i></p> <p><i>Prof. Millsteed undertook the site survey for the Palaeontological Impact Assessment. Some of the farms along Transmission Line Preferred Alternative 3 could not be surveyed because of the lack of access permission. However, it is expected that the palaeontological significance of the formations of these farms was sufficiently assessed along other sections of the three proposed alternatives.</i></p> <p><i>The northern section of the three alternatives and the power station are underlain by the Clarens Formation of the Karoo Supergroup, which is of high palaeontological significance, and by the Eendragtpan Formation which is not well known from a palaeontological perspective, but could include vertebrate fossils of the transition between the Eodicynodon and the Cyanognathus Assemblage Zones. Any fossils identified in this formation would be of valuable research significance given the scarce information available on it. The central section of Alternatives 2 and 3 is underlain by the Karoo Supergroup (Swartrant Formation), which is expected to contain Glossopteris flora. The southern section of alternatives 2 and 3 is underlain by the Kransberg Subgroup of the Waterberg Group (Mogalakwena Formation) of low palaeontological significance. The final section of Alternative 3 is located within Cenozoic Alluvium, which is normally of low palaeontological sensitivity, however, given the rarity of fossils in regoliths, if any fossil material is identified in the alluvium, it would be of high scientific significance."</i></p> <p>SAHRA commented on the findings of the report as follows:</p> <p><i>"Regular monitoring by an ECO should be undertaken for the sediments of the Karoo Supergroup and Cenozoic regoliths. If any new evidence of fossil material is identified, work must halt immediately in the area and a palaeontologist must be contacted to inspect the findings. If the newly discovered findings are of palaeontological significance, the specialist will require to apply for a permit in terms of s. 35(4) of the NHRA."</i></p> <p>In addition to monitoring as requested in the Final comment, the ECO must undertake a report on the monitoring must be submitted to the case, outlining any excavations through the</p>	<p>Recommendations made by SAHRA have been included within the EMPr.</p>

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	<p>sediments of the Karoo Supergroup and Cenozoic regoliths. The report should include photos of any fossil uncovered.</p> <p>If any newly discovered heritage resources during construction and operation phases of the proposed development, then a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings at the expense of the developer.</p> <p>If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required at the expense of the developer. Mitigation will only be carried out with a permit in terms of section 35 of the NHRA (Act 25 of 1999). You may contact SAHRA APM Unit for further details: (Nokukhanya Khumalo/John Gribble 021 202 8652).</p> <p>If any unmarked human burials are uncovered and the archaeologist called in and the police find them to be heritage graves then mitigation may be necessary and the SAHRA BGG Unit must be contacted for processes to follow (Mimi Seetelo 012 320 8490).</p>	
SUBMISSION FROM JANNA BEDFORD-OWEN, DATED 22 FEBRUARY 2017		
2.	<p>In response to the Climate Change Impact Assessment Report available for comment, I have the following comments/questions:</p> <ul style="list-style-type: none"> The study (Climate Change IA Report) looks at the project specifically, using national examples as a base for comparison. The cumulative impacts are not as clearly detailed as they could be. Please can you or the relevant specialist include an overview of current and future (2030 and 2050) coal fired power station emissions nationally, noting operational plants and life spans, as well as proposed coal power stations. This would provide the public with a better idea of the projects contribution to GHG's relative to national planning e.g. plant X emits X and will do so for X yrs, plant Y, emits Y and will cease operation in yr Y etc. thus the total national emissions will increase, remain neutral or decrease by ## while the Thabametsi is in operation and a conclusion can be drawn on whether it will indeed have a national/cumulative contributing impact. The need for water use licensing is stated in the EMPR. Is this process underway and what studies will be included therein? Similarly, the need for an AEL is noted; is this pending/underway and what studies are included? I would appreciate more details on direct air emission impacts in this regard viz. dust, PMx, SOx, NOx, COx, VOCs etc. <p>Thank you in advance for your response.</p> <p>Lastly, while the project itself is controversial not necessarily the work completed for it, I do appreciate your work as an EAP. I understand difficulties faced when maintaining client relationships and the need to remain independent and environmentally objective.</p>	<ol style="list-style-type: none"> Analysis of this sort is an extension to the typical scope of work for a project-level CCIA. It is more aligned with the scope of work for a strategic environmental assessment of the Government's IPPPP and/or the Coal Baseload IPP programme. However, sections 3 and 4 of the Climate Change Impact Assessment Report (CCIA) have dealt with the emissions intensity of the South African Grid and of coal-fired powered plants in South Africa and the impact of the GHG emissions for the project on the South African grid emissions factor on the basis of the information available, including the publicly available schedule for the decommissioning of certain of Eskom's coal-fired power stations (more fully detailed in the CCIA). In this regard, Eskom has published data on the CO₂ emissions intensity of its coal-fired power plants in 2010/2011. ERM has confirmed with Eskom that this data does not include CH₄ and N₂O emissions and Eskom has not provided it with the CO₂e data for the plants. In the absence of this data, ERM has estimated the GHG emissions intensity factor to Eskom's coal-fired power plants, using publicly available information on the combustion technology of each of the plants shown in Figure 3.4, and by applying IPCC Tier 3 emission factors (Figure 3.5). In accordance with the Guidance Note regarding water availability and water use licensing for the Coal Baseload Independent Power Producer (IPP) Procurement Programme (Guidance Note) issued by the Department of Water and Sanitation (DWS), the Thabametsi Project has already commenced its IWULA pre-application process and has already been issued with a non-binding confirmation of water availability from the DWS. The water for phase 1 of the Thabametsi Project will be sourced from an already existing allocation issued to Exxaro Coal (Pty), under authorisation from DWS. The draft IWULA has already been provided to the public for comment and the final IWULA will be submitted for public review in due course. The AEL application is currently being updated. This application is supported by the EIA studies, specifically the Air Quality Impact Assessment and will be submitted to the relevant authorities and for public review in due course.
SUBMISSION BY CENTRE FOR ENVIRONMENTAL RIGHTS ON BEHALF OF EARTH LIFE AFRICA, DATED 27 FEBRUARY 2017		
3.	<ol style="list-style-type: none"> As you are aware, we act for Earthlife Africa Johannesburg ("our client"), a registered interested and affected party (I&AP) in relation to the environmental impact assessment process for the proposed Thabametsi power station. We submit herein, our client's comments on the draft climate change impact assessment ("draft CCIA") and the draft palaeontological impact assessment ("draft PIA") for the independent power producer (IPP) Thabametsi coal-fired power station ("Thabametsi") proposed by Thabametsi Power Company (Pty) Limited. 	<p>It is confirmed that Earthlife Africa Johannesburg (Earthlife) is a registered interested and affected party (I&AP) in relation to the environmental impact assessment process for the proposed Thabametsi power station.</p> <p>The comments have been recorded as part of the process currently being undertaken and will be submitted to the Department of Environmental Affairs (DEA) together with the final climate change impact assessment (CCIA) and paleontological impact assessment (PIA) for the independent power producer (IPP) Thabametsi coal-fired power station. The content of the final CCIA addresses, among</p>

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		other things, issues raised in comments of I&APs, including Earthlife. In relation to Earthlife's comments on the PIA, this document was made available to the public and the South African Heritage Resources Authority has accepted the PIA.
3	We place on record that our client's comments on the draft CCIA and PIA, in no way constitute an acknowledgement that the Minister's decision to call for these assessments, in the absence of a decision to set aside the environmental authorisation, was lawful. Our client's rights in this regard are fully reserved.	Comment noted. No response required.
	The draft CCIA	
4	We refer to our comments on the draft scope of work report (DSR) of 25 May 2016 ("the DSR comments") and to the comments on the final scope of work report of 10 November 2016 ("the FSR comments"). We stand by the DSR and FSR comments and submit that they must be considered alongside these comments.	The comments on the draft and final scope of work reports have been recorded as part of the process currently being undertaken and will be submitted to the DEA together with the final CCIAR and PIA for the independent power producer (IPP) Thabametsi coal-fired power station.
	Requirements for the CCIA	
5	References to the draft CCIA refer to the 'Climate Change Study and Palaeontological Impact Assessment: Summary Report for Public Review, 27 January 2017' ("draft summary report") and various appendices.	Comment noted. No response required.
6	We do not intend to repeat the DSR or FSR comments; however, we do wish to re-emphasise the following as indispensable requirements for the CCIA. The CCIA must consider several aspects of the relationship between the proposed project and climate change, including:	The CCIAR was prepared in accordance with the Scope of Work approved by the DEA on 16 January 2017, including the additional requirements of the DEA made known to the applicant on acceptance of the Scope of Work. Prior to its acceptance, the Scope of Work Report was subject to a comprehensive public participation process, undertaken firstly in April/May 2016 and further in October/November 2016, the content of which informed the final approved Scope of Work. Earthlife was an active participant in the public participation process.
6.1	the project's direct impacts on climate change. In addition to simply considering the extent of greenhouse gas (GHG) emissions to arise from the project, this must include as assessment of: indirect and full lifecycle emissions; cumulative emissions; and the environmental and social cost of the GHG emissions;	In approving the Scope of Work, the DEA was obliged to take into account the comments and responses generated in the public participation process. The DEA also had available to it and was required to take into account, the comments and responses generated during the scoping phase of the proposed Project. In light of all of this information before it, the DEA approved the Scope of Work which it assessed to be consistent with the requirements of NEMA and other applicable legislation.
6.2	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	The applicant is therefore not obliged by law or required by the DEA, to include issues which are beyond the ambit of the approved Scope of Work. The content of the CCIAR, is consistent with the approved Scope of Work and adequately addresses the impacts of all project phases on climate change.
6.3	how predicted climate change effects on the environment and society – at both national level and at the scale of Lephalale - will be aggravated by the project's impacts. This would include the ways in which the proposed project would impact on South Africa's own capability of adapting to a changed climate. This is a particularly fundamental consideration, which does not appear to have been given adequate consideration in the CCIA, as will be explained more clearly below.	However and notwithstanding the approved Scope of Work, the applicant, through its CCIAR, has also taken into consideration the points raised by the CER on behalf of Earthlife and has extended the Scope of Work (without any obligation in law to do so) and addressed them to the extent it is able to do so within the context and within the information available to its advisors, as set out below.
		6.1. Direct and indirect emissions
		While the project's direct impacts on climate change cannot be assessed, the CCIAR sets out an assessment of the greenhouse gas (GHG) emissions (carbon footprint) associated with the construction, operations and decommissioning of the proposed Thabametsi power station. The carbon footprint includes all direct GHG emissions from sources owned or under the operational control of the Thabametsi Project and all indirect emissions from the consumption of purchased electricity in line with guidance from international standards including the International Finance Corporation's (IFC) Performance Standard 3 on Resource Efficiency and Pollution Prevention.
		More particularly, the impact of these GHG emissions (and therefore the impact of the project in terms of contribution to global climate change) is assessed by way of comparing estimated annual GHG emissions from the project with South Africa's baseline and projected

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		<p>annual GHG emissions, through reference to GHG magnitude scales for projects from various lender standards, and through the benchmarking of the Project's emissions and energy performance against other coal-fired power stations in South Africa and worldwide.</p> <p>In relation to the environmental and social costs of the GHG emissions, section 2.1 of the CCIAR notes that a traditional impact assessment is conducted by determining how the proposed activities will affect the state of the environment prior to development of a project. In the case of GHG emissions, this process is complicated by the fact that the impact of GHG emissions on the environment cannot be quantified within a defined space and time. The greenhouse effect occurs on a global basis and the geographical source of GHG emissions is irrelevant when considering the future impact on the climate. CO₂ has a residence time in the atmosphere of approximately 100 years by which time emissions from a single point source have merged with other anthropogenic and natural (e.g. volcanic) greenhouse gas emissions. Therefore it is not possible to link emissions from a single source – such as the Thabametsi Project – to particular environmental and social impacts in the broader study area.</p> <p>In addition, there are no established, universally-acceptable guidelines for estimating the social costs of carbon (SCC) related to a single project, firstly due to the complex nature of climate change and its drivers and secondly, because any assessment of the extent of climate change requires value judgements about the relative importance of temporal impacts. In 2010, the US Environmental Protection Agency, through a presidential executive order, adopted a US-specific framework for estimating social costs of carbon as part of Environmental Impact Assessments. However, the 2017 Technical Support Document to this executive order clearly points out that there are too many uncertainties with such an assessment and that the models used are imperfect and incomplete, and as such SCC estimates should be treated as provisional until improved scientific and economic information is available. The United Kingdom recently considered policy-level assessments of the social costs of carbon but has not applied them at project-level. South Africa, also, does not have a framework for estimating SCC.</p> <p>In the circumstances, the environmental and social costs and impacts of the Project have been assessed in the CCIAR (and accompanying annexures) to the extent it is able to do so within the context and within the information available to its advisors. Further details regarding cumulative emissions and the project's GHG impact assessment can be found in section 4 of the CCIAR on pages 50 and 51.</p> <p>6.2. The impact of climate change on the Project</p> <p>A climate resilience assessment (CRA) for the Thabametsi Power Station is annexed as part of the CCIAR. The CRA highlights key climate-related risks to the project, taking into account future climate change impacts in the study area and the effect on water resources required for the Thabametsi Power Station.</p> <p>In addition, a Water Resources Report (WRR), annexed to the CRA, was commissioned by the applicant, in order to understand the potential impacts of climate change on water resources in respect of the development of the Thabametsi Power Station in Lephalale, Limpopo Province. The WRR expands on the CRA with respect to water issues, and seeks to explore what the impacts could be from climate change projections which have relevance to the Thabametsi Project's water supply from MCWAP-1 and MCWAP-2 schemes and the management thereof.</p> <p>In this respect, it should be noted that the project's IWULA is only for the first phase, for which water will be obtained from Exxaro's already existing allocation of water from the MCWAP-1 scheme.</p> <p>6.3. Predicted climate change effects on the environment and society</p> <p>As stated above, a traditional impact assessment is conducted by determining how the proposed activities will affect the state of the environment described as the baseline. As noted in Section 2.1 of the CCIAR, in the case of GHG emissions, this process is complicated by the fact that the impact of GHGs on the environment cannot be quantified within a defined space and time. The greenhouse effect occurs on a global basis and the point source of emissions is irrelevant when considering the future impact on the climate and it is not</p>

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		<p>possible to link emissions from a single source – such as the Thabametsi Project – to particular environmental and social impacts in the broader study area.</p> <p>In respect of the project's impact on South Africa's capability to adapt to a changed climate, section 4.2.4 of the CCIAR also assesses the degree to which the planned project is consistent with South Africa's stated climate change and energy policy, including comparison with the country's Peak, Plateau and Decline (PPD) target.</p>
7	<p>As stated in both the DSR and FSR comments, the CCIAR should be a comprehensive and accurate assessment of the climate change impacts of the project, which meets the requirements of the National Environmental Management Act, 1998 (NEMA) and s24 of the Constitution.</p>	<p>As stated in the response above, the CCIAR (and its accompanying annexures) is a comprehensive assessment of the climate change impacts of the Project which meets the requirements of the DEA, NEMA and the Constitution and has further been conducted in line with accepted international good practice.</p>
8	<p>The Comments and Responses report ("C&R report"), appendix C5 to the draft summary report, states that "the expectations as to what may be achieved by a study at project level must be realistic" and further refers to the need to balance the environment and "positive socio-economic impacts" associated with the project and "particularly so in respect of a project which is being developed in the national interest and in South Africa, a country that is facing a national energy crisis." We have, on numerous occasions, pointed out, and do so again, that this project is not in the national interest, nor is there an energy crisis, which necessitates the power station. In fact, Eskom has had excess capacity for several months (and at least since May 2016, as evidenced by the systems status briefing, which showed that Eskom had 11000 MW of excess capacity daily), and renewable energy projects have added significant capacity.</p>	<p>South Africa's electricity generation plans for the period 2010 to 2030 are set out in the Integrated Resource Plan for Electricity 2010-2030 (2010 IRP). The 2010 IRP was adopted by Cabinet, and thus represents State policy. The 2010 IRP expressly envisaged that coal fired power plants would be established by independent power producers, in 2014/2015 "in order to avoid security supply concerns" and that these privately operated power stations would generate electricity through the fluidised bed combustion process. The Project is therefore a necessary project, pursuant to national interest.</p> <p>In addition, the revised draft Integrated Resources Plan for period up to 2050 (2016 IRP), recently available for public comment, includes all projects that have been committed to (which includes the Thabametsi Power Station) in the 2016 IRP update base case. The 2016 update base case was produced by updating the optimisation model (using the 2010 IRP as a base) with the latest assumptions and input parameters. A number of government policy positions imposed in the IRP 2010-30 were maintained, <i>inter alia</i>, emissions constraints, which included government policy to reduce GHG emission. Therefore, the Thabametsi Power Station has been considered in the context of the realistic energy supply required in South Africa.</p> <p>In amplification of the above, it is noted that in January 2017, Eskom had reported a surplus of 5 600MW at peak that could meet any increase in demand until 2021. However, the Thabametsi Power Station is envisaged to only come online in 2021/22 and as such, will not add to the current excess capacity, which is anticipated to hold only until 2021.</p>
9	<p>With Medupi and Kusile already in the pipeline; with Eskom's possible plans to extend the lives of its oldest power stations; and with a decrease in electricity demand, it is incorrect and misleading to continue painting a picture of this power station being needed to solve an electricity shortage crisis that does not exist. In any event, any electricity needs would be much more favourably met by renewable energy, which will not have the same risks and impacts, as shown in the CCIAR.</p>	<p>Please refer to the response in the comment above. The Thabametsi Project has been established pursuant to the 2010 IRP and constitutes a legitimate policy decision. The 2010 IRP has not been legally challenged and the basis of complaint is not one which can or ought to be addressed as part of comments to the CCIAR.</p>
10	<p>The fact that the assessment is being done "at project level" does not exempt Thabametsi from its duty of care under NEMA; its obligation in terms of the NEMA Environmental Impact Assessment (EIA) Regulations, 2010 to assess cumulative impacts;8 or its obligation not to infringe on the constitutional rights of the communities likely to be impacted by this project. These expectations are not unrealistic – as suggested in the C&R report – and have been shaped by legal requirements. All our client asks is for Thabametsi to perform a fair and accurate assessment.</p>	<p>The CCIAR contains a comprehensive assessment of the GHG emissions associated with the construction, operations and decommissioning of the proposed Thabametsi Power Station.</p> <p>As stated above, in the response to comment 6.1 above, in terms of the impact of the GHG emissions, section 2.1 of the CCIAR notes that a traditional impact assessment is conducted by determining how the proposed activities will affect the state of the environment prior to development of a project. In the case of GHG emissions, this process is complicated by the fact that the impact of GHG emissions on the environment cannot be quantified within a defined space and time and it is not possible to link emissions from a single source – such as the Thabametsi Project – to particular environmental and social impacts in the broader study area. In the circumstances, the environmental and social impacts of the Project have been assessed to the extent it is able to do so within the context and within the information available to its advisors and the applicant submits that it has performed a fair and accurate assessment in terms of its obligations under NEMA and all other applicable law.</p>
11	<p>We note that in the C&R report - as with the C&R report for the FSR – Thabametsi again tries to distance itself from the international developments and good practice in relation to CCIAs, stating, <i>inter alia</i>, that "legislation and guidelines from other countries cannot be applied in a South African context nor is it practical or feasible to consider in the</p>	<p>Thabametsi has not been trying to distance itself from international developments and good practice in relation to CCIARs. The CCIAR and PIA are largely based on South African guidelines, as contemplated and pursuant to the agreed scope of work. It must however be pointed out that recourse was also had regard to international practice. For instance, because South Africa has no specifically defined thresholds to understand GHG emissions impact or magnitude within its environmental legislation, this assessment of magnitude</p>

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	<p><i>context of the climate change impact assessment for the Thabametsi power station". As submitted in the FSR comments, the CCIA for Thabametsi is the first of its kind for a coal-fired power station in South Africa. Because there are no guidelines as to what such an assessment should consider, nor any stipulated requirements from the Minister in her appeal decision pertaining to Thabametsi, international best practice must be used as a guide and benchmark in this instance. Common features of CCIA laws and guidelines which are implemented in other jurisdictions should guide, and at least be considered as examples for, South African assessments. A CCIA, should, after all, be as accurate and comprehensive an assessment as possible, in order to be of true use and value - this stands true irrespective of what the international best practice is.</i></p>	<p>(i.e. the scale of GHG emissions from the Project) is based on a GHG magnitude rating scale developed following practice typically developed by international financial institutions such as the International Finance Corporation, the European Bank for Reconstruction and Development and Equator Principles. In addition, the CCIAR has assessed the GHG emissions of the project using Intergovernmental Panel on Climate Change (IPCC) Tier 3 emission factors and the carbon footprint for the Project has been estimated in accordance with the GHG Protocol: Corporate Accounting & Reporting Standard, developed by the World Business Council for Sustainable Development and the World Resources Institute.</p>
12	<p>South African law is quite clear that an EIA must consider all potentially significant impacts. For that reason it cannot be said that South African law does not provide for an assessment of the impacts of climate change, and such an impact assessment must comprehensively assess all climate change impacts relating to the project and how this will impact on the environment and communities in the area, as well as on the wellbeing and resilience of the wider South African public.</p>	<p>Notwithstanding that the CCIAR is compliant with the Final Scope of Work, as stated above, a traditional impact assessment is conducted by determining how the proposed activities will affect the state of the environment described in the baseline. As noted in section 2.1, in the case of GHG emissions, this process is complicated by the fact that the impact of GHGs on the environment cannot be quantified within a defined space and time. In the circumstances, the CCIAR provides, to the extent possible, for a comprehensive assessment of the climate change impacts on the environment, communities as well as the wellbeing and resilience of the wider South African public.</p> <p>The CRA is also important in this regard. In the CRA, potential climate-related risks were identified through the assessment of the interaction between the climate baseline and future climate scenarios, and the Project's operations. The aspects of the Project considered when identifying project-related climate change risks included the power plant and ancillary infrastructure (e.g. pollution control dam, water treatment plants, access roads etc.), raw materials handling (i.e. coal, limestone, fuel oil, and water), transmission lines, staff and local communities, which have the potential to affect the performance of the plant.</p> <p>To the extent that Earthlife has requested that a study be done on the wellbeing and resilience of the wider South African public, this is a study that should instead be conducted by the DEA. The applicant is not obliged by law or required by the DEA, to include issues which are beyond the ambit of the approved Scope of Work.</p>
13	<p>Our client commends the draft CCIA for its thorough assessment of the project's GHG emissions. Its findings that the project's GHG emissions will be very high, and the assessment of the risks that the impacts of climate change will pose for the project – many of which cannot be adequately mitigated – are duly noted.</p>	<p>Please refer to the responses to comments 6.3 and 8 above. The rating of the Project's emissions as 'Very Large' using benchmarks from international lender standards would be the same for any conventional thermal power plant of this capacity. The mitigation of GHGs would be from the selection of generation and emissions abatement technology to maximise efficiency and GHG production, as set out in section 5 of the GHG assessment report.</p> <p>The requirements of the Coal Baseload IPP Procurement Programme constrained the choice of technology used for the proposed Project and the size of the proposed power station constrains the extent to which technology-based GHG mitigation measures can be used. The Coal Baseload IPP Procurement Programme's requirements were specified in the Request for Proposals issued by the Department of Energy (DoE) and Thabametsi has duly complied with these requirements.</p>
14	<p>There are, however, some shortcomings in the draft CCIA, which we request be attended to in the final CCIA.</p> <p>These include:</p> <p>14.1 the plant's GHG emissions have been incorrectly calculated and are significantly underestimated;</p> <p>14.2 the failure to consider the social cost of the GHG emissions associated with Thabametsi. This entails a consideration of external costs and the impacts on the environment and accordingly on human health and wellbeing, as a result of the project's emissions;</p>	<p>14.1 The GHG emissions have not been incorrectly calculated and the methodology used is clearly stated. The final CCIAR uses the IPCC Tier 3 emission factors to calculate the emissions intensities of the Project and South Africa's Electrical Grid. The use of Tier 3 emission factors will also become more widely used in South Africa following the implementation of the National Greenhouse Gas Emission Reporting Regulations, which were gazetted on 3 April 2017. Tier 3 emission factors also clarify the contribution made by different GHG (specifically CO₂, CH₄ and N₂O) to the overall GHG emissions of the proposed Thabametsi power plant.</p> <p>14.2 As more fully set out in section 2.1 of the CCIAR and as referenced in the response to comment 6.1 above, the social costs of the GHG emission associated with Thabametsi cannot be assessed as there are no established, universally-acceptable guidelines for estimating the social costs of carbon related to a single project. This is firstly, due to the complex nature of climate change and its drivers and secondly, because any assessment of the extent of climate change requires value judgments about the relative importance of temporal impacts.</p>

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	<p>14.3 the failure to consider how the project's impacts will exacerbate the effects of climate change in the project area, and how these net changes will impact on the communities and the environment;</p> <p>14.4 the failure to give full consideration to the water scarcity issue in the Waterberg, in considering the risks to the project as part of the climate resilience assessment; and</p> <p>14.5 the lack of effective recommendations in the draft CCIA.</p>	<p>14.3 Please refer to the responses to comments 6.3 and 8 above. The CCIAR sets out an assessment of the GHG emissions associated with the construction, operations and decommissioning of the proposed Thabametsi power station. More particularly, the impact of these GHG emissions (and therefore the impact of the project in terms of contribution to global climate change) is assessed by way of comparing estimated annual GHG emissions from the project with South Africa's baseline and projected annual GHG emissions, through reference to GHG magnitude scales for projects from various lender standards, and through the benchmarking of the project's emissions and energy performance against other coal-fired power stations in South Africa and worldwide. Further detail can be found in the responses to comments 6.1 and 11 above.</p> <p>In addition, and as stated in section 2.1 of the CCIAR and in terms of the impacts on communities and the environment, a traditional impact assessment is conducted by determining how the proposed activities will affect the state of the environment prior to development of a project. In the case of GHG emissions, this process is complicated by the fact that the impact of GHG emissions on the environment cannot be quantified within a defined space and time. In the circumstances, the impacts of the project have been assessed to the extent possible in the CCIAR (and its accompanying annexures).</p> <p>14.4 In addition to the CRA (which includes consideration of the water scarcity as a risk to the Thabametsi Project), the WRR looks at the potential impacts of climate change on water resources in respect of the development of the Thabametsi Power Station in Lephalale, Limpopo Province. The WRR expands on the CRA with respect to water issues, and seeks to explore what the impacts could be from climate change projections which have relevance to the Thabametsi Project's water supply from MCWAP-1 and MCWAP-2 schemes and the management thereof.</p> <p>14.5 The CCIAR outlines various effective recommendations such as, inter alia, the implementation of emissions management through optimisation of plant thermal efficiency and emissions management during construction and decommissioning in sections 5.2 to 5.6. As stated in the response to the comment above, the requirements of the Coal Baseload IPP Procurement Programme constrains the extent to which technology-based GHG mitigation measures can be used. The Coal Baseload IPP Procurement Programme's requirements were specified in the Request for Proposals issued by the DoE and Thabametsi has duly complied with these requirements. In addition to the recommendations proposed in the CCIAR, the CRA, in the context of climate change, proposes a number of high level mitigation (adaptation) of risks with physical climate-related impacts. For further information on these effective recommendations, please refer to section 6 of the CCIAR and table 6.2 and section 7 of the CRA.</p>
15	These concerns are addressed in turn, and in more detail, below.	Please refer to responses below.
16	We point out that the DSR and FSR comments already highlighted the need for many of these considerations to be included in the CCIA, and we stand by the submissions made in those comments.	<p>The comments on the draft and final scope of work reports have been recorded as part of the process currently being undertaken and will be submitted to the DEA together with the final CCIAR and the PIA for the independent power producer (IPP) Thabametsi coal-fired power station.</p> <p>We reiterate that the DEA has already evaluated the DSR and FSR Comments and Responses and further reiterate the response in comment 6 above in respect of amendments of the scope of work and the additional work carried out by the applicant.</p>
17	We also, in these comments, wish to point out contradictions between the findings of the draft CCIA, in comparison with some of the findings and conclusions in Thabametsi's final environmental impact report (FEIR) and the integrated water use licence application (IWULA). Our client has not yet been provided with access to the atmospheric emission licence application (AELA), which we are advised will be resubmitted by Thabametsi.	Comment noted and a response will be provided where details of contradictions are addressed. The AEL application will be submitted for public comment after the Minister has issued her decision on the Environmental Authorisation.
18	<p><i>i. Incorrect calculation and underestimation of GHG emissions</i></p> <p>We note that the GHG Assessment Report (GAR), appendix D of the draft CCIA, only estimates the emission of carbon dioxide (CO₂) from Thabametsi, and omits estimates of other GHGs - nitrous oxide (N₂O) and methane (CH₄) - pollutants which are also emitted during the operational phase of the plant.</p>	<p>This revised and final version of the CCIAR responds to comments made by CER in relation to version 1 of the CCIAR, issued in January 2017. Specifically:</p> <ul style="list-style-type: none"> it applies more accurate calculation methods based on 'Tier 3' technology-specific GHG emission factors as opposed to generic 'Tier 1' emission factors to assess the projected GHG emissions from the proposed Thabametsi plant and to compare these against the emissions of other coal-fired power plants on the South African grid. The use of 'Tier 3' emission factors will become more widely used in South Africa following the implementation of the National Greenhouse Gas Emission Reporting Regulations, which were gazetted on 3 April 2017;

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		<ul style="list-style-type: none"> it clarifies the contribution made by different GHGs (specifically CO₂, CH₄ and N₂O) to the overall GHG emissions of the proposed Thabametsi plant (in tonnes of CO₂e); and it updates and expands the comparison of GHG emissions from the proposed Thabametsi plant against the GHG emissions of other coal-fired power plants on the South African grid, specifically those plants that are scheduled for retirement in the period before 2030, in an effort to assess the impact of the proposed plant on South African GHG emissions.
19	The GAR explains how the CO ₂ emissions for the plant were estimated. This was done by considering "the mass of CO ₂ emitted during the combustion of coal ... estimated based on the mass of carbon combusted ..." no reference is made here to N ₂ O or CH ₄ emissions or the methodology for estimating those emissions.	Please see the response to comment 18 above.
20	Then table 4.2 of the GAR, which looks at estimated GHG emissions arising from the operation of Thabametsi, presents the estimate of GHG emissions as CO ₂ equivalent (CO ₂ eq) emissions. This is incorrect, as the stated annual GHG emission rate is for CO ₂ only. Emissions of N ₂ O and CH ₄ do not appear to have been calculated. CO ₂ eq should be calculated as the sum of CO ₂ , N ₂ O and CH ₄ emissions, taking into account the global warming potential (GWP) of the latter two gases.	Please see the response to comment 18 above. Table 4.2 now comprises the figures for t CO ₂ e estimated GHG emissions
21	What the draft CCIAR refers to as a calculation of CO ₂ equivalent (CO ₂ eq) emissions, is in fact only a calculation of CO ₂ emissions.	Please see response to comment 18 above.
22	For example, we note that the GWP of nitrous oxide is considerably greater than carbon dioxide's GWP; this being 264 to 298 times that of CO ₂ over 20 to 100 year timescales, and that the GWP of methane is 84 to 86 times that of CO ₂ over a 20 year timescale and 28 to 32 times that of CO ₂ over a 100 year timescale. In other words, the GAR significantly under-reports these data.	Please see response to comment 18 above.
23	It is important to note that N ₂ O emissions from a circulating fluidised bed (CFB) unit, which is proposed for Thabametsi, may be 43 times greater than for a comparable pulverised fuel boiler (PFB) (61kg/TJ for CFB compared with 1.4kg/TJ for PFB). In this case then, N ₂ O emissions may be about 14% of total GHG emissions for Thabametsi. The omission of an estimate of Thabametsi's N ₂ O emissions therefore represents a significant underestimate of its climate change impact.	Please see response contained in item 18 above.
	<i>ii. The social cost of the GHG emissions</i>	Please refer to the response to comment 6.1 above and section 2.1 of the CCIAR.
24	The draft CCIAR does not consider the external social (including livelihood, health and safety) and environmental costs of the proposed project and its GHG emissions to the country. As submitted in the DSR and FSR comments, this is a vital consideration.	
25	We stand by our previous submissions that the social and environmental costs associated with the power station's impacts must be considered as a relevant consideration in terms of s24O of NEMA.	Please refer to the response to comment 24 above.
26	By assigning the project 'high' risk ratings, the CRA is acknowledging that the project poses a high risk in terms of aggravating climate change and the associated impacts on society and the environment. Emissions of some 8.2 million metric tons of CO ₂ equivalent per year, once the plant is fully operational, will no doubt exacerbate climate change impacts and therefore, associated environmental and social costs. Yet, the draft CCIAR does not assess the quantum and significance of these indirect and cumulative costs to society and the environment.	Please refer to the responses to comments 6.3 and 24 above.
27	In the DSR comments, we referred to the United States (US) social cost of carbon protocol for assessing climate impacts - which is intended to be a comprehensive estimate of climate change damages - as a potential guide to determining the social costs of Thabametsi. This was again emphasised in the FSR comments. The C&R report states,	Please refer to the response to comment 24 above.

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	<p>however, that "the social cost of carbon is not commonly used for purposes of conducting a GHG (climate change) impact assessment in EIAs and is not required according to South African EIA regulations ...".</p>	
28	<p>According to a US Environmental Protection Agency (EPA) report on the social cost of carbon emissions, a comprehensive estimate of climate change damages, which includes changes in net agricultural productivity, impacts on human health, property damage from increased flood risk, and changes in energy system costs (such as increased costs for air conditioning) can be as high as USD 152 per metric ton of CO2 by the year 2030.</p>	<p>Please refer to the response to comment 24 above.</p>
29	<p>The implication here is that the social cost of the Thabametsi power station to the country could be more than USD 12 billion per year by the year 2030.¹⁸ It is therefore vital that these external costs be factored into the assessment of the project's climate change impacts, or at least into the assessment of the financial feasibility of the project, given the NEMA principle that the 'polluter' must 'pay' for damage or environmental degradation.</p>	<p>Please refer to the response to comment 24 above. The 2017 Technical Support Document to the executive order adopting a US-specific framework for estimating SCC, points out that there are too many uncertainties with an assessment of the social costs of carbon and that the models used are imperfect and incomplete, and as such the SCC estimates should be treated as provisional until improved scientific and economic information is available.</p>
	<p>iii. <i>The failure to consider how the project will exacerbate the impacts of climate change for the communities and environment</i></p>	<p>Please see the responses to comments 6, 6.3, 10 and 12 above.</p>
30	<p>The draft CCIA does not give adequate consideration as to how the impacts of climate change for human health and the environment, would be exacerbated by this power station becoming operational.</p>	
31	<p>In response to our client's contentions in the FSR comments that these impacts should be considered, the C&R report states that "the ways in which the project would impact on South Africa's own adaptations and resilience to climate change are not considered as part of the scope of the climate change study. The decision was made to exclude this on the basis that the EIA process in South Africa looks at the impact of the project of the environment and not vice versa." This, with respect, shows a misunderstanding of what is required in this instance. We are requesting the assessment to look at how the power station will impact on the environment and communities (and not vice versa), specifically how the project impacts will impact further on an environment which will be affected by climate change, and what the extent and significance of these impacts will be.</p>	<p>Please see the response to comment 30 above.</p>
32	<p>This requires consideration of how climate change will impact the environment, health and wellbeing of communities in the Lephalale area without the proposed project (i.e. the counterfactual) and then how this project, through its construction, operation for at least 40 years, and then decommissioning, will exacerbate those impacts. This sequence of impact assessment is at the core of good practice EIA.</p>	<p>Please see the responses to comments 6, 6.3, 10 and 12 above.</p>
33	<p>The draft summary report acknowledges that:</p> <p>33.1 Lephalale is generally a water-scarce area;</p> <p>33.2 the area is vulnerable to extreme weather events, such as flooding, drought and wildfires; and</p> <p>33.3 the climate projections for Lephalale suggest that temperatures are likely to increase and that dry spells are projected to increase in duration, suggesting increased drought risk.</p>	<p>Comment noted.</p>
34	<p>The Climate Resilience Assessment (CRA), appendix F to the draft summary report, looks at the risks that climate change poses to the project and states that lower than normal</p>	<p>Comment noted.</p>

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	<p>precipitation levels and increased drought resulting in water shortages, as well as water quality issues, are high risks to the power station, as well as high temperatures resulting in reduced thermal efficiency. The CRA acknowledges that the Limpopo river basin is "heavily stressed" as a result of water demands from domestic, irrigation, mining and industrial users.</p>	
35	<p>It is clear then that the draft CCIA acknowledges the severe water scarcity in Lephalale and predicts that climate change will only make this situation worse. This power station will require significant amounts of water in order to operate, meaning that it will need to utilise limited water which is critical to local communities and users such as farmers. Water supplies will become increasingly limited in future.</p>	<p>It is acknowledged that the Project falls within a water scarce area, however, it should be noted that:</p> <ul style="list-style-type: none"> • in accordance with the Guidance Note, the Thabametsi Project has already initiated its IWULA pre-application process and has been issued with a non-binding confirmation of water availability from the DWS; • the water for phase 1 of the Thabametsi Project will be sourced from an already existing allocation from the MCWAP-1 scheme made to Exxaro Coal (Pty) Ltd (Exxaro), under authorisation of DWS and the draft IWULA has already been provided to the public for comment and the final IWULA will be submitted for public review and approval by DWS in due course; • the applicant's water use will constitute less than 1.8% of the already existing allocations of water from the MCWAP-1 scheme. Because the water will be sourced from an existing allocation, the Thabametsi Project is not placing additional consumptive demands on water resources in Lephalale; • the WRR was commissioned by the applicant, to consider the potential impacts of climate change on water resources in respect of the development of the Thabametsi Power Station. The WRR expands on the CRA with respect to water issues, and seeks to explore what the impacts could be from climate change projections which have relevance to the Thabametsi Project's water supply from MCWAP-1 and MCWAP-2 schemes and the management thereof; • the proposed Thabametsi Power Station will use a selection of dry cooling technologies which will serve to reduce water requirements for the plant. This type of technology uses up to 15 times less water than a wet cooled plant. Detailed water consumption comparison is explained in the WRR; • the Thabametsi Project, as recorded in the CRA, is expected to have minimal impacts on water resources as it has been designed to be a zero liquid effluent discharge plant and will not use groundwater resources; • in compliance with the requirements in the Guidance Note, the Thabametsi Project will include an 18 day raw water storage provision in case of low water conditions; and • the 2013 National Water Resource Strategy (2013 NWRS), in accordance with section 6 of the National Water Act, provides that the highest allocation priority is afforded to water for the purposes of the Reserve. The first objective of this priority is to ensure that sufficient quantities of raw water are available to provide for the basic water needs of people. In other words, should water supplies become limited to the extent that the water priorities identified in the 2013 NWRS, the communities' needs will be prioritised.
36	<p>There is also a risk that the power station, and its associated infrastructure and activities, will pollute both surface water and groundwater resources, through contaminated surface-runoff and seepage (particularly from the ash dump and coal stockpiles) and/or deposition of eroded material from the ash dump and stockpiles. This would contribute to further degradation of water resources and reduced availability to local communities and farmers.</p>	<p>Impacts on the quality of surface and groundwater have been assessed within the EIA. The implementation of mitigation measures as detailed within the EIA Report and EMPr will minimise the risk of contamination impacts on surface and groundwater. In addition, the CRA notes that the Thabametsi Project is expected to have minimal impacts on water resources as it has been designed to be a zero liquid effluent discharge plant and will not use groundwater resources.</p> <p>Various measures have also been outlined in the draft IWULA Report which will mitigate the risks associated with pollution of surface water and groundwater resources. For the sake of brevity, these measures have not been repeated in the CCIAR or the PIA.</p>
37	<p>The CRA does acknowledge that, "drought conditions have historically negatively impacted local communities, including farmers and other rural residents directly dependent on water supplies for cattle farming and other agriculture" and that increased water stress "may bring about increased community concerns and tension". It states, inter</p>	<p>Please refer to the response to comment 35 above.</p> <p>Thabametsi acknowledges the water needs of affected communities. It acknowledges that government has an obligation to provide water to communities and that water use by communities has been prioritised in a number of policy documents. Indeed, acknowledging</p>

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	<p>alia, that "[c]ommunities are likely to be prioritised over industry in the event of future water shortages". We point out, however, that there is no guarantee or commitment that communities will be prioritised in either the FEIR or IWULA. Notably, the CRA only assesses these risks in terms of how they may impact the project (i.e. reputational and financial risks), stating inter alia, that: "dry spells/drought events affect communities and threatens (sic) <u>social licence to operate</u>" (emphasis added).</p>	<p>the water scarcity in the project area, the applicant commissioned the WRR in order to understand the potential impacts of climate change on water resources in respect of the development of the Thabametsi Power Station. The WRR expands on the CRA with respect to water issues, and seeks to explore what the impacts could be from climate change projections which have relevance to the Thabametsi Project's water supply from MCWAP-1 and MCWAP-2 schemes and the management thereof.</p> <p>Thabametsi is and will continue to, follow the lawful processes in submitting its application for its water use licence and will adhere to any and all conditions of water use imposed by DWS. In this respect, and as stated above, the Project's IWULA is only for the first phase and water will be obtained from Exxaro's existing allocation of water from the MCWAP-1 scheme. Thabametsi's water use will constitute less than 1.8% of the already existing allocations of water from the MCWAP-1 scheme. And because the water will be sourced from an existing allocation, the Thabametsi Project will not exacerbate or make worse water scarcity in Lephalale. For further information, please refer to the response to comment 35 above.</p>
38	<p>The draft CCIA acknowledges the significant water-related risks of climate change in the Lephalale area, but fails to assess how the project (through its water demands and potential impacts on water quality) could exacerbate these climate change impacts for the local communities, farmers and the environment. It only considers how the increased water scarcity will impact the project. This is a significant and material omission from the draft CCIA, as well as the FEIR. This must be remedied in the final CCIA, given that such impacts would undoubtedly constitute indirect and cumulative impacts linked to the proposed project, and their consideration is therefore required by NEMA.</p>	<p>Please refer to the responses to comments 6, 10 and 12, 35 and 37 above.</p>
39	<p>iv. <i>The water risks for the project</i></p> <p>While the draft CCIA assesses the current and future water constraints in the Lephalale area, and how they will impact on the project, it fails to convey adequately the extent of the risk that is posed for the power station.</p>	<p>Please refer to the responses to comments 6, 10 and 12, 35 and 37 above. The applicant is satisfied that the water risks for the Project have been adequately considered in the CRA and the WRR, which also meets the requirements of the DEA's final Scope of Work, NEMA, the Constitution and international good practice.</p>
40	<p>The CRA confirms our client's previous contentions that water availability (and shortages) is relevant to climate change. It also confirms that the influence of climate change on water shortages cannot be considered in isolation from the other factors that influence water shortages, stating that "risks relating to water shortages and water quality issues are influenced by multiple factors, one of which is climate change. Climate-related risks to water supplies cannot be considered in isolation, and therefore the likelihood and consequences of water shortages (3a) and water quality issues (3b) as scored here reflect the various risk drivers as discussed previously. In the case of water shortages, this includes the risk of surplus water in the Crocodile River catchment failing to meet demand and risk of slower than anticipated progress with the construction of MCWAP-2 (Mokolo Crocodile Water Augmentation Project, phase 2) and/or subsequent infrastructure issues."</p>	<p>Please refer to the response to the comment above. The applicant is satisfied that the water risks for the Project have been adequately considered in the CRA and the WRR.</p>
41	<p>It is well documented that water is a serious concern in the Mokolo catchment and presumably climate change will impact further on this issue and place uncertainty on future water availability, presenting risks to the longterm feasibility of the project.</p>	<p>Please refer to the response to comment 39 above. The applicant is satisfied that the water risks for the Project have been adequately considered in the CRA and the WRR.</p>
42	<p>We are concerned that the CRA underestimates the risk associated with the proposed Mokolo Crocodile Water Augmentation Project Phase 2 (MCWAP2) - on which Thabametsi and other projects in the area plan to depend - in terms of if, and if so when, it will commence and be operational. In addition, it is not clear how water allocation from this scheme will be decided, and whether there would be any guarantees of water supply, particularly should such supply fluctuate depending on yield from the Mokolo and Crocodile West catchments.</p>	<p>Please refer to the response to comment 39 above. The applicant is satisfied that the water risks for the Project have been adequately considered in the CRA and the WRR.</p> <p>As stated above, the water for Phase 1 of the Thabametsi Project will be sourced from an existing allocation from MCWAP-1.</p> <p>Further, and as indicated in section 2 of the WRR, the MCWAP-2 scheme will transfer water in order to help meet the anticipated rising demands from the various additional water users, including potentially Phase 2 of the Thabametsi Project and other proposed mining, power and industrial developments. Current indications suggest that MCWAP-2 will be operational by 2021. The water consumption</p>

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		requirements and assurances for Phase 2 will only be considered and analysed by DWS in accordance with the requirements for the next bid window under the next Coal Baseload IPP Procurement Programme.
43	The risks associated with the MCWAP2 water supply need to be properly acknowledged in the CCIA, since they could pose an additional risk to the long-term feasibility of this project.	Please see the response to comment 42 above.
44	Even with MCWAP2, the demand scenarios in the GAR highlighted risks of shortfalls in water available from the Crocodile River. Further, the CRA does not mention that the scoping phase of the EIA for MCWAP2 has not yet commenced and that it is therefore not certain, at this stage, whether MCWAP2 will obtain all the necessary authorisations to go ahead.	Please see the response to comment 42 above. The applicant is satisfied that the water risks for the Project have been adequately considered in the CRA and the WRR and that, and as stated above, the Project's IWULA is only for the first phase and in which water will be obtained from Exxaro's existing allocation of water from the MCWAP-1 scheme.
45	Our client's objections to the IWULA for Thabametsi highlight the significant risks associated with Thabametsi's reliance on MCWAP2. A copy of the IWULA objections (without annexures) is attached marked "A".	Please see the response to the comment above.
46	The draft CCIA also fails to assess how the project could exacerbate the impacts of climate change, and therefore the current and projected future water demand, of other industries and mines in the area, which are presently operating or about to start operating. These include Eskom's Medupi power station, which relies on the same limited water resources in the area and which intends to use water delivered by MCWAP2, if MCWAP2 is able to go ahead. Medupi and Matimba power stations will have additional water requirements in order to meet Eskom's obligations to reduce its sulphur dioxide (SO ₂) emissions to within legislated limits – this necessarily requires installing flue gas desulphurisation (FGD) for both plants, which requires a considerable volume of water.	Please refer to the response to comment 42 above. The applicant notes that Eskom's Medupi power station is anticipated to rely on water from MCWAP-1. Further, the FGD requirements for Medupi and Matimba will only come into operation once the MCWAP-2 scheme has been completed.
47	Importantly, the CRA acknowledges that Thabametsi has limited influence in terms of mitigating the risk of operational water shortages. This supports the argument that the mitigation measures recommended in the FEIR's water impact assessment do not adequately mitigate the risks associated with the plant's water use.	The applicant acknowledges that it has limited influence in terms of mitigating the risk of operational water shortages. However, it has put in place measures that acknowledge and mitigate against operational water shortages. These factors are more fully set out in the responses to comments 35 and 37 above.
48	Given the significant problem of water scarcity in the Lephalale area, it is more appropriate that the likely 'consequence' of water shortages for the risk 3a of the CRA should be cited as 'catastrophic (5)' rather than 8'major (4)'. The latter relates to, inter alia, plant shutdown for several days; significant damage to infrastructure; and major financial losses. Whereas the former relates to plant shutdown for several weeks; major damage to assets; and very significant financial losses threatening the commercial viability of the plant.	Please see the responses to comments 35 and 37 above. Further, in terms of the 2013 NWRS, in accordance with section 6 of the National Water Act, provides that the fourth priority for the allocation of water is accorded for uses that are strategically important to the national economy. These are uses that are of critical importance to the nation and must be authorised by the Minister. The uses include the continued availability of water to be used for electricity generation throughout the country. As such, the Thabametsi Project, will fall into the fourth priority in terms of the allocation of water.
49	The GAR concludes that " <i>climate change projections for the site, assuming a high emissions scenario and looking to the 2050s suggest increasing average and maximum temperatures ... and increased frequency and severity of drought events</i> ", and the CRA confirms that " <i>[h]igh temperatures result in reduced efficiency of the plant.....</i> ". These are significant future risks, which must be afforded sufficient weight, as they will have significant impacts on the power station and its ability to operate, at full capacity, for its expected 40 year lifespan – past the year 2060.	Various measures have been considered in order to address these future risks. Please refer to the responses to comments 14.5, 35 and 37 above.
50	If the power station does not have access to sufficient water, it cannot operate. This is a very real and significant risk, which must be explained as such in the final CCIA.	Please refer to the response contained in item 48 above.

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51	<p>v. <i>The need for effective recommendations in the CCIAR</i></p> <p>Although the draft summary report confirms the findings of the GAR that the magnitude of the project's GHG emissions will be "very large", the draft CCIAR provides little in the way of clear recommended actions to minimise and address the significant impacts that will result from the power station, other than the conducting of additional risk assessments.</p>	<p>Section 5 of the CCIAR states that the vast majority of total emissions during the construction, operation and decommissioning of the plant are attributed to emissions from the operation of the plant. The CCIAR therefore primarily focusses on the emission management measures during operations, which are canvassed in sections 5.1, 5.2, 5.3, 5.4 and 5.5. Emissions management measures for some of the larger sources of emissions during construction and decommissioning is covered in Section 5.6 of the CCIAR. More specifically:</p> <ul style="list-style-type: none"> • section 5.1 deals with the impact of the Coal Baseload IPP Procurement Programme requirements and plant technology on emissions reduction potential; • section 5.2 deals with emissions management through optimisation of plant thermal efficiency and recommends various measures in this regard; • section 5.3 deals with managing changes to operating philosophy which suggests changes to cycling philosophies; • section 5.4 deals with energy and an emissions management plan, which in summary identifies the key elements of a thermal efficiency / GHG management plan and the abatement of N2O emissions; • section 5.5 concerns the use of alternative fuels; and • section 5.6 deals with emissions management during construction and decommissioning and recommends various measures to reduce GHG emissions during these phases. <p>The aforementioned sections provide clear recommended actions to minimise and address the impacts of the proposed Thabametsi Power Station. Notwithstanding the above, and with reference to the response to comment 14.5 above, the applicant is conscious of the requirements of the Coal Baseload IPP Procurement Programme which constrained the choice of technology used for the proposed Project and the size of the proposed power station constrains the extent to which technology-based GHG mitigation measures can be used.</p>
52	<p><u>The risks of the power station</u></p> <p>The CRA identified 12 climate change-related risks for Thabametsi. The highest risks are identified as increased temperatures which will impact on the thermal efficiency of the plant; and water stress (water shortages and water quality issues). These are clearly significant risks, as explained above. If the power station has inadequate water, it cannot operate, nor are these risks likely to be easily resolved. The draft CCIAR, however, does not propose any definitive solutions or ways to address these risks, as adaptation measures are proposed at "a high level with the intention that they can be considered and more formally integrated into future design" and the measures proposed predominantly entail further assessments and monitoring.</p>	<p>Please refer to the response to comments 35, 37, 48 and 51 above.</p>
53	<p>The risks of water availability for the power station, are addressed in detail above.</p>	<p>Please refer to the response to the water availability comments made above.</p>
54	<p>The CRA offers strong arguments relating to high operational efficiency risks for the power station, including water shortages (supply) and water quality issues, as well as medium risks of social issues and livelihood harm, and flooding. It refers to the limited ability to address or correct these risks and impacts. Yet, it attempts to justify the power station's high impacts by alleging that there will be "positive socio-economic impacts" of the power station.</p>	<p>The risks and impacts associated with the power station can be associated in varying degrees with other infrastructure projects. These risks and impacts have been considered and mitigation and minimisation measures have been considered in order to counter act these risks and impacts.</p> <p>Further, it is not Thabametsi's aim to justify the power station's impact by alleging that there will be positive socio-economic impacts. Thabametsi has merely pointed this out as a further advantage in respect of the power station.</p>
55	<p>The CRA, however, also states that concerns already exist that water resources are being diverted away from communities and farms, which may threaten the "social licence" for industrial users to operate in the area. In addition, it refers to the vulnerability of the work force to the increase in temperatures. These points alone contradict the supposed "positive socio-economic impacts" of Thabametsi and acknowledge that, in fact, this project will not be in the best interests of society, particularly not if it will lead to the Lephalale communities, along with the greater South African public, being deprived of water and increasingly vulnerable to droughts, floods and heatwaves.</p>	<p>The applicant does not believe that the points put forward by Earthlife completely contradict the positive socio-economic impacts of the Thabametsi Project. In this regard, reference must be had to the response to comments 35, 37, 38, 48, 51 and 54 above.</p> <p>In addition to the mitigation measures in the CCIAR (in section 5), section 6.1 of the CRA also provides risk management / adaptation measures in respect of the points raised by CER. Most importantly though, and as mentioned in item 35 above, the first phase of the Thabametsi Power Station will source its water from an already existing allocation. This means that water resources will not be further diverted away from communities and farms than currently planned for.</p>

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56	<p>It is clear from the draft CCIAR that the water scarcity has an impact on the emissions efficiency of Thabametsi. The fact that the applicant has chosen to build a coal-plant in a water-scarce area, will mean that, in fact, Thabametsi will have effectively increased climate change impacts, in comparison to what it would potentially have elsewhere, without the water constraints. The GAR states that <i>"the 1 200 MW capacity and type of technology chosen are also constrained by a limited availability of water, which is why dry air cooled condensers (using 6 to 10 times less water than 'wet cooled' plants) have been selected. It is noted that air cooled condensers generally require more power than wet cooling systems due to the use of fans for cooling. This increases the auxiliary power load and reduces plant efficiency."</i> Because of the water-scarce circumstances in Lephalale, Thabametsi will be emitting even more GHGs. The chosen location of the plant is therefore a very relevant consideration, which should have, in accordance with NEMA and the EIA Regulations, 2010, been taken into account in deciding whether to authorise the proposed project.</p>	<p>The Thabametsi Project has been planned to be established pursuant to already executed governmental policy which assesses the need for electricity in the context of water scarcity. The chosen location of the power station is necessitated by the stringent requirements of the first bid submission phase of the Coal Baseload IPP Procurement Programme, which include that:</p> <ul style="list-style-type: none"> • the power station must use coal as its fuel (using either boilers of the pulverised coal or the fluidised bed type), and which in turn mean that for commercial reasons: <ul style="list-style-type: none"> ◦ the power station will have to be situated close to a nearby coal field; and ◦ the power station will have to use dry cooled condensers given the water scarcity of the project area; • the electricity provided be capped at a set tariff (ZAR 0.82/KWh), necessitating the use low-grade coal; • power stations have a contracted capacity of not more than 600MW; and • the proposed Thabametsi Power Station will use a selection of dry cooling technologies which will serve to reduce water requirements for the plant. This type of technology uses up to 15 times less water than a wet cooled plant (as opposed to the 6 to 10 times previously reported in the draft CCIAR). The water consumption comparison is explained in the WRR. <p>As a result, Earthlife's comment should therefore be addressed in relation to such governmental policy and not in the CCIAR or PIA.</p>
57	<p>South Africa will have to stay within the committed peak plateau decline (PPD) trajectory as provided for in its Nationally Determined Contribution (NDC), which commits South Africa to peaking its GHG emissions between 2020 and 2025, plateauing between 2025 and 2035, and thereafter declining in absolute terms. It must also be noted that, as a party to the Paris Agreement, South Africa is obliged to submit renewed undertakings regarding emission reductions every 5 years, which must always be stricter than the previous commitments. It goes without saying then that South Africa's GHG reduction requirements will only get more stringent, as Thabametsi continues to operate and emit high amounts of GHGs.</p>	<p>In addition to what is set out in the responses to comments 6.3 and 8 above, the Paris Agreement remains an International Agreement, the provisions of which have not been fully incorporated into South African law. Further, it must be emphasised that South Africa is a developing country and the establishment of the power station is pursuant to legitimate government policy which remains legally unchallenged and which calls for the establishment of the power station, in the context of considerations of South Africa's international climate change obligations.</p>
58	<p>Thabametsi, presuming it is able to operate for its full anticipated lifespan, will be emitting GHGs well into the year 2060, by which time South Africa should long have moved away from fossil fuels and significantly decreased its GHG emissions. As indicated in the GAR, these emissions, even in the international context, will be 'very high'. The GAR states that <i>"the magnitude of the project's emissions (8.2 million t CO₂e per year) is Very Large based on a GHG magnitude scale drawing from various international lender organisation standards..."</i>.</p>	<p>Please see responses to comments 6.3, 8, 10, 12, 13, 14.5, 48, 51, 56, 57 above.</p> <p>This is an issue to be addressed at policy level, when assessing the Coal Baseload IPP Programme, rather than targeting such objections to specific projects. In addition, Thabametsi's power purchase agreement is for 30 years and it will only emit GHGs until 2050.</p>
59	<p>The GAR points out limitations in the tracking of emissions past the year 2040. It states that the fact that emissions cannot be tracked past 2040 suggests that current national mitigation potential is not sufficient, and it says that revisions of the Integrated Resource Plan for Electricity (IRP) may track PPD more closely, meaning that South Africa will be held to stricter reduction requirements. This acknowledges the future risk to the power station of having to reduce emissions subsequently, and potentially becoming a stranded asset – a risk which is explained in detail in the FSR comments.</p>	<p>Please see the response to the comment above.</p>
60	<p>There is also the risk that South Africa, due to the long-term lock-in to this substantial infrastructure project, will not be able to reduce its emissions and meet international commitments, thereby breaching its constitutional obligations to mitigate against climate change. If it is known now that stricter reduction requirements will be necessary, it makes no sense that new coal-fired power plants, such as Thabametsi should proceed and be authorised at all, particularly as the electricity sector is the easiest and most affordable sector in which to reduce GHG emissions.</p>	<p>Please refer to the response to comment 58 above.</p>

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	<u>The 'unknowns'</u>	Please see responses to comments 6.2, 35, 37, 42, 47 and 48 above. The applicant is satisfied that the water risks for the Project have been adequately considered in the CRA and the WRR, which also meets the requirements of the DEA's final Scope of Work, NEMA, the Constitution and international good practice.
61	Of greater concern, is that there are a number of 'unknowns', especially regarding water resources planning. The CRA notes, for example, likely changes in water resource planning since the 2012 report, and delays in the Medupi project, which could significantly affect predictions regarding water availability.	It is reiterated that for the first phase of the Thabametsi Project, water will be obtained from Exxaro's already existing allocation of water from the MCWAP-1 scheme and that this cannot be deemed an "unknown".
62	The CRA also acknowledges that ecological water requirements were not considered in the Limpopo Water Management Area (WMA) North reconciliation strategy and, should they be implemented, the yield of major dams would be significantly impacted – a potential 57% reduction in the 1:50 year yield from Mokolo Dam.	Please see responses to comments 35, 37 and 48 above. On enquiry with the DWS, they confirmed that the EWR had been considered and we have therefore not addressed this issue in the revised CRA.
63	The draft CCIA notes that there is disagreement on future changes to precipitation levels and intensity from a climate change impact perspective.	Comment noted. It is anticipated that the current model disagreements found with respect to precipitation projections will remain. This is confirmed in section 4 of the WRR.
64	Because it is not entirely clear how extensive the impacts of the power station will be, the precautionary principle would necessitate a cautious and risk-averse approach. In this regard, the draft CCIA falls short of setting out the acceptable or 'safe' boundaries of operation for the project, taking into account these considerable uncertainties and material risks to the project's viability.	Please see responses in items 35, 37, 42 and 48. A detailed review of the publicly available information and data provided has been undertaken. We confirm that water for the first phase of the Project is being sourced from an already existing allocation.
	<u>Recommendations</u>	The CCIAR does in fact assess the probability of effecting the measures recommended in sections 5.1 to 5.6 as well as the likely result of effecting these measures. Please see the response to comment 51 above in this regard.
65	Although the draft CCIA proposes some emission management measures, it fails to assess the probable effect of these measures and/or likelihood of their being successfully implemented, nor does it look into what is likely to be achieved through these measures. Therefore, while it states that measures 'should be considered' to 'minimise emissions'; a GHG management plan should be drawn up; and emissions measured and tracked, it is not clear whether GHG emissions will in fact be minimised, by how much, and by when.	Invariably, the GHG management plan is only drawn up once the plant is operational. It is not possible at this time to give details as to whether the GHG measures identified are feasible, due to the level of detail within the current design. It is anticipated that the suggested GHG mitigation measures within the CCIAR are evaluated by the engineers when developing the detailed design. This is also one of the requirements in the EMP.
66	Considering the inherent inefficiencies in the plant, as noted in the GAR, any reductions are likely to be trivial and the impacts are likely to remain highly significant, with Thabametsi continuing to make a large contribution to South Africa's GHG emissions. To counter this point, the CCIA must state explicitly, the maximum improvement in emissions intensity that could be achieved by the proposed plant, and whether this improvement would be a material reduction of GHG emissions.	Please refer to the response to the comment above. The final CCIAR has taken into account a range of mitigation measures and assessed the extent to which the Project will be able to reduce its emissions. This includes maximising the efficiency of the plant and investigating all viable abatement measures and also includes reference to the GHG management plan that will be included in the EMP.
67	In short, the measures proposed in the draft CCIA are weak and lacking in explicit outcomes and requirements.	This is also a very bold and vague statement which is not capable of being sufficiently dealt with in this response.
68	The draft CCIA, instead attempts to justify the power station's impacts by stating that "it is important to consider the impact assessment findings within the context of South Africa's national energy plans including the planned increases in baseload power to meet needs". We point out that government's energy plans and policies cannot, however, serve as justifications for projects with significant environmental impacts, nor can they exempt projects from having to avoid, or at least minimise and remedy, these impacts, as required by NEMA.	It is submitted that sufficient mitigation factors have been identified in order to mitigate the negative effects of the Project.
69	The draft CCIA's contentions around the need for this project to meet energy needs, and Eskom's plans for its 'aging generation fleet' are baseless given that:	69. The contentions around the need for the Thabametsi Project to meet energy needs are not baseless for the following reasons:
69.1	there is in fact no "need" or "energy crisis", given that Eskom has surplus capacity, and the 'crisis' circumstances that existed when the Ministerial determination calling for new coal was made, have changed fundamentally;	69.1 Whilst we note that Eskom has commented that there has been "surplus capacity", we also note from the same statement that "Eskom has surplus capacity until 2021". Thabametsi will commence operation in 2021/22 and therefore will be able to significantly contribute to the electricity grid. In addition, the need for a project such as Thabametsi was not only to meet the electricity demands present at the time the decision was made, but to also secure electricity supply in future. Accordingly,

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69.2	Eskom plans on extending the lives of some of its oldest power plants; and	Thabametsi is in fact required to meet the energy needs of South Africa, at a time where the current surplus of electricity will decline and / or be non-existent. The need for the project is based on National Policy.
69.3	South Africa's electricity needs can be met with more affordable, healthy and efficient renewable energy, as an alternative to coal. Research by the Council for Scientific and Industrial Research (CSIR) shows that, in fact, a combination of solar PV (photovoltaic) and wind supplemented by gas or storage can provide continuous supply to match demand at much lower costs than coal.	<p>69.2 In terms of Eskom's planning, a number of older power stations will be decommissioned from 2020. Notwithstanding Eskom's decision to extend the lives of some of its old power stations, it must be noted that Thabametsi has been established to further displace the older, similar or less efficient plants overtime.</p> <p>69.3 While the applicant cannot comment on the research by the CSIR, it is noted that the revised IRP (for the period up to 2050) currently available for public comment, considers the requirements in terms of emission reduction. The awarded IPP projects are considered within the determination of the required energy mix to meet the country's future electricity requirements as well as these commitments. The choice to continue meeting South Africa's energy needs with a mix of renewable and non-renewable energy is a legitimate policy decision that has already been executed. Such comments do not have a place in the CCIAR or the PIA. Further, there is conflicting evidence that renewable energy technologies can effectively meet South Africa's baseload power requirements.</p>
70	The draft summary report also states that "whilst noting that the magnitude of the GHG emissions is very high and the overall significance rating is high (negative), this is not considered to be a fatal flaw". The conclusion that these impacts do not constitute a fatal flaw does not appear in the CRA or GAR. It is therefore not clear on what basis:	The CCIAR and CRA do not state that the impact is considered to be a fatal flaw nor that the project should not proceed.
70.1	Savannah drew such a conclusion that these high ratings cannot be considered to be a fatal flaw;	
70.2	Savannah evaluated the spectrum of tradeoffs that would be implicated in arriving at such a conclusion; and	
70.3	against what sustainable development criteria these tradeoffs were measured to draw such a conclusion. In the absence of such explicit criteria and systematic assessment, this conclusion has no basis and is unacceptable.	
71	It is clear that many of the risks associated with the power station cannot be mitigated. In such an instance, the most appropriate and reasonable recommendation, given the risks and the need to take a cautious approach, would be that the power station should not go ahead. However, such a recommendation has not been made.	<p>From the conclusions of the specialist studies undertaken within the EIA, it is apparent that the impacts associated with the construction and operation of the power station and associated infrastructure are expected to be of Medium to Low significance with the implementation of appropriate mitigation measures. The findings of the additional studies undertaken do not alter this overall conclusion, although the impact rating associated with climate change impacts is rated as high. Recommendations have been made within the CCIAR regarding mitigation and adaptation measures which are to be considered for the Project. These will assist in addressing the impacts to some extent.</p> <p>It is apparent from this statement that the purpose of these comments from Earthlife is in fact to try and prevent the building of coal power stations and not so much that additional factors relating to climate change impact should be considered. Earthlife's objections are contrary to current government policy decisions and to which no legal challenge has been instituted. Notwithstanding the above, the choice to continue meeting South Africa's generation needs with a mix of renewable and non-renewable energy is a legitimate policy decision that has already been executed. Thabametsi has been planned pursuant to such policy.</p>
72	Thabametsi and the state have a duty to avoid causing pollution and degradation of the environment and where avoidance is not entirely possible, to minimise and remedy the impacts. In this instance, given the nature and extent of the risks and impacts, there are no remedies which could be invoked, and nothing has been proposed in the draft CCIA to remedy the residual negative impacts. In the circumstances, avoidance – the so-called "no go option" - is necessary.	Please refer to item 71 above.

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	<p>73 The draft CCIA's failure to recommend that the project should not go ahead is reckless given that:</p> <p>73.1 the magnitude of the project's GHG emissions is regarded as "very large" and South Africa, as a country vulnerable to climate change impacts and a signatory to the Paris Agreement, should be taking urgent steps to reduce its GHG emissions and not authorising a plant such as Thabametsi, which the draft CCIA acknowledges, will not be emission-efficient;</p> <p>73.2 the project is likely to lead to environmental and social impacts at a national level through exacerbating climate change effects;</p> <p>73.3 this project could well lead to irreplaceable loss of resources (water supply and quality) and irreversible impacts on livelihoods, public health and agriculture; and</p> <p>73.4 the water shortages pose a significant risk to the operation of power station, which risks cannot be mitigated. The precautionary principle 67 would then require that, even if the exact extent of the impacts are not known, this project should not go ahead.</p>	<p>Please refer to the response to the comment above.</p> <p>A detailed review of the publicly available information and data provided has been undertaken. Water for the first phase of the Project is being sourced from an already existing allocation. In addition, the final CCIAR has taken into account a range of mitigation measures and assessed the extent to which the Project will be able to reduce its emissions. This includes maximizing the efficiency of the plant and investigating all viable abatement measures and also includes reference to the GHG management plan that will be included in the EMP. For further information on these effective recommendations, please refer to section 6 of the CCIAR and table 6.2 and section 7 of the CRA.</p> <p>There is no threshold on which the Project can be deemed acceptable in law. It is noted that the decision not to recommend that the Project go ahead is not one that a decision maker should make on the basis of one study but on the basis of various requirements in terms of the enabling legislation.</p> <p>73. Please refer to item 71 above.</p> <p>73.1 Please refer to items 6.3, 8, 13 and 57 above.</p> <p>73.2. Please refer to the response in items 6.1.</p> <p>73.3 Please refer to the response in items 35, 37 and 48 above.</p> <p>73.4 Please refer to the response in items 35, 37 and 48 above.</p>
	<p>74 Our client therefore disagrees with the recommendations of the draft CCIA and requires that they be amended to be aligned with the principles of NEMA, and take full cognisance of the fact that unavoidable harm is likely to materialise if the project goes ahead resulting in irreplaceable loss of resources potentially affecting the most vulnerable sectors of society.</p>	<p>The CCIAR is aligned with the principles of NEMA.</p>
	<p>75 We argue strongly that the precautionary principle and other principles of NEMA and section 24 of our Constitution require that this power station should not proceed and the environmental authorisation should not have been granted. Particularly given that there are power generation alternatives, which will not invoke these kinds of impacts – namely solar PV or wind energy.</p>	<p>Please refer to the response to comments 6.3, 8, 9 and 56 to 58 above. Thabametsi has been established pursuant to an already executed governmental policy, particularly recognising the need for coal fired power stations as opposed to alternative power generation.</p>
	<p>76 We point out that location alternatives for the power station were not even considered, and recommendations based on this should, at the very least, have been made. It is simply not feasible or responsible to build another coal-fired power station; particularly in a water stressed-area such as the Waterberg. This will exacerbate existing water stress on people and the environment, and the draft CCIA acknowledges these risks. To allow the power station to proceed would amount to a violation of NEMA and the constitutional right to an environment not harmful to health or wellbeing.</p>	<p>Please refer to the response to comment 56. It is reiterated that the location of the power station is driven by the location of the fuel source. The area within which the power station is proposed has been identified as a Mining Focus Area in terms of the Waterberg Environmental Management Framework. Indeed, location alternatives within this area were considered within the Scoping Study.</p> <p>Further, and as stated in the response in items 35, 37 and 48, the water for the first phase of the Thabametsi Power Station will be sourced from an existing allocation and as such, it will not exacerbate the existing water stress on people or the environment.</p>
	<p>Contradictions and relevant considerations in the draft CCIA</p> <p>77 As mentioned above, certain information in the draft CCIA contradicts material information given in the FEIR and/or the IWULA. This brings into question the integrity of the information in the FEIR and IWULA, and our client's rights in this regard are reserved.</p>	<p>It is unclear what contradictions are being referred to which question the integrity of the information in the FEIR and IWULA.</p>
	<p>78 There are also contradictions with contentions made by the Minister of Environmental Affairs and Thabametsi in relation to the emission efficiency of the plant. These contradictions are explained below.</p>	<p>Comment noted and dealt with in detail below.</p>

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79	The draft CCIA has introduced a number of considerations that were not addressed in the FEIR; these considerations should have been an integral part of the FEIR since they have cross-cutting implications for a range of different issues and associated specialist assessments. By simply 'adding on' a climate change impact assessment to an already authorised project, this integration has been prevented, simultaneously preventing the competent authority from considering all relevant factors and information.	The fact that the FEIR did not include a CCIAR is acknowledged by the Minister in the Appeal Resolution. In approving the Project subject to the preparation of additional studies including the CCIAR, DEA had and will have, before it, comprehensive information to enable it to regulate the proposed Project. The "adding on" of the additional studies does not prevent DEA from considering all information before it comprehensively and in an integrated manner.
80	<i>Water impacts</i> The CRA shows that the water scarcity situation in Lephalale is far worse than the IWULA or water impact assessment in the FEIR acknowledge. We refer here to our client's comments on Thabametsi's IWULA, where we emphasised that inadequate consideration was being given to the water scarcity in Lephalale and that the IWULA and FEIR understate the impact of Thabametsi's water use on the area, by concluding that an allocation from Exxaro and MCWAP2 can simply be relied upon to meet Thabametsi's water needs. For this reason, our client maintains and stands by objections to the issuing of an IWUL to Thabametsi (attached hereto).	The FEIR indicates that the impacts on water supply would be of high significance without the implementation of mitigation measures. The IWULA acknowledged that the Project falls within a water scarce area and that future water demands will have to be catered for by means of MCWAP 2 or a similar water supply scheme. This is in accordance with the Reconciliation Strategy of the DWS as well as the LDP for Lephalale. As mentioned in the response to comment 6.2, the WRR, was commissioned by the applicant, in order to understand the potential impacts of climate change on water resources in respect of the development of the Thabametsi Power Station in Lephalale, Limpopo Province. The WRR expands on the CRA with respect to water issues, and seeks to explore what the impacts could be from climate change projections which have relevance to the Thabametsi Project's water supply from MCWAP-1 and MCWAP-2 schemes and the management thereof. on of the IWULA. Further, and as stated in the response to comments 35, 37 and 48, the water for the first phase of the Thabametsi Power Station will be sourced from an existing allocation and as such, it will not exacerbate the existing water stress on people or the environment. The water required for the second phase of the Thabametsi Power Station is intended to be sourced from the MCWAP-2 scheme. If the scheme is not operational, the second phase will be held back until it comes online.
81	Furthermore, the FEIR's water impact assessment did not take into account the material factor of climate change, which is likely to reduce water availability further (as confirmed by the CRA). In the circumstances, it is necessary that the impacts of the project's water use (on other water users and the environment) be re-evaluated, taking into account climate change.	Please refer to the response above.
82	The C&R report implies that the impacts of climate change on water supplies will be addressed in the IWULA. This is not the case, as climate change was not addressed in the IWULA, and for this reason the IWUL should not be issued.	The C&R report does not indicate that the IWUL will consider the impacts of climate change on water supplies. It states: " <i>The issue of water availability forms part of the Water Use License Application and is being determined in consultation with TCTA and DWS.</i> " In any event, please refer to the response to comment 80 above. Climate change impacts have been considered in the WRR.
83	As stated above, the CRA acknowledges that the plant has limited influence in terms of mitigating the risk of operational water shortages. This supports the argument that the mitigation measures recommended in the FEIR's water impact assessment do not adequately mitigate the risks associated with Thabametsi's water use.	This is an incorrect understanding of the statements contained in the CRA. The CRA acknowledges that Thabametsi has limited influence over the drivers which may result in water shortages and does not state that Thabametsi has a limited influence in adequately mitigating such risks. The relevant portions of the CRA are as follows: <i>"Additionally, the risks relating to water shortages and water quality issues remain high. This is because these risks are affected by numerous drivers, a number of which the plant has limited influence over."</i> It is unclear how the acknowledgement that Thabametsi has limited influence in terms of mitigating the risk of operational water shortages supports the argument that the mitigation measures recommended in the FEIR's water impact assessment do not adequately mitigate the risks associated with the plant's water use. The mitigation measures recommended within the FEIR include " <i>Installation of dry cooling technology to reduce water consumption at the power station, implementation of the Water Demand and Conservation Plan, implementation of waste minimisation strategies, water re-use and recycling, monitoring programmes, adherence to specifications of the MCWAP</i> ". Further, and with reference to the responses to comments 6.2, 35, 37, 42, 47 and 48 above, the applicant is satisfied that the water risks for the Project have been adequately considered in the CRA and the WRR and that the mitigation measures referenced therein provide adequate measures for the risks associated with the applicant's use of water.
84	There are also contradictions regarding the volume of water that Thabametsi will require. The CRA says Thabametsi's phase 1 will need 680 000m ³ of water per annum, 70 but in	The CRA has been amended to 720 000m ³ and the IWULA will be submitted on this basis.

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	<p>fact the IWULA says it needs 750 000m³. The fact that inconsistent volumes of water have been given is highly concerning and severely impacts on the public's rights to be informed, to comment, and to participate meaningfully.</p>	
85	<p><i>Plant lifespan</i></p> <p>The draft CCIA assumes the plant will only be operational for 30 years. However, the FEIR suggests the plant will be operational for 40 years. This must be clarified.</p>	<p>The FEIR was calculated on the basis of the projected and anticipated life of the proposed power plant as the FEIR was finalised prior to the Coal Baseload IPP Procurement Programme.</p>
86	<p><i>Technology & emission efficiency of Thabametsi</i></p> <p>An important contradiction that appears from the draft CCIA pertains to Thabametsi's contentions that Thabametsi will utilise clean and efficient technologies and the Minister's statements in her appeal decision, in relation to Thabametsi, that "<i>existing facilities that are old and polluting should not prevent newer, more efficient, cleaner facilities from coming into operation</i>".</p>	<p>This is not a contradiction. This comment is also noted and dealt with in the response to item 88 below. From a cleanness point of view, you will also need to consider the emission levels of SoX and NoX. In this regard, please refer to the CCIAR at section 4.2.2.</p>
87	<p>Thabametsi claims, on affidavit, that "<i>Thabametsi's power station will use newer, cleaner energy generation technology that will contribute to South Africa's emission-reducing goals. The commissioning of the Thabametsi power station, will enable older, carbon inefficient coal-fired power stations to be decommissioned without impairing the country's energy security</i>".</p>	<p>Commented noted and dealt with in detail below.</p>
88	<p>The draft CCIA however, concludes that the Thabametsi plant does not represent, as far as GHG emissions are concerned, an improvement on current emissions intensity of South Africa's grid. The draft CCIA notes that "the emissions are 'very high' when benchmarking against a project-wide emissions magnitude scale based on various international lender standards, as is expected for a coal-fired power station. The emissions intensity (t CO₂e per MWh) is also relatively high when benchmarked against other power plants.</p>	<p>The requirements of the Coal Baseload IPP Procurement Programme constrained the choice of technology used for the proposed project and the size of the proposed power station constrains the extent to which technology-based GHG mitigation measures can be used. The Coal Baseload IPP Procurement Programme's requirements were specified in the Request for Proposals issued by the Department of Energy (DoE) and Thabametsi has duly complied with these requirements. Given the restrictions in the choice of technology, the CCIAR proposes all possible measures to reduce these emissions.</p> <p>Further, the emissions intensity of the Thabametsi Power Station in fact represented an improvement on the three oldest Eskom coal-fired power plants that were due to be commissioned at the time of the issuing of the draft CCIAR.</p> <p>And as indicated in the CCIAR, Eskom has an aging fleet, with 81% of the operating coal-fired power plants being older than 20 years as of 2012 and by 2020/21 it is projected that all the five Eskom power plants scheduled for decommissioning (Camden, Hendrina, Grootvlei, Kriel and Komati) will have similar or higher emissions intensities compared to the proposed Thabametsi plant).</p>
89	<p>The quality of coal and boiler technology proposed for Thabametsi are noted as being inadequate for emissions reduction. This is a fatal flaw, which should have been addressed at the outset as part of the EIA and prior to the project being authorised. This also exposes the mistruths of the statements referred to above.</p>	<p>Please refer to the response above. This is not a fatal flaw. Consideration must be (and has been) given to other equally important factors in addition to the requirements of the first phase for the Coal Baseload IPP Independent Procurement Programme.</p> <p>For instance, the choice to use CFB technologies in respect of coal quality was considered as this will result in the reduction of water use. Further, simply because this technology presents a limited emissions output, one cannot simply describe it as inadequate, especially considering other benefits derived, such as water reduction. The choice of boiler technology on the other hand was considered in order to achieve the greatest increase efficiency. Please refer to the response in item 56 for further information.</p>
90	<p>The GAR criticises DOE's own prescribed technologies for the power stations under the Coal Baseload Independent Power Producer Procurement Programme as not being effective for the reduction of GHG emissions. It states that "<i>[i]mproved thermal efficiencies and lower emissions intensities for coal-fired power plants can be achieved through the use of supercritical steam technologies. However, such technologies are not feasible for the plant, which is designed to meet the DoE's Coal Baseload IPP key requirements in relation to capacity (individual projects are restricted to 600 MW), redundancy (which should be maximised, reflected in the selected configuration of four 150 MW boilers and two 300 MW steam units per 600 MW phase for Thabametsi), and low cost of generation</i></p>	<p>Please refer to the response to comment 58 above. Earthlife's comment is contrary to approved governmental policy, under which the proposed Project will be developed.</p>

NO.	COMMENT/ISSUE	RESPONSE
	<i>(CFB plants are able to use lower quality, cheaper coal).</i> " The fact that DOE has not prescribed the most climate-friendly requirements for the IPP plants cannot be a justification for the inefficiencies of the Thabametsi plant. This, however, does call into question the statements made by government regarding the efficiency and "clean energy" expected to be provided by the new coal IPP power plants, when in fact, they will simply be on par with the polluting Eskom stations.	
	<p><i>Contradictions in the draft CCIA</i></p> <p>91 Even the draft CCIA itself contains contradictions in that the C&R report states that emissions from construction and decommissioning will be excluded "since these are likely to be insignificant in the context of the project's operational emissions"; yet these appear from the GAR to have been assessed, and this was required by DEA.</p>	<p>Paragraph 1.2 of the C&R expressly states that "A separate greenhouse gas (GHG) assessment has been conducted as part of the EIA, assessing the magnitude of the project's GHG emissions during the construction, operation and decommissioning of the plant..."² It is unclear where the statement to the contrary quoted by Earthlife has been extracted from. There are accordingly no contradictions in the draft CCIAR.</p> <p>The emissions from the construction and decommissioning phases of the project were included within the assessment on instruction from the DEA as part of the acceptance of the Scope of Work document.</p>
	<p><u>The draft PIA</u></p> <p>92 The draft PIA constitutes the draft summary report, the Full Palaeontological Impact Assessment Report (PIAR), appendix E to the draft summary report, and other relevant appendices to the draft summary report.</p>	Noted.
	93 The PIAR refers, incorrectly to the applicant as being Newshelf 1282 (Pty) Ltd – this should be corrected.	This has been corrected within the final report.
	94 It identifies the nature of the impacts from Thabametsi as being: damage or destruction to fossil materials during construction (which impact could be significant with "irreversible damage"); the movement of fossils during construction; and the loss of access to fossil materials, for scientific study, which are beneath infrastructural elements.	Comment noted.
	95 The probability of impacts is generally stated as low to medium (medium only for the Karoo Supergroup in the Swartrant Formation). Nevertheless, in the absence of mitigation procedures, damage or destruction of any palaeontological materials would be permanent.	Comment noted.
	96 The PIAR states that "while the likely hood (sic) of any disturbance of paleaontological materials is low in the Karoo Supergroup and Cenozoic deposits, the severity of any impact is potentially extremely high", this is because fossil deposits of the Cenozoic age are not common within the geographical record of the wider region, and thus each fossil that may be present is potentially highly scientifically significant. It states further that the possibility of a negative impact can be minimised by the implementation of adequate damage mitigation procedures.	Comment noted. We reiterate that even though the severity of any impact is potentially extremely high, such negative impacts can be minimised by the implementation of adequate damage mitigation procedures.
	97 Much therefore, depends on the adequate implementation of mitigation procedures and proper monitoring of such procedures by the South African Heritage Resources Agency (SAHRA). If adequate steps are not taken by Thabametsi and SAHRA, this could result in irreversible damage to, and loss of, valuable heritage resources. It is therefore vital that proper mitigation measures be put in place; that these measures be strictly complied with; and that regular monitoring be conducted by SAHRA as required.	Comment noted.
	<p><u>Conclusion</u></p> <p>98 In conclusion, we request that our recommendations made herein be given careful consideration, alongside our DSR and FSR comments – and that they be used to finalise</p>	Final comments have been received from SAHRA. Mitigation measures included within the Paleontological Impact Assessment as well as those made by SAHRA have been included within the EMPr for the project.

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	<p>the CCIA and PIA, to ensure that the assessments are in line with the Constitution and the requirements of NEMA.</p>	
<p>99</p> <p>99.1</p> <p>99.2</p>	<p>In particular, we submit that:</p> <p>the scope of the CCIA must be amended and extended to include an assessment of the impacts of the project, as exacerbated by climate change, on the environment and the people of South Africa, particularly in Lephalale where the power station will be based, and the CCIA must comprehensively assess these impacts; and</p> <p>numerous risks and impacts addressed in the CCIA, which were not assessed in the FEIR and IWULA, have now come to light. This highlights the inadequacy of the EIA and IWULA and the prejudice to our client's rights to public participation and the s24 Constitutional right of the people who will be impacted by the power station. These rights are hereby reserved.</p>	<p>The comments have been recorded as part of the process currently being undertaken and will be submitted to the DEA together with the final climate change impact assessment and paleontological impact assessment for the independent power producer (IPP) Thabametsi coal-fired power station. Where required, amendments have been made to the CCIAR and PIA Report to address comments made.</p>
<p>SUBMISSION FROM LEPHALALE LOCAL MUNICIPALITY, DATED 30 MAY 2017</p>		
	<p>We acknowledge your letter dated 30 January 2017 and wish to inform you that the municipality has no objection on the proposed Climate Change and Paleontological Impact Assessment subject to the following:</p> <ul style="list-style-type: none"> • The development must comply with both the Lephalale IDP and Spatial Development Framework in that both these strategic documents seek to enhance and promote economic sustainability and growth; • The farm does not have a very high agricultural value due to its location in a mining area, hence agricultural land won't be compromised; as well as noting that proposed rights were considered for several properties in close vicinity of the subject property. However, strict note should be taken to emission percentages and direction thereof. • That the proposed development for the IPP Waterberg (Thabametsi) Power Station be in accordance with all relevant legislations and policies attached to its planning and implementation. <p>Kindly note that these comments do not exempt any person from complying with the provisions of any other act.</p>	<p>Comments have been noted as part of the process.</p> <ul style="list-style-type: none"> • The project site is located within Zone 4: Mining focus areas as defined in the Environmental Management Framework (EMF) for the Waterberg District Municipality. This zone represents areas where significant mineral resources (in this instance coal) of strategic national importance occur within largely natural environments. The proposed power station would be viewed as a preferred development within this Zone as it is directly associated with mining (i.e. the Thabametsi Mine), and does not restrict or constrain potential mineral exploitation. • The project site falls within Spatial Development Area 3 (mixed non-residential land-use driven by mining and energy) as defined in the Spatial Development Framework (SDF) of the Lephalale Municipality and within the mining zone (focus area 3) as defined in the IDP of the Lephalale Municipality. The proposed project is therefore in line with the strategic planning of the municipality.

SUBMISSIONS ON THE FINAL SCOPE OF WORK REPORT FOR THABAMETSI IPP COAL-FIRED POWER STATION BY CENTRE FOR ENVIRONMENTAL RIGHTS ON BEHALF OF EARTH LIFE AFRICA SUBMITTED TO DEA, DATED 10 NOVEMBER 2016

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4.	<p>We refer to the final scope of work report ("the FSR") for the climate change and palaeontological impact assessments for the proposed Thabametsi coal baseload independent power producer (IPP) power station ("the project").</p> <p>As you are aware, we act for Earthlife Africa Johannesburg ("our client"), a registered interested and affected party (I&AP) in relation to the environmental impact assessment process for the project.</p> <p>We refer also to our comments on the draft scope of work report (DSR) dated April 2016, of 25 May 2016 ("the DSR comments").</p> <p>There appear to be no substantive changes from the DSR to the FSR, and our client's many suggested changes have not been incorporated into the FSR. The FSR therefore remains inadequate in many material respects. Our client stands by the DSR comments and recommendations made therein, and we incorporate by reference our client's DSR comments as comments on the FSR. A copy of the DSR comments is attached as A1, for your ease of reference.</p>	<p>Comments received from CER on the Draft Scope of Work Document were included within the Comments and Responses Report submitted to the DEA together with the final Scope of Work Document.</p>
5.	<p>We particularly reiterate our DSR submission that the proposed scope for the climate change impact assessment (CCIA) is far too narrow an assessment, and at odds with global practice in this area.</p>	<p>The comment is noted and has been responded to in the Comments and Responses Report submitted as part of the Final Scope of Work document.</p>
6.	<p>We do not intend to repeat the DSR comments; however, we do wish to re-emphasise the following as indispensable requirements for the CCIA to be conducted. The CCIA must consider several aspects of the relationship between the proposed project and climate change, including:</p> <p>6.1 the project's direct impacts on climate change. In addition to simply considering the extent of greenhouse gas (GHG) emissions to arise from the project, this must include as assessment of: indirect or full life-cycle emissions; cumulative emissions; and the social cost (i.e. the external health and environmental costs) of carbon;</p> <p>6.2. 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 due to South Africa's Paris Agreement obligations and a collapsed coal market – this would result in the project becoming a stranded asset; and</p> <p>6.3. how the project's impact on South Africa's environment and society will be affected further by climate change. This would include the ways in which the proposed project would impact on South Africa's own necessary adaptations to a changed climate.</p>	<p>These comments are noted and have been responded to in the Comments and Responses Report submitted as part of the Final Scope of Work document.</p>
7.	<p>Our additional comments below relate, largely, to recent developments relevant to the impact assessments and incorporate further input on the contents of the FSR.</p>	<p>Noted. Responses are provided below as relevant.</p>
Background & Relevant Developments		
8.	<p>We were advised that this FSR had already been submitted to the Department of Environmental Affairs (DEA) on 18 July 2016, and accepted by DEA on 25 August 2016, without being made available for public consideration and comment. This is inconsistent with the requirements of the Environmental Impact Assessment (EIA) Regulations, 2010, which were confirmed by DEA to apply to these assessments.</p>	<p>Comment noted. No response required.</p>

NO.	COMMENT/ISSUE	RESPONSE
9.	<p>On 30 September 2016, we wrote to DEA advising that, in terms of the EIA Regulations, 2010, the I&APs, including our client, should have been given an opportunity to comment on the FSR, and requesting that:</p> <p>9.1. the FSR be made available to I&APs for comment in terms of regulation 56 of the EIA Regulations, 2010 without delay; and</p> <p>9.2. DEA revoke its acceptance of the scope of work report to allow the submission of comments by I&APs; the consideration of such comments by DEA; and, after having considered the input of I&APs, a fresh decision to be made by the DEA on whether to approve the scope of work report.</p>	<p>Comment noted. No response required.</p>
10.	<p>On 7 October 2016, we received a response from DEA advising that "that the Department has considered (the applicant's) submission and addressed (its) concerns. The final scope of work will be made available to registered interested and affected parties for comment and resubmitted to the Department for consideration."</p>	<p>Comment noted. No response required.</p>
11.	<p>The FSR was, as a result, made available to I&APs for consideration and comment on 9 October 2016, with comments due 11 November 2016.</p>	<p>Comment noted. No response required.</p>
12.	<p>Given that the climate change impact assessment report, was, according to an email from Gabriele Wood of Savannah Environmental (Pty) Ltd dated 12 September 2016 (attached marked A2), already in the process of being "updated and finalised", our client is concerned that the comments on the FSR will not have any bearing on the content of the assessment – which seems, in any event, to have commenced already. This would render the commenting opportunity for I&APs nothing more than a tick-box exercise, and would be counter to the object and principles of the National Environmental Management Act, 1998 (NEMA).</p>	<p>Considering the fact that an Acceptance of the Scope of Work document was received from the DEA on 25 August 2016, it is not considered unreasonable that the climate change impact assessment study was underway in September. Comments on the draft Scope of Work and the response from the DEA in the letter dated 25 August 2016 were taken into consideration in the initiation of this study. Any additional comments raised by stakeholders and/or the DEA will be considered with the assessment prior to finalisation thereof.</p>
13.	<p>Our client will take strong exception to any indication that the due processes set out and required by NEMA and the EIA Regulations, 2010 are not being adequately followed. The CCIAR cannot commence without the final comment by I&APs and approval by DEA of the FSR.</p>	<p>Comment noted. The CCIAR will only be completed and the draft report made available following acceptance of the Scope of Work document by the DEA.</p>
14.	<p><u>South Africa's Ratification of the Paris Agreement</u> The DSR comments refer to the Paris Agreement, to South Africa's Intended Nationally Determined Contribution – now Nationally Determined Contribution (NDC) - and to the fact that South Africa had recently become a signatory.</p>	<p>Comment noted. No response required.</p>
15.	<p>On 5 October 2016, the Paris Agreement came into effect when at least 55 Parties to the Convention accounting in total for at least an estimated 55% of the total global GHG emissions deposited their instruments of ratification. This happened at an unprecedented and record speed for a multilateral agreement. Currently 103 parties, including South Africa (as of 1 November 2016), have ratified the Agreement. On 4 November 2016, the Paris Agreement entered into force.</p>	<p>Comment noted. No response required.</p>
16.	<p>The fact that this Agreement has come into force faster than anyone anticipated is indicative of the rapid and necessary move away from the fossil fuel era. This also means that South Africa is bound to the provisions of the Paris Agreement, in terms of which it is obliged to submit more ambitious and stringent NDCs every 5 years.</p>	<p>Comment noted. No response required.</p>
17.	<p>Section 231 of the Constitution confirms that an international agreement binds the Republic once it has been approved by resolution in both the National Assembly and the National Council of Provinces. Furthermore, one of the principles set out in NEMA under S2(4)(n), is that "global and international responsibilities relating to the environment must be discharged in the national interest." In any event, there is no doubt that the project will impact on constitutional environmental rights. The CCIAR and paleontological impact assessment must be conducted so as not to violate Section 24 of the Constitution, nor any other constitutional right. Section 39(1)(b) of the Constitution requires any interpretation of the Bill of Rights to</p>	<p>Comment noted. The CCIAR has provided an indication of the climate change impact of the project in context of the current situation of the country in terms of GHG emissions and international obligations. South Africa's national response considers both development needs and climate change imperatives. South Africa faces the challenge of climate change as a developing country, with overriding priorities to eliminate poverty and eradicate inequality. Eliminating poverty and eradicating inequality requires addressing major challenges in creating decent employment, which in turn requires sustainable economic development, improving basic education, health and social welfare and many other basic needs such as access to food, shelter and modern energy services. In addition, South Africa is presently facing acute energy challenges that hamper economic development. As a result of the historical development pathway of its energy sector, South Africa is currently heavily dependent on coal, with a fleet of old and inefficient coal-fired power</p>

NO.	COMMENT/ISSUE	RESPONSE
	consider international law. South Africa is therefore under an obligation to meet the commitments set out in its NDC and the Paris Agreement. A new coal-fired power station with an anticipated lifespan of at least 40 years would, our client submits, be inconsistent with any commitments under the Paris Agreement.	plants that are nearing, but not yet at, the end of their design lifecycles as well as being reliant on a significant proportion of its liquid fuels being generated from coal. Therefore, in the short-term (up to 2025), South Africa faces significant rigidity in its economy and any policy-driven transition to a low carbon and climate resilient society must take into account and emphasise its overriding priority to address poverty and inequality. South Africa's INDC should be understood in the context of these and other national circumstances ³ . The NDC obligations should be understood in the context of these national circumstances, where the global climate change multi-lateral system includes the mobilisation of and access to finance, technology and capacity building for developing countries, and that as a developing country SA is putting in place a system to achieve a fair contribution ⁴ .
18.	We also pointed out, in the DSR comments, that both the Paris Agreement and South Africa's current NDC have been the subject of criticism for not being strict enough to deter the impending impacts of climate change. Many scientists concur that even a 2 degrees Celsius temperature increase will be catastrophic for South Africa. Even with our NDC commitments in place, more action is required to mitigate against the impacts that will result from "the "inadequate" rating indicates that South Africa's commitment is not in line with interpretations of a "fair" approach to reach a 2°C pathway. This means it is not consistent with limiting warming to below 2°C. If most other countries were to follow South Africa's approach, global warming would exceed 3–4°C." It also states that "South Africa will need to implement additional policies to reach its proposed targets."	The comment is noted and has been responded to above and in the Comments and Responses Report submitted as part of the Final Scope of Work document. In addition, Thabametsi cannot comment on the criticism directed at the Paris Agreement and South Africa's NDC. This is a policy decision and should be directed at the relevant authorities.
19.	As a result of the above and the necessary global divestment from fossil fuels, any fossil fuel projects run the high risk of becoming stranded assets, with severe economic and environmental consequences. A study by the Energy Research Centre titled 'The Impact of Stranding Power Sector Assets in South Africa' states that "(g)iven that the recently negotiated outcome of the UNFCCC's Paris Agreement will require commitment even from developing countries to reduce their greenhouse gas emissions, continued investment in high-emitting infrastructure may create costly risks for South Africa in the future ... Investing in new coal-fired assets in the short-term may well prove costly in the longer-term, as the risk associated with not recouping those investments due to policy shifts or technology changes grows higher, especially for plants built after Medupi.	The need for the proposed coal-fired power station is based on energy planning as defined in the 2010 IRP (the current gazetted energy plan for the country) which defines the need for 8GW of coal based power generation up to 2030. Further, this comment is dealt in the response to comment 8 above.
20.	It is within this context that the CCIA must be conducted. It is therefore important that the scope of the CCIA is comprehensive and factors in considerations relating to the future obligations and economic trends, which could result in the project becoming redundant and carrying even more harmful risks to society –including human health and wellbeing, the environment, the climate, and the economy than may have been anticipated.	Considerations relating to future obligations and economic trends are beyond the scope of the EIA and CCIAR and are not required by law. As previously stated, the Thabametsi Project is in response to a request by Government to independent power producers. Macro-economic trends are thus considered by Government in formulating policies, not at project level.
Submissions of the Content of FSR		
21.	The FSR simply states that "this study seeks to assess the GHG impacts associated with the project. Annual GHG emissions resulting from the project will be estimated ... and the climate change impact of these emissions assessed ...". As repeatedly submitted in the DSR comments, what is required for a comprehensive and effective CCIA is much more than a mere estimate of the GHG emissions of the project.	The comment is noted and has been responded to in the Comments and Responses Report submitted as part of the Final Scope of Work document.
22.	The FSR makes no mention of the need to assess the impacts of the project's emissions more broadly; including an assessment of the project's full life cycle emissions, cumulative emissions and the social cost of these emissions; the impacts that climate change will have on the feasibility of the project in going forward; or how the impacts of the project will be further exacerbated by the impacts of climate change.	These comments have been responded to in the Comments and Responses Report submitted as part of the Final Scope of Work document and further addressed more thoroughly in the CCIA.

³ <http://www4.unfccc.int/ndcregistry/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf>

⁴ SOUTH AFRICA'S INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC) DISCUSSION DOCUMENT 1 August 2015

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23.	<p>In the DEA's (which has now been withdrawn) Acceptance of the Scope of Work Report dated 25 August 2016, the DEA made the following recommendations for the scope of the CCIA:</p> <p>23.1. that the project's full life-cycle emissions be considered – not simply the emissions from the operation phase;</p> <p>23.2. that the carbon footprint of the project be calculated for construction and decommissioning, and activities related to those phases;</p> <p>23.3. that the project's resilience to the impacts of climate change be addressed; and</p> <p>23.4. that all comments received as part of the public participation process should be addressed adequately and should form part of the final additional studies report.</p>	<p>These requirements have been noted by the applicant and have been more thoroughly addressed in the final CCIAR.</p>
24.	<p>Our client welcomes the recommendations that were made by DEA, but also emphasises that a more extensive assessment of, inter alia, the following is required:</p> <p>24.1. cumulative emissions, taking into account the combined (current and future) GHG emissions from other coal-fired power stations, mines, heavy industry, and other polluters, and how this will potentially impact on South Africa's emissions targets;</p> <p>24.2. the social cost of the carbon emissions associated with Thabametsi. This entails a consideration of external costs and the impacts on the environment and accordingly on human health and wellbeing, as a result of the project's emissions;</p> <p>24.3. how the project's harmful impacts will be worsened and exacerbated by the harmful effects of climate change in the Limpopo Province and the Waterberg in particular; and</p> <p>24.4. how the impacts of climate change will impact on the feasibility and continued operation of the power station project. This is the question of whether - as a result of external factors such as climate change and the international move away from fossil fuel combustion – the project will be able to operate for its full anticipated lifespan.</p>	<p>These comments have been responded to in the Comments and Responses Report submitted as part of the Final Scope of Work document and have been more thoroughly addressed in the final CCIAR.</p>
25.	<p>In addition to the above general submissions and the submissions already made in the DSR comments, we make the following further submissions on the FSR.</p>	<p>Noted. Responses are provided below as relevant.</p>
26.	<p><u>Change of Applicant</u> We point out that the "Project Developer" reflected in the FSR is, in fact, no longer the proponent of the project.</p>	<p>Noted. The amendment of the applicant was issued on 26 August 2016, after submission of the Final Scope of Work document to the DEA (submitted in July 2016). The applicant name will be updated within the assessment document detailing the findings of the CCIAR and Palaeontological Impact Assessment.</p>
27.	<p>On 26 August 2016, I&APs were given notification of an amendment to the environmental authorisation in terms of the EIA Regulations, 2014.</p>	<p>Noted. No response required.</p>
28.	<p>The amendment provides for the holder of the environmental authorisation to be amended from "Sanjith Mungroo, Newshelf 1282 (Pty) Limited" (now Thabametsi Power Project (Pty) Limited) to "Harutoshi Nakamura on behalf of Toshihiro Maruo (Director of Thabametsi Power Company (Pty) Ltd), Thabametsi Power Company Limited".</p>	<p>Noted. No response required.</p>
29.	<p>As a result of the amendment, the authorisation is now held by Thabametsi Power Company (Pty) Limited, and therefore the project developer as reflected on page 2 of the FSR is incorrect, as it is no longer Newshelf 1282 (Pty) Ltd. The FSR must be amended to reflect this.</p>	<p>Noted. The amendment of the applicant was issued on 26 August 2016, after submission of the Final Scope of Work document to the DEA (submitted in July 2016). The applicant name will be updated within the assessment document detailing the findings of the CCIAR and Palaeontological Impact Assessment. It is not considered necessary to amend the Scope of Work document as the change in applicant name does not change the content of the document or intended scope of work.</p>
30.	<p>Appendix B5 - The Comments and Responses Report 30. The Comments and Responses Report ("the C&R report"), Appendix B5 to the FSR, purports to address and respond to the submissions made in the DSR comments. We do not intend to deal with all the responses herein, however we regard it as important and necessary to highlight, and respond to, some of them, which we address below.</p>	<p>Noted. Responses are provided below as relevant.</p>
31.	<p>In relation to our client's recommendation that international best practice and climate change laws of other jurisdictions be considered, the C&R report states, inter alia, that:</p>	<p>These comments have been responded to in the Comments and Responses Report submitted as part of the Final Scope of Work document and have been addressed in the final CCIAR.</p>

NO.	COMMENT/ISSUE	RESPONSE
	<p>31.1. "Not all international practice is necessarily appropriate or applicable to South Africa and this Project";</p> <p>31.2. "legislation and guidelines from other countries cannot be applied to a South African context nor is it feasible to consider in the context of the climate change impact assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy which is applicable within the context of the project. By following South African legislation the appropriate scope will be developed for a South African project, which will probably not be the same as that applicable in the EU or the USA...;"</p> <p>31.3. "the good practice in CCIAR (in South Africa) is still emerging"; and</p> <p>31.4. the approach recommended in the DSR comments "is emerging global practice in developed countries not developing countries".</p> <p>These contentions are disputed for reasons that include the following:</p> <p>31.1 In the context of climate change and the assessment of its impacts, particularly in relation to large infrastructure, fossil fuel projects such as the present, all the guidelines and laws highlighted in the DSR comments, including those of foreign jurisdictions, would be relevant and applicable to this project. The intention in referring to these was to reference good examples of CCIA practice, given that this has not yet been developed in South Africa. S39(1)(c) of the Constitution makes provision for the consideration of foreign law when the Bill of Rights is interpreted.</p> <p>31.2. The fact that good practice in this field has not yet developed in South Africa does not mean that the applicant is entitled to follow a sub-par assessment process. If anything, this should serve as an opportunity to set a precedent for a best practice CCIA.</p> <p>31.3. It also cannot be said that our client's recommended approach to the CCIA is confined to developed countries. Such approaches have also been adopted by developing countries such as the Republics of Kiribati and Vanuatu, island nations which are particularly vulnerable to the impacts of climate change and therefore have a duty to implement such a cautionary approach. The reality is that many developing countries are those most at risk in relation to climate change impacts. Similarly, South Africa, as a water-scarce country, is acknowledged in national policy to be very vulnerable to the impacts of climate change. Furthermore, it would clearly be in South Africa's best interests to follow the most comprehensive approach to a CCIA, the country's classification as "developing" as opposed to "developed" in this instance is irrelevant.</p> <p>31.4. It would also be in the applicant's own best interests to fully assess whether the project is likely to be economically feasible in light of current climate change developments. The only possible detriment of following such an approach might be an additional expense to the applicant. This is, however, outweighed by the importance of this assessment and the significant harm that could be caused by the applicant, in the absence of climate change impacts being thoroughly assessed.</p>	<p>The CCIAR is not an interpretation of the Constitution and therefore the application of Section 39(1)(c) cannot be connected to the drafting of the CCIAR. Section 39(1)(c) states that "(1) When interpreting the Bill of Rights, a court, tribunal or forum—(c) may consider foreign law". The use of the word may is a clear indication of a discretion and not an obligation.</p> <p>It is not possible for the applicant to follow "sub-par assessment process" if "the CCIAR for Thabametsi is the first of its kind for a coal-fired power station in South Africa," thereby there is no standard for such an assessment.</p>
32.	<p>The CCIA for Thabametsi is the first of its kind for a coal-fired power station in South Africa. Because there are no guidelines or legislative requirements in South Africa as to what such an assessment should consider, nor any stipulated requirements from the Minister in her appeal decision, international best practice must be used as a guide and benchmark in this instance. Many other jurisdictions have developed a growing practice in this area.</p>	<p>Comments regarding the scope and following of best practice in undertaking the studies have been responded to in the Comments and Responses Report submitted as part of the Final Scope of Work document.</p>

NO.	COMMENT/ISSUE	RESPONSE
	<p>Common features of CCIA laws and guidelines which are implemented in other jurisdictions should guide South African assessments. To ignore global practice by proposing only a basic assessment of the GHGs to be emitted by the project – as Thabametsi does - would result in a wholly-inadequate CCIA.</p>	
33.	<p>Nevertheless, South African law is quite clear that an EIA must consider all potentially significant impacts. For that reason it cannot be said that South African law does not provide for an assessment of the impacts of climate change.</p>	<p>South African law does not provide Regulations or Guidelines for an assessment of the impacts of climate change. The National Environmental Management Air Quality Act ("NEMAQA") is the only legislation that makes reference to climate change. However, no Regulations have been implemented as required by the implementing legislation.</p>
34.	<p>We stated, in the DSR comments, that the CCIA should be a comprehensive and accurate assessment of the climate change impacts of the project, which meets the requirements of NEMA and s24 of the Constitution. In response, it was stated that "unrealistic expectations should not be placed on this CCIAR which is essentially being done at Project level". The fact that the assessment is being done "at project level" does not exempt Thabametsi from its duty of care under NEMA or its obligation not to infringe on the constitutional rights of the communities likely to be impacted by this project. No unrealistic expectations are being made – all our client asks is for Thabametsi to perform a fair and accurate assessment.</p>	<p>The full comment to which reference is made is as follows:</p> <p><i>"We submit herein our comments on the SR. In addition, as the required CCIA (in the context of the EIA for a coal-fired power station) is relatively new in South Africa, we are instructed to make particular recommendations on the scope for the CCIA based on international best practice, to ensure that the CCIA will be a comprehensive and accurate assessment of the climate change impacts of the project, which meets the requirements of NEMA and s24 of the Constitution."</i></p> <p>The response provided was referring to the expectations that all international guidelines be complied with. This is considered an unrealistic expectation.</p>
35.	<p>The C&R report states that our submissions regarding the inadequacy for South Africa's NDC to mitigate the effects of catastrophic climate change relates to national and international policy and that it is not possible or appropriate to assess these issues in the EIA stage of the project.</p> <p>This may be so, but these considerations are certainly relevant at project level, given the likelihood of, and necessity for, more stringent policies being adopted as the impacts of climate change worsen and international pressure around this issue mounts. This could see the project incurring major additional or unforeseen expenses or no longer being able to operate. It also means that the climate change impacts of the project will not be minor, given that South Africa is already expected to be impacted significantly by climate change.</p>	<p>The CCIA will be undertaken to assess the impact of the project on climate change as required by the DEA. The CCIA (or an EIA) cannot be expected to consider future probable "more stringent" policies and can only be based on current existing laws.</p> <p>Considerations relating to future obligations and economic trends are beyond the scope of the EIA and CCIAR and are not required by law. As previously stated, the Thabametsi Project is in response to a request by Government to independent power producers. Macro-economic trends are thus considered by Government in formulating policies, not at project level.</p> <p>The project has already been registered as a Strategic Infrastructure Project (SIP). A Power Purchase Agreement will be signed for the project with Eskom for a 30-year period which will therefore require that the project is operational for this timeframe. Following this, the PPA will be extended or the project will be decommissioned, depending on the requirements at the time.</p>
36.	<p>In response to our client's submissions that the CCIA should consider how climate change will impact upon the feasibility of the project, the C&R report states, at item 21, that "the impacts of climate change on the project are considered a project specific risk and are not considered relevant to the environmental impact assessment (as these do not represent impacts on the environment) which is conducted in lines with South Africa's EIA regulations." On the contrary, as explained above, should the project become infeasible and unable to operate for its full expected lifespan, it would become a stranded asset and this could have numerous significant impacts from an environmental and socio-economic perspective, which Thabametsi is required to consider. Because the project would require water and coal to operate, this would result in the unnecessary use of water required by communities and other sectors and in the unnecessary further destructive and harmful mining of coal.</p> <p>Furthermore, DEA has clearly indicated on previous occasions (in relation to an EIA for Transnet's proposed berth expansion in Durban), and in respect of this project (in the Acceptance of the Scope of Work Report) that an EIA must consider the proposed project's resilience to the impacts of climate change - this relates to the project's feasibility in light of the impacts of climate change. This must therefore be considered.</p>	<p>The CCIA will be undertaken to assess the impact of the project on climate change as required by the DEA and in accordance with existing South African legal requirements. The Acceptance of the Scope of Work has been withdrawn, thus its requirements are not legally binding.</p> <p>The project has already been registered as a Strategic Infrastructure Project (SIP). A Power Purchase Agreement will be signed for the project with Eskom for a 30-year period which will therefore require that the project is operational for this timeframe. Following this, the PPA will be extended or the project will be decommissioned, depending on the requirements at the time.</p>
37.	<p>In response to the submission in the DSR comments that the CCIA must consider the way in which the project will impact on South Africa's own necessary adaptations to climate change, the response states that this was not considered to be part of the scope of the CCIA and that</p>	<p>This has been considered as part of the CRA.</p>

NO.	COMMENT/ISSUE	RESPONSE
	<p>"the decision was made to exclude this on the basis that the EIA process in South Africa looks at the impact of the project of the environment and not vice versa." This is a misunderstanding of the recommendation, which was that the CCIA must look at how the current and future impacts of climate change on the environment (for example water availability, dust emissions and soil fertility) will be exacerbated and aggravated by the impacts that the project will have on these elements of the environment and human health.</p>	
38.	<p>Insofar as the recommendation for the determination of the baseline - which constitutes the baseline environment without the impacts of climate change - is concerned, the C&R report states that, "climate change impacts and their effect on the project and on the baseline environment was not included in the scope of the work, which is mitigation rather than adaptation focused." This is incorrect. The purpose of determining the baseline environment is to ascertain the scenario in the absence of the climate change impacts, which will materialise in future and will be exacerbated by the project. This relates directly to the project's impacts and this is how the environmental, specifically the climate change, impacts of the project must be determined and assessed.</p>	<p>It is not possible to consider the environment without climate change impacts (as suggested), since climate change has already occurred. The Scope of Work document details the scope of the GHG Baseline study (Part 2 of the study). The report states that the GHG baseline study will "focus on quantifying (and projecting) South Africa's national annual GHG emissions, and will present a magnitude scale for project-wide GHG emissions based on a number of standards from international lender organisations or groupings". The CCIA will be undertaken to assess the impact of the project on climate change as required by the DEA.</p>
39.	<p>We note that, in respect of our recommendation that the cumulative impacts of the project must be considered, the C&R report states that the "impact assessment will include an analysis of the extent to which the project is aligned with South Africa's climate change policy and INDC..." We trust that this means that the project's emissions will not be assessed in isolation and that they will be considered alongside the emissions of other sectors and those of other existing and upcoming industrial developments, to ascertain whether, with current and upcoming emissions, there will be adequate emission space to meet the NDC commitments, with the GHG emissions that will come from Thabametsi.</p>	
40.	<p>The C&R report also states that the project's impacts on water were assessed as part of the EIA phase and that these will be further assessed within the water use licence application (WULA) process. This is unacceptable, firstly and predominantly because the impacts of climate change inherently entail impacts on available water resources and water quality. Secondly, because the water impacts were not adequately assessed in the EIA phase, nor are they being adequately assessed in the IWULA.</p>	<p>The appeal resolution requires that an assessment of the impacts of the project on climate change be undertaken and did not include a requirement for the assessment of the impacts of climate change on the environment. Impacts of the project on water resources were assessed to the satisfaction of the DEA as part of the EIA. The issue of water availability forms part of the Water Use License Application and is being determined in consultation with TCTA and DWS.</p>
41.	<p>The FSR gives no indication that it will assess how climate change is going to alter the water availability of the Mokolo and Crocodile West catchments, which the project will depend on. The EIA and WULA do not consider this either. It is well documented that water is a serious concern in the Mokolo catchment and if it is found that climate change reduces the water availability or places uncertainty as to future water availability, this could impose a risk on the long term feasibility of the project. It is suggested therefore that the FSR be amended to provide for such a study to be included.</p>	<p>As previously indicated, the supply of water to phase I of the project will be sourced from the Mokolo Dam and in terms of an existing entitlement. There is no indication that this will be deficient according to the project's water requirements.</p> <p>Water availability within the broader Mokolo and Crocodile West catchments was considered by DWS as part of the MCWAP feasibility studies. The long term study of the Mokolo catchment is beyond the scope of the project and the CCIA.</p>
Conclusion		
42.	<p>In conclusion we again request that our recommendations in the DSR comments and herein, be given due and careful consideration, to ensure that the FSR and the CCIA are in line with the Constitution and the requirements of NEMA.</p>	<p>Comment noted. No response required.</p>
43.	<p>In the circumstances, we request that the competent authority reject the FSR in terms of regulation 30(1)(b) of the EIA Regulations, 2010.</p>	<p>Regulation 30(1)(c) is the correct reference regarding rejection of a report and states:</p> <p>30. (1) The competent authority must, within 30 days of acknowledging receipt of a scoping report, or receipt of the required information, reports, or comments or the amended scoping report, consider it, and in writing</p> <p>(c) reject the scoping report if it—</p> <p>(i) does not contain material information required in terms of these Regulations; or</p>

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		<p>(ii) has not taken into account guidelines applicable in respect of scoping reports and plans of study for environmental impact assessment.</p> <p>In terms of the above requirements, the Scope of Work is not considered to be fatally flawed and addresses the requirements of the appeal resolution issued by the Minister.</p>
44.	Alternatively, we request that the competent authority, at least, request the EAP to make the recommended amendments (as contained herein above) to the FSR, in terms of regulation 30(1)(c) of the EIA Regulations, 2010.	From the issues raised, this is not considered to be a reasonable request. The Scope of Work is not considered to be fatally flawed and addresses the requirements of the appeal resolution issued by the Minister.

RECOMMENDATIONS FOR THE CLIMATE CHANGE IMPACT ASSESSMENT TO BE CONDUCTED BY THABAMETSI POWER PROJECT (PTY) LTD SUBMITTED BY EARTH LIFE AFRICA ON 25 MAY 2016 – CENTRE FOR ENVIRONMENTAL RIGHTS

NO.	COMMENT/ISSUE	RESPONSE
45.	We address you on behalf of our client, Earthlife Africa, Johannesburg (ELA), with reference to the Proposed Scope of Work: Additional Studies (the scoping report or "SR") prepared for Newshelf 1282 (Pty) Ltd (now Thabametsi Power Project (Pty) Ltd ("Thabametsi")), which was made available for comment on 22 April 2016.	Comment noted.
INTRODUCTION		
46.	The submissions herein relate to the 7 March 2016 decision on the appeal of the integrated environmental authorisation (EA) granted to Thabametsi on 25 February 2015 ("the appeal decision"), for the proposed establishment of a 1200MW coal-fired power station and associated infrastructure near Lephalale, Limpopo ("the project").	Comment noted.
47.	As part of the appeal decision, the Minister required, inter alia, that, within 6 months of the appeal decision, Thabametsi conduct a climate change impact assessment (CCIA), as well as a palaeontological impact assessment report (PIAR), in relation to the project.	Comment noted.
48.	We note, however, that the appeal decision has not prescribed how the CCIA should be conducted, nor what impacts it should consider.	The appeal decision did not prescribe any methodology for the study. The purpose of the Scope of Work Report (Savannah 2016) was to present the proposed methodology to the public and DEA and obtain comments.
49.	Our client's rights to take the Minister's appeal decision on review remain fully reserved. The following submissions are made without prejudice to those rights. Nonetheless, our client recognises the need for the CCIA to be conducted properly, irrespective of the outcome of any potential litigation.	Comment noted.
50.	A letter from the Department of Environmental Affairs (DEA): Director of Appeals and Legal Review, of 24 March 2016, in response to our letter to the Minister of 23 March 2016, confirmed that the CCIA will "be subject to scoping, public comment and assessment as per the Environmental Impact Assessment Regulations, 2010". We note that you were copied on this correspondence.	The Scoping Report (Scope of Work Report, Savannah, 2016) has been released and was made available for public and stakeholder comment from 20 April 2016 to 23 May 2016.
51.	In accordance with the above and in terms of Regulations 29 and 56(1) of the National Environmental Management Act (NEMA): Environmental Impact Assessment (EIA) Regulations, 2010 ("the EIA Regulations"), our client, and all interested and affected parties (I&APs), must have an opportunity to comment on, in addition to the SR, the draft and final CCIA and PIAR to be submitted to DEA	Both the Climate Change Impact Assessment Report (CCIAR) and PIAR will be made available for public review and comment for a 30-day period, as agreed to with DEA.
52.	We submit herein our comments on the SR. In addition, as the required CCIA (in the context of the EIA for a coal-fired power station) is relatively new in South Africa, we are instructed to make particular recommendations on the scope for the CCIA based on international best practice, to ensure that the CCIA will be a comprehensive and accurate assessment of the climate change impacts of the project, which meets the requirements of NEMA and s24 of the Constitution.	Comment noted, however, unrealistic expectations should not be placed on this CCIAR which is essentially being done at a Project level.
53.	With the above in mind, we refer below to other jurisdictions where climate change considerations are taken into account in assessing the impacts of proposed developments. The European Union, the Republic of Kiribati, and the Republic of Vanuatu have amended their EIA laws to specifically require that climate change effects are evaluated. Canada and Fiji have also published guidance documents directing project applicants to conduct climate change analyses, although they have not formally amended their EIA statutes or regulations (bid at page 10)	Comment noted, however not all international precedent is necessarily appropriate or applicable to South Africa and this Project.
54.	We and our client have always maintained that, as NEMA s24(4)(a)(iv) requires that an EIA process ensures investigation into the potential consequences for or impacts of a listed activity on the environment, and regulation 31(2)(l) of the EIA Regulations requires an environmental impact report to contain an assessment of each identified potentially significant impact, it is	Comment noted however there is no definitive requirement in South African law to do so. The CCIAR being undertaken is, to the best of the EAP's knowledge, the first of its kind. It is noted here that good practice in CCIAR is still emerging.

NO.	COMMENT/ISSUE	RESPONSE
	clear that climate change impacts of proposed listed activities must, as a rule, be evaluated in the EIA process.	
55.	The CCIA must therefore fully consider the climate change impacts relating to the project, and with this in mind, we make the recommendations set out below	Comment noted however again, the expectations as to what may be achieved by a study at Project level must be realistic.
56.	The NEMA principles, set out in s2 of NEMA, apply to the actions of all organs of state and must guide the implementation not only of all environmental laws, but all decisions taken in terms thereof. S2(4) states that sustainable development requires consideration of all relevant factors, including that global and international responsibilities relating to the environment must be discharged in the national interest.(NEMA S 2(4)(n))	Comment noted. Sustainable development also requires the balancing of the environment and positive socio-economic impacts (development) associated with a project, particularly so in respect of a project that is being developed in the national interest and in South Africa, a country that is facing an energy crisis.
57.	We note that the SR refers to the state's climate change commitments outlined in South Africa's National Climate Change Response Policy (NCCRP) (encompassed in the National Climate Change Response White Paper) and refers to South Africa's commitments as a party to the United Nations Framework Convention on Climate Change. The SR fails, however, to make specific mention of South Africa's Intended Nationally Determined Contribution (INDC), which sets out South Africa's commitments under the Paris Agreement (to which South Africa recently became a signatory).	The INDC will be considered within the context of South Africa's climate mitigation policy in the CCIA, to the extent applicable to the Project.
58.	We point out that the INDC has committed to South Africa's emissions between the years 2025 and 2030, being in a range between 398 and 614 megatonnes of CO ₂ equivalent. This, according to the INDC, is the benchmark against which the efficacy of mitigation actions will be measured. The INDC also states that "South Africa's mitigation component of its INDC moves from a "deviation from business-as-usual" form of commitment and takes the form of a peak, plateau and decline greenhouse gas (GHG) emissions trajectory range.	Noted. The INDC will be considered within the context of South Africa's climate mitigation policy in the CCIA in a form appropriate for the Project.
59.	Notably, the Paris Agreement places obligations on parties to: <ul style="list-style-type: none"> • undertake and communicate (as nationally determined contributions (NDCs)) ambitious efforts with a view to achieving the purpose of the Paris Agreement; • every 5 years, prepare, communicate and maintain successive NDCs that each party intends to achieve. Parties shall pursue domestic mitigation measures with the aim of achieving the objectives of such contributions, and each successive NDC will represent a progression beyond the party's then current NDC and reflect its highest possible ambition;⁸ and • account for their NDCs. In accounting for anthropogenic emissions and removals corresponding to their NDCs, parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting. 	Noted. The INDC will be considered within the CCIA as applicable to the Project. It should be noted that the Paris Agreement remains an International Agreement, the provisions of which have not been fully incorporated into South African law.
60.	In our client's appeal, we referred to the NCCRP which acknowledges, among other things, that "South Africa is a water scarce country with a highly variable climate and has one of the lowest run-offs in the world – a situation that is likely to be significantly exacerbated by the effects of climate change." The NCCRP also acknowledges that "under a drier future scenario, significant trade-offs are likely to occur between developmental aspirations, particularly in terms of the allocation between agricultural and urban industrial water use, linked to the marginal costs of enhancing water supply. These constraints are most likely to be experienced in central, northern and south-western parts of South Africa, with significant social, economic and ecological consequences through restricting the range of viable national development pathways."	Comment noted. Water specific issues related to the Project will be dealt with in the water licensing process which will only take place after the announcement of the Preferred Bidder.
61.	While we do not intend to repeat all the relevant provisions and obligations set out in the NCCRP, we point out that the relevant decision-maker, in considering the CCIA, must take the NCCRP into account, as is required by s24O(1)(b)(viii) of NEMA. The CCIA should therefore	Comment noted. These aspects will be considered within the context of South Africa's climate mitigation policy in the CCIA to the extent possible and relevant to the Project.

NO.	COMMENT/ISSUE	RESPONSE
	indicate in what respects the projected emissions and impacts of the project would contradict the NCCRP, the current INDC and the Paris Agreement.	
62.	While the obligations and commitments under the INDC and Paris Agreement are fundamental steps towards South Africa's GHG emission reduction obligations, both the Paris Agreement and the INDC have been the subject of criticism for not being strict enough to deter the impending impacts of climate change. Many scientists concur that even 2 degrees Celsius temperature increase will be catastrophic for South Africa. Therefore, even with our INDC commitments in place, more action is required to mitigate against the impacts that will result from climate change.	Comment noted. This relates to National and International Policy and it is submitted that it is not possible or appropriate to assess these issues in the EIA stages of a Project.
63.	We note that the SR also makes reference to the Department of Energy's (DoE) Integrated Resource Plan (IRP), which runs "in parallel" with South Africa's NCCRP. We acknowledge the substantial misalignments between policies and we and our client have always regarded this as a substantial problem from a regulatory perspective. In any event, as we have submitted in the appeal and in our client's answering statement, the IRP is outdated and should have, in terms of its own provisions, been updated 3 years ago. This has still not happened, and we submit that the reference to the IRP in the SR, should at least, acknowledge this fact and the significant shift in climate change and energy developments since the IRP came into effect. In this regard, we point out that, in a press release of 11 May 2016, the Minister of Energy, in the Energy Department Budget Speech Vote 2016-2017, indicated that the "updated IRP process is well underway, and will be submitted to the economic sector and infrastructure development cluster in the second quarter of this financial year". The demand for electricity must not be confused with a 'need' for the electricity to be coal-based. Any reliance on the IRP in the CCIA would be misplaced and legally incorrect, as it can have no bearing on the need and desirability for the project, nor can the existence of the IRP have any relevance for the climate change impacts relating to the project.	Government policy (i.e. the 'IRP 2010-2030' published in 2011 as the most recent promulgated plan for energy development) and requirements in terms of procuring electricity from IPPs inform the need for the project and therefore form the basis of the proposal for the project. An update to the IRP 2010-2030 (2011) is due but has not been promulgated. Until such time as the update is promulgated, the Project and those responsible for the environmental studies and authorisations can only follow the law as it is. Reference may be made to draft update policies where applicable provided that it is made clear that the drafts are not binding.
64.	As it stands, the current SR proposes only a simple GHG emissions and impact assessment. The proposed outcome of this work, according to the SR "will be a greenhouse gas assessment (in report format) for the power plant. This will include estimated annual GHG emissions from the plant, an assessment of the magnitude of the climate change impact of these emissions, and the recommendation of emissions management measures." Such an assessment is inadequate and would not result in a comprehensive climate change impact assessment, which is what the nature and extent of the proposed project requires. Moreover, such a narrow assessment is inconsistent with global climate change assessment practice.	Refer to response for item 21 below.
65.	In particular, the SR makes no mention of an assessment of the impacts that climate change will have for the project and its intended operation or how the project's impact on South Africa's environment and society will be affected further by climate change. It is necessary that these aspects also be assessed. Other jurisdictions, such as the USA and the European Union (EU), have acknowledged the need for a wide set of considerations to be taken into account in the assessment of climate change impacts.	The impacts of climate change on the project are considered a Project specific risk and are not considered relevant to the environmental impact assessment (as these do not represent impacts on the environment) which is conducted in line with South Africa's EIA regulations. The project developer must consider this risk as part of its feasibility assessment for the project. The analysis of climate change risk to the project was therefore not included in the scope of work for the climate change study.
66.	For example, the USA's Council on Environmental Quality (CEQ) published, after public review and comment, a "Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews". The draft Guidance aims to provide federal agencies direction on when and how to consider the effects of GHG emissions and climate change in their evaluation of all proposed federal actions, in accordance with the National Environmental Policy Act (NEPA) and the CEQ Regulations. It requires that federal agencies consider both: (1) the potential effects of a proposed action on climate change as indicated by its GHG emissions; and (2)	Legislation and guidelines from other countries cannot always be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The effects of the project on climate change in terms of GHG emissions will however be assessed in the climate change impact assessment. This GHG assessment will be undertaken considering international lender standards and South African legislation and policy, which are applicable within the context of the project.

NO.	COMMENT/ISSUE	RESPONSE
	the implications of climate change (for example water scarcity) for the environmental effects of a proposed action, when addressing climate change.	
67.	<p>It is worth noting that the draft Guidance:</p> <ul style="list-style-type: none"> • sets out an obligation to consider <i>“the ways in which a changing climate over the life of the proposed project may alter the overall environmental implications of such actions;”</i> • requires that a GHG assessment discuss direct, indirect, and cumulative impacts analysis of a proposed action's reasonably foreseeable emissions and effects. • requires the taking into account of both the short- and long-term effects and benefits of a proposed project, based on what the agency determines is the life of a project and the duration of the generation of emissions; • instructs agencies to consider how climate change may alter: the affected environment; the environmental impacts of the proposed action; and the environmental impacts of alternatives to the proposed action. For example, agencies should consider the extent to which climate change may <i>“increase the vulnerability of a resource, ecosystem, human community”</i> within the affected environment of the project, both to establish baseline conditions and to determine if these resources will be more susceptible to impacts or risks posed by the project; and • by requiring agencies to assess the implications of climate change for the proposed action, the draft Guidance enables agencies to select alternatives that are more resilient to the changing climate. 	<p>Legislation and guidelines from other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy, which is applicable within the context of the project. By following South African legislation the appropriate scope will be developed for a South African project, which, will probably not be the same as that applicable in the EU or the USA for the reasons submitted above.</p>
68.	<p>The European Commission (EC) Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment²⁴ requires an assessment of both a project's impact on climate change (i.e. mitigation aspects) and the impact of climate change on the project and its implementation (i.e. adaptation aspects).</p>	<p>Legislation and guidelines from other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy, which is applicable within the context of the project. Please refer to the comments made in item numbers 23 and 24 above.</p>
69.	<p>The EC Guidance provides a list of key questions for identifying climate change adaptation issues, and lists the considerations that should factor into the assessment of climate change impacts on the environmental baseline, the vulnerability of built infrastructure, and adaptation opportunities. The EC Guidance states that, in assessing the effects related to climate change in an EIA one must, <i>inter alia</i>:</p> <ul style="list-style-type: none"> • consider climate change scenarios at the outset including extreme climate scenarios and 'big surprises'; • analyse evolving environmental baseline trends; • take an integrated approach to planning and assessment, investigating relevant thresholds and limits; • seek to avoid biodiversity and climate change effects from the start, before considering mitigation or compensation; and • assess alternatives that make a difference in terms of climate change and biodiversity. 	<p>Legislation and guidelines from other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy, which is applicable within the context of the project.. Please refer to the comments made in item numbers 23 and 24 above.</p>
70.	<p>The EC, in its Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment,²⁷ lists Key Considerations for Scoping - which our client recommends be taken into account for purposes of finalising the SR for the CCIA – by asking the following questions: <i>“(1) What are the key climate change and biodiversity issues likely to be? (2) Who are the key stakeholders and environmental authorities with an interest in climate change and biodiversity and how will they be involved in the EIA? What do they think are the key issues? (3) What is the current situation relating to climate change and biodiversity and how is it likely to change in the future? (4) What is the climate change and biodiversity policy context, what are the objectives and targets?”</i>²⁸</p>	<p>Legislation and guidelines from other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy which is applicable within the context of the project.</p>

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71.	<p>In line with the approaches followed by the USA, the EU, and many other jurisdictions, as well as the requirements of NEMA, the NNCRP and South Africa's international commitments, the CCIA must consider several aspects of the relationship between the proposed project and climate change, including:</p> <ul style="list-style-type: none"> • the project's direct impacts on climate change; • 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 • how the project's impact on South Africa's environment and society will be affected further by climate change, i.e. the ways in which the proposed project would impact on South Africa's own necessary adaptations to a changed climate. 	<ul style="list-style-type: none"> • The direct impacts of the project on climate change will be assessed in the Climate Change Impact Assessment. • The impacts of climate change on the project are considered a Project specific risk and are not considered relevant to the environmental impact assessment (as these do not represent impacts on the environment). The project developer must consider this risk as part of its feasibility assessment for the project. • The ways in which the project would impact on South Africa's own adaptations to climate change are not considered as part of the scope of the climate change study. The decision was made to exclude this on the basis that the EIA process in South Africa looks at the impact of the project on the environment and not vice-versa.
72.	<p>As we describe below, such an approach is consistent with emerging global practice in this area. With this in mind, we address each proposed task under the SR.</p>	<p>Comment noted but it appears that this is emerging global practice in developed countries, not developing countries and is therefore not applicable in South Africa.</p>
73.	<p><u>Task 1 – Boundary Definition</u> According to the SR, this is “the boundary within which the carbon footprint of the plant will be calculated at this stage”.</p>	<p>Comment noted.</p>
74.	<p>We point out, in this regard, the transboundary nature of GHG emissions. While we do not intend to delve into an explanation of how GHG emissions contribute to global warming, the fact that emissions in South Africa will have impacts across the world means that the boundary definition cannot be confined strictly to a set radius around the proposed project.</p>	<p>The study must be reasonably practical and focus on a South African context. Although GHG emissions are of a transboundary nature it is not practical to assess global climate change impacts associated with GHG emissions in this scenario.</p>
75.	<p>The SR further proposes that the “assessment be focused on GHG emissions during the operational phase, since GHG emissions from the construction phase are likely to be minimal in comparison.”</p>	<p>Comment noted.</p>
76.	<p>It is our client's contention that, in order to obtain a holistic assessment of the project's GHG emissions, the pre-operation phase must also be considered, and that the emissions from this phase of the project will not be minimal. The production of concrete and other building materials are major sources of GHG emissions. There will also be substantial emissions arising from the transportation of materials and waste during the construction phase.</p>	<p>Emissions associated with the construction and eventual decommissioning of the Project are excluded from the assessment, since these are likely to be insignificant in the context of the Project's operational emissions arising from the combustion of coal for power generation. Life cycle assessment studies have shown that the contribution of non-operational (direct) emissions including emissions associated with infrastructure construction and coal mining are negligible in the context of cumulative CO₂ emissions associated with electricity production at coal power plants. Specific LCA studies will be referenced in the report.</p>
77.	<p>We and our client further submit that the boundary must take cognisance of activities giving rise to indirect emissions, namely mining and transportation of the coal needed for the operation of the project.</p>	<p>In line with international best practice (e.g. IFC Performance Standards), emissions will be quantified for facilities owned or controlled by the facility i.e. direct emissions. IFC does not require indirect Scope 3 emissions (including emissions from the mining and transportation of coal) to be quantified. Furthermore, as noted, LCA studies have shown that the contribution of non-operational (direct) emissions including emissions associated with infrastructure construction and coal mining are negligible in the context of cumulative CO₂ emissions associated with electricity production at coal power plants. This study therefore focuses on the major and direct GHG emissions sources relating to power production.</p>
78.	<p><u>Task 2 – GHG Baseline Study</u> The SR states that the GHG baseline study will “focus on quantifying (and projecting) South Africa's national annual GHG emissions, and will present a magnitude scale for project-wide GHG emissions based on a number of standards from international lender organisations or groupings”.</p>	<p>Comment noted.</p>
79.	<p>A 2015 report by the Sabin Center for Climate Change Law at Columbia Law School titled “Assessing the Impacts of Climate Change on the Built Environment under NEPA and State EIA Laws: A Survey of Current Practices and Recommendations for Model Protocols” states that “(a)n accurate impact assessment ... requires an accurate characterization of the baseline environment. To the extent that climate change may influence that baseline, it should factor into the environmental review process. This means that decision-makers should account for the impacts of climate change when describing the natural resources, ecosystems, and communities that will be affected by a project.”</p>	<p>The CCIA is required to inform the final decision of the authorities on the project, as per the decision on the appeal issued by the Minister, and will address the impact of the project on climate change in terms of its GHG emissions, with reference to South Africa's baseline GHG emissions and the country's climate change policy and through benchmarking against international lender standards and other projects / entities as relevant.</p>

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80.	Therefore, in line with the Sabin Center's report, we and our client submit that the baseline study for the CCIA must not be limited only to the project's GHG emissions, in comparison with national GHG emissions, but it must consider the baseline environment – this being the environment as it is without climate change impacts. Only then can the climate change impacts associated with the project be properly assessed.	Climate change impacts and their effect on the project and on the baseline environment was not included in the scope of work, which is mitigation rather than adaptation focused. This is in line with the requirements of EIA regulations and the requirements for specialist studies which refer to mitigation and avoidance rather than adaptation.
81.	The CCIA must accurately describe the baseline (pre-climate change) environment, and then address how climate change may affect that environment (including how it is already affecting it). This is relevant both to assessing the additional impact of the project on those climate-related impact and in assessing the effect of other aspects of this project on the environment. For example, drawing 1 300 000m ³ per annum - the total estimated water demand for the project - from the baseline environment, will already have an impact on the baseline environment. But that does not take into account the impacts that climate change will have (and is already having) on the water resources in the proposed project area. A correct assessment would be to assess what drawing 1 300 000m ³ per annum of water will do to the environment as it is being - and will further be - changed by climate change.	The impact of the project on the environment (including the use of water for the project) has been considered within the EIA undertaken for the project. Impacts on water resources will be further assessed within the water use license process. The ways in which the project would impact on South Africa's own adaptations to climate change are not considered as part of the scope of the climate change study. The decision was made to exclude this on the basis that the EIA process in South Africa looks at the impact of the project on the environment and not vice-versa.
82.	<u>Task 3 – Data Collection and Carbon Footprint Calculation</u> The SR states that “documentation from the ... (EIA) and feasibility study will be reviewed in order to identify key GHG emission sources from the power plant. If required, a (sic) separate additional information on energy consumption/GHG emissions will be collected”.	Noted.
83.	It is vital that the projected GHG emissions of the project be accurately and comprehensively calculated. A comprehensive assessment requires consideration of the project's cumulative emissions, as well as the life-cycle emissions of the project – commencing from the construction and pre-operation phase of the project to the end of the project's lifetime and decommissioning.	Emissions associated with the construction and eventual decommissioning of the project will be excluded from the assessment, since these are likely to be insignificant in the context of the Project's operational emissions arising from the combustion of coal for power generation. This is in line with life cycle assessment studies for coal fired power plants that have shown that the contribution of non-operational (direct) emissions including emissions associated with infrastructure construction and coal mining are negligible in the context of cumulative CO ₂ emissions associated with electricity production. Cumulative GHG emissions from the Project's operations will be assessed as part of the assessment.
84.	In this regard, we refer to the Greenhouse Gas Protocol developed by the World Resource Institute (WRI) and the World Business Council on Sustainable Development (WBCSD), which sets a global standard on how to measure, manage, and report GHG emissions. This is a widely-used international accounting tool for identifying, quantifying, and managing GHG emissions and it serves as a foundation for other GHG reporting standards. ³⁴	The carbon footprint has been calculated in accordance with the Greenhouse Gas Protocol and IPCC 2006 methodologies.
85.	An alternative and commendable methodology for the calculation of the project's GHG emissions would be the Intergovernmental Panel on Climate Change's (IPCC) 2006 Guidelines for National GHG Inventories for Energy. This appears to be the methodology prescribed by government for the calculation of GHG emissions in the Draft National GHG Emission Reporting Regulations.	The carbon footprint has been calculated in accordance with the Greenhouse Gas Protocol and IPCC 2006 methodologies.
86.	Our client would have no objection to either the GHG Protocol or the IPCC Guideline methodologies being applied in the calculation of the project's GHG emissions, and recommends that due consideration be given to the standards and measures prescribed in both.	Comment noted (see responses to Items 40 and 41).
87.	We also point out that an assessment of the project's carbon footprint should consider the external costs associated with climate change impacts. In this regard, we refer to the USA's social cost of carbon protocol (SCC) for assessing climate impacts, which is intended to be a comprehensive estimate of climate change damages. It includes, among other things: changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services - all of which climate change can degrade. Although the SCC does not currently include all of the relevant damages, it is a useful method for estimating the damages associated with even a small increase in CO ₂ emissions -	The GHG assessment will follow best practice guidelines such as those set out in IFC Performance Standard 3. Consideration of the social cost of carbon is not currently a widely stated requirement in the context of assessing GHG emissions from developments within an EIA, and is not required by the IFC Performance Standards. See also responses to Items 22 and 23 relating to the applicability of South African legislation and policy in the context of this project.

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	conventionally one metric ton - in a given year, and represents the value of damages avoided for a small emission reduction (i.e. the benefit of a CO ₂ reduction).	
88.	Annex 3 of the EC Guidance, referred to above, provides for the assessing of a project's carbon footprint, including links to a methodology for calculating absolute and relative GHG emissions piloted by the European Investment Bank (EIB). It is recommended that this methodology be taken into account as well.	The greenhouse gas assessment will be undertaken considering international lender standards and South African legislation and policy which are applicable within the context of the project. The project's carbon footprint will quantify absolute emissions as well as relative emissions (GHG emissions per MWh generated), the latter of which are used for benchmarking the performance of the plant. As noted above, the WBCSD / WRI's GHG Protocol together with the IPCC methodologies will be used to inform the assessment.
89.	<u>Task 4 - Impact Assessment</u> The SR states that "in this task, the GHG (or climate change) impact associated with the power plant will be assessed by comparing projected annual GHG emissions from the project (as quantified in Task 3) with South Africa's baseline and projected GHG emissions, and through a comparison against a GHG magnitude scale based on various lender standards (as analysed in Task 2). In addition, the emission intensity of the electricity generated (i.e. tCO ₂ e emitted per kWh of electricity generated) can be benchmarked against other facilities / against the grid emissions factor for Eskom. Relevant aspects relating to South Africa's climate change and energy policy will also be used during the analysis."	Comment noted.
90.	This is far too narrow an assessment, and at odds with global practice in this area.	The proposed methodology is in line with best practice for GHG impact assessments in the context of an EIA, and follows guidance set out in IFC Performance Standard 3.
91.	The USA draft Guidance acknowledges the broad nature of climate change impacts and states that, "the statement that emissions from a government action or approval represent only a small fraction of global emissions is more a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether to consider climate impacts under NEPA. Moreover, these comparisons are not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations."	The impact associated with emissions from the project will be assessed by way of understanding their scale relative to South Africa's national emissions, but also through benchmarking emissions performance against similar facilities, understanding emissions intensity relative to the current South African electrical grid emissions factor, and with reference to GHG emissions thresholds from international lender standards including IFC, EBRD and EP. The extent to which the project is aligned with South Africa's climate and energy policies will also be considered.
	The Sabin Center for Climate Change Law has developed a set of model protocols for assessing the impacts of climate change on the built environment – these are contained in Sabin's report referred to above. The model protocols are based on the legal and empirical research presented in the report, and on input from a Stakeholder Workshop hosted by the Sabin Center in June 2015 to discuss various opportunities and challenges associated with the consideration of climate change impacts.	Comment noted. The direct impacts of the project on climate change will be assessed in the Climate Change Impact Assessment. The impacts of climate change on the project are considered a Project specific risk and are not considered relevant to the environmental impact assessment (as these do not represent impacts on the environment). The project developer must consider this risk as part of its feasibility assessment for the project.
92.	The Sabin Center report makes the following recommendations on considerations that should be taken into account in assessing the impacts of climate change: "a. Future baseline: Whether climate change may influence the future baseline conditions which would exist in the absence of the proposed action (the no action alternative). b. Project description: Whether the project may be vulnerable to the impacts of climate change, taking into account the location of the project, the project's expected useful life, and the resilience of design features, construction materials, operational processes, and decommissioning processes. c. Purpose and need for project: Whether climate change may influence the need for the proposed project or the ability of the project to fulfill its intended purpose. d. Affected environment and resources: Whether climate change may increase the vulnerability of the affected environment and any natural and human resources that are impacted by the project. e. Implications for the environmental consequences of the project: Whether the impacts of climate change may exacerbate the environmental consequences of the project or generate new consequences which would not have otherwise occurred."	The ways in which the project would impact on South Africa's own adaptations to climate change are not considered as part of the scope of the climate change study. The decision was made to exclude this on the basis that the EIA process in South Africa looks at the impact of the project on the environment and not vice-versa.

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93.	The report also states that, "(d)ue to the uncertainty of the pace and magnitude of climate change, agencies should take a precautionary approach when assessing and disclosing the potential impacts of climate change: they should evaluate impacts by using multiple scenarios, including the most severe climate change projections developed by the IPCC and other authoritative bodies. The probabilities of each of the scenarios should be disclosed if they can be estimated."	Refer to response to item 48.
94.	We and our client recommend that the above protocol and recommendations by the Sabin Center for Climate Change Law be given adequate consideration for purposes of determining the scope for the impact assessment to be applied. In particular, we refer to the steps identified at pages 52 to 56 of the report, and to Appendix A, which provides a list of informational resources that can be used to conduct project specific climate impact assessments.	Comment noted. Legislation and guidelines from other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CClA will be undertaken considering international lender standards and South African legislation and policy which are applicable within the context of the project.
95.	Furthermore, in assessing the climate change impacts associated with the project regard must be had to the full lifetime of the project. In considering the full lifetime of the project it must be taken into account that there will be continued GHG emissions beyond South Africa's proposed peak plateau decline (PPD) trajectory in the INDC.	The climate change impact assessment, which assesses the scale of the GHG emissions from the project, will consider emissions over the project's lifetime, with reference to the PPD GHG emissions trajectory which forms the basis of South Africa's climate change policy, which in turn will inform the impact assessment.
96.	As stated above, and consistent with the approaches followed in the USA, the EU and many other jurisdictions, the assessment of climate change impacts must take on a three-pronged approach and give specific consideration to: <ul style="list-style-type: none"> • the project's impact on climate change; • climate change's impact on the project, including the impacts of climate change on the water necessary for the project; and • how the project's impact on South Africa's environment and society will be affected further by climate change, i.e. how the proposed project would impact on South Africa's own necessary adaptations to a changed climate. 	<ul style="list-style-type: none"> • The direct impacts of the project on climate change will be assessed in the Climate Change Impact Assessment. • The impacts of climate change on the project are considered a Project specific risk and are not considered relevant to the environmental impact assessment (as these do not represent impacts on the environment). The project developer must consider this risk as part of its feasibility assessment for the project. • The ways in which the project would impact on South Africa's own adaptations to climate change are not considered as part of the scope of the climate change study. The decision was made to exclude this on the basis that the EIA process in South Africa looks at the impact of the project on the environment and not vice-versa.
97.	We elaborate further on each of these points below	Comment noted.
I. THE PROJECT'S IMPACT ON CLIMATE CHANGE		
98.	It is our client's recommendation that, in assessing the project's impacts on climate change, consideration be given to: <ul style="list-style-type: none"> • direct emissions of the project; • indirect or full life-cycle emissions; • cumulative emissions; and • the social cost of carbon <p><i>Direct emissions of the project</i></p> <ul style="list-style-type: none"> • We again submit that the direct GHG emissions of the project must be accurately and comprehensively calculated. • We refer again to the methodologies referred to in paragraphs 40 and 41 above. <p><i>Direct emissions of the project</i></p> <ul style="list-style-type: none"> • These are the emissions that do not emanate directly from the project activities but which emanate from those activities directly associated with and necessary for the operation of the project i.e. the full lifecycle of the project. This will include the GHG emissions that will result from, <i>inter alia</i>, the necessary mining and transportation of coal required by the project throughout the project's lifespan. • A study titled "A Guide to Lifecycle GHG Emissions from Electric Supply Technologies" states that "[f]or fossil fuel technology options, upstream GHG emission rates can be up to 25% of the direct emissions from the power plant".⁴⁷ The life cycle assessment (LCA) would account for, among other things, energy resource exploration, 	<p><i>Direct and indirect emissions of the project</i></p> <p>As noted, the GHG assessment will focus on direct emissions associated with the project's operations. Emissions associated with the construction and eventual decommissioning of the Project will be excluded from the assessment, since these are likely to be insignificant in the context of the Project's operational emissions arising from the combustion of coal for power generation (see response in Item 32). Indirect or full life-cycle emissions will be excluded from the assessment; international lender standards including the IFC do not require Scope 3 value chain emissions to be quantified as part of a GHG assessment for an EIA (see response in Item 33). The social cost of carbon is not commonly used for the purposes of conducting a GHG (climate change) impact assessment in EIAs and is not required according to South African EIA regulations or guidance, and therefore will not be used to inform this impact assessment study (see response in Item 43). The GHG assessment will be conducted in line with widely used global standards including the Greenhouse Gas Protocol and IPCC 2006 methodologies (see responses in Items 40 and 41).</p> <p><i>Cumulative emissions</i></p> <p>As noted (see Item 39), cumulative GHG emissions from the Project's operations will be calculated as part of the impact assessment. The impact assessment will include an analysis of the extent to which the Project is aligned with South Africa's climate change policy and INDC, which sets out the country's PPD GHG emissions trajectory and forms the basis of the country's mitigation commitments submitted in 2015 to the UNFCCC. An in-depth analysis of the alignment of South Africa's energy and climate change policies is beyond the scope of the EIA.</p> <p><i>Social cost of carbon</i></p>

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	<p>extraction and processing; raw materials extraction for technology and infrastructure; transport of fuel; and waste management (e.g. ash disposal).</p> <p><i>Cumulative emissions</i></p> <ul style="list-style-type: none"> The emissions and impacts of the project must not be assessed in isolation - consideration must also be given to the cumulative impact that the project, with the impacts of other GHG emitters, will have for the existing environment, infrastructure, municipal services and communities in the area. The USA draft Guidance notes that diverse individual sources of emissions each make relatively small additions to global atmospheric GHG concentrations that collectively have huge impacts. In this regard, consideration must be given to the limited "emission space" which remains for South Africa and which is needed by other sectors such as agriculture and transport. There is a limit to the amount of carbon which can still be emitted before 2°C of warming becomes inevitable.⁵⁰ The result is that there is effectively a limit to the amount of GHGs which can be emitted, and effectively the already limited "emission space" must be used cautiously for industries that need it. Industries such as agriculture, on which human beings are directly dependent for life, for example, require the emission space more urgently. <p><i>The social cost of carbon</i></p> <ul style="list-style-type: none"> We reiterate that the CCIA must consider the external costs associated with the project's impacts on climate change and refer again to the USA's SCC protocol (SCC) for assessing climate impacts, referred to above at paragraph 43. 	<p>As noted, the social cost of carbon is not commonly used for the purposes of conducting a GHG (climate change) impact assessment in EIAs and is not required according to South African EIA regulations, and therefore will not be used to inform this impact assessment study (see response in Item 43).</p>
II. THE IMPACTS OF CLIMATE CHANGE ON THE PROJECT		
99.	<p>The impacts associated with climate change must be considered as risks not only for the world and surrounding environment, but also as risks for the proposed project, and these must be comprehensively assessed. The associated risks may entail, for example, climate-related phenomena such as flooding, drought and heat waves, which can directly impair the performance and longevity of infrastructure and buildings such as the proposed project.</p>	<p>The impacts of climate change on the project are considered a Project specific risk and are not considered relevant to the environmental impact assessment (as these do not represent impacts on the environment). The project developer must consider this risk as part of its feasibility assessment for the project.</p>
100.	<p>Under EU law, an EIA should address "<i>the risk of major accidents and/or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge</i>", and "<i>the vulnerability of the project to climate change</i>."⁵²</p>	<p>The comments are noted. However, Legislation and guidelines from other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering international lender standards and South African legislation and policy which are applicable within the context of the project.</p>
101.	<p>Fiji's EIA Guidelines, 2008 require project applicants to consider the vulnerability of a project to natural disasters, taking into account the future impacts of climate change and sea level rise.</p>	
102.	<p>The EIA Guidance for Coal Fired Power Stations in Pakistan (IUCN) elaborates usefully on this issue by listing the coal-fired power sector's vulnerability to projected climate changes as including the following:</p> <ul style="list-style-type: none"> increases in water temperature, which are likely to reduce generation efficiency, especially where water availability is also affected; increases in air temperature, which will reduce generation efficiency and output as well as increase customers' cooling demands, stressing the capacity of generation and grid networks; changes in precipitation patterns and surface water discharge, as well as an increasing frequency and/or intensity of droughts, which may reduce water availability for cooling purposes to thermal power plants; and 	

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	<ul style="list-style-type: none"> extreme weather events, such as stronger and/ or more frequent storms, which can reduce the supply and potentially the quality of coal, damage generation and grid infrastructure, reduce output, and affect security of supply. This may be of particular significance in regions where projects are located or planned in water-stressed areas or where water is scarce.⁵⁷ 	
103.	In South Africa, an already water-scarce country, climate change is impacting, and will particularly impact upon, water supply (both quality and quantity) and water management structures for existing communities, public infrastructure, agriculture and the proposed project, should it go ahead. We note that Limpopo was declared a drought disaster area in November 2015 and the situation in recent months has only worsened, with food security being an additional related crisis.	Comment noted. Water specific issues will be considered in the water licensing process which will only commence after the announcement of the Preferred Bidder.
104.	The World Economic Forum's '2015 Global Risk Report' has named water crises the world's greatest risk. The world is forecast to face a 40% shortfall in water supplies in 15 years, owing to population growth, urbanisation and increased demand for food production, energy and industry. Climate change also increases water-related risks. South Africa is ranked among the world's 30 driest countries.	Comment noted. Please refer to the response in Item 59 above.
105.	We note that the project proposes to rely on the Mokolo Crocodile Water Augmentation Project (MCWAP) for the supply of its water. We point out, however, that the EIA process for MCWAP phase 2 only commenced a few weeks ago, the EIA application having been previously withdrawn due to water demands. As a result, relying on MCWAP to justify availability of water for the project would be speculative at best.	1.5-million m ³ /annum of water is required for 1200MW. Water for Phase 1 is to be supplied from the allocation to Exxaro Coal from the Mokolo-Crocodile Water Augmentation Project (MCWAP) Phase 1. This water supply has been confirmed. Water for subsequent phases is proposed to be obtained from water supply from the Crocodile River (MCWAP2) but could also be available from the MCWAP 1 allocations.
106.	We point out that power stations are not immune to the impacts of drought. And drought (attributed to climate change) has significantly impacted the operation of coal-fired power plants in other countries. One example is India where the operators of the 2100 megawatt (MW) coal-fired Farakka power station in West Bengal shut down five of the six turbines due to lack of water. A few days later, the 500 MW sixth unit was shut down as well. A study in the Nature Climate Change Journal notes that climate change impacts and associated changes in water resources could lead to reductions in electricity production capacity for more than 60% of the power plants worldwide from 2040-2069.	Comment noted.
107.	It must also be taken into account – given that the proposed project is a large power station and infrastructure development - that climate change will impact upon South Africa's energy supply and use. Extreme temperature and weather events can affect energy production and delivery facilities, causing supply disruptions and affecting other infrastructure that depends on energy supply.	Comment noted.
III. HOW THE PROJECT'S IMPACT ON SOUTH AFRICA'S ENVIRONMENT AND SOCIETY WILL BE AFFECTED FURTHER BY CLIMATE CHANGE		
108.	In addition to the impacts that climate change will have on the operation and functionality of the project itself, climate change-related phenomena can increase the vulnerability of the surrounding environment (human and natural) to the environmental impacts of a project.	Comment noted.
109.	The CCIA must consider how the project will impact upon South Africa's resilience to climate change. This entails consideration of the extent to which specific components of the affected environment, namely natural systems, human systems and key resources, are vulnerable and/or resilient to the impacts of climate change.	Physical climate change risk, adaptation and resilience were scoped out at the outset of the study. This is in line with the requirements of EIA regulations and the requirements for specialist studies which refer to mitigation and avoidance rather than adaptation. The ways in which the project would impact on South Africa's own adaptations and resilience to climate change are not considered as part of the scope of the climate change study. The decision was made to exclude this on the basis that the EIA process in South Africa looks at the impact of the project on the environment and not vice-versa.
110.	The Republic of Vanuatu recognises, in its Environmental Management and Conservation Act (EMCA), that the definition of "significant environmental impact" includes "the degree to which the adaptation to, and mitigation of climate change is affected." The EMCA specifically identifies climate mitigation as a critical ecosystem service that may be provided	The precedent set by other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy which is applicable within the context of the project.

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	by sites of national biodiversity significance and enables the Minister to make any regulations necessary to uphold Vanuatu's obligations under the UNFCCC for climate change adaptation and mitigation. ⁶⁶	
111.	We refer again to the USA draft Guidance, which confirms that climate change impact assessments must consider the effects of climate change on the environmental consequences of a proposed action. ⁶⁷	The precedent set by other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy which is applicable within the context of the project.
112.	We reiterate that, as per the model protocols in the Sabin Center's report, the following are among the considerations that should be taken into account in assessing the impacts of climate change: <i>"d. Affected environment and resources: Whether climate change may increase the vulnerability of the affected environment and any natural and human resources that are impacted by the project.</i> <i>e. Implications for the environmental consequences of the project: Whether the impacts of climate change may exacerbate the environmental consequences of the project or generate new consequences which would not have otherwise occurred."</i> ⁶⁸	The precedent set by other countries cannot be applied to a South African context, nor is it practical or feasible to consider in the context of the Climate Change Impact Assessment for the Thabametsi power station. The CCIA will be undertaken considering South African legislation and policy which is applicable within the context of the project.
TASK 5 – EMISSION MANAGEMENT MEASURES		
113.	The SR states that the emission management measures will be "[b]ased on a high level review of the development's plans and global best practice, high level recommendations on how emissions can be managed, and how resources can be used with maximum efficiency throughout the lifetime of the project will be provided. Emissions management measures may include ongoing energy and emissions monitoring, and energy management plans."	Comment noted.
114.	We here refer again to the WRI and the WBCSD Greenhouse Gas Protocol which sets a global standard on how to measure, manage, and report GHG emissions, and recommend that the standards provided for be taken into account. ⁶⁹	The GHG assessment will be conducted in line with Greenhouse Gas Protocol and IPCC 2006 methodologies. Recommendations for ongoing emissions management will be made in accordance with guidance given in the Greenhouse Gas Protocol and based on wider principles relating to environmental management systems.
ADDITIONAL RECOMMENDATIONS FOR THE SCOPE OF THE CCIA		
115.	In addition to the recommendations already made in respect of the five tasks proposed in the SR, we and our client recommend that an additional task be added to provide for an assessment of the project's ability to maximise GHG reductions and contribute to climate change resilience.	Comment noted. Whilst noting the inherent GHG mitigation constraints for coal-fired power stations, measures to manage and minimise emissions over time will be outlined as part of Task 5. Assessment of climate change resilience implications for the project and surrounding environment/communities was not included in the scope of work which is mitigation rather than adaptation focused.
116.	We refer to our client's appeal submissions wherein our client submitted that every development decision must be based on its contribution to both climate change mitigation and adaptation. We stand by this recommendation and submit that the assessment should consider the project's ability to, <i>inter alia</i> : <ul style="list-style-type: none"> • maximise reduction in direct and indirect GHG emissions • maximise potential for further mitigation • optimise adaptation to impacts over the full life of the development, using best available knowledge and modelling projections of future impacts, which will become more extreme over time • ensure that such adaptations are not misdirected 'maladaptations' which will fail and/or exacerbate impacts/increase vulnerability over time; and • contribute to restoration of ecological infrastructures to better enable ecosystem-based adaptation, namely building improved resilience in people, infrastructure and ecosystems. 	Whilst noting the inherent GHG mitigation constraints for coal-fired power stations, measures to manage and minimise emissions over time will be outlined as part of Task 5. Assessment of climate change resilience implications for the project and surrounding environment/communities was not included in the scope of work which is mitigation rather than adaptation focused. This is in line with the requirements of EIA regulations and the requirements for specialist studies which refer to mitigation and avoidance rather than adaptation.
117.	We also recommend that specific provision be made in the SR and CCIA for the consideration and assessment of non-fossil fuel-based i.e. renewable alternatives to the project. Regulation 28(j) of the EIA Regulations, 2010 requires that a scoping report must include a description of	This issue has already been addressed within the appeal response provided by the applicant.

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	identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity.	
118.	Having considered what many of the above jurisdictions regard as best practice and in light of the Constitutional right to an environment not harmful to health and wellbeing and the right to have the environment protected for present and future generations, we strongly recommend that the recommendations above for the scope of the CCIA be taken into account and that consideration be given to the reports, legislation and guidelines referred to above, in order to ensure that the SR and the CCIA meet the requirements of NEMA and the EIA Regulations, 2010.	Comment noted. The CCIA will be undertaken considering South African legislation and policy which is applicable within the context of the project. The assessment will meet all the requirements of specialist reports in terms of the EIA Regulations as well as NEMA.
PALAEOLOGICAL IMPACT ASSESSMENT		
119.	We note the SR states that "[b]oth the power line foundations and excavations for the power station itself could impact on local fossil resources	Comment noted. There is always the potential for impact on fossil resources with any excavation work.
120.	It is stated that "the likely impact of the proposed development on local fossil fuel heritage is then determined on the basis of (1) the palaeontological sensitivity of the rock units concerned and (2) the nature and scale of the development itself."	Comment noted.
121.	In terms of 38 of the National Heritage Resources Act, 1999 (NHRA) Thabametsi cannot proceed with the project without approval from the South African Heritage Resources Agency (SAHRA). As part of the EIA process for the project, SAHRA issued both interim and final comments – addressed below. The final comments, however, were not included in Thabametsi's final EIA. As a result, I&APs did not have an opportunity to consider and comment on SAHRA's final comment. Furthermore, the palaeontological impact assessment which is referred to in SAHRA's final comment was not included in the FEIR, nor was it made available to I&APs for consideration and comment	In terms of Section 38 (8) of the NHRA, the provisions of this section [i.e. section 38] do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the environmental legislation or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the MPRDA, or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent. Final comments received by SAHRA were provided to the DEA prior to the decision being granted and were therefore considered in the issuing of the decision in accordance with the above Section of the NHRA.
122.	Our client notes that the concerns highlighted by the SAHRA in their interim comments of 12 May 2014 were that "SAHRA will only be able to issue a final comment on the project once the palaeontological impact assessment is received. Please note that the geology of the area is considered of high palaeontological sensitivity, as such a desktop study is required and based on the outcome of the desktop study, a field assessment is likely."	Comment noted. The palaeontological report was previously sent to SAHRA for final comment.
123.	In SAHRA's final comment, after a palaeontological impact assessment had been conducted, it was stated that: "The northern section of the three alternatives and the power station are underlain by the Clarens Formation of the Karoo Supergroup, which is of high palaeontological significance, and by the Eendragtspan Formation which is not well known from a palaeontological perspective, but could include vertebrate fossils of the transition between the Eodicynodon and the Cyanognathus Assemblage Zones. Any fossils identified in this formation would be of valuable research significance given the scarce information available on it. The central section of Alternatives 2 and 3 is underlain by the Karoo Supergroup (Swartrant Formation), which is expected to contain Glossopteris flora. The southern section of alternatives 2 and 3 is underlain by the Kransberg Subgroup of the Waterberg Group (Mogalakwena Formation) of low palaeontological significance. The final section of Alternative 3 is located within Cenozoic Alluvium, which is normally of low palaeontological sensitivity, however, given the rarity of fossils in regoliths, if any fossil material is identified in the alluvium, it would be of high scientific significance."	Comment noted.
124.	SAHRA made the following recommendations, insofar as the palaeontological impacts of the project were concerned: "Regular monitoring by an ECO should be undertaken for the sediments of the Karoo Supergroup and Cenozoic regoliths. If any new evidence of fossil	Comment noted. This recommendation is already included in the EMPr for the project – Objective 9 of the EMPr (Savannah Environmental, March 2014)

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	<p>material is identified, work must halt immediately in the area and a palaeontologist must be contacted to inspect the findings. If the newly discovered findings are of palaeontological significance, the specialist will require to apply for a permit in terms of s. 35(4) of the NHRA.</p> <p>Should any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ash concentrations), unmarked human burials, or other categories of heritage resources are found during the proposed activities, SAHRA APM Unit (Colette Scheermeyer 021 462 4502) must be alerted immediately, and a professional archaeologist must be contacted as soon as possible to inspect the findings."</p>	
125.	Neither we, nor our client are in a position to make valuable input on the content of the palaeontological aspect of the SR, save to say that the necessary procedures in terms of NEMA and the NHRA must be complied with at all stages of the assessment process and the community members and other I&APs must be consulted and given an adequate opportunity to participate and comment on the PIAR.	Both the Climate Change Impact Assessment and PIAR will be made available for public review and comment for a 30-day period as agreed with DEA. All I&APs will be notified of the availability of these documents for review.
126.	We reserve our rights, however, to make more substantive comments on the PIAR at a later stage, when the draft report is made available for comment	Comment noted.
CONCLUSION		
127.	We trust that you will take into account the above recommendations in considering the scope for the CCIA and the PIAR, prior to and as you conduct the specialist studies for the assessment of the project's climate change impacts in particular.	Responses to each recommendation above are included in this Comments and Response Report.
128.	We will await a copy of the final SR, as well as the draft environmental impact report for consideration and comment by our client and other I&APs.	Comment noted.
129.	Please let us know if you have any questions or require any further information.	Comment noted.
130.	Our client's rights remain fully reserved	Comment noted.

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LATEGAN, VILJOEN & PRETORIUS (LVP) ATTORNEYS, MR KOBUS DE VILLIERS ON BEHALF OF HARDUS STEENEKAMP		
131.	<p>We refer to the abovementioned documents sent to our office on 27 May 2016.</p> <p>As already communicated on various occasions and platforms, the circumstances regarding our clients' farming activities was clearly stipulated.</p> <p>Our clients' properties are adjacent to the proposed IPP and will be directly affected by the construction and operational phase of the IPP.</p> <p>It is not only a definite concern regarding the ecotourism side of our clients business, but the ecological side too will be impacted negatively.</p> <p>We stipulated this concern in the past but have not received any clearance on how these problems will be mitigated in the future.</p> <p>Due to spontaneous burning of stockpiles at the Grootgeluk Mine close to our clients properties and emissions from the Matimba Power Station and Medupi Power Station's negative impacts on the vegetation in that area is clearly notable. Acid rain in the area is also the main culprit of damage on the vegetation and the game fences in the area. The negative effects that New Shelf 1282 PTY (Ltd) IPP will have on properties in the area will not only contribute to the current</p>	<p>The project was authorized by the National Department of Environmental Affairs (DEA) on 25 February 2015. The requirement for a climate change study and palaeontology study is based on the appeal resolution from the Ministry of Environmental Affairs. Other impacts, including ecological impacts, were addressed in the original EIA study and will not be re-investigated.</p> <p>This study seeks to assess the GHG impacts associated with the project. Annual GHG emissions resulting from the project (quantified in tonnes of CO₂-equivalents emitted per annum) will be estimated, and the climate change impact of these emissions assessed based on an understanding of South Africa's baseline and future projected GHG emissions, GHG emission benchmarks provided by various international lender standards, and a review of South Africa's climate and energy policy.</p>

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	<p>negative effects but the adjacent properties will suffer severely (As the farm Elandsbosch and Minnasvlakte have).</p> <p>Each and every study conducted regarding this IPP fell short at mitigation in the form of damages paid to property owners in the inner circle of the IPP.</p> <p>We would like your study to address this as a matter of importance.</p>	

