

Issues and Responses Summary: Eskom Nuclear-1 Review Report and Climate Change Impact Assessment

In compliance with the requirements of the EIA Regulations, 2014, the Issues and Responses Summary reflects the *comments*¹ submitted by stakeholders listed in Table 1 as received by SRK Consulting (South Africa) (Pty) Ltd (SRK) during the stakeholder engagement period for the Environmental Impact Assessment (EIA) Review Report and Climate Change Impact Assessment Report (CCIAR) released from 24 July– 22 September 2023.

Verbatim comments have been included and responses provided in the respective columns of the Issues and Responses Summary² (Table 2). Copies of all original comments, submitted by email or through the online form and received by SRK are collated and presented in Appendix J of the Final Review Report³. Responses are formulated by SRK, Eskom and Promethium. Discussions with stakeholders at the Public Open Day have not been recorded in the Issues and Responses Summary⁴. Comments made during the online stakeholder engagement meeting have been captured in the meeting minutes included in the Issues and Responses Summary.

Issues are grouped into the following general themes in the Issues and Responses Summary:

- A. EIA and Appeal Process
- B. General Comments
- C. Review of Environmental Impact Report (EIR) and Specialist Studies
- D. CCIAR

¹ As required by the Department of Forestry, Fisheries and the Environment (DFFE) the comments have been included verbatim.

² Administrative or clarification-based comments (e.g. comments that do not relate to specific issues) have been excluded from the Issues and Responses Summary.

³ To comply with the Protection of Personal Information Act 4 of 2013 (POPIA), documents containing personal information of stakeholders will not be made available in the public domain. However, they will be submitted to the DFFE.

⁴ Stakeholders attending the Public Open Day have been requested to submit their comments in writing.

Abbreviations and Acronyms used in the Issues and Responses Summary

BBE	Black Economic Empowerment	GIBB	GIBB (PTY) Ltd
CA	Competent Authority	GRM	Grievance Redress Mechanism
CCIA	Climate Change Impact Assessment	IEP	Integrated Energy Plan
CCIAR	Climate Change Impact Assessment Report	IRP	Integrated Resource Plan
CoCT	City of Cape Town	NEMA	National Environmental Management Act 107 of 1998
DEA&DP	Department of Environmental Affairs and Development Planning	NPS	Nuclear Power Station
DFFE	Department of Forestry, Fisheries and the Environment	NNR	National Nuclear Regulator
EA	Environmental Authorisation	MW	Megawatt
EIA	Environmental Impact Assessment	NERSA	National Energy Regulator of South Africa
EIAR	Environmental Impact Assessment Report	NEA	National Energy Act 34 of 2008
EIR	Environmental Impact Report	PAJA	Promotion of Administrative Justice Act 3 of 2000
ELA-JB	Earthlife Africa – Johannesburg	PRDW	Prestedge Retief Dresner Wijnberg
EMP	Environmental Management Programme	SAFCEI	Southern African Faith Communities' Environment Institute
EMPr	Environmental Management Programme	SAHRA	South African Heritage Resources Agency
ERA	Electricity Regulation Act	SRK	SRK Consulting (South Africa) (Pty) Ltd
Eskom	Eskom Holdings (Soc) Limited	TP	Town Planning
FEIR	Final Environmental Impact Report		

Table 1: Stakeholders who submitted comments

#	Stakeholder	Affiliation	Submission Format	Comment Received
<i>Written comments</i>				
i.	George Bennett	GNB Communications	Online Form	24 July 2023
ii.	Ina Mbiza	Pinault Group Pty Ltd	Online Form	25 July 2023
iii.	Annelise de Bruin	City of Cape Town (CoCT): Spatial Planning and Environment	Email	26 July 2023; 28 July 2023
iv.	Lurwin Jeneke	CoCT: Policy and Strategy, Future Planning and Resilience	Email	18 August 2023
v.	Adrian Pole	Adrian Pole Attorneys on behalf of Southern African Faith Communities' Environment Institute (SAFCEI), Earthlife Africa – Johannesburg (ELA-JB) and Greenpeace Africa	Email	23 August 2023; 22 September 2023
vi.	Adri La Meyer	Department of Environmental Affairs and Development Planning (DEA&DP)	Email	23 August 2023
vii.	Sarietha Engelbrecht	CoCT: Office of the Executive Mayor	Email	8 September 2023
viii.	Justine Hansen	Marcop IT Professionals	Email	21 August 2023; 11 September 2023; 22 September 2023
<i>Comments raised at online stakeholder meeting</i>				
ix.	Francesca de Gasparis	SAFCEI	Online meeting	15 August 2023
x.	Annelise De Bruin	CoCT	Online meeting	15 August 2023
xi.	Adrian Pole	Adrian Pole Attorneys on behalf of SAFCEI, Earthlife Africa – Johannesburg (ELA-JB) and Greenpeace Africa	Online meeting	15 August 2023
xii.	George Bennet	GNB Communications	Online meeting	15 August 2023

Table 2: Issues and Responses: Eskom Nuclear-1 Review Report and CCIA

No	Comments	Stakeholder	Response
A. EIA and Appeal Process			
1.	The city never received any response from the appeal as submitted. Now we see that the decision is not open for re-debate, but only the process. Do you consider the fact that our appeal submission has not been responded to, as part of the procedural flaw?	CoCT: Spatial Planning and Environment; 26 July 2023	Eskom submitted an Appeals Responding Statement to the Department of Forestry, Fisheries and the Environment (DFFE) on 31 July 2018. On 8 August 2022, DFFE's Minister, the Honourable Ms. B Creecy adjourned the appeal process to afford Eskom an opportunity to appoint an independent specialist to commission a Climate Change Impact Assessment (CCIA) study and review specialist studies, the Final Environmental Impact Report (FEIR) and the Environmental Management Programme (EMPr, interchangeably EMP) relating specifically to the Duynefontein site. These studies will inform the Minister's appeal decision and all appellants will be notified of the outcomes. SRK's Scope of Work does not include a review of the appeals process (which has not yet been concluded). We however anticipate that the Minister/Appeal Directorate will respond to appeals / inform Appellants once an Appeal Decision has been taken.
2.	The City of Cape Town also appealed the decision by the Minister. We raised concerns that the specialist report on Town Planning desperately fell short of adequate information even though provided to the consultants. The same is applicable now even a decade later. How do we deal with that?		As noted in the previous comment, SRK's Scope of Work does not include a review of the appeals process but we assume that the Minister/Appeal Directorate is considering the merit of each appeal.
3.	Actually we have had quite a bit of issues with the Town Planning report from the start. And since that date MANY THINGS have changed in this region, the fastest growing corridor in the City of Cape Town. We have even progressed with a new Traffic Evacuation Model, in association with ESKOM and the NNR. So our views on the original EIA specialist reports should also be considered. And I'm not entirely sure how to deal with some of those comments which are outdated or even more serious now than ever. e.g. the population of Du Noon has massively increased over the past more than 10 years since the specialists used the 2011 census. Although it might have even be the 2001 census. I really cannot recall.	CoCT: Spatial Planning and Environment; 28 July 2023	SRK is not considering comments on the FEIR, aside from the potential outdatedness of the final report, the implications and remedy thereof. Regarding the second comment that 'many things have changed' since the report was completed but more specifically that the population of Du Noon has grown significantly since the 2011 census the following recommendations in the Town Planning review have reference: • It is considered likely that the baseline conditions associated with relevant town planning aspects (e.g. land use and population density) have changed in the period since the Town Planning Assessment was completed. However, the degree of this change is considered marginal given the prevailing spatial planning policies and guidelines; and

No	Comments	Stakeholder	Response
	What do we do now, just hang on and wait to say something when we get asked?		<ul style="list-style-type: none"> None of the assumptions / considerations listed are impacted by the passage of time since the study was conducted. <p>The report is therefore considered to be suitable for decision making in its current form and the specialist reviewer does not recommend any updates to the study.'</p>
4.	Have there been any meetings with between SRK/Eskom and DFFE/Appeal Authority subsequent to the 8 August 2022 directive from the Minister? If so, where can the Minutes relating to these meetings be accessed?	Adrian Pole Attorneys; 15 August 2023	Eskom has engaged the Appeals Office to confirm the proposed approach to the review and stakeholder engagement. No minutes were taken during these discussions.
5.	<p>Further to the correction provided to my query above, were there discussions or was what was agreed with the Appeal Authority recorded/confirmed in emails (or otherwise)? Where can these emails be accessed?</p> <p>There is a difference between what was in the directive of 08 Aug 2022 [calling for a revised EIA Report] and the EIA Review Report?</p>		<p>There was no written communication other than the original letter sent to the DFFE for extension request.</p> <p>A review was needed to identify if any studies (including the EIA itself) requires updating, which SRK undertook. The gap analysis/ review(s) presented in the Review Report found no need for the EIR and associated studies to be updated.</p>
6.	There were two sites Identified the one based in Cape Town (Duynefontein) what are the prescribed impact on the environment that currently is home to flora and fauna and is classified as conservation areas, and how will the current status of the approved land be re classified.	GNB Communications; 15 August 2023	SRK noted that the EIA assessed the impact on fauna and flora at both sites (including Duynefontein). Deon Jeannes (Eskom) noted that if the EA is upheld, the land will be rezoned (it is currently a protected area). An application will be made to the relevant authorities, including Cape Nature.
7.	CoCT appealed the final decision taken at the time. Main arguments are in the documents submitted to the DFFE with regards to the Town Planning Report. When the project was considered, it was located in the fastest growing corridor in the city. There has been an influx in unauthorised land use in the region of the project. The CoCT did not receive a response from DFFE regarding the appeal. CoCT is unsure of how concerns of issues raised in the EIA is dealt with by the review consultants. Is there a quicker way to engage with the town planning consultant to understand how they considered the city's previous questions and how they have come up with this position that the original specialist report is still adequate	CoCT: Spatial Planning and Environment; 15 August 2023	<p>SRK's scope of work did not include a review and analysis of previous comments/issues raised in original EIA process.</p> <p>The Minister is considering the CoCT's appeal. SRK assumes that this comment is the basis of CoCT's appeal, which the Minister would use in her review to understand and adjudicate the EA.</p>
B. General Comments			
8.	<p>The summary points of the report requires more indebt analysis. My team of communication specialist can assist with public engagement. Digital campaigns and public meetings</p> <p>Email us:gnbcommunication@gmail.com we are based in Atlantis and is BEE level1 accredited</p>	GNB Communications; 24 July 2023	It is unclear from this comment what in depth analysis is required. SRK has in-house expertise to manage the stakeholder engagement process.

No	Comments	Stakeholder	Response
9.	Thank you for the information, Banzi Geotechnics is currently engaged by the Council for Geoscience to assist with a review of the Koeberg PSHA. If there is any data related or relevant to this work, we would be very pleased to be informed.	Banzi Geotechnics; 24 July 2023	The stakeholder notification letter and executive summary of the Review Report detailing where the reports can be found were emailed to this stakeholder on 24 July 2023.
10.	There is no report attached	Pinault Group; 25 July 2023	The stakeholder notification letter and executive summary of the Review Report detailing where the reports can be found were emailed to this stakeholder on 28 July 2023.
11.	The City of Cape Town has been requested to provide comments on the Environmental Impact Assessment (EIA) Review Report and Climate Change Impact Assessment in response to appeals lodged against the Environmental Authorisation granted on 11 October 2017 for the proposed development of the Nuclear-1 Project at Duynefontein. We note that the closing date for comments is 23 August 2023. The City would, however, hereby like to request an extension on providing such comments	CoCT: Policy and Strategy, Future Planning and Resilience; 15 August 2023	This stakeholder was notified on 21 August 2023 that Eskom had agreed to an extension of the comment period of 14 days, and that comments would be accepted until 6 September 2023. The Minister then granted an extension of 30 days, taking the comment period to 22 September 2023, and the stakeholder was advised of this additional extension.
12.	Please could a copy of the presentation be shared to attendees after the meeting	SAFCEI; 15 August 2023	The online stakeholder meeting presentation was shared with the attendees on 16 August 2023.
13.	For the proposed project who are the approved partners that assisted in completing the environmental and climate assessment report, is there a summary available to utilized for public discussion.	GNB Communications; 15 August 2023	SRK and external specialists undertook the review of the EIR, EMP and many of the specialist studies. Promethium undertook the CCIA. Executive summaries of both reports were issued to registered stakeholders and are available on the SRK website.
14.	On the Urban renewal opportunities identified what are they and who will assist in ensuring that they are implemented. Urban Renewal (sic) opportunities relates to, deforesting, labor intensive activities		Recommendations related to Urban Renewal were not in the scope of the current review process, although the Town Planning study was reviewed.
15.	Can the CoCT get access to the reassessment of the specialists reports? Especially extracts of how the previous concerns raised has been recorded, re-assessed and evidence of how the reassessment has confirmed that the original specialist reports were accurate and sufficient. The CoCT raised specific concerns about the Town Planning perspective.	CoCT: Spatial Planning and Environment; 15 August 2023	The Social Impact Assessment and the Town Planning Assessment used future projections of populations and development in the project area in their impact assessments and the reviewers concluded that these projections remain valid. None of the developments and/or growth in population exceeded the expected projections. The findings of the specialist reviews are presented in the EIA Review Report, which includes a section dealing with each of the specialist studies individually. The review report has been made available to the

No	Comments	Stakeholder	Response
			CoCT. SRK is not undertaking detailed technical reviews or assessing how comments raised in the previous EIA were addressed, but SRK's review concluded that sufficient opportunity to raise comment was provided during the original EIA process. DFFE would have taken this into consideration in taking a decision on the EIA process and issuing the EA.
16.	We need to get the EIA, our current internal information and the new traffic evacuation model and the specialists that you have now appointed for reassessment of the old things to be on the same page. There has never been a chance for these three parties to meet and to just compare notes so that we are all on the same page.		The Town Planning review report is included in the main Review Report which has been made available to stakeholders. SRK can send CoCT the Town Planning review report separately if required. The baseline was found to remain valid – future projections that were used are consistent with the current baseline. Eskom is happy to proceed with further discussion in this regard if required.
17.	Thank you, colleagues for the brilliant responses as it pertains to waist (sic) management is there consideration in the assessment for nuclear waist management protocols.	GNB Communications; 15 August 2023	Nuclear waste management protocols were assessed in the EIR.
18.	Are the underlying specialist reports (by SRK specialist reviewers) available on the SRK website?	Adrian Pole Attorneys; 15 August 2023	An integrated report (the EIA Review Report) is available on the SRK website. Stand-alone specialist review reports were not published, and were integrated directly into the EIA Review Report.
19.	I would like to respond but this has proved to be an impossible deadline coinciding with our financial year end (31 Aug) on top of the severe impact of the strike earlier this month. The strike also prevented me from attending the public open day event on 7 August so I wondered if another opportunity would be created for that? And I do hope an extension can be granted of a month (or ideally longer) to give time for a more considered response as there's a lot of material to work through.	Justine Hansen; 21 August 2023	This stakeholder was notified on 22 August 2023 that Eskom had agreed to an extension of the comment period of 14 days, and that comments would be accepted until 6 September 2023. This stakeholder was then notified on 11 September 2023 that the Minister had agreed to an extension of the comment period of 30 days, and that comments would be accepted until 22 September 2023.
20.	I unfortunately, couldn't meet this deadline in time – just not possible to attend to this last week after financial year end. I wanted to note though that I was quite confused about why, for the most part, the research that I skimmed is so outdated. This includes waste, seismic and other specialist studies (around 35). Renewed attention is also especially required for the Need & Desirability.	Justine Hansen; 11 September 2023	This stakeholder was notified on 11 September 2023 that the Minister had agreed to an extension of the comment period of 30 days, and that comments would be accepted until 22 September 2023.

No	Comments	Stakeholder	Response
	<p>Also of concern are the significant population changes which would impact on an evacuation plan in the case of a serious nuclear accident or sabotage at Koeberg.</p> <p>I am in support of the views of Koeberg Alert published in the press. Here are two which I read:</p> <p>https://www.iol.co.za/capeargus/news/koeberg-issues-mount-activists-say-vastly-underestimated-refurbishment-costs-threaten-economy-b71533e3-4791-4cce-8c9a-1935f446f143</p> <p>https://www.businesslive.co.za/bd/national/2023-08-22-eskom-under-fire-for-concealed-koeberg-report/</p> <p>And since the Department of Mineral Resources and Energy is working to release an updated IRP this year, I plan to comment on that instead.</p> <p>https://www.engineeringnews.co.za/article/ramokgopa-working-with-dmre-to-have-updated-irp-released-for-consultation-soon-2023-09-02</p> <p>I trust that a wide audience will be given the opportunity to comment on this too in an extensive and robust public participation process so that it's not just a rubber-stamping process. We last had in-person IAP engagement in various areas around Cape Town in 2015. Eight years ago!</p> <p>So hopefully efforts to reach existing and new IAPs will be done well and timeously for more thorough and informed engagement on the need, desirability and other concerns and considerations.</p>		
21.	<p>Much of the research shared seems to be very dated and this will hopefully be addressed in the new IRP which the Department of Mineral Resources and Energy is preparing to release soon for public consultation.⁵</p> <p>And which I'd like the opportunity to comment on in more detail. I trust that a wider audience will also be given the opportunity to comment on this in a more extensive and robust public participation process so that it's not just a rubber-stamping process. To the best of my knowledge we last had in-person IAP engagement in various areas around Cape Town in 2015. That was eight years ago – surely it's time now for another in-person session, widely and timeously advertised to reach not only existing IAPs but new ones too.</p> <p>A thoroughly considered update of many of the studies is obviously important in light of the changes to the landscape over more than a decade.</p>	Justine Hansen; 22 September 2023	See response to comments 25, 64, 71 and 76.

⁵ <https://www.engineeringnews.co.za/article/ramokgopa-working-with-dmre-to-have-updated-irp-released-for-consultation-soon-2023-09-02>

No	Comments	Stakeholder	Response
	<p>An obvious example is Cape Town's population which increased by nearly a million people in the last decade.⁶</p> <p>This would clearly impact on the evacuation plan too in the case of a serious nuclear accident or sabotage at Koeberg.</p> <p>And the lack of transparency around safety is particularly concerning, as reported in the press last week.⁷⁸</p> <p>Need & Desirability needs a lot more consideration in light of the exorbitant costs. I hope that the new IRP will draw the same rational conclusion that the promised benefits aren't justified by that amount of expense. I support the analysis of SAFCEI in this regard⁹ as well as Koeberg Alert¹⁰.</p>		
C.	Review of EIR and Specialist Studies		
22.	<p>1. INTRODUCTION</p> <p>These comments are made on behalf of Greenpeace Africa, Earthlife Africa – Johannesburg and the Southern African Faith Communities' Environment Institute ('SAFCEI') (collectively referred to as 'the Appellants') in response to an invitation by SRK Consulting ('SRK') to review and comment on an Environmental Impact Assessment Review report ('EIA Review report') and Climate Change Impact Assessment Report ('CCIAR') prepared on behalf of ESKOM HOLDINGS (SOC) LIMITED ('Eskom').</p> <p>On 5 March 2018, the Appellants lodged an appeal against the environmental authorisation ('EA') granted on 11 October 2017 to Eskom for the construction of a nuclear power station and associated infrastructure (Nuclear-1) at Duynefontein, Western Cape Province. On 8 August 2022 the Minister issued a Directive affording Eskom an opportunity to commission an independent specialist to carry out a climate change impact assessment (CCIA) study for the proposed project and to 'supplement the EIA reports that were filed in support of the application for EA with more up to date information'.</p> <p>The EIA Review report is 228 pages in length, and reviews the original Nuclear-1 FEIR, 19 Specialist Impact Assessments and 12 Technical Assessments submitted as part of Eskom's application for environmental authorisation for Nuclear-1. While a 30-day comment period was</p>	<p>Adrian Pole; 23 August 2023</p>	<p>In the absence of a response by the Minister, Eskom agreed to grant stakeholders an additional 14 days within which to submit comments. Mr Pole was notified of this extension by SRK on 25 August 2023. The Minister then granted an extension of 30 days, taking the comment period to 22 September 2023, and the stakeholder was advised of this additional extension.</p>

⁶ <https://www.macrotrends.net/cities/22481/cape-town/population>

⁷ <https://www.energize.co.za/article/threat-legal-action-forces-release-safety-information-about-koeberg>

⁸ <https://www.businesslive.co.za/bd/national/2023-08-22-eskom-under-fire-for-concealed-koeberg-report/>

⁹ <https://www.greenbuildingafrica.co.za/more-than-just-a-cost-issue-secret-decisions-about-koeberg-nuclear-power-plant-could-result-in-more-harm-than-good/>

¹⁰ <https://www.iol.co.za/capeargus/news/koeberg-issues-mount-activists-say-vastly-underestimated-refurbishment-costs-threaten-economy-b71533e3-4791-4cce-8c9a-1935f446f143>

No	Comments	Stakeholder	Response
	afforded for review and comment on the EIA Review report and CCIAR, this amount of time was insufficient to afford the Appellants adequate time to review the reports, seek expert advice where required, and draft comprehensive comments. The Appellants applied for a 30-day extension of time within which to submit their comments, but as at the time of finalising these comments no decision on the extension application had been communicated by the Appeal Authority. As a consequence, the Appellants have restricted their comments to what was achievable in the limited time available.		
23.	<p>It is noted that the EIA Review report states that:</p> <p>The purpose of stakeholder engagement coordinated by SRK is to solicit comment only on the reviews of specialist studies, the FEIR and EMPr as documented in this Review Report, as well as the CCIA. The purpose is expressly not to reopen comment on the issues raised during the EIA process undertaken by GIBB¹¹.</p> <p>As a consequence, the Appellants do not repeat the grounds of appeal articulated in their 5 March 2018 Appeal against the 2017 Nuclear-1 EA and supplementary submissions made in 2021 relating to the IRP2019. However, where relevant to this comment, reference is made to some of these appeal grounds.</p> <p>The Appellants stand by their grounds of appeal.</p>		Noted.
24.	These comments (and the absence of comment on various aspects) should not be interpreted as accepting the lawfulness of this EIA Review process, or the approach taken. The Appellants fully reserve their rights.		Noted.
25.	<p>2. COMMENTS ON EIA REVIEW REPORT</p> <p>2.1. EIA REVIEW</p> <p>(a) The Minister's Directive</p> <p>On 8 August 2022, the Minister decided to adjourn the appeals process to afford Eskom an opportunity to commission an independent specialist to carry out a climate change impact assessment (CCIA) study for the proposed project and to <i>'supplement the EIA reports that were filed in support of the application for EA with more up to date information on such aspects as</i></p>		<p>The purpose of the review undertaken by SRK and the specialist reviewers was to consider whether or not any potentially outdated information contained in the FEIR materially affects the findings of the specialists studies or the FEIR or the significance of impacts.</p> <p>Some specialist review noted that some data could be updated, but all concluded that there are no material deficiencies and the studies remain fit for purpose and are suitable for decision making in their current form. The specialist reviewers did not recommend any updates to the studies. Exceptions are as follows:</p>

¹¹ EIA Review report, p6.

No	Comments	Stakeholder	Response
	<p><i>Eskom may deem fit</i>¹².</p> <p>In accordance with the above, the Minister directed Eskom to do inter alia the following:</p> <p>7.1 Commission a climate change impact assessment study in relation to the proposed project;</p> <p>7.2 <u>Supplement the EIA reports that were filed in support of the application for EA with more up to date information on such aspects as Eskom may deem fit;</u></p> <p>7.3 Subject the... updated EIA reports to a public participation process for review and comments by all registered interested and affected parties, including the appellants... for a period of at least 30 days as prescribed by the Environmental Impact Assessment Regulations 2014;</p> <p>7.4 Compile all the comments received and Eskom's responses thereto in a comments and response report; and</p> <p>7.5 <u>Submit the... updated EIA reports</u> and the comments and response report to the Director: Appeals and Legal Review within the Department, within 90 days from the date of receipt of this... letter, for my consideration during the adjudication of the appeals.¹³ (emphasis added).</p> <p>With regard to directing Eskom to supplement the EIA reports that were filed in support of the EA with more up to date information on such aspects as Eskom may deem fit, it is relevant to note that the context for this directive is that the Minister took into consideration <i>'that a number of appellants have raised that the EIA was granted to Eskom based on outdated information as a ground of appeal'</i>.¹⁴</p>		<ul style="list-style-type: none"> The Economic Impact Assessment found that nuclear is the cheaper and more appropriate (energy generation) option, a conclusion which may no longer be valid. The specialist reviewer recommends that the Minister must consider the IRP 2019 when adjudicating the appeal; The specialist reviewer of the 1:100 year floodline recommends that Nuclear-1 design complies with recommendations in separate Site Safety Reports (SSRs) commissioned for the National Nuclear Regulator (NNR) licensing process, for a Nuclear Power Station at Duvnefontein; and The Grid Integration Report specialist review recommends a new Grid Integration Study once the appeal process is finalised, incorporating the most recent data for Nuclear-1..
26.	The Minister also indicated that she is guided by the judgement of the court in <i>Earthlife Africa</i>		Noted. See response to comment 25.

¹² Minister's 8 August 2022 direction, para 6. Note – the date of the Minister's direction is handwritten, and may read 5 August 2022.

¹³ Ibid.

¹⁴ Ibid, para 4.

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	<p><i>Johannesburg vs Minister of Environmental Affairs and Others</i>¹⁵, where the court held at paragraph 107 that:</p> <p>The appeal under section 43 of NEMA is a wide appeal <u>involving a determination de novo where the decision in question is subject to a reconsideration, if necessary on new or additional facts, with the body exercising the appeal power free to substitute its own decision for the decision under appeal.</u> The Minister could therefore have (and perhaps should have) adjourned the appeal and similarly directed Thabametsi to undertake a climate change impact assessment for consideration in the appeal process and thereafter to have substituted the Chief Director's decision with her own. (emphasis added)</p> <p>Subsection 43(5) of the National Environmental Management Act, 1998 ('NEMA') empowers the Minister to consider and decide the appeal or appoint an appeal panel to consider and advise the Minister on the appeal, while subsection 43 (6) of NEMA empowers the Minister, after considering an appeal, to confirm, set aside or vary the EA decision, or make any other appropriate decision.¹⁶</p> <p>It would appear from the Minister's directive that she is not simply considering and deciding the appeals against the 2017 environmental authorisation (EA) (which EA would necessarily be assessed having regard to information available to the decision-maker at the time), but is subjecting the EA to a reconsideration having regard to relevant new or additional facts. For the purposes of these comments it assumed that the Minister's intention (when affording Eskom an opportunity to supplement the EIA reports that were filed in support of the EA with more up to date information on such aspects as Eskom may deem fit) is to afford Eskom the opportunity to introduce updated information to inform her appeal decision.</p>		
27.	<p>(b) Comments on EIA Review Scope and Approach</p> <p>(i) Scope</p> <p>The EIA Review report submitted by SRK on behalf of Eskom indicates that the Scope of Work 'to inform the Minister's decision on the appeal process' is to:</p> <ul style="list-style-type: none"> <u>Review specialist studies, the FEIR and the EMPr to determine risks of not updating reports, and determine if the risks (if any) need to be mitigated;</u> <u>Compile a report... documenting the findings of the review and – if necessary- recommend methods to address any gaps, e.g. by updating specialist studies and/or revision (and</u> 		<p>The Minister will consider this comment.</p> <p>Insofar as the directive affords Eskom an opportunity to supplement the EIA reports that were filed in support of the EA with more up to date information on such aspects as Eskom may deem fit, a prior step is to determine whether such supplements are required. SRK's Review Report evaluated this.</p>

¹⁵ [2017] 2 ALL SA 519 (GP).

¹⁶ Subsections 43(5) and (6) of NEMA were introduced by way of the National Environmental Management Amendment Act 8 of 2004 (Government Gazette 27161 dated 6 January, 2005). The NEM Amendment Act, 2004 was brought into operation on 7 January 2005 by Presidential Proclamation GNR. 1 of 2005.

No	Comments	Stakeholder	Response
	<p>approval) of the EMPr;</p> <ul style="list-style-type: none"> • Undertake a CCIA; and • Conduct a public participation (stakeholder engagement) process... of at least 30 days as prescribed by the EIA Regulations (2014) as amended.¹⁷ (emphasis added). <p>The Scope of Work given by Eskom to SRK goes beyond the Minister's directive affording Eskom an opportunity to supplement the EIA reports that were filed in support of the EA with more up to date information on such aspects as Eskom may deem fit. This extended scope is aimed at 'determining the risks of not updating reports' and to 'determine if the risks (if any) need to be mitigated'.</p>		
28.	<p>It is submitted that while the Minister's directive clearly directs Eskom to commission a CCIA study (and read with section 6 of the directive it is clearly intended to afford Eskom an opportunity to commission an independent specialist to carry out this CCIA study), it does not direct Eskom to commission an EIA Review report. It directs Eskom to supplement the EIA reports that were filed in support of the application on such aspects as Eskom may deem fit. It is submitted further that, properly interpreted, section 6 of the directive indicates that it was intended to afford Eskom an opportunity to supplement the EIA reports. The reference to 'independent <u>specialist</u>' relates to commissioning of a CCIA report, and no mention is made of commissioning an 'independent <u>consultant</u>' to supplement the EIA reports. Moreover, the directive does not direct Eskom to commission an independent consultant to conduct a review of the Nuclear-1 FEIR, express various subjective views and opinions on matters that are under Appeal, or make recommendations to the Minister on her adjudication of the Appeal. The appointment by Eskom of an independent consultant to advise the Minister is clearly very different to the Minister (or her appointed appeal panel) commissioning a report from an independent consultant to advise her. The following views expressed in the judgment of a full bench of the Cape High Court in <i>Earthlife Africa (Cape Town) v Director - General : Department of Environmental Affairs & Tourism</i> and another are instructive in this regard:</p> <p>...although Eskom's consultants were notionally "independent" in the sense that they were not institutionally part of Eskom, they were <u>employed by Eskom to act as its agent and the purpose of their engagement was to obtain the authorisation Eskom sought</u>. Eskom employed them, both to prepare the application for authorisation and to perform the functions of its consultants under the EIA Regulations. <u>The consultants were, in other words, clearly aligned on Eskom's side and were not independent consultants employed by the decision-maker to assist him in making his</u></p>		<p>See comment 27.</p> <p>SRK has not been appointed by Eskom to <i>advise</i> the Minister but rather to provide information to inform the Minister's decision. SRK is independent and was not employed by Eskom to act as its agent to obtain authorisation.</p>

¹⁷ EIA Review Report, p1. Executive Summary (no page number indicated).

No	Comments	Stakeholder	Response
	<u>decision</u> . ¹⁸		
29.	While the views expressed by the Court in the above quotation were given in the context of the application of the <i>audi</i> rule in an EIA application, they highlight the clear difference between an independent consultant (in this case SRK) employed by Eskom (the applicant seeking environmental authorisation, and Respondent in the Nuclear-1 Appeal process), and independent consultants employed by the Minister to assist her in making her appeal decision.		See comment 28.
30.	The Appellants also point out that the Minister's 8 August 2022 decision is an administrative decision made by the Minister exercising her statutory appeal powers, which decision was communicated to Eskom and appellants in the Nuclear-1 appeal. Appellants have not been notified of any subsequent variation of this decision by the Minister, and as such the 8 August 2022 decision stands and cannot be varied arbitrarily. It is noted that appellants were informed during a virtual meeting held in relation to the draft EIA Review report on 15 August 2023 that neither SRK nor Eskom had any formal meetings with the DFFE Appeal Authority, but that informal discussions were held regarding the approach taken and how to engage with the public. It was explained further during the virtual meeting that SRK needed to do a gap analysis to determine whether the EIA required restarting or updating, and that this was clarified verbally with the DFFE Appeal Authority who confirmed the approach. This informal engagement is noted but does not vary or change the legal effect of the Minister's 8 August 2022 decision (and any approach informally agreed would have no basis in law, would be unlawful and procedurally unfair).		The Minister will consider this comment.
31.	Regarding the 'Review Approach and Methodology' section of the EIA Review report, it is noted that the 'Regulatory Context' subsection states that it can be inferred from the transitional provisions applicable to the NEMA 2014 EIA Regulations that protocols and other instruments that have subsequently been published in terms of the NEMA 2014 EIA Regulations are not applicable to 'pending applications'. It is noted further that the EIA Review report goes on to state that the Nuclear- 1 EIA could not and – in law – does not need to comply with instruments which came into effect after the Nuclear-1 EIA commenced. While this proposition is correct relating to ' <u>pending applications</u> ', the EIA Review Report fails to recognise that the Nuclear-1 EIA is not a ' <u>pending application</u> ', but is <u>under appeal</u> . The adjournment of the appeal by the Minister does not change this fact, and is distinguishable from a situation where the Minister has made an appeal decision, and has remitted the matter back to the competent authority (CA) for various steps to be taken and for a new decision on authorisation to be made by the original CA.		Noted. SRK has amended the final Review Report to make this distinction, but as stated in the comment, notes that the applicability of the recently published protocols and other instruments remains unchanged.

¹⁸ *Earthlife Africa (Cape Town) v Director - General : Department of Environmental Affairs & Tourism and another* [2006] 2 All SA 44 (C), at paragraph 70.

No	Comments	Stakeholder	Response
32.	<p>It is submitted that the transitional provision in regulation 53(4) of the NEMA 2014 EIA Regulations should instead have been referred to, which provides as follows:</p> <p>An appeal lodged in terms of the previous NEMA regulations, and which is pending when these Regulations take effect must despite the repeal of those previous NEMA regulations be dispensed with in terms thereof as if those previous NEMA regulations were not repealed.</p> <p>This correlates with the transitional provisions contained in the National Appeal Regulations, 2014,¹⁹ which provide (among other things) that:</p> <p>An appeal lodged after 8 December 2014 against a decision taken in terms of the Environmental Impact Assessment Regulations, 2006 must despite the repeal of the regulations... be dispensed with in terms of the Environmental Impact Assessment Regulations, 2010 as if those regulations have not been repealed.</p>		<p>Noted. SRK has amended the final Review Report to make reference to this transitional provision.</p>
33.	<p>This means that while it is correct that the Nuclear-1 EIA was concluded under the provisions of the EIA Regulations, 2006, the EIA Regulations, 2010 are applicable to the current EIA Appeal process. In terms of regulation 64(3) of the EIA Regulations, 2010, the Minister is empowered to request the Appeal Respondent (i.e. Eskom) to submit such additional information in connection with the appeal as the Minister may require. It is submitted that it is within this regulatory context that the Minister's directive (affording Eskom an opportunity to supplement the EIA reports that were filed in support of the EA with more up to date information on such aspects as Eskom may deem fit) should be understood.</p>		<p>The Minister will consider this comment.</p>
34.	<p>Whether as a result of the Minister's directive being misinterpreted and/or the EIA Review report misconstruing the regulatory context within which the Minister has issued her directive, the EIA Review report proceeds to express various subjective views relating to the Nuclear-1 EIA process and EA that go to the merits of the EIA appeal process. It is submitted that this is inappropriate and procedurally irregular within the context of the Nuclear-1 EIA appeal, effectively amounting to Eskom having another 'bite at the appeal cherry' not contemplated in the EIA Regulations, 2010.</p>		<p>The Minister will consider this comment.</p>
35.	<p>(ii) Approach</p> <p>The EIA Review report goes on to state in the subsection headed 'Approach to the Review' that the review:</p> <p><u>...does not assess the correctness or accuracy of information presented in the EIA Report or specialist reports as these were very thoroughly reviewed (through peer review and stakeholder</u></p>		<p>These paragraphs have been extracted from the Review Report to inform the subsequent comment and do not require a response.</p>

¹⁹ GN R.993 of 8 December 2014 (as amended), regulation 10(2)(b).

No	Comments	Stakeholder	Response
	<p>review) for factual correctness during the EIA process, and EA was granted for Nuclear-1 at Duynfontein.²⁰(emphasis added).</p> <p>The EIA review report goes on to state that:</p> <p>The review <u>assumes</u> that the EIA process, stakeholder engagement, FEIR and specialist studies were comprehensive, legally compliant and fit-for-purpose when EA was granted in October 2017. The review is thus not a technical review, but a process review, in effect a gap analysis assessing whether EIAs and associated studies undertaken over 10 years ago are fit-for-purpose in 2023.</p> <p>To that end, the review focuses on:</p> <ul style="list-style-type: none"> • <u>The extent to which the EIA of Nuclear-1, undertaken in terms of the 2006 EIA Regulations, is aligned with the intent and “spirit” of the EIA Regulations, 2014.</u> This entailed a detailed review of transitional provisions and the FEIR against a number of aspects, including stakeholder engagement...; • <u>Alignment with and applicability of “the spirit” and intent of (new) specialist study regulations and reporting protocols...</u>; • Whether old information is still suitable, i.e. is baseline information and data in the Nuclear EIA adequate for the purposes of EA or have conditions changed so considerably <u>that the information may compromise the original EA</u>; • The materiality of the information, i.e. does the status of the information in the FEIR or a particular study affect potential impacts of the project, <u>increasing the risk that the project will not withstand further appeals in future</u>; and • Whether data deficiencies and risks can be addressed: <ul style="list-style-type: none"> • Through new conditions attached to the EA and/or appeal decision, including conditions which may pertain to more technical matters, e.g. seismic risk; • By a new application for EA (i.e. a new EIA process); • By updating the EMPr; • Through a Specialist Study Addendum; • By implementing and disclosing a Grievance Redress Mechanism (GRM) and reacting to valid grievances as they arise; 		

²⁰ EIA Review Report, p3.

No	Comments	Stakeholder	Response
	<ul style="list-style-type: none"> Through another legislative process (e.g. land use application); or Some other process.²¹ (emphasis added) 		
36.	The EIA Review report thus indicates that it did not assess the correctness or accuracy of the information presented in the FEIR and specialist studies, and makes the <u>assumption</u> that that the Nuclear-1 EIA process, stakeholder engagement, FEIR and specialist studies were comprehensive, legally compliant and fit-for-purpose when EA was granted in October 2017. It is submitted that this value-laden assumption is inappropriate in the context of the Minister's directive in the EIA appeal process (where the Nuclear-1 EIA process and EA have been impugned by various appellants, and where Eskom has already had an opportunity to submit a Responding Statement), and that the EIA Review report should rather have constrained itself to simply reviewing the various reports to determine what information was out-of-date and needed updating.		The Minister will consider this comment.
37.	Furthermore, the EIA Review report indicates that is thus not a technical review, but a process review, 'in effect' a gap analysis assessing whether EIAs and associated studies undertaken over 10 years ago are fit-for-purpose in 2023. This appears to conflate an EIA process review with a 'gap analysis', and inappropriately leads to the EIA Review report expressing subjective views on whether the environmental impact assessment and associated studies undertaken 10 years ago are fit-for-purpose in 2023, rather than identifying outdated information (through a gap analysis), and updating the FEIR and associated studies (where outdated information was identified) so that up to date information (rather than assumptions and subjective views) could be put before the Minister to inform her appeal decision.		<p>The Minister will consider this comment.</p> <p>The views expressed in the report are objective insofar as SRK and specialist reviewers are independent and were not appointed to obtain authorisation.</p> <p>A "gap analysis" (referred to in the Review Report as "in effect a gap analysis") may not be the most precise term for the review(s) that were undertaken. In part it was used for the benefit of public stakeholders. The report has been appropriately reworded.</p>
38.	The approach taken in the EIA Review report - which misconstrues the EIA Appeal process with an EIA process and conflates a review of an EIA process with a gap analysis - sets the EIA Review report up to (inappropriately within the context of an EIA appeal process) express views and opinions defending, supporting and approving (among other things) the EIA process, FEIR and specialist studies as being 'comprehensive, legally compliant and fit-for-purpose' when the EA was granted in 2017.		See comment 37. While "gap analysis" may not be the most precise term, SRK does not believe there was any conflation as regards the approach adopted.
39.	This in turn leads to the EIA Review report focussing on considerations irrelevant to complying with the Minister's directive, such as 'the extent to which the Nuclear-1 EIA, undertaken in terms of the 2006 EIA Regulations, is aligned with the intent and "spirit" of the EIA Regulations, 2014' and 'alignment with and applicability of "the spirit" and intent of (new) specialist study regulations and reporting protocols'.		The Minister will consider this comment.

²¹ EIA Review report, pages 3 – 4.

No	Comments	Stakeholder	Response
40.	Given that the EIA Review report recognises that the Nuclear-1 EIA did not need to comply with requirements that came into effect after the EIA process commenced, the focus on whether the EIA conducted is aligned with the intent and “spirit” of the EIA Regulations, 2014 is misplaced. This in turn leads to the EIA Review report making an inappropriate and irrelevant conclusion that ‘SRK believes the EIA process undertaken was adequate to meet the current requirements in terms of the EIA Regulations, 2014’. ²²		The Minister will consider this comment.
41.	Furthermore, the focus of the review on whether old information is still suitable for EA again misconstrues the process within which the Minister’s directive was made (i.e. the Nuclear-1 EIA appeal process and not a remitted EIA process). The EIA Review report oversteps the remit of the Minister’s directive by indicating that its intent was to determine whether the old information ‘may compromise the original EA’. Eskom was not directed by the Minister to express views regarding whether or not the ‘old information may compromise the original EA’. Whether or not the EA impugned on appeal was compromised by old information is a function of the Minister as the appeal authority (in considering any grounds of appeal raised against the 2017 EA that take issue with the information presented in the original EIAR and EIA reports). The opportunity afforded to Eskom to supplement its EIA reports with updated information is clearly aimed at ensuring that the Minister has sufficient and updated information upon which to base her appeal decision.		The Minister will consider this comment. As noted above, SRK’s Review Report was a prior step is to determine whether the EIA reports should be supplemented.
42.	It is submitted that affording an Appeal Respondent (i.e. Eskom) a further opportunity to defend the original EIA process, documentation and EA (i.e. in addition to the submission of its Responding Statements relating to the various appeals lodged) is not contemplated in the EIA Regulations, 2010, and permitting it to do so would make the Minister’s future appeal decision vulnerable to review under inter alia sections 6(2)(a)(i), 6(2)(c), 6(d), 6(e)(i) and (iii), and 6(f)(i) of the Promotion of Administrative Justice Act, 2000 (PAJA).		The Minister will consider this comment.
43.	Additionally, the EIA Review report expressly states that: <u>The purpose of the current stakeholder engagement coordinated by SRK (in 2023) is not to reopen comment on the issues previously identified in- and/or the merits of- the EIA undertaken by GIBB, since SRK (is) neither qualified nor appointed to respond to such comments.</u> <u>Rather the purpose of the current round of stakeholder engagement is to solicit comment only on the reviews in the Review Report compiled by SRK, and the CCIA compiled by Promethium.</u> ²³ (emphasis added)		The Minister will consider this comment. SRK did not seek to re-open (old) comments but did not advise that the Minister should ignore them.

²² EIA Review Report, p27.²³ EIA Review Report, p134.

No	Comments	Stakeholder	Response
	That SRK indicates the current engagement process is not to re-open comments on (among other things) the merits of EIA undertaken by Gibb since SRK <i>'is neither qualified nor appointed to respond to such comments'</i> provides further support for the submission that it is inappropriate for SRK to express views regarding whether or not the original EIA reports <i>'may compromise the original EA'</i> .		
44.	Furthermore, while no objection is raised to the review assessing the materiality of the information in the FEIR and EIA reports within the context of evaluating whether such information is out of date and should be updated, assessing whether such outdated information increases <i>'the risk that the project will not withstand further appeals in the future'</i> again oversteps the Minister's directive (which simply afforded Eskom an opportunity to supplement the EIA reports that were filed in support of the application for EA with more up to date information on such aspects as Eskom may deem fit).		The Minister will consider this comment.
45.	The EIA Review report goes on to indicate that it focussed on whether data deficiencies and risks can be addressed through various methods. Again it oversteps the Minister's directive. It is submitted that it is irregular for the EIA Review report to consider a number of other methods that in its view could be used to address 'data deficiencies and risks', such as suggesting new conditions, implementing grievance redress mechanisms or 'some other process'. The EIA Review report should rather have constrained itself to identifying any information that was out of date, and to supplementing the EIA reports with more up to date information to inform the Minister's decision on appeal.		The Minister will consider this comment.
46.	<p>(c) FEIR Review - Conclusions, Key Findings and Recommendations</p> <p>In the introduction to its review of the Nuclear-1 FEIR, the EIA Review report indicates that it provides an overview of the various aspects presented in the FEIR, <i>'along with an evaluation of whether or not this information remains fit-for-purpose and adequate for DFFE (the Minister) to take a final decision on the Project'</i>.²⁴ However, in providing this overview and conducting its evaluation, the EIA Review report ignores grounds of appeal raised by the Appellants. The result is that the 'evaluation' is not objective, 'enters the fray' of the appeal while excluding a consideration of appeal grounds, and goes well beyond the wording and purpose of the Minister's directive (to supplement the EIA reports that were filed in support of the application for EA with more up to date information on such aspects as Eskom may deem fit). This in turn results in the EIA Review report making a number of conclusions, key findings and recommendations regarding the Nuclear-1 EIA that are irregular and inappropriate within the context of the Nuclear-1 Appeal</p>		<p>The Minister will consider this comment.</p> <p>SRK did not seek to re-open (old) comments but did not advise that the Minister should ignore them</p>

²⁴ EIA Review Report, p11.

No	Comments	Stakeholder	Response
	process.		
47.	<p>(i) Project Description</p> <p>Regarding the Nuclear-1 FEIR Project Description, the EIA Review report makes the key finding that:</p> <p>...all assumptions in the FEIR relating to the project description remain valid, notably the approach of specifying a conservative envelope of design data and other relevant requirements, with which the detailed Nuclear Power Station design and layout must comply.²⁵</p> <p>This key finding is based on confirmation provided by Eskom (the Respondent in the Nuclear-1 EIA Appeal process) that <i>'the consistent dataset used to model the impacts of the proposed power station remain valid, and that since a vendor has not yet been identified, more detailed design information is not available'</i>.²⁶ In reaching this finding, the EIA Review report has ignored submissions made by the Appellants in their Nuclear-1 Appeal challenging the 'envelope of design' approach (see in particular Section E.5 of the Appellants' Nuclear-1 Appeal, under the sub-heading <i>'Lack of certainty as to the specific type of plant, its design and safety mitigation features'</i>). The EIA Review report reveals a lack of objectivity and fairness in its approach – offering its views on issues that are under appeal (and which are in turn based on information provided by the appeal Respondent), while not having regard to counter-views articulated in the Appellants' grounds of appeal. It also oversteps the remit of the Minister's directive – going beyond identifying out of date information and supplementing the EIA reports that were filed in support of the application for EA with more up to date information</p>		<p>The Minister will consider this comment.</p>
48.	<p>(ii) Need and Desirability</p> <p>Regarding the FEIR section on Need and Desirability, the EIA Review report makes the following conclusions and key findings relating to the 2010 and 2019 iterations of the Integrated Resource Plan:</p> <ul style="list-style-type: none"> The IRP 2010 underpins the evaluation of the need and desirability of the proposed Nuclear-1 project. While the information presented in the EIA relating to the IRP, current and proposed additional generation capacity may be out of date, this will not affect either the motivation that additional power generation capacity is urgently required in South Africa or the how nuclear energy fits into the proposed energy mix. It was not the purpose of the EIA process to determine this. 		<p>Noted.</p>

²⁵ EIA Review Report, p26-27.

²⁶ EIA Review Report, p18.

No	Comments	Stakeholder	Response
	<ul style="list-style-type: none"> The IRP 2019 envisages nuclear in the energy mix, with an expansion of the current nuclear capacity beyond 2030; <p>It is not disputed by the Appellants that additional power generation is urgently needed. However, the Appellants contest that nuclear energy (with its long lead in times) can deliver electricity to the grid within a timeframe that addresses the current urgent need for additional power generation in South Africa.</p>		
49.	<p>The EIA Review report also provides an overview of the Need and Desirability motivation included in the 2017 FEIR, supplemented by subjective views regarding the IRP2010 and supporting the FEIR's view that nuclear generation is not seen as an alternative to renewable technologies. The EIA Review report goes on to acknowledge that subsequent to the Nuclear-1 EIA process, the IRP2019 was gazetted, and expresses the following subjective view:</p> <p>It is thus SRK's <u>opinion</u> that while the information presented in the FEIR relating to the IRP, current and proposed additional generation capacity <u>may be out of date</u>, this will not affect either the motivation that additional power generation capacity is urgently required in South Africa (probably more so than at the time the EIA was completed).</p> <p>It is not within the remit of this review to decide which forms of energy generation are most appropriate; that decision (and the Minister's final decisions regarding the Nuclear-1 Project) is political in nature and better guided by the IRP 2019 (DoE, 2019) which considers a mix of energy sources.²⁷ (emphasis added)</p>		Noted
50.	<p>It is submitted that this approach is problematic in the following respects:</p> <ul style="list-style-type: none"> Firstly, the statement that information presented in the FEIR relating to the IRP2010 'may be out of date' is misleading. The IRP2010 is out of date, having been replaced by the IRP2019. Secondly, the EIA Review report offers views and opinions on issues relating to the IRP2010 that are under appeal, while not having regard to counter-views articulated in the Appellants' grounds of appeal. Detailed submissions relating to the IRP2010 are made by the Appellants in their Nuclear-1 Appeal in sections E.1 <i>Failure to adequately describe and evaluate need and desirability of the proposed NPS</i>, E.2 <i>Failure to adequately describe and evaluate power generation alternatives</i>, E.3 <i>Failure to adequately investigate, assess and select the "no-go" option</i>, and E.5 <i>Failure to adequately assess socio-economic impacts</i> (under the sub-ground of appeal titled <i>Nuclear Waste Management and NPS decommissioning costs</i>). Thirdly, the EIA Review report ignores that on 23 July 2020, the Appeals Authority invited 		<p>The Review Report will be revised to note that the IRP 2010 is out of date.</p> <p>Since the EA was appealed on 8 August 2022, SRK assumes that the DFFE Minister was aware of and considered supplementary submissions related to IRP 2019, made in 2020 and 2021.</p>

²⁷ EIA Review report, p13.

No	Comments	Stakeholder	Response
	appellants to make supplementary submissions relating to the replacement of the IRP2010 by the IRP2019. ²⁸ On or about 3 September 2020, the Appellants made detailed supplementary submissions into the Nuclear-1 EIA Appeal process in response to this invitation, while on or about 17 March 2021 Eskom submitted its Supplementary Response.		
51.	The one-sided views expressed in the EIA Review report again reveal a lack of objectivity and fairness in the approach taken in the EIA Review report - offering its views on issues that are under appeal, while not having regard to counter-views articulated in the Appellants' grounds of appeal in relation to the IRP2010, or the supplementary appeal submissions by the Appellants on the IRP2019. It also oversteps the remit of the Minister's directive – going beyond identifying out of date information and supplementing the EIA reports that were filed in support of the application for EA with more up to date information		The Minister will consider this comment. The views expressed in the report are objective insofar as SRK and specialist reviewers are independent and were not appointed to obtain authorisation.
52.	<p>It is noted in its principal recommendations in terms of adjudicating the appeal (recommendations that are themselves outside the remit of the Minister's directive, and which it is submitted are irregular and procedurally unfair within the context of the Nuclear-1 EIA process), the EIA Review report indicates that the FEIR remains valid and is fit-for-purpose to inform a decision, subject to (among other things):</p> <ul style="list-style-type: none"> • The Minister considering the Section 34(1) determination issued in accordance with the Electricity Regulation Act of 2006 for 2 500 MW new nuclear, when adjudicating the appeal; and • The Minister considering the IRP 2019 (DoE, 2019) which considers a mix of energy sources; when adjudicating the appeal.²⁹ <p>This recommendation is, with respect, inaccurate and misleading (as is a discussion of the 'section 34 determination' in section 5.9.2.1.1 of the EIA Review Report under the heading <i>Policy and Planning Documents</i> forming part of the <i>Specialist Review: Transmission Integration Report</i>). NERSA's 26 August 2021 decision to concur with the draft determination submitted to NERSA by the Minister of Mineral Resources and Energy in terms of s34 of the Electricity Regulation Act³⁰(ERA) was made 'subject to the following suspensive conditions':</p> <p>1.1 Satisfaction of Decision 8 of the IRP 2019 which requires that the nuclear build programme must be at an affordable pace and modular scale that the country can afford because it is no</p>		The Minister will consider this comment.

²⁸ Letter from DFFE Director: Appeals and Legal Review to Appellants dated 23 July 2020.

²⁹ EIA Review report, p139.

³⁰ Act 4 of 2006.

No	Comments	Stakeholder	Response
	<p>regret option in the long term. This will require the following to be satisfied:</p> <p>1.1.1 Recognition and taking into account technological developments in the nuclear space.</p> <p>1.1.2 To further establish rationality behind the 2 500MW capacity of nuclear, a demand analysis aimed at determining the envisaged load profile post 2030, to derive the generation mix that would be needed to meet the envisaged demand. This will assist to determine the capacity and the scale at which the country would need to procure additional power generation from various technologies, including nuclear.</p>		
53.	<p>NERSA's concurrence is therefore subject to suspensive conditions. At the time of submitting these comments, the Minister had not yet satisfied these suspensive conditions, and no final s34 determination relating to the procurement of 2 500MW new electricity generation capacity from nuclear energy sources has been issued or published in the <i>Government Gazette</i>. The EIA Review report again reveals its lack of objectivity and fairness by mischaracterising NERSA's conditional concurrence with the Minister's proposed s34 Determination as '<i>the Section 34(1) determination issued in accordance with the Electricity Regulation Act of 2006 for 2 500 MW new nuclear</i>', offering misleading and inaccurate views on issues that are under appeal. It also oversteps the remit of the Minister's directive – going beyond identifying out of date information and supplementing the EIA reports that were filed in support of the application for EA with more up to date information.</p>		The Minister will consider this comment.
54.	<p>It is also noted that the EIA Review report does not address the fact that both the IRP2019 (in its policy decision 'to commence preparations for a nuclear build programme at a pace and scale that the country can afford') and proposed s34 Determination (which is subject to suspensive conditions which have not yet been satisfied, and has not yet been finalised or published in the <i>Gazette</i>) make reference to 2500 MW of new nuclear power generation capacity. In contrast, the EA for the proposed Nuclear- 1 nuclear build programme grants authorisation for 4000 MWe (comprising two or three reactor units).³¹ Thus even if the nuclear section 34 is in the future finalised (assuming that it withstands possible legal challenges), it will not provide justification for the authorisation of a 4000MWe new nuclear build.</p>		The Minister will consider this comment.
55.	<p>In addition, the EIA Review report makes no reference to President having issued a Proclamation³² determining 1 April 2024 as the date on which section 6 of the National Energy Act, 2008 ('NEA')</p>		The Minister will consider this comment.

³¹ Nuclear-1 EA (11 October 2017), Condition 1.

³² Proclamation No. 118 of 28 April 2023

No	Comments	Stakeholder	Response
	comes into operation. As a result, the Minister of Mineral Resources and Energy will (as from 1 April 2024) be obliged to develop, revise on an annual basis and publish an Integrated Energy Plan ('IEP'). ³³ Subsections 6(6)(a) and (c) of the NEA stipulate that the IEP must serve as a guide for future energy infrastructure investments, and must guide the selection of appropriate technology to meet energy demand, while subsection 6(7) obliges the Minister of Mineral Resources and Energy, before finalising the IEP, to invite public comment and duly consider such comment. It is submitted that the pending development and publication of an IEP -which is intended (among other things) to serve as a guide for future energy infrastructure investments (such as a nuclear new build programme) and guide the selection of appropriate technology to meet energy demand - is relevant new information that should have been brought to the Minister's attention.		
56.	<p>(iii) Identification and Assessment of Impacts</p> <p>The SRK Review report indicates that the list of impacts identified in the FEIR is 'extensive, in many cases addressing the concerns raised through the EIA and related public participation process.'³⁴</p> <p>The EIA Review report goes on to offer the following opinion:</p> <p>SRK <u>is of the opinion that a robust impact assessment methodology was employed and relevant impacts were assessed</u>. The validity of the impacts assessed by specialists was evaluated in the reviews of the specialist studies (see Sections 4 and 5 of this Review Report) which found that no material omissions in the impact assessments which would invalidate the FEIR.³⁵</p> <p>In line with the above, the EIA Review report summarises the above as a <u>key finding of the review</u>: ...A robust impact assessment methodology was employed and relevant impacts were assessed. The validity of the impacts assessed by specialists was evaluated in the reviews of the specialist studies, which found no material omissions in the impact assessments which would invalidate the FEIR.³⁶</p>		These paragraphs have been extracted from the Review Report to inform the subsequent comment and do not require a response.
57.	It is clear from the above that the EIA Review report again oversteps the remit of the Minister's directive affording Eskom an opportunity to supplement the EIA reports that were filed in support of the application for EA with more up to date information. This leads to SRK expressing its subjective view that 'in many cases addressing the concerns raised through the EIA and related		The Minister will consider this comment.

³³ NEA, section 6(1).

³⁴ EIA Review report, -20.

³⁵ Ibid.

³⁶ EIA Review report, p27 (and Executive Summary p4).

No	Comments	Stakeholder	Response
	<p>public participation process'. It also leads to SRK expressing an opinion that a 'robust' impact assessment methodology was employed, while the validity of the impacts was assessed by its specialist reviewers which 'found no material omissions'. Detailed submissions relating to the evaluation of impacts are made by the Appellants in their Nuclear-1 Appeal (in sections E.5 <i>Failure to adequately assess negative socio-economic impacts</i>, E.6. <i>Failure to assess all potential impacts of nuclear waste</i>, and E.7 <i>Failure to address impact on development expansion in Duvynfontein</i>). The one-sided views expressed in the EIA Review report reveal a lack of objectivity and fairness in the approach taken - offering opinions and subjective views on issues that are under appeal, while not having regard to counter-views articulated in the Appellants' grounds of appeal.</p>		
58.	<p>(iv) Identification and Assessment of Alternatives</p> <p>The EIA Review report states that a wide range of alternatives were identified during the Nuclear-1 EIA process, and that alternatives considered and the conclusions drawn through the EIA process include (among others)</p> <ul style="list-style-type: none"> • Activity alternatives: considering various power generation technologies and concluding that neither coal nor hydropower were suitable alternatives in the Western Cape and that (at the time) renewable energy (wind and solar power) could not provide adequate base load or integrate easily into the existing power network; • The no-development alternative (i.e. 'No-Go'): The status quo would be retained with the benefits of the development not being realised.³⁷ <p>The EIA Review report goes on to acknowledge that in most cases these alternatives were not comparatively assessed by specialists, although the findings of (particularly technical) specialist studies informed the evaluation of 'some' of the alternatives. The EIA Review report then makes the following 'key findings' relating to the assessment of alternatives:</p> <ul style="list-style-type: none"> • Many of the above alternatives were considered and eliminated during the Scoping Phase. Only site alternatives were comparatively assessed in detail in the FEIR. Acceptance of the Scoping Report and Plan of Study for EIA by DFFE indicates acceptance of this process; If I have time – check approved SR and POS of EIA • The reasons for selecting and screening of alternatives considered technical and ecological criteria and are adequately described in the FEIR. Motivations are adequate and largely remain valid; and 		<p>These paragraphs have been extracted from the Review Report to inform the subsequent comment and do not require a response.</p>

³⁷ EIA Review report, p22.

No	Comments	Stakeholder	Response
	<ul style="list-style-type: none"> There has been a substantial increase in the development of renewable energy projects, in recent years (since the EIA was concluded). The statement in the FEIR that that renewable energy (wind and solar power) could not provide adequate base load or integrate easily into the existing power network may no longer be correct; however the energy mix is informed by the IRPs. It is not within the remit of this review to decide which forms of energy generation are most appropriate; that decision (and the Minister's final decisions regarding the Nuclear-1 Project) is political in nature and better guided by the IRP 2019 (DoE, 2019) which considers a mix of energy sources.³⁸ 		
59.	It is clear from the above that the EIA Review report again oversteps the remit of the Minister's directive affording Eskom an opportunity to supplement the EIA reports that were filed in support of the application for EA with more up to date information. Detailed submissions relating to the alternatives and the 'no-go' option are made by the Appellants in their Nuclear-1 Appeal (in sections E.2 <i>Failure to adequately describe and evaluate power generation alternatives</i> , E.3 <i>Failure to adequately investigate, assess and select the "no-go" option</i>). The one-sided views expressed as 'key findings' in the EIA Review report reveal a lack of objectivity and fairness in the approach taken - offering opinions and subjective views on issues that are under appeal, while not having regard to counter-views articulated in the Appellants' grounds of appeal.		The Minister will consider this comment.
60.	In amplification of the above, it is noted that despite acknowledging that there has been a subsequent increase in the development of renewable energy projects since the Nuclear-1 EIA was concluded, and that the statement in the FEIR that ' <i>renewable energy (wind and solar power) could not provide adequate baseload power or integrate easily into the existing power network may no longer be correct</i> ', the EIA Review report inexplicably does not recommend that the EIA reports filed in support of the application for EA be updated – if it is possible that renewable energy could provide adequate baseload power and integrated easily into the existing power network, the EIA reports filed in support of the application for EA should clearly have been supplemented with up to date information in this regard. Instead, it seeks to justify not doing so by referring to the energy mix being informed by the IRP2019, and stating that it is not within the remit of its review to decide which forms of energy generation are most appropriate, and that this decision (and the Minister's final [appeal] decision relating to the Nuclear-1 project) is political in nature and better guided by the IRP2019 which considers a mix of energy sources. In making this 'key finding', the EIA Review report misconstrues the Minister's statutory appeal powers (which are administrative powers) as being 'political in nature' and fails to recognise that the IRP2019 is non-binding policy.		

³⁸ Ibid.

No	Comments	Stakeholder	Response
61.	It is submitted that that while the Minister may (and should) take the IRP2019 into account when making her appeal decision, it is well established that rigid adherence to policy in making an administrative decision fetters the decision-maker's discretion, in violation of basic principles of just administrative action (it is a fundamental rule of administrative law that the decision-maker vested with a discretionary power may not fetter its discretion by rigid adherence to a pre-determined policy). What is required of an administrator is that he or she is independently satisfied that the policy is appropriate to the circumstances of the particular case. The decision-maker cannot elevate principles or policies into rules that are considered to be binding with the result that no discretion is exercised at all. While policies in keeping with the empowering legislation may be used to assist decision making, they may not inevitably determine the outcome of the decision, lest they <i>'preclude the person exercising the discretion from bringing his mind to bear in a real sense on the particular circumstances of each and every individual case coming up for decision.'</i> ³⁹		The Minister will consider this comment.
62.	<p>2.2. Specialist Study Review</p> <p>Due to time limitations, the Appellants have not had an opportunity to conduct an extensive review of the Specialist Study Reviews contained in the EIA Review report (or the underlying Nuclear-1 FEIR Specialist Studies). The Appellants provide comment only on a sample Specialist Review Reports. The absence of comment on the remaining Specialist Review Reports should not be interpreted as acceptance that there is no outdated information contained in the underlying FEIR Specialist Studies.</p>		
63.	<p>(a) Specialist Review: Assessment of the Potential Radiological Impact on the Public and the Environment</p> <p>The Appellants have no comment to make at this stage regarding outdated information in relation to the Radiological Assessment Report (Appendix E32 to the FEIR).</p> <p>However, insofar as the Specialist Reviewer's conclusion that <i>'The report is therefore considered to be suitable for decision making in its current form and the specialist reviewer does not recommend any updates to the study'</i> could be interpreted as giving an unqualified approval of the Radiological Assessment Report, the Appellants contest its suitability, and stand by the grounds of appeal relating to the Radiological Assessment Report articulated in their 2018 Nuclear-1 EIA Appeal (see sections E.2 <i>Failure to adequately describe and evaluate power generation alternatives</i> and E.4 <i>Failure to adequately assess the health and socio-economic impacts of a radiological release as a consequence of a catastrophic nuclear incident</i>).</p>		<p>The Minister will consider this comment.</p> <p>The views expressed in the report are objective insofar as SRK and specialist reviewers are independent and were not appointed to obtain authorisation.</p>

³⁹ Richardson v Administrator, Transvaal 1957 (1) SA 521 (T) at 530.

No	Comments	Stakeholder	Response
64.	<p>(b) Specialist Review: Social Impact Assessment (SIA)</p> <p>The SRK specialist review of the social impact assessment (SIA) fails to update facts and assumptions in the SIA, so as to place all relevant considerations before the decision maker - in this case the appeal authority. The review also relies on out of date information, placing irrelevant considerations before the appeal decision maker. The Final EIA report (FEIAR) remains based on out of date information.</p> <p>(i) Update of Information on Demographic Profile</p> <p><u>Background</u></p> <p>The Plan of Study for the EIA</p> <p>The plan of study for the EIA</p> <p>The plan of study requires demographic information for each <u>enumerator area</u>:</p> <p>4.5.14 Social</p> <p>The appointed specialist will be required to undertake the following:</p> <ul style="list-style-type: none"> Obtain census data by enumerator area or smaller (if available) for the 80 km annulus.⁴⁰ <p>Statistics South Africa defines an enumerations area (EA) as:</p> <p>The smallest geographical unit (piece of land) into which the country is divided for enumeration purposes. Enumeration areas contain between 100 to 250 households.⁴¹</p> <p>The SIA provides a description of the population in 15km / 16km and 80km radius zones.⁴²</p> <p>It follows that the update of demographic information in the SIA must include information both for localized areas around the proposed site of the Nuclear-1 reactor at Duynefontein, as well as areas within larger 80km radius zones.</p> <p>Census data for each enumerator area is available for 2011 but the next census has not taken place.</p>		<p>The EIA Review Report does not claim that the baseline data will be unchanged from the date of completion of the original EIA. Given that population is a dynamic system, it follows that there must have been changes to the population since the completion of the FEIR. Rather, the Review Report anticipates and accepts that such changes must have occurred and then considers whether or not such changes were accurately anticipated in the original assessment and whether these changes would materially alter the assessment and rating of impacts and the recommendations for mitigation of these impacts as presented in the FEIR. The Review found that the original assessment adequately accounted for future population variance and that the assessment of impacts is thus still sufficiently accurate so as to provide a basis for decision-making.</p>

⁴⁰ Revised Plan Of Study For Environmental Impact Assessment For Eskom's Proposed Nuclear-1, -2 And -3 – Revision May 2009.

⁴¹ [https://www.statssa.gov.za/?page_id=3917#:~:text=An%20enumerations%20area%20\(EA\)%20is,between%20100%20to%20250%20households.](https://www.statssa.gov.za/?page_id=3917#:~:text=An%20enumerations%20area%20(EA)%20is,between%20100%20to%20250%20households.)

⁴² SIA page 9.

No	Comments	Stakeholder	Response
	<p>Information contained in the SIA</p> <p>The first draft of the SIA was subject to peer review in 2015 and updated in 2016. The 2016 SIA states that in response to the peer review it was updated with census information from the 2011 census.</p> <p>Figures used for the jurisdictional area of Cape Town have been obtained from the City of Cape Town. The City of Cape Town has made certain corrections to the 2011 census figures, based on household surveys. Census figures as obtained from Statistics South Africa were utilised for areas outside of the metropolitan area.⁴³</p> <p>The SIA does not reference the 'figures from the City of Cape Town', nor does it explain their content or dates. It records that there are gaps in information from Statistics South Africa, being national and provincial data. To address this it therefore extrapolates from 2011 data in order to estimate 2016 population figures:</p> <p>Although Statistics SA provides certain statistical updates on a regular basis these updates are at the national and provincial levels, with some such as the Community Survey extending to the municipal level. At the municipal and ward levels, however, there are gaps in the official data obtainable from Statistics SA as data, at these levels, dates back to Census 2001 and 2011. Although this lack of more recent area specific data has been a limiting factor these limitations have not been insurmountable as a fair, if not relatively accurate estimate, can be obtained by plotting the available data against updated provincial and national trends. It is not always possible to find comparative data sets.⁴⁴</p> <p>The projected population growth is then provided in the following table, from an unpublished report by Dorrington, dated 2000:⁴⁵</p> <p>Table 7: Projected Population in 5 year intervals until 2031, within the 80km radius of Duynfontein</p>		

⁴³ Final SIA page 40.

⁴⁴ Id page 32.

⁴⁵ Dorrington Report, 2000: Projection of the Population of the Cape Metropolitan Area. 1996 – 2031 Unpublished.

No	Comments	Stakeholder	Response																																
	<table border="1"> <thead> <tr> <th>Years Year</th><th>Population Growth @ 1.8% per year</th><th>Population Growth @ 2.4% per year</th><th>Population Growth 3.7% per year</th></tr> </thead> <tbody> <tr> <td>2001</td><td>3 200 000</td><td>3 200 000</td><td>3 200 000</td></tr> <tr> <td>2006</td><td>3 498 556</td><td>3 602 880</td><td>3 837 459</td></tr> <tr> <td>2011</td><td>3 824 968</td><td>4 056 482</td><td>4 601 903</td></tr> <tr> <td>2016</td><td>4 181 833</td><td>4 567 193</td><td>5 518 631</td></tr> <tr> <td>2021</td><td>4 571 993</td><td>5 142 202</td><td>6 617 975</td></tr> <tr> <td>2026</td><td>4 998 555</td><td>5 789 604</td><td>7 936 315</td></tr> <tr> <td>2031</td><td>5 464 914</td><td>6 518 515</td><td>9 517 276</td></tr> </tbody> </table> <p>(Source: Dorrington, 2000, Unpublished)</p> <p>Assumptions</p> <p>The SIA states that the population projections given above are evenly distributed in each sub-region or local municipality, although higher percentages could be expected in certain sectors within the same sub-region. It notes that Bloubergstrand and Parklands (within the sub-region of Blaauwberg) experienced a high level of growth during the recent past.⁴⁶</p> <p>Population distribution and densities around Duynfontein</p> <p>From Table 6 of the SIA the population of areas at different distances from the Duynfontein site can be compared, for 2011. The scale of the Du Noon settlement relative to population of surrounding areas is evident. The area South South East of the KNPS has a population of 49 967 which presumably includes Du Noon, which had a population of 29,268 (29,518.50 per km² in the 2011 census.⁴⁷</p> <p>Other residential areas at a similar distance to the KNPS have far lower population density: populations range from 82 to 7595 with most averaging between 2000 and 4000 persons.</p>	Years Year	Population Growth @ 1.8% per year	Population Growth @ 2.4% per year	Population Growth 3.7% per year	2001	3 200 000	3 200 000	3 200 000	2006	3 498 556	3 602 880	3 837 459	2011	3 824 968	4 056 482	4 601 903	2016	4 181 833	4 567 193	5 518 631	2021	4 571 993	5 142 202	6 617 975	2026	4 998 555	5 789 604	7 936 315	2031	5 464 914	6 518 515	9 517 276		
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⁴⁶ SIA page 42.

⁴⁷ <https://census2011.adrianfrith.com/place/199013009>

No	Comments	Stakeholder	Response																																																																																																		
	<p>Table 6: Population Distribution within 80km radius of Duynfontein (2011)</p> <table><tr><th>Distance</th><th>E</th><th>ENE</th><th>ESE</th><th>N</th><th>NE</th><th>NNE</th><th>NN W</th><th>NW</th><th>S</th><th>SE</th><th>SSE</th><th>SS W</th><th>Grand Total</th></tr><tr><td>0 - 5km</td><td>969</td><td>937</td><td>1 37</td><td>928</td><td>944</td><td>968</td><td>932</td><td>326</td><td>144</td><td>1 369</td><td>1293</td><td></td><td>10047</td></tr><tr><td>5 - 10km</td><td>3 123</td><td>2 813</td><td>3 775</td><td>3 545</td><td>2 831</td><td>3 146</td><td>3 592</td><td>1 254</td><td>878</td><td>5 008</td><td>5175</td><td></td><td>35140</td></tr><tr><td>10 - 15km</td><td>3 051</td><td>4 615</td><td>5 799</td><td>5 957</td><td>4 736</td><td>5 887</td><td>5 735</td><td>831</td><td>1 451</td><td>19 268</td><td>8746</td><td></td><td>66076</td></tr><tr><td>15 - 20km</td><td>2 733</td><td>3 443</td><td>2 730</td><td>4 710</td><td>4 899</td><td>7 595</td><td>1 662</td><td>82</td><td>155</td><td>10 323</td><td>49957</td><td>9735</td><td>98024</td></tr><tr><td>20 - 25km</td><td>2 866</td><td>1 790</td><td>3 510</td><td>996</td><td>779</td><td>1 565</td><td>460</td><td></td><td></td><td>5 992</td><td>52798</td><td></td><td>70756</td></tr><tr><td>25 - 30km</td><td>2 794</td><td>2 269</td><td>4 290</td><td>672</td><td>1 207</td><td>895</td><td>576</td><td></td><td>4 7 866</td><td>49 179</td><td>134662</td><td></td><td>244410</td></tr></table> <p>Requirements of the SIA</p> <p>The general terms of reference of the SIA include a requirement to:</p> <p>Undertake field surveys as appropriate to the requirements of the particular specialist study.⁴⁸</p> <p>The specific terms of reference for the SIA demographic profile includes a considerable degree of localised detail, with an emphasis on information relevant to emergency planning. It includes demographic profile, health and social well-being, quality of the living environment, social context of how people run their lives, and identification of <u>‘Special population groups, i.e. that portion of the population that could be difficult to shelter or vacate, this includes data obtained from places such as hospitals, schools, institutions for mentally or physically handicapped, old age homes and prisons etc.</u>⁴⁹</p>	Distance	E	ENE	ESE	N	NE	NNE	NN W	NW	S	SE	SSE	SS W	Grand Total	0 - 5km	969	937	1 37	928	944	968	932	326	144	1 369	1293		10047	5 - 10km	3 123	2 813	3 775	3 545	2 831	3 146	3 592	1 254	878	5 008	5175		35140	10 - 15km	3 051	4 615	5 799	5 957	4 736	5 887	5 735	831	1 451	19 268	8746		66076	15 - 20km	2 733	3 443	2 730	4 710	4 899	7 595	1 662	82	155	10 323	49957	9735	98024	20 - 25km	2 866	1 790	3 510	996	779	1 565	460			5 992	52798		70756	25 - 30km	2 794	2 269	4 290	672	1 207	895	576		4 7 866	49 179	134662		244410		
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⁴⁸ Social Impact Assessment Report page 31.

⁴⁹ Determine the following:

- Demographic profile of the area (number, age, gender etc);
- Require accurate demographic figures for peak holiday population of Greater St. Francis area, together with future projections;
- Health and social well-being of people in 80 km annulus;
- Quality of the living environment;
- Social context of how people run their lives and the key factors that affect them on a day-to-day basis;
- Level and state of infrastructure in the area as well as planning compatibility and potential conflict;
- Land use and ownership patterns in the area as well as planning compatibility and potential conflict;
- Access to resources; and
- Institutional (including key service institutions), legal, political and equity impacts.
- Identify the following:
 - Family, community and gender impacts;
 - Social trends (historic and current) and driver in the affected area;

No	Comments	Stakeholder	Response
65.	<p>The Peer Review of the SIA – 2015⁵⁰</p> <p>This review was required to:</p> <p>Consider whether the report is technically, scientifically and professionally credible, consider whether the method and study approach is defensible; identify whether there are information gaps, omissions or errors.⁵¹</p> <p>The review made several recommendations including additional consultation in order to cater for demographic changes that might have taken place, describing recent social changes in RSA as significant.</p> <p>It stated:</p> <p>Significant social changes have occurred in South Africa during this time, and it is very likely that the affected communities have also changed. In order to ensure credibility additional consultation should take place to warrant that the findings are still relevant. It would not be necessary to repeat the entire consultation process, but a small selection of stakeholders in each potentially affected community could be interviewed to establish whether the communities have changed, and what the feelings in relation to the project is. (emphasis added).</p> <p>The Peer Review report also commented that “it is not acceptable to use outdated data if more recent data is available”.</p> <p>The updated SIA of January 2016, referred to and endorsed the recommendations of the peer</p>		<p>As noted in the comment, the updated SIA of January 2016 (which was the subject of the review) referred to and endorsed the peer reviewer's recommendations. These recommendations were thus taken into consideration in the EA.</p>

-
- Main transient population nodes (spatial representation);
 - Special population groups, i.e. that portion of the population that could be difficult to shelter or vacate, this includes data obtained from places such as hospitals, schools, institutions for mentally or physically handicapped, old age homes and prisons;
 - Social initiatives and opportunities;
 - Individuals, communities, organization's and institutions who are likely to be affected by the project/plan/policy, with specific emphasis on vulnerable individuals, communities, organization's and institutions;
 - Require up-date of census figures, based on rejection of 2001 census as being inadequately handled, and unprecedented growth over past five years;
 - Predict social impact of large-scale, uncontrolled influx of unemployed and unskilled job-seekers; the likelihood of their remaining in informal settlements; the pressures arising on health, educational, housing, police and other services; and responsibility for mitigation;
 - What corporate strategy is to be undertaken in the areas affected by the development of the nuclear power station;
 - Institutional arrangements and structures; and
 - Cultural impacts, beliefs and value systems.

⁵⁰ Nuclear 1, Social Impact Assessment Review - Annexure E 37, Dr Ilse Aucamp

⁵¹ Id page 1.

No	Comments	Stakeholder	Response
	reviewer's report giving 'special attention' to its recommendations. ⁵²		
66.	<p><u>Analysis of the SRK Specialist Review</u></p> <p>SRK sets out the duties of the reviewer as follows:</p> <ul style="list-style-type: none"> Is baseline information/data adequate? Have conditions changed so considerably that information may compromise the original EA? Does status of information in EIR or a study affect impacts of project, increasing risk that the project will not withstand further appeals in the future? <p>Amplifying the above the SRK Review states that it considered:</p> <p>Changes to baseline conditions, also considering the following elements of Appendix 6 of the NEMA 2014 EIA Regulations (Section 4.13.2.2):</p> <ul style="list-style-type: none"> cA – the age of base data used for the specialist report, i.e. is the original data used still fit for purpose, is it outdated to such an extent that it might invalidate a study, is newer data available, or should new data be gathered; cB – are there changes to the environment that might affect the evaluation of cumulative impacts; g –are any buffers proposed still appropriate given legislative/policy changes and changes to the baseline; Census Data; and Time dependency of assumptions and limitation to the study, also considering the following elements of Appendix 6 of the NEMA 2014 EIA Regulations: <ul style="list-style-type: none"> i- are any of the assumptions or uncertainties recorded in the original report time sensitive, and if so, are there changes in the physical, social or legislative environment that impact on these (Section 4.13.2.3)" <p>The SRK Review assumes that the SIA adequately fulfilled the content requirements stipulated in Regulation 33 of the EIA Regulations, 2006 (GN 385 of 2006).</p> <p>SRK Review Conclusions</p> <p>The SRK Review states that it 'has considered the 16 km radius and has examined satellite imagery for visible changes to land use over this period.' It does not provide further detail on this</p>		<p>The Review Report considers whether changes to baseline conditions have been so material that the assessment of impacts is no longer valid, rather than considering the absolute accuracy of the data. And see response 64.</p>

⁵² SIA page 4

No	Comments	Stakeholder	Response
	<p>statement that would enable meaningful public participation and comment on the data referred to.⁵³</p> <p>The review specialist opinion concludes that 'while current population and associated demographics have changed since the SIA was compiled, the SIA adequately accounted for these expected changes and the significance ratings and mitigation measures as reported in the SIA remain valid'.⁵⁴</p> <p>The basis of this conclusion is the fact that the SIA made certain predictions for population growth,⁵⁵ and based on a more recent study by the City of Cape Town, the growth in population in the city has fallen within these projections.⁵⁶ (Referred to as COGTA 2020 in the SRK Review)</p>		
67.	<p>The SRK review states:</p> <p>"As an example of references that might be considered outdated, the SIA references population growth data, particularly migration, from the publication "Population projections for the Western Cape 2001 – 2021" (Dorrington, 2005). This 2005 publication was updated in 2013 and a narrow reading of the Peer Review report might conclude, owing to more recent data being available, that the SIA needs to be revised. <u>However, using the parameter of population size as an indicator, the SIA projects population growth within 80 km of the site using a growth rate of 2.4%, which predicts and compares favourably with 2020 estimates of population (COGTA, 2020).</u></p> <p>The SRK Review of demographics is based on out of date information</p> <p>The estimates of City of Cape Town 2020 (COGTA 2020) report referred to relate to data collected in 2019, and therefore this information is 4 years out of date.⁵⁷ In this four year period South Africa has experienced significant social and economic changes including the COVID and energy disasters, significant economic decline, as well as internal migration.</p> <p>The International Monetary Fund for example stated recently that 'newly released data shows the South African economy grew by 0.4 percent between January and March this year. Crippling power cuts, volatile commodity prices and a challenging external environment have contributed to the country's weak growth performance.'⁵⁸</p>		See response to comment 66.

⁵³ What 'meaningful comment' entails was clarified by the court in Heatherdale Farms v Deputy Minister of Agriculture 1980 (3) SA 476 (T) at 486F-G. The court recognized that the common law principles relating to procedural fairness require (among other things) that a person 'must be put in possession of such information as will render his right to make representations a real, and not an illusory one'.

⁵⁴ SRK Review page 74

⁵⁵ SIA Table 7

⁵⁶ (COGTA 2020) City of Cape Town Profile and Analysis, District Development Model. Cooperative Governance & Traditional Affairs.

⁵⁷ (COGTA 2020) City of Cape Town Profile and Analysis, District Development Model. Cooperative Governance & Traditional Affairs.\

⁵⁸ South Africa's Economy Loses Momentum Amid Record Power Cuts By the South Africa Team, IMF African Department.

No	Comments	Stakeholder	Response
	<p>Migration to the Western Cape has increased: Statistics South Africa is reported to have estimated that for the period 2021 - 2026 'Cape Town would experience one of the largest inflows of migrants, standing at 460 489.' ⁵⁹In October 2022 Environmental Affairs and Development Planning MEC Anton Bredell warned that if the population of Cape Town continues growing at the current rate, 'the province will have to build a new city the size of Bloemfontein to accommodate 900 000 extra people in the next eight years' - citing the population of Cape Town metro as 4.7 million people.⁶⁰</p> <p>In the light of these significant societal changes it is submitted that demographic information referred to by the SRK Review that is four years old, is out of date. In the case of <i>Seafront for all and Another vs MEC, Environmental and Development Planning, Western Cape Provincial Government and Others ("Seafront")</i>⁶¹ the MEC's decision was based primarily on information contained in the final scoping report some 4½ years before the MEC took her decision. It was held that:</p> <p>The information in the final scoping report ought to have been augmented by a comprehensive current environmental impact assessment. In failing to call for such updated assessment, the MEC took her decision on the basis of irrelevant considerations (information which was out of date and no longer correct), and failed to have regard to relevant considerations.</p>		
68.	<p>Failure of the SRK Review to validate projections up to 2023 results in the review being based on outdated 2011 census information.</p> <p>Estimations of populations based on projections from 2011 census information, if not validated (especially for fast growing communities located close to or inside the 16 km UPZ) constitutes out of date information. The SRK Review does not undertake any validation of the SIA projections through local surveys and other relevant data collection methods, for such communities, without acceptable explanation.</p>		<p>The specialist review found the following:</p> <ul style="list-style-type: none"> • 'While population and associated demographics are different from those used as the baseline in the SIA, the SIA has accounted for these changes and the significance ratings and mitigation measures as reported in the SIA remain valid; • There has been substantial expansion of residential areas within 16 km of the Duynefontein site. Such expansion is consistent with predictions of expansion in the SIA and falls within the zone of influence that affects predictions of significance of impacts, both positive and negative. The extent of such changes would not change the significance rating of impacts as the underlying rating of the components of the rating scale would stay the same. Current mitigation measures would sufficiently address this change in the

⁵⁹<https://www.iol.co.za/capeargus/news/if-cape-town-population-continues-to-explode-the-western-cape-may-need-a-new-city-79b8bdee-f52a-4edd-b58b-537a2acd4d#:~:text=Cape%20Town%20has%20the%20largest,standing%20at%20about%20460%20489.>

⁶⁰ Id.

⁶¹ (2010) JOL 25602 (WCC).

No	Comments	Stakeholder	Response
			baseline.'
69.	<p>The SIA refers to the fact that there might be uneven population growth in the future. It states that it is an assumption of the report that the percentage increase in each sub-region or local municipality is evenly distributed, but qualifies this assumption by noting that 'it could be expected that certain sectors within the same sub-region or local municipal area would have a higher percentage growth than others.' It records that there was high level of growth in Bloubergstrand and Parklands.⁶²</p> <p>The SRK Review and information update was required to evaluate assumptions of the SIA. It needed to test the assumption that population projections 12 years after a census would be evenly distributed in sub-regions and local municipalities. Population densities close to or within the UPZ are highly relevant to evacuation and the impacts of adding a second nuclear power station to the KNPS site. Therefore, local population figures in populous and fast expanding areas such as Du Noon and Atlantis must be updated on a credible basis for lawful decision making.</p>		<p>The specialist review found the following:</p> <ul style="list-style-type: none"> There are no assumptions or limitations that are no longer valid, or which invalidate the findings of the SIA due to the passage of time; None of the mitigation measures are time sensitive and mitigation measures remain valid and do not need to be updated and hence no change to the EMPr due to the SIA is required.
70.	<p>The Peer Review recommendations regarding credibility of demographic information are helpful in this regard and are repeated. The SIA states that these were incorporated into the updated 2016 SIA. The Peer Review states:</p> <p>Significant social changes have occurred in South Africa during this time, and it is very likely that the affected communities have also changed. In order to ensure credibility additional consultation should take place to warrant that the findings are still relevant.⁶³</p> <p>The Peer Review is not prescriptive in regard to the validation of findings. It is expected that the SRK team would have employed experts in that are well placed to work out how to validate macro population data at a local level.</p>		<p>Had the review found that the assumptions made were no longer valid, the report may have recommended that additional studies be undertaken. However, this was not the case. The recommendations made in the SIA remain valid.</p>
71.	<p>The SRK review did not validate the projected increases in population referred to in Table 7 of the SIA by means of surveys, consultations or any other credible mechanism. The SIA and SRK review repeatedly refer areas of the Blaauwberg area as being one of high growth in population. But the SRK review concludes.</p> <p>However, the SIA as well as other studies conducted for the EIA (e.g. land use, emergency planning) have taken into consideration the growth of these areas, and such growth appears to be within the prediction in the SIA.⁶⁴</p>		<p>The materiality of this possibility with respect to the influence it would have on impact ratings was considered by the reviewer to be negligible.</p>

⁶² SIA page 42.

⁶³ Peer Review of SIA page 4 paragraph 3

⁶⁴ SRK review page 73.

No	Comments	Stakeholder	Response
	This statement is incorrect. The SIA did not 'take into consideration growth in certain areas.' It assumed that the percentage increase in each sub-region or local municipality would be evenly distributed but acknowledged the limitations of this assumption stating there might be areas within the subregion with higher growth. This possibility should have been explored by SRK when it undertook the update.		
72.	<p>Why updating demographic information around the UPZ zone is important</p> <p>Of particular concern to the appeal decision maker is demographic information regarding areas such as Du Noon, Melkbostrand⁶⁵ and Atlantis that are populous and located within or near the boundary of the 16km UPZ, given the need to evacuate in the event of a major nuclear disaster. No information is given in the SRK review in regard to these two areas. Du Noon which is a residential area constrained by boundaries, had a population growth of 170.8% in the years between 2001 and 2011 census.⁶⁶In effect this is an increase of around 6% per annum. Yet the specialist opinion of the SRK review is that:</p> <p>While population and associated demographics are different from those used as the baseline in the SIA, the SIA has accounted for these changes and the significance ratings and mitigation measures as reported in the SIA remain valid;</p> <p>The SIA was required to obtain census data by enumerator area or smaller (if available) for the 80 km annulus.⁶⁷In the absence of census data being available other methods such as consultations and surveys are referred to in the Peer Review. This plan of study requirement emphasises the need for information about small or specific areas, rather than merely looking at a 80km radius. This is after all an EIA about a nuclear power station that could experience a catastrophic release of radiation, where the impact is strongly associated with proximity to the disaster.</p>		See response to comment 3, 64, 70 and 71.
73.	<p>Assumptions and limitations</p> <p>The SRK review states that there are no assumptions or limitations that are no longer valid, or which invalidate the findings of the SIA due to the passage of time.</p> <p>One of its assumptions is that migration to Cape Town has already peaked and no large influxes are expected in the near future.⁶⁸As referred to above there is currently considerable information</p>		See response to comment 71.

⁶⁵ the Melkbostrand boundary is about 5 km away from the KNPS reactor with a population of around 11, 600 and population density of 840 per square kilometre

⁶⁶ Xenophobia and outsider exclusion – addressing frail social cohesion in South Africa's communities: Du Noon case study October 2017.

⁶⁷ Plan of study for Scoping.

⁶⁸ Figure 2.08 of the SIA: City of Cape Town Migration Trend per Racial Group, 2001-2025 is accompanied by the view expressed that "Following major policy changes in the country, total net migration was at high levels in 2001 and the succeeding years, but the general trend indicates a steady decline up to 2025. This suggests that migration has already peaked and no large influxes are expected in the near future."

No	Comments	Stakeholder	Response
	in the public domain that suggests that migration to Cape Town is a fact and could be significant. This should have been investigated by the SRK review experts before they glibly confirmed the trend of 2016 which is that migration was decreasing to Cape Town.		
74.	<p>Conclusion</p> <p>The SRK review is not based on up to date information and validation of wider metropolitan population trends at a local level. It draws conclusions that are not credible and confirms assumptions without testing underlying factual information. As such it is inaccurate and does not serve as relevant information to be considered by the appeal decision maker. The information as to demographics contained in the SIA should have been updated in response to the Minister's directive.</p>		<p>The SRK review is of the 2016 SIA which forms part of the FEIA. It follows that the information contained therein may be outdated; however, the purpose of the review is not to determine whether the data is outdated or not, but rather whether the change in the (outdated) baseline is so materially different from the changes that were anticipated in the study that the 2016 impact assessment is compromised.</p> <p>And see response 64.</p>
75.	<p>(ii) Demographics and Evacuation</p> <p>The issue of accurate demographic information for a decision when deciding to locate a nuclear reactor in an area is raised because of the nature of the site and its surrounds. When the Koeberg nuclear reactor was first established, the area for many kilometres around it was sparsely populated and rural. The SIA describes Blaauwberg (where the site is located) as one of the fastest growing districts in the City of Cape Town metropolitan area.⁶⁹</p> <p>It can therefore be expected that significant numbers of people currently, and in future, will live in close proximity to the reactors, and will be faced with various significant risks and the need to evacuate based on proximity to the site in the event of any potential nuclear disaster. For this reason, and based on the requirements of the plan of study for the EIA, there must be a detailed up-to-date study of the demographics of the areas around the site, at different distances. These figures should be linked to an assessment of the emergency response capability now and in the future.</p>		<p>See response to comment 3, 64 and 71. Demographics have not changed to the extent that they are material, as found by the specialists who undertook the SIA and Town planning reviews. Also see comment 76 below relating to emergency response.</p>

⁶⁹ Environmental Impact Assessment For The Proposed Nuclear Power Station ('Nuclear 1') And Associated Infrastructure Social Impact Assessment January 2016 (Sia) At Parag 2.2.5.

No	Comments	Stakeholder	Response
76.	<p>The SIA</p> <p>The SIA confirms that the Koeberg NPS evacuation plan has to demonstrate the ability to evacuate of the public within the 0 to 5 km Protective Action Zone (PAZ) within 4 hours, and within the 5 to 16 km Urgent Protective Action Zone (UPZ) UPZ within 16-hour periods.</p> <p>The SIA states that the KNPS currently has an emergency evacuation plan, which complies with the evacuation time requirements for each zone (PAZ (and UPZ), in place. Importantly it states that no new developments are allowed to be located within the PAZ and existing and <u>planned developments situated within UPZ are required to be included in the facility's emergency evacuation plan.</u>⁷⁰</p> <p>The SIA refers to the 2005 Emergency Plan (HHO, 2005) when evaluating the capacity to evacuate if Nuclear-1 is added to the site:</p> <p>The Koeberg NPS 2005 Emergency Plan (HHO, 2005) further states that if the capacity of the road system is reduced by 60% of normal capacity the required population evacuation can still be evacuated within acceptable time limits.⁷¹</p> <p>An EIA which currently relies on an Emergency Plan that is almost 20 years out of date to indicate evacuation capacity from a nuclear accident would be unacceptable.</p> <p>The SRK Review does not refer to new developments that have taken place around emergency planning at the KNPS, or local demographic changes and how these impact on evacuation capability.</p> <p>It merely states that while the population may have increased, the significance ratings and mitigation measures as reported in the SIA remain valid and there are no assumptions or limitations that are no longer valid, or which invalidate the findings of the SIA due to the passage of time:</p> <p>There has been substantial expansion of residential areas within 16 km of the Duynefontein site. Such expansion is consistent with predictions of expansion in the SIA and falls within the zone of influence that affects predictions of significance of impacts, both positive and negative. The extent of such changes would not change the significance rating of impacts as the underlying rating of the components of the rating scale would stay the same. Current mitigation measures would sufficiently address this change in the baseline; and none of the mitigation measures are time sensitive and mitigation measures remain valid and do not need to be updated and hence no</p>		<p>The review of the Emergency Response Plan found the following:</p> <p>'Land use around the proposed site has not changed. In contrast, the current total population (and the associated age distribution) would have increased from the 2008 totals (as used in the study). As a consequence, traffic and communication infrastructure would have been impacted. The fact that loadshedding is now an everyday occurrence also impacts on traffic plans and in some instances, also the impairment of communications. These changes, however, are not that significant to prevent the feasibility of the site to be put at risk. Evidence of this is that the emergency plan for Koeberg Nuclear Power Station is still maintained despite these changes. In any case, as explained earlier, the feasibility stage is but the first of many steps in the development of a functional emergency plan'.</p> <p>The baseline data, as used in the study, is therefore still adequate for use. Also, there are no changes to the environment that might affect the evaluation of cumulative impacts.'</p> <p>The Emergency Response Plan is a living document responding to changing conditions, and which has evolved over time and will continue to evolve.</p>

⁷⁰ SIA 2.2.11. Emergency Evacuation.

⁷¹ Id.

No	Comments	Stakeholder	Response
	change to the EMPr due to the SIA is required. <i>The report is therefore considered to be suitable for decision making in its current form and the specialist reviewer does not recommend any updates to the study.</i> ⁷²		
77.	<p>The most populous areas in the vicinity of KNPS are Atlantis (13km) and Du Noon (18 km). The Du Noon settlement is located next to an evacuation route from Koeberg NPS just outside the 16 Km UPZ. Its growth is a relevant consideration regarding feasible evacuation from the PAZ and UPZ in the case of a nuclear accident. In Fukushima a 20 km zone was evacuated, and if applied to Koeberg, would include the whole of Du Noon.⁷³ The location and significant population of Du Noon, even if evacuation is not required may impact on evacuation of other areas closer to the KNPS.</p> <p>Also, in recent years land invasions in the vicinity of Du Noon have been reported signalling unplanned urban development at or near the UPZ.</p> <p>The City of Cape of Cape Town identified Khayelitsha, Mfuleni, Delft, Kraaifontein, Philippi and Du Noon as hotspots of land invasion. The economic impact of COVID-19, shack farming and political manoeuvring had fuelled unlawful occupation. Many unauthorised settlements occur on sites designated for human settlement development so that these individuals are given priority during the housing allocation.⁷⁴</p> <p>The impact of unplanned development so close to the UPZ is an issue that should have been referred to in the SRK Review. Existing and planned developments situated within UPZ are required to be included in the facility's emergency evacuation plan.⁷⁵ Unplanned developments that might hinder evacuation are relevant considerations that should have been brought to the appeal decision maker's attention.</p> <p>An indication of growth in Du Noon in the period from 2001 to 2011 is described as follows: "Although Dunoon is not a very old settlement, it has experienced fast population growth. The recorded population in Ward 104 in 2001's census was 13,655 and this increased by 170.8% to 36,973 in 2011. The number of households in Ward 104 increased by 210.3% from 4,638 in 2001 to 14,390 in 2011.⁶⁶ As a result of the density, overpopulation, and poor service provision, the</p>		<p>See response to comment 76.</p> <p>The specialist reviewer concludes:</p> <ul style="list-style-type: none"> • The study was done according to NNR accepted methodology and in doing so demonstrates that the Duynefontein site is feasible for an emergency plan. The study also provides additional information to the reader to inform about the content of the eventual emergency plan for the site. The Emergency Response Report therefore meets the requirements for a specialist study. • The fact that the site will be shared with the Koeberg Nuclear Power Plant gives it the advantage of access to the latest relevant information to ensure the applicability of their Emergency Plan. Any changes to baseline conditions will therefore not change this outcome. • There are no assumptions or limitations that are no longer valid, or which invalidate the findings of the study due to the passage of time.

⁷² SRK Review page 74.

⁷³ https://en.wikipedia.org/wiki/Japanese_reaction_to_Fukushima_Daiichi_nuclear_disaster

PMG report of the Parliamentary Committee on Human Settlements 16 September 2020.

⁷⁴ <https://pmg.org.za/committee-meeting/31087/> <https://pmg.org.za/committee-meeting/31087/>

⁷⁵ SIA 2.2.11. Emergency Evacuation.

No	Comments	Stakeholder	Response
	<p>township has an overwhelming air of unkemptness and inaccessibility.⁷⁶</p> <p>Clearly there has been a dramatic increase in population since the 2005 emergency plan.</p> <p>It might be of interest to the appeal decision maker that in terms of USA legislation a reactor should be located so that over a distance of 20 miles the population density does not exceed 500 persons per square mile.⁷⁷ Per the 2011 census there were population densities of 29,518.50 persons per square kilometre at Du Noon (distance from the reactor 17km) and 2300 persons per square km in Atlantis (distance from the reactor 13 km).⁷⁸</p>		
78.	<p><u>Conclusion</u></p> <p>It is submitted that the failure to refer to demographic changes within at least 20 km of the KNPS site as they relate to evacuation is a critical failure to put relevant information and considerations before the appeal decision maker and is a fatal flaw in the FEIR that has not been addressed.</p>		The specialist reviewer of the Emergency Response Plan does not agree with this statement. The Minister will consider this comment.
79.	The conclusions of the SRK Review are based on out-of-date evacuation information and fail to update the FEIR with information on evacuation capability which takes into account up to date localised population figures. As such it has failed to place relevant considerations before the appeal decision maker and its representations should be regarded as irrelevant considerations.		See response to comment 76.
80.	The SIA and FEIR is out of date and should have been updated in response to the Minister's directive.		The detailed review of the FEIR and specialist reports found that the information presented is still appropriate and valid for decision-making purposes and that updating the FEIR with more recent data would not materially change the findings.

⁷⁶ City of Cape Town, "Population and Households by Ward – 2001 & 2011", January 2013, Compiled by Strategic Development Information and GIS Department, City of Cape Town, Available: http://resource.capetown.gov.za/documentcentre/Documents/Maps%20and%20statistics/Population_and_Households_by_Ward_2001_and_2011.pdf

⁷⁷ 10 CFR 100.21(h).

⁷⁸

No	Comments	Stakeholder	Response
81.	<p>(c) Specialist Review: Economic Impact Assessment</p> <p>The Economic Impact Assessment (Appendix E.17 to the FEIR) ('EclA') is dated September 2013, and is itself thus 10 years old. An analysis of the References to the EclA show that most of the sources relied upon are dated between 2006 and 2010.</p> <p>The Peer Review of Economic Specialist Report (Appendix E.37 to the FEIR) comments on the age of the data as follows:</p> <p><u>Of some concern is the fact that some of the data employed in the study date back to 2007 or earlier. The world has changed since that time: the Great Recession has impacted severely on almost every country in the world, geo-political developments and tensions have strained economic and political ties, the Fukushima nuclear power plant disaster of 2011 and deepening concerns about global warming and the impact of fossil fuels on the environment have changed the global landscape compared with less than a decade ago.⁷⁹(emphasis added).</u></p> <p>While the Peer Reviewer states further that 'given the nature of the methodology employed in the study and the fact that economic structures change relatively slowly, the results obtained in this study are unlikely to be wide off the mark', it is self-evident that the world (and South Africa's economy in particular) will have changed even further since the data used in the EclA was employed.</p> <p>The EIA Review report Specialist Review states regarding the September 2013 EclA and changes to Baseline Conditions as follows:</p> <p><u>Given that the EclA (Coningarth Economists, 2013) was conducted approximately 10 years ago, a revised baseline assessment, would be required to properly determine to what extent baseline conditions as described in the EclA match the current conditions. Economic data (demographics, sectoral [agriculture, tourism, fisheries, retail] revenue, income levels, economic growth rates, Regional Gross Domestic Product [GDP], etc.) will clearly have changed considerably. The 2013 study presented 2008 prices (costs and revenue) whereas a 2023 baseline would present much higher 2023 prices.⁸⁰(emphasis added)</u></p>		<p>In common with most reviews, the EclA Review notes that a revised baseline assessment, <i>would</i> (emphasis added) be required to properly determine to what extent baseline conditions as described in the EclA match the current conditions, but notes that the EclA did project prices into the future, and that the mitigation measures recommended also would not change materially (were a new baseline to be prepared). As such a new baseline is not considered necessary.</p> <p>Correctly, the original EclA was not a financial analysis of Nuclear-1, i.e. the financial viability of the project. Affordability and multiple other factors are considered in IRPs and the EclA review recommends that the Minister must consider the IRP2019 when adjudicating the appeal.</p>

⁷⁹ EIA Review report, p76.

⁸⁰ EIA Review report, p76.

No	Comments	Stakeholder	Response
82.	<p>Despite acknowledging that a revised baseline assessment would be required to 'properly determine' to what extent baseline conditions as described in the EclA match current conditions, the Specialist Review provides a contorted justification for not recommended that the FEIR EclA Report be updated:</p> <p>However, the EclA did project prices into the future, applying an 8% discount rate to determine a Net Present Value. Furthermore, in a sense costs and revenue will have increased in tandem and it is considered unlikely that subsequent changes to the baseline environment would alter the impact significance rating. Even if this were not the case, the mitigation measures recommended also would not change materially. In addition to which, most impacts are benefits and may possibly be found to be understated were the EclA to be updated in 2023, especially in the diversified Western Cape economy.⁸¹</p> <p>The Appellant's submit that this justification should be rejected by the Minister.</p>		
83.	<p>And while it is not the intent of the Appellants to repeat their grounds of appeal, it should be noted that the failure of the FEIR and EclA Report to adequately assess negative socio-economic impacts is one of the grounds of appeal articulated in their 2018 Nuclear-1 EIA Appeal (see section E.5 <i>Failure to adequately assess negative socio-economic impacts</i>). This ground includes submission relating to the potentially significant negative socio-economic consequences associated with the high cost of building, operating and ultimately decommissioning a 4000 MWe nuclear power station comprising of two to three units.⁸²</p>		
84.	<p>The EIA Review report Specialist Review goes on to state that:</p> <p>In 2013, South Africa had very little renewable energy capacity and costs (per Kilowatt [hour]) were considerably higher. The EclA found that "it seems clear that nuclear is the cheaper and more appropriate option for the three sites to produce enough power for a growing South African economy".</p> <p><u>This conclusion may no longer be valid.</u>⁸³(emphasis added).</p> <p>Inexplicably - instead of recommending that the EclA be updated to provide a 2023 comparison of the costs of nuclear in relation to renewable energy (the costs of the latter having dropped significantly during successive Bid Windows in the DMRE's Renewable Energy Independent</p>		

⁸¹ EIA Review report, p76.

⁸² As was noted in section E.3 of the Appellants 2018 Nuclear-1 EIA Appeal, the Final EIA Report admits that "the exact costs of the NPS are not known at this stage, but are known to be significant."

⁸³ EIA Review report, p77

No	Comments	Stakeholder	Response
	<p>Power Producer Procurement Programme (REIPPP)⁸⁴ - the Specialist Review proceeds to recommend that the Minister must consider the IRP2019 when adjudicating the appeal:</p> <p>The EclA found that nuclear is the cheaper and more appropriate (energy generation) option, a conclusion which may no longer be valid. The specialist reviewer recommends that the Minister must consider the IRP (DoE, 2019) when adjudicating the appeal.⁸⁵</p> <p>This recommendation does not address the fact that the conclusion contained in the FEIR EclA is out of date, and it is submitted that the EIA Review report should rather have recommended that the Nuclear-1 FEIR and EclA report be supplemented with up to date information.</p>		
85.	<p>It is submitted further that the consideration and assessment of the cost of nuclear power (and its comparison to the comparative cost of renewable power in 2023) is a relevant consideration that the Minister must have regard to when considering the Nuclear-1 EIA Appeal, for (among others) the following reasons:</p> <ul style="list-style-type: none"> • It will enable the Minister to consider and evaluate the cost-effectiveness of the proposed nuclear power plant in relation to feasible alternatives such as renewable energy and storage technologies. This in turn informs the consideration of the appropriateness of the 'no-go option'; • It will enable the Minister to consider and evaluate the affordability of nuclear energy having regard to up to date information on costs and the financial status of Eskom⁸⁶; • It will enable the Minister to consider and evaluate the negative socio-economic impacts of 		See response 81.

⁸⁴ The average tariff for solar dropped from 329 c/kWh in REIPPP Bid Window 1 to 79 c/kWh in Bid Window 4, while the average tariff for wind dropped from 136 c/kWh in Bid Window 1 to 62 c/kWh in Bid Window 4. See: <https://www.py-magazine.com/2021/09/30/reipp-one-of-the-worlds-best-renewable-energy-tenders-but-theres-room-for-improvement/>

⁸⁵ EIA Review report, p77.

⁸⁶ On 22 August 2023, it was reported in the media that that South Africa's Treasury has paid R16 billion to 'indebted power utility Eskom', and has offered a total of R254 billion to Eskom so that it can pay its debts to global financial institutions, which currently stand at about R423 billion. See: <https://www.cnbc.com/2023/south-african-power-utility-eskom-gets-850-mln-tranche-of-state-help-with-debts/>

No	Comments	Stakeholder	Response
	<p>the proposed Nuclear-1 programme, including the impacts this may have of future generations of electricity users (who will ultimately bear the cost of expensive nuclear energy).</p> <p>Without such information, the Minister is unable to make an informed decision on the potential negative economic impacts that building a new nuclear is likely to have on the South African economy and end-users of electricity (including future generations) or on affordability of the proposed nuclear build (having regard to Eskom's financial status), nor can the Minister engage in the delicate balancing act of determining the sustainability of the proposed Nuclear-1 nuclear build programme.</p>		
86.	<p>It is submitted that an updated EclA report is critical to the Minister's decision on appeal, that the EIA Review report and specialist review of the EclA report erred in not recommending that the EclA be supplemented with up-to-date information on the costs of the proposed nuclear build programme (at least within a reasonable 'envelope' given that no decision has been made to select a specific vendor's technology), while the recommendation that the Minister must have regard to the IRP2019 does not address the problem.</p> <p>In light of the above, it is submitted that this constitutes a fatal flaw and that the Minister should uphold the appeal and/or substitute a decision refusing authorisation for the proposed nuclear build programme.</p>		See response 81.
87.	<p>Specialist Review: Beyond Design Accidents Report</p> <p>The Appellants have no comment to make at this stage regarding outdated information in relation to the Beyond Design Accidents Report (Appendix E33 to the FEIR).</p> <p>However, insofar as the Specialist Reviewer's conclusion that '<i>The report is therefore considered to be suitable for decision making in its current form and the specialist reviewer does not recommend any updates to the study</i>' could be interpreted as giving an unqualified approval of the Beyond Design Accidents Report, the Appellants contest its suitability, and stand by the grounds of appeal relating to the Beyond Design Accidents Report articulated in their 2018 Nuclear-1 EIA Appeal (see section E.4 <i>Failure to adequately assess the health and socio-economic impacts of a radiological release as a consequence of a catastrophic nuclear incident</i>).</p>		The specialist reviewers' mandate is not to 'give approval' of reports, but only to determine whether these reports are suitable for decision-making in their current form.
88.	<p><u>Climate Change Impact Assessment Report (CCIAR)</u></p> <p>Due to time limitations, the Appellants have not had an opportunity to fully ventilate with an expert all aspect of the CCIAR including cradle-to-grave impacts. The Appellants therefore make no submissions and reserve their rights.</p>		Noted.

No	Comments	Stakeholder	Response
89.	<p>Comments on the review of Environmental Impact Report and specialist studies and the specialist Climate Change Impact Assessment Report to inform Minister Creecy's final decision on the appeal process for the proposed construction and operation of the Eskom 4000 MW nuclear power station and associated infrastructure ("nuclear-1") predominantly on farm Duynefonteyn no. 1552, Melkbosstrand (DFFE ref: 2/12/20/944; Appeal ref: LSA 167385).</p> <ol style="list-style-type: none"> 1. The email notification of 24 July 2023 regarding the availability of the Environmental Impact Assessment ("EIA") Review Report and specialist Climate Change Impact Assessment refers. 2. Thank you for the opportunity to participate in the public participation process to inform Minister Creecy's decision on the appeals lodged against the environmental authorisation ("EA") granted to Eskom SoC to construct and operate a nuclear power station ("NPS") at the Duynefontein site ("Nuclear 1"). It must be noted that the Department lodged an appeal against the EA granted on 11 October 2017 by the then Department of Environmental Affairs (their reference 12/12/20/944). Notwithstanding the Department's appeal submission, please find the Department's objective comments on the <i>Review of Environmental Impact Report and Specialist Studies: Nuclear-1 Project, Duynefontein, Western Cape</i> compiled by SRK Consulting (South Africa) (Pty) Ltd dated July 2023 (hereinafter referred to as the "EIA Review Report") and the <i>Specialist Climate Change Impact Assessment</i> ("CCIA") compiled by Promethium Carbon dated July 2023. These reports were downloaded from the website of the EIA review environmental assessment practitioner ("EAP"). 	DEA&DP; 23 August 2023	Noted.
90.	<p><u>Comments on the EIA Review Report</u></p> <ol style="list-style-type: none"> 3. The findings of the specialist environmental impact study and specialist technical study reviews concluded that the specialist reports completed as part of the scoping & environmental impact reporting application for the Eskom Nuclear-1 project are considered as suitable for decision-making in their current form. Most environmental and technical specialist reviewers did not recommend any updates to the studies. The following additional comment in terms of the specialist environmental impact study is noted: <ol style="list-style-type: none"> 3.1. The Economic Impact Assessment compiled by Conningarth Economists/ Imani Development (SA) (Pty) Ltd dated September 2013 found that nuclear is the cheaper and more appropriate (energy generation) option. The specialist reviewer indicated that this conclusion may no longer be valid and recommended that the Minister must consider the 2019 Integrated Resources Plan ("IRP") when adjudicating the appeal. The Department supports this conclusion, given the trajectory of the current and future renewable energy market, especially in the Western Cape. 		The Department's support of the specialist review recommendation is noted.

No	Comments	Stakeholder	Response
91.	<p>4. In terms of the specialist technical study reviews, the following additional updates were recommended:</p> <p>4.1. The specialist reviewer of the 1:100-year flood line recommended that the Nuclear-1 design comply with recommendations in separate Site Safety Reports commissioned for the National Nuclear Regulator licensing process for a NPS at Duynefontein.</p> <p>4.2 The grid integration report specialist review recommended a new grid integration once the appeal decision in favour of Nuclear-1 is finalised.</p>		Noted.
92.	<p>5. <i>“There has been a substantial increase in the development of renewable energy projects, in recent years (since the EIA was concluded). The statement in the FEIR that that renewable energy (wind and solar power) could not provide adequate base load or integrate easily into the existing power network may no longer be correct; however the energy mix is informed by the IRPs”.</i> The Department agrees with this finding of the EIA Review Report (section 7, page 138) and believes that future renewable energy projects will become cheaper to develop and, coupled with technological advancements, will most likely be a major contributor to the base load and/or national grid.</p>		The Department's support of the specialist review recommendation is noted.
93.	<p>6. The gazetted IRP 2010 was applicable when the application for EA was undertaken and when the EA was granted for the Nuclear-1 development at the Duynefontein site. In terms of the IRP 2010, South Africa needed to install an additional 40 000 MW of generation capacity by 2025, of which the IRP 2010 mandated that 9 600 MW must be nuclear. <i>“The IRP 2019 envisages the total nuclear capacity by 2030 remaining 1 860 MW, based on a proposed extension of the lifespan of the existing 1 860 MW KNPS by 20 years from 2024.”</i> The proposed Nuclear-1 development would result in the generation of 4 000 MW nuclear energy. The Final EIA Review Report should indicate whether the remaining 1 860 MW (reduced from 9 600 MW) has taken cognisance of the proposed Nuclear-1 development.</p>		As set out in the specialist review report, the IRP 2019 provides more up to date planning data and reference should rather be made to this document than the 2010 document.
94.	<p>7. In terms of the town planning assessment review, reference is made to the City of Cape Town's Municipal Spatial Development Framework (“MSDF”) dated 2022. Please note that the City of Cape Town's MSDF was approved by City Council on 26 January 2023.</p>		Noted.
95.	<p>8. It is noted that detailed information regarding the design of the proposed NPS will only be made known once a vendor has been identified and is known. It is assumed that the design will not result in the need for an additional EA as it is assumed that Eskom SoC has investigated all potential listed activities that may be triggered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (“NEMA”) EIA Regulations, 2014 (as amended).</p>		This is correct. Additional authorisations (pertaining to e.g. land use, coastal waters discharge, waste disposal, etc) will be required, but the existing EIA and EA adequately cover the application for environmental authorisation.

No	Comments	Stakeholder	Response
96.	9. In terms of the botany and dune ecology impact assessment review, it is not apparent that the specialist reviewer has considered the Revised National List of Ecosystems that are Threatened and in Need of Protection ("the Red List of Ecosystems") published in Government Notice ("GN") No. 2747 of 18 November 2022 in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), although it is noted that "[T]here are no assumptions or limitations that are no longer valid, or which invalidate the findings of the study due to the passage of time."		<p>The Botany and Dune Ecology specialist review cites the following key findings from the EIA:</p> <ul style="list-style-type: none"> • 'Two vegetation types (Cape Flats Dune Strandveld and Cape Flats Sand Fynbos) are found on the site, both of which are Endangered; • The transverse dune system at Duynefontein is endemic, and is poorly represented on the Cape West Coast; • Sensitivity of the habitat is locally high due to the presence of mobile and potentially mobile dunes, susceptibility to fire is high in the sand plain fynbos, and vegetation resilience is low.' <p>It is correct that the review does not reference the Revised National List of Ecosystems that are Threatened and Need of Protection. This document lists Cape Flats Sand Fynbos as Critically Endangered and does not list Cape Flats Dune Strandveld. The motivation cited for the listing of Cape Flats Sand Fynbos is Cape Flats Sand Fynbos is that it is 'narrowly distributed with high rates of habitat loss in the past 28 years (1990-2018), and evidence of ongoing biotic disruption from invasive species'. The reviewer's comments remain valid – the findings of the study remain suitable for decision-making as the updated information does not materially change the outcome of the assessment.</p>
97.	10. It is unclear what the specialist reviewers' views are on the changed baseline conditions for the botany and dune ecology, and marine ecology impact assessments. It's stated that revised assessments would be needed from the most recent 2014 and 2007 field surveys, respectively, but then it is concluded that revisions are not unnecessary. This is especially unclear following the acknowledgement that recent aerial imagery may only be useful in deductions of terrestrial ecology, but not that of the marine environment. It is recommended that another baseline assessment or ground-truthing is undertaken to confirm the initial surveys undertaken.		<p>The Botany and Dune Ecology specialist review states 'Subsequent changes in the baseline environment are likely to have taken place, however, these are not considered to be to the extent that they would result in meaningful changes in the impact assessment provided in Low's 2011 report or the mitigation measures proposed.' In other words, while some changes are to be expected given that this is a dynamic system, and while such changes could only be accurately described by updated field survey, the changes are not likely to be so significant that they will materially alter the findings and outcome of the assessment and therefore further field assessment is not required for the purposes of decision making.</p>
98.	11. The specialist and review specialist do not appear to demonstrate an understanding of how coastal erosion manifests, misunderstanding the role of "height above sea level" in beach retreat. The issue is briefly mentioned in the mitigation measures section, but the risk does not seem to be understood properly. Based on the information presented in the EIA Review		<p>A number of studies (and reviews) considered coastal dynamics and associated potential risks, including an Oceanographic Assessment and Position of 1:100 Sea Floodline (Study), as well as the CCIA and separate</p>

No	Comments	Stakeholder	Response
	Report, it does not appear that a coastal risk assessment was undertaken, please confirm?		SSRs. Risks are well understood, and can be mitigated.
99.	12. It may not be in the remit of the EIA review to decide on an appropriate energy mix, but it is the onus of the EAP to set the precedent for the promotion of the safest and most sustainable options for society. Renewable alternatives need better and actual representation in the EIA Review Report.		The purpose of the EIA report is not to assess or reassess the underlying motivation for the project. However, where there is relevant, updated information that can and should be taken into account by the Minister in deciding the appeal, the reviewers have drawn the Minister's attention to such information (for example the IRP 2019).
100.	13. There is no mention of where the discharge of effluent/brine from the proposed on-site wastewater treatment works ("WWTW") and desalination plant will be, and the impacts of discharge to the environment, although the WWTW is discussed in the Wetland Ecosystems Specialist Study Impact Assessment Phase compiled by the Freshwater Consulting Group dated March 2011, and desalination in Chapter 10 of the Final EIA Report.		The reviewer has not discussed these specific aspects as there is no change to the project description since the EIA was compiled and, given the limited changes to the baseline environment, the assessment of potential impacts and proposed mitigation measures remain valid.
101.	14. The Estimating the 1:100-year Flood Line from the Sea Report prepared by Prestedge Retief Dresner Wijnberg ("PRDW") dated October 2009 is not mentioned in the CCIA, and no risk findings were meaningfully/correctly communicated in the PRDW report.		The specialist review report notes that the 1:100 year Floodline study '...is a technical study that is referenced in a number of other specialist studies. The study does not predict the significance of impacts but is a technical assessment which informs the assessment by other specialists.'
102.	15. The specialist review of the Air Quality Impact and Climatology Assessment prepared by Airshed Planning Professionals (Pty) Ltd dated August 2015 states that <i>"Due to a lack in industrial and urban development at the Duynefontein site since the baseline assessment was undertaken, it is likely that background sulfur dioxide (SO₂), nitrogen dioxide (NO₂) and particulate matter of less than 10 micrometres (PM₁₀) concentrations are similar to those measured between 2000 to 2007."</i> Given that the baseline air quality assessment was undertaken over 10 years ago, without a more recent air quality monitoring campaign, it is difficult to conclude the extent to which the baseline environment has been affected. Ideally, more recent air quality monitoring data from monitoring stations in proximity to the proposed project site should have been used as a baseline by the review specialist to confirm the suitability of the baseline information used in the Air Quality and Climatological Assessment.		While some changes to background air quality parameters are to be expected given the time that has elapsed since the air quality assessment was undertaken, and while such changes could only be accurately described by updated monitoring programme, the specialist reviewer asserts that the changes are not likely to be so significant that they will materially alter the findings and outcome of the assessment and therefore further monitoring is not required for the purposes of decision making. There are very few emissions from a NPS.
103.	16. Should the Minister dismiss the appeals and uphold the EA, it is imperative that the predicted cumulative impacts of the proposed project comply with the relevant National Ambient Air Quality Standards that are applicable at the time that the appeal process is finalised.		The Minister will consider this comment. There are very few emissions from a NPS.
104.	17. It is noted that the National Dust Control Regulations published in GN No. R. 827 of 1 November 2013 were not referenced or used in the Air Quality Impact and Climatology		Should be EA be upheld, this will be managed through the EMPr, which is a dynamic document that will need to be regularly updated.

No	Comments	Stakeholder	Response
	Assessment. Fugitive dust emissions from general construction activities, as well as any other activity associated with the proposed project, should be monitored and managed in accordance with the latest National Dust Control Regulations that are applicable.		
105.	18. The specialist review of the Dune Geomorphology Impact Assessment regarding the impact of off- road vehicles on the dune systems during the construction and operational phases should be confirmed, or a recommendation should be made to assess this aspect, if it was not considered.		The specialist review notes: 'The impact of Off-Road Vehicles (ORV) on the dune systems during the construction and operational phases is not described [in the specialist Dune Geomorphology Impact Assessment]. It is assumed that impacts associated with ORVs were assessed as impacts related to constructing infrastructure, transmission lines and access roads. It should be noted that the "Control of vehicles in the Coastal Area Regulations (colloquially known as the Off-Road Vehicle Regulations) makes provision for permissible activities and the necessary permits should be obtained prior to construction commencing.'
106.	<p>SUBMISSION OF COMMENTS ON THE CLIMATE CHANGE IMPACT ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REVIEW REPORT IN RELATION TO ESKOM'S PROPOSED NUCLEAR-1 PROJECT AT DUYNESFONTEIN</p> <p>I refer to the invitation to submit comments on the Climate Change Impact Assessment (CCIA) and a review of the Environmental Impact Assessment (EIA) reports in response to appeals lodged against the environmental authorisation for the proposed development of the Nuclear-1 Project at Duynesfontein, in response to your letter dated 24 July 2023, and would like to submit the following comments on behalf of the City of Cape Town ("the City"):</p> <p>1. GENERAL COMMENTS:</p> <p>Eskom Holdings SOC Ltd ("Eskom") proposes to construct, operate and decommission a conventional nuclear power station in South Africa. This is in order to meet the total demand for electricity in the context of economic growth and increasing social needs, which has resulted in substantially greater energy demands. The document asserts that new generating capacity must be installed to cater for the growth in energy demand or to replace aging plants.</p> <p>It is further proposed that this nuclear plant be located at Duynesfontein in the jurisdiction of the City of Cape Town. The total footprint required for the (4 000 MW) Nuclear-1 at Duynesfontein is - 265 ha. The Nuclear-1 building will occupy one third of the footprint, with the remainder of the area affected by construction activities. Further, two categories of exclusion zones for emergency planning purposes will be implemented around the Nuclear-1 complex.</p> <p>The City has, in the past, raised several objections to the proposed Nuclear-1 plant at Duynesfontein. These objections were primarily founded on the basis that the proposed development is to be located in the fastest urban growth corridor of the City, the lack of consultation on the part of the Minister, and concerns surrounding potential cost implications to</p>	CoCT: office of the Executive Mayor; 6 September 2023	<p>The Minister will consider this comment. Site Safety Reports are technical reports submitted to NERSA, not generally released to the public.</p> <p>The Minister should consider SSRs in adjudicating the appeal. SRK has revised the Review Report accordingly.</p> <p>And see response 64.</p>

No	Comments	Stakeholder	Response
	<p>the City. The Specialist Report on Social Impact Assessment (SIA) (as drafted in 2015/16 by Octagonal Development cc) and reviewed by the SRK Team (2023:69-74), as well as the Town Planning Assessment (TPA) (drafted by GIBB 2016) and reviewed by SRK (2023: 97-103), fail to adequately reflect the urban growth and population growth trends in the north-western corridor and the potential impact of new nuclear reactors on the long-term population trends in that district. Although the SIA is quite comprehensive in scope, it lacks recent population growth figures. Both the original and the review report were still considering the 2011 census, which is now hopelessly out of date. It also lacks an agreed or validated growth estimate or trajectory agreed to by the City and the ESKOM consultants. Related to this, Eskom has appointed two other teams of consultants to compile site safety and traffic evacuation reports, yet there has been no opportunity for these teams to share technical information and get their data and assumptions validated by the City's Population Unit and/or Stats-SA, so that everyone is working on the basis of the same assumptions and forecasts.</p>		
107.	<ul style="list-style-type: none"> • That said, the City accepts that, per the Integrated Resource Plan, 2019 (IRP), approximately 24 100 MW of coal power plants is expected to be decommissioned in the period beyond 2030 to 2050, which is then to be replaced by clean energy technologies that includes nuclear. The IRP further also commits South Africa to an energy pathway that is characterised by a diversified energy mix that reduces reliance on a single or a few primary energy sources. To this end, Policy Decision 8 clearly commits to commencing preparations for a "nuclear build programme to the extent of 2,500 megawatts at a pace and scale that the country can afford because it is a no-regret option in the long term". • The City further is committed to the energy transition, from a predominately fossil-based system of energy production and consumption, to renewable energy sources. Coal-fired electricity remains the largest source of greenhouse gas emissions, while load shedding across South Africa continues to limit economic growth, and electricity price increases add an unnecessary burden to households already under financial pressure. Thus, the transition to a clean energy system where the electricity provided is generated from renewable sources, is critical. Because nuclear energy does not require burning fossil fuels, it does not directly contribute to greenhouse gas emissions and climate change, and this has an important role to play in the energy transition. Nuclear power-a proven, zero-carbon electricity source- is a firming, resilient, and dispatchable energy source, which can be generated at any time. • Nuclear energy is further also able to complement variable, non-dispatchable power sources, such as wind and solar, to ensure that the total power supply meets grid demand. This is of key interest to the City, in our pursuit of energy independence, and commitment in increasing the proportion of electricity sourced directly from 		The Minister will consider this comment.

No	Comments	Stakeholder	Response
	<p>Independent Power Producers and through exports from small-scale embedded generation. This objective has now started to grow as technological and regulatory changes have permitted higher levels of embedded generation, as well as direct procurement of electricity, whether by the City or customers. This also means that renewable energy is becoming a greater share of energy source in the City.</p> <ul style="list-style-type: none"> • That said, the principles for energy supply choice need to be sound. Due to the increasingly competitive and fast-changing nature of the energy generation sector, supply technologies cannot be pre-determined, but rather need to be considered based on a number of contextual factors and responses from the market within the determined parameters. Not least of all the following: • New supply must not undermine the reliability of supply to customers; • Most cost-effective (least-cost) energy over the lifetime of supply; • Fairly and transparently apportion the cost of new supply to customers over time (cost of new supply must as closely as possible align with the timeframe of the benefit received from the new supply); • New supply must support price predictability and must not introduce increased price or supply volatility into the energy market; and • New supply must not worsen the local grid factor and/or decrease air quality in Cape Town. 		
108.	<p>Considering the fiscal situation of South Africa, in the context of a broader global economic malaise, the City is committed to, and supports, the least-cost option. A key recommendation of the report is the uncertainty of the Economic Impact Finding that nuclear is the cheaper and more appropriate (energy generation) option, and suggests that the conclusion may no longer be valid. The City recommends the proper consideration of this possibility when adjudicating the appeal, especially considering there are hidden costs to nuclear, which may not have been adequately considered. These include, but are not limited to the cost of decommissioning, waste management, and disaster risk preparedness - the latter currently borne by the City in significant measure. The City supports the principle of "polluter pays", but believes that the full costs of nuclear are not adequately considered.</p>		<p>Noted. The specialist reviewer recommends that the Minister must consider the IRP (2019) when adjudicating the appeal. Consideration of all costs is included into the Section 34 application. Such an application would need to incorporate the conditions of an Environmental Authorisation and specialist recommendations incorporated into the final EMP.</p>
109.	<p>Notwithstanding the sentiment stated, the City does not agree that locating a new nuclear plant at Koeberg is necessarily the best option for the country. Further, the City cannot agree that this site is the best option for Cape Town. This is especially the case for the period beyond 2045, which is the period for which the implications of the new nuclear I EIA (under review now) will be applicable. The City will, under its Municipal Planning By-Law, 2015 review the required land-use application,</p>		<p>Noted. The Review Report notes that other approvals will be required, not just EA.</p>

No	Comments	Stakeholder	Response
	and wishes to assert that the acceptance of the EIA does not equate to the approval of a land-use application to allow the development of nuclear as proposed. Additionally, the proposed development is in conflict with the City's Municipal Spatial Development Framework 2023 and the associated Blaauwberg District Spatial Development Framework and Integrated Environmental Management Framework, which recognise the entire area as a Critical Natural Asset in which development is discouraged.		
110.	The City also finds it concerning that there is no Biodiversity Offset Report included in the EIA Review, or as an Appendix for the Duynfontein site. The approach appears to be to simply dismiss the requirement for a 265 ha biodiversity offset with the following statement repeated in several places in the review report: "the subject of a separate specialist report and therefore not part of this review". This is an unacceptable gap in the review, since the lack of an offset in the 2017 Environmental Authorisation decision is one of the City's grounds of objection.		<p>As documented in the Review Report, the original EIA noted that the loss of conservation area (at KNR) is material and an offset would be required to ensure that there is no net loss of ecological value. SRK assumes that the Minister was aware of this recommendation, since this was one of the issues under appeal given that this was not a condition of EA.</p> <p>When the EA was granted, draft Biodiversity Offset Guidelines had been compiled, but not formally approved. On 23 June 2023, the National Biodiversity Offset Guideline was gazetted and came into effect. The Minister may want to reconsider the merits of an offset as a condition of authorisation in adjudicating the appeal. SRK has revised the Review Report accordingly.</p>
111.	<p>Furthermore, the cost of Disaster Risk Management and adequate disaster management plans may not be fully developed and understood. To this end, the Fukushima Nuclear Disaster in 2011 highlighted that authorities can easily be overwhelmed by the sheer scale of the impact of a nuclear disaster, and their ability to evacuate large numbers of affected community members remains untested. The existing equipment and resources necessary to ensure that required disaster procedures can be effectively implemented is currently significantly lacking and, in most cases, dated.</p> <p>Importantly the opportunity costs to the City and its residents will continue to increase over time, should this project be given the go-ahead.</p>		<p>Noted that existing resources are inadequate.</p> <p>This issue is addressed through the Emergency Response Plan, which is a living document responding to changing conditions, and which has evolved over time and will continue to evolve.</p>
112.	<p>The Review Report (2023:99) stipulates that the City no longer regards the Atlantis corridor as a future growth corridor and delineated the 2023 DSDF with a contracted urban edge, shifting south compared to the 2012 District Plans. This view can be considered as partially correct only, as explained below.</p> <p>Similarly, the Review Report (2023:99) admits the serious omission of the MSDF, considering that, as a policy document, it contains the long-term vision of the City. It also stipulates (2023:99) that the degree of changes in the Spatial Policy, vision and land use management system is considered 'marginal given the prevailing spatial planning policy and guidelines' and, on page (2023:102), it states that even with the updated policy (2023 MSDF and DSDF) and guidelines</p>		See response 3.

No	Comments	Stakeholder	Response
	documents... it was found that there is not materially relevant and significant differences between the 2012 Blaauwberg District Plan and the updated policy. Although this may be partially true, the City disagreed with these statements as explained below.		
113.	The review report notes that the City has self-regulated by contracting its urban edge in the latest review of its MSDF. But it is important to consider that the time horizon of the MSDF is 15 - 20 years, and this self-regulation allows for the extension of the operating life of the current Koeberg units for a further 20 years, which we support - despite Eskom failing to get approvals on site safety in advance of construction - as critical to avoiding even greater destruction of South Africa's economic production by load shedding. But the City cannot guarantee this position going forward in the EIA and MPB-L application for new reactors/ the new build applications which will neutralize the City's and private owners' land holdings and the urban growth corridor well-beyond this time horizon.		See response 3.
114.	Even within the current policy context, the City approved the amendment to its Municipal Planning By-law and Development Management Scheme (as amended and effective from 3 February 2020, allowing three dwellings on a single residentially zoned erf. Although Section 158 of the DMS aims to retain low densities around the nuclear reactor, it is very difficult to manage this land use change and density in the 5-16km zone. The TPA could not have considered this change, but the Review Report ignores this impact on population density. Similarly the City's DSDFs have pushed up preferred densities on vacant and under-utilised land parcels in the corridor between 2012 and 2023. The TPA specialists report would not have considered this as it happened between 2018 and 2023. The Review Report is therefore not correct.		See response 3.
115.	It does not make sense to place a new nuclear plant in one of South Africa's fastest growing areas and replace one economic handbrake (energy insecurity) with another (sterilization of land for development). Eskom should identify a more remote site for expansion of its nuclear fleet		The EIA assessed two additional sites identified by Eskom, namely Thyspunt in the Eastern Cape and Bantamsklip near Gansbaai. Both of these sites are arguably more remote than Duynefontein, but following consideration of the EIA, the DFFE authorised the Duynefontein site.
116.	2. SPECIFIC COMMENTS Notwithstanding the above comments, please see below specific comments for your attention: 1. Page 2; Duynefontein locality map ; The Duynefontein locality map does not show the Koeberg Nature Reserve's boundary, despite "Nature Reserve" appearing in the legend.		New map inserted.
117.	2. Page 20; 3.7 Identification and Assessment of Impacts ; "Following mitigation, the majority of impacts were rated to be of Medium or lower significance[...]" Loss of 265 ha of endangered, endemic Cape Flats Dune Strandveld cannot be of medium		It is correct that this impact is rated as being of high significance and cannot be mitigated, as stated in the specialist review of the Botanical and Dune Ecology specialist report. It is however true to say that

No	Comments	Stakeholder	Response
	or lower significance and contradicts the Botanical Specialist impact finding that "Loss of habitat due to loss of unvegetated and partially vegetated dune areas (a negative impact of high significance, not reduced with mitigation, and permanent)"		'following mitigation, the <i>majority</i> of impacts were rated to be of Medium or lower significance' [emphasis added].
118.	<p>3. Page 22; 3.9 Conclusions of the EIA Process; "The 265 ha development at Duynefontein will lead to the loss of conserved land. The conservation area was directly premised on the establishment of the KNPS and has been judicious use of the land that is owned by Eskom and kept free of development for safety reasons. The loss of that conservation area is material and an offset would be required to ensure that there is no net loss of ecological value[...]".</p> <p>If the loss of conservation area is material and an offset is required, why then is a Biodiversity Offset not included in the review, specifically in the list of key recommendations on page 24 or in the conclusion to this report?</p>		See response 110
119.	<p>4. Page 29; 4.1 Introduction; "Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes when Applying for EA (GN R320 and GN RI150 of 2020)".</p> <p>The amended version recently gazetted should be used: <i>Amendment to the protocols for specialist assessment and minimum report content requirements for environmental impacts. Published in GG 49028 NN 3717 dated 28 June 2023.</i> This also applies to all other environmental Specialist Assessment review</p>		The specialist reviews were mostly undertaken in April and May 2023. It is further noted that the most significant change in the amended protocols of 28 June 2023 is the removal of the reference to the term 'terrestrial' with respect to plant and animal species, with a view to the inclusion of freshwater plant and animal species in the ambit of these protocols. Since the FEIA (and the Review Report) included a Freshwater Ecology specialist study, this publication does not result in any material change to the information presented to the Minister.
120.	<p>5. Page 32; 4.2.2.1 Changes to Legislation, Policy, Protocols or other Instruments Pertinent to the Agricultural Impact Assessment; "The City of Cape Town (CCT) has prepared a Maintenance Management Plan (MMP): Dune and Beaches (City of Cape Town, 2017) that provides a generic MMP to enable the CCT to conduct dune and beach maintenance and rehabilitation on City-owned land more efficiently whilst remaining compliant with the requirements of NEMA".</p> <p>It must be clearly stated in this report that the City cannot be held responsible for dune and beach maintenance on Eskom-owned land.</p>		Noted. The Review Report will be amended to reflect this comment.
121.	<p>6. Page 49; 4.8.1 Status of Original Botany and Dune Ecology Impact Assessment; "This management plan must include effective rehabilitation and monitoring, and the enhancement of the Koeberg Nature Reserve. Low also recommended that any losses of the transverse dune should be offset by addition of dune vegetation habitat to the north of Koeberg Nature Reserve boundary".</p>		The implementation of this recommendation only becomes necessary if the appeal is dismissed and the development of the proposed Nuclear-1 project proceeds at Duynefontein.

No	Comments	Stakeholder	Response
	Why is this Specialist's recommendation not implemented?		
122.	<p>7. Page 51; 4.8.2.1 Changes to Legislation, Policy, Protocols or other Instruments Pertinent to the Botany and Dune Ecology Impact Assessment; " While no CBAs or ESAs are identified for the Duynefontein site, it does overlap with the Koeberg Nature Reserve16 (a protected area proclaimed in 1991) and would therefore impact conservation targets, the protected area network, and trigger the requirement for offsets (the subject of a separate specialist report and therefore not part of this review)".</p> <p>Why has the requirement for a biodiversity offset not been addressed in this review? An offset is the final option in the NEMA mitigation hierarchy, and therefore does apply to the original application. The report goes on to say " ...implicit in Low's study is that such impacts were considered material, hence the requirement for an offset. It is assumed that this is covered in more detail in the report dealing with offsets, and that the information provided in Low's reports is adequate to inform that report. The presence of the KNPS has directly resulted in protection of an area (the Koeberg Nature Reserve) that may otherwise not have been protected, and it could be argued that similar benefits in terms of biodiversity conservation could potentially result from the Duynefontein power plant if a suitable offset arrangement is reached." Why has the required offset report not been included in this review? A Biodiversity Offset Specialist should have been appointed, and a Biodiversity Offset Report should have been included in this public participation process.</p>		See response 110
123.	<p>8. Page 52; 4.8.2.2 Changes Baseline Conditions; "No change in the conservation status of the vegetation types identified in the report has been identified. The Duynefontein site is dominated by Cape Flats Dune Strandveld (Endangered) and Cape Flats Sandy Fynbos (Critically Endangered)".</p> <p>This is false information. Koeberg Nature Reserve protects Cape Flats Dune Strandveld and Atlantis Sand Fynbos, not Cape Flats Sand Fynbos.</p>		<p>Low (2015) does not refer to Atlantis Sand Fynbos. The original botanical report by Golder and Associates (2010) lists the following synonyms for the vegetation types, which explains the types of challenges in nomenclature of vegetation types and the use of different classification systems:</p> <p>'Sand plain fynbos (Community K10) Synonyms: Boucher (1987) – generally allied with his <i>Phyllica cephalantha</i> community, in association with <i>Cliffortia falcata</i> and <i>Thamnochortus obtusus</i>; Heijnis et al. – Proteoid Lowland Sand Plain Fynbos/ Lowland sand Plain Fynbos/ West Coast Dune Thicket-Lowland Fynbos transitional veld; Low (2000) – Sand Plain Fynbos on marine-derived acid sand/ Dune Thicket-Sand Plain Fynbos transition; Mucina & Rutherford (2006) – <u>Atlantis Sand Fynbos</u>'.</p> <p>One could argue against Low's choice of classification system, but the key question for the review is whether or not this has bearing on the findings of the report and the assessment of potential impacts of the</p>

No	Comments	Stakeholder	Response
			proposed project and the specialist reviewer's opinion is that it does not have a material bearing on the assessment.
124.	<p>9. Page 60; 4.10.2.3 Changes to Baseline Conditions; <i>Whole section</i>.</p> <p>While changes to Species of Special Conservation Concern may not be expected, the impact of a significant reduction in available habitat for large mammals may need to be reassessed. Koeberg Nature Reserve (before this proposed 265 ha reduction) approached/exceeded the carrying capacity for the large mammal herbivores (Eland, Plains Zebra and other antelope), resulting in costly game capture operations to reduce numbers. It should be established to what extent these herds use the proposed 265 ha footprint. Forcing these herds into a significantly smaller area may have negative consequences for threatened habitats, flora and other fauna.</p>		This is a management issue for the Koeberg Nature Reserve to consider but is not a significant impact <i>per se</i> .
125.	<p>3. CLOSING REMARKS</p> <p>The City welcomes the opportunity to comment on the reports, and trusts that the comments as provided will be duly considered. The City further would appreciate further engagement and consultation on the proposed development of the Nuclear-1 Project at Duynefontein in light of our objections raised in this regard.</p>		Noted.
126.	<p>2. SUPPLEMENTARY COMMENTS</p> <p><u>2.1. SPECIALIST STUDY REVIEW</u></p> <p>(a) Specialist Review: Beyond Design Accidents Report</p> <p>In their 23 August 2023 comments on the EIA Review report, the Appellants stated that they had no comment to make at this stage regarding outdated information in relation to the Beyond Design Accidents Report (Appendix E33 to the FEIR). However given the extension afforded to make supplementary submissions, the following comments are submitted.</p>	Adrian Pole; 22 September 2023	Noted.
127.	The Appellants contest the suitability of the Beyond Design Accidents Report, and stand by the related grounds of appeal articulated in their 2018 Nuclear-1 EIA Appeal (see section E.4 Failure to adequately assess the health and socio-economic impacts of a radiological release as a consequence of a catastrophic nuclear incident). This included a failure to adequately assess the significance ⁸⁷ of the cumulative impacts; the extent and duration of the impacts; the degree to which the impacts can be reversed; and the degree to which the impacts may cause irreplaceable		SRK assumes the Minister considered this when granting the original EA.

⁸⁷ "Significant impact" is defined in the EIA Regulations as meaning "an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment".

No	Comments	Stakeholder	Response
	loss of resources.		
128.	The intention of this submission is not to make representations regarding the safety of the proposed nuclear power station, but to submit that <u>new information relevant to safety should have been included in the EIA Review report</u> . This information relates to the energy crisis and its impact on grid stability. It will be submitted that these developments have an impact on nuclear safety and the potential for a radiological release as a result of a catastrophic nuclear incident. The need is thus <u>increased</u> for an <i>adequate assessment of the health and socio-economic impacts of a radiological release as a consequence of a catastrophic nuclear incident</i> . The failure to update the EIA with this new information and to conduct such an assessment is a fatal flaw in the EIA .		<p>The purpose of the review undertaken by SRK and the specialist reviewers was to consider whether or not any potentially outdated information contained in the FEIR materially affects the findings of the specialists studies or the FEIR or the significance of impacts.</p> <p>Some specialist review noted that some data could be updated, but all concluded that there are no material deficiencies and the studies remain fit for purpose and are suitable for decision making in their current form. The specialist reviewers did not recommend any updates to the studies.</p>
129.	This comment will further submit that the appeal authority is bound by the precautionary principle in deciding the appeal, and that the circumstances exist that trigger a consideration of a risk averse and cautious approach which takes into account the limits of current knowledge about the consequences of decisions and actions. Further that such approach cannot be taken in way other than by requiring an assessment of the health and socio-economic impacts of a radiological release as a consequence of a catastrophic nuclear incident including the updated information set out in this submission.		<p>The specialist (Beyond Design) review notes that :</p> <ul style="list-style-type: none"> • The baseline conditions at the site are not relevant to this study as the content is not site specific. • The study also makes it clear that its discussions and findings will eventually be followed up with a more detailed report wherein all the given assurances will be substantiated with analyses and calculations, tailored specific for the chosen site and the chosen nuclear power plant design. The study therefore meets the requirements for a specialist study. • The content of the report is not site specific. Any changes to baseline conditions will therefore not change this outcome.
130.	<p><u>E33 – the Beyond Design Accidents Report</u></p> <p>The Nuclear-1 Beyond Design Basis Accidents Report was concluded eight years ago, and has not been updated by the EIA Review report.</p> <p><u>The EIA failed to conduct an assessment of impacts of a catastrophic release of radiation on the basis of this being improbable.</u></p> <p>The Final EIA Report acknowledges that <i>the “proposed NPS has a range of inherent risks, which have severe potential consequences”, and concedes that while the low likelihood of these consequences reduces the residual risk to tolerable levels, “under no circumstances can it be guaranteed that the inherent risks will not materialise”. The Final EIA Report goes no to admit that “[i]t is only the “No development option” that can provide that guarantee. Especially important is the risk of abnormal (beyond design) radioactive release that would have severe potential consequences for human health and safety”.</i>⁸⁸</p>		<p>The Human Health Risk Assessment Review concluded that the assumptions, scientific methodologies, and health-risk findings for the Duynfontein site have not changed since 2010 and are unlikely to change in the future: the report is therefore considered to be suitable for decision making in its current form.</p> <p>The Minister should consider SSRs (NNR licensing process) in adjudicating the appeal. SRK has revised the Review Report accordingly.</p> <p>The Minister will take account of the precautionary principle.</p>
131.	The final EIA Report included a Radiological Assessment Report, but this assessment was restricted to normal operations and did not include an assessment of the health impacts of a		<p>As is the case with most projects (if appeals are dismissed and) if EA is</p>

⁸⁸ Appeal paragraph 67; final EIA report 5.9 p 5-39

No	Comments	Stakeholder	Response
	catastrophic nuclear incident. ⁸⁹ It also included a Beyond Design Accident Report, but this report focusses on how a severe accident with potentially large public health and environmental impacts can be avoided, rather than assessing the consequences of a catastrophic nuclear incident as required by NEMA and the EIA Regulations. It furthermore does not investigate the question whether the population can be sufficiently protected in the case of a severe, beyond design accident with substantial emissions of radioactive substances. ⁹⁰		granted, numerous (updated) studies to comply with numerous legislative requirements will be required. This includes a Nuclear Installation Licence in terms of Sections 20 and 21 of the NNRA from the NNR. In terms of NEMA, the DFFE is (currently) responsible for decision-making regarding the potential impacts of Nuclear-1 on the environment, even though these impacts are likely to include those relating to certain aspects of the radiological hazards associated with the facility. The NNR authorisation process applies specifically to issues of nuclear and radiation safety related to the siting, design, construction, operation and decommissioning of nuclear installations. This review focusses on the EA process and does not consider the requirements to the Nuclear Installation Licence (which are addressed in very comprehensive, separate Site Safety Reports [SSR] commissioned by
132.	Updated information Significant changes have taken place which are relevant to the safety of Nuclear-1 by itself or cumulatively with Koeberg Nuclear Power Station (KNPS) The EIA Review report is flawed in its failure to update the EIA with new information relevant to nuclear safety.		
133.	Since the environmental authorisation was granted in 2017 there have been significant changes in South Africa's electricity supply that can have an impact on nuclear safety and therefore assumptions regarding the low risk (which is denied) of a radiological release as a consequence of a catastrophic nuclear incident must be updated with this new information. The requirement that the socio- economic impacts of a major accident be assessed is now even more pressing and the decision maker must determine this requirement in the context of applying the precautionary principle.		The SSRs and most technical studies reviewed by specialists will be updated accordingly. As an instructive example , if EA is granted, Nuclear-1 may not commence operation for (say) 10 years and an updated Emergency Response Report will have to be compiled at that time and into the future. Nevertheless, the relevant review concluded that the report is considered to be suitable for decision making in its current form (emphasis added).
134.	(i) Legislative context and precautionary and preventative principles The NEMA principles apply to all actions of organs of state that may significantly affect the environment. ⁹¹ The umbrella nature of the NEMA principles is emphasised in section 2(1)(c), which stipulates that the principles must 'serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment'. Of these principles, the most important for the purposes of this submission are the 'precautionary principle' in section 2(4)(a)(vii) and the 'preventive principle' in section 2(4)(a)(viii).		The (original) Waste Management Study refers to the need for detailed regulations on specific issues relevant to long-term management for spent fuel and geological disposal of HLW, which remains valid at the time of the review.
135.	The preventive principle seeks to minimise environmental damage as an object in itself, and requires action to be taken at an early stage, if possible before damage has actually		

⁸⁹ Appeal paragraph 79.1

⁹⁰ Id paragraph 79.2

⁹¹ NEMA section 2

No	Comments	Stakeholder	Response
	occurred. ⁹² The precautionary principle aims to provide guidance in environmental management decision-making where there is scientific uncertainty. ⁹³ Most important, the principle permits a lower level of proof of harm to be used in decision-making whenever the consequences of waiting for higher levels of proof may be very costly and/or irreversible.		
136.	Both the precautionary principle and the preventive principle have acquired the status of international law norms, ⁹⁴ and are thus also binding on the State as such. Under section 39(1) of the Constitution, international law must be considered when the rights in the Bill of Rights are interpreted, in this case the right to a healthy environment (section 24 of the Constitution). Section 39(2) of the Constitution of the Republic of South Africa, 1996 directs that when any legislation is interpreted, the result must be a construction that promotes 'the spirit, purport and objects of the Bill of Rights'.		
137.	The core of the precautionary principle was enunciated in Principle 15 of the Rio Declaration from the 1992 UN Conference on Environment and Development: Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. ⁹⁵		
138.	The Precautionary Principle as a NEMA principle is formulated as follows (3) Development must be socially, environmentally and economically sustainable. (4)(a) Sustainable development requires a consideration of all relevant factors including the following.... (viii) [T]hat a risk averse and cautious approach be applied, which takes into account the limits of current knowledge about the consequences of decisions and actions;...		
139.	The precautionary approach therefore has two components – firstly potential significant impact;		

⁹² P. Sands Principles of International Environmental Law 2ed (Cambridge: Cambridge UP, 2003) at 246-279. See, especially, the European Commission's Communication on the precautionary principle, which recognizes it to have been 'progressively consolidated in international environmental law, and so it has since become a full-fledged and general principle of international law'. COM 2000(1), 2 February 2000, available at http://europa.eu.int/comm/dgs/health_consumer/library/pub/pub07_en.pdf. at 246-247.

⁹³ In 2000, the European Commission Communication on the Precautionary Principle stated: The precautionary principle applies where scientific evidence is insufficient, inconclusive or uncertain and preliminary scientific evaluation indicates that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the high level of protection chosen by the EU

⁹⁴ For a compilation of the international conventions incorporating the precautionary principle see P. Sands Principles of International Environmental Law 2ed (Cambridge: Cambridge UP, 2003) at 246-279; European Commission's Communication on the precautionary principle, which recognizes it to have been 'progressively consolidated in international environmental law, and so it has since become a full-fledged and general principle of international law'. COM 2000(1), 2 February 2000, available at http://europa.eu.int/comm/dgs/health_consumer/library/pub/pub07_en.pdf.

⁹⁵ UN General Assembly, Report of the United Nations Conference on Environment and Development (Rio de Janeiro, 3-14 June 1992) Annex I, A/CONF.151/26 (vol. I), available at <http://www.un.org/documents/qa/conf151/aconf15126-1annex1.htm> (accessed 19 March).

No	Comments	Stakeholder	Response
	and secondly scientific uncertainty. A decision maker, when considering administrative action which has these characteristics must fulfil the requirement of consideration of a cautionary approach, notwithstanding the limitations of scientific uncertainty.		
140.	<p>The 2006 EIA regulations⁹⁶ require an EIA, and relevant specialist reports to describe how the environment may be affected by a proposed activity:</p> <p>32 (2) An environmental impact assessment must contain all information that is necessary for the competent authority to consider the application and to reach a decision contemplated in regulation 36, and must include-</p> <p>...</p> <p>(d) a description of the environment that may be affected by the activity and the <u>manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;</u></p> <p>....</p> <p>33(2) A specialist report or a report on a specialised process prepared in terms of these Regulations must contain-</p> <p>...</p> <p>(f) a description of the findings and potential implications of such findings on <u>the impact of the proposed activity</u>, including identified alternatives, on the environment.</p>		
141.	When making a decision on an appeal the Minister must apply the NEMA principles, and consider a risk averse and cautious approach, in circumstances where the administrative decision may result in potentially significant impact, notwithstanding that there is scientific uncertainty regarding the likelihood of such an event. This applies specifically to deciding whether to require an assessment of socio-economic impacts of a catastrophic incident, which is an event that cannot be completely excluded from occurring at Nuclear-1. As stated above the EIA states that “ <i>under no circumstances can it be guaranteed that the inherent risks will not materialise</i> ”. ⁹⁷		
142.	<p>The EIA Review report</p> <p>The EIA Review report states that there have been no changes that would alter the conclusions</p>		

⁹⁶ GN385 of 21 April 2006

⁹⁷ Footnote 2 above

No	Comments	Stakeholder	Response
	<p>of the Beyond Design Based Accidents report,⁹⁸ and provides no updates relating to the need to assess the impacts of a catastrophic release of radiation:</p> <ul style="list-style-type: none"> The approach followed in assessing the doses to the public and the environment was deliberately chosen to be conservative. The dose results are therefore representative of a worst case, which in this instance, are still well below the 250 µSv/a public dose limit or the 10 µGy/h environmental reference level. <u>Any changes to baseline conditions or other parameters will not change this outcome</u>; and There are no assumptions or limitations that are no longer valid, or which invalidate the findings of the study due to the passage of time.⁹⁹ <p>It is disputed that changes to baseline conditions or 'other parameters' will not change this outcome as set out in this submission.</p>		
143.	<p>(ii) Changes that have taken place since the environmental authorisation of Nuclear-1</p> <p>Changes in South Africa's energy landscape since 2018 when the environmental authorisation was granted have increased the risk of a catastrophic release of radiation from Nuclear-1, whether seen in isolation or cumulatively with the Koeberg nuclear power station (KNPS). This conclusion is evident from publications of the International Atomic Energy Association (IAEA) that indicate how these factors increase the potential for a nuclear accident and catastrophic release of radiation. In South Africa this risk is increased as a result of the following developments:</p> <ul style="list-style-type: none"> (i) South Africa's energy crisis, entailing electricity constraints, continual loadshedding and grid instability that may result in a grid collapse. Dependence on outside electricity supply by both Nuclear-1 and KNPS may be compromised by civil unrest impacting on diesel supplies to Ankerlig; (ii) The KNPS has applied for an extension of its licence and might operate for a further extended period. Accidental releases of radiation from KNPS or Nuclear-1 may have a cumulative impact on each other. 		
144.	The EIA needs to be updated with this information and a risk averse and cautious approach adopted which includes the consideration of the socio-economic impacts of a catastrophic release		

⁹⁸ Appendix 33 to the FEIA report

⁹⁹ At paragraph 4.6.3

No	Comments	Stakeholder	Response
	from Nuclear-1 seen in isolation or cumulatively with the Koeberg nuclear power station.		
145.	<u>Update 1 - Safety Risks Associated With Multiple Reactors</u> The siting of Nuclear-1 in the vicinity of the KNPS at the Dynefontein site will increase the risk of a catastrophic release of radiation.		
146.	On 12th January 2023 Eskom formally notified the public and municipalities that it had applied to operate the Koeberg Nuclear Power Station beyond the timeframe established in the Nuclear Installation License (NIL-01 Variation 19). ¹⁰⁰		
147.	The extension of the licence for KNPS - if granted - together with the construction of Nuclear-1 will result in the site housing multiple nuclear reactors. As is clear from the IAEA guideline entitled 'Development and Application of Level 2 Probabilistic Safety Assessment for Nuclear Power Plants' having multiple nuclear power units at the same site 'adds significantly to the complexity in probabilistic risk assessment.' ¹⁰¹ In other words attempts to predict the likelihood of a major nuclear accident are more complex.		
148.	Annexure E33 to the Final EIA Report (Beyond Design Basis Accidents report) discussed the possibility of a beyond design based accident, but limited the discussion to one reactor. It concluded that the prospect of a worst case scenario catastrophic release of radiation was 'practically eliminated' by the Generation III design and safety characteristics.		
149.	<p>"The Gen III NPP designs include distinctive safety characteristics in respect of sequences of events that could result in conditions outside the design basis of a NPP, known as design extension conditions. The results of safety analyses show that beyond design basis accidents that present a significant risk to the public and environment are practically eliminated as a result of provisions for design extension conditions. Examples of these safety characteristics are [1]:</p> <ul style="list-style-type: none"> • simpler designs making the reactors easier to operate and more tolerant of abnormal operating conditions; • passive safety features in the design of the structures, systems and components (SCCs) that avoid use of active control and instead rely on natural phenomena such as natural circulation of cooling media e.g. cooling of the containment building to avoid over-pressure; • reduced SCCs failure probabilities and a lower reactor core damage frequency compared to 		

¹⁰⁰ Letter to Koeberg Public Safety Information Forum dated 12th January 2023.

¹⁰¹ IAEA safety issues - https://www.iaea.org/sites/default/files/23/07/draft_ds528.pdf At paragraph 14.22

No	Comments	Stakeholder	Response
	<p>earlier generation reactors (an order of magnitude reduction);</p> <ul style="list-style-type: none"> new design features that provide mitigation should the reactor core melt to significantly reduce the release of radioactivity to the environment; and improved ability to withstand the impact external hazards such as aircraft crash and extreme natural events.¹⁰² 		
150.	These conclusions apply to a Generation III nuclear power plant. They do not consider the cumulative impact of such an event where a Generation III plant is situated next to an aging Generation II plant, in this case KNPS, and where either or both plants experience a worst case scenario release of radiation.		
151.	Moreover, very few Generation III nuclear power stations have been built and the high degree of nuclear safety described in the Beyond Design Basis Accidents report is a goal rather than a given. Passive systems are a new feature relied upon to improve safety in these plants, particularly where it comes to cooling in the event of a reactor trip. But according to the IAEA in its publication entitled 'Use of Passive Safety Features in Nuclear Power Plant Designs and their Safety Assessment' they are not failsafe, and there is still a degree of scientific uncertainty:		
152.	More recently, however, new reactor designs are making a more extensive use of passive safety features for a variety of purposes, for instance for core cooling during transients, design basis accident or even severe accidents or for containment cooling, with the claim that passive systems are highly reliable and reduce the cost associated with the installation and maintenance of systems requiring multiple trains of equipment requiring expensive pumps, motors and other equipment as well as redundant safety class power supplies. However, <u>the weak driving forces of many of such passive safety features based for instance on natural circulation and small pressure differences pose significant challenges to the design and safety demonstration of passive system for a broad range of accident conditions and also additional loads that can be posed by internal or external hazards.</u> ¹⁰³ (emphasis added)		
153.	The potential for significant environmental impacts in a context of scientific uncertainty exists with the siting of Nuclear-1 at the KNPS site, and the assessment of the health and socio-economic consequences of a major release must be undertaken in the EIA for it to be compliant.		
154.	<u>Update 2 – Nuclear Power and South Africa's Energy Crisis</u>		

¹⁰² EIA Beyond Design Basis Accidents – dated September 2015 Page 5

¹⁰³ <https://www.iaea.org/topics/design-safety-nuclear-power-plants/passive-safety-features>

No	Comments	Stakeholder	Response
	The EIA Review report has failed to update the EIA with new information pertaining to nuclear safety that arises from South Africa's energy crisis, particularly relating to the last two years. The impact of a constrained grid, on-going load shedding, grid instability generally and the potential for a grid collapse and are developments which may have an impact on nuclear safety, both of the Nuclear 1 reactor and cumulatively with KNPS – thus undermining the contention that the potential for a nuclear accident and major release of radiation from Nuclear 1 is very low.		
155.	A national state of disaster was declared in April 2023 with the main intention to address the shortfall in electricity supply. Grid constraints and loadshedding have been a feature of the South African energy landscape since 2008 and have in the last year been increasing in intensity, with no end in sight. Loadshedding is a mechanism used by the power utility Eskom to reduce demand and stabilize the grid, where demand exceeds supply. There is no indication of when this state of affairs may be rectified if ever.		
156.	The appeals against the authorisation of Nuclear-1 are to be considered in a context where grid stability, a cardinal requirement for nuclear safety, cannot be assured. Various aspects of defence-in-depth relating to the grid-NPP interface are compromised in the current energy landscape. The siting of an additional nuclear power station at Duynefontein raises concerns as to whether two nuclear power plants can be assured of robust off-site power supply at all times. They face the prospect of a grid collapse where diesel supplies to on-site and off-site power backups might fail due to the social, transportation and communications breakdowns that will in all likelihood follow such an event. Although these impacts might be more critically focused on the KNPS, the fact that a new reactor will be located on the same site increases the potential for cumulative safety impacts that may result from a grid collapse and other deficiencies in electricity supply.		
157.	These issues are not mentioned in the EIA Review report update. The Minister is not in a position to evaluate an updated version of the Beyond Design Based Accidents report as it pertains to potential significant health and environmental impacts of the proposed activity, and the public has not been afforded an opportunity to comment on the issue, presented and evaluated by relevant experts. The EIA is therefore fatally flawed.		
158.	These new developments in our electricity grid mean that the Minister must make a decision which that has the potential to allow an activity that may significantly affect the environment. The extent of that potential impact is scientifically uncertain. According to the precautionary principle these two facts trigger the requirement that a risk averse and cautious approach be adopted by the Minister in the making of her decision. This approach would entail at the very least requiring an assessment of the health and socio- economic consequences of such an event. The EIA Review report in failing to provide this update renders the EIA out of date and fatally defective.		

No	Comments	Stakeholder	Response
159.	<p><u>Grid stability</u></p> <p>As stated by the IAEA in its guidelines for the design of electrical power systems for nuclear power plants regarding grid stability, the electrical grid should provide stable off-site power and the trip of a nuclear power plant main generator should not jeopardise the stability of the grid.¹⁰⁴</p>		
160.	<p>The following research published in a journal article from the USA is informative:</p> <p>There is no question that electrical generation facilities (nuclear and nonnuclear) are impacted by events that occur in the Grid. A cursory search of the U.S. Nuclear Regulatory Commission's (NRC's) online Licensee Event Report (LER) database Citation for the period 2000 to 2017 returned 26 reports in which a Grid disturbance was a contributing cause to a reported event at a U.S. commercial NPP. (Nuclear Power Plant)</p> <p>A similar search with the keywords "transmission line" yielded 31 reports in which issues associated with the NPP transmission lines resulted in reported events.¹⁰⁵</p>		
161.	<p>As stated in the IAEA guideline <u>AEA-TECDOC-1791</u>:</p> <p>Numerous studies have shown that a Station Blackout (SBO) event could be a relevant contributor to the total risk from NPP accidents in some countries. Although this total risk may be small, the relative importance of SBO events was established. This finding and the accumulated Diesel generator failure experience increased the concern about SBO, particularly in plants where the external grid is not very stable.</p>		
162.	<p>Published journal articles support this view with details:</p> <p>The electrical grid is the preferred power source for safe startup, operation and normal or emergency shutdown of the NPP, in addition to the necessity of the adequate capacity for exporting the produced power from the NPP (IAEA N, 2012). Hence, loss of offsite power (LOOP), (ie loss of power from the grid) is defined as the "simultaneous loss of electrical power to all safety-related buses that causes emergency power generators to start and supply power to them" (Eide et al., 2005a). LOOP stands out as the most dominant contributor to the core damage frequency</p>		

104

18 IAEA Publication Design of Electrical Power Systems for Nuclear Power Plants - Specific Safety Guide No. SSG- 34 2016 <https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1673web-53477409.pdf>105 "Are Current U.S. Nuclear Power Plants Grid Resilience Assets?" By Sherrell R. Greene - Published online: 15 March2018 - available at <https://www.tandfonline.com/doi/full/10.1080/00295450.2018.1432966>.

No	Comments	Stakeholder	Response
	of NPPs (Mohsendokht et al., 2018). ¹⁰⁶		
163.	The availability of alternating current power via the electrical grid is essential for safe operation and accident recovery of nuclear power plants (NPP). Loss of offsite power (LOOP), as an initiating event, contributes more than 26 percent to the core damage frequency (CDF) of generation II reactors. The LOOP event dramatically affects plant operations because it influences the mitigation responses by placing demands on the onsite power systems. ¹⁰⁷		
164.	<p>Grid instability may increase the frequency of reactor shutdowns, which in turn may cause damage that ultimately compromises reactor safety.</p> <p>South Africa currently operates a constrained grid with very little surplus capacity, and unplanned outages can result in electricity demand exceeding available supply as it does not currently have the requisite reserves to rely on in order sustain supply. In these circumstances Eskom has resorted to load shedding. This is explained in the paragraphs 40 to 43 of the affidavit of Andre De Ruyter then CEO of Eskom:¹⁰⁸</p> <p>40. The immediate cause of load shedding is insufficient generation capacity. Where a system generates a surplus amount of electricity, it can temporarily take various of its power stations offline in order to perform required maintenance. It can also sustain required supply during unplanned outages (or breakdowns) of power stations by relying on its reserves.</p> <p>41. Where there is little or no surplus of generation capacity, however, unplanned outages can result in electricity demand exceeding available supply, meaning that load shedding is required. Additionally, if power stations are intentionally taken offline to perform required maintenance, electricity demand can exceed generation supply. Insufficient generation capacity therefore often means either that maintenance cannot be performed or that load shedding must be implemented to enable required maintenance.</p> <p>58.1. Typically, a well-run electricity system has a reserve margin of approximately 15% which allows for preventative maintenance and unplanned shut-downs</p>		

¹⁰⁶ Assessment of the grid-related loss of offsite power to the nuclear power plants in the presence of wind farms <https://www.sciencedirect.com/science/article/abs/pii/S0149197022003821> Sh Kamyab ^a, A. Ramezani ^b, M. Nematollahi ^a, P. Henneaux ^c, P.E. Labeau ^c

¹⁰⁷ Reducing the loss of offsite power contribution in the core damage frequency of a VVER-1000 reactor by extending the house load operation period January 2018 Annals of Nuclear Energy 116:303- 313 DOI:10.1016/j.anucene.2018.01.030 Massoud Mohsendokht, Kamal Hadad, Masoud Jabary

<https://www.researchgate.net/publication/324295283> Reducing the loss of offsite power contribution in the core damage frequency of a VVER-1000 reactor by extending the house load operation period

¹⁰⁸ Affidavit of Andre Marinus de Ruyter : IN THE HIGH COURT OF SOUTH AFRICA GAUTENG DIVISION, PRETORIA CASE NUMBER: 2023/005779 In the matter between: UNITED DEMOCRATIC MOVEMENT AND 18 OTHERS Applicants and ESKOM HOLDINGS SOC LIMITED AND 7 OTHERS Respondents

No	Comments	Stakeholder	Response
	<p>without load shedding.</p> <p>58.2. In 1992, Eskom had a reserve margin of 40%.</p> <p>58.3. By 1998, this had decreased to approximately 30%.</p> <p>58.4. By 2001, it had dropped to 13.6%; by 2003, to just above 10%; and by 2008 to 5%.</p>		
165.	IAEA guidelines on nuclear safety and grid reliability state that when considering siting a new nuclear power plant the reliability of the off-site power will have to be calculated. The grid reliability data will be needed to assist the probabilistic safety assessment to be presented into the pre-construction safety report. ¹⁰⁹		
166.	<p>8.2. CALCULATION OF THE RELIABILITY OF THE OFF-SITE POWER</p> <p>The NPP developer will need to arrange the calculation of the expected reliability of off-site power. The grid reliability data will be needed to assist the probabilistic safety assessment to be presented into the pre-construction safety report....</p>		
167.	The calculation of the reliability of offsite power will need to use historic data on grid faults and events involving loss of grid connection, such as the information summarized in Section 4.2. It will also require a provisional design for the proposed connection scheme for the future NPP. The analysis should consider all the possible causes of loss of off-site power (LOOP), and it would be useful to provide information on which are the main causes of the LOOP events, to allow corrective actions to reduce risks. The causes could include faults within the NPP that affect the connection between the NPP and the grid, and the many types of faults on the grid summarized in Section 4.6 and listed in detail in Appendix I.		
168.	The non-site and site specific data provided should be analyzed and summarized; Table 1 gives an example of such a summary. The report on the reliability of offsite power needs to be consistent enough so it can be relied on for the nuclear site licence application.		
169.	Table 1 includes two types of data: the frequency of events that result in loss of off-site power (LOOP); and the probability that reactor transients will lead to LOOP. For each type of event, both duration and frequency shall be considered by dividing the different events into duration categories, as suggested in the table.		

¹⁰⁹ IAEA Nuclear Energy Series No. NG-T-3.8, Electric Grid Reliability and Interface with Nuclear Power Plants - available at https://www-pub.iaea.org/MTCD/publications/PDF/Pub1542_web.pdf

No	Comments	Stakeholder	Response
170.	<u>Potential Grid Collapse</u> Grid collapses/ blackouts happen from time to time for example in the USA in 1997 and more recently in Pakistan. Load shedding to prevent grid collapse has been a concern at Eskom since 2008. The potential for a grid collapse though previously regarded as a remote possibility in South Africa has become more real with potentially catastrophic consequences as described in the affidavit of de Ruyter. ¹¹⁰		
171.	He states that for the reasons explained by Eskom's General Manager of Transmission System Operator Ms Isabel Fick, Eskom estimates as to how long such a blackout would last is impossible to predict with any certainty. ¹¹¹		
172.	A grid collapse could compromise the supply of electricity to start up Nuclear-1 and/or the KNPS after a shutdown of the reactors, if there is a breakdown in off-site power to the reactors, which is intended to be supplied by the Ankerlig power plant. This could for example arise from a lack of access to sufficient diesel, as a result of interruptions in supply – caused for example by unrest and communications breakdowns. Recent looting and unrest in KZN have demonstrated how fragile the transportation system can become when there is widespread unrest. ¹¹² A further serious consequence of a grid collapse would be the failure of off-site and on-site backup cooling for the KNPS which could also have impact on safety at Nuclear-1. A failure to cool the KNPS plant until the grid restored after a collapse could result in a nuclear catastrophe based on similar events that took place at Fukushima when cooling backup systems failed. ¹¹³		
173.	(iii) Conclusion The assumption of very low risk of radiological release as a consequence of a catastrophic nuclear incident in the Beyond Design Basis Accident report can no longer be accepted given the significant changes in electricity stability in SA in the past year and the likelihood that this will continue for foreseeable future. This report needs to be updated with these new facts and circumstances.		

¹¹⁰ Grid collapse catastrophic for SA, De Ruyter warns in affidavit published Feb 28, 2023 - <https://www.iol.co.za/business-report/economy/grid-collapse-catastrophic-for-sa-de-ruyter-warns-in-affidavit-75ac722e-1a03-4549-9356-9e51b2d04a7c>

¹¹¹ de Ruyter affidavit paragraph 14

¹¹² <https://www.dailymaverick.co.za/article/2021-07-14-food-and-fuel-supplies-curtailed-in-kzn-as-looting-persists-billions-in-losses-reported/> Food and fuel supplies curtailed in KZN as looting persists, billions in losses reported -

By Daily Maverick Reporters and Bloomberg 14 Jul 2021

¹¹³ World Nuclear Association- "Following a major earthquake, a 15-metre tsunami disabled the power supply and cooling of three Fukushima Daiichi reactors, causing a nuclear accident beginning on 11 March 2011. All three cores largely melted in the first three days." <https://world-nuclear.org/information-library/safety-and-security/safety-of-plants/fukushima-daiichi-accident.aspx>

No	Comments	Stakeholder	Response
174.	Grid stability and reliability is a key requirement in ensuring safety of nuclear power stations. The state of crisis in the South African electricity supply sector should have been mentioned as updated information in the EIA Review report and as a factor that may increase the likelihood of a nuclear accident. Flowing from this update the EIA Review report should have recommended that the health and socio economic impacts of a catastrophic release of radiation be assessed. The failure to do so results in the EIA being out of date and non-compliant and not a basis for lawful decision making.		
175.	<p>(b) Specialist Review: Management of Radioactive Waste Impact Assessment</p> <p>The Appellants stand by the grounds of appeal relating to the radioactive active waste impact assessment articulated in their 2018 Nuclear-1 EIA Appeal (see E.6 <i>Failure to assess all potential impacts of nuclear waste</i>). While it is not the intention to repeat these grounds of appeal in these comments, it is relevant to highlight that: radioactive waste (and spent nuclear fuel in particular) is a 'significant impact' of nuclear power generation; that the EAP conceded that the impact of nuclear waste disposal had not been presented in the EIA, and that spent nuclear fuel is extremely long-lived and is an important consideration for decision-making; and that the Appellants contested the lawfulness of the justification offered for not having undertaken an environmental assessment of waste to be generated by the Nuclear-1 power station (namely referring to the NNR having strict requirements for the disposal of radioactive waste).</p>		
176.	The Nuclear-1 Management of Radioactive Waste report ¹¹⁴ (Waste Assessment) indicated that the intention is to store spent nuclear fuel (high level radioactive waste) on-site throughout the life of the nuclear power station, and to store the spent nuclear fuel on-site for a further 10 years after decommissioning if needed (i.e. for a period of 70 years). The Waste Assessment goes on to indicate that ' <i>[t]his should provide sufficient time to define and develop a long-term management strategy for the Nuclear-1 Nuclear Power Station spent fuel, e.g. a central geological disposal facility or an alternative</i> '. ¹¹⁵ The Waste Assessment indicates that internationally, spent nuclear fuel and high level radioactive waste is currently being stored awaiting the development of geological repositories, but admits that ' <i>it is generally agreed that these arrangements are interim and do not present a final solution</i> '. ¹¹⁶ The Waste Assessment states further that ' <i>more detailed regulations are needed on specific issues relevant to long-term management and geological disposal of HLW</i> ', ¹¹⁷ and that the IAEA's 2006 requirements for geological disposal should be		

¹¹⁴ Nuclear-1 FEIR, Appendix 29 – Management of Radioactive Waste (AquiSim Consulting (Pty) Ltd, 2010)..

¹¹⁵ Ibid, Executive Summary at p5.

¹¹⁶ Ibid, Executive Summary at p5.

¹¹⁷ Ibid, Executive Summary at p6

No	Comments	Stakeholder	Response
	<i>'supplemented from the experiences of several national programs that are within a decade of operating a geological repository for HLW and spent fuel, notably Finland, Sweden and the USA'.¹¹⁸</i>		
177.	<p>Instead of ensuring that the FEIR included an assessment of the impacts of high level radioactive waste, the EAP in its further responses to submissions made on behalf of the appellants during the EIA acknowledges that spent nuclear fuel is long-lived and that a negative consequence of nuclear power is that future generations will have to live with that legacy, and proceeds to make a number of assumptions regarding the final disposal of this waste stream:</p> <p><u>The no-go option has been updated to reflect on the fact that the spent fuel despite being relatively low volume will maintain high levels of radioactivity for several hundred thousand years. The principle that future generations will have to live with that legacy is an important negative consequence of nuclear power. Although there has not been a detailed assessment of nuclear waste given the fact that disposal is strictly governed by the requirements of the NNR, the assumption in the EIA is that such waste can be safely disposed despite its long-lived nature. Methods exist for reprocessing spent fuel and for deep geological disposal neither of which are yet practiced in South Africa. The EIA is accordingly based on the assumption that by the time the NPS needs to be decommissioned that South Africa will have implemented an effective nuclear waste management approach that will ensure the safe disposal of radioactive waste in perpetuity but that circumstance does not currently prevail.</u>¹¹⁹</p>		
178.	Thirteen years have passed since the Impact Assessment of the Management of Radioactive Waste (Appendix E.29 to the FEIR) was completed in 2010, and over seven have passed since the Nuclear FEIR was finalised in February 2016.		
179.	The EIA Review report Specialist Review expresses the opinion that Waste Assessment has 'addressed the radioactive waste management issues identified through the Nuclear-1 EIA process in a manner that satisfied and still satisfies the requirements of the NNR. It has presented an assessment of the waste management issues in an objective manner that is consistent with the requirements of the SSR [Site Safety Report]'. ¹²⁰ It is submitted that this opinion ignores that fact that the Waste Assessment (and Nuclear-1 FEIR) did not include an assessment of the potential impacts of spent nuclear fuel disposal. The Appellants dispute that the Waste Assessment presented an assessment of the waste management issues in an objective manner:		

¹¹⁸ Ibid, Executive Summary at p6

¹¹⁹ Gibb 19 July 2016 Response to LRC submission dated 12 May 2016, Response 28 at p17.

¹²⁰ EIA Review report, p130.

No	Comments	Stakeholder	Response
	while the Waste Assessment claims that the intention was to present an assessment of the waste management issues in an objective manner consistent with the Safety Analysis Report process, its lack of objectivity is revealed by the statement that this was done <i>'in order to facilitate regulatory approval and assure stakeholders of the adequate safety of the waste management procedures'</i> . ¹²¹ A specialist study in an EIA process cannot be said to be objective where it openly indicates that the assessment conducted was intended to facilitate regulatory approval. The EIA Review report Specialist Review also reveals a lack of objectivity by expressing its opinion on the self-claimed objectivity of the waste assessment, and oversteps the remit of the Minister's directive – going beyond identifying out of date information and supplementing the Waste Assessment with more up to date information.		
180.	It is submitted that, given the passage of time since the Waste Assessment was conducted (13 years) and the Nuclear-1 FEIR finalised (over seven years), the following aspects of the Waste Assessment could have been updated (with appropriate public consultation) to ensure that adequate and updated information is put before the appeal decision-maker:		
181.	- Firstly, an update on progress (or the lack of progress) made internationally to establish and operate geological repositories for high-level radioactive waste and spent nuclear fuel could have (and in the Appellants' view, should have) been provided;		
182.	- Secondly, an update on progress (or the lack progress) made in South Africa to establish and operate geological repositories for high-level radioactive waste and spent nuclear fuel (or what the anticipated costs of establishing such a repository are likely to be) could have (and in the Appellants' view, should have) been provided;		
183.	- Thirdly, updated information on progress made (or the lack of progress made) in establishing a Radioactive Waste Management Fund could have (and in the Appellants' view, should have) been presented in the EIA Review report Specialist Review. In this regard, it is relevant to note that the Waste Assessment makes reference to South Africa's National Radioactive Waste Management Policy and Strategy (2005), ¹²² which policy indicated that <i>'Government shall within five years following approval of this policy, establish a Radioactive Waste Management Fund (RWMF) by statute'</i> ; ¹²³ and		
184.	- Fourthly, updated information on progress made (or the lack of progress made) in applying		

¹²¹ Nuclear-1 FEIR, Appendix 29, p3

¹²² Ibid, p77.

¹²³ Radioactive Waste Management Policy and Strategy for the Republic of South Africa 2005 (nrwidi.org.za) , at p22.

No	Comments	Stakeholder	Response
	for a nuclear installation license for the Nuclear-1 power station could have been provided. This would in turn have provided an opportunity for Eskom to update its FEIR and specialist reports by inputting relevant information relating to the management and final disposal of spent nuclear fuel into its FEIR and specialist reports, as well as other safety-related information that – in the Appellants view – has been irregularly and unlawfully excluded from the Nuclear-1 EIA process.		
185.	It is also relevant that the EIA Review report Specialist Review notes that the Waste Assessment refers to the need for detailed regulations on specific issues relevant to long-term management of spent fuel and geological disposal of HLW, <i>'with no further developments in this regard available at the time of the review'</i> . ¹²⁴ This lack of progress in thirteen years is a relevant consideration that should be taken into account by the appeal decision-maker.		
186.	The Appellants stand by the grounds of appeal set out in their 2018 Nuclear-1 EIA Appeal. The Waste Assessment and Nuclear-1 FEIR failed to undertake an environmental impact assessment of the impacts associated with the final disposal of spent nuclear, despite radioactive waste being identified as a 'significant impact' as defined in the 2006 EIA Regulations. Attempting to justify this omission by deferring this aspect to a future NNR nuclear installation licensing process fails to remedy this fatal flaw in the EIA. Authorising a new nuclear power plant (with up to four nuclear reactors) will inevitably result in the production of more spent nuclear fuel, with the intention being to store this high-level radioactive waste on-site for up to 70 years (at best an interim arrangement that does not present a final solution to the final disposal of such waste). No solution for the final disposal of the spent nuclear fuel that will accumulate over the lifespan of the proposed Nuclear-1 power plant has been presented, imposing an unjustifiable burden on future generations and triggering the requirement for the decision-maker to apply a risk averse and cautionary approach. These appeal grounds have not been addressed in the EIA Review report and Specialist Review.		
187.	Despite the passage of thirteen years since the Waste Assessment was concluded and over seven years since the FEIR was finalised, the EIA Review report and Specialist Review fails to identify any information that is out of date, and fails to take advantage of the opportunity to supplement the FEIR and related reports with updated information. No updated information is presented on progress (or the lack of progress): made internationally to establish and operate geological repositories for high-level radioactive waste and spent nuclear fuel; made in South Africa to establish and operate geological repositories for high-level radioactive waste and spent nuclear fuel (or what the anticipated costs of establishing such a repository are likely to be); in establishing a Radioactive Waste Management Fund; and in applying for a nuclear installation license for the		

¹²⁴ EIA Review report, p129.

No	Comments	Stakeholder	Response
	Nuclear-1 power station.		
188.	In light of the above, the Appellants stand by their appeal submissions that the FEIR and specialist reports were - and remain - fatally flawed, and submit further that the FEIR and Waste Assessment is outdated and is not suitable for decision-making.		
189.	<p>3. CONCLUDING REMARKS</p> <p>While the Minister's 8 August 2022 directive afforded Eskom an opportunity to supplement the EIA reports that were filed in support of the Nuclear-1 application with more up to date information, Eskom has failed to do so. Instead, an EIA Review report (inclusive of the Specialist Reviews) has been released for public comment with a scope of work that goes beyond the remit of the Minister's directive, and which is aimed at determining the risks of not updating the EIA reports and if the risks need to be mitigated. The EIA Review report misconstrues the EIA Appeal process with an EIA process, and conflates a review of an EIA process with a gap analysis. As a consequence, the EIA Review report inappropriately and irregularly expresses various subjective views and opinions on matters that are under Appeal, and also inappropriately makes recommendations to the Minister on her adjudication of the Appeal. And while the specialist reviews identify information that is out of date (including baseline information), the methodology applied in each instance inevitably leads to each specialist reviewer not recommending any updates to the study. This invites an inference that the EIA Review report (inclusive of the thirty one Specialist Reviews) was contrived to avoid supplementing the EIA Reports filed in support of the Nuclear-1 application with more up to date information. It beggars belief that all of the EIA Reports, most of which were concluded during or about 2015 (and which in many instances were based on baseline information dating to 2010 and before), do not require updating.</p>		<p>The Minister will consider this comment.</p> <p>The views expressed in the report are objective insofar as SRK and specialist reviewers are independent and were not appointed to obtain authorisation.</p> <p>A "gap analysis" (referred to in the Review Report as "in effect a gap analysis") may not be the most precise term for the review(s) that were undertaken. In part it was used for the benefit of public stakeholders. The report has been appropriately reworded.</p>
190.	The EIA Review report fails to acknowledge significant changes in the landscape since the FEIR was finalised in 2016, and fails to provide relevant and up-to-date information on such changes. These include (among others) significant negative changes in South Africa's economy as well as Eskom's financial situation (which are relevant to the issue of affordability of expensive Generation III nuclear reactors), significant demographic changes around the Duynefontein site, significant increases in loadshedding and related grid instability, as well as the intended long-term operation of the Koeberg nuclear power station on the same site. As a consequences, none of these significant changes have been assessed, and these highly relevant considerations have not been put before the Appeal decision- maker. The Appellants' submit that the failure to do so is fatal to the EIA.		The EIA Review Report very clearly anticipates and acknowledges that conditions have changed since the FEIR was finalised in 2016, and considers whether the FEIR is fit for purpose in 2023. Recommendations are provided where appropriate.
191.	In light of the above, the Appellants submit that the 2017 Nuclear-1 environmental authorisation should be overturned.		Noted.

No	Comments	Stakeholder	Response
D. CCIAR			
192.	19. The climate change projections used in the report should be reviewed against the latest information prepared for the Western Cape Government. It is suggested that the following report: <i>SmartAgri: Updated Climate Change Trends and Projections for the Western Cape (2022)</i> ¹²⁵ , which was completed for the Western Cape Department of Agriculture by the Climate Systems Analysis Group at the University of Cape Town, should be referred to, to determine if the most up-to-date climate science and projections have been utilised for this specialist study	DEA&DP; 23 August 2023	Promethium: It is noted that we have used a number of the same datasets as the <i>SmartAgri</i> report, namely the ERA5 and CMIP6 datasets, with the latter being the most up-to-date with respect to climate projections. We did not make use of CORDEX downscaled data in the report. Largely the trends identified in the <i>SmartAgri</i> report are similar or near-identical to those reported in the climate change report for this project. However, the scale at which the results in the <i>SmartAgri</i> report are presented, namely at district (SmartAgri zones) level, at low resolution, make more thorough comparisons with the climate change study, which was done at a local, relatively high resolution, challenging. That said, we have updated aspects in the report to reflect any relevant comparisons and that the <i>SmartAgri</i> report has subsequently been referenced as part of the study.
193.	20. When comparing emissions to other forms of electricity generation, one should not only consider coal-fired powerplants. Over the next 20 – 40 years, renewables and battery energy storage systems will be a form of baseload and peak electricity. Using coal power as comparison is somewhat outdated as renewable energy alternatives need better and actual representation in this report.		Promethium: The CCIA report references coal fired power plants as it is the current supplier of baseload energy to the South African grid. One recent IMF report states: “ <i>Higher penetration of renewables has significant benefits for decarbonization, but it is also a source of uncertainty on the intermittent and volatile production of renewable assets that could cause supply-demand imbalances, instability in the electricity grid, and more volatile pricing behaviour... Therefore, as policymakers in Europe scramble to respond the energy crisis and shield consumers against higher energy prices, it is critical to better understand how renewable energy affects electricity prices.</i> ” ¹²⁶ Renewable energy is not a viable option to compare with for baseload power supply. The fact that renewable energy is becoming cheaper than grid average prices does not mean that the grid can accept the energy from intermittent sources. This has been borne out in the latest REIPPP round where many projects were not granted preferred bidder status due to the inability of the grid to accept the energy. See, for example, the press release by the DMRE: “ <i>Following the confirmation from Eskom during the evaluation that no grid capacity was available to connect any</i>

¹²⁵ [SmartAgri-Climate-Change.pdf \(elsenburg.com\)](#)

¹²⁶ IMF, Chasing the Sun and Catching the Wind: Energy Transition and Electricity Prices in Europe, November 2022

No	Comments	Stakeholder	Response
			<i>proposed Onshore Wind projects in these supply areas, the Department could unfortunately not award any of the wind projects up to the allocated 3 200 MW under this bid window.”¹²⁷</i>
194.	21. Figure 6, page 9 of the CCIA works within a context that greenhouse gas (“GHG”) emissions have no local impact and can therefore not be managed at a local level. The specialist study has therefore not considered the cumulative impacts of any potential additional power plants underway or planned within proximity of the site. Although it is clearly understood that GHG have a global impact, it is irresponsible not to consider any development that may generate emissions in the context of the cumulative impact that it may have on a site and/or the surrounding area.		Promethium: Consideration of power plants in the vicinity, for example, gas turbine projects in Saldanha, has no bearing on the climate change impact of the proposed nuclear power plant. Even though such power plants will have higher GHG emissions than the proposed nuclear plant, it will have no impact on the climate change risks in the region. This is explained in detail in the report.
195.	22. Citing “uncertainties” for conditional inclusion of the decommissioning phase in the lifecycle assessment is not sufficient. The current political climate and sensitivity surrounding nuclear requires transparent reporting of every project phase, inclusive of nuclear waste disposal, even, and especially, in the light of uncertainty and variability.		Promethium: It is important to note that there is no provision for the final decommissioning of nuclear power stations in SA. See Long-Term Operation of Koeberg Nuclear Power Station (Eskom, Iiso labantu News, Mid-Month - April 2023). Also, note that Vaalputs, South Africa’s only radioactive waste disposal site, is not licensed to accept spent fuel from Koeberg (see South African National Report on the Compliance to Obligations Under the Joint Convention on Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management,) Decommissioning was considered in the CCIA report. The report states that “ <i>The decommissioning phase will have minimal energy requirements, and therefore GHG emissions.</i> ”
196.	23. Although the CCIA outlines the proposal’s vulnerability to the effects of climate change and measures to safeguard/mitigate such effects, little to no information is provided in terms of water resilience. It is further noted that since the initial approval of the NPS (which is also water dependent in terms of its process requirements), the Western Cape has experienced periods of extreme drought. Hence, it remains essential that elements of water resilience be included.		Promethium: It is our understanding via the FEIR that operational water requirements will primarily be met through the use of a desalination plant which will be developed for the component cooling. The use of municipal and groundwater resources were noted as being unfeasible in the long-term. It is further noted that the freshwater supply specialist report (E8) recommended desalination of sea water as the most assured water supply in terms of climate change impacts. If the majority of water requirements are met through the extraction of sea water and desalination, the water resilience of the NPS will be relatively high in that it will have very low dependence on surface and groundwater resources which are likely to come under strain both due to increased

¹²⁷ DMRE Media Statement 8 December 2022

No	Comments	Stakeholder	Response
			demand in the region and likely continuation of extremely high water stress and increased seasonal variability of water supply (see section 4.2.7).
197.	24. The CCIA focuses largely on the aspect of safeguarding against the effects of climate change, as opposed to (re)addressing the project's elements to reduce its impact/contribution towards climate change. Noting that a vendor has not yet been assigned, it may have been advantageous if the study also focused on the NPS's impact to reduce climate change, by e.g., technical and design measures that can be implemented to reduce the power plant's emissions during the operational phase, as well as its ecological footprint and demand for resources.		Promethium: Section 4.1 of the report deals with the project's contribution to climate change through a greenhouse gas inventory including direct emissions during both the construction and operational phases, and the indirect and cumulative emissions during the construction phase (in detail) and operational phase (at a high level). An impact assessment (section 4.1.2) details the impact of the direct and indirect and cumulative emissions. In terms of measures to reduce the impact of the project on climate change, general, non-binding recommendations were made in section 5.1.
198.	25. The applicant is reminded of its " <i>general duty of care towards the environment</i> " as prescribed in section 28 of the NEMA, 1998 which states that " <i>Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment</i> ", read together with section 58 of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) which refers to one's duty to avoid causing adverse effects on the coastal environment.		Noted.
199.	26. The Department reserves the right to revise initial comments and request further information based on any or new information received.		Noted.