

**APPLICATION FOR POSTPONEMENT OF THE MINIMUM
EMISSION STANDARDS (MES) COMPLIANCE TIMEFRAMES FOR
ESKOM'S COAL AND LIQUID FUEL-FIRED POWER STATIONS IN
THE MPUMALANGA HIGHVELD, VAAL TRIANGLE AND
CAPE REGION**

ISSUES AND RESPONSE REPORT

VERSION 2

**Appendix 13 to the Public Participation Process Report
(Standalone Document to PPP Report)**

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PROJECT INFORMATION

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This Issues and Response Report has been prepared by Naledzi Environmental Consultants (Pty) Ltd in support of Eskom's Application for Postponement of the MES compliance timeframes for its coal and liquid fuel fired power stations located in the Mpumalanga Highveld, Vaal Triangle and Cape Region.

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INTRODUCTION

This Issues and Response Report (IRR) presents comments received during the course of the entire public participation process from Interested and Affected Parties (I&APs), stakeholders and organs of state. This includes the following public engagements:

- engagements with provincial and district licensing authorities from 30 July to 1 August 2018;
- public registration period on the Background Information Document (BID) from 13 August to 11 September 2018;
- A series of public meetings that took place as part of the 1st round of public engagements from 20 to 31 August 2018;
- Public review and comment period on the respective power station draft Application Documents from 19 November 2019 to 4 February 2019;
- A series of public meetings that took place as part of the 2nd round of public engagements from 20 to 29 November 2019.

All the comments received during the project announcement period during the 1st round of public engagement are appended as **Annexure A**. Comments received during the public review period of the draft application documentation in the 2nd round of engagement is appended as **Annexure B** to this IRR.

The IRR provides a summary of the issues received and offers a response to the issues raised. As indicated, the public was consulted in two phases during the application for postponement of the MES for Eskom's coal and liquid fuel fired power stations and thus the IRR consists of versions. These versions include:

- Version 1 – IRR appended to the draft application documentation.
- **Version 2** – IRR appended to the finalised application documentation which is submitted to National Air Quality Officer for decision making.

Version 1 of the IRR was appended to the draft Applications made available for public review and comment from 19 November until 4 February 2019.

All the comments received during the 2nd round of public engagements have now been consolidated and incorporated into Version 2 of the IRR which is appended to the finalised application documentation submitted to the National Air Quality Officer on 15 March 2019 for decision making.

As a general point it is noted that some of the more general issues raised by some parties are explicitly addressed in the Background Information Document (BID) provided to I&AP's for the project and rather than fully repeat that document here in some cases the response refers to the BID. Further some of the issues raised in the first and second round of consultation were explicitly addressed in the reports produced for the second round of the public participation process viz the Atmospheric Impact Report, the Cost Benefit Analysis and the Postponement Motivation and as such the reader is referred to these reports for detail.

On 26 October 2018 the 2017 National Framework for Air Quality Management (NAQF) was formally published. Version 1 of the IRR was prepared based on the applicable legislation and guidelines prior to 26 October 2018 as it was under these requirements that the public

participation was undertaken and practically the report was 99% complete prior to 26 October 2018. During January 2019 NEC has reviewed the recently published 2017 NAQF and the need to update the IRR. Fundamentally there is no need to update the IRR based on the applicable legislation. The IRR has thus been updated to Version 2 by incorporating all the issues and comments received from the public, stakeholders and organs of state during the 2nd round of public engagements until 4 February 2019.

TABLE OF CONTENTS

1. APPLICATION PROCESS	1
2. OTHER SEPARATE POSTPONEMENT APPLICATIONS PURSUED FOR SELECTIVE POWER STATIONS	51
3. MOTIVATION / JUSTIFICATION FOR POSTPONEMENT APPLICATION.....	54
4. BACKGROUND INFORMATION DOCUMENT (BID)	62
5. PUBLIC PARTICIPATION PROCESS (ppp)	71
6. REASON FOR DELAY IN MEETING THE MES AND POSTPONED TIMEFRAMES	85
7. POWER STATION OPERATIONS, DESIGN, rETROFITS,technology types and emission reduction plan.....	100
8. HEALTH IMPLICATIONS / HUMAN HEALTH RISK ANALYSIS.....	137
9. COST BENEFIT ANALYSIS (CBA)	157
10. AIR QUALITY OFFSETS	189
11. HIGHVELD PRIORITY AREA (HPA) & VAAL TRIANGLE Airshed PRIORITY AREA (VTAPA)	206
12. COMPLIANCE AND COMMISSIONING	231
13. ATMOSPHEIC IMPACT ASSESSMENT AND ATMOSPHERIC DISPERSION MODELLING.....	262
14. ECONOMICS / COMPLIANCE COSTS / SOCIAL INVESTMENT by eskom	281
16. ALTERNATIVE TECHNOLOGY / RENEWABLE ENERGY	293
17. DECOMMISSING OF POWER STATIONS AND DECOMMISSIONING SCHEDULE	300
18. EMISSIONS / FUGITIVE EMISSIONS	320
19. APPLICATION FOR ALTERNATIVE LIMITS UNTIL DECOMMISSIONING	334
20. IMPACT ON AGRICULTURAL SECTOR	338
21. INFORMATION REQUESTS FROM I&APS	341

LIST OF ACRONYMS

MES	Minimum Emission Standards
NEM: AQA	National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
AQA	Air Quality Act
NAAQS	National Ambient Air Quality Standards
AQMP	Air Quality Management Plan
HPA AQMP	Highveld Priority Area Air Quality Management Plan
VTAPA AQMP	Vaal Triangle Air Shed Priority Area Air Quality Management Plan
‘Framework’	Framework for Air Quality Management
NEM	National Environmental Management
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)
EIA	Environmental Impact Regulations
PM	Particulate Matter
PM₁₀	Particulate Matter 10 micrometers or less in diameter
PM_{2.5}	Particulate Matter 2.5 micrometers or less in diameter/fine particles
SO₂	Sulphur Dioxide
NO_x	Oxides of nitrogen
NO₂	Nitrogen Dioxide
GHG	Greenhouse gas
AEL	Atmospheric Emission License
AIA	Atmospheric Impact Assessment
AIR	Atmospheric Impact Report
ADM	Air Dispersion Model
CBA	Cost Benefit Analysis
HRA	Health Risk Analysis
PPP	Public Participation Process
PPP Report	Public Participation Process Report
BID	Background Information Document
IRR	Issues and Response Report
IRP	Integrated Resource Plan
ERP	Emission Reduction Plan
HPA	Highveld Priority Area
VTAPA	Vaal Triangle Airshed Priority Area
WBPA	Waterberg-Bonjanala Priority Area
WC	Western Cape
EC	Eastern Cape
I&AP	Interested and Affected Party
GM	General Manager
PPO	Public Participation Officer

LIST OF ACRONYMS continue

DEA	Department of Environmental Affairs
NAQO	National Air Quality Officer
NEC	Naledzi Environmental Consultants (Pty) Ltd
Eskom	Eskom Holding SOC Ltd
NERSA	National Energy Regulator South Africa
NDM	Nkangala District Municipality
STLM	Steve Tshwete Local Municipality
ELM	Emalahleni Local Municipality
EC DEDEAT	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
WC DEADP	Western Cape Department of Environmental Affairs and Development Planning
CoCT	City of Cape Town
BCMM	Buffalo City Metropolitan Municipality
HPA ITT	Highveld Priority Area Information Task Team
VTAPA ITT	Vaal Triangle Airshed Priority Area Information Task Team
LAC	Life After Coal Campaign
CER	Centre of Environmental Rights
gW	Groundwork
ELA	Earthlife Africa Johannesburg
HEJN	Highveld Environmental Justice Alliance Network
VEJA	Vaal Environmental Justice Alliance
AIDC	Alternative Information Development Centre
WHO	World Health Organisation
SA	South Africa
EU	European Union
SHEQ	Safety, Health, Environment and Quality
ESP	Electrostatic Precipitators
FFP	Fabric Filter Plant
FGC	Flue Gas Conditioning
FGD	Flue Gas Desulphurisation
LNB	Low Nox Burner
CFB-FGD	Circulating Fluidised Bed-Flue Gas Desulphurisation to reduce SO ₂
GBD	Global Burden of Disease
GEMM	Global Exposure Mortality Models
PV	Photovoltaic (Solar)
LCOE	Levelised Cost of Energy
JET	Just Energy Transition

Table 1: Issues and Responses recorded from written submissions, authority engagements and public meetings during the course of the entire public participation process.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
1. APPLICATION PROCESS				
1.1	I object to the postponement application as it flies in the face of agreements that South Africa (SA) is signatory to.	Michele/Mike Rivarola Eastern Cape Region 10 August 2018 Via email	All	SA has signed agreements on the carbon dioxide (CO ₂) emission limits viz the Paris Accord. It should be noted that the Paris Accord deals with climate change issues and the postponements applied for are for pollutants other than CO ₂ . With the current IRP Eskom will remain within the limits it agreed upon in the Paris Accord. The switching off of the older stations, as stated in the IRP, will ensure that Eskom stays with the Paris Accord. (see 15.1 for more detail)
1.2	Is there nothing new to this application since the 2014 postponement application?	Samson Mokoena VEJA Sharpeville Public Meeting 20 August 2018	All	NEC is conducting the same process as followed by Eskom in 2014. This is a defined process in terms of the NEM:AQA and Listed Activity Regulations. Information is updated including but not limited to the following: more data is available from air quality monitoring stations to conduct the AIA since these have been operational for a longer period as opposed to the 2014 application. There is more certainty regarding the decommissioning of power stations at 50 years and some units have already been shut down. Grootvlei power station completed the FFP retrofit and this application includes a Cost Benefit Analysis. The crux is this process has access to much more up to date and current information verses the 2014 process, which will assist NEC in its current assessment.
1.3	What is Eskom's way forward if the NAQO does not grant the requested postponements?	Rob Jones Sedibeng District Municipality Midvaal Ward 5 Councillor 20 August 2018 Vereeniging Public Meeting	Lethabo	It is envisaged that the NAQO would be reasonable in the postponement decision. It takes time to implement retrofits. To implement retrofits for SO ₂ , it takes 5 years to plan and procure for the project and another 5 years to implement; this equals a 10 year period to implement. Based on Eskom's cost estimation it will cost approximately R 300 billion to implement all the retrofits across its fleet. This is a significant capital expenditure which will result in a significant electricity tariff increase. If the postponements are rejected and not time provided to retrofit plant, this

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				will leave Eskom and South Africa in a difficult position in terms of the provision of electricity. Further to this Eskom requires a reasonable tariff increase to cover the costs of the proposed emission reduction plan. The costs for the proposed plan has been included into the latest tariff application to NERSA, if the authorities require additional retrofits which will increase the cost, this will need to be included into the next tariff application.
1.4	Will Eskom encounter complications if it does not apply for postponement?	Community Member Siyathemba Public Meeting, Balfour 21 August 2018	Grootvlei	Eskom as a responsible company aims to comply with its AEL. Yes Eskom will encounter complications in that it would require a higher tariff and would also be required to raise additional funding to cover the cost of retrofit projects. Since it takes some time to implement such significant projects Eskom requires that the authorities grant appropriate timelines to implement.
1.5	Is Grootvlei power station affected by this postponement application?	Philemon Tshabalala Thabakgoadi Public Meeting, Grootvlei 21 August 2018	Grootvlei	It was originally planned to include Grootvlei in the present postponement application but given that the station has different compliance time frames than the other Power Station Eskom has decided to exclude Grootvlei from this postponement application. Several units at Grootvlei have been shut down, these could be returned if required but would require significant funding and at least a year to return to service. In the future Eskom will have to make more specific commitments for decommissioning, these decisions will determine if Grootvlei requires another postponement.
1.6	Who is the decision maker for the postponement application? Does government decide whether to grant the postponement application or does the community decide?	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	<p>The NAQO of the DEA must reach a decision on the postponement application she does this in consultation with the provincial/local government licensing departments. It's NEC's responsibility to submit the public views and concerns regarding the application to the NAQO to assist her in making an informed decision.</p> <p>The PPP/community participation is very important in the MES postponement application. NEC will capture all comments and issues from the public throughout the public engagement and submit it to the NAQO.</p>

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1.7	The AIDC endorses Project 90 by 2030 and the CeR's submission to reject Eskom's plea to postpone its compliance with the AQA MES.	Shumirai Blessing Mudavanhu AIDC, Cape Region 11 September 2018 Written comments	All	Noted
1.8	We represent the Edgemead Community directly affected by the Acacia power plant. We wish to have the opportunity to give input into any decision related to the application for postponement in relation to Acacia power plant specifically.	Stephan Fourie Edgemead Residents Association, Cape Town 12 September 2018 Comments and Response Form	Acacia	Eskom decided not to pursue an application for postponement for Acacia in October 2018. Opportunity for public comments will be made for any future application. Update February 2019 – Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.
1.9	Greenpeace Africa strongly opposes Eskom's application for further postponements (which will amount to an exemption) from complying with SA's relatively weak MES. We believe that it is in the public interest that our constitutional right to a healthy environment is realised, and granting Eskom's application will put these rights at risk, and is illegal simply in terms of the law.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	This is noted. Section 6 of the MES makes provision for postponement of the compliance timeframe. It is in line with this provision that Eskom is submitting an application for postponement and following the required application process. It is therefore not considered illegal and Eskom will continue with the application process.
1.10	In relation to Eskom's previous applications to postpone compliance with the MES – in respect of its Tutuka power station (2018), located in the HPA, the	Timothy Lloyd Attorney – Pollution and Climate Change	All	Submission made in terms of the Tutuka and Medupi and Matimba postponement application will be addressed through those legal processes. Section 6 of the MES makes provision for postponement of the compliance timeframe. It is in line with this provision that Eskom is

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	<p>Medupi and Matimba power stations (2017), located in the Waterberg-Bojanala Priority Area (WBPA), and the wide-ranging postponements for multiple coal-fired stations (all but Kusile) sought in 2013 – we submitted extensive comments and objections pertaining to:</p> <ul style="list-style-type: none"> ▪ Legal requirements of MES postponement applications ▪ Why application sought by Eskom do not comply with those legal requirements ▪ The illegality of the rolling postponement applications brought by Eskom <p>We object to the further postponement application for the multiple power stations and maintain that Eskom should not be permitted to apply for any postponements of MES compliance, as it has not met the prescribed conditions for a postponement application.</p>	LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment		<p>submitting an application for postponement and following the required application process. Naledzi believes the process it is following meets the legal requirements for a postponement.</p> <p>Your comments are reflected in this report which is provided to the decision making body DEA for consideration.</p>
1.11	DEA proposes amendments to the Section 21 “List of Activities” which will specify no further postponements of existing plant MES are permissible; only one postponement of ‘new plant’ MES is permissible including that industrial	Timothy Lloyd Attorney – Pollution & Climate Change LAC joint campaign by CeR,	All	During the preparation, print and release of the IRR Version 1 the proposed amendments had not been promulgated and as such Eskom stance was to submit its application in terms of the then legal framework. If the legal framework changes Eskom would revise its approach if necessary.

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	<p>facilities, which provide clear schedule for decommissioning by 2030, will be permitted to apply, by 31 March 2019 for once off suspension of compliance timeframes with new plant standards.</p> <p>Current postponements sought by Eskom would be rendered illegal, once the amendments are promulgated. It is not clear what Eskom plans to do in relation to the current postponement application when these amendments come into force.</p>	ELA, HEJN, VEJA 11 September 2018 Official Comment		<p>The amendments to the listed activities and associated minimum emission standards in terms of Section 21 of the NEM: AQA (GN 1207, 31 October 2018) and the 2017 National Framework for Air Quality Management (2017 NFAQM) in SA (GN1144, 26 October 2018) come into effect on 31 October 2018.</p> <p>Based on the amendments to Section 21 Eskom is lodging applications to the NAQO for suspensions and alternative emission limits and postponement for some of the power stations emission limits contained within the MES compliance timeframes. The applications to be submitted to the NAQO and or proposed requested alternative limits are detailed under Section 4 of the Summary Motivation Document.</p> <p>As per the Amendments to the listed activities and associated minimum emissions standards identified in terms of section 21 of the NEM: AQA, there are 3 options available to Eskom to support compliance with the MES, these include:</p> <p>OPTION 1 (paragraph 11A of GN 1207) - Apply for a postponement from only the MES new plant standards until 2025</p> <p>OPTION 2 (paragraph 11B of GN 1207) – Apply for suspension from the new plant standards until decommissioning and Eskom must comply with the existing plant standards</p> <p>OPTION 3 (paragraph 12A of GN 1207) – Apply for alternative emission limit to the new plant standards with assurance of compliance to the national ambient air quality standards in the area or demonstration of no increased health risk where there is no increase in the ambient air quality standards.</p> <p>As such, the applications that Eskom is submitting, or the alternative</p>

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				<p>emission limits that are requested during normal operating conditions, are summarised in Table 5 of the Summary Motivation Document.</p> <p>Eskom requests that the proposed alternative limits only apply during normal working conditions, and not during start-up or shut-down periods.</p>
1.12	What is the application for postponement all about?	Zenezi Emalahleni Public Meeting 21 November 2018	All	<p>Legislation controls the concentrations of pollutants NO_x, SO₂ and PM emitted at Eskom's power station stacks through the MES. The MES provide the maximum allowable emissions that may be emitted by certain industries.</p> <p>Eskom's application for postponement is requesting to emit alternative emission levels than allowable in the MES having taken into consideration the independent studies and Eskom information which weigh up various issues such as the negative impact on health, the cost of compliance, the planned decommissioning of power stations and socio-economic considerations.</p>
1.13	<p>I have not been able to track Annexure C: Health related Cost Benefit Analysis on the NEC website.</p> <p>One of the key documents in terms of the legislation that must accompany the suspension application is a detailed decommissioning plan for the individual power stations. Are these available on the Naledzi website?</p>	Timothy Loyd Attorney – Pollution & Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	All	<p>Annexure C, the Health impact focused Cost Benefit Analysis Report is available for download from the Naledzi website from 26 November 2018.</p> <p>The ERP which includes the decommissioning plan is also available on the Naledzi website.</p> <p>The decommissioning dates for power stations are indicated in the individual AIRs and Motivation Documents. Eskom has also presented the current ERP at the Midrand Public Meeting which includes the decommissioning dates for the power stations. The schedule shows power stations will be decommissioned from 2025 to 2030.</p>
1.14	Has the NAQO stated how long it will take to reach a decision on the	Melita Steele Greenpeace Africa	All	The legislation does not specify a specific timeframe to review and reach a decision on the application. However the decision would need to be

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	application?	Senior Climate and Energy Campaign Manager 23 November 2018 Midrand Public Meeting		reached before 31 March 2020 and before the AEL's for power stations expire. The application for postponement will also include a variation request to which the NAQO need to agree on the requested alternative limits. The Variation Requests have been uploaded onto the Naledzi website.
1.15	<p>It is important for the public to know what the implication of the postponement application will be on the ambient air quality.</p> <p>The health impact verses the economic implications of the increase in electricity tariff are difficult to balance. None of the chosen comes without a consequence.</p>	Dalene Venter Three Rivers Councillor 26 November 2018 Vereeniging Public Meeting	Lethabo	<p>Eskom's plan is to reduce PM emissions at Lethabo power station in the next 5 years to meet the new plant MES but request for an alternative emission limit for SO₂. The existing plant MES for SO₂ is 3500mg/Nm³ the new plant limit is 1100mg/Nm³. Eskom will request an alternative limit of 2600mg/Nm³.</p> <p>The SO₂ concentration at ground level in the Vaal does not exceed the NAAQS. Even if Eskom is asking for leniency on the SO₂ stack limit it will not exceed the NAAQS at ground level which government accepts as a tolerable exposure.</p> <p>Lethabo power station will close in 2040. It takes 12 years to plan and implement the FGD Plant which reduces SO₂ emissions. The FGD technology is extremely expensive. This means that Eskom has only 8 years to run the power station on the new FGD technology which is not financially viable.</p> <p>The status quo of the ambient air quality is the worst case scenario in the Mpumalanga Highveld. Eskom will close 5 power stations which will significantly improve the air quality by 2035.</p> <p>Your question is addressed in full in the postponement application for Lethabo power station and in the Eskom summary motivation report.</p>

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1.16	Who is determining acceptable air quality?	Coenie Dafel Amersfoort Agricultural Union 29 November 2018 Amersfoort Public Meeting	Majuba	The NAAQS were published by government but are derived through a consultative process. The NAAQS are generally in line with international standards. It's only the daily SO ₂ limit which is set at 125mg/m ³ similar to the USA, which the World Health Organization (WHO) states should be 20mg/m ³ . The AIR, which forms part of the postponement application assesses if the ambient air quality surrounding the power stations comply or exceeds the NAAQS.
1.17	We as agricultural community cannot support or endorse the application from Eskom for the postponement of the minimum emission standards for Majuba power station. Our concerns were raised and motivated at the Amersfoort Public Meeting and we also take note that it is included in the minutes of the meeting.	Coenie Dafel Amersfoort District Agricultural Union 4 February 2019	Majuba	This is noted. Eskom believes it is within the legislative framework for DEA to issue a postponement decision. The application will be assessed by DEA which will make the decision. Majuba's ash dam extension project has been approved. A binding polymer will now be installed to cover the ash dam. Top soiling will be completed by April 2019. Update February – top soiling is ongoing and the full ash dump rehabilitation project will be completed by the end of September 2019.
1.18	Greenpeace Africa was an I&AP for Eskom's original applications for postponement from complying with the MES in 2013/2014, and we remain an I&AP for Eskom's revised request for postponements. We strongly opposed the decision to allow Eskom to postpone complying with the MES in 2015, and we believe that the grounds for opposing Eskom's updated MES application are even stronger in 2019. We believe that	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 04 February 2019 Official Comment	All	Noted. Eskom believes a decision to approve the postponement application is in line with the Constitution and NEMA principles as the authority must consider all appropriate and relevant considerations, including the State's responsibility to respect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and, in particular the basic needs of categories of persons disadvantaged by unfair discrimination. Indeed any decision taken must be environmentally, socially and economically sustainable.

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	these revised applications for postponements and /or suspensions from Eskom equate to rolling postponements, and in the interests of realising the constitutional right to an environment that is not harmful to health or well-being, absolutely no further postponements should be given to Eskom (or indeed, any other entity.			It is Eskom's belief that considering all the available information approval of the postponement applications is consistent with the objectives of NEMA and the Constitution.
1.19	<p>Based on the following legal framework the NAQO must refuse to consider Eskom's MES applications on the basis that they don't meet with the mandatory legal requirements for consideration:¹</p> <p>Eskom's</p> <ol style="list-style-type: none"> 1. 'Constitutional Duties'; and 2. its duty in terms of NEMA to take reasonable measure to prevent air pollution beyond complying with the MES since these are minimum standards and if there are reasonable measures which Eskom could take to reduce their emission still further, they are obligated by law to take 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 04 February 2019 Official Comment</p>	All	<p>As indicated in 1.18 above it is Eskom's belief that the Eskom application is in line with the Constitutional and NEMA objectives as indicated in 1.18 above and as such may be considered and approved by the NAQO.</p> <p>Further while noting the broad ranging legal argument provided Eskom believes it has met the applicable legal requirements for submission of a postponement application as specifically described in the Listed activities and minimum emission standards regulations as amended GNR 1207 of 31 October 2018 and similarly its application can be legally considered by the authorities.</p> <p>Additional response to the detail of the CER and Grenpeace Africa arguments are provided below.</p>

¹ Full detailed Legal Framework for postponement and suspension applications are detailed in Greenpeace Africa's submission dated 4 February 2019 included attached under Annexure B.

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	<p>those measures; and</p> <p>3. Section 2 NEMA principles</p> <p>4. NEM: AQA</p> <p>5. Purpose of the MES and conditions that must be met before a postponement/suspension application may be considered;</p> <p>6. NAAQS – decision maker cannot consider any application for postponement/suspension of compliance with the MES for a facility if the ambient air quality in the area where applicant's facility is situated does not meet the NAAQS;</p> <p>7. National Framework – applications which fall outside the scope of the National Framework cannot be considered, and if decision makers did so, that action and any decision to approve the application would be <i>ultra vires</i> and consequently unlawful.</p> <p>Factors to be taken into account in considering postponement/suspension application</p> <p>If an application for postponement or</p>			

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	<p>suspension of compliance with MES meets the considerations, then the NAQO must take account of the following factors and principles (amongst others) when exercising his or her discretion as to whether or not to grant the application:</p> <ul style="list-style-type: none"> a) The constitution duties of the State, particularly the environmental right in section 24. b) The purpose the NEM: AQA and the general duty of State, when applying NEM: AQA (which includes its subordinate legislation and the National Framework), to seek to protect and enhance the quality of air in the Republic and to apply the Act in a manner that will achieve the progressive realisation of the environmental right. c) The duty of care and the national environmental management principles prescribed in NEMA. <p>The decision-maker must consider all relevant considerations and must make a decision that is reasonable and rationally connected to the information before the decision maker. The NAQO must refuse</p>			

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	Eskom's MES applications, because an approval based on the information that is currently contained in the application documents would be unreasonable and irrational and consequently unlawful and liable to be set aside on review .			
1.20	<p>Eskom's MES applications do not merit consideration</p> <p>We have set out that the NAQO, together with the licensing authorities, may only consider postponement and suspension applications where the binding minimum requirements for consideration, as set out in the National Framework, have been met. It would be <i>ultra vires</i> for a decision maker to decide such an application because the law does not provide for such an application to be made.</p> <p>We have demonstrated that the industry's air emissions are currently causing, and will continue to cause, direct and severe adverse impacts on the surrounding environment, including the health and well-being of persons of all ages. We have also described how the ambient air quality in Eskom's application areas, being the HPA Vaal Triangle and the Waterberg-Bojona Priority Areas,</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 04 February 2019 Official Comment</p>	Kendal	<p>As indicated in 1.19 Eskom believes it has submitted a legally correct application in terms of the MES regulations which can be considered by the authorities.</p> <p>Eskom acknowledges that its emissions are impacting on ambient air quality and this is detailed in the Atmospheric Impact Reports completed for the postponement application. Dispersion modelling completed for Eskom's power stations indicate that individually they do not result in exceedances of the National Ambient Air Quality Standards (NAAQA) in local areas. The general conclusions of the cumulative assessment indicates that the quality of air will be in compliance with NO₂ National Air Quality Standards (NAAQS), but noncompliance with the daily and annual SO₂ standards in several areas across the Highveld. Daily and annual average PM₁₀ and PM_{2.5} concentrations could be in noncompliance and for extended periods of time. The effect of the above is that PM ambient levels currently result in increased health risk for a large part of the Highveld.</p> <p>In addition, the combined SO₂ emissions from all Eskom power stations are predicted to contribute a significant amount to the pollution in and around the Emalahleni and Middelburg areas and even extending south towards Komati Power Station. However analysis indicates that the non-compliance is not only due to Eskom Power Stations but a function of a</p>

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	<p>currently exceed the limits of the National Ambient Air Quality Standards.</p> <p>In addition, we submit that Eskom is attempting to apply for postponements and suspensions outside of the conditions mandated by the Framework. For example, the Kendal power plant will only be decommissioned after 2030. Eskom is applying for the following with regards its Kendal plant:</p> <ul style="list-style-type: none"> ▪ postponement of the new plant standard for PM between 1 April 2020 to 31 March 2025 and an alternative daily limit of 100 mg/Nm³ and an alternative daily limit of 85 mg/Nm³ for PM from 1 April 2025 until decommissioning (2038 - 2043); ▪ postponement of the new plant standard for SO₂ and an alternative daily limit for SO₂ of 3000 mg/Nm³ from 1 April 2025 until decommissioning (2038 - 2043); ▪ postponement of the NO_x new plant limit and an alternate limit daily limit of 			<p>multitude of sources in the Highveld.</p> <p>The dispersion modeling and ambient air quality monitoring data indicate that the elevated pollution levels in the Highveld require a holistic approach, addressing all identified and potential sources. Therefore, a single approach, targeted at only eliminating Eskom power station emissions will not result in acceptable ambient air quality levels that are not harmful to human health and the environment. (See also 19.1)</p> <p>In terms of the application for Kendal and the argument that Eskom is applying outside of the regulation it is Eskom's reading of the MES regulations that</p> <p>“(12A) a) An existing plant may submit an application regarding a new plant standard to the National Air Quality Officer for consideration, if the plant is in compliance with other emission standards but cannot comply with a particular pollutant or pollutants.</p> <p>b) An application must demonstrate previous reduction in emissions of the said pollutant or pollutants, measures and direct investments implemented towards compliance with the relevant new plant standards.</p> <p>c) The National Air Quality Officer, after consultation with the Licensing Authority, may grant an alternative emission limit or emission load if:</p> <ul style="list-style-type: none"> ○ there is material compliance with the national ambient air quality standards in the area for pollutant or pollutants

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	<p>1100mg/Nm³ ; and</p> <ul style="list-style-type: none"> from 1 April 2025 Eskom requests a monthly limit of 750mg/Nm³ until decommissioning (2038-2043). <p>Section 5.4.3.4 of the Framework provides that plants being decommissioned after 2030 may only apply for a postponement (not a suspension) and that such a postponement “will be for a period not exceeding 5 years and no postponement would be valid beyond 21March 2025.” Eskom is applying for a postponement and alternative daily limits from 2025 until decommissioning which is estimated to occur between 2038 – 2043. According to the Framework, no applications for postponement after 2025 will be valid. The Framework doesnot provide for such an application, and therefore it should be dismissed.</p> <p>As the applications made by Eskom do not fall within the scope of the legal requirements for postponement and suspension applications, it would be <i>ultra vires</i> for any decision-maker to decide to grant such an application.</p>			<p>applied for; or</p> <ul style="list-style-type: none"> the Atmospheric Impact Report does not show a material increased health risk where there is no ambient air quality standard. <p>Eskom has shown compliance across the fleet for many of pollutant limits and has illustrated its previous emission reduction activities including installing :</p> <ul style="list-style-type: none"> Electrostatic Precipitators (ESPs) at Matimba, Kendal, Lethabo, Matla, Kriel, Tutuka, Komati, 3 of the 6 units at Duvha. In addition SO₃ injection plants have also been installed at those stations with ESPs, except Tutuka, to improve the efficacy of the same; Fabric Filter Plants (FFPs) at Majuba, Arnot, Hendrina, Camden, Grootvlei, Medupi, Kusile and 3 units at Duvha; Boilers/Plants with Low NO_x design at Kendal, Matimba, Ankerlig and Gourikwa; Flue Gas Desulphurisation (FGD) at Kusile. <p>With its present Emission Reduction plan being a a phased and prioritised approach to achieve compliance in terms of the MES. Reduction of Particulate Matter (PM) emissions has been prioritised, as PM is considered to be the ambient pollutant of greatest concern in South Africa. In addition, Eskom proposes to reduce NO_x emissions at the three highest emitting stations. Kusile Power Station will be commissioned with abatement technology to achieve the new plant standards for PM, NO_x and SO₂. Medupi is commissioned with abatement technology which can meet PM and NO_x new plant standards and will be retrofitted with flue-gas</p>

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				<p>desulphurisation (FGD) so that the new plant SO₂ limit will also be achieved over time. There are six power stations which will be decommissioned before 2030 (totalling in excess of 10 000MW), and an additional two by 2035 (totalling in excess of 7 000MW) and the remaining existing plants by 2043 (excluding Majuba, Medupi and Kusile).</p> <p>Given the above Eskom believes it has submitted a legally correct application which can be considered by the authorities.</p>
1.21	<p>Even if Eskom's MES Applications met the pre-conditions for consideration (which they do not) the decision-makers must refuse them because evidence before the decision-makers makes it clear that:</p> <ul style="list-style-type: none"> there is no basis in law for approving them; Eskom's (flawed) CBA cannot justify infringing the Bill of Rights; the application is misleading in several material respects (e.g. Eskom's estimates of how much it would cost to comply with the new source MES for SO₂ is at least five times higher than the 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 04 February 2019 Official Comment</p>	All	<p>The basis in law for approving the application is described in 1.20 above</p> <p>The Eskom has provided the CBA as one of several inputs into the decision making process in line with the NEMA principles (NEMA S2 (4) a and b which requires the decision maker to consider all relevant factors including (i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</p> <p>In addition the CBA provides some support to the decision maker in the lack of a sector specific CBA as set out in the NAQF.</p> <p>Eskom's costs for compliance and times for instillation are based on Eskom's practical experience of the costing of pollution abatement instillation in the South African context at stations such as Kusile and Grootvlei. The South African market for the instillation of such equipment is substantively smaller than that in other countries and that impact substantially on pricing.</p>

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	<p>actual costs, and it has exaggerated the time necessary to procure and install FGDs);</p> <ul style="list-style-type: none"> ▪ approving Eskom's MES applications will result in the premature and avoidable deaths of thousands of people combined with significant environmental harm; and consequently would be wholly inconsistent with the Bill of Rights, NEMA and NEM:AQA. <p>In line with the NEMA section 2 principles, the State must place the burden of the costs of remedying and preventing further pollution on the polluter – Eskom. It must place people and their needs at the forefront and serve their needs and interests equitably, and therefore cannot justify further pollution on economic grounds. Particularly with due consideration of the lengthy period of time that Eskom has had to meet the MES, the only reasonable conclusion is that Eskom must be held to the MES, without any further postponement or suspension.</p>			<p>As indicated above in 1.18 it is Eskom's belief that considering all the available information approval of the postponement applications is consistent with the Bill of Rights, NEMA and NEM:AQA as it will "secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development;" further the Principles of NEMA "(a) shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination" S2(1) a NEMA.</p> <p>It is a practical economic reality that requiring Eskom to implement fully compliance to the MES will result in either Eskom incurring additional costs to implement the required technologies which will be required to recover from electricity users. Alternatively Eskom will be forced to prematurely close non-compliant power stations which will negatively impact on an already constrained electricity supply and affected communities.</p>
1.22	We note further that Eskom has also failed to refer to the conditions required	Melita Steele Greenpeace Africa	All	Eskom has clearly articulated the conditions for application as listed in the MES regulations on page 13 of it's Summary motivation (included below)

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	<p>for application consideration, and in particular, the requirements that the application must demonstrate no adverse environmental impact and that the ambient air quality for the application area cannot currently exceed the ambient standards.</p> <p>There is accordingly at least a <i>prima facie</i> case to say that the information contained in the application documents contains false and misleading information. Provision of false and misleading information to an NAQO constitutes a criminal offence in terms of section 51(1)(f). This should at the very least have the consequence of the information not being relied upon and the application being rejected. Any decision knowingly based on false information cannot be sustained.</p>	<p>Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>		<p>and as such there is no <i>prima facie</i> evidence that the application contains false and misleading information’.</p> <p>P 13 of Eskom Summary Motivation “(12A)</p> <p>a) An existing plant may submit an application regarding a new plant standard to the National Air Quality Officer for consideration, if the plant is in compliance with other emission standards but cannot comply with a particular pollutant or pollutants.</p> <p>b) An application must demonstrate previous reduction in emissions of the said pollutant or pollutants, measures and direct investments implemented towards compliance with the relevant new plant standards.</p> <p>c) The National Air Quality Officer, after consultation with the Licensing Authority, may grant an alternative emission limit or emission load if:</p> <ul style="list-style-type: none"> ○ there is material compliance with the national ambient air quality standards in the area for pollutant or pollutants applied for; or ○ the Atmospheric Impact Report does not show a material increased health risk where there is no ambient air quality standard.”
1.23	Greenpeace Africa strongly objects to allowing Eskom any further postponements or suspensions for multiple coal-fired power stations from	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign	All	<p>The Constitutional argument has been responded to above in 1.18</p> <p>The atmospheric impact of the power stations has been clearly described in the atmospheric impact reports prepared for the postponement</p>

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	<p>complying with the Minimum Emission Standards. Instead, where coal-fired power stations cannot even meet South Africa's comparably lax emission standards, they should not operate/should be decommissioned on an accelerated timeline. We have laid down here that:</p> <ul style="list-style-type: none"> ▪ Constitutional rights and air pollution legislation in SA are violated by the current operation of Eskom coal-fired power stations. Air pollution, with its devastating impacts on human health and well-being, remains a significant problem in our country, particularly in the priority areas such as the Highveld, where air quality remains poor or has further deteriorated from "potentially poor" to "poor" against all intentions of the law. ▪ Mpumalanga province in SA is the largest NO₂ air pollution hotspot in the World, as new satellite data assessed by Greenpeace showed for the period between 1 June to 31 August 2018. There is clear 	<p>Manager 4 February 2019 Official Comment</p>		<p>applications and has been summarised in above in 1.20.</p> <p>NOx hotspots</p> <p>The high NOx levels noted by Greenpeace have as Greenpeace is well aware been identified by both DEA and experts at Parliamentary Hearings in 2018 as high level emissions which are not directly impacting on the health of communities around the Highveld and Vaal. Indeed the ambient monitoring reviewed indicates general compliance with the NOx NAAQS limits across the regions and around the Eskom power stations. Further more in the South African context high ambient levels of NOx are generally associated more the vehicle emissions than industrial sources</p> <p>Number of emission exceedances</p> <p>Eskom confirms that based on it's information it is in general compliance with its stations emissions limits. Where instances of high emissions are identified these are reported and investigated to identify actions which can be taken to address the causes. The figure of 3200 exceedances referred to by Green Peace is from the study by Dr Sahu and in respect of that the following should be noted.</p> <p>Eskom power stations monitor compliance to their particulate emissions limits as set in their Atmospheric Emission Licences (AEL) on a continuous basis and provide monthly reports on station and emission performance to the licencing authorities. Included in these monthly reports are details of emissions levels on a daily basis and reasons for any exceedances of the applicable limits.</p>

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	<p>evidence of the huge impacts of coal-fired power stations on the air quality in the region, and that the highest concentrations recorded at monitoring stations are clearly linked to emissions from coal-fired power plants operation.</p> <ul style="list-style-type: none"> Between April 2016 and December 2017 the 17 Eskom coal-fired power stations reported nearly 3,200 exceedances of applicable daily AEL limits for PM, SO₂, and NO_x. Compared with many other countries SA has very weak MES, that allow coal-fired power stations to currently emit: Close to 100 times more SO₂ than allowed in China (key regions), 20 times more than existing stations in India and more than 45 times more than new plants in India and more than 20 times more than current regulations in the European Union; 			<p>Emission exceedances are usually associated with times of plant start- up, shut-down or upset conditions.</p> <p>During plant start-up and shut-down times emission reduction equipment due to it's design does not operate as effectively as when it is running during normal operations – think of it like a car on a cold morning it needs time to heat up to work efficiently. Upset conditions are linked to power station plant malfunctions or emissions reduction equipment problems. The Atmospheric Emission Licences make provision for Eskom to exceed the emission limits during these periods for between 48 and 72 hours and as such these are not treated as non-compliances to the legislation.</p> <p>Where the emission exceedances are associated with upset conditions which can be generally described as unplanned, unexpected, sudden incidents the station is required to report to the licencing authority (the DEA and district authority) in terms of Section 30 of the National Environmental Management Act (Act 107 of 1998).</p> <p>Whilst all exceedances (plant start- up, shut-down or upset conditions) are reported in the Licensing Authorities monthly reports existing systems and on –line systems do not presently allow a rapid accurate accumulation of this information across the Eskom fleet for a specific time period. However, weekly performance is tracked and instances of high emissions are required to be addressed by the relevant power stations in order to ensure the stations remain in compliance.</p> <p>Providing a detailed analysis to respond to Dr Sahu's report is thus not presently practical.</p>

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	<ul style="list-style-type: none"> About 6 times more PM than allowed in the EU and China (key regions) and almost 5 times what is allowed for new stations in India; and 15 times more NO₂ than allowed in India (new build coal-fired power stations) and China (key regions) and more than 7 times more than currently in the EU. Eskom significantly underestimates the health impacts of their coal-fired power stations and annual premature deaths by ignoring international research standards. An estimated total of 23,000 premature deaths could be avoided by requiring full compliance with the MES. This represents a 40% reduction in the health impacts of air pollution from Eskom's power stations. Eskom's "ERP" would allow the company to operate its entire existing fleet without even rudimentary controls for 			<p>Based on our interpretation of monitoring data it is our position that whilst there are occasions of exceedance Eskom stations generally complies with the conditions of their AEL in respect of emission levels. The authorities have at several times asked Eskom to provide detailed explanations of emission levels due to a perception of a high number of exceedances. Detailed analysis of station records was undertaken to respond to those queries and the following general issues which result in an overstatement of AEL emission exceedances based on the interpretation of the monthly monitoring results were identified. It is believed Dr Sahu's study has been impacted by similar issues.</p> <ul style="list-style-type: none"> (i) As indicated above the AEL allow for a grace period during shutdown, startup and upset conditions of between 48 and 72 hours and this is often not factored into the interpretation of monitoring results. High emissions during these periods are thus not treated as non-compliances to the AEL. (ii) Formally declared NEMA section 30 periods where there is an upset or incident occurred should be excluded from interpretation of days of exceedance and the time frame for these periods if often not clearly articulated in the reports which can result in an overstatement of days of non-compliance. (iii) Issues with monitoring equipment do occur and whilst these are noted in the monitoring reports the issues are not

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	<p>two of the most dangerous pollutants emitted from coal-fired power plants: SO₂ and mercury, and with substantial exemptions for controlling NO_x and dust emissions.</p> <ul style="list-style-type: none"> ▪ Compliance to MES by Eskom should technically be possible in time as other countries have already shown: <ul style="list-style-type: none"> ○ China retrofitted approximately 250 gigawatts of existing coal-fired capacity with FGD between 2005 and 2011, bringing share of capacity with SO₂ controls from 14.3% to 89.1% in six years; and ○ India is aiming to bring its entire coal fleet to compliance with stricter standards than the MES by 2022, requiring retrofits in much of its 220GW of operating capacity. According to India's Ministry of Power, the procurement, construction 			<p>clearly linked to daily exceedances in the monthly reports.</p> <ul style="list-style-type: none"> (iv) Station AEL's are not identical and this must be factored in the interpretation of any data for example: Kriel has a monthly not a daily particulate emission limit; Lethabo has a 72 hour grace period not the standard 48 hour grace period and Lethabo's AEL does make provision to apply for exemption when the SO₂ is not operating. (v) It is sometimes necessary to re-state emission reports when problems with monitors have been identified and at times analysis is carried out on the older less accurate data. <p>Dr Sahu's report illustrates that there are periods on exceedance of the emission levels but it is argued that most of these exceedances are not-legal non-compliances and are explainable with detailed review. His report also illustrates the difficulty in interpreting monitoring results without the full understanding on factors and context.</p> <p>Appropriateness of standards</p> <p>In respect of the "lax" local standards it should be noted that the South Africa's MES were developed as the outcome of a process run by the National DEA which included broad consultation on the proposed standards. The standards derived are a function of the state of technology of the various emissions sources in South Africa, the practicality of compliance given that technology and the anticipated environmental impact.</p>

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	<p>and connection of an FGD takes 30-36 months, and according to the International Energy Agency 24-36 months. As long as procurement is started in 2019-2020, there is sufficient time install FGDs by the 2025 deadline in all plants that intend to operate beyond 2030.</p> <ul style="list-style-type: none"> ▪ Eskom uses claims of extremely high costs of installing emission controls, particularly FGD equipment, as an argument against compliance with the MES. These claims are based on outdated research from 2006, before China, India and other emerging countries started deploying FGDs at scale. ▪ Eskom exaggerates the costs of compliance with the new source MES for SO₂ at least 5-fold, completely invalidating claims that costs of compliance exceed benefits. <p>For the reasons set out in this submission</p>			<p>In respect of SO₂ Eskom believes the RSA standard SO₂ has been established by DEA noting the high sulphur content of South African coals and the costs and impacts associated with reducing SO₂ levels. As it stands it is Eskom's position that the existing standards are in themselves are too high given the South African coal qualities, plant capabilities, water and waste issues and costs of SO₂ reduction.</p> <p>Some attempts have been made to compare the RSA MES to the Chinese standards. In this respect it should be noted that China's emissions reduction program started some +23 years ago with the first limits being published in 1996. This was progressively reduced over time. The most recent 2015 limits are basically a requirement for the eastern densely populated provinces in China while the central and western provinces are encouraged to achieve that. China has in excess of 900 000 MW of coal fired power plant in stark comparison to the approximately +/-37 000 MW (excl. Medupi and Kusile) in SA. The sheer magnitude of their absolute emissions (tons) from these plants as a result of the number of plants in operation warrant much stricter limits than anywhere else in the world.</p> <p>Time frames for retrofit</p> <p>In respect of the time frames for implementation of retrofit technology Eskom would indicate that. It has taken the Chinese at least 15 years to move from existing (1996) to their equivalent of the new plant standards (2011). During the period 1996 to approx. 2015, China was building in excess of 20000 MW per year on average of additional new capacity. This means that the bulk of the power plants were design and installed with</p>

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	<p>the NAQO and the licensing authorities are required by law to refuse to consider Eskom's MES Applications because they do not meet the minimum requirements for considering applications.</p> <p>In the (unlawful) event that the applications are considered, the decision makers must, in accordance with their legal duties, place people, their needs and their health, together with the health of the environment, at the forefront and refuse Eskom's multiple postponement and suspension applications.</p> <p>Greenpeace Africa is willing to provide further expert evidence in support of its submissions should it be required by the NAQO the licensing authorities in deciding on these applications.</p>			<p>near best available emissions abatement control devices (available at the time) as new plants were commissioned (similar to how Eskom has built Kusile and to some degree Medupi as well). It is also not clear from any literature surveys whether the plant in operation prior to 1996, where in fact retrofitted and to what degree was it done, if any.</p> <p>Electricity production in China</p> <table border="1"> <caption>Estimated Electricity Production in China (TW-h)</caption> <thead> <tr> <th>Year</th> <th>Fossil Fuels</th> <th>Hydroelectricity</th> <th>Non-Hydroelectric Renewables</th> <th>Nuclear</th> </tr> </thead> <tbody> <tr><td>1980</td><td>200</td><td>100</td><td>10</td><td>0</td></tr> <tr><td>1982</td><td>250</td><td>120</td><td>15</td><td>0</td></tr> <tr><td>1984</td><td>300</td><td>140</td><td>20</td><td>0</td></tr> <tr><td>1986</td><td>350</td><td>160</td><td>25</td><td>0</td></tr> <tr><td>1988</td><td>400</td><td>180</td><td>30</td><td>0</td></tr> <tr><td>1990</td><td>450</td><td>200</td><td>35</td><td>0</td></tr> <tr><td>1992</td><td>550</td><td>250</td><td>40</td><td>0</td></tr> <tr><td>1994</td><td>650</td><td>300</td><td>45</td><td>0</td></tr> <tr><td>1996</td><td>750</td><td>350</td><td>50</td><td>0</td></tr> <tr><td>1998</td><td>850</td><td>400</td><td>55</td><td>0</td></tr> <tr><td>2000</td><td>1000</td><td>450</td><td>60</td><td>0</td></tr> <tr><td>2002</td><td>1200</td><td>500</td><td>65</td><td>0</td></tr> <tr><td>2004</td><td>1500</td><td>600</td><td>70</td><td>0</td></tr> <tr><td>2006</td><td>2000</td><td>700</td><td>75</td><td>0</td></tr> <tr><td>2008</td><td>2500</td><td>800</td><td>80</td><td>0</td></tr> <tr><td>2010</td><td>3000</td><td>900</td><td>85</td><td>0</td></tr> <tr><td>2012</td><td>3500</td><td>1000</td><td>90</td><td>0</td></tr> <tr><td>2014</td><td>4000</td><td>1100</td><td>95</td><td>0</td></tr> </tbody> </table>	Year	Fossil Fuels	Hydroelectricity	Non-Hydroelectric Renewables	Nuclear	1980	200	100	10	0	1982	250	120	15	0	1984	300	140	20	0	1986	350	160	25	0	1988	400	180	30	0	1990	450	200	35	0	1992	550	250	40	0	1994	650	300	45	0	1996	750	350	50	0	1998	850	400	55	0	2000	1000	450	60	0	2002	1200	500	65	0	2004	1500	600	70	0	2006	2000	700	75	0	2008	2500	800	80	0	2010	3000	900	85	0	2012	3500	1000	90	0	2014	4000	1100	95	0
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				<p>Source: Wikipedia</p> <p>Hence, China's experience is largely linked to greenfield installation of abatement control plant as the power plants were being built and not brownfield retrofit applications. It is this consistent increase in capacity from the mid-80s to the mid-90s that afford China the opportunity to leverage economies of scale to their advantage that also allowed them to accelerate the expansion program since early-2000.</p> <p>Eskom does acknowledge that the lead time and durations of retrofit are marginally longer than international experience. It must however be noted this is due to the fact that one needs to adjust international productivity rates etc to actual conditions in South Africa. For example, the South African skills base (literacy, education etc) for the execution of these projects are significantly lower than that of our international counterparts. Furthermore, the support industries required for these mega-projects are not readily available in this country. Establishing those takes time and are often not sustainable entities if too much is required in a short period of time or if there is no steady growth.</p> <p>Costs of Retrofits</p> <p>As indicated above, one needs to compare apples with apples, something which Greenpeace Africa have failed to demonstrate. The costs for these projects are reflective of what Eskom expects to pay for the relevant abatement control technologies under a South African context. Furthermore, the benefit of technology maturity can only be realised in a</p>

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				<p>market that has matured, something that South Africa will not see benefit from as it starts the retrofit program. Being a state owned entity, Eskom is also bound to facilitate and participate in the transformation agenda that Government is spearheading. These initiatives, which are desperately needed to redress the imbalances of the past, do tend to result in project costs being slightly higher than international norms. What is not clear in the references quoted (reference 47 in particular), is whether these project are all inclusive and include balance of plant considerations, ZLED, support infrastructure & services, materials of construction, owner's development costs etc. Furthermore, one cannot directly compare the Chinese practices in areas of intellectual property rights, labour and general human rights practices in project execution to that of South Africa which is a constitutional democracy.</p> <p>For example: The actual cost incurred for the Grootvlei FFP retrofit was R 882M in 2017. Based on the 2018 MES application, the estimate for the Grootvlei FFP retrofit on units 2 to 4 was: R1 697/kW x 200 MW x 1000 x 3 units = R 1 018M (or approx. R970M if discounted by 6% inflation to bring the cost back to a 2017 base). It must also be noted that this was the second of three units that was done at Grootvlei and hence the risk provision were better understood and managed to ensure that the project was eventually completed within budget. Comparing these actuals to the Reference 47 estimate in the Greenpeace report we get: USD/MW 11 822₍₂₀₁₀₎ x 14_(ZAR/USD) x 200 MW x 3 units x 1.06¹⁸_(6% inflation over 18 years) = R284M.</p> <p>It is therefore safe to say, the estimates provided for in the Greenpeace</p>

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				<p>report are grossly under-estimated for the South African context.</p> <p>Eskom has in the past used international project estimates without the localisation aspect and have found that the project costs have been under-estimated when actual tenders are evaluated. This leads to project execution delays which incidentally have been a reason for delays in execution on some of the 2015 MES commitments.</p> <p>In short, the project's cost that Eskom has estimated are a reflection of all the factors that need to be considered for it's plant in the South African market. Eskom therefore stands by its techno-economic assumptions.</p> <p>Under estimation of health impacts</p> <p>Eskom disagrees with the unsubstantiated statement that the health impact focussed cost benefit analysis ignores international research standards. The methodology used followed that the recommendations of the World Health Organisation. Exposure-response functions used were provided by the SA Medical Research Council and accurate exposure modelling was done within the study area. Further sources of uncertainty and limitations have been clearly identified and discussed (see section 2.5 of the CBA Report) and addressed where possible. For instance, one of the key areas of uncertainty is the selection of exposure-response functions, where Eskom was guided by the SA Medical Research Council. Here, the selection of exposure-response function introduced a variance exceeding 80% around the mean (refer to CBA report section 2.3.1). As a result of this variance, the CBA analysis incorporated a sensitivity analysis to demonstrate varying outcomes at a variance of 80%. The methodology is</p>

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				<p>therefore sound. As indicated in the MES application Eskom does not argue that there should be no emission activities but rather these should be carefully planned and phased in a balanced manner. The health impact focussed cost benefit analysis is one of the factors which decision makers should consider in their decision making process noting the scope, uncertainty and limitations associated with any study of this nature.</p> <p>Number of premature deaths</p> <p>Greenpeace quotes a figure “that an estimated total of 23,000 premature deaths could be avoided by requiring full compliance with the MES. This represents a 40% reduction in the health impacts of air pollution from Eskom’s power stations.” The Greenpeace has report referred to here (and elsewhere in the IRR) has not yet been published and Eskom has thus not been able to assess the methodology used. As is articulated in the Eskom study, and indeed also in the Greenpeace 2014 report to which Eskom has access, any cost benefit analysis is affected by the assumptions and limitations associated with the study. The assumptions and uncertainty issues for the Eskom health focused impact study are clearly listed in section 2.5 of the report. The Eskom study also provides comment on a number of other studies which attempt to address the health or economic impact of air quality in South Africa. Each study uses a differing set of assumptions and as such direct comparison is not appropriate. The figures of “23 000” quoted by Greenpeace are from studies which they have completed which but which is not yet available to Eskom, and it is therefore unfortunately rather unclear in terms of some of their assumptions.</p>

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				<p>With respect to exposure response modelling, Eskom is able to compare the methodology used by Eskom to the methodology described by Greenpeace (GP) in their 2014 report. Firstly, the assessment period is different – Eskom modelling is based on 2015, 2016 and 2017 (meteorological and emissions), whereas GP modelling based on 2010, 2011, 2012 (emissions), (meteorological period unclear). Secondly, Eskom used the CALPUFF suite of models, whereas GP use a combination of CAMx (for PM2.5) and a model based on CALPUFF. Thirdly, the modelling domain of Eskom i) centred on the Highveld, ii) centred on Port Rex, and ii) centred on Acacia, whereas the GP modelling domain was regional for the subcontinent. Fourthly, the Eskom modelling excluded Medupi and Matimba. Fifthly, Eskom used actual monthly emission rates for 3-years 2015 to 2017, whereas the GP used annual average emission rates taken from the uMoyaNILU plan of study report for the 2013 postponement applications (2010-2012). Sixth, Eskom used meteorological data from a 2015-2017 diagnostic model based on actual measurements for 2015-2017, whereas it is not clear what data is used in the GP modelling. Finally, Eskom modelled PM2.5 firstly assuming all primary PM emitted is PM2.5 and modelling secondary particulates using Calpuff model chemistry and background O3 and NH3. The two were added to give total ambient PM2.5. ON the other hand, GP used the chemical model CAMx, power station emissions and satellite measured background O3 and NH3. This difference in study area would explain one aspect of variation in results.</p> <p>Eskom's understanding is therefore that the Greenpeace study considered the national impact of air quality that is to say they calculated not only</p>

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				<p>how many people will be impacted by Eskom emissions in the main airsheds of the HighvVeld and Vaal but they extended the anlysis to assess how many were affected in CapeTown, Durban and the whole country. This is considered a rather large impact area, the Eskom study considered the completed atmospheric impact reports and an impact area of 360km by 270 km an area from Brits to Utrecht (including Pretoria, Johannesburg and Emaleni).</p> <p>Based on the 2014 Greenpeace report, Eskom also assumes that Greenpeace used an alternative set of exposure-response functions to that recommended by the SA Medical Research Council. Thus, Bby increasing the study area, including additional power stations and using alternative exposure-response functions, the new Greenpeace study likely substantially increases the number of people exposed to pollution impacts and this results in a significant increase in the number of health risk mortalities which could be considered an over statement.</p> <p>Moreover, and aAs indicated above, Eskom considers the health focussed cost-benefit conducted in this assignment a valuable input to decision making illustrating the cost-benefit range for a number of scenarios. The intention of the cost-benefit analysis is to provide insights into the optimal planning of mitigation options. The cost-benefit ratios should therefore not be assessed as absolute numbers which indicates whether specific scenarios are viable or not, rather the results are intended to inform insights into how the proposed mitigation options are best implemented. It is to be noted for instance, that Scenario 4 in the cost-benefit analysis assessment demonstrates the significant impact of earlier closure of coal-</p>

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				<p>fired power stations.</p> <p>Eskom reserves its rights to respond further to any additional submission made by Greenpeace.</p> <p>In summary Eskom confirms its belief that it has prepared a legally compliant and well reasoned postponement application that fairly illustrates the issues and costs and benefits associated with the application. and provides decision makers the basis to grant a positive postponement application which gives effect to the Eskom emission reduction plan and decommissioning schedule.</p>
1.24	<p>Mpumalanga Agriculture is the provincial affiliate from Agri SA in the Mpumalanga Province. We represent a substantial number of commercial farmers in Mpumalanga. From our side we strongly oppose the application by Eskom for the suspension, alternative limits and/or the postponement of compliance with the minimum emission standards for 10 of its coal fired power stations.</p> <p>Please do not ignore this objection by Mpumalanga Agriculture.</p>	<p>Robert Davel General Manager Mpumalanga Agricultural Union 4 February 2019 Emailed comment</p>	<p>Power Stations in Mpumalanga</p>	<p>Section 6 of the MES makes provision for postponement of the compliance timeframe. It is in line with this provision that Eskom is submitting an application for postponement and following the required application process.</p> <p>Your comments are reflected in this report which is provided to the decision making body DEA for consideration.</p>
1.25	<p>(3) We have been persistent and consistent objectors against Eskom – as one of the country’s largest polluters – applying for postponements of compliance with the MES; the first set</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint</p>	<p>Tutuka Medupi Matimba</p>	<p>Correct.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>being the multiple postponements Eskom applied for in 2013. Since then, it has also made two subsequent applications for postponement in respect of its Tutuka power station (2018), located in the HPA, and the Medupi and Matimba power stations (2017) located in the Waterberg-Bojanala Priority Area (WBPA). The application for postponement of compliance with the SO₂ existing plant MES at Medupi and Matimba was granted in October 2018 and the postponement application for Tutuka for existing plant and new plant MES was submitted to the NAQO for consideration in November 2018.</p> <p>(4) These successive postponement applications have been entertained, and largely granted, by the NAQO despite the general legitimate government purpose of section 21 of the NEM: AQA, which is to control and reduce atmospheric emissions from listed activities which have or may have a significant detrimental effect on the environment; including health, social conditions, economic conditions, ecological conditions or cultural heritage (“List of Activities”). This is in order to give effect to section 24</p>	<p>campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>		

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	of the Constitution of the Republic of South Africa, 1996 (“the Constitution”) and other fundamental rights.			
1.27	<p>(5) Aside from the approval of the Medupi and Matimba applications and the submission of the Tutuka application for consideration referred to above, the following relevant developments have since transpired:</p> <p>1) (5.1) Amendments to the List of Activities and the prescribed MES were published on 31 October 2018, following the publication of the updated 2017 National Framework for Air Quality Management in the Republic of South Africa (“the 2017 Framework”) on 26 October 2018. The anticipated publication of the proposed amendments to the List of Activities was recorded in the BID submissions, as was the fact that it was not clear what Eskom plans to do in relation to the current postponement application when these amendments come into force, particularly given the option of a suspension of compliance, circumscribed by certain conditions. CER sent follow-up emails to Naledzi</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>Correct</p> <p>We can confirm that Eskom is presently evaluating the need for MES postponement applications for Acacia. Port Rex, Grootvlei, Matimba and Medupi and will submit these as a separate application to the current one if required</p> <p>The issue of the alleged high number of exceedances - Dr Sahu’s reports is responded to comprehensively in 1.23 above.</p>

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	<p>Environmental Consultants (“NEC”), on 26 October 2018 and 2 November 2018, to enquire about Eskom’s approach in response to the 2017 Framework (to the extent it applies to the application) and the MES. NEC confirmed by email that Eskom had noted the regulatory changes and I&APs would be informed of any changes in Eskom’s approach to the present postponement applications.</p> <p>2) (5.2) An assessment of Eskom’s monthly emission reports for the period April 2016 – December 2017, was completed by energy and air quality specialist, Dr. Ranajit Sahu. This study reviewed data from 14 of 5 Eskom’s coal-fired power stations, excluding Kusile which is still under construction. Dr Sahu’s assessment found that 13 of Eskom’s coal-fired power stations reported nearly 3,200 exceedances of applicable daily AEL limits for PM, SO₂, and NO_x, during a 21-month period. An aggravating finding from the assessment is that many of these reported exceedances were</p>			

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	significantly greater than the applicable AEL emission standards.			
1.28	<p>(8) In our BID submissions, we reiterated the extensive comments and objections submitted in opposition to Eskom's previous applications to postpone compliance with the MES, dating back to the first set of wide-ranging postponements for multiple coal-fired stations (all but Kusile) sought in 2013. The objections pertained to the following:</p> <ul style="list-style-type: none"> - the legal requirements of MES postponement applications; - why the applications sought by Eskom do not comply with those legal requirements; and - the illegality of the exemption/rolling postponement applications brought by Eskom. <p>It was on the basis of these submissions that we wholly and unequivocally objected to Eskom's current application for postponement of MES compliance at multiple power stations, at the BID stage. We maintain our unequivocal objection to Eskom's revised applications and the</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	Responded to in detail below.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	above submissions are largely reiterated; notwithstanding the amendments to the List of Activities and the 2017 Framework and Eskom's purported reasons underpinning its applications for suspension, alternative limits and/or postponement of compliance with the MES, Eskom should not be permitted to apply for any of these three "options", as it has still not met the prescribed conditions, as amended.			
1.29	<p>(9) The reasons why the NAQO should summarily reject this application are as follows:</p> <ul style="list-style-type: none"> (9.1) As contemplated in terms of section 5.4.3.4 of the 2017 Framework only in such cases where the areas in which the power stations are based are in compliance with the NAAQS, can postponement, suspension, or alternative limit applications even be considered. Lethabo power station is located in the VTAPA and Majuba, Camden, Kriel, Matla, Kendal, Duvha, Arnot, Hendrina and Komati power stations are located in the HPA-based on DEA's reports, neither the HPA or VTAPA (or the 	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	See responses provided to the individual points below.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>WBPA) remain in compliance with the NAAQS;</p> <ul style="list-style-type: none"> ▪ (9.2) The 2017 Framework requires that Eskom demonstrate its air emissions are not causing direct adverse impacts on the surrounding environment. Eskom's "Health related CBA" determined that once Medupi and Kusile are fully operational, it is estimated that air pollutant emissions from its power stations will be responsible for a total of 2,400 premature deaths per year, projected over time, the excess emissions allowed if Eskom's applications are fully granted will result in approximately 23,000 premature deaths. These premature deaths could be avoided by requiring full compliance with the MES, which would represent 40% reduction in the cumulative health impact of air pollution from Eskom's power stations. ▪ (9.3) Eskom had knowledge of the direct health impacts of its coal-fired power stations, based on the 2006 studies it 			

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	<p>commissioned, providing sufficient reason for Eskom to ensure that it was implementing the necessary abatement measures to effectively mitigate the impacts of its coal-fired power stations. In other words, as an organ of state with constitutional obligations, Eskom was legally compelled to act to limit its pollution well before the MES were even published in 2010. Eskom had ample opportunity to take the necessary steps to ensure MES compliance. At the very latest, it became aware of this on 31 March 2010 – almost 9 years ago. We submit that Eskom’s reasons for delay: planning, approval and commercial processes, is unacceptable – as a state-owned entity requiring government approval and compliance with the Public Finance Management Act, 1999, Eskom is experienced in the lead-time and process and expenditure required in order to install operating equipment at its power</p>			

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	<p>stations.</p> <ul style="list-style-type: none"> ▪ (9.4) It is disputed that Eskom is in compliance with various emission limits contained in their relaxed AELs and therefore operating legally. The 3,200 exceedances of applicable AEL limits for PM, SO₂, and NO_x, reported in Eskom's monthly emission reports over a 21-month period, is evidence of this. Urgent enforcement action should be initiated against Eskom as a result of its non-compliance with its relaxed AEL limits at a number of power stations, as opposed to considering this impermissible application to further delay and suspend compliance with the MES. ▪ (9.5) Eskom's decommissioning schedule is too broad- setting out a wide range of several years over which each power station is expected to be decommissioned; with no particularity regarding the specific process per unit and date. For instance, no indication is given as to when the relevant timelines for each EIA process 			

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	<p>would commence for such decommissioning, and all relevant timelines for each phase in the EIA process. Therefore the decommissioning table in Figure 1 falls far short of satisfying the List of Activities and 2017 Framework requirements for detailed and clear decommissioning schedule.</p> <ul style="list-style-type: none"> ▪ (9.6) Alternative limits, in the alternative to postponement applications ('option 1'), are applied for in relation to Majuba, Kendal, Lethabo, Duvha and Matla stations. The majority of these applications request an alternative limit post-2025 "until decommissioning" that is weaker than the new plant MES – these are tantamount to an exemption from the MES and are unlawful. That much is clear from the List of Activities and the Framework. 1 April 2025 is the latest date for compliance with new plant MES. ▪ (9.7) Eskom otherwise provides no justifiable or acceptable reasons in support of its 			

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	various applications. Stations that cannot comply with the MES should not operate and/or their decommissioning should be expedited. Applying for a 'tailored' set of limits that are weaker than the new plant MES through to decommissioning, in areas where there is chronic non-compliance with the NAAQS, cannot be permitted and undermines the Constitution, NEMA, the AQA, the List of Activities and the Framework.			
1.30	(10) We are instructed to focus our comments on the Summary Motivation Report, the Summary (cumulative) 8 9Atmospheric Impact Report (Annexure B), and "Health impact focused cost benefit analyses" (Annexure C). The Summary Motivation Report includes an explanation of Eskom's emission reduction plan, its compliance status with the new plant MES, the legal basis for the applications to be submitted and the reasons for its postponement, suspension and alternative limit applications. These submissions are also confined to the 10 stations	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	It is Eskom's belief that considering all the available information approval of the postponement applications is consistent with the objectives of the act (see 1.31 for more details).

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	identified above, namely, Lethabo, Majuba, Camden, Kriel, Matla, Kendal, Duvha, Arnot, Hendrina and Komati power stations. We submit that the content of these documents is sufficient to conclude that Eskom has not satisfied the prescribed conditions required for its various applications, and understood within the applicable legislative 2017 Framework, the applications should be rejected.			
1.31	(12) Section 24 of the Constitution guarantees everyone the right to an environment not harmful to health or well-being, and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. As the Constitution is the supreme law, any law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled. All law and conduct must be measured against the right to an	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Noted. Responded to in detail in 1.18 above. Eskom also notes that NEMA was developed to give further effect to the Constitutional right for environmental protection and in terms of the preamble to NEMA the act also aims to "secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development;" further the Principles "(a) shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination" S2(1) a NEMA. It is Eskom's belief that considering all the available information approval of the postponement applications is consistent with the objectives of the Constitution and NEMA.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>environment that is not harmful to health or wellbeing. It is to give effect to the constitutional environmental right that environmental legislation - including air quality legislation - was enacted.</p> <p>(13) The overarching environmental legislation which gives effect to section 24 of the Constitution is NEMA, and the National Environmental Management (NEM) Principles in NEMA's section 2, which must be adhered to by any organ of state in all decision-making and when exercising its functions. Some of these binding directive principles are as follows:</p> <p>a. the environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage ("public trust doctrine);</p> <p>b. a risk-averse and cautious approach must applied, which takes into account the limits of current knowledge 13about the consequences of decisions and actions ("precautionary principle");</p> <p>c. negative impacts on the environment and on people's</p>			

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	<p>environmental rights must be anticipated and prevented, and where they cannot be altogether prevented, must be minimised and remedied (“preventive principle”);</p> <p>d. pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied (“preventive principle”);</p> <p>e. environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons;</p> <p>f. responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its lifecycle;</p> <p>g. sensitive, vulnerable, highly dynamic or stressed ecosystems...require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development</p>			

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	<p>pressure;</p> <p>h. the cost of remedying the pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment (“polluter pays’ principle”);</p> <p>i. use and exploitation of non-renewable natural resources must be responsible and equitable, and take into account the consequences of the depletion of the resource; and</p> <p>j. the participation of all interested and affected parties in environmental governance must be promoted.</p>			
1.32	<p>(14) –(15) AQA requires that an organ of state “give effect to the national Framework when exercising a power or performing a duty in terms of [AQA] or any other legislation regulating air quality management”. As a significant emitter and a major source of pollution in South Africa, Eskom is legally required to limit its emissions to help ensure NAAQS compliance.</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>Eskom notes the National Air Quality Framework but it also takes notes the MES regulation GN 893 as amended (see below) which provide the NAQ the discretion to consider the Eskom application and motivation in line with the broad intent of the NEMA Act. (12A)</p> <p>(a) An existing plant may submit an application regarding a new plant standard to the National Air Quality Officer for consideration if the plant is in compliance with other emission standards but cannot comply with a particular pollutant or pollutants.</p> <p>(b) An application must demonstrate a previous reduction in emissions</p>

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	<p>(16) On 26 October 2018, the 2017 Framework was published, which reflected the material amendments made to the process of applying for the postponement or suspension of the MES.</p> <p>(18) Paragraph 5.4.3.4 of the 2017 Framework thus stipulates that compliance with MES may be postponed and a suspension of compliance may be granted, provided NAAQS are in compliance and the air emissions are not causing direct adverse impacts on the surrounding environment. The NAAQS compliance requirement holds particular significance in relation to the 3 air quality Priority Areas situated within the Highveld, Vaal Triangle, and the Waterberg-Bojona - all of which remain out of compliance with NAAQS, despite their status as a "PriorityArea" and despite the fact that: the VTAPA was declared almost 13 years ago; the HPA more than 11 years ago; and the WBPA, more than 6-and-a-half years ago. We and our clients reiterate our view that no industries operating within these Priority Areas should be permitted to apply for postponement, suspension or alternative limits and submit that granting such applications</p>			<p>of the said pollutant or pollutants, measures and direct investments implemented towards compliance with the relevant new plant standards.</p> <p>(c) The National Air Quality Officer, after consultation with the Licensing Authority, may grant an alternative emission limit or emission load if:</p> <p>(i) there is material compliance with the national ambient air quality standards in the area for pollutant or pollutants applied for; or</p> <p>(ii) the Atmospheric Impact Report does not show a material increased health risk where there is no ambient air quality standard.</p> <p>[Para. (12A) inserted by GN 1207/2018]</p> <p>(13) The National Air Quality Officer, with the concurrence of the Licensing Authority as contemplated in Section 36 of this Act, may in respect of an application for a once-off postponement with compliance timeframes with minimum emission standards for new plant as contemplated in paragraph (11A), or a once-off suspension of compliance timeframes with minimum emission standards for new plant as contemplated in paragraph (11B):</p> <p>(a) grant the application with or without conditions; or</p> <p>(b) refuse the application with written reasons.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	will only exacerbate the high levels of air pollution, and its dire impact on human health, well-being, and the environment; which would in turn, make it even more difficult for the Priority Areas to meet their goals of ensuring compliance with NAAQS.			
1.33	<p>(20) Paragraph 5.4.3.4 of the 2017 Framework also notes that: “that the year 2020 marks 10 years since the publication of the 2010 AQA Section 21 notice. Therefore, sufficient time has been afforded to industry towards compliance with the initial MES by 2020. In upholding the objectives of the AQA, the Department provides certainty regarding postponement or suspension of compliance timeframes in the following order:</p> <p>a. Existing facilities may apply for a once-off postponement of compliance timeframes for new plant standards. A postponement if granted will be for a period not exceeding 5 years and no postponement would be valid beyond 31 March 2025;</p> <p>b. Existing facilities that will be decommissioned by 2030 may apply for a once-off suspension of compliance</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	As indicted Eskom notes the National Air Quality Framework but it also takes notes the MES regulation GN 893 as amended which provide the NAQ the discretion to consider the Eskom application and motivation in line with the broad intent of the NEMA Act (see 1.18).

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>timeframes with new plant standards for a period not beyond 2030. An application must be accompanied by a clear decommissioning schedule and no such application shall be accepted after 31 March 2019;</p> <p>c. Existing facilities that will be granted a suspension of compliance timeframes shall comply with existing plant standards during the suspension period until they are decommissioned; and</p> <p>d. No postponement of compliance timeframes or a suspension of compliance timeframes shall be granted for existing plant standards.</p> <p>e. An existing facility may submit an application regarding a new plant standard to the National Air Quality Officer for consideration, if the facility is in compliance with other emission limits but cannot comply with a particular pollutant or pollutants. An application must demonstrate previous reduction in emissions of the said pollutant or pollutants, measures and direct investments implemented towards compliance with the relevant new plant standards. The National Air Quality Officer, after consultation with the</p>			

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	<p>Licensing Authority, may grant an alternative emission limit or emission load provided there is compliance with the national ambient air quality standards in the area for pollutant or pollutants applied for; or the Atmospheric Impact Report does not show increased health risk where there is no ambient air quality standard”</p> <p>(21) The 2017 Framework sets out new requirements for the postponement of MES compliance and makes provision for suspensions of such compliance. The following is made clear:</p> <ul style="list-style-type: none"> a) postponements of the 2015 MES are no longer permitted; b) in limited circumstances, including demonstration of compliance with existing plant standards and NAAQS, only one postponement, per pollutant, is permitted for the 2020 MES, and such postponement may not extend more than 5 years (i.e. all plants must meet the 2020 MES by 31 March 2025; and c) in limited circumstances, including demonstration of 			

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	<p>compliance with existing plant standards and NAAQS, facilities to be decommissioned by 31 March 2030 may receive for a once-off suspension of compliance with the 2020 MES, no later than 31 March 2030.</p> <p>(22) In light of the above, we reiterate that the 2017 Framework is the “national Framework for achieving the objectives of [the AQA]” and it “binds all organs of state in all spheres of government”. We therefore note that Eskom may not lawfully apply to postpone its compliance with the MES, or apply to suspend MES compliance, unless and until the ambient air quality within the HPA and VTAPA is in compliance with the NAAQS. This is not the case; and for this reason alone: the applications should be rejected.</p>			
1.34	<p>(26) Like the 2017 Framework, the List of Activities has also been updated on a few occasions. Most recently, on 25 May 2018, the proposed amendments to the List of Activities were published for comment, which proposed, inter alia, that no further postponements of existing plant MES would be permitted and that no further postponements of new plant MES will be permitted beyond 31</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	Noted.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	March 2025. We submitted written comments on these draft amendments on 25 June 2018.			
1.35	(32) Should Eskom persist in making such applications, we call upon it to ensure full compliance with the legal requirements for such postponement and suspension applications, set out in the List of Activities and the 2017 Framework. These include that no postponement or suspension application can succeed unless NAAQS are in compliance and it is demonstrated “that the industry’s air emissions are not causing direct adverse impacts on the surrounding environment”. It is clear that this is not the case.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	As indicated above Eskom believes it meets the legal requirement to submit an application in terms of the MES regulations (see 1.32).
1.36	As set out above, given that air quality in the HPA and VTAPA (and WBPA) is not in compliance with the NAAQS, postponement applications should be summarily rejected. The NAQO, in concurrence with the competent licensing authorities needs to go no further in arriving at a rational and reasonable decision. Granting any of these postponement, suspension or alternative limit applications would be ultra vires the Constitution, the AQA, the amended List of Activities, the 2017 Framework, and the provisions of the	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	See 1.18 above and 19.1

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	NEMA.			
2. OTHER SEPARATE POSTPONEMENT APPLICATIONS PURSUED FOR SELECTIVE POWER STATIONS				
2.1	<p>Post receipt of the 2015 multiple postponements of compliance with MES two other subsequent postponements were sought for Medupi, Matimba (2017) and Tutuka power stations (2018).</p> <p>The current postponement application BID does not apply to Medupi and Matimba yet Table 6 of the BID indicates both stations also seek postponement of the new plant MES for SO₂. Please advise of the outcome of the Medupi and Matimba existing plant SO₂ re-applications as soon as available. We also seek urgent confirmation regarding further postponement applications-if any in relation to Mepudi and/or Matimba.</p>	<p>Timothy Loyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	<p>Medupi Matimba</p>	<p>There is no new postponement application from the MES compliance timeframes for Medupi and Matimba. It has been included in Table 6 of the BID to provide a complete overview of postponements applied/being applied for by Eskom for its fleet of power stations presently. These two power stations hence do not form part of this postponement application process.</p> <p>The NAQO has already granted the requested postponements for Medupi and Matimba in September 2018 and Eskom have published this to interested and affected parties. We can confirm the Eskom is presently evaluating the need for MES postponement applications for Acacia. Port Rex, Grootvlei, Matimba and Medupi and will submit these as a separate application to the current one if required.</p>
2.2	<p>The BID indicates 'Tutuka's postponement application commenced in early 2018 and is running slightly ahead of remaining postponement applications and will be submitted before 31 March 2019'. This statement creates the impression that there is still a separate postponement application process for Tutuka. Yet Table 1 indicates Tutuka will</p>	<p>Timothy Loyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	<p>Tutuka</p>	<p>A separate postponement application process is being followed for Tutuka since the compliance timeframe for MES set by DEA is earlier, 2019. Hence it does not form part of this application process and started ahead of this process. Tutuka has been included in Table 6 of the BID to provide a complete overview of postponements applied/being applied for by Eskom for its fleet of power stations. Michelle Koyama from LAC, is registered on the I&AP Database for the Tutuka postponement application and has been actively submitting comments on the process. The 2nd round of public engagement for Tutuka has commenced and NEC has</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>form part of the current application process.</p> <p>Please clarify if Tutuka will form part of the current application process.</p>			accordingly notified LAC.
2.3	<p>The BID does not apply to Medupi and Matimba power stations, but it appears from Table 6 that both stations also seek postponements of new plant SO₂ MES. We request that I&APs in this process are given a full picture of the postponement applications being made by Eskom, including Medupi and Matimba and Tutuka.</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment</p>	<p>Medupi Matimba Tutuka</p>	<p>Please refer to response under point 2.1 and 2.2.</p> <p>NEC has added Greenpeace Africa to the I&AP Database for Tutuka and has been notified of the commencement of the 2nd round of public engagement for Tutuka's postponement application.</p> <p>Medupi, Matimba and Tutuka have been included in Table 6 of the BID to provide a full picture of the postponement applications which are/ being made by Eskom.</p> <p>Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.</p>
2.4	<p>(5.3) The second round of public engagement for the application for postponement of the MES compliance timeframes for Eskom's coal and liquid fuel fired stations was announced in press advertisements on 9 November 2018, and in an email to I&APs on 12 November 2018. Documents were available for perusal and comment from 19 November 2018. It was confirmed that Eskom would</p>	<p>Timothy Lloyd Attorney-Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	<p>Medupi Matimba</p>	<p>Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	apply to the NAQO for postponement or suspension or propose alternative emission limits of the respective emission standards for the following power stations: Lethabo power station (Vaal Triangle – the VTAPA); Majuba, Camden, Kriel, Matla, Kendal, Duvha, Arnot, Hendrina and Komati power stations (Mpumalanga Highveld – the HPA). It was further confirmed in the notification that Grootvlei power station (Balfour), Acacia power station (Western Cape) and Port Rex power station (Eastern Cape) are excluded from this postponement application and would be dealt with through separate application processes. It remains unclear what the position is regarding future postponement and/or suspension and/or alternative emission limit applications for Medupi and Matimba power stations (WBPA).			
2.5	(6) It has been clarified that Grootvlei, Acacia, and Port Rex power stations are excluded from this current application; however, these stations are still referred to throughout the Summary Motivation Report, as are Medupi and Matimba power stations. In the BID submissions, we requested urgent confirmation regarding further	Timothy Lloyd Attorney-Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Medupi Matimba	We can confirm that Eskom is presently evaluating the need for MES postponement applications for these stations and will submit these as a separate application to the current one if required.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	postponement applications – if any - sought in relation to Medupi and/or Matimba. It is requested, once again, that this is clarified as soon as possible.			
2.6	(70) We re-emphasise that it is our primary objection that Eskom's current applications – and any forthcoming applications for Grootvlei, Medupi, and Matimba stations – should be rejected on the basis that they do not satisfy the pre-requisites as contemplated in the 2017 Framework and List of Activities. The consequential premature fatalities attributed to Eskom's coal-fired power stations cannot be justified in terms of the Constitution, NEMA, and the AQA.	Timothy Lloyd Attorney-Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Grootvlei Medupi Matimba	<p>The issue of Constitutional and legal basis for approval the application has been described in 1.18 above.</p> <p>The Eskom application provides a reasoned basis for the postponement application. The reasons for the applications include limited water availability, a low reserve margin for which means that retrofits have to be carefully phased to maintain the reserve margin, public pressure to keep the electricity tariff low and other negative environmental consequences including greenhouse gas emissions, transport related impacts and waste. Eskom contends that in line with the Constitution and NEMA a decision should be taken in the national interest, weighing up the costs and benefits of compliance. Eskom further contends that the proposed Eskom emissions reductions plan presents a fair balance between cost and benefit whereas full compliance with the MES does not.</p>
3. MOTIVATION / JUSTIFICATION FOR POSTPONEMENT APPLICATION				
3.1	How will Eskom justify this postponement application?	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	<p>It is a complex and expensive process to retrofit power stations. Power stations cannot be completely shut down to retrofit generating units since it will impact on the electricity supply. Eskom is cognisant of the impact the capital expenditure would have on the electricity tariff. Eskom's only source of income is through sale of electricity. The expenditure would need to be recovered through an increased electricity tariff to be paid by the people of South Africa.</p> <p>Additionally the control measure for SO₂ requires significant volumes of</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
				<p>water. There simply is not enough water for these purposes.</p> <p>The Motivation document providing the justification for Eskom application for postponement from the MES will be made available for public review and comment during the 2nd round of public engagement.</p>
3.2	<p>In the introduction of each power station motivation document it is said under Chapter 2, ESKOM'S EMISSION REDUCTION PLAN, Eskom considers that it is not practically feasible or beneficial for SA (when considering the full implications of compliance, planned decommissioning and health impacts) to comply fully with the 'new plant; MES by the stipulated timeframes'.</p> <p>Who's opinion is more important? The opinion of Eskom or government that supposedly has discussed this with its experts?</p> <p>Having to comply with the existing and new emissions standards was known already in November 2013. How come plants like Grootvlei and Arnot can have FFP already installed?</p>	<p>H.A. de Koningh Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official written comments</p>	All	<p>Eskom fully respects the authority of government and has acted in compliance with its AELs as issued based on the 2014 postponement application in terms of the instillation of the required technology. Eskom was required to install FFP as a part of the commitments made in the 2014 postponement and did so. Being aware of emissions issues Eskom proactively install FFP at Arnot in line with its overall plan to reduce emissions – especially particulates.</p>
3.3	<p>With regard to reducing emissions one would say that it must be ensured that the planned offset project which will reduce low level emissions in communities in the</p>	<p>H.A. de Koningh Free lance Engineer Energy & Climate Change</p>	All Kriel Matla	<p>Eskom has appointed the Medical Research Council to independently assess the impact of its emissions offsets projects on communities in order to verify its present understanding.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	vicinity of Eskom power station will be studied long enough to conclusively provide cost benefit (from ESKOM ENV18-R242 rev 1 Matla, ESKOM ENV18-R238 rev1 Kriel).	Heidelberg 4 February 2019 Official written comments		
3.4	From “ESKOM ENV18-R241 rev 1 Lethabo”/Motivation Document: For NOx postponement of the new plant standard 3until 2025 is requested and thereafter an alternative daily limit of 1100 mg/Nm is requested until station decommissioning. How can this alternative limit be obtained suddenly?	H.A. de Koningh Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official written comments	Lethabo	The 1100mg/Nm ³ limit is the existing NOx standard Eskom is asking to continue to operate at this level post 2025 so there is no sudden improvement in performance.
3.5	From “ESKOM ENV18-R240 rev1 Kendal: under 5.2 Water Availability. The total water demands in the Integrated Vaal River Catchments presently exceed the water availability in the catchment until Phase 2A of the Lesotho Highlands Water Project (LHWP) is implemented. Kendal must refer to the correct water catchment area. This is not the Vaal Catchment area??	H.A. de Koningh Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official written comments	Kendal	Correction Kendal power station is situated in the Olifants Catchment Management Area.
3.6	In the Summary AIR under 2.1.1 10-	H.A. de Koningh	Kendal	That is true but what the commentator does not acknowledge is the fact

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	minute average: The Kendal monitoring station which is immediately downwind of the power station shows the highest number of exceedances of the NAAQS limit value, with more than 300 in 2015, even with a data recovery of less than 50%. The report of Kendal “ESKOM ENV18 – R240 rev 1 Kendal”/Motivation Document does however not admit it is because of SO ₂ emissions coming from Kendal.	Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official written comments		that in the following two years of monitoring where the data recoveries were 90.4% and 82.1% there were less than 300 exceedances of the NAAQS limit value. Therefore it is highly likely that there was still compliance with the NAAQS standard in 2015 even though such compliance cannot be assured.
3.7	<p>Eskom's explanations for why it cannot comply with the MES are unconvincing and are based on incorrect or misleading information.</p> <ol style="list-style-type: none"> Contrary to Eskom's claims, it is technically possible to install Flue Gas Desulphurization equipment (FGDs) in all plants that intend to operate beyond 2030, by the 2025 deadline (as long as procurement is started in 2019-2020). For example: <ul style="list-style-type: none"> China retrofitted approximately 250 gigawatts of existing coal-fired capacity with FGD between 2005 and 2011, bringing share of capacity with SO₂ controls from 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official written comments</p>	All	<p>As indicated while comparing selected costs and compliance time frames is interesting Eskom's cost and timeframes are based on its practical experience of construction in the South African context. For Eskom to propose costs and timeframes outside of its real experience would be misleading.</p> <p>See 1.23 for a full response to the timeframe and costing arguments.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>14.3% to 89.1% in six years; and</p> <ul style="list-style-type: none"> - India is aiming to bring its entire coal fleet to compliance with stricter standards than the MES by 2022, requiring retrofits in much of its 220GW of operating capacity and . according to India's Ministry of Power, the procurement, construction and connection of an FGD takes 30-36 months (according to the International Energy Agency 24-36 months is required) <p>2. Eskom exaggerates the costs of compliance with the new source MES for SO2 at least 5-fold. For example its costing of the installation of FGD equipment is based on outdated research from 2006: before China, India and other emerging countries started deploying FGDs at scale and the costs dropped.</p>			
3.8	(19) We note that in the section of the Summary Motivation Report that describes the legal basis for this application, the conditions relating to compliance with NAAQS and direct	Timothy Loyd Attorney – Pollution and Climate Change LAC joint	All	<p>As indicated Eskom believes it meets the legal requirements to submit an application.</p> <p>Eskom clearly describes the MES regulation requirements on page 13 of its summary motivation.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	adverse impacts on the surrounding environment, have been inexplicably omitted. The prospects of Eskom's applications hinge on these two conditions, which we submit it has not met, and it is critical that I&APs are aware of these requirements.	campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment		
3.9	<p>(41) In the Summary Motivation Report, Eskom acknowledges its current and continued impact on ambient air quality in the HPA, in particular, in which residents are still exposed to dangerous levels of air pollution, despite its declaration in 2007. It states the following:</p> <p>“It is common cause that the Minimum Emission Standards (MES) serve to ensure that there is compliance with the National Ambient Air Quality Standards (NAAQS). It is also common cause that there are many areas in South Africa in which NAAQS are not met consistently, exposing people and the environment to pollutants at concentrations that are above those considered to be protective of human health as seen in the state of air report for the Highveld Priority Area (HPA).</p>	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Power stations in HPA, VTAPA	

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>In addition to the individual AIR completed for each power station, an air quality report, considering the cumulative impact of the Eskom stations over the HPA was completed. The analysis included three scenarios; which considered (1) the actual emissions, (2) emissions if the MES was complied with and (3) emissions if six power stations are decommissioned by 2030. The general conclusions of the analysis indicate that the quality of air will be in compliance with NO₂ National Air Quality Standards (NAAQS), but noncompliance with the daily and annual SO₂ standards in several areas across the Highveld. Daily and annual average PM₁₀ and PM_{2.5} concentrations could be in noncompliance and for extended periods of time. The effect of the above is that PM ambient levels currently result in increased health risk for a large part of the Highveld.</p> <p>Dispersion modelling results based on individual and combined power station emissions, excluding all other sources; indicate a negligible contribution to PM pollution. In addition the diurnal pattern in PM concentrations based on monitored ambient data clearly indicate a morning and early evening peaks, typical of low</p>			Correct.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>level source contributions. However, a combination of SO₂ and NO_x emissions from all the Highveld power stations is predicted to form a significant component of the PM_{2.5} load especially over Emalahleni area, which is in noncompliance with PM standards, is a cause for concern.</p> <p>In addition, the combined SO₂ emissions from all Eskom power stations are predicted to contribute a significant amount to the pollution in and around the Emalahleni and Middelburg areas and even extending south towards Komati Power Station. However analysis indicates that the non-compliance is not only due to Eskom Power Stations but a function of a multitude of sources in the Highveld.”</p>			
3.10	(89) It is reasonable to conclude that Eskom has been anything but “committed” to reducing its cumulative emissions, but rather continually attempted to delay, postpone, suspend, or undermine the purpose and object of the Listed Activities and AQA. We therefore submit that these applications should not be considered, not only because it is legally impermissible as explained	<p>Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	The delays in implementation of planned emission reduction projects have been associated with investment and procurement, budget confirmation and commercial delays. As a responsible company it will comply with the conditions of any postponement granted.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	above, but also because Eskom has failed to provide justifiable reasons for not meeting the timeframes granted in the previous 2014 postponement application. We have no reason to believe that it will comply with additional conditions granted should any of its applications succeed.			
4. BACKGROUND INFORMATION DOCUMENT (BID)				
4.1	In which languages will the BID be made available?	<p>Chakane Daniel Sibaya Environmental Manager & AEL Officer Fezile Dabi District Municipality District Licensing Authority Engagement Meeting 30 July 2018</p> <p>Oupa Mokoena Public Participation Officer Emalahleni Local Municipality Emalahleni Ward Councillor Briefing 17 August 2018</p>	All	<p>English Afrikaans IsiZulu Sesotho IsiXhosa Siswati</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
4.2	The BID argues that the NAAQS are 'safe', which is not true.	Lyndon Mardon DEDEAT Eastern Cape Provincial Air Quality Officer East London Public Meeting 28 August 2018	All	In the BID the word 'tolerable' is used not 'safe'. In this the point is made that there is no safe limit.
4.3	I enquired at the Edgemoor Library while waiting for the public meeting and the librarian had no knowledge of the BID.	Richard Hasley Project 90 by 2030 Edgemoor Public Meeting 29 August 2018	Acacia	Confirmation of the receipt of the BID at the Edgemoor Library was obtained to show the BID was in fact delivered and available at the library.
4.4	Key items are missing in the BID. <ul style="list-style-type: none"> - No mention is made of the HPA where majority of the power stations are located. It is critical information as the HPA fails to meet the NAAQS. This is reason enough for the entire postponement application to be rejected; - It does not provide proper reasons why Eskom is unable to comply with the MES only 'due to various existing constraints' - The BID must include what programs have been initiated, what money has been spent, what obstacles were encountered, what was done to overcome obstacles, 	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	<p>There is no legal requirement in terms of what must be shown in the BID. The BID provides a background to project with additional details being provided in the documents made available for public comments. NEC believes the information provided in the BID and in the applications provides sufficient information for the decision makers to make an informed decision and the public to provide initial input on the process.</p> <p>The fact that power stations are in the HPA and VTAPA are now explicitly described in the AIRs for the respective power station.</p> <p>The delays in implementation of planned emission reduction projects have been associated with investment and procurement, budget confirmation and commercial delays. See 7.36 for additional details on delays.</p> <p>The penalties with non-compliance with the AEL and NEMAQA are described in the act and Eskom has not been subject to any penalty in terms of the act to date.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>in relation to MES compliance</p> <ul style="list-style-type: none"> - It should include what finance plans (including amounts) were put in place for programmes to meet the MES and what funds were set aside. If this was never done it is also important public information - It should give details on the any applicable penalties for non-compliance and if these absent explain why. <p>The BID does not contain enough information for a meaningful first round of public participation.</p>			
4.5	Having the first round of public consultation without the results of properly conducted AIR seems to indicate that the current air quality in the affected areas is not a priority, which it must be, especially for those living in the areas where a number of the consultations are taking place.	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	<p>The current air quality in the affected areas are a priority and of pivotal importance to the assessment of the resultant impact of the requested postponements.</p> <p>NEC has taken the approach to engagement with the public in two rounds of consultation based on the PPP requirements set out in the NEMA EIA Regulations of 2014. The aim being:</p> <ul style="list-style-type: none"> (a) 1st round: To scope the issues and potential impact of the application by firstly bringing Eskom's intent to apply for postponement to the attention of the public and to providing the opportunity to comment on the approach of the planned assessment; (b) 2nd round: Communicate the outcome of the specialist assessments to the public, which have taken public inputs from the 1st round of engagements into consideration.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
				NEC is of the submission that the approach is acceptable and allows the assessor to first scope all the potential issues that need to be taken into consideration in the AIR.
4.6	A great deal more information is required for public participation in this process to be meaningful, and we caution against a process that mirrors the 2014 application process, which we believe to be fatally flawed.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	The public participation process meets the requirements of the relevant legislation. In addition the process is more extensive than the one undertaken in 2014 in that a range of additional public meetings have been scheduled.
4.7	<p>The BID is inadequate due to:</p> <ul style="list-style-type: none"> - Incomplete information, which undermines the PPP, and the decision-makers' ability to reach an informed decision; - Inadequate reasons for Eskom's delay in meeting the MES, which it claims necessitates the current postponement application; - Deficiencies in the proposed approach for conducting an AIR and air quality modelling. <p>The BID does not contain the necessary information required for reasonable public participation. For this reason alone, the BID should be rejected, and an accurate, informative, complete BID provided for comment on an urgent basis. It misses the following information:</p> <ul style="list-style-type: none"> - It does not mention that the 12 	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	<p>See 4.4 above and 6.21</p> <p>The BID provides a background to project with additional details being provided in the motivation and AIR documents made available for public comments.</p> <p>NEC believes the information provided in the BID and supporting document provides sufficient information for the decision makers to make an informed decision and the public to provide input on the process.</p> <p>The location of the stations in the priority areas is indicated in the supporting documents which are made available to the public.</p> <p>Eskom indicates it is in general compliance to the conditions of the AEL's, instances of non-compliance can occur and these are managed through appropriate legal mechanisms</p> <p>The reference to the 2013 Amendments is because those are the regulations that currently prevail and so the idea 'that this was done to create the 'incorrect impression' is refuted.</p>

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	<p>power stations are within the Vaal and Highveld Priority Areas regularly out of compliance with the NAAQS. This is fatal to Eskom's application;</p> <ul style="list-style-type: none"> - Eskom states it is in compliance with the stations AEL's. We request proof of this; - Reference is made to 2013 MES. It's misleading to the public. Eskom knew of the compliance timeframes and limits since 2010. It was part of the discussions on setting limits and compliance timeframes for polluters since 2004 giving many years advance warning to plan and invest in power stations to come into compliance with the MES. This should be clear in the BID; - It does not indicate which air quality models will be used. It only mentions a "puff model" that will "take a puff of pollution and then disperse that puff through the atmosphere as a function of the state of the atmosphere when the puff is emitted". The ADM Regulations lists 5 types of models including CALPUFF and 			<p>Details of the air quality modelling approach will be available in the AIR.</p> <p>NEC believes the public participation process including the BID meets the requirements of the relevant legislation.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>SCIPUFF which may be used. To assess the suitability of the chosen air quality model and modelling approach, the BID should set the key criteria used to select the model and modelling approach to be used with a detailed justification of choices. It will enable any concerns to be addressed before any modelling is conducted.</p> <ul style="list-style-type: none"> - It is not sufficient to only engage “independent consultants”. International procedures should be adopted and a clear Terms of Reference must be produced as part of the public participation process, including scope and methodology of this analysis; 			
4.8	<p>The BID does not provide a reasonable explanation for the delay in adequately progressing and planning for the abatement equipment installations. Eskom must provide clear reasons in the BID for not meeting the time frames granted in the previous 2014 postponement application namely:</p> <ul style="list-style-type: none"> - Why it has delayed commencing with the necessary retrofits; - What challenges were experienced during the retrofit 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment</p>	All	<p>See 4.4 above</p> <p>The delays in implementation of planned emission reduction projects have been associated with investment and procurement, budget confirmation and commercial delays.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>programme;</p> <ul style="list-style-type: none"> - What actions were taken; - When to remedy the delay 			
4.9	<p>The BID is defective; it does not contain material information. It does not explain the Framework's postponement requirements, the fact that the NAAQS are not in compliance in the HPA or VTAPA, or the health impacts of the postponement.</p> <p>The process should begin afresh, with publication of an accurate informative BID.</p> <p>The BID is problematic in several aspects, including:</p> <ul style="list-style-type: none"> • Inaccurate information is provided • Inadequate explanation is provided in respect of Eskom's delay in meeting its obligations which it claims necessitates the current postponement application; • There are deficiencies in the approach for conducting the AIR; • Inappropriate approach to the proposed air quality modelling; 	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	All	<p>NEC believes the information provided in the BID and supporting document provides sufficient information for the decision makers to make an informed decision and the public to provide input on the process.</p> <p>NEC believes the public participation process including the BID meets the requirements of the relevant legislation.</p>
4.10	<p>Information missing from the BID:</p> <ul style="list-style-type: none"> - Paragraph 8 relies on the legislative requirements in the List of Activities, 	<p>Timothy Lloyd Attorney LAC joint</p>	All	<p>NEC believes the information provided in the BID and supporting document provides sufficient information for the decision makers to make an informed decision and the public to provide input on the process.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>it neglects to set the provisions of the Framework;</p> <ul style="list-style-type: none"> - It does not indicate 11 power stations are in the HPA and 1 station in the VTAPA which are in non-compliance with the NAAQS and that MES postponement applications may not be made where NAAQS are out of compliance. It's crucial for the application. I&APs need to be aware of these requirements, the state of air quality in the HPA and VTAPA, it not being in compliance with the NAAQS including what the health impacts of such non-compliance are; - It fails to include the relaxed current AEL limits applicable to the coal-fired power stations, compared to the MES; - It fails to address the significant number of exceedances of emission limits in its AEL's at majority of its power stations; - The BID states Eskom complies with limits stipulated in the stations AEL's. We dispute this. LAC in collaboration with international air quality experts are finalising an assessment of Eskom's monthly emissions reports for April 2016 – December 2017. The study reviews 14 of Eskom's coal-fired power stations and compares 	<p>campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>		<p>NEC believes the public participation process including the BID meets the requirements of the relevant legislation.</p> <p>Many of the details requested are addressed in the motivation and AIR which will be provided for public comment in the second round of public participation.</p>

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	<p>Eskom's actual monthly emissions against the limits prescribed in the stations' AELs. We confirm that there were over 3000 exceedances at these stations across the applicable daily average emissions limits for PM, SO₂ and NO_x during this 21 month period. The exceedances were significantly greater than the applicable AEL emission standards.</p> <ul style="list-style-type: none"> - The reference to the 2013 MES amendments creates an incorrect impression that Eskom only knew in 2013 of its compliance limits and timeframes; - The air quality model which will be used as per the ADM Regulations is not indicated. The BID should set out the key criteria to be used to select the air dispersion model and modelling approach to be used with justification for its choices. This will allow any concerns to be addressed before any modelling is conducted; - It does not state that there is an inadequate number of monitoring stations and data around power stations. This may have an impact on the AIR Eskom proposes to undertake. In Eskom's 2014 application DEA requested further information from 			

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	Eskom to make a decision including why limited data were supplied to undertake the health and environmental impact study.			
5. PUBLIC PARTICIPATION PROCESS (PPP)				
5.1	<p>NEC should engage with NDM stakeholders namely the HPA ITT and VTAPA ITT.</p> <p>Engagement with the HPA ITT stakeholders should be done over and above the planned public meetings. NDM will provide the stakeholders database for the HPA ITT members so that these members are included in all consultations.</p>	<p>Mpho Nembilwi Pollution Control and Environmental Division NDM District Licensing Authority Engagement Meeting 30 July 2018</p>	All	<p>The project has been presented to the Sasolburg Air Quality Team on 15 August 2018, the VTAPA ITT (Sedibeng ITT) on 16 August 2018, the Nkangala ITT on 20 September 2018.</p>
5.2	<p>Advertisements and notices need to be placed in newspapers which are distributed in the communities as well. The list of libraries at which the public documents are displayed need to include Sasolburg and Zamdela.</p> <p>The public meeting scheduled for Lethabo should include a public meeting in Zamdela as Eskom's dispersion model shows that it does impact on the area. Also include Sedibeng District Municipality as part of the stakeholder's</p>	<p>Chakane Daniel Sibaya Environmental Manager & Atmospheric Emission Licensing Officer Fezile Dabi District Municipality District Licensing Authority Engagement Meeting</p>	Lethabo	<p>Notices will be placed in the Sedibeng Ster, Beeld, Daily Sun, Vaalweekblad and 'Die Ster'. The Zamdela Public Library has been included as a library at which the BID is displayed. NEC will include a public meeting for Zamdela. We have identified the Harry Gwala Multipurpose Centre as a suitable venue.</p> <p>Sedibeng District Municipality has been included on the I&AP Database.</p> <p>The option of using community radio stations to announce the project will be considered.</p>

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	engagement. Consider using the community radio stations to communicate the public meetings for the areas surrounding Lethabo Power Station namely Karabo FM (Zamdela), Teta FM (Vereeniging) and VUT FM.	30 July 2018		
5.3	There are many business owners in Balfour and farmers. In the 2 nd round of engagement NEC should schedule a meeting at the Balfour Town Hall.	Willem Davel DA PR Councillor DLM Balfour Ward Councillor Briefing 21 August 2018	Grootvlei	NEC will consider the Balfour Town Hall in the 2 nd round of public engagement.
5.4	Where were the public meetings for Grootvlei advertised? A lot of people of not aware of these meetings.	Willem Davel DA PR Councillor DLM Balfour Ward Councillor Briefing 21 August 2018	Grootvlei	NEC published advertisements in the Beeld, Daily Sun and Heidelberg/Nigel Heraut. Site notices have been placed in the area of Grootvlei, Balfour and Greylingstad. NEC has communicated the project to the Speakers Office of DLM and sent the BID to the relevant councillors, hence the briefing meeting. DLM Speaker's office has also loud hailed the meetings in the communities.
5.5	We have three areas in which meetings need to be conducted namely Grootvlei, Balfour and Greylingstad. In the 2 nd round of public engagement we would like to have three meetings in the area not just two.	Khetiwe Nkosi Speaker DLM Balfour Ward Councillor Briefing 21 August 2018	Grootvlei	NEC will consider the request, although budgetary limitations are driving the choice of venues. The choice seeks to make the best suitable area, as it is not feasible to hold meetings at all residential areas.
5.6	Register Earthlife Africa Johannesburg, groundwork and CeR to the project I&AP Database. We are unable to download the	Ruchir Naidoo Candidate Attorney CeR	All	ELA, gW and CeR have been registered as I&APs and added to the project I&AP Database on 14 August 2018.

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	requisite registration form from the NEC website indicated on the I&AP Notification Letter (www.naledzi.co.za/publicdocuments) and request NEC to send this form for registered parties to complete.	14 August 2018 Via Email		The BID and Comments and Registration form were emailed to the registered parties on 14 August 2018.
5.7	I attended the meeting at the East London Museum on the 28 August, along with one other Ward Committee member from Ward 18. Besides the two of us and the 3 gentlemen presenting there were only 2 others from BCMM that attended. However, we thoroughly enjoyed the presentation and wished that more of the public could have attended. It was mentioned that there would be a 2 nd round of public engagement. Is the date for East London available yet?	Susan van Scheltema Buffalo City Metropolitan Municipality Ward 18 Administrator East London 13 August 2018 Via Email	Port Rex	The 2 nd round of public engagement is scheduled for 12 November to 11 December 2018 during which the public will have the opportunity to review and comment on the Draft Motivation document, AIR and PPP Report for the project. The 2 nd round of public meetings will therefore be scheduled to take place from 19 to 30 November 2018.
5.8	Eskom is not the only company emitting pollutants in Vaal Region. People are only focusing on Eskom's part of the contribution to air pollution. Naledzi should engage other companies who are polluting the air in the Vaal Region.	Sere Phillip Letsika Justice and Peace Sharpeville Public Meeting 20 August 2018 Community Member Zamdela Public Meeting 21 August 2018	Lethabo	Eskom engages with several stakeholder groups to bring its air quality issues to their attention; namely the community, priority area information task teams, local authority, district authority, provincial and national government, The details of the postponement application process and related specialist assessments will be shared with these stakeholders. In particular, the Vaal Triangle is a Priority Area. All the main emitters of air pollution form part of a MSRG which engage to discuss ways to continue to improve air quality in high priority areas.
5.9	How can we obtain more information regarding the project in the future?	Oupa Ndeba Thabakgoadi Public	Grootvlei	NEC will notify the public through newspaper advertisements, site notices in the local area. We will place project documentation again at the

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		Meeting 21 August 2018		Grootvlei Mine Town Library. The information will also be placed on the NEC website. We will also notify the Speaker's Office of DLM and the Councillor of the availability of the outcome of the studies in the 2 nd round of public engagement. Another public meeting will be held in the area to communicate the outcome of the assessments with the community.
5.10	What does Eskom require from us as a community for this project?	Community Member Zamdela Public Meeting 21 August 2018	Lethabo	NEC wants communities to be informed of the application process; hence we invite the community members to public meetings. Attending the public meetings provides community members the opportunity to gain an understanding of the project and asked questions for clarity. Attendees should spread the word of Eskom's application for postponement from the MES to friends and acquaintances to increase attendance at public meetings in the 2 nd round of public engagement. Zamdela is an affected community and it is important to create awareness of the project within the community.
5.11	We want the AIR's and all associated specialist analysis which states the impacts from the respective power stations before STLM as a municipality can make a comment.	Pearl Moswathupa STLM Environmental & Air Quality Division Hendrina Public Meeting 28 August 2018	Hendrina Arnot Komati	The 2 nd round of public engagement will see the motivation documentation, AIRs inclusive of the health risk analysis and cost benefit analysis and PPP Report made available for public review and comment. NEC will place the documents for review at public venues and make it available for download from the NEC website: www.naledzi.co.za/publicdocuments . NEC will report the findings of the AIR inclusive of the health risk analysis and CBA for the respective stations to the public through a 2 nd round of public meetings. I&APs will be notified of its availability.
5.12	Please forward all the project information as required through the application process to us.	Karien Zantow Zantow Environmental Consulting Vanderbijlpark 11 September 2018 Comments and	Lethabo	Zantow Environmental Consultants have been registered on the I&AP Database for the project and will be notified of the availability of the project information. Also refer to response under 5.11.

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		Registration Form		
5.13	We have provided our email addresses on the attendance register and will like to request an emailed copy of the meeting presentation so we can apply our minds and comment by 31 January 2019.	Jeffrey Skosana Community Development Forum Kriel Public Meeting 20 November 2018	Kriel Matla	The meeting presentation was sent, together with the Minutes of the Kriel Public Meeting and signed Attendance Register, to meeting attendees for comment and finalization on 23 January 2019.
5.14	How do we access the draft Application Documents if we do not have access to the internet?	Dolly Nkombo Thubelihle Resident Thubelihle Public Meeting 20 November 2018	Kriel Matla	A copy of the draft Application Documents are/were available for public review and comment at the Thubelihle Community Hall from 26 November 2018 until 4 February 2019.
5.15	Since Eskom is not the only polluters in the Emalahleni area, why do they not engage and come up with a solution with the other polluters to reduce the emissions?	Teboga Masilo Emalahleni Public Meeting 21 November 2018	All	The DEA governs air pollution and the department develops a plan to address the air pollution issues in terms of the three priority areas, it is in this process that Eskom engages with the DEA, industry and other relevant stakeholders.
5.16	Is NEC still going to record all the concerns from the Emalahleni Public Meeting and the poor attendance? Will the meeting be rescheduled? Are we going to legitimize this public meeting?	Robby Mokgalaka Groundwork Emalahleni Public Meeting 21 November 2018	Kendal Duvha	All the concerns from the Emalahleni Public Meeting have been recorded in the minutes of the meeting. The minutes have been circulated for public review and comment from 23 January 2019 until 5 February 2019. It has been highlighted in the PPP Report that there was a concern regarding the poor attendance of the Emalahleni meeting during the 2 nd round of public engagement. Information on the issues experienced in respect of the meeting was communicated to the Emalahleni Local Municipality Public Participation Officer on 6 December 2018 but no response has been received to date.
5.17	Why is a consultation meeting not scheduled for Phola?	Phola Community Member Ogies Public	Kendal	A public meeting was scheduled for Phola as part of the 1st round of public engagements. The meeting had to be cancelled due to unrest in the area which compromised the safety of NEC and Eskom teams. In the 2 nd

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		Meeting 21 November 2018		round of engagement we have scheduled a meeting in Ogies.
5.18	How do we submit our comments on the project? We do not have access to internet?	Ogies Community Member Ogies Public Meeting 21 November 2018	Kendal	The draft Application Document is/was made available at the Ogies public library from 26 November 2018 until 4 February 2019. Comment and Response Sheets have been/were placed at the library for community members to complete. The completed forms can/could be given to the ward councillor to scan and email to Naledzi as per the provided contact details on the Comment Sheet. The ward councillor can/could also contact Naledzi and make an arrangement to submit the comments.
5.19	We were waiting at Phola NG Church for the public meeting. NEC changed the venue and did not inform us. The people from Phola had to arrange transport. I could not transport everybody in my vehicle. NEC will have to come back. There needs to be another meeting at Phola as initially planned.	Robby Mogalaka GroundWork 21 November 2018 Ogies Public Meeting	Kendal	No meeting was scheduled at the Phola NG Church as part of the 2 nd round of public engagements. The public meeting was scheduled at Ogies Reformed Church Hall. On the day of the meeting it was found that the Ogies Reformed Church Hall was double booked. Hence the meeting was moved to the Ogies NG Church Hall. NEC notified the Reformed Church to direct any attendees to the Ogies NG Church Hall. NEC waited at the Reformed Church to direct attendees to the new venue. NEC was informed by Groundwork that its members were waiting at the Reformed Church. NEC went to collect any further attendees at the Reformed Church including Groundwork members. It was later found that Groundwork was waiting at the Phola NG Church not the Ogies NG Church. We apologise for the confusion which developed around the venue.
5.20	Next time NEC should give proper notice and provide transport to the communities if the venue is in town.	Robby Mogalaka GroundWork 21 November 2018 Ogies Public	Kendal	On 24 November 2018 an emailed notification and apology was sent to Groundwork and the Greater Phola/Ogies Woman's Forum confirming that after reviewing the situation NEC will not be able to host a meeting in Phola due to previous challenges with respect to hosting a public meeting

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	A meeting should be scheduled for 26 November 2018 at 10:00am at Phola Community.	Meeting		in the area.
5.21	Please take note that the Ogies community does not want to form part of public meetings held at Phola. If any follow up meetings are required at a later stage we want a separate meeting. We do not go Phola.	Ogies Community Member 21 November 2018 Ogies Public Meeting	Kendal	Refer to above response under Section 5.20
5.22	Why is the attendance so low at the Kwazamokuhle public meeting (22 November 2018)?	Thomas Nguni Groundwork 22 November 2018 Kwazamokuhle Public Meeting	Hendrina Arnot Komati	<p>The 1st round public meeting in Kwazamokuhle was very well attended.</p> <p>For the 2nd round public meeting NEC advertised the public meetings in the national and local newspapers. Emailed notifications were sent out to ward councillors supplemented by telephonic communication. Bulk sms notifications were also sent to all the previous meeting attendees who attended the 1st round of public engagement.</p> <p>NEC also tasked the local municipality to loud hail the meeting details. It appears as if this was not implemented. Yet all the previous attendees did receive bulk sms notifications.</p>
5.23	<p>Will the health related cost benefit analysis be available in Zulu?</p> <p>At this meeting the findings of the reports are presented to the people in Zulu. How will they read the health related cost benefit analysis in English?</p> <p>The law says that all documents should be available in the languages of the affected areas.</p>	Themba Mthimunye ECCG 22 November 2018 Kwazamokuhle Public Meeting	Hendrina Arnot Komati	<p>The health related cost benefit analysis is available in English.</p> <p>All public notification documentation has been presented to the public in Zulu, SiSwati, Xhosa, Sesotho, English and Afrikaans which are the languages of the affected areas. NEC have found during the public consultation process and at public engagement meetings that people still tend to and prefer to take and read the English versions of the public notification documents. Hence the documents are provided in English.</p>

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5.24	Is there a document available on which we can raise issues on the draft Application Documents?	Doktor Skosana Kwazamokuhle Ward Councillor 22 November 2018 Kwazamokuhle Public Meeting	Hendrina Arnot Komati	Comment sheets are/were available on the NEC website and also several copies thereof at the public library at Hendrina, Pullen's Hope and Rietkuil. If the community does not have access to email they can give the comments sheets to the relevant councillor to email to NEC.
5.25	Some people do not have resources to review the draft Application Documents and reports being referred to.	Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting	All	The Annual Performance Reports were uploaded onto the NEC website for public review and comment. Due to the number of reports and timing they were not made available at the local libraries as originally planned.
5.26	On 17 January 2019 Groundwork is having a meeting at Rietkuil the discussions will focus on the power station emissions. Eskom must attend this meeting.	Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting	Arnot	NEC communicated with Groundwork and the meeting at Rietkuil was postponed until 31 January 2019. Groundwork extended an invite to Eskom to attend the meeting. Eskom staff attended the meeting on 31 January 2019.
5.27	There are a lot of people that need to be informed of this application for postponement. I will need to start organizing key people to comment on the project. I will also need to inform further key people of this project and we may need to arrange another meeting. How available is NEC?	Dalene Venter Three Rivers Councillor 26 November 2018 Vereeniging Public Meeting	Lethabo	If there is a specific request or interest for another meeting, NEC is willing to schedule and present. A follow up on the meeting request was sent to Ms. Dalene Venter on 24 January 2018. No response has been received to the request to date.
5.28	When NEC presented the emissions from the Lethabo power station they were misleading us by only presenting the scenario for NO ₂ and SO ₂ but not for PM ₁₀ and PM _{2.5} .	VEJA 27 November 2018 Zamdela Public Meeting	Lethabo	The Vaal Triangle has an air pollution problem in particular PM, smoke. All four AQMS show noncompliance with the NAAQS for PM ₁₀ and PM _{2.5} . Eskom plans to implement an Emission Reduction Plan (ERP). As part of the ERP Lethabo Power station will install PM abatement equipment from 2019 – 2020 to reduce the PM emissions. By 2025 Lethabo Power Station will comply with the MES limit for PM. Eskom is requesting a 5 year postponement of the compliance timeframe to install

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				<p>emission abatement equipment. It takes Eskom 6 years to retrofit the power station. There is therefore not enough time to comply in time with the MES and thus will only be completed by 2025.</p> <p>Eskom views PM emissions a priority and thus will immediately install abatement equipment at Lethabo.</p> <p>The public meeting presentation attempted to provide an accessible high level overview of the results of the study, detailed information is available in the Lethabo AIR. There is no intention to mislead anyone in terms of the results presented at public meetings.</p>
5.29	<p>Attendance at the Ermelo public meeting is poor which is strange since it's an air quality issue being discussed. It appears as if people were not mobilized to attend. We have a way of mobilizing our community.</p> <p>Also, the way the message of the project and meeting is packaged is for the Elite and the public cannot easily understand this information.</p> <p>Eskom must find a way to simplify the message or presentation. The PM2.5 emissions affect our health. The community will not understand the jargon and we first need to equip them to understand it. We need to create an understanding under the community. They don't understand these issues so</p>	<p>Thebogo Tetso 28 November 2018 Ermelo Public Meeting</p>	Camden	<p>During the 1st round of public engagement a meeting was hosted in Ermelo at Ella Du Bruyn Hall. The meeting was well attended, yet the community did not want to discuss air quality issues. The community demanded job opportunities. NEC tried to explain the meeting purpose was to discuss Eskom's postponement application from the MES compliance timeframes for Camden. The demand was to discuss job opportunities.</p> <p>NEC sent out numerous notifications to the public regarding the public meeting.</p> <p>Newspaper advertisements were placed in the Beeld, Daily Sun, Ermelo Highvelder and Highveld Tribune. Social Media notifications were placed on Ermelo/Lothair/Dundonald/Volksrust Business Classified Ads and Ermelo Advertisers and Surrounding Areas. Emailed notifications were sent out to councillors and the Msukaligwa Local Municipality. Notifications were also sent to the Ermelo Woman's League, Ermelo Business Chamber / Mpumalanga Business Chamber, Councillors were contacted and notified. In communication with Councillor Zelandra Breytenbach the meeting notification was further sent to another 600 stakeholders registered on the local databases for the area. We further also</p>

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	they don't attend.			<p>sent a notification to the Camden power station Stakeholders Forum and the Local Economic Development Forum (LED) who regularly meets to discuss environmental issues.</p> <p>NEC did not loud hail the meeting notification in the 2nd round of engagement in low income areas. In the previous round the meeting notification was loud hailed and people attended the meeting for the wrong reason. NEC hence posted the notifications on social media, newspaper advertisements and through emailed notifications to avoid the miscommunication of the meeting purposes.</p> <p>In terms simplifying the project presentation, NEC presented a fairly basic message at the public meeting in Zamdela in the Vaal Triangle on 27 November 2018. Yet were accused of misleading attendees by not presenting the detailed facts.</p>
5.30	<p>Will Eskom create public committees for areas around Grootvlei and Ermelo based on the air quality issues?</p> <p>It is better for us to mobilise communities. There are environmental activists in our area, yet they are not attending the meeting. It feels as if so many people are left behind, not even the councilors are present.</p> <p>We have 19 Wards and we use our own structure to mobilise the community.</p> <p>Gert Sibande District Municipality bought a very expensive air quality monitoring</p>	<p>Thebogo Tetso 28 November 2018 Ermelo Public Meeting</p>	Camden	<p>Eskom will take the suggestion and explore it. Camden power station has the standing Msukaligwa Stakeholders Forum which is led by the Local Economic Development (LED) Office which specifically discusses employment issues.</p> <p>Camden power station will consider the option to establish a separate forum focused on environmental issues.</p>

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	machine, yet no one knows how to operate it. It's important that we establish an environmental forum with environmental groups or representatives from the area.			
5.31	<p>The PPP was not adequate, Venues selected for public meetings as well as the times were inappropriate. The most vulnerable groups of the community of Emalahleni were not given opportunity to raise their concern about the application. Considering the consequences of this application I will suggest that the consultation process should be all inclusive and reach out to all wards throughout various structures as ward meetings, ward committees, churches and other community forums.</p> <p>Venues can be requested from the local municipality. Times for hosting the meetings should be during the day to afford opportunity to those who are available during the day.</p>	<p>Erald John Nkabinde Manager: Environmental Impact Emalahleni Local Municipality 13 December 2018 Comment Sheet</p>	Kendal Duvha	<p>NEC has arranged the Emalahleni Public Meeting in communication with the Emalahleni Public Participation Officer. The date, time and venue have been selected based on such communications with the local authority.</p> <p>The meeting was held central to Emalahleni town at 6pm to afford the working class the opportunity to attend the scheduled public meeting.</p>
5.32	(5.5) On 16 November 2018, Life After Coal, VEJA, Vukani Environmental Movement and Khuthala Environmental Care Group requested, in writing, that the deadline for written submissions be extended from 16 January 2019 to 6 February 2019. In an email received	<p>Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA</p>	All	Correct.

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	from Naledzi Environmental Consultants Pty Ltd. on 21 November 2018, it was indicated that the review period for all I&APs would be extended to 31 January 2019. On 28 January 2019, the CER, on behalf of its clients and Greenpeace Africa sought an additional two days within which to make submissions. This was granted on 29 January 2019. As a result, these submissions are due on 4 February 2019.	4 February 2019 Official Comment		
5.33	(106) The Summary Motivation Report confirms that the public participation process for this application must follow the process specified in the EIA Regulations. The Summary Motivation Report states that “Further effort to meet with stakeholders including those missed due the challenges in round 1st is being made in the round 2nd public participation process.”	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Correct. During the 1 st round of public engagement the public meetings at Kriel, Thubelihle, Phola and Emalahleni were cancelled due to unrest in the areas which compromised the safety of NEC and Eskom teams. In the 2 nd round of engagement we conducted public meetings at Kriel and Thubelihle on 20 November 2018 and at Emalahleni and Ogies on 21 November 2018.
5.34	(107) Paragraph 5.9.1.1 of the 2017 Framework provides that “. . . Active participation and contributions from individual citizens and citizen groups is of utmost importance in developing, implementing and enforcing air quality management decisions within the context of the AQA. The potential benefits of public participation are numerous. If well-planned and managed, public	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Correct.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	participation can bring new and important knowledge to the table, mediate between conflicting perspectives early in the process and facilitate more efficient air quality governance. Equally important, public participation in air quality management plays a vital role in strengthening and deepening democracy in South Africa and in giving effect to the constitutional right to an environment which is conducive to health and well-being. Section 4(2) of the NEMA, which is the overarching environmental law in South Africa embodies a number of principles aimed at ensuring effective and equitable public participation.			
5.35	(108) In light of the above and the environmental injustice experienced by many vulnerable and disadvantaged communities, especially those surrounding many of Eskom's power stations in the HPA, the need to promote community attendance through assistance with transport to meeting venues was reiterated during the public meeting in Emalahleni. Many of these concerned community members have sick children, largely as a result of the chronic ambient air pollution and they are desperate to participate meaningfully and exercise their democratic rights.	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	<p>During the 1st round of public engagement, a project briefing meeting took place with representatives from Emalahleni Local Municipality's Speaker's Office, the Public Participation Officer, relevant ward councillors and a representative from the office of the Municipal Manager to discuss the public engagement approach for meetings in the Emalahleni area. Please refer to Annexure 3B of the Public Participation Report for minutes of the meeting.</p> <p>The outcome of the meeting was that people's motivation for streaming to Eskom public meetings would be for job opportunities and would therefore attend the meetings for the wrong reasons. The scheduled public meeting needs to be communicated to the correct people such as the Youth Office with particular interest in environmental justice, non-governmental organisations, ward councillors and ward committees who deal with environmental issues in their areas.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
				<p>The PPO confirmed that the municipality would assist to inform the relevant stakeholders to attend the Emalahleni public meeting through the ward councillors and ward committees.</p> <p>Although the Emalahleni public meeting was cancelled in the 1st round of engagement this was the same approach for the public meeting in the 2nd round of engagement. NEC, as per the 1st round of engagement, communicated the public meeting details to the Speaker's office and PPO.</p> <p>Naledzi refers the CeR to the NEMA EIA Regulations of 2014 (as amended on 7 April 2017) and its minimum requirements for PPP. There is no obligation in terms of legislation to conduct public meetings and hence these are considered supplementary to the engagement process.</p> <p>Public meetings were scheduled in Ogies, Emalahleni, Kriel and Thubelihle in the vicinity of Emalahleni.</p>
5.36	(109) We submit that both Eskom and the Environmental Assessment Practitioners managing this public participation process must recognise this limitation and arrange public meetings within disadvantaged communities affected by Eskom's power-stations, alternatively, where meetings are arranged in towns, provide transport to and from the venue.	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	<p>5 Public meetings were scheduled as part of the 2014 Eskom Postponement Application Process. 25 Public meetings took place as part of the 2018 postponement process.</p> <p>13 Public meetings were held as part of the 1st round of public engagements and 12 public meetings as part of the 2nd round. Several of these meetings during the 1st and 2nd round took place in disadvantaged communities namely:</p> <ul style="list-style-type: none"> ○ Sharpeville on 20 August and 27 November 2018; ○ Zamdela on 21 August and 27 November 2018; ○ Thubelihle on 20 November 2018; ○ Ogies on 21 November 2018; ○ Amersfoort at Mayors Hall largely attended by Ezamakuhle community on 22 August 2018;

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				<p>○ Kwazamokuhle on 28 August and 22 November 2018.</p> <p>In the case of Emalahleni public meeting, Eskom explicitly stated during the initial engagements with Emalahleni Local Municipality that it would not be financially viable for Eskom to provide transport to community members to attend public meetings. Members of the public are welcome to attend any of the scheduled public meetings at their own cost.</p> <p>It is reiterated that there is no legal obligation to conduct public meetings and these have been conducted supplementary to the engagement process.</p>
5.37	We reserve our right to supplement these submissions with the specialist reports referred to above and any other evidence relevant to Eskom's applications.	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	The official closure of the public participation period was on 4 February 2019, this is after a request for extension by the CER and other parties. Eskom similarly reserves its rights to respond further to submissions made after the 4 February 2019 and notes while it will respond to these it may only be practical to do so after the formal application submission date.
6. REASON FOR DELAY IN MEETING THE MES AND POSTPONED TIMEFRAMES				
6.1	How is Eskom addressing its delay with the meeting the MES compliance timeframes? We don't want to convene again and be informed of Eskom's delays to implement offsets.	Tebogo Matoare NDM GM: Social Services& Environmental management District licensing Authority Engagement Meeting	All	Eskom states it has implemented a range of measures to try and address the delays. A recovery team has been established to ensure delays are being recovered in the emission retrofit projects. Eskom does however follow rigorous governance and procurement processes and these can unfortunately result in delays.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		30 July 2018		
6.2	Eskom has had 10 years to address its air pollution challenges. Now Eskom is asking the public to approve their continued air pollution into the air breathed by us and irreversibly damaging our atmosphere. Eskom must use its money to pay for required abatement equipment required at power stations instead of spending public money fraudulently and must not overburden tax payers with more carbon tax that they need to pay.	Michele/Mike Rivarola Eastern Cape Region, East London 10 August 2018 Via email	All	<p>Eskom has been in discussion with authorities since 2006 when the legislation was being developed. Eskom suggested during this period that the existing plant standards, which were more stringent than the upper standards, should be what Eskom's power station would need to comply with. Yet any new power stations Eskom build would need to comply with the 'new plant' standards. Eskom still has that stance due to the costs for retrofitting, significant water requirements for SO₂ control and in terms of ambient air quality monitoring. If Eskom is not exceeding the ambient air quality standards and if the impact on the ambient air quality is not directly related to Eskom's operations it is debatable whether it is worth it for the economy of SA to spend R 30 billion rand per station on the expensive retrofits.</p> <p>Eskom proposed to DEA previously in 2014 that it would continue to keep that stance and will retrofit stations with PM abatement technology to come into compliance with the 'new plant' standards, but will not be retrofitting for NO_x and SO₂.</p> <p>Carbon tax is associated with CO₂ emissions and the postponements requested do not deal with CO₂</p>
6.3	<p>Eskom has been aware of the MES since 2006. There was a transitional period of 10 years given to Eskom and Sasol to make a transition from the upper emission limits to the MES lower emission limits.</p> <p>VEJA is of the view, given the transitional period Eskom was given, Eskom never intended to comply with the MES.</p>	Samson Mokoena VEJA Sharpeville Public Meeting 20 August 2018	All	Refer to response under 6.2

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
6.4	Eskom was sleeping throughout this transitional period of the MES. Why was more not done during this transition period?	Kgomontso (SANCO) Sharpeville Public Meeting 20 August 2018	Lethabo	<p>Since 1982 to 2015 Eskom has reduced PM emissions at its power stations by 89%. Since 2015 Eskom have implemented a further 30% reduction in relative PM emissions.</p> <p>Since the 1990's the PM emissions at Lethabo power station have been reduced by 90%.</p> <p>Eskom has to consider various factors from costs, water usage and impact on human health before it can implement an emission reduction approach at its power stations. Eskom will also await the outcome of the specialist investigations commissioned as part of the postponement process to finalize its approach to the Emission Reduction Plan at stations.</p> <p>Eskom's new power stations are built to comply with the 'new plant' MES. Kusile is fully compliant with the 'new plant' MES. Medupi power station will be fitted with a FGD Plant to bring down the SO₂ emissions to come into compliance with the 'new plant' MES. Thereafter Medupi will also be fully compliant with the 'new plant' MES. At existing plants we are reducing the PM emissions as much as possible.</p> <p>See 6.2 above</p>
6.5	In 2014, Eskom conducted the same application process. Does Eskom have a solid plan to ever come into compliance with the MES?	Sfiso Makhubo Balfour (Siyathemba) Public Meeting 21 August 2018	Grootvlei	<p>In 2014 Eskom's application reflected Eskom's challenges with meeting the timeframes for both "existing plant standards" and "new plant standards". The application provided that Eskom would, ideally, apply for postponement until they complete their retrofit programme. Completion of the retrofit programme would be beyond the 2020 horizon. The MES makes provision for 5-year validity of postponement application approvals, and thus Eskom could only be granted approval for a 5 year period, and such is coming to an end in 2020.</p> <p>This application is, thus, a response to the time period provisions in the</p>

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				<p>MES.</p> <p>Eskom has developed an updated Emission Reduction Plan, and this was shown in the presentation. The plan will be refined upon receipt of the specialist studies being undertaken by Naledzi.</p>
6.6	In 2014 Eskom applied for a 5 year postponement to meet the MES compliance time frame. Yet now Eskom is seeking another 5 year postponement.	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	<p>Eskom has a long term Emission Reduction Plan for the various power stations in the electricity grid. However Eskom cannot implement all the retrofits for all the power stations at the same time. Retrofits need to be implemented over period and in a phased approach. Eskom will focus on power stations that pose the highest potential health risk to people living in its vicinity.</p> <p>Legally In 2014 Eskom's application reflected Eskom's challenges with meeting the timeframes for both "existing plant standards" and "new plant standards". The application provided that Eskom would, ideally, apply for postponement until they complete their retrofit programme. Completion of the retrofit programme would be beyond the 2020 horizon. The MES makes provision for 5-year validity of postponement application approvals, and thus Eskom could only be granted approval for a 5 year period, and such is coming to an end in 2020.</p> <p>This application is, thus, a response to the time period provisions in the MES.</p>
6.7	Why is it taking Eskom this long to comply with the limits set by the MES?	Samuel Magadula Amersfoort Public Meeting 22 August 2018	Majuba	<p>Eskom does generally comply with its AEL for Majuba Power Station and the occasional events of non-compliance are dealt with through the relevant legal processes. The station complies with the 2015 'existing plant' limits apart from NO_x. It is the 'new plant' MES compliance timeframes effective from 1 April 2020 Eskom faces a challenge to comply with. As station has existed prior to the legislation Eskom believes it should only be required to comply with the existing plant standard for NO_x and SO₂</p>

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6.8	Until when will Eskom keep on applying for postponement and at what date will it actually be able to comply with the MES?	Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018	Hendrina Arnot Komati	<p>In terms of the implementation of the current Emission Reduction Plan, Eskom is delayed in some instances. Most of the retrofits planned for respective power stations will be installed and completed within the next ten years however, 2030 (with the exception of SO₂ reduction at Kendal and Matimba).</p> <p>The Emission Reduction Plan provided in the BID stipulates the dates when retrofits will be started and completed for the respective power stations. The plan also shows what was committed to in the 2014 postponement application and what has been completed thus far.</p> <p>Eskom will comply with the existing plant limit of MES but existing plant but will not be in a position to comply with new plant standards for existing plant given cost, water requirements and the limited marginal impact on the receiving environment.</p>
6.9	The MES formed part of the List of Activities under the NEM: AQA and came into force in April 2010. Eskom have, therefore, had over 8 years to prepare, but have chosen rather to apply for postponements. Furthermore, the process of putting together the List of Activities commenced in about 2004. Over a 5 year period Eskom and other stakeholders were involved in determining the MES, so Eskom effectively had 14 years warning about the changes that would be required. The fact that Eskom have been granted a 5 year postponement already for existing	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	<p>Eskom has been in discussion with authorities since 2006 when the legislation was being developed. Eskom suggested during this period that the existing plant standards, which were more stringent than the upper standards, should be what Eskom's power station would need to comply with. Yet any new power stations Eskom build would need to comply with the 'new plant' standards. Eskom still has that stance due to the costs for retrofitting, significant water requirements for SO₂ control and in terms of ambient air quality monitoring.</p> <p>Eskom's reasons for applying for the postponement are addressed in the Motivation document released for public review.</p>

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	plant standards (as noted in the BID) is more than what should have been given, so a further application for the new plant standards should be rejected.			
6.10	Our MES are weak by international standards, and since Eskom has had plenty of time to prepare, there is no reason to entertain a postponement application. If Eskom is unable to meet the MES in the timeframes stipulated, then Government must intervene. The decommissioning dates should be revised forward and the electricity generation capacity replaced by renewable sources. This is technically possible, but it must be done in the context of a JET plan.	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	<p>The MES standards were developed by DEA in consultation of South African stakeholders.</p> <p>Eskom has worked towards complying with the MES as per the previously approved ERP and will continue to work towards compliance as outlined in the the present ERP.</p> <p>The MES postponements will be issued by the DEA under the relevant legal framework and conditions deemed appropriate by them.</p>
6.11	Since 2010 Eskom has been well aware of the requirement of compliance with the MES. A precedent must not be set where an operator can postpone retrofits for years/indefinitely for failing to start installation in time.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	<p>Refer to response under 6.9.</p> <p>In terms of legislation Eskom is entitled to make a postment application.</p>
6.12	Eskom was well aware of the provisions of the MES at least from April 2010 and several years prior to it coming into force; importantly that it required installation of necessary emission control measures to ensure compliance with the law.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	All	Refer to response under 6.2, 6.4, 6.5 and 6.9

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	Since 2010, older plants were given a transitioning lead period of 5 years, to come into compliance with the lenient 'existing plant' MES, and to come into compliance with a more stringent 'new plant' MES by 2020.			
6.13	<p>Eskom's reason for delay is incomplete, vague at worst, misleading and inaccurate. In the BID, Eskom provides no reasonable explanation why it has waited more than 8 years since the List of Activities came into force, or more than 3 years from when the 2015 postponement application was granted, to begin or adequately progress and plan the abatement equipment installations.</p> <p>It is not for Eskom to dictate how they wish to comply with the law, and when to begin retrofitting. Eskom has failed to provide justifiable reasons for not meeting the timeframes granted in the previous 2014 postponement application.</p>	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	All	<p>Refer to response under 4.4 and 7.36.</p> <p>Eskom's updated Emission Reduction Plan has been included in the BID. The Emission Reduction Plan has been proposed for deployment as a means of driving compliance.</p>
6.14	In respect to Tutuka, Eskom's current relaxed PM limit is 3.5 times weaker than the MES it was required to meet in 2015 and 7 times weaker than the 2020 standards, it seeks to retain this extremely lenient limit until 2024. According to BID Table 6, Eskom also seeks to postpone compliance with PM existing plant MES	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	Tutuka Matla Kriel Kendal Lethabo Duvha Komati	<p>The delays in implementation of planned emission reduction projects have been associated with investment and procurement, budget confirmation and commercial delays.</p> <p>Eskom's Updated Emission Reduction Plan schedules retrofits to abate PM for Kendal, Lethabo, Duvha, Matla and Kriel. The retrofits are scheduled from 2019 onwards.</p>

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	for Matla, Kriel, and with PM new plant MES for Kendal, Lethabo, Duvha, Matla, Kriel and Komati. The List of Activities envisaged that old plants would conduct necessary retrofitting from 2010 to ensure they could meet the existing plant MES of 100mg/Nm ³ by 2015 and the new plant MES of 50mg/Nm ³ by 2020.			
6.15	For SO ₂ , Table 6 in the BID records Medupi and Matimba's re-applications to postpone compliance with SO ₂ existing plant MES and that every station (except Kusile) seeks postponement from the SO ₂ new plant MES. Apart from Medupi, which will eventually comply, no other station will ever meet the SO ₂ new plant MES. 'It seeks rolling postponements' of compliance. The BID refers to a 'CFB-FGD' pilot project to be initiated at Kendal power station in 2021/2022 to reduce SO ₂ to a level between the existing and new plant MES. It's unacceptable, apart from Medupi, and Kusile – and now possibly Kendal – not a single one of the stations will ever comply with emission standards any stricter than the 2015 SO ₂ MES. It's also unacceptable that Eskom seeks to only pilot a FGD technology that is far less effective than wet FGD, 4 years from now. The List of Activities envisaged that old plants would conduct	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	All	Eskom believes the costs of implementing FGD outweigh the benefits. Additional information will be presented in the Cost benefit study in the next phase of public participation.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	necessary retrofitting from 2010 to ensure it could meet the existing plant SO ₂ MES of 3500mg/Nm ³ and new plant MES of 500mg/Nm ³ by 2020.			
6.16	Majuba, Tutuka, Matla, Kriel, Hendrina, Camden and Komati seek postponement from the existing plant MES for NO _x , and apart from Medupi, Matimba, every stations seeks postponement from the new plant MES. The List of Activities envisaged old plants to conduct necessary retrofitting from 2010 to meet the NO _x existing plant MES of 1100 mg/Nm ³ by 2015 and the new plant MES of 750 mg/Nm ³ by 2020.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	All	This is correct
6.17	<p>It has been indicated that Eskom has done a lot to reduce its emissions. But Eskom has been asking for rolling postponements since for 14 years. Only the PM2.5 emissions were reduced, yet no reduction is seen in NO_x and SO₂. How can we trust Eskom if it has failed to retrofit its power stations in the last 14 years?</p> <p>People are dying the Highveld Priority Area (HPA). The HPA is polluted and the emissions are deadly. The people can't move away. What is Eskom going to commit to?</p>	Robby Mokgalaka Groundwork Emalahleni Public Meeting 21 November 2018		<p>This is the 2nd postponement application by Eskom and also the last. Government passed the amended 2018 MES which does not allow for further postponement of the emission standards. Eskom will ask for suspension of certain limits, alternative limits and postponement of limits.</p> <p>Eskom has and is implementing its Emission Reduction Plan as described in Section 2 of the summary motivation to reduce its impact</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
6.18	<p>Why does Eskom not comply with the MES?</p> <p>Why does Eskom continuously apply for postponement of the MES compliance timeframes?</p>	<p>Fanie Venter Rietkuil Resident 22 November 2018 Hendrina Public Meeting</p>	Arnot	<p>The MES Regulations make provision for emitters to apply for postponement, suspension or for alternative limits. In terms of the legislation Eskom must apply for postponement of the compliance timeframes every 5 years.</p> <p>The new 2018 MES Regulations state ‘existing or new plants’ must either retrofit to comply with the MES, decommission stations/plants or apply for alternative emission limits.</p> <p>5 of Eskom’s power stations will be decommissioned by 2030. The remaining power stations will be retrofitted.</p> <p>Arnot has bag filters installed without a bypass system. It is practically impossible to operate with 40% of bags only. If the 60% were theoretically not in service the unit would not be able to do more than 25% load. If the 60% of the bags were leaking, the emissions would be in the thousands of mg/Nm³. Although there are occasional problems with the FFP as with any other plant, Arnot is complying with the MES.</p>
6.19	<p>Eskom is not planning to comply with the MES. Before Eskom built Medupi power station Groundwork warned Eskom not to build the station in Lephalale as there is not enough water in the area. Yet Eskom said that government will provide it with the necessary water requirements.</p> <p>Now in Mpumalanga it states it cannot get enough water to manage its SO₂</p>	<p>Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting</p>	All	<p>Eskom has an ERP in place scheduling several retrofits for emission abatement equipment at its power stations.</p> <p>It takes 12 years from planning to installation of SO₂ abatement equipment. It is also very expensive management equipment. It took Kriel power station years to get approval for finances to upgrade its PM reduction equipment to FFP’s, yet the Minister turned the request down. FFP’s were installed at Grootvlei power station at a significant cost yet now the power station has closed.</p>

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	<p>emissions.</p> <p>Government prepared the MES Regulations in 2006 in consultation with Eskom. Eskom knew it must comply then already. Now in 2014 Eskom applied for postponement from the MES compliance timeframes and now again it can't comply and is reapplying in 2020. Eskom indicated that it will apply for rolling postponements. Up to now Eskom has not responded to this issue in parliament as to why it does not address the requirement and comply.</p> <p>Just how much more money must a farmer loose before Eskom complies. People are paying for Eskom's noncompliance. Is Eskom going to pay people's medical bills and agricultural crop loss and or cattle loss?</p>			<p>See 6.21</p> <p>Eskom was in consultation with government on the MES Regulations prior to 2010. During the consultation Eskom made it clear that it is difficult to implement new plant standards to existing plants. It was indicated that Eskom will bring its existing plants into compliance with the existing plant standards and any new plants into compliance with the new plant standards. Eskom has retrofitted some power stations since the discussions. According to the new 2018 MES Eskom have no choice but to decommission its older power stations and implement an ERP/retrofit plan on the remaining stations. Eskom is doing the work to address its emission problems. The Motivations placed in the public domain explained the justification and proposed mitigations thoroughly.</p> <p>Regarding Medupi power station; Eskom will be installing a FGD, but government is delayed in building the water augmentation project which is to supply the required water for the FGD. Kusile power station has been constructed with an FGD and it is already operating.</p> <p>Eskom can only pay for medical bills and agricultural crop losses in cases where such claims are proved in a court of law or through an insurance claims process.</p>
6.20	Eskom was aware of the MES since 2010 and was a key stakeholder in the setting of the MES Regulations. Do you think there is something that Eskom could have done differently to comply?	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	All	Eskom did submit an ERP in 2014 as part of its MES postponement application and have generally complied with the plan; for example Grootvlei which was one of Eskom's worst emitting stations, were fitted with a Fabric Filter Plant in compliance with the ERP. Unfortunately Grootvlei will be the first station to close. Hence Eskom is judicious with funds and have learned that there is a continual risk of slippage that must be managed.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
6.21	Eskom was part of set the MES and knew it was coming. Eskom should have prepared to comply.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 23 November 2018 Midrand Public Meeting	All	<p>Eskom was involved in setting the MES and consistently indicated that there were challenges with Eskom stations meeting the requirements. Eskom was however but one stakeholder and the DEA issued the MES being aware of Eskom's concerns. In addition during the MES consultations it was not originally planned for the MES to have existing plants / power stations to comply with the new plant standards. This was only included very late in the setting of the MES. Existing plants should have met existing plant standards.</p> <p>Eskom's plan shows now that it will meet the existing plant standards and for some of the power stations it will meet the new plant standards. There was a change in the legislation; Eskom has an ERP which will allow it to comply as much as practicable.</p>
6.22	<p>None of the attendees can agree to the postponement of the MES based on the health related impacts namely early death and diseases. Eskom must come into compliance with the MES otherwise we as a community will close Majuba power station.</p> <p>It has been 6 years since the MES has been published. Why has Eskom not implemented the necessary abatement technology at the power stations to comply?</p>	Guilliam Smalberger Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	Majuba	<p>Eskom is legally allowed to request for postponement from MES and is hence applying under these provisions of the MES Regulations.</p> <p>The delay in compliance with the MES is owed to various reasons including design-related limitations of the stations, financial constraints, age of the power stations, the coal quality used, water resources and maintaining a reserve margin. Further, installing abatement technology to achieve full compliance to the MES, on each station for PM, NOx and SO₂, would cost an exorbitant amount of money, directly impacting on the electricity tariff and requiring an adjustment.</p>
6.23	Eskom has known for atleast 9 years that it would be required to comply with the MES, that it now seeks to postpone or suspend and was indeed one of the entities involved in the process developed to set	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager	All	Eskom recived a MES postponement based on an emission reduction plan in 2015. Eskom has worked to implement this plan but has experienced delays. The present ERP does in Eskom's belief present a realistic and balanced approach to ensuring complaicne and reducing emissions across the region.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>the MES themselves. Despite this, the utility has not taken the necessary action to install pollution abatement equipment (such as FGD's) to reduce its emissions in order to meet the legal requirements. On the contrary, Eskom's euphemistically named "Emission Reduction Plan" would allow the utility to operate its entire existing fleet without even rudimentary controls for two of the most dangerous pollutants emitted from coal-fired power plants (SO₂ and Mercury) and with substantial exemptions for controlling NO_x and dust emissions. This would be completely irresponsible, particularly since the air pollution levels already exceed the maximum levels prescribed in the NAAQS.</p> <p>Instead of implementing a plan to ensure that it meets air emission standards, Eskom has sought to evade its legal responsibility by repeatedly applying for the postponement or suspension of its obligations to comply with the MES in respect of many of its power stations in some of the most polluted areas of the country.</p>	4 February 2019 Official Comments		<p>The implementation of measures to address mercury is not a requirement of the MES.</p> <p>The statement that Eskom has sought to evade its legal responsibility is incorrect. Eskom has obtained its previous postponements legally and is entitled to make a further application in terms of legislation.</p>
6.24	(24) The List of Activities was developed in a multi-stakeholder process over several years, in which Eskom was an	Timothy Lloyd Attorney-Pollution and Climate	All	It is correct that Eskom did participate in this consultation process see 6.21 above for further detail.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	active participant; we refer to the press advertisement statement published by DEA on 4 December 2013. Eskom participated directly in this process and standards seek to balance the economic, social and environmental imperatives.	Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment		Eskom's position in the process was however that existing plant such as its power stations should only be required to existing plant standards and further that a grandfather clause to allow the managed closure of older plants was appropriate. The final government position that existing plant must meet new plant standards over time but that postponement to compliance with the standards was possible was however noted. As such Eskom formalised its Emission reduction strategy and has progressively work to implement it.
6.25	(25) The List of Activities came into force on 1 April 2010 and prescribes MES for various polluting activities, including those for combustion installations such as Eskom's coal-fired power stations, for particulate matter (PM), sulphur dioxide (SO ₂), and oxides of nitrogen (NO _x) for both new and existing plants. "Existing plants", like all of Eskom's stations (including Medupi and Kusile, still under construction), had to comply with more lenient standards by 1 April 2015 – a transitioning period – so that they could adhere to stricter new plant standards by 1 April 2020. In essence, since the List of Activities was published on 31 March 2010, older plants (although, as indicated, this includes Medupi and Kusile) were given a transitioning lead period of 5 years to come into compliance with a more lenient 2015 standard, and to come into compliance with a stricter standard by April 2020. Eskom was	Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Responded to above under Section 6.21.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	therefore well aware of this provision at least from April 2010, and was aware from several years before that that the MES would come into force, requiring the necessary emission control measures to ensure compliance with the law.			
6.26	Save for the recent unlawful amendment in November 2018, we reiterate that the MES in respect of coal-fired power stations have not changed since 2010. As indicated above, the process of putting together the List of Activities commenced in about 2004 and over an approximate 5 year period, a multi-stakeholder process was convened to determine appropriate MES for the List of Activities. Eskom was integral to this process. It should, therefore be made clear in the Summary Motivation Report, as well as in the public participation process, that Eskom knew of the compliance limits and timeframes as far back as 2004 – or at least by 2010, giving it many years’ advance warning that it would need to make the necessary plans and investments to come into compliance with MES.	Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	See 6.21 Eskom obtained has obtained legally correct postponement applications and has worked to operate it’s plant and implement the ERP to meet it’s compliance obligations. Eskom is legally entitled to apply for a further postponement in terms of the existing legislation.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
7. POWER STATION OPERATIONS, DESIGN, RETROFITS, TECHNOLOGY TYPES AND EMISSION REDUCTION PLAN				
7.1	In the previous round of postponement applications, Eskom committed to undertake retrofits at several of its power stations. Not all of the retrofits have been implemented. It appears as if retrofits have only been implemented at Duvha.	Mpho Nembilwi NDM Environmental & Air Quality Division District Licensing Authority Engagement Meeting 30 July 2018	All	Eskom did lay out a retrofit schedule in the 2014 postponement application. The dates have changed especially for Tutuka and Kriel where Eskom experienced delays, but the retrofits are still planned. Eskom, on a quarterly basis, submits its progress on the Emission Reduction Plan to DEA. Also many of the technologies to be implemented at the stations have changed.
7.2	Does Lethabo power station have six stacks?	Rob Jones: Sedibeng District – Midvaal Ward 5 Councillor 20 August 2018 Vereeniging Public Meeting	Lethabo	Power stations have two stacks (each with 3 flues) and have six generating units. Three units emit into one stack and another three units into the second stack.
7.3	If it takes 5 years to plan retrofits and then another 6 years to install, then how will Eskom be able to implement the retrofits at Lethabo by 2020?	Rob Jones: Sedibeng District – Midvaal Ward 5 Councillor 20 August 2018 Vereeniging Public Meeting	Lethabo	Eskom is already busy considering retrofit technology for particulate matter at Lethabo and is currently upgrading the existing electrostatic precipitators and testing technology for a Sulphur conditioning plant. Eskom requires 6 years to plan and implement the specific retrofits. The Lethabo retrofits will be completed by 2025.
7.4	How many units at Lethabo power station will be retrofitted?	Samson Mokoena VEJA Sharpeville Public	Lethabo	Further PM reduction technology will be installed on all six generating units.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		Meeting 20 August 2018		
7.5	<p>If Lethabo power station is switched off, does it mean the people of the area would not have electricity?</p> <p>If the people would still have electricity, consider switching of the entire station to complete retrofits earlier and in effect comply earlier with the MES.</p>	Jacob Sebidi Justice and Peace Sharpeville Public Meeting 20 August 2018	Lethabo	<p>If Lethabo were to be switched off the communities in the area would still have electricity. However Lethabo power station feeds electricity into the national grid and then transmits the electricity to consumers. If the station is switched off it means there would not be enough electricity to supply the country and Eskom would need to implement load shedding.</p> <p>Eskom needs to supply sufficient electricity to sustain the economy.</p>
7.6	Please explain the retrofitting procedure at power stations?	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	<p>There are six generating units at the Lethabo power station. Retrofits are implemented in a phased manner. This means a unit is offline for up to 1 year. Once the unit is completed it is placed back on line. The next unit is shut down for retrofits and the process repeats until all six units have been retrofitted. A 6 years period is required to retrofit all six generating units.</p> <p>The retrofit process will not impact the current employees. It will however create opportunity for contractors to work on the units.</p>
7.7	<p>In terms of STLM's AQMP we have found that Eskom's power stations are the main polluters within the municipal jurisdiction.</p> <p>Secondly, Hendrina power station pushes out black smoke. We have requested the station to remedy it. To date it has not been addressed. We request that Eskom speed up the process of fixing malfunctioning emission control equipment and or retrofits.</p>	Pearl Moswathupa Steve Tshwete Local Municipality Environmental & Air Quality Division Hendrina Public Meeting 28 August 2018	Hendrina	<p>The level of Eskom's impact on air quality will be presented in the AIR which will be distributed for public comments.</p> <p>Eskom aims to complete the retrofit schedule as per the proposed plan.</p>
7.8	Is it really necessary for Acacia power	Helen Carstens	Acacia	It is still necessary to keep the peaking station available but it is unlikely

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	station to remain operation until 2026 and would it also mean that power station will never comply?	Ward 5 Councillor – Edgemoed Edgemoed Public Meeting 29 August 2018		that it will be used extensively since Eskom is moving to a position of energy surplus and Ankerlig facility is being expanded. Acacia is a low merit order station suggesting that it will only be used as an absolute last resort. The station has been used between 20 – 30% from 2014 to 2016 consequently of supply constraints within the period.
7.9	How many peaking power stations in the Eskom fleet are operating in residential areas?	Andre Du Plessis Edgemoed resident Edgemoed Public Meeting 29 August 2018	Acacia	Only Acacia power station. Port Rex is also a peaking station, which is situated in East London in an industrial area.
7.10	It is unbearable for Edgemoed residents when Acacia is operated. Is it still necessary for the peaking station to operate considering the ostensibly limited use of the power station going forward? Coal fired power stations on the Highveld have been poorly maintained and hence there is a risk of one of the coal power stations failing. Will this necessitate the use of Acacia again?	Andre Du Plessis Edgemoed resident Edgemoed Public Meeting 29 August 2018	Acacia	Acacia power station either runs or does not run; it is not run continuously at low capacity. That is the basis of a peaking station in that it can be started up and shut down very quickly and as such immediately brings additional power on line during peak demand. As such there are only emissions when the station is actually operational. Acacia power station is part back up for Koeberg in the event that there is a loss of power there, then Acacia can be started to provide the power necessary for the safe operation of Koeberg. If the power system was severely constrained Acacia may be used but given the cost of operation this is not done lightly.
7.11	The conditions at my residence are unbearable when Acacia power station is operated. The worst is experienced during start up and shut down of the station.	Emile Coetzee Edgemoed Residents Association Edgemoed Public Meeting 29 August 2018	Acacia	Noted. The station is only run under extreme circumstances.
7.12	We are concerned about the water use at Acacia power station.	Aimee Hoppe Greenpeace Africa	Acacia	Neither Acacia nor Ankerlig requires water other than for domestic use, as turbines are turned by the exhaust from the combustion process. There is

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		Edgemead Public Meeting 29 August 2018		no need to cool the stream to return it to water phase as is required at the coal-fired power stations. There is a difference between simple cycle gas turbine, like used at Acacia, and a combined cycle gas turbine, where the heat is used to turn water into steam thereby creating additional electricity generation capacity.
7.13	I do not accept the argument that Port Rex power station only operates for a limited period of time since the air emission license conditions allow Eskom to run the station whenever required. During load shedding Port Rex peaking station was operating full time.	Lyndon Mardon DEDEAT Eastern Cape Provincial Air Quality Officer East London Public Meeting 28 August 2018	Port Rex	Load shedding is only for a limited period of time. While Port Rex is allowed to operate full time, Eskom does not operate the station full time.
7.14	Enough water is available for mega coal-fired power stations Medupi and Kusile, yet it is said not enough water is available for emission abatement technology (specifically FGD). Alternative technology exists such as semi-dry and dry FGD and should be implemented at power stations.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	FGD requires additional water above that used by the coal fired power stations. Alternative technologies have and are assessed.
7.15	If Kriel and Matla power stations can spend R 1 Billion to achieve a 30mg/m3 PM emission rate, why can't the other power stations achieve the same at the same cost?	Nick Janse van Rensburg Kriel Resident 20 November 2019 Kriel Public Meeting	Kriel Matla	Every power station has its own design base. Based on its design base one can optimize the emission reduction equipment. The current technology implemented at for example Kusile power station cannot be implemented at Kriel power station as it's an older station. If one is to install a Fabric Filter Plant (FFP) at Kriel the entire back section of the station will need to be broken down to make space for the FFP. This means the entire station needs to be reconfigured which does not make financial sense. For

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				<p>this reason it makes it very difficult for power stations to optimize their plants.</p> <p>Kriel received approval to install a FFP at the cost of R 7 billion. When the budget was submitted to the Minister for approval it was rejected since it's over budget in terms of is available to Eskom in its overall budget. Based on the said Kriel station reconsidered the current design and how to optimize its current emission reduction equipment. In essence the other power station designs are different and it will not be possible to implement the same equipment as at Kriel.</p> <p>The objective of all the power stations is to achieve a 50mg/m3 emission limit.</p>
7.16	In terms of water use at the power stations, Eskom can optimize cooling tower water use as a result have more water available for FGD.	Melanie Gosling Kriel Resident Kriel Public Meeting 20 November 2018	Kriel Matla	Comment noted. Eskom is constantly exploring ways of reducing its water consumption. One of the objectives of the proposed FGD pilot plant at Kendal is to look at reducing water usage and investigate the potential for the use of different water qualities.
7.17	What is Eskom doing at Kendal power station to reduce the emissions?	Ogies Community Member 21 November 2018 Ogies Public Meeting		Eskom will refurbish the Electrostatic Precipitators (ESP's) and Fluid Gas Conditioning (FGC) for PM reduction at Kendal power station from 2023 to be completed by 2025.
7.18	Bag filters have been installed at Arnot power station yet Eskom is not doing maintenance on the filters. Only 40% of the bag filters are working. The filters are not effective. Eskom has no money to maintain the equipment. Now Eskom wants to increase the electricity tariff to cover the costs.	Fanie Venter Rietkuil Resident 22 November 2018 Hendrina Public Meeting	Arnot	<p>Some power stations like Arnot have bag filters to control PM emissions and other stations namely Kendal, Matimba, Tutuka, Komati and Kriel have ESP's.</p> <p>The bag filters are a far more efficient control measure for PM.</p> <p>Arnot has bag filters installed without a bypass system. It is practically impossible to operate with 40% of bags only. If the 60% were</p>

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	Why does Eskom not comply with the MES?			theoretically not in service the unit would not be able to do more than 25% load. If the 60% of the bags were leaking, the emissions would be in the thousands of mg/Nm ³ . Although there are occasional problems with the FFP as with any other plant, Arnot is complying with the MES.
7.19	In the Summary Motivation Document it is noted that there has been delays in implementing the retrofits as per the ERP. Will this be a chronic issue for the new ERP? Is this a problem Eskom still foresees?	Melita Steele Greenpeace Africa 23 November 2018 Midrand Public Meeting	All	The current ERP illustrates the initial 2014 ERP implementation project dates including the current planned project dates. The delays experienced in the former ERP have thus been factored into the current ERP. Eskom's postponement application is based on the current ERP. Eskom has implemented remedial action in instances where it has had delays in the past, thus the aim is to avoid delays. Eskom has stated that delays have been owned to approval and commercial challenges and these have been addressed in more detail in the individual AIRs. Eskom will manage any unforeseen delays but the current ERP is the aim for implementation.
7.20	Eskom is in the middle of a financial crisis. With Will Eskom's restructuring in a years' time factor in the ERP?	Melita Steele Greenpeace Africa 23 November 2018 Midrand Public Meeting	All	From the Motivations Documents it will be evident that it has not been factored in. Yet each power station will be issued with an Atmospheric Emission License and each station must comply with the AEL. Thus the legal requirements will have to be met going forward.
7.21	How has Eskom's approach to Flue Gas Desulphurization changed since the last postponement application? So in summary the wet FGD will go ahead and Eskom is investigating semi	Melita Steele Greenpeace Africa 23 November 2018 Midrand Public Meeting	All	This has been addressed in the draft Application Documents. The full compliance scenario described in the document assumes Eskom will have FGD on 5 of its newest stations. Eskom's emission reduction plan assumed FGD at Medupi and pilots at Kendal and Matimba. Eskom is also conducting investigations with pilot projects on semi dry FGD's. There is also the fact that the standard for SO ₂ , legally or illegally, has changed and given that change it may have implications on the technology choices to the implemented in order to meet the standard. This referring to the

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	dry FGD.			1000mg/Nm ³ under contention. Eskom will investigate which is the best option based on the present pilot project on semi dry FGD.
7.22	Can Eskom confirm that Majuba's FFP operates properly and is maintained? Can landowners go for an inspection and confirm that the FFP is working properly? Who monitors Eskom's emissions?	Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	Majuba	There are often challenges with the Majuba FFP. Yet for the last 3 months Majuba station has experienced challenges with the FFP due to the current set of bags reaching the end of their life. Eskom is busy replacing the FFP bags on Unit 1-3 and will commence with units 4-6 in 2019. Refurbishment will be completed in the next 4 weeks. Once completed the FFP's will operate properly. Eskom has its own monitor at the stack which measures the source emissions. The monitors are correlated by an independent service provider to measure the ash concentration. For Majuba power station the release is 50mg/m ³ . Eskom also appoints independent contractors to test the monitors in the stack during which they physically weight the ash concentration released. The tests are conducted every 2 years.
7.23	I was employed at Majuba power station when unit number 3 came into production. During this period Eskom used high grade coal which produced low volumes of ash. Now Eskom uses low grade coal which produces higher volumes of ash. Why did Eskom switch from high to low coal grade?	Theo Gouws Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	Majuba	The grade of coal supply to power stations is lower than received in former years. Eskom buys coal of a certain specification at the best available prices. It is unfortunately not cost effective to produce electricity from the highest grade coal at the current prices. This applies to all the power station.

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7.24	<p>With reference to the report '<i>Emission standards and control of PM2.5 from coal-fired power plant dated July 2016</i> © IEA Clean Coal Centre' there has been a trend globally to replace ESP's with FFP's in recent years. In America most ESP's are being taken out of service and replaced with FFP's. Indian power plants are looking at converting their existing ESP's into FFPs. FFP's have been improved to make them more efficient and to extend the operation lifespan of the filter bags. Efforts have been made to increase the number of filters and their depth in order to enlarge the filter in the same sized space. New filter materials are being developed. Traditionally FFP's were made of glass, cellulose and synthetic and polymer fibres. New developments use nanofibre technology and membrane-type fibres, such as polytetrafluoroethylene (PTFE) (Appleyard, 2015). A review of developments in ESP's and FFP's can be found in the IEA CCC Reports listed at the beginning of the chapter.</p> <p>Is Eskom looking at all the options?</p>	<p>H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written comment</p> <p>Reiterated in official comment dated 4 February 2019</p>	All	<p>Eskom has over the year built up extensive experience in FFP and the filtration media. Eskom is one of a handful of utilities in the world that have a dedicated in-house R&D facility for assessing the performance of different filtration media performance.</p> <p>Eskom's standard material specifications include the use of fine denier fibres to enhance the performance of the bags.</p> <p>Eskom continues to track developments in fabric filter plants and technologies. Some of the enhancement mentioned in the comments raised is already incorporated into the design for the Tutuka FFP retrofit as an example.</p>
7.25	Also with reference to the report ' <i>Emission standards and control of PM2.5 from coal-fired power plant dated</i>	H.A De Koningh Engineer: Energy and Climate	All	Comment noted. A detailed engineering assessment is undertaken for each site to determine the best techno-economic solution required.

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	<p><i>July 2016 © IEA Clean Coal Centre'</i></p> <p>There are no miracle technologies for PM_{2.5} emission control. Individual coal-fired power plants vary in aspects, such as type of coal used, location, water resources, space availability, funding and local labour cost. Consequently, performance from a certain particulate control technology on a specific plant may not be achieved on other plants. However, providing correct assessments and management are undertaken, the emission standards set up by each country and region will be achievable with currently available pollution control technologies.</p>	<p>Change Heidelberg 16 January 2019 Official written comment</p> <p>Reiterated in official comment dated 4 February 2019</p>		
7.26	It is indicated in the Summary AIR that Grootvlei has FFP's installed for all units. These were only installed for units 2, 3 and 4!	<p>H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written comment</p>	Grootvlei	Grootvlei's emission control plant was retrofitted in two phases. Unit 1, 5 and 6 were retrofitted with FFP's during the return to service project (Phase 1). Units 2, 3 and 4 were initially returned from mothballing with ESP's, performance enhanced with the fitment of SO ₃ plants. The ESP's were removed however and the units fitted to FFP's in recent years (Phase 2 of the retrofit project).
7.27	Eskom's euphemistically named "Emission Reduction Plan" would allow the utility to operate its entire existing fleet without even rudimentary controls for two of the most dangerous pollutants emitted from coal-fired power plants: SO ₂ and mercury; and	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>The levels of pollution on the HPA have been assessed in the AIR. Mercury is presently not a priority pollutant for which MES have been set.</p> <p>The reasons for the postponement applications include limited water availability, a low reserve margin for which means that retrofits have to be carefully phased to maintain the reserve margin, public pressure to keep the electricity tariff low and other negative environmental consequences</p>

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	with substantial exemptions for controlling NOx and dust emissions. This would be completely irresponsible, particularly since the air pollution levels in High Priority Areas already exceed the maximum levels prescribed in the national ambient air quality standards.			including greenhouse gas emissions, transport related impacts and waste. Eskom contends that a decision should be taken in the national interest, weighing up the costs and benefits of compliance. Eskom further contends that the proposed Eskom emissions reductions plan presents a fair balance between cost and benefit whereas full compliance with the MES does not.
7.28	Another area where Eskom is dramatically exaggerating the difficulty of compliance is the amount of time required to carry out emission control retrofits. Experiences from other emerging countries (and please note here that we are specifically and consciously not referring to developed countries here as a point of comparison, but rather to other emerging countries) demonstrate that it is entirely feasible to achieve compliance by 2025. For example, China retrofitted approximately 250 gigawatts of existing coal-fired capacity with FGD between 2005 and 2011, resulting in an increase in the proportion of capacity with SO2 controls from 14.3% to 89.1% in six years. These installations were in response to its national emission standards introduced in 2004. Similarly, after its emission standards	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment	All	<p>Please see response to 1.23.</p> <p>As indicated while comparing selected costs and compliance time frames is interesting Eskom's cost and timeframes are based on its practical experience of construction in the South African context. For Eskom to propose costs and timeframes outside of its real experience would be misleading.</p> <p>Based on the South African situation and Eskom experience Eskom disagrees with notion that there is sufficient time to install FGD by 2025.</p>

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	<p>were updated in 2011 to levels that required selective catalytic NOx controls (SCR), these retrofits were carried out on approximately 480 GW of capacity by 2015, raising penetration from 18.2% to 84.5% in four years.</p> <p>Currently India has targeted 2022 as the year by which its entire coal fleet will comply with stricter standards than the MES by 2022, requiring retrofits in much of its 220GW of operating capacity.</p> <p>According to India's Ministry of Power, the procurement, construction and connection of an 50FGD takes 30-36 months , and according to the International Energy Agency 24-36 months. As long as procurement is started in 2019-2020, there is sufficient time install FGDs by the 2025 deadline in all plants that intend to operate beyond 2025.</p>			
7.29	It remains unclear why it has taken Eskom so long to get started on retrofitting their fleet, and has overestimated the time that it would take to carry out the retrofit at each site. It appears that Eskom has simply taken a figure of five years for retrofitting	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>Eskom in section 2 of its summary motivation clearly described what has happened in terms of emission reduction over time and the plan going forward.</p> <p>In addition to planning and then commercial processes the actual commencement of the installation of the abatement technology at a unit needs to be carefully scheduled to fit into a six-month unit outage time,</p>

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	anything (FGD, PM filters etc). This stretches the time between investment and benefit, and so skews the Cost-Benefit-Analysis. The National Framework itself recognises that "sufficient time has been afforded to industry" to make the necessary changes.			which is usually planned alternatingly for each unit (i.e. one unit per year) as part of an official longer term outage schedule.
7.30	<p>It is assumed that Eskom's updated Emission Reduction Plan is the closest to the truth (schedule given in updated IRP 2018 is slightly different).</p> <ul style="list-style-type: none"> For Low NO_x burner (LNB) it assumed that emissions can be brought down to average 700 mg/Nm³ at 10% O₂ after retrofits (40–60% reduction). I.e. retrofitting and using these for respectively old and new power stations makes these complying with to the new MES for 2020 (from Eskom, Application for suspension from the MES and alternative emission limits for Kriel, Nov 2018). Retrofitting these is relatively inexpensive. Sulfur emissions of 3500 mg/Nm³, <i>World Bank, Pollution Prevention and Abatement Handbook</i>, July 1998: The use of solid fuels burned in underfired feed stoker units meets the SO₂ emissions guideline if the 	<p>H.A De Koningh Freelance Engineer: Energy and Climate Change Heidelberg 4 February 2019 Official written comment</p>	All	<p>See 1.23 for a discussion on international comparisons</p> <p>The 2018 IRP is a draft and for consistence in the final MES application Eskom has standard decommissioning dates on the Eskom Consistent Data Set (Eskom 36-623 rev 3). There is a variance of 1 year at some station between the draft IRP 2018 and the Eskom Consistent Data set.</p>

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	<p>sulfur content of the solid fuel is 1.0% or less. The sponsor must maintain records of fuel analyses to demonstrate that the sulfur content of the fuel is at or below the specified levels.</p> <ul style="list-style-type: none"> ▪ Based on the <i>World Bank, Pollution Prevention and Abatement Handbook, July 1998</i>, the most significant option for reducing the sulfur content of fuel is called beneficiation. Up to 70% of the sulfur in high-sulfur coal is in pyritic or mineral sulfate form, not chemically bonded to the coal. Coal beneficiation can remove 50% of pyritic sulfur and 20–30% of total sulfur (It is not effective in removing organic sulfur). Beneficiation also removes ash responsible for particulate emissions. This approach may in some cases be cost-effective in controlling emissions of sulfur oxides, but it may generate large quantities of solid waste and acid wastewaters that must be properly treated and disposed of; ▪ <i>World Bank, Pollution Prevention and Abatement Handbook, July 1998</i>, the traditional method of SO_x dispersion through high stacks is not 			

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	<p>recommended, since it does not reduce total SOx loads in the environment.</p> <ul style="list-style-type: none"> Coal-fired power plants contribute significantly to PM_{2.5} concentrations in the air through the emission of SOx and NOx (<i>Xing Zhang Emission standards and control of PM_{2.5} from coal fired power plant, July 2016</i>). Control of PM emissions and their precursors from coal-fired power plant are necessary to mitigate their environmental and health impacts, especially in countries where coal is the main energy source for power generation, such as China, India and South Africa. All continuous, on-line emission monitoring results must be reported as a Daily Average concentration expressed as mg/Nm³, and at 'normalised' conditions of 10% O₂, 101.3 kPa, 273 K / 0 °C, dry gas (NEM: AQA GNR 898 Section 21 List of activities which result in atmospheric emissions). Unless where otherwise specified, minimum emission standards are expressed on a daily average basis, under normal conditions of 273 K, 101.3kPa, specific oxygen percentage and dry 			

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	<p>gas.</p> <ul style="list-style-type: none"> ▪ However, the measurement of PM_{2.5} still remains a challenge (<i>Xing Zhang Emission standards and control of PM2.5 from coal fired power plant, July 2016</i>). PM is categorised, according to particle size, into TSP, PM₁₀ and PM_{2.5} ▪ ESP's, but their PM_{2.5} removal efficiency is low. ▪ Total suspended particulates (TSP) includes particles of various sizes. Some proportion of TSP consists of particles too large to enter the human respiratory tract; therefore, TSP is not a good indicator of health-related exposure. The particles most likely to cause adverse health effects are the fine particulates PM₁₀ and PM_{2.5}— particles smaller than 10 microns and 2.5 microns in aerodynamic diameter, respectively. No generally accepted conversion method exists between TSP and PM₁₀, which may constitute between 40% and 70% of TSP (USEPA1982b). For Tutuka power station (<i>AIR, Tutuka Power Station, Naledzi, September 2018</i>): Stack measurements for total particulates (PM) are available. However, there 			

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	<p>are no measurements for the ratio of PM₁₀ and PM_{2.5}. It is therefore assumed that all particulates released are PM₁₀ (a conservative assumption). It is also assumed that PM_{2.5} constitutes an average of 59% of those PM₁₀ emissions as presented by Witi et al. (2005).</p> <ul style="list-style-type: none"> According to the Air Quality Strategy the outage time required to perform the retrofits is 150, 130, 120 days for Low NO_x burners, FGD and FFP respectively, which can be planned to coincide with General Overall outages (not sure why LNB need such a long time). These dates are very disputable and rather the additional info from “ESKOM ENV18-R238 rev1 Kriel” is taken saying the following: the actual commencement of the installation of the abatement technology at a unit needs to be carefully scheduled to fit into a six-month unit outage time, Once the pollutant specific abatement technology has been installed, it takes months for the relevant technology to function optimally (optimisation period), as test-runs and assessments take place to ensure the equipment functions to 			

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	<p>its design capacity (in this case for NO_x and PM to meet ‘new plant’ emission standards). The optimisation period for FFPs is typically 9 months and the optimisation period for LNBs can typically take up to a year, emphasising that abatement technology installation completion does not automatically signify immediate full compliance.</p> <ul style="list-style-type: none"> ▪ Another form, nitrous oxide (N₂O), is a greenhouse gas. Nitric oxide is readily converted nitrogen dioxide. Approximately 90–95% of the nitrogen oxides emitted from power plants is nitric oxide; this slowly converts to the much more harmful nitrogen dioxide by chemical reaction with ozone present in the atmosphere (<i>World Bank, Pollution Prevention and Abatement Handbook, July 1998</i>). Emissions of nitrogen oxides are a precursor of ground-level ozone (O₃), which is potentially a more serious problem. 			
7.31	(74) In relation to Eskom’s “ <i>updated planned retrofit schedule</i> ”, we take issue with the statement that Eskom is “ <i>committed to implementing the technology elements of its emission</i>	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint	All	Eskom’s acknowledges that some previously committed timelines for technology installation have moved back by 1-3 years. Delays in planning, approval and commercial processes have caused delays in the dates originally outlined for abatement retrofits. No delays were however incurred for the Grootvlei FFP installation, and so, since 2017, Grootvlei’s

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	<i>reduction plan</i> ” and “ <i>to ensure the continued legal operation of its plant[s]</i> ”. A condition of the first set of multiple postponements granted to Eskom, which, we submit, still did not justify the decision to approve the majority of the applications, was to comply with the emission reduction plan submitted to DEA. It is clear from Figure 1 in the Summary Motivation Report that it has been unable to do so.	campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment		abatement technology retrofit was successfully completed, and Grootvlei, which used to count as one of Eskom’s highest emitting PM emitters, now easily complies with the new plant PM standard of 50 mg/Nm ³ . Additionally, work has successfully been completed on Duvha and Camden to reduce PM and NOx emissions, respectively.
7.32	(75) Eskom concedes that “some of Eskom’s previously committed timelines for technology installation have moved back by 1-3 years. Delays in planning, approval and commercial processes have caused delays in the dates originally outlined for abatement retrofits at Medupi, Majuba, Tutuka and Matla”, and “the retrofit schedule and projected emission reduction above clearly illustrates Eskom has been and remains committed to implementing emission reduction technologies to improve air quality in South Africa. Though there are delays in the implementation of the retrofit plan Eskom remains committed to ensuring these planned technology installations are completed.” This point was reiterated during the public meeting in Midrand, and that Eskom will “manage	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	Correct.

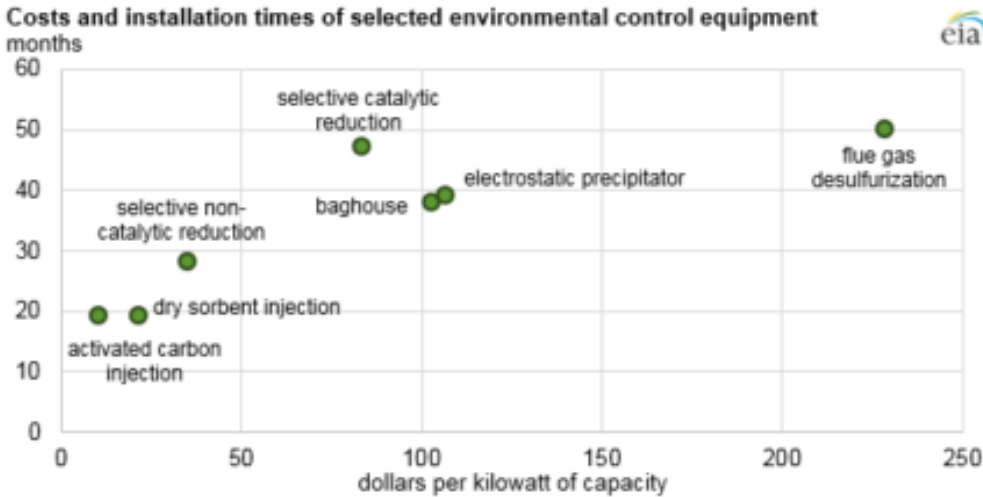
NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	any foreseen delays but the current ERP is the aim for implementation. Yet there is always a risk.			
7.33	(76) Eskom has failed to install adequate abatement retrofits to meet the required timeframes and limits under the first round of multiple postponement applications, yet it now applies for further postponements and suspension of compliance on the basis that it will implement its updated emission reduction plan. We submit that Eskom's reasons for delay: planning, approval and commercial processes, is unacceptable – as a state-owned entity requiring government approval and compliance with the Public Finance Management Act, 1999, Eskom is experienced in the lead-time and process and expenditure required in order to install operating equipment at its power stations. If Eskom does implement a “rigorous planning and approval process” to ensure compliance, this process should anticipate possible delays and put contingencies in place. This is Eskom's responsibility and its continued deflection is unreasonable. We also note Eskom's apparently largely-unperturbed attitude in relation to such non-compliance. It is clear that it does not take compliance with the emission	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	<p>The ERP approved in 2014 was clear that Eskom would not have the retrofits for full compliance to the MES installed by 2020. The present ERP provides an update on the 2014 plan recognising that some of the planned ERP have been delayed but that others have been completed for example the Grootvlei FFP retrofit has been completed with additional work on Duvha and Camden to reduce PM and NOx emissions..</p> <p>Eskom acknowledges its responsibility to implement the ERP projects timeously and does treat the delays in the implementation of the ERP seriously and continues with efforts to mitigate present delays and avoid further ones.</p> <p>In terms of the alleged “history of non-compliance” Eskom acknowledges it has received several NEMA pre-compliance notices from DEA in the past for alleged non-compliance to its AEL's. Eskom has however responded comprehensively to these clarifying the alleged non-compliances and to date no formal sanction has been issued by DEA in terms of air quality issues.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	reduction plants seriously; and sees no threat of action against it for non-compliance. This conduct is, we submit, unacceptable, and does not inspire any confidence of Eskom's future commitment to legal compliance. This history of non-compliance is evidenced by constant compliance action described in DEA's annual National Environmental Compliance and Enforcement Reports; and the ongoing exceedances of its AELs.			
7.34	(78) Aside from the impending obligations of the MES (at the time), Eskom had knowledge of the direct health impacts of its coal-fired power stations, based on the 2006 studies referred to above; these provided sufficient reason for Eskom to ensure that it was implementing the necessary abatement measures to effectively mitigate the impacts of its coal-fired power stations. Indeed, as an organ of state, it had and continues to have a duty to respect, protect, promote and fulfill the rights in the Constitution; in particular, but not limited to, section 24. In other words, Eskom was legally compelled to act well before the MES were even published in 2010.	Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Eskom has worked extensively over time to pro-actively reduce emissions from its power stations. Historically the reduction of Particulate Matter (PM) emissions has been prioritised, as PM is considered to be the ambient pollutant of greatest concern in South Africa. Since 1982 Eskom's emission reduction plan has seen a reduction in relative emissions of some 5kg/MwhSO to 0.27kg/MwhSO in 2018. Eskom contends that it has operated in compliance with the Constitutional imperatives since well before 2010.

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7.35	<p>(78) In the circumstances, Eskom provides no reasonable explanation as to why it has waited more than 8 years since the List of Activities came into force, or more than 3 years from when the 2015 postponement application was granted, to begin – and/or adequately progress and plan for - the abatement equipment installations. This issue was raised during the public meeting in Midrand and Eskom responded with the following:</p> <p><i>“Eskom was involved in setting the MES. But originally it was not planned for the MES to have existing plants / power stations to comply with the new plant standards. This was only included very late in the setting of the MES. Existing plants should have met existing plant standards.”</i></p> <p>(80) We dispute that the 2020 new plant MES requirement for existing plants arbitrarily arose only at the latter stage of setting the MES or came as a surprise to Eskom. We also dispute that for the MES to be legitimate and enforced was, or is, dependent on some form of consent from Eskom. The law applies irrespective of whether Eskom agrees with it. We reiterate the above contention that Eskom,</p>	<p>Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>Eskom has never in the postponement process indicated that the authorities required "some form of consent" and to suggest such is misleading. Indeed as the CER and its partners is aware Eskom has implemented an emission reduction plan for many years in an effort to reduce its atmospheric impact.</p>

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	as an organ of state, already had a constitutional duty to mitigate its severe atmospheric impact through abatement technology, yet Eskom still failed to prepare for and install retrofits to meet the 2015 standards, irrespective of the new plant MES requirement for existing plants by 2020.			
7.36	(81) Even if Eskom did not know until the publication of the List of Activities that its existing plants would have to meet new plant MES (which is denied), Eskom had ample opportunity to take the necessary steps to ensure MES compliance. At the very latest, it became aware of this on 31 March 2010 – almost 9 years ago. We reiterate that it is not for Eskom to dictate whether; and if so, when and how they wish to comply with the law, and when to begin retrofitting. In 2015, Eskom obtained numerous postponements of compliance with the MES, to allow it more time to come into compliance. Since it has failed to do so, it must give a detailed explanation as to why it has delayed in commencing the necessary retrofitting process, what issues or challenges were experienced during the retrofit programme, and what actions were taken – and when - to remedy the delay. We submit that the vague	Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	<p>Eskom has reviewed the specific reasons for the delays in implementation and has summarised them as indicated as "approval and commercial challenges" to provide further detail in a summary document would, it is suggested, defeat the purpose of a "summary document".</p> <p>Some of the specifics of the delays are highlighted below:</p> <ul style="list-style-type: none"> ▪ Despite progress made in 2015 and 2016, project teams for Medupi Flue Gas Desulphurisation and Tutuka and Kriel Fabric Filter Plant (no longer included in the plan) retrofits have notified the organisation of delays of one to four years for these projects. These delays are due to funding constraints, lengthy planning, engineering, commercial processes and delayed PFMA approvals. Examples of these delays include: <ul style="list-style-type: none"> - The (PFMA) application for the Kriel FFP retrofit project was declined on 09 February 2018 by the Department of Public Enterprises (DPE). In June 2018 Board approved implementation of a HFT and ESP update without FFP. Replanning is thus underway. ▪ For Tutuka it was only possible to obtain PFMA approval in January 2017. Several procurement packages have been put out on tender but the tender responses did not meet requirements and it has become

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	<p>explanation in this regard during the public meeting in Midrand, that “Eskom has implemented remedial action in instances where it has had delays in the past, thus the aim is to avoid delays. Eskom has stated that delays have been owned to approval and commercial challenges and these have been addressed in more detail in the individual AIRs”, is completely inadequate. The explanation is substantially the same in the individual atmospheric impacts reports, and again, as a state-owned entity and South Africa’s long-standing power utility, Eskom management is very familiar with the time associated with these standard regulatory processes.</p>			<p>necessary to re-advertise further delaying progress. Several of the Tutuka contracts are now the subject of investigation and could be delay further.</p> <ul style="list-style-type: none"> ▪ Lethabo upgrades were approved in the ERA in August 2018. Tenders were advertised for the Lethabo upgrades but the bids received did not meet the local production and content requirements. National Treasury approval being sought for enquiry cancellation. Six(6) months cooling off period will be needed before re-issue to market. <p>Eskom has provided a high level plan of intended actions for the future projects and will report on these to authorities as required. The provision of detailed information prior to finalisation of procurement processes could result in commercial risks and is not supported.</p> <p>In addition to regular progress monitoring a steering committee/recovery team has been established to ensure delays are being recovered in the emission retrofit projects. Eskom does however follow rigorous governance and procurement processes and these can unfortunately result in delays.</p>
7.37	<p>(82) On this note, we also dispute Eskom’s process outline that requires “12 or more years”, from start to finish, for 72abatement technology to be installed at a power station. This claim is contrary to the fact that coal-fired plants in other countries are regularly brought into compliance with industry emission standards through the installation of flue gas desulphurisation (FGD), selective catalytic reduction technology,</p>	<p>Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>The project timeframes provided by Eskom are to a large part informed by the actual experience of Eskom and the requirement to schedule such work in terms of ensuring a continuous energy supply. Outages for emission retrofits need to be scheduled with other outages across the Eskom fleet to ensure there remain a minimum energy supply at all times. The ability of other utilities to implement quicker with their own governance, procurement and administrative framework is recognised but these timeframes are not necessarily transferable to the Eskom and RSA context.</p> <p>See 1.23 for additional comment on time frames</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	electrostatic precipitators, and other pollution controls. For example, as shown in the following chart from the United States (US) Energy Information Administration, the lead time for pollution controls in the US has been around 1-5 years. The emission control technology with the longest lead time - FGD – is typically installed within 50 months.			
7.37	<p>Costs and installation times of selected environmental control equipment</p>  <p>(83) These prescribed lead times are reflected in compliance deadlines set in emission standards in the US and with which there is regular and consistent compliance. These include:</p> <p>The Mercury and Air Toxics Standard (2012), gave existing plants 4 years from the date of the standard to comply. Environmental Protection Agency (EPA) studies showed that 3 years would be sufficient to comply, but the EPA gave States the power to grant an extra 1 year for installing pollution controls. Between January 2015 and the April 2016 compliance deadline, 87 gigawatts (GWs) of coal-fired plants installed</p>			

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	<p>pollution control equipment.</p> <p>In the US, between 2001 and 2005, the power generation industry successfully installed more than 96 GWs of Selective Catalytic Reduction (SCR) systems in response to NOx requirements. In response to the Clean Air Interstate Rule (CAIR), issued in 2005, about 60 GW of scrubbers and an additional 20 GW of SCR were brought on line from 2008 to 2010, during the course of 3-5 years.</p> <p>The Cross State Air Pollution Rule came into effect in the US in 2011. The Homer City Generating Station east of Pittsburgh, Pennsylvania is a 2 GW coal-fired power plant. It had to either shut down or install 76\$US 750 million in pollution controls to remove 100 000 tons of SO2. Within 5 years, this power station was able to go through the process of responding to the new legislation, planning, and building pollution controls.</p> <p>(84) In the memo attached as Annexure C1 – Dr Sahu benchmarks the timeframes associated with the installation of the relevant emission control technologies, based on his 30 years of energy and air quality consulting experience.</p>			
7.38	<p>(85) Eskom states that the “reason for these applications in most cases is due to design-related limitations” and that “existing power stations will not be able to comply with the MES” due to the “original design of the plant, [and] age of the power station,” among other reasons. These claimed justifications for non-compliance are undermined by the fact that coal- fired power plants of similar ages and design in other countries have readily achieved compliance with far more stringent emission limits.</p> <p>(86) Eskom has failed to articulate any specific design-related limitation or age-concern that would make it infeasible to</p>	<p>Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>See 1.23 for a detailed response on time frames and the applicability of danger of international comparisons for implementation of retrofit technologies which fail to consider the South African context</p> <p>On a theoretical level it may be possible with enough money, time and available supply on the national grid to retrofit older plants but Eskom's plans are based on practicalities not theories. For example unlike Medupi, none of Eskom's existing plants have been designed for any form of FGD. Medupi is FGD ready and as part of that design requirement certain provisions have been in the plant layout and design to cater for the eventual retrofit. These include amongst other, the orientation and lining of the chimney flues, the space of the terrace around the chimney, servitudes for auxiliary services to the station being routed according etc. When considering the retrofit, there are various factors that need to be considered that add different levels of complexity in the decision making process, more so if the plant has not been designed for any level of readiness. There were/are a number of power plants all over the world, particularly those in the older vintage, where the techno-economics</p>

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	<p>comply when other countries have overcome similar hurdles. Experience elsewhere shows that the overwhelming majority of older plants can be retrofitted. If this is not possible for some of the oldest plants, they must then be decommissioned. Eskom has on several occasions produced capital cost estimates for retrofitting its fleet of coal-fired power stations, implying that retrofitting is in fact possible.</p>			<p>associated with retrofits could not be justified and the authorities granted concessions on these plants. Most of Eskom plant are of that vintage (i.e. pre-90s) and are approaching their scheduled end of life and as such cannot also be justified.</p> <p>If one has to consider a wet FGD at Duvha for example, the FGD island has to be located in the available space on the site as the terrace cannot cater for it. The older the station, the less space there is available.</p> <p>Kendal on the other hand (one of Eskom's newer existing power plants) can locate a wet FGD on the terrace around the chimney, subject to existing service not being a limiting factor in the layout. If one has to consider a semi-dry FGD (CFB), then the location determination is driven by the ability of the electricity supply network in terms of allowable outage time.</p> <p>The further away any FGD plant is from the boiler house, the higher the life-cycle costs of said installation will be.</p> <p>Eskom has never contested that the FGD does not work, but has always maintained the one size fits all generic statement to retrofits does not apply.</p> <p>Eskom has provided indicative capital costs for full implementation of the MES in the past and has for the sake of modeling also scheduled some of these retrofits. This however does not imply that the actual implementation is practical in terms of scheduling.</p>

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7.39	<p>(87) The examples below demonstrate that many operators in other countries have installed emissions controls to achieve emissions limits, and Eskom should be no exception:</p> <p>Europe</p> <p>a) A high percentage of European coal plants use emissions control technology. Regarding PM controls, around 91% of coal plants in Europe have electrostatic precipitator systems (EPS), and just under 5% have either baghouses or baghouses in conjunction with cold-side EPS's. For SO₂ controls, around 88% of plants have FGD in place and 86% of these plants use limestone-based FGD. Data on NO_x controls are more limited, but the majority of EU plants have low NO_x burners and/or "over-fire air systems", which cause coal to burn at a lower temperature that, in turn, reduces the amount of NO_x produced. SCR technology is used in about 31% of plants and only 4% use flue gas recirculation as a method for controlling NO_x</p>	<p>Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>Eskom's time frames and costs are based on Eskom's experience in a South African context. See 1.23 for a full discussion on costing and timing and international comparisons.</p>

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	<p>emissions. Only one plant in Europe is reported to have an advanced multi-pollutant control technology in place (SNOX), although there are trials of newer systems at some plants.</p> <p>b) The current European Union emission limits sit at between 200 and 400 mg/m for SO, 200 and 300 mg/m³ for NOx, and 20–30 mg/m³ for PM, depending on plant size (and some derogations remain for older plants running for a limited number of hours before closure). Proposed changes could bring these limits down even further, to as low as 80 mg/m³ for SO₂ and 50 mg/m³ for NOx at newer, larger plants.</p> <p>China China now has among the strictest emissions limits in the world. China's coal plants are retrofitted with PM and SO₂ controls and 95% have NOx controls. In recent years, China has replaced its EPSs (dropping from 95% use in the fleet in 2010 to 69% in 2015) with fabric filters or pulse-jet bag filters,</p>			

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	<p>which have increased from 5% to 31% across the fleet. Desulphurisation systems are installed on 92.8% of the existing fleet and the remaining plants are Circulating Fluidised Bed Combustion (CFBC) systems with in-built sulphur reduction. At least 65% of the desulphurisation systems are FGD technologies.</p> <p>Japan</p> <p>a) Japan's coal fleet is just under 35 GW. 90% of this fleet uses wet FGD. 75% of the fleet uses 93both low NOx burners and SCR systems, with the remaining 25% using either one or the other. Only 3% of Japan's coal plants use no flue gas treatment technology for sulphur control. 92% of Japan's coal-fired power plants have PM controls in place, and of these plants 23% have the most advanced control technologies such as low temperature electrostatic precipitators and wet electrostatic precipitators. All of Japan's power plants have some form of SO2 control,</p>			

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	<p>including an advanced multipollutant control system called ReACT™ (described below). Over 9781% of Japan's plants have wet limestone scrubber FGD. Japan's dominant NOx control technology is SCR, which 71% of Japan's plants use either alone or in combination with a low-NOx burner.</p> <p>b) Japan's coal plants have reached very low emission rates - the average emissions for the Isogo coal-fired power plant are 16.5 mg/m3 for NOx, 15 mg/m3 for SO2, and 7.5 mg/m3 for PM, with one of its units emitting single-digit levels of pollutants. This plant achieves these low emissions through emission controls that use a combination of SCR and ESP with ReACT™. ReACT is a regenerative activated coke dry-type capture technology that captures SO2, NOx and 100mercury while only using 1% of the water required by conventional wet FGD.</p>			

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	<p>United States</p> <p>The U.S. has over 400 coal-fired power plants that are 300 MW or larger. 63% of these are subcritical plants and 50% are over 40 years old. Of the 279 GW's of installed coal-fired capacity in the US, 81% has some form of FGD technology installed (169 GW's-wet FGD; 42 GW's 103- dry FGD scrubber; 11 GW's - dry sorbent injection). Between 2001 and 2005, the power generation industry successfully installed SCR systems covering more than 96 GW's of capacity 104in response to NOx requirements.</p> <p>(88) Such real-world experience with the installation of pollution controls further demonstrates the unreasonableness of Eskom's failure to meet the timeframes for MES compliance and its attempt to even further delay any such compliance.</p>			
7.40	<p>(103) Eskom states that "the only technology which would enable Eskom's coal-fired power stations to achieve the new 112plant SO2 limit is flue gas desulphurisation (FGD)". The Summary Motivation Report then proceeds to</p>	<p>Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA</p>	All	Statements as per the Eskom report.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>describe the environmental impacts associated with the operation of FGD installations. Based on Eskom's assessments, the methodology and calculations for which are not available to I&APs for scrutiny, these impacts include:</p> <p>(103.1) The water demands of FGD are significant across the power stations and will increase Eskom's water demand by some 59 million m³/annum – a 20% increase in the combined water consumption of Eskom's power stations. . . The argument is also not just one of having water available in the catchment, it is also one of determining whether FGD is a judicious use of what is an extremely scarce resource in South Africa in the face of multiple competing demands for that same resource”;</p> <p>(103.2) “FGD across the generating fleet to meet full compliance of the MES would require 5.2 million tonnes of sorbent (limestone or lime) per annum, and 1.5 million tons/annum for Eskom's emission reduction plan. . . The transport of the sorbent would result in environmental impacts, notably</p>	<p>4 February 2019 Official Comment</p>		

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	<p>greenhouse gas emissions, and fugitive dust emissions. An increase in truck traffic would also result in an increase in driver mortalities, as has been observed in association with coal transport in Mpumalanga. New mines would also need to be opened to supply sorbent to all Eskom's power stations. . ."; and</p> <p>(103.3) "If wet FGD is installed on all power stations, an additional approximate 3 million tons per annum of CO₂ would be produced if Eskom has full compliance to the MES. An additional 435 000 tons/annum would be produced from the implementation of Eskom's emissions reduction plan".</p>			
7.41	<p>(104) In relation to water availability and the mining and transport of limestone, Eskom's reasons are substantially the same as the motivation for postponement in 2013. Our overarching objections to Eskom falling back on these impacts as justifications for this application for the postponement and suspension of compliance or alternative limits in 2018/9, are three-fold:</p> <p>(104.1) We reiterate that while the availability of water, sorbent consumption and CO₂ emissions are clearly real issues,</p>	<p>Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>(104.1) Eskom is providing decision makers with its best assessment of the impact of compliance with the SO₂ standard. Eskom has consistently raised these issues with stakeholders including the authorities. The issue of international comparisons has been discussed above in 1.23.</p>

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	<p>what is not at all clear is why Eskom raises these issues as barriers to its compliance with the MES when it has known about the compliance standard for many years and was part of the multi-stakeholder process of setting the MES. It is clear that any such issues do not entitle Eskom to fail to comply with its obligations in terms of the AQA. FGD is used worldwide, as illustrated in section D above, as the Best Available Technology to control SO₂ emissions, because of its high degree of SO₂ removal. Eskom's reasoning in this case is merely self-serving.</p> <p>(104.2) Except for the reference to semi-dry FGD, which "typically uses lime as a sorbent [and] does not produce CO₂ directly in the FGD process, but the CO₂ is produced instead through the manufacture of lime from limestone", Eskom does not discuss SO₂ removal technologies such as dry sorbent injection (DSI) which can remove SO₂ from the exhaust gas stream using no water at all. Using reagents such as trona, lime, or sodium bicarbonate, in dry powder form, DSI can remove as much as 50% of the SO₂, which would go a long</p>			<p>(104.2) The DSI solutions are unable to meet the new plant limits and hence cannot be considered as a technical option. Furthermore, the sorbent/Ca-to-sulphur ratio in a DSI option is at least 2 to 4 times higher than that of semi-dry system. For only a 30 to 50% SO₂ removal, it has the highest operating cost. While the actual capital costs not the DSI, system may be low, the downstream plant require major upgrades to the particulate control and material handling system which when considered holistically increase the capital cost of the plant.</p>

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	way towards achieving compliance with the MES. Further, the capital costs of DSI are substantially lower (less than 10%) of the capital cost of wet-FGD and DSI can be installed in less than 12 months, including design time.			
7.42	(104.3) Eskom's discussion of wet-FGD use may mislead a reader to think that significantly more water is required to meet the MES than Eskom actually needs. Eskom states that "Wet FGD approximately triples the water consumption of a dry-cooled power station." However, Eskom's calculations assumes that semi-dry FGD will be installed on most of its fleet of coal-fired power stations, and most of the fleet is wet-cooled. This is important because Eskom's actual plan to use semi-dry FGD, rather than wet-FGD, will result in less water consumption for most of its coal-fired power plants. Eskom acknowledges that although its 20% increase in water assumes that wet-FGD will be installed at 5 of its newest stations, "it may be possible to meet the limit using semi-dry FGD at the 5 newest stations."	Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	(104.3) Eskom's intent is in no way to mislead the reader rather to illustrate the issues as best as possible and to highlight possibilities which it has clearly done. The availability of sorbent locally and the quality thereof is also a limitation for a fleetwide roll-out. Part of the proposed semi-dry pilot program at Kendal is to understand the techno-economic relative SO2 reduction that will be achieved considering factors such as water and sorbent quality amongst others.
7.43	(104.4) There are factors under Eskom's control to reduce its water demand, while meeting the MES. For example, Eskom's own 2018 Technology Selection Study	Timothy Lloyd Attorney-Pollution and Climate Control	All	103.4) Comments with respect to options to reduce the FGD water consumption are noted and are being given due consideration. Eskom cannot comment on their fleet wide application as it requires site

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	Report for FGD options at the Medupi power station showed that a wet-FGD system with an inlet gas cooler would use about 30% less water compared with a system without the inlet gas cooler. The overall life-cycle cost of such a system would also be approximately the same as that of a wet-FGD system without the cooler. However, Eskom refused to adopt this option for Medupi for reasons we still do not understand or accept. Eskom should also reduce the use of water-inefficient stations and/or expedite the decommissioning of these stations. Eskom has not stated that it would be impossible to improve the water efficiency of its stations, and it may be possible for Eskom to offset some of the water used by semi-dry FGD processes through gains in efficiency.	LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment		specific assessments. It must be noted, that there has a move away from gas coolers and gas reheaters internationally due to their associated life-cycle costs and long term availability and reliability. In accordance with the IRP, Eskom will be shutting down a number of stations by 2030 which will significantly reduce its overall water consumption. It is only when these stations are shut-down, that the water can be released for the FGD plants subject to being allocated a water use licence for the additional process.
7.44	(104.5) Eskom's apparent, and rather belated, concern about the environmental impacts of FGD is disingenuous, when one considers its continued reliance on coal-fired power stations and the environmental, health, land, water and climate change impacts associated with the coal cycle, that services these stations. These include: (104.5.1) the significant number of coal	Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Eskom recognises the environmental impact of its use of coal fire power stations and has implemented a range of environmental programmes to reduce these impacts in line and beyond its licence requirements. In the present application Eskom is presenting the environmental costs of implementation of the SO2 reduction technologies considered most practical in a South African context. An issue which CER has itself noted Eskom has done consistently since at least the 2013 postponement applications. Eskom has over the years refurbished, upgrade, decommissioned and built new plant to support improvement in the overall cycle efficiency of its

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	<p>mines, in particular in the HPA, that supply Eskom's power stations cause the loss of arable land, pollution from the spontaneous combustion of discard coal stockpiles, water pollution and dust emissions generated by coal mining operations, including transport, being the largest source of PM10 emissions in the HPA;</p> <p>(104.5.2) the production of 250 million tons of coal per year (Eskom used 114 million tons of coal in 1182016/7) requires between 42.5 million m³ (enough to fill 17 000 Olympic-sized swimming pools) and 147 million m³ (enough to fill 58 800 Olympic-sized swimming pools) of water. In addition, it results in the deposit of about 60 million tons of discard coal;</p> <p>(104.5.3) the fact that Eskom landfilled 32.6 million tons of ash in 2016/7;</p> <p>(104.5.4) that fact that, on 2017, Eskom consumed approximately 307 million m³ of water (enough to fill 122 800 Olympic-sized swimming pools) for power generation, amounting to 10 m³ of water (125 bathtubs) per second; and</p>			<p>asset. For example a number of it's newer plant are equipped with dry cooling technology thereby reducing water consumptions at these plant by almost an order of magnitude over the previous generation of plants. Eskom started with it's particulate reduction program in the 80's long before it was formally required to do so. Eskom continues to prioritise its highest emitting and/or youngest stations for emissions related upgrades. However one must understand the bulk of its plant are aged, a blanket approach to compliance in not in South Africa's techno-socio-economic interest. As has been done and continues to be done internationally, a certain pedigree of plant is allowed leniency until it's end of life. The IRP addresses the energy mix migration in a pragmatic manner and the reliance on coal generation has already reduced hence improving the impact associated with coal fired power station. To date Eskom has already placed 10 of its older units in long term cold reserve and it is highly unlikely that they will ever return to service.</p>

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	(104.5.5) the fact that annual CO ₂ e emissions generated by Eskom's coal-fired power stations (emissions factor of 1.00kg CO ₂ e /kWh) was 215.6 million tons of CO ₂ e in 2015, or 40% of South Africa's total CO ₂ e emissions (529.82 million tons of CO ₂ e in 2015).			
7.45	(105) FGD installation will certainly be a factor that contributes to Eskom's total water demand, but it should not be viewed as prohibiting Eskom's obligation to comply with the MES. While it is true that water is an extremely scarce resource, emission controls will require less water than Eskom's Summary Motivation Report implies and will yield significant benefits in terms of health impacts, in particular. The magnitude of water that semi-dry FGD controls require cannot be grounds to excuse compliance with the MES – either timeously or at all.	Timothy Lloyd Attorney-Pollution and Climate Control LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	The extent of Eskom's water use has been confirmed in section 7.41 – 7.44 above and Eskom believes this remains a significant negative impact of SO ₂ reduction in the South African context.
8. HEALTH IMPLICATIONS / HUMAN HEALTH RISK ANALYSIS				
8.1	The people of Emalahleni are complaining a lot about the air pollution. The environment is not conducive. We are particularly worried about the new born children that are born into this air pollution.	Oupa Mokoena PPO, ELM Emalahleni Ward Councillor Briefing 17 August 2018	Kendal Duvha	The AIR will include the assessment of the impact on the environment, human health. It will also include a cost benefit analysis which will explain the human health cost which must be borne by South Africa as a result of postponement from the MES.

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8.2	How would these postponement applications impact on communities living close to the power stations?	William Mphuthing Sedibeng Business Chamber Sharpeville Public Meeting 20 August 2018	Lethabo	MES focuses on primary pollutants PM, SO ₂ and NO _x . These are the primary pollutants which pose a potential risk to human health. The specialist studies to be conducted by NEC will consider the impact from these three primary pollutants on the ambient air quality and potential health risk to people surrounding the power stations. NEC will conduct this health risk analysis independently. Traditionally the health risk assessment focuses on PM. The outcome of the specialist investigations will be available for public review and comment in the 2nd round of public engagement.
8.3	How will this postponement application affect us as a community?	Oupa Ndeba Thabakgoadi Public Meeting 21 August 2018	Grootvlei	NEC is still busy conducting the impact assessments, which include health and cost-benefit analysis. NEC will consider the impact from the three primary pollutants on the ambient air quality and potential health risk to people surrounding the power station. The outcome of the investigation will be available during the 2nd round of public engagement for public review and comment.
8.4	It is mentioned that a CBA and HRA will be prepared for the project. Has NEC completed this research yet to establish how the Siyathemba community would be impacted by this postponement application? We need NEC to come back and report the findings to the community.	Nomasonto Mofokeng Balfour (Siyathemba) Public Meeting 21 August 2018	Grootvlei	The outcomes of the AIR, HRA including the CBA is currently available for public review as part of the 2 nd round of public engagement.
8.5	What is the number of deaths associated with the air pollution in the area?	Community Member Zamdela Public Meeting 21 August 2018	Lethabo	NEC is required to assess the risk on human health and assess if there is a risk of premature death, illness as a result of the ambient air quality in this area. The outcome of the AIR, HRA and CBA is currently available for public review and will be communicated at the public meeting scheduled for Zamdela as part of the 2 nd round of public engagement.

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8.6	Are Eskom and NEC concerned about the health of the people?	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	<p>NEC is concerned regarding the health of the people. We will conduct a human health risk assessment as part of the AIR. If the assessment finds that people's health is at risk if power stations continue at its current levels, we will highlight the findings to the NAQO.</p> <p>Eskom also state that they have reduced the amount of pollution produced over the years since they are committed to safeguard people's health.</p> <p>Eskom's mandate is to provide electricity without impacting people's health. An AIA inclusive of a HRA and CBA has been commissioned as part of the process. The outcome of the assessments will be made available for public review and comment. The assessments together with the public inputs from public engagements will be submitted to the NAQO to assist in making a decision on the application. The final decision on the application lies with the NAQO.</p>
8.7	Will Eskom compensate the community for suffering the consequences of the air pollution?	Samuel Magadula Amersfoort Public Meeting 22 August 2018	Majuba	<p>Health issues experienced at ambient air quality levels are contributed to various other activities (e.g. domestic fuel burning, veld fires, vehicle entrained dust from gravel roads) not necessarily only as a consequence of Eskom's power stations. The outcome of the AIR will verify if Eskom's power stations are in fact causing any health impacts. If it is found that the power stations do pose a significant health risk, Eskom and government will need to remediate the impact and decide which emission reduction interventions need to be implemented to improve the air quality in the area.</p>
8.8	How often does Eskom get involved in conducting health studies in communities?	Themba Mthimunye Groundwork Hendrina Public Meeting 28 August 2018	Hendrina Komati Arnot	<p>Eskom does not generally get involved in health studies. As part of Eskom's application for postponement from the MES, it will conduct a HRA. This information will enable the NAQO to consider the risk to human health when considering Eskom's application for postponement.</p> <p>Eskom does have a number of ambient air quality monitoring stations in</p>

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				communities which measures the emission levels of the ambient air quality in those communities. Please keep in mind the monitoring stations measure the cumulative levels from everyone's pollution not just from the power stations. It picks up dust from dust roads, veld fires, domestic fuel burning and other industries. The monitoring data is submitted to the DEA to assist them, together with Eskom's monitoring data, DEA's monitoring data, district and provincial, to understand the status quo of the ambient conditions where people live/communities.
8.9	In my engagement with medical practitioners I have learned that Edgemoed has many incidences of respiratory disease and other diseases such as cancer. Acacia definitely has a significant negative impact on Edgemoed.	Keith Enzlin Edgemoed Resident Edgemoed Public Meeting 29 August 2018	Acacia	The AIR will include the assessment of the impacts on the environment, and human health. An independent consultant has been appointed to conduct a very detailed HRA and CBA. The assessments will analyse the number of people exposed to the emissions, cost to human health verses the cost to retrofit power stations.
8.10	It is unacceptable for Eskom to apply for this postponement and there should be government intervention to make sure that the health of our people and the environment takes priority.	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	Section 6 of the MES makes provision for the application for postponement from the MES compliance timeframes. It is within this framework that Eskom is applying for postponement from the MES. Refer to responses under 8.9
8.11	Greenpeace Africa's previous objections on the 2014 process: - Research connects coal fired power stations to negative impacts on human health; - Health impacts were not adequate addressed in the 2014 application so Greenpeace Africa prepared a desktop health study finding non-	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	The impact of emissions from the Eskom coal fired power stations will be assessed in the AIR. Eskom is however not only the only polluter with the study area and the impact of other sources must be considered. The health impacts of the application will be assessed in the AIR and the CBA prepared for the postponement application. Any future postponement will be issued by the DEA after consideration of all applicable information.

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	<p>compliance with MES results in 20 000 premature deaths over the lifespan of power stations. Estimated current air pollution released from coal fired power stations currently cause 2200 premature deaths / year.</p> <ul style="list-style-type: none"> - Granting further postponement will have a significant impact on human health, violating Section 24 of the Constitution, NEMA and the AQA. 			
8.12	<p>In 2014, Greenpeace Africa objected to the fact that Eskom had not undertaken a detailed health impact assessment of the postponement application. Applicants need to show their facility's current and proposed emissions are and will not cause any adverse impacts on the surrounding environment.</p> <p>In absence of a health assessment, our 2014 objection relied on a research study by Lauri Myllyvirta, a coal air pollution specialist. The study concluded air emissions from Eskom's coal fired power stations cause an estimated:</p> <ul style="list-style-type: none"> - 2200 premature deaths/year due to PM_{2.5} exposure - Counted in are 200 deaths of young 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment</p>	All	<p>The AIR will include the assessment of the impacts on the environment, and human health. An independent consultant has been appointed to conduct a very detailed HRA and CBA. The assessments will analyse the number of people exposed to the emissions, cost to human health verses the cost to retrofit power stations.</p> <p>The previous studies have been considered in the present CBA work.</p> <p>See 1.23 for further comment on the CBA</p> <p>DEA will make a decision on the postponement considering all the available information and the broad constitutional requirements see 1.18</p>

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	<p>children</p> <ul style="list-style-type: none"> - With an economic cost to society of USD 2.37 billion/year <p>In 2016 Dr Mike Holland, UK based air quality and health expert, assessed health impacts and relevant economic costs of current PM_{2.5} emissions from Eskom's coal fired-power stations in his report 'Health impacts of coal fired power stations in South Africa'. It estimates the following impacts attributed to emissions:</p> <ul style="list-style-type: none"> - 2 239 deaths/year <ul style="list-style-type: none"> ▪ 157 lung cancer ▪ 1 110 ischaemic heart disease ▪ 73 chronic obstructive pulmonary disease ▪ 719 strokes ▪ 180 lower respiratory infection - 2 781 cases of bronchitis/year in adults - 9 533 cases of bronchitis/year in children aged 6 – 12 - 2 379 hospital admissions/year - 3 972 902 days of restricted activity/year - 94 680 days of asthma symptoms/year in children aged 5-19 - 996 628 lost working days/year <p>The serious health impacts make clear why Eskom's postponement cannot succeed, it would be contrary to the Constitution, NEMA, AQA and the Framework. It's a fatal flaw to Eskom's current and future</p>			

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	<p>applications to postpone MES compliance.</p> <p>Notwithstanding, the CBA to be conducted by independent consultants, including 'health impacts', we do not believe a scenario exists where DEA could justifiably approve a postponement application in light of the health effects attributed to Eskom's coal-fired power stations.</p>			
8.13	Hazardous health threats could occur from the postponement application.	Zolani Sihola ZN Sihola Tradings East London 11 September 2018 Comment and Response Form	Port Rex	The AIR will include the assessment of the impacts on the environment, and human health. An independent consultant has been appointed to conduct a very detailed HRA and CBA. The assessments will analyse the number of people exposed to the emissions, cost to human health verses the cost to retrofit power stations.
8.14	A plethora of health impact assessment research illustrates the devastating impacts of Eskom's stations on human health. The adverse health impact caused by Eskom's coal-fired power stations is reason alone to reject the application. Postponements of compliance (issuing new AEL's to new facilities) will only sustain the state of non-compliance with the NAAQS in priority areas and continued breach of Section 24 of the Constitution.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official comment	All	The AIR will include the assessment of the impacts on the environment, and human health. An independent consultant has been appointed to conduct a very detailed HRA and CBA. The assessments will analyse the number of people exposed to the emissions, cost to human health verses the cost to retrofit power stations.
8.15	The WHO confirmed that, both ambient and indoor air pollution is the largest	Timothy Lloyd Attorney	All	Responded to in 8.14 above and in 1.23

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	<p>cause of death worldwide. According to reports from the DEA, confirmed by our experience and analysis air quality exceeds the SA NAAQS on an on-going basis, especially in the Highveld, Mpumalanga and Waterberg-Bonjanala priority areas.</p> <p>On-going exceedances of the NAAQS are closely linked with non-communicable diseases. A quarter of all heart attack deaths, a third of all deaths from stroke, lung cancer and chronic obstructive pulmonary disease are due to air pollution exposures. Health impacts are the largest among woman, children, older people and the poor. Although the NAAQS are intended to be health-based, there are no safe levels of exposure to several pollutants.</p> <p>Emissions from coal-fired power generation are a major source of SA's air pollution – and its attendant health impacts; as well as significant contributor to climate change.</p>	LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official comment		
8.16	<p>Comments by Greenpeace Africa (under 8.11) are echoed by LAC.</p> <p>Eskom is well aware of the health impacts of its power stations. Eskom</p>	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA	All	Responded to in 8.12 above

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	<p>commissioned health impact assessments as far back as 2006 which outline the following key findings:</p> <ul style="list-style-type: none"> • Mpumalanga Highveld study: The then- existing fleet of 10 coal-fired power stations cumulatively were responsible for: <ul style="list-style-type: none"> - 17 non-incidenta mortalities - 661 respiratory hospital admissions/year - Future Eskom emissions and increased releases from the existing fleet, 3 new stations and 3 return to service (RTS) stations were cumulatively calculated responsible for 617 non-accidental mortalities and 24 842 respiratory hospital admissions annually; - Since 2006 Eskom was aware that commissioning new coal stations and RTS stations online, without installation of SO₂ abatement equipment at all stations would result in large and disproportionate increase in mortalities and respiratory illnesses. • Eskom Limpopo Health Study 	<p>11 September 2018 Official comment</p>		

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	<p>analysed Matimba and planned Medupi power station:</p> <ul style="list-style-type: none"> - Matimba station emissions are estimated to be responsible for 80% of premature mortality and 50% respiratory hospital admissions - Medupi would result in health risks doubled from 1.5 to 3 premature deaths and from 144 to 300 respiratory hospital admissions per year. <p>The serious health impacts from Eskom's power stations make it clear that Eskom's postponement applications cannot succeed as it is contrary to the Constitution, NEMA, AQA and the Framework.</p> <p>Notwithstanding, the CBA to be conducted by independent consultants, including 'health impacts', we do not believe a scenario exists where DEA could justifiably approve a postponement application in light of the health effects attributed to Eskom's coal-fired power stations.</p>			
8.17	The 2017 Broken Promises Report recommends that no more MES	Timothy Lloyd Attorney		The postponement decisions will be made by the DEA based on all

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	postponements should be granted or AEL's issued in priority areas, until such time as the air quality improves so that there is consistent compliance with the NAAQS. Recommendations are based on the negative health impacts on communities as a result of air pollution in the HPA.	LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official comment		available information.
8.18	If we allow Eskom to continue emitting at the current rate, how would this affect the health of our community?	Sfiso Makhubo Balfour (Siyathemba) Public Meeting 21 August 2018	Grootvlei	The results of the AIR, HRA including the CBA are currently available for public review as part of the 2 nd round of public engagement.
8.19	<p>What has Eskom done to get statistics from doctors, chemists on reported pulmonary disorders caused by power station emissions and from ash fallout from the power station ash dams? The dust in our houses contains sulfur.sulfursulphur. We have 5 year olds already on respiratory equipment.</p> <p>What is Eskom doing to address the emissions at ground level?</p> <p>We understand the circumstance Eskom finds itself in but what will be done to address the health issue? The health impact related cost benefit analysis is based on the national statistics attained from government.</p>	Bryan MacKenzie Kriel Resident Kriel Public Meeting 20 November 2018	Kriel Matla	<p>To address the local air pollution at ground level, authorities have placed a condition in the last postponement approval in which Eskom is to implement Air Quality Offsets. The aim with air quality offsets is to improve the air quality to which people are directly exposed to where they live and work.</p> <p>Eskom is implementing an air quality offset program in Kwazamokhule in Hendrina where the most significant direct exposure to air pollution in the area is from domestic fuel burning in people's houses. In 2019 Eskom will be fixing ceilings for better insulation, providing electric and gas stoves as to minimize the need for these people to burn coal in their houses and minimize direct exposure. Eskom has also recognized the need to rollout this program in Thubelihle in 2020.</p> <p>Eskom will first implement pilot projects to measure the emission exposure in the area before implementation of the offsets and how it has reduced the emissions post implementation of the equipment and insulation. Based on the said Eskom can determine how effective the offsets are before it rolls out the lead project at full scale. During this pilot</p>

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				Eskom will send out researches to clinics and doctors to investigate the health related impacts that people in the area experience.
8.20	<p>Eskom gets away with everything. It is polluting our air and we are suffering from TB and air borne diseases. There are no TB clinics in Thubelihle. In 2029 Eskom will close Kriel power station and leave the community of Thubelihle to suffer the consequences of the air pollution.</p> <p>What is Eskom's solution to this?</p>	Thubelihle Resident Thubelihle Public Meeting 20 November 2018		<p>The most problematic pollutant is PM. The air pollution felt by communities are not all from Eskom power stations. There are other significant sources of PM such as domestic fuel burning with coal and wood which is responsible for people's direct exposure to PM at a household level.</p> <p>Eskom is implementing Air Quality Offset Program pilot projects in communities where the PM levels are particularly problematic. The implementation of the program will lower people's direct exposure to PM.</p> <p>The planning is to start a pilot project for the air quality offset program in Thubelihle and Rietspruit by the year 2020.</p>
8.21	When Eskom conducts the health study where does it get the statistics from?	Zibonagaliso Mabasa 21 November 2018 Emalahleni Public Meeting	Kendal Duvha	Eskom retrieves statistics from government which retrieve their statistics from the local clinics.
8.22	Does Eskom go around communities and conduct health checks?	Zibonagaliso Mabasa 21 November 2018 Emalahleni Public Meeting	Kendal Duvha	Eskom uses surveys from government since there are various pollution sources. When Eskom conducts the air quality offsets it will conduct assessments in communities to determine how/if the offsets are improving the air quality and health impacts in the area and will also through those assessments conduct a health surveys in communities.
8.23	<p>Has Eskom conducted research around our local clinics and communities?</p> <p>The small children have asthma. The people are dying. We cannot find the</p>	Promise Mabega 21 November 2018 Emalahleni Public Meeting	Kendal Duvha Kriel	A health related cost benefit analysis was prepared to determine the impact of the postponement on people's health, by an independent consultant and was available at the public libraries in the area namely Emalahleni, Middelburg, Ogies, Kriel, Hendrina, Pullen's Hope and Rietkuil from 26 November 2018 until 4 February 2019 and on the

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	<p>statistics to check. Is there a possibility to get hold of the statistics used for the health assessment?</p> <p>We would like to compare the statistics from the health assessment with the statistics from our local doctors and clinics.</p>		<p>Matla</p> <p>Komati</p> <p>Hendrina</p> <p>Arnot</p>	Naledzi website.
8.24	Why does Eskom not conduct health checks on people in the local Ogies and Phola communities?	Lucky 21 November 2018 Ogies Public Meeting	Kendal	<p>A Health impact related cost benefit analysis has been prepared for the postponement application by an independent specialist. Eskom retrieves statistics from government which retrieve their statistics from the local clinics.</p> <p>When Eskom conducts the air quality offsets it will conduct assessments in communities to determine how/if the offsets improve the air quality and health impacts in the area and will also through those assessments conduct a health surveys in communities.</p>
8.25	Health Studies completed in 2014 indicated that pollution from Eskom's power stations is responsible for 2200 premature deaths. Recently in parliament Eskom stated that based on its health related cost benefit analysis its power stations are responsible for 300 deaths.	Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting	All	An independent Health related cost benefit analysis has been completed for the project. It does state that Eskom contributes to premature deaths. Eskom's solution is to implement the ERP and significantly reduce its overall contribution to the NAAQS in the area by decommissioning 5 power stations by 2030.
8.26	<p>In the Health impact related cost benefit analysis it is stated that Eskom is responsible for 333 deaths per year. Over 12 years it's over 4000 people.</p> <p>Is Eskom planning to reduce the numbers? What is Eskom going to do</p>	Thomas Nguni Groundwork 23 November 2018 Midrand Public Meeting	All	<p>Eskom is presently in general in compliance with its Atmospheric Emission Licenses for its power stations. Eskom has a current ERP which is aimed at reducing emissions at its power stations.</p> <p>Eskom is also busy implementing an air quality offset program to further reduce emissions and the related health impact at household level, specifically in areas which show high levels of exceedances of the</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	about that?			NAAQS.
8.27	Eskom's most feasible plan to reduce emissions is to implement the ERP and by decommissioning 5 power stations by 2030. Eskom in this manner can still provide electricity to the general population and still adhere to the policies and continue its operations. But the crux is that 333 deaths are caused by Eskom's emissions and are essentially collateral to Eskom continuing operations. I am afraid that it is not really a tenable position to be in, in a constitutional democracy.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	All	As stated in parliament Eskom does not want to see mortalities as a result of its emissions. Eskom has an ERP in place to reduce its emissions.
8.28	That means that it will still take up to 12 years before the 5 power stations are decommissioned and the air quality improves. So those living in the PM2.5 hotspots must just hang tight with those deadly air emissions until then?	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	All	Eskom is aiming to reduce emissions in accordance with its current ERP and implementation of air quality offsets in areas showing high levels of exceedances based on air quality monitoring stations. There are impacts on either decisions to be made and there are policy decisions that need to be weighed up.
8.29	Eskom acknowledged that its emissions cause significant health impacts such as early death. What compensation does Eskom pay out to such families where early death is caused as a result of its emissions? Is there medication available to the	Guilliam Smalberger Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	Majuba	Eskom is legally allowed to request for postponement from MES and is hence applying under these provisions of the MES Regulations. Eskom has appointed independent consultants to conduct a health impact related cost benefit analysis to investigate health impacts and cost to society. The CBA is available for public review and comment at the stated public venues and on the NEC website. Eskom has an ERP in place which will see a reduction in emissions of PM

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	<p>public? It is the poorer communities who are mostly subject to the pollution and resultant health impacts.</p> <p>What is Eskom doing to address or reduce their emissions?</p>			<p>by 58%, SO₂ by 66% and NO_x by 46% by the year 2035.</p> <p>There will be a reduction in relative emissions from 2020 with implementation of Eskom ERP and power station decommissioning.</p>																																																															
8.30	<p>Air pollution is a major problem in South Africa, stemming from various sources including transportation and agriculture, but largely from industry and the country’s large dependence on fossil fuels as a source of energy and electricity. The burning of coal is associated with heavy releases of pollutants and airborne toxins such as fine particulate matter (PM), nitrogen oxides (NO_x), including nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead, mercury, and other heavy metals.</p> <p>The health, economic and environmental impacts of the resulting air pollution are dire. Health impacts related to coal in South Africa include lung cancer, heart disease, pulmonary disease, stroke, asthma, and respiratory infections.</p> <p>Premature deaths from air pollution A 2016 report by the World Bank estimates that roughly 20 000 South</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>See 1.23 for a discussion on the issues associated with the health impact focussed CBA.</p> <p>In summary the CBA follows internationally accepted practice including using input provided by the SA Medical Research Council and is clear in terms of its’ assumptions, uncertainties and limitations.</p> <p>Recognising the uncertainties and limitations associated with such a study the completed study contains a table clearly illustrating the range of final values given the possible variance in the health benefits and the central cost benefit ratio.</p> <p>Table 6 Costs and benefits NPV estimates (lower and upper ranges) for each scenario, and cost:benefit ratios</p> <table><tr><th></th><th colspan="2">FC (S1)</th><th colspan="2">ERP (S2)</th><th colspan="2">ERP+FGD (S3)</th><th colspan="2">ERP+ED (S4)</th></tr><tr><th>Million Rands</th><th>lower</th><th>upper</th><th>lower</th><th>upper</th><th>lower</th><th>upper</th><th>lower</th><th>upper</th></tr><tr><td>NPV of Costs</td><td>-43 369</td><td>-65 053</td><td>-16 923</td><td>-25 385</td><td>-21 205</td><td>-31 808</td><td>-16 923</td><td>-25 385</td></tr><tr><td>NPV of Benefits</td><td>2 403</td><td>21 625</td><td>1 962</td><td>17 661</td><td>2 252</td><td>20 264</td><td>3 374</td><td>30 367</td></tr><tr><td>NPV of Benefits minus Costs</td><td>-40 966</td><td>-43 428</td><td>-14 961</td><td>-7 724</td><td>-18 954</td><td>-11 544</td><td>-13 549</td><td>4 982</td></tr><tr><td>Cost: Benefit Ratio (range)</td><td>18.0</td><td>3.0</td><td>8.6</td><td>1.4</td><td>9.4</td><td>1.6</td><td>5.0</td><td>0.8</td></tr><tr><td>Cost: Benefit Ratio (central)</td><td colspan="2">4.5</td><td colspan="2">2.2</td><td colspan="2">2.4</td><td colspan="2">1.3</td></tr></table> <p>Under the present assumptions and noting the limitations and assumptions</p>		FC (S1)		ERP (S2)		ERP+FGD (S3)		ERP+ED (S4)		Million Rands	lower	upper	lower	upper	lower	upper	lower	upper	NPV of Costs	-43 369	-65 053	-16 923	-25 385	-21 205	-31 808	-16 923	-25 385	NPV of Benefits	2 403	21 625	1 962	17 661	2 252	20 264	3 374	30 367	NPV of Benefits minus Costs	-40 966	-43 428	-14 961	-7 724	-18 954	-11 544	-13 549	4 982	Cost: Benefit Ratio (range)	18.0	3.0	8.6	1.4	9.4	1.6	5.0	0.8	Cost: Benefit Ratio (central)	4.5		2.2		2.4		1.3	
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	<p>Africans die from air pollution related causes every year . A different study by the International Growth Centre at the University of Cape Town estimated an even higher cost of 27 000 deaths and over 300 billion Rand (6% of the country's GDP), using the United States Environmental Protection Agency's Environmental Benefits Mapping and Analysis Program (BenMAP) . The Johannesburg-Pretoria metro area suffers the highest losses of life, followed by other densely populated areas such as Cape Town and Durban.</p> <p>Eskom's underestimation of premature deaths</p> <p>For the first time Eskom presented its own assessment that admits that there are premature deaths caused by their coal-fired power stations. But this research still significantly underestimates impacts by ignoring international research standards, in at least the following ways:</p> <ul style="list-style-type: none"> ▪ The analysis excludes most of South Africa's population (an estimated 70%) by artificially limiting the geographical area covered by the study. 			<p>the study shows various outcomes including that:</p> <ul style="list-style-type: none"> • the implementation of abatement technologies does have a positive impact on human health. • implementation of the Eskom Reduction Plan with the early decommissioning of stations is the most beneficial from a cost-benefit perspective • the implementation of FGD is considered to have limited impact on the cost benefit ratios • full compliance to the MES while resulting in the maximum benefit is associated with a long lead time resulting in the least beneficial cost benefit ratio • implementation of the abatement technologies places Eskom a significant financial burden on Eskom which must be sourced from somewhere. <p>In setting up a dispersion model, the modeller decides on how best to define the receptor points at which the model will provide predicted ambient air quality for the pollutant in question. Typically a grid is used with the receptor points being defined by the points of intersection of the north south lines with the east west lines. In principle, it is possible to set up a model that has a very dense set of receptors, but in practice that has to be offset against how long it will take the model to run. As such the modeller must optimise the number of receptor points so that the dispersion modelling runs can be completed in the available time. The next decision is how far to spread those receptor points apart and in</p>

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	<ul style="list-style-type: none"> ▪ The modelling of changes in ambient pollution levels is based on short-range (60km) assessment around each power station. Relative changes in pollution levels are then extrapolated to a larger area (though as noted above, this does not cover all of South Africa). The method for extrapolation is unclear and unsubstantiated. The range of ▪ 60km is inadequate for quantifying changes in concentration of secondary particles that form in the atmosphere following release of other pollutants. A better approach would have been to model directly on the scale of the larger domain for all scenarios. ▪ The authors use a ‘pollution interval’ based approach to link pollution data to response functions. This discounts some part of exposure from analysis, considering it ‘insignificant’. Elsewhere in the world, analysis uses continuous relationships between exposure and effect. It is unclear how much the Eskom approach underestimates total damage, but as demonstrated in the 			<p>theory it is possible to spread the receptors across the entire country but then there would have to be vary distances between the receptor points.</p> <p>Experience has shown that the significant ambient concentrations occur within 15 km of the power station which suggests that distance be used to define the receptor points but the modellers would typically extend that distance to 30 to 40 km or so to ensure that they include all the areas over which potentially significant concentrations are predicted. At the same time the modellers would typically not extend the grid too much further away from the source than that to ensure that there is adequate density within the modelling domain to allow for the preparation of isopleth maps. The dispersion modeller thus needs to balance all these competing considerations to come up with predictions that are scientifically defensible and this would typically restrict a modelling domain to the 60 x 60 km modelling domain that has been used in this assessment.</p> <p>When continuous mathematical relationships (such as exposure response functions) are applied to discrete datasets such as the population and exposure data in this analysis, pollution intervals have to be used as part of the modelling process. Figure 21 was included in the report to demonstrate the sensitivity of selecting pollution intervals. Based on this sensitivity analysis the authors selected the interval resolution that gave the most conservative results, and this was 0.2 µg/m³. The statement made here that “Eskom approach underestimates total damage ... in the order of 50% or more” is simply untrue.</p>

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	<p>Eskom report (their Figure 21), the effect can be substantial, in the order of 50% or more. The approach used is certainly not conservative, as claimed by the authors.</p> <ul style="list-style-type: none"> Underestimation also arises from the way that response functions are selected. The Eskom report recognises that there is potential for double counting when applying response functions separately for a series of pollutants (SO₂, NO_x and PM_{2.5}). The final selection of functions excludes those for effects of PM_{2.5} on cardiovascular and respiratory mortality, instead adopting functions based on SO₂ and NO₂ exposure. However, the relationships with PM_{2.5} are significantly stronger and should thus have been preferred. Using the PM_{2.5} based functions would more than double the estimates for mortality. The analysis excludes several further pathways of health impacts from PM_{2.5}, including effects on morbidity (illness) and cancer mortality linked with PM_{2.5}. Estimates of benefits are 			<p>Exposure response functions used were as recommend by the SA Medical Research Council. Eskom recognises that there is a large variation in the health outcomes of the set of exposure response functions recommended by the SA Medical Research Council and thus tested the variance of all the functions around the mean of the key functions selected. This has been reported on thoroughly in the cost benefit analysis report. This variance was then applied to the benefit ratios in the final cost benefit analysis.</p> <p>Exposure response functions used were as recommend by the SA Medical Research Council. Morbidity health outcomes were not assessed due a complete absence of data. Section 2.5.1 of the cost benefit analysis report lists this as a limitation resulting in under-estimation of health effects.</p> <p>Eskom agrees with the comment on the discount rate, and as a result have re-assessed the cost benefit ratios using sensitivity analyses and alternative social discount rates of 1% and -1%. The IPCC provides a detailed discussion on discount rates and this was used as a basis for selecting the socail discounts rates. The results have been included in the updated cost benefit analysis report. The results show that in Scenarios 2, 3 and 4 helath benefits would exceed mitigation costs in the upper extremes of the mortality assumption range. However, the order of the Scenarios do not</p>

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	<p>significantly reduced by assumptions on discounting. The rate used (8.5%) is significantly greater than that considered appropriate for socio-economic assessment in, for example, Europe. No account appears to have been taken for increased valuation of mortality as a consequence of economic growth in future years. The extended (and over-estimated, as pointed out in this submission) timescales for retrofit further reduce benefits relative to costs.</p> <ul style="list-style-type: none"> ▪ The report fails to compare Eskom's so-called emission reduction plan to an alternative of complying with the Minimum Emission Standards without further delay (after the five-year postponement already granted). ▪ The report also excludes the impact of reductions in mercury emissions that would result from the installation of Flue Gas Desulfurization to comply with the SO₂ standards - failure to comply means substantially higher 			<p>change from the assessment that used the 8.4% discount rate, indicating that earlier closure of coal mines still has the highest positive impact on health benefits (Scenario 4), followed by Scenario 2 and 3 respectively.</p> <p>Exposure response functions used were as recommend by the SA Medical Research Council. Refer to the SA MRC technical report.</p> <p>If we understand the question correctly we disagree with this assertion. The dispersion modelling scenarios are for current emissions and for MES compliance so it is clear what the difference would be between what is there currently and what would occur under MES compliance. Eskom's emission reduction plan spells out when power stations would be retrofitted and once retrofitted them would be compliant with the MES for the pollutant in question. If the question is asking why this scenario was not modelled collectively then the reason is that there are just too many permutations to model (6 generating units per power station, 13 power stations, 3 pollutants and 30 years for example would imply 7020 permutations, without considering the 10 different averaging periods that would also need to be presented). In addition it would be very difficult to see the differences between these various scenarios. Given that scenarios of current emissions, full compliance with the MES and current emissions with 5 power stations decommissioned have been modelled for all the power stations combined, the improvements that could be brought about through compliance with the MES, are clear.</p>

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	<p>mercury emissions.</p> <p>From review and analysis of the various biases to underestimation in the health impact assessment, basing analysis only on information presented in the Eskom report, it is concluded that central estimates of benefits of compliance would exceed costs for at least three of the four scenarios considered and quite possibly the fourth. However, given the nature of several of the deficiencies and errors in methodologies identified in the report, a better understanding of effects requires new modelling.</p>			<p>Eskom disagrees with this statement. As discussed above and in 1.23, Eskom has applied diligence in all components of the cost benefit analysis study and the technical components upon which it is built. Moreover, Eskom recognises a range of uncertainties inherent in health outcomes cost benefit analysis. The cost benefit analysis lists a large number of uncertainties in 2.51 and provides a description of how each could affect the final results. Moreover, the cost benefit analysis finally conducts sensitivity analysis using a health benefits range to demonstrate how the cost benefit ratio would be affected by the extremes in the range of uncertainties.</p>
8.31	<p>(43) The finding that a combination of SO₂ and NO_x emissions from all the Highveld power stations is predicted to form a significant component of the PM_{2.5} load, has, we submit, vindicated our recommendations and submissions made over the course of several years. We strongly contend that this is more than a mere “cause for concern”. We submit that, notwithstanding the condition that NAAQS must be in compliance, Eskom’s cumulative contribution to the formation of PM_{2.5} and the severe health impacts associated with PM_{2.5}, is fatal to Eskom’s applications. It is recognised above that</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>Eskom has recognised the significance of its contribution to PM, NO_x and SO₂ and as described in its motivations has acted and continues to act to reduce its impact to the environment (human health, water resources and natural resources) in a responsible and sustainable manner. Eskom believes its plan presents a sustainable development approach which considers the costs and benefits and balances protection of the environment and the need for social and economic development.</p>

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	the effect of this accumulation will be an increasing health risk for a large part of the Highveld, and, we submit, this will more than likely only sustain the state of non-compliance with NAAQS in the HPA and the continued breach of section 24 of the Constitution. This is unacceptable. The health impacts attributed to Eskom's coal-fired power stations, caused by PM _{2.5} alone, are addressed in the section below.			
9. COST BENEFIT ANALYSIS (CBA)				
9.1	Eskom must address what the cost of retrofitting Acacia power station with Low Nox Burners will be and what point source emissions rate reduction would be anticipated to be achieved versus the cost of doing the retrofit.	Ian Gildenhuys CoCT Head Specialised Environmental Health, Air Quality Officer City Health 1 August 2018 CoCT and WC Authority Engagement Meeting 10 September 2018 Via Email	Acacia	Eskom has decided not continue with the postponement for Acaica at this time . Update February 2019 – Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.
9.2	The cost of retrofitting and scarcity of water is highlighted yet these postponements are requested on account of the health of the people. Government	Jacob Kgotso Sharpeville Public Meeting 20 August 2018	Lethabo	NEC will conduct an independent assessment to determine what the implications of the postponement application and determine the impact on human health. We understand the concern regarding whether Eskom is

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	should not approve these postponements. Government is failing to enforce the MES.			trading off people's health to save money on their power stations. NEC has conducted a CBA to translate these concerns into costs, e.g. the cost for retrofits verses the cost of community health effects.
9.3	<p>What would be the cost to human health as a result of the non-compliance with the MES, and request for postponement to meet the MES compliance timeframes?</p> <p>Has it been considered how many respiratory diseases and premature deaths may result from the continued air pollution?</p> <p>What is the cost to human health in relation to cost for retrofitting the power stations to reduce emissions?</p>	<p>Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018</p>	<p>Hendrina Arnot Komati</p>	<p>Eskom has appointed independent consultants, who have the responsibility to conduct a very detailed HRA and CBA. The assessments will analyse the number of people exposed to the emissions, cost to human health verses the cost to retrofit power stations. It will provide the exact numbers requested.</p> <p>The AIR, HRA and CBA are available for public review and comment as part of the 2nd round of public engagement.</p> <p>Ultimately this is the intent of the NAAQS and the issue of the MES, which is to protect human health. Eskom wants to ensure that it takes these factors into account when requesting for postponement.</p>
9.4	The Terms of Reference for the CBA are unclear at this stage, and the analysis should be subject to peer review.	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment</p>	All	The reports will be made available for public comment.
9.5	<p>In the absence of specific guidelines in SA for CBA, international procedures should be adopted.</p> <p>The HRA should not simply form part of a CBA, reducing health impacts to</p>	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018</p>	All	NEC believes best practice has been followed in undertaking the CBA and the reports will be available for public review.

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	monetary value. We reserve our rights to challenge the scope and methodology of this analysis, pending availability of further detail.	Official Comment		
9.6	<p>Why is the health related cost benefit analysis not discussed in the Kwazamokuhle public meeting?</p> <p>The meeting should be stopped and rescheduled for when the cost benefit analysis is available.</p>	<p>Thomas Nguni Groundwork 22 November 2018 Kwazamokuhle Public Meeting</p>	<p>Hendrina Arnot Komati</p>	<p>There is no need to reschedule the Kwazamokuhle Public Meeting since the presentation did discuss the CBA. The full health related CBA was available for public review and comment on the NEC website and at public venues from 26 November 2018 until 4 February 2019.</p> <p>A public meeting is not the only method of consultation and is further not compulsory in terms of the NEMA EIA Regulations. It is an additional measure of consultation. Groundwork was provided the opportunity to submit written comments on the health related cost benefit analysis during the public review and comment period until 4 February 2019. Comments submitted during this period have been recorded and submitted to the NAQO.</p>
9.7	<p>Has the current mortalities been modeled based on:</p> <ul style="list-style-type: none"> the predicted emissions once the emission reduction plan has been completed; and what the number of mortalities will be after completion of the ERP? 	<p>Melita Steele Greenpeace Africa 23 November 2018 Midrand Public Meeting</p>	<p>All</p>	<p>The mortalities related to the current emission exposure and predicted future emissions once 5 power stations have been decommissioned have been addressed in the Health impact related Cost Benefit Analysis Report.</p>
9.8	<p>Does Eskom really think it's morally doing the right thing by postponing the MES and negatively impacting the air quality breathed by people?</p> <p>Eskom can't say it can't afford abatement equipment. One cannot weight up</p>	<p>Coenie Dafel Chairperson, Amersfoort Agricultural Union 29 November 2018 Amersfoort Public Meeting</p>	<p>Majuba</p>	<p>Eskom is legally allowed to request for postponement from MES and is hence applying under these provisions of the MES Regulations.</p> <p>Eskom has appointed independent consultants to conduct a health impact related cost benefit analysis to investigate health impacts and cost to society. The CBA is available for public review and comment at the stated public venues and on the NEC website.</p>

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	finances against a moral issue. Eskom has not weighed up the broader economic cost to society. Our farm labourers get sick from lung diseases and TB. The true economic impact of the postponement application is not reflected. Eskom just wants to carry on with a bad habit.			
9.9	<p>The cost benefit analysis figures provided for the ERP and full compliance to MES are biased.</p> <p>It is indicated the most effective measure to substantially reduce emissions is to close down 5 coal fired power stations by 2030 and to move away from coal energy. If these 5 stations close what will happen to the economy?</p> <p>What plans are in place to reduce the emissions and the health impacts? What are the impacts and cost to the public due to usage of low quality coal? There are a lot of cumulative impacts snowballing the overall impact.</p>	Guilliam Smalberger Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	Majuba	<p>Eskom is a state owned entity and its future plans tie in with government and is detailed in the IRP. The IRP guides Eskom's future planning. The decommissioning of 5 coal fired power stations is stated in the IRP with the aim to bring in clean electricity into the energy mix.</p> <p>Eskom does experience challenges with low grade coal received at some power stations.</p> <p>The ash content of coal is a challenge to power stations. If the ash content at the station is 25% the station can manage, but if the ash content is 32-35% the power station operates under stress.</p> <p>Majuba power station it is fitted with FFP which is 98% effective in management of the PM/ash. The FFP is a physical barrier to contain fly ash.</p> <p>The poor quality of coal can affect/increase the concentration of SO₂ and NO₂ released into the atmosphere. Yet for the Amersfoort area the SO₂ and NO₂ concentrations are in compliance with the NAAQS and do not pose of problem.</p>
9.10	The full negative impact economic impact has not been taken into account by Eskom. The economic impact on the affected parties has been ignored	Coenie Dafel Chairperson, Amersfoort Agricultural Union	Majuba	The cost benefit study focussed on health costs and the cost of pollution control equipment and did not consider the economic impact of the complete range of environmental externalities.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	completely by Eskom.	4 February 2019 Official written comment		
9.11	<p>Correcting bias in Eskom's modelling of health impacts</p> <p>Compared against a scenario of full compliance with the MES after the 5-year delay to 2025, excluding units set to retire by 2030, the various postponements, variations and exemptions sought by Eskom would allow the company to emit an estimated 19 million tonnes more SO₂, 1 million tonnes more NO_x, and 190,000 tonnes of particulate matter. The failure to install SO₂ controls would increase mercury emissions over the remaining operating life of the power plants by a total of an estimated 200,000 kilograms. These estimates are based on the assumption that all units retire after 50 years of operation - a longer operating life would mean larger excess emissions.</p> <p>To assess the health impacts of these excess emissions, the Greenpeace Global Air Pollution Unit carried out CALPUFF dispersion modeling closely following the methodology of the modeling used in Eskom's Cost-Benefit Analysis, with the modeling domain</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>Eskom disagrees with the claims of bias in the health impacts study.</p> <p>See 1.23 and 8.30 for a comprehensive response to the CBA issues.</p> <p>Any CBA study is impacted by the assumptions on which it is based and comparisons when the assumptions are not identical are difficult. Eskom notes some of the differences between previous studies in its CBA report.</p> <p>The report within which the values provided by Greenpeace in this comment have not yet been published and is therefore not possible to evaluate.</p> <p>Eskom reserves its rights to comment further on the Greenpeace recent (undated) CBA report if and when it is provided. Eskom believes its study is appropriate and defensible and illustrative of the issues in a health related CBA and the relative cost of compliance.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>expanded to cover most of South Africa's population. Separate model runs were carried out for each of the 15 Eskom power stations, and contributions of SO₂, NO_x and primary PM_{2.5} emissions to ambient PM_{2.5} and NO₂ levels were isolated for each station and each pollutant. The resulting avoidable health impacts were projected following the Global Burden of Disease methodology for PM_{2.5} health impacts and a risk function for acute NO₂ exposure selected to avoid double counting with PM_{2.5} health impacts . Once Medupi and Kusile are in full operation, we estimate that air pollutant emissions from Eskom's coal-fired power plants will be responsible annually for:</p> <ul style="list-style-type: none"> ▪ 170 premature deaths due to increased risk of lower respiratory infections in children ▪ 900 premature deaths due to increased risk of stroke ▪ 140 premature deaths due to increased risk of lung cancer ▪ 610 premature deaths due to increased risk of ischaemic heart disease, and ▪ 220 premature deaths due to increased risk of chronic obstructive 			

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	<p>pulmonary disease associated with chronic PM_{2.5} exposure, as well as</p> <ul style="list-style-type: none"> 390 premature deaths due to increased risk of death associated with acute NO₂ exposure, for a total of 2,400 premature deaths per year (95% confidence interval: 1,500 to 3,000 deaths). <p>The detailed modeling for individual power plants allowed us to project the reductions in ambient air pollution levels at each location of the modeling domain over time, as emission reductions from meeting the MES or implementing Eskom's "Emission Reduction" plan are realized. The projections take into account expected population growth and epidemiological transition associated with improved health care and aging population.</p> <p>We project that, over the remaining lifetime of Eskom's coal-fired power plants, the excess emissions allowed if Eskom's requests for non-compliance with the MES are fully granted will lead to the following avoidable health impacts:</p> <ul style="list-style-type: none"> 1,100 premature deaths due to 			

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	<p>increased risk of lower respiratory infections in children;</p> <ul style="list-style-type: none"> ▪ 9,700 premature deaths due to increased risk of stroke; ▪ 2,200 premature deaths due to increased risk of lung cancer; ▪ 7,100 premature deaths due to increased risk of ischaemic heart disease; ▪ 2,500 premature deaths due to increased risk of chronic obstructive pulmonary disease associated with chronic PM2.5 exposure; and ▪ 500 premature deaths due to increased risk of death associated with acute NO2 exposure. <p>In total, an estimated 23,000 premature deaths (95% confidence interval: 14,000 to 28,000 deaths) could be avoided by requiring full compliance with the MES. This represents a 40% reduction in the cumulative health impact of air pollution from Eskom's power stations.</p> <p>This health impact assessment is an update of the report "Health impacts and social costs of Eskom's proposed non-</p>			

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	<p>compliance with South Africa's air emission standards" published in 2014. In that report, we estimated that the external social costs avoided by requiring Eskom to fully comply with South Africa's MES would be ZAR230 billion. Since the health impact estimates have increased with the more detailed atmospheric modeling and epidemiological projections used for our updated assessment, the avoided social costs will also be higher, showing that the costs of retrofitting Eskom's coal fleet with basic emission controls technologies are justified and will make South Africa as a society better off.</p> <p>The 2014 report was reviewed , among other similar studies on health impacts of power plant emissions in South Africa, by scientists from University of Johannesburg and The Nova Institute, who concluded that the study "appears to be a reasonable quantification of the health risk in remote areas, but is probably a large over-estimation of the health risk in more polluted areas," because the exposure-response relationships used "may well not be" applicable in industrialized areas due</p>			

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	<p>to the high overall pollution levels. For this update of the results, the recommendations of the authors for exposure-response relationships better suited to these conditions were adopted.</p> <p>We are willing to submit the full study and the recommendations of the review of the previous study, and reserve our rights to supplement this submission with both of these.</p>			
9.12	<p>Air pollution has devastating impacts on human health and well-being. Eskom significantly underestimates the health impacts of their coal-fired power stations and annual premature deaths by ignoring international research standards.</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>Eskom denies that its study ignores international research standards. The health impact assesement used best avaiable exposure modelling , Statsitics SA official data, exposure response functions from the SA Medical Reseachr Council and applied the health outcome cost benefit analysis methdolodoly of the World Health Organisation.</p> <p>See 1.23 and 8.30 for detailed technical responses.</p>
9.13	<p>Inflated costs of installing pollution abatement equipment Eskom uses claims of extremely high costs of installing emission controls, particularly Flue Gas Desulfurization (FGD) equipment, as an argument against compliance with the MES.</p> <p>These claims are based on a study prepared in 2006 by a European consultant, before China, India and other emerging countries started</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>See 1.23 for a response to the costing arguments.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	deploying FGDs at scale. Installation of FGDs at eight power stations with a total of 31.6GW generating capacity is claimed to cost R140 to R175 billion overnight, implying an astronomical cost level of R4 400 to R5 500 per 47kW of capacity. For comparison, costs in China are reported at R400 per kW and in India 48at R950 per kW for wet FGD and R670 per kW for semi-dry FGD. There is accordingly no reasonable basis for Eskom to rely on vastly outdated information to exaggerate the costs of compliance with the new source MES for SO ₂ , at least 5-fold. This exaggeration also contributes to its claims that costs of compliance exceed benefits. Eskom's cost-benefit analysis is accordingly flawed, and incorrectly inflates the cost of compliance.			
9.14	Eskom seeks to rely on a (deeply flawed) cost-benefit analysis (CBA) as a basis for avoiding compliance with the MES and continuing to cause thousands of premature deaths and severe health and environmental impacts. We agree with the submission made by Life After Coal that a CBA cannot be a justification for avoiding compliance with the MES and there is no legal basis for doing so.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment	All	<p>The health impact assesement used best avaiable exposure modelling , Statsitics SA official data, exposure response functions from the SA Medical Reseachr Council and applied the health outcome cost benefit analysis methdolodoly of the World Health Organisation.</p> <p>Eskom provides the health impact focussed CBA as an aspect which the decision maker should consider in making a decision on the MES postponement application. Refer to section 1.23 above for Eskom's receommendation on how the cost benefit results need to be interpreted to inform decision-making. The full range of issues to be considered in described in section 5 of the Eskom Summary Motivation.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>Applying such an approach amounts to trading off fundamental human rights enshrined in the Bill of Rights against the financial expenditure of a parastatal. Allowing anyone, but particularly an organ of state, to infringe human rights on the basis of a CBA is unacceptable</p> <p>in a constitutional democracy founded on the rule of law, human dignity, the achievement of equality and the advancement of human rights and freedoms. Approving Eskom's MES applications would amount to an impermissible limitation of rights enshrined in the Bill of Rights.</p> <p>Compliance with the MES is a minimum obligation. Eskom is required by the Constitution and by NEMA to take all reasonable measures to avoid contributing to air pollution and climate change. Instead of preparing a CBA that purports to justify continued inaction in installing pollution abatement equipment, and the continuation of severe health and environmental impacts, Eskom should have undertaken a CBA to evaluate (on a unit-by-unit basis) whether it was preferable to install FGD equipment in</p>			<p>The Constitutionality of a decision which approves Eskom's application is discussed in 1.18. In summary Eskom takes the view that approving the balanced approach proposed by Eskom in its application actually meets the Constitutional objective of securing ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (Constitution of RSA S24(b) iii and the NEMA objective that "Development must be socially, environmentally and economically sustainable" (NEMA S2 (3)).</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>order to comply with the law, or to decommission the unit and if necessary, procure replacement electricity from renewable energy sources. Such a CBA should also take into account the very substantial benefits arising from the reduction of greenhouse gas emission associated with the early decommissioning of coal-fired power units or stations. A failure to take the climate change implications of allowing coal-fired power stations to continue operating biases the analysis against adopting accelerated decommissioning as an emissions reduction strategy.</p> <p>Installing pollution abatement equipment at all coal-fired power stations is a feasible measure that Eskom could and should already have implemented in compliance with its duties under the Constitution and NEMA. Approval of Eskom's MES applications would simply make the decision-makers complicit in this unlawful behaviour and its severe human and environmental consequences.</p>			
9.15	We have described in our submission the number of false, exaggerated and misleading statements that are contained	Melita Steele Greenpeace Africa Senior Climate and	All	Eskom denies that it has made any false or exaggerated statements. As illustrated above Eskom has practical experience or justifiable reasons or has clearly articulated the assumptions associated with the information

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	in Eskom's application documents. These statements have the effect of skewing the cost-benefit analysis to inflate the cost of compliance, to Eskom's favour in the present applications.	Energy Campaign Manager 4 February 2019 Official Comment		contained in its submission. The health impact assessement used best avaiable exposure modelling, Statsitics SA official data, exposure response functions from the SA Medical Reseacrh Council and applied the health outcome cost benefit analysis methdolodoly of the World Health Organisation. Refer to sectins 1.23 and 8.30 for detailed discussions.
9.16	A technical and legal process must be followed to ensure the proposed ambient air quality standards can be achieved in practice and at a justifiable cost. These standards are accepted via the correct process given in the 2017 National Framework for Air Quality Management (DEA Notice 518, 25 May 2018, Notice of intention to amend 2012 NFAQM) is said for 'Procedure for the listing activities'. "The targeting of industries where the benefits or regulation are expected to outweigh the costs, based on experience from developed and developing countries, substantially reduces the risks of economic impacts arising due to the emission standards set. The listing of activities therefore must be informed by appropriate analysis, such as a cost benefit analysis (CBA). In '5.4.3.4 Standard-setting process for listed activities' many comments are made with direct relation to the Eskom	H.A De Koningh Engineer: Energy and Climate Change Heidelberg 4 February 2019 Official written comment	All	The ambient standards have been set by DEA following the required legal processes. No CBA has however been published by DEA in respect of the standards published to date and as related to this application.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	power station cases of MES requirements.			
9.17	<p>(47) We reiterate that one of the amendments to the List of Activities, to paragraph 11, is the following:</p> <p>“As contemplated in paragraph 5.4.3.5 of the National Framework for Air Quality Management in the Republic of South Africa, published in terms of section 7 of this Act, an application may be made to the National Air Quality Officer for the postponement of the compliance time frames in paragraph (9) and (10) for an existing plant”</p> <p>(48) In addition to the requirement that the area must be in compliance with NAAQS, the 2017 Framework requires that Eskom must demonstrate that its air emissions are not causing direct adverse impacts on the surrounding environment. Furthermore, the NAQO, in concurrence with the competent licencing authorities, is also bound by the applicable legislative framework outlined in Section A above. In considering Eskom’s applications and the surrounding circumstances, the NAQO must be guided by the NEMA</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>Eskom takes the contrary view that approving the balanced approach proposed by Eskom in its application actually meets the Constitutional objective of securing ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (Constitution of RSA S24(b) iii and the NEMA objective that "Development must be socially, environmentally and economically sustainable" (NEMA S2 (3)).</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	principles and apply the AQA in accordance with section 24 of the Constitution to ensure that air pollution is not harmful to human health or well-being, and to enhance the quality of air in South Africa.			
9.18	(49) The World Health Organisation has confirmed that air pollution, both ambient and indoor, is one of the largest causes of death worldwide. About a quarter of all heart attack deaths, and about a third of all deaths from stroke, lung cancer, and chronic obstructive pulmonary disease are due to air pollution exposures. Health impacts are largest among women, children, older people, and the poor.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	That is true.
9.19	(50) The purpose of the health-based NAAQS is for the Minister of Environmental Affairs to establish the permissible amount or concentration of each such substance or mixture of substances in ambient air, in order to minimise the risk of fatal health impacts caused by ambient air pollution. In addition to the fact that all three of South Africa's priority areas are out of compliance with the NAAQS, as reported by DEA, and that our comparatively weak NAAQS are in urgent need of review, it is critical to	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	The establishment of standards/limits in terms of specific averaging periods and by defining a threshold number of exceedances does set a legally acceptable exposure level.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	note that there are no safe levels of exposure to several pollutants. This includes PM _{2.5} , and as confirmed above, a significant component of the PM _{2.5} load in the HPA is formed by Eskom's coal-fired power stations. Exposure to ambient PM _{2.5} as a major health concern cannot be underestimated – recent research (September 2018) into global estimates of mortality associated with long-term exposure to outdoor fine particulate matter, has revealed that outdoor particulate air pollution is an even more important population health risk factor than previously thought. Global Exposure Mortality Models (GEMM) were constructed for five specific causes of death examined by the global burden of disease (GBD) and it predicts 8.9 million deaths in 2015 due to PM _{2.5} , a figure 30% larger than that predicted by the sum of deaths among the five specific causes and 120% larger than the risk function used in the GBD.			
9.20	(51) Eskom's knowledge of the extent of the health impacts caused by its fleet of coal-fired power stations, dates back 57to at least 2006, when it commissioned its own health impact assessments. We outline the key findings of	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA	All	Eskom has and does acknowledge the impact of its emissions as confirmed in its reports. Eskom has, as it has done in this application, taken a balanced and sustainable approach to the addressing the environmental, technical and financial issues associated with providing the country with electricity.

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	<p>Eskom's respective reports below:</p> <p>(51.1) The Mpumalanga Highveld study focused on the emissions from Eskom's then-existing fleet of 10 coal-fired power stations, and concluded that Eskom stations were cumulatively calculated to be responsible for 17 non-accidental mortalities and 661 respiratory hospital admissions per year. What is even more striking, however, is the study's finding that future Eskom's emissions, including increased releases from existing stations and the commissioning of 3 new and 3 return-to-service (RTS) stations, were cumulatively calculated to be responsible for 617 non-accidental mortalities and 24 842 respiratory hospital admissions annually. It is therefore clear that, at least from 2006, Eskom was already well aware that commissioning new coal-fired stations and bringing the RTS stations back online, without installation of SO₂ abatement equipment at all of the stations, would result in a large and disproportionate increase in mortalities and respiratory illnesses.</p> <p>(51.2) The Eskom Limpopo Health Study analysed the health risks of its</p>	<p>4 February 2019 Official Comment</p>		

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	Matimba power station and planned Medupi power station and concluded that “emissions from existing Matimba Power Station operations are estimated to be responsible for 80% of the premature mortality and 50% of the respiratory hospital admissions” and that Medupi “would result in health risks being doubled from 1.5 to 3 premature deaths and from 144 to 300 respiratory hospital admissions per year”.			
9.21	(52) Given the absence of the health assessment as a supporting document, our objections in 2014 to Eskom’s first round of MES postponement applications place detailed reliance on a research study by Lauri Myllyvirta – a coal and air pollution specialist – which concluded that atmospheric emissions from Eskom’s coal-fired power stations were then causing an estimated 2,200 premature deaths per year, due to PM _{2.5} exposure. This included approximately 200 deaths of young children. The economic cost to society was estimated at USD2.37 billion per year (at the time).	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	See 1.23 and 8.30 for a response to the CBA issues
9.22	(53) Using the data from Lauri Myllyvirta’s study, UK-based air quality and health expert Dr Mike Holland assessed the health impacts and	Timothy Loyd Attorney – Pollution and Climate Change	All	See 1.23 and 8.30 for a response to the CBA issues

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	<p>associated economic costs of current emissions from Eskom's coal-fired power stations in 2016. The assessment especially focused on the role PM_{2.5} formed in the atmosphere following release of other pollutants, particularly SO₂ and NO_x. His report, entitled "Health impacts of coal fired power plants in South Africa", estimates that the following impacts are attributable to these emissions:</p> <ul style="list-style-type: none"> ▪ 2 239 deaths per year: 157 from lung cancer; 1 110 from ischaemic heart disease; 73 from chronic obstructive pulmonary disease; 719 from strokes; and 180 from lower respiratory infection; 2 781 cases of chronic bronchitis per year in adults; ▪ 9 533 cases of bronchitis per year in children aged 6 to 12; ▪ 2 379 hospital admissions per year; ▪ 3 972 902 days of restricted activity per year; ▪ 94 680 days of asthma symptoms per year in children aged 5 to 19; and ▪ 996 628 lost working days per year. 	<p>LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>		
9.23	(54) We continue to submit that these serious and direct health impacts make it clear that Eskom's applications cannot	Timothy Loyd Attorney – Pollution and	All	Eskom takes the contrary view that approving the balanced approach proposed by Eskom in its application actually meets the Constitutional objective of securing ecologically sustainable development and use of

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	succeed, as this would be contrary to the Constitution, NEMA, AQUA, the Listed Activities, and the 2017 Framework. On a proper consideration of this issue, consistent with the Constitution, these impacts – quite apart from the fact that there is NAAQS non-compliance are fatal to Eskom's applications to postpone or suspend compliance with the MES and/or request alternative limits.	Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment		natural resources while promoting justifiable economic and social development" (Constitution of RSA S24(b) iii and the NEMA objective that "Development must be socially, environmentally and economically sustainable" (NEMA S2 (3)).
9.24	<p>(55) In our BID submissions, we anticipated that even on the basis of a cost-benefit analysis (CBA) to be conducted by independent consultants, including "health impacts", we could not conceive of a scenario where DEA could justifiably approve Eskom's applications, in light of the health effects attributed to Eskom's stations. Contrary to Eskom's intentions, its "Health impact focused cost benefit analyses", only affirms our conclusion, if not weakening Eskom's position even further.</p> <p>(56) In its Summary Motivation Report, Eskom' states the following:</p> <p>"The basis of the assessments of the impact of power stations emissions on human health and the environment is a comparison of the measured and</p>	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	<p>Eskom has provided the CBA as one of several inputs into the decision making process in line with the NEMA principles (NEMA S2 (4) a and b which requires the decision maker to consider all relevant factors including (i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</p> <p>In addition the CBA provides some support to the decision maker in the lack of a sector specific CBA as set out in the NAQF.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>predicted air quality concentrations with the NAAQS. Stakeholders have argued correctly that the NAAQS cannot be interpreted to imply no health risk at all but the counter argument is that the NAAQS express a 'permissible' level of risk. To manage air quality to a point that it is completely free of risk is to invoke such significant financial and non-financial costs that those costs will in themselves result in severe potential economic and social consequences. In these terms it is necessary to present here some perspectives on the cost-benefit of full MES compliance."</p> <p>(57) Firstly, we vehemently dispute that a CBA, irrespective of the findings, can serve as a justification for avoiding compliance with the MES in a constitutional democracy founded on the rule of law, human dignity, the achievement of equality and the advancement of human rights and freedoms. In its motivations, Eskom has not set out a legal basis to support the CBA, and we submit that it is because there is none. This includes the following:</p> <p>Summary Motivation Report reference: "the 2017 National Air Quality</p>			

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	Framework for Air Quality Management provision is made for suspensions and alternative emission limits due to the potential economic implications of emission standards on existing plant. The provision is provided because a sector specific CBA was not completed prior to setting standards” – the once-off postponement and suspension application provision is provided on condition that the requirements listed in the List of Activities and the 2017 Framework are satisfied. In this case they are not.			
9.25	(58) In any event, based on the health impact studies outlined above, there are already severe and indefensible social and economic consequences caused by the operation of Eskom’s coal-fired power stations.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Eskom in its own work acknowledges that there are health impacts associated with it's operation’s, in this application it does however present these impacts and costs against those associated with full compliance with the MES and believes its plans are appropriate given that context.
9.26	(59) In direct response to the “to manage air quality” point above, Eskom has conceded that “it is common cause that the Minimum Emission Standards (MES) serve to ensure that there is compliance with the National Ambient Air Quality Standards (NAAQS).” It is submitted that at the core of this	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019	All	The NEM: AQA, the National Air Quality Framework and the supporting regulations make express provision for applications such as the one Eskom is submitting. The Eskom motivation highlights a range of issues which the decision maker should consider one of which is financial considerations.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	application, is an attempt by Eskom, on the basis that it is not financially feasible, to postpone and suspend compliance with the MES, the very purpose of which, is to control and reduce atmospheric emissions from listed activities 'which have a significant detrimental effect on the environment; including health, social conditions, economic conditions, ecological conditions or cultural heritage'.	Official Comment		
9.27	<p>(60) Notwithstanding the fact that, for the first time, Eskom has presented its own assessment that publically admits that premature deaths are caused by their coal-fired power stations, the CBA still significantly underestimates all health impacts by ignoring international research standards. This based on an expert review conducted by Dr Mike Holland, referred to above, in which he finds that the CBA is fatally flawed in the following respects:</p> <ul style="list-style-type: none"> ▪ The analysis excludes most of South Africa's population (an estimated 70%) by artificially limiting the geographical area covered by the study; 	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>These comments are identical to those made in 8.30 above. Refer to 1.23 and 8.30 for responses to the CBA issues raised here.</p> <p>Eskom affirms again that the health impact assesement used best avaiable exposure modelling, Statsitics SA official data, exposure response functions from the SA Medical Reseachr Council and applied the health outcome cost benefit analysis methdolodoly of the World Health Organisation.</p>

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	<ul style="list-style-type: none"> ▪ The modelling of changes in ambient pollution levels is based on short-range (60km) assessment around each power station. Relative changes in pollution levels are then extrapolated to a larger area (though as just noted, this does not cover all of South Africa). The method for extrapolation is unclear. The range of 60km is inadequate for quantifying changes in concentration of secondary particles that form in the atmosphere following release of other pollutants. A more credible and accurate approach would have been to model directly on the scale of the larger domain for all scenarios; ▪ The authors use a ‘pollution interval’ based approach to link pollution data to response functions. This discounts some part of exposure from analysis, considering it ‘insignificant’. Elsewhere in the world, analysis uses continuous relationships between exposure and effect. It is unclear how much the Eskom approach underestimates total damage, but as demonstrated in the 			

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	<p>Eskom report (Figure 21), the effect can be substantial, in the order of 50% or more. The approach used is certainly not conservative, as claimed by the authors;</p> <ul style="list-style-type: none"> Underestimation also arises from the way that response functions are selected. The Eskom report recognises that there is potential for double-counting when applying response functions separately for a series of pollutants (SO₂, NO_x and PM_{2.5}). The final selection of functions excludes those for effects of PM_{2.5} on cardiovascular and respiratory mortality, instead adopting functions based on SO₂ and NO₂ exposure. However, the relationships with PM_{2.5} are significantly stronger and should thus have been preferred. Using the PM_{2.5} based functions would more than double the estimates for mortality; Analysis excludes several further pathways of health impacts from PM_{2.5}, including effects on morbidity (illness) and cancer mortality linked with PM_{2.5}; 			

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	<ul style="list-style-type: none"> Estimates of benefits are significantly reduced by assumptions on discounting. The rate used (8.5%) is significantly greater than that considered appropriate for socio-economic assessment in, for example, Europe. No account appears to have been taken of increased valuation of mortality as a consequence of economic growth in future years. The extended timescales for retrofit further reduce benefits relative to costs; The report fails to compare Eskom's so-called emission reduction plan to an alternative of complying with the MES without further delay (after the five-year delay already granted); and From review and analysis of the various biases to underestimation in the health impact assessment, basing analysis only on information presented in the Eskom report, it is concluded that central estimates of benefits would exceed costs for at least three of the four scenarios considered - and quite 			

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	possibly the fourth too.			
9.28	(61) As a result of the significant underestimation of the health impacts, the ‘health cost’ or quantification is also significantly higher than Eskom’s CBA presents. A more detailed report setting out Dr Holland’s findings will be available during the course of February 2019. We reserve our right to supplement these submissions with this report, once available.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	The CBA authors have responded extensively in the sections above to the claims of underestimation above and similarly reserve the right to respond further when Dr Holland's report is available.
9.29	(62) In response to Eskom’s CBA, Lauri Myllyvirta has conducted a further health impact assessment, which is effectively an update of his 2014 assessment, referred to above. Compared against a scenario of full compliance with the MES after the 5-year delay to 2025, excluding units set to retire by 2030, the various postponements, suspensions and alternative limits sought by Eskom would allow its coal-fired power stations to emit an estimated 19 million tons more SO ₂ , 1 million tons more NO _x , and 190 000 tons of PM. The failure to install SO ₂ controls would increase mercury emissions over the remaining operating life of the power plants by a total of an estimated 200 000 kilograms. These	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	This is noted. Refer to the detailed response in 9.11. Eskom will only be able to comment on this once the “further” health impact assessment has been published.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	estimates are based on the assumption that all units retire after 50 years of operation - a longer operating life would mean larger excess emissions.			
9.30	(63) To assess the health impacts of these excess emissions, Mr Myllyvirta and the Greenpeace Global Air Pollution Unit carried out CALPUFF dispersion modeling closely following the methodology of the modeling used in Eskom's CBA, with the modeling domain expanded to cover most of South Africa's population. Separate model runs were carried out for each of the 15 Eskom power stations, and contributions of SO ₂ , NO _x and primary PM _{2.5} emissions to ambient PM _{2.5} and NO ₂ levels were isolated for each station and each pollutant. The resulting avoided health impacts were projected following the Global Burden of Disease methodology for PM _{2.5} health impacts and a risk function for acute NO ₂ exposure selected to avoid double-counting with PM _{2.5} health impacts. Once Medupi and Kusile are in full operation, it is estimated that air pollutant emissions from Eskom's coal-fired power plants will be responsible total of 2,400 premature deaths per year (95% confidence interval: 1,500 to 3,000 deaths):	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Eskom notes the alternate domain size applied and the additional power stations included in the modelling. Refer to our detailed comparison in 1.23 on the differences between the Greenpeace 2014 study and the Eskom study conducted here. Eskom will only be able to comment on this once the “further” health impact assessment has been published.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<ul style="list-style-type: none"> ▪ 170 premature deaths due to increased risk of lower respiratory infections in children; ▪ 900 premature deaths due to increased risk of stroke; ▪ 140 premature deaths due to increased risk of lung cancer; ▪ 610 premature deaths due to increased risk of ischaemic heart disease; ▪ 220 premature deaths due to increased risk of chronic obstructive pulmonary disease associated with chronic PM2.5 exposure; and ▪ 390 premature deaths due to increased risk of death associated with acute NO2 exposure. 			
9.31	(64) Furthermore, the detailed modelling for individual coal-fired power plants allowed the Greenpeace Global Air Pollution Unit to project the reductions in ambient air pollution levels at each location of the modelling domain over time, as emission reductions from meeting the MES or implementing Eskom's emission reduction plan are realised. The projections take into account expected population growth and epidemiological transition associated with	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	<p>These comments are a repeat of comments made earlier. Eskom will only be able to comment on this once the “further” health impact assessment has been published.</p> <p>(67) Eskom's initial response to the issues provided above but Eskom similarly reserves it's rights to comment further when the reports are provided to it.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>improved health care and aging population.</p> <p>(65) It is projected that, over time, the excess emissions allowed if Eskom's various applications are fully granted will result a total estimation of 23,000 premature deaths (95% confidence interval: 14,000 to 28,000 deaths):</p> <ul style="list-style-type: none"> ▪ 1,100 premature deaths due to increased risk of lower respiratory infections in children; ▪ 9,700 premature deaths due to increased risk of stroke; ▪ 2,200 premature deaths due to increased risk of lung cancer; ▪ 7,100 premature deaths due to increased risk of ischaemic heart disease; ▪ 2,500 premature deaths due to increased risk of chronic obstructive pulmonary disease associated with chronic PM2.5 exposure; and ▪ 500 premature deaths due to increased risk of death associated with acute NO2 exposure. <p>(66) These premature deaths could be avoided by requiring full compliance with</p>			<p>(67) Eskom's initial response to the issues provided above but Eskom similarly reserves it's rights to comment further when the reports are provided to it.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>the MES, which would represent a 40% reduction in the cumulative health impact of air pollution from Eskom's power stations.</p> <p>(67) Similarly, an updated health impact assessment report detailing these findings will be available during the course of February 2018 and we reserve our right to supplement these submissions with this report, once available.</p>			
9.32	<p>(68) We emphasise that, notwithstanding how alarming the health impacts of the excess emissions are, it is not necessarily the number of deaths that is the most important consideration. The baseline scenario (5) in Eskom's CBA of an "additional 320 premature mortalities in 2018" is not acceptable, in the context of a CBA and certainly in the context of the Constitution. In other words, even on Eskom's own version (which we dispute for the reasons set out in these submissions), the number of deaths for which it is responsible is a gross violation of human rights.</p> <p>The only reasonable conclusion, we submit, especially considering the revised health impact assessment, is that there is no justification to permit Eskom's</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	All	<p>The situation Eskom finds itself in is not merely "self-inflicted" it is a reflection of a range of factors including national government policy decisions in terms of energy policy and pricing. The decision in terms of the postponement decisions must aim to facilitate sustainable development and Eskom believes the application and plan presented does address this as described above.</p>

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	postponement, suspension or alternative limit applications. The situation in which Eskom finds itself is completely self-inflicted, and vulnerable communities must not be burdened with these fatal costs through to 2030 and beyond.			
9.33	The CBA aside, Eskom has failed to demonstrate that its emissions are not causing direct adverse impacts on the surrounding environment. To the contrary. It has failed to meet the conditions prescribed in the Listed Activities and the 2017 Framework. The CBA demonstrates that the cost of any further delays in compliance with the MES cannot be authorised, and to do so, would be a gross dereliction of constitutional duty.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	<p>The modeling and ambient monitoring thus illustrates that there is “material” compliance to the standards and further that Eskom is but one contributor to emission levels. See 19.1 for further detail.</p> <p>Eskom takes the contrary view that approving the balanced approach proposed by Eskom in its application actually meets the Constitutional objective of securing ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (Constitution of RSA S24(b) iii and the NEMA objective that "Development must be socially, environmentally and economically sustainable" (NEMA S2 (3).</p>
10. AIR QUALITY OFFSETS				
10.1	For the previous postponements granted there was mention of the air quality offsets. Currently at Kwazamokhuhle only 20 houses have been retrofitted. Will Eskom carry on with offsetting?	Mpho Nembilwi NDM Environmental & Air Quality Division District Licensing Authority Engagement Meeting 30 July 2018	Hendrina Komati Arnot	<p>Air Quality Offsets were a condition from DEA for granting the previous postponements which stated Eskom was to implement an air quality offset programme to improve the ambient air quality in communities affected by the power station emissions. It was an intervention to reduce PM emissions.</p> <p>Eskom has embarked on a large scale project to install interventions at a household level eg. Switching from coal to electric stoves and backup LP stoves including insulation of houses to reduce PM emissions created from domestic burning of coal.</p>

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				<p>Kwazamokhuhle was the community chosen close to Hendrina power station to use as a pilot study to ascertain the effectiveness of the air quality offsets and to ascertain what combination of interventions would work best to reduce the emissions there.</p> <p>Eskom has targeted 130 households for different kinds of intervention types such as an electric kitchen stove, LP Gas stoves as pose to coal stoves. We have studied 20 households to ascertain the effectiveness of the interventions. Yet it is all part of Eskom's lead implementation plan for Kwazamokhuhle. It's risky to roll out a large scale project without being able to prove its effectiveness. The large scale roll out of the offset programme will be implemented from the beginning of 2019. Ezamokhuhkle and Sharpville will also form part of the areas identified for offsets. The aim is to target 5000 households in the next two years at Kwazamokhuhle, The cost to implement offsets at Ezamokhuhle and Sharpville are in the range of R 700 million. But it has been delayed.</p>
10.2	<p>How much of the PM emissions have Eskom reduced in the last five years through its offset programme? We need to determine if the offsets were effective and if another five year postponement can be granted?</p> <p>Minister Edna Molewa stated that the offsets must be beneficial to the affected communities. Are these offset programmes really improving the air quality in the offset communities?</p>	<p>Samson Mokoena VEJA Sharpeville Public Meeting 20 August 2018</p>	All	<p>The postponement was granted to Eskom in 2015 on condition that it submits an offset plan within a 1 year from the decision, which was submitted.</p> <p>Eskom have started with pilot projects and implementing offsets however are not yet in a position to provide reduction percentages from interventions for PM. Eskom has implemented a pilot project on 120 houses with LPG Gas stoves and ceilings. Furthermore a 30 house pilot project was completed where the units were fitted with electricity and electric stoves.</p> <p>The rollout of the lead offset implementation plan will only start in March 2019. Eskom will only be able to determine the actual reduction in</p>

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	We need to determine what the levels were and how the offsets have reduced the levels up to now.			<p>particulate matter in these communities by March 2020. It has been determined through Eskom's pilot studies that there will be a reduction in emissions and people will be far less exposed to emissions from their coal stoves or lower level emissions compared to their exposure now.</p> <p>No significant change in PM emissions has been noted to date.</p>
10.3	Why did NOVA only select 50 housing units for the offset programme and not the whole of the community?	Philemon Maisela Kwazamokuhle Public Meeting 28 August 2018	Hendrina, Arnot, Komati	Nova was doing a survey/ pilot to inform Eskom's air quality offset programme. The pilot project tested the effectiveness of different intervention types that can be implemented to improve the air quality to which people are directly exposed at their homes. NOVA selected a few houses to install and test effectiveness of the alternative interventions. Eskom is considering all the effective options first before implementation and large scale roll out of the programme. Once a final decision has been made, the best option for KwaZamokuhle will be rolled out to all qualifying households.
10.4	There are challenges relating to the offset programme appliances NOVA implemented at housing units.	Lucas Motswedi Kwazamokuhle Public Meeting 28 August 2018	Komati Hendrina Arnot	Past interventions were implemented as part of a pilot study, and solutions have been sought to address ceiling problems. Eskom will return to communities for engagements on the offsets.
10.5	<p>We know in some areas surrounding the power stations the NAAQS are not met. These are the type of conditions wherein the communities live.</p> <p>Where there is non-compliance the stations must be decommissioned. PM is the most significant contributor to the impact on the ambient air quality.</p>	Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018	Hendrina Arnot Komati	<p>Eskom is required to look at air quality offsets to improve the quality of air breathed by people at home in areas surrounding and affected by Eskom's power stations.</p> <p>There are health impacts from emissions that result from poor air quality. Eskom acknowledges this and is not ignoring its responsibility. Eskom is putting measures in place at its power stations to lower emissions and to eventually meet the MES, where it is deemed beneficial to do so from a socio-economic perspective.</p> <p>In the 2014 postponement application, postponement was granted subject to Eskom implementing air quality offset projects. Eskom has conducted</p>

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				studies through implementing pilot projects at homes to test the effectiveness of technologies to determine which measures would be effective in minimising the poor air quality of the area and improving the air quality breathed at homes. The offset programme does not absolve Eskom from its responsibilities as it still needs to implement retrofits to meet the MES and AELs.
10.6	<p>Eskom's offset programme is a disaster, it's not working.</p> <p>People from Kwazamokhuhle will tell Eskom that offsetting is not an option. Their houses are fitted with electric stoves in some instances. The electricity is too expensive.</p>	<p>Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018</p>	<p>Hendrina Arnot Komati</p>	<p>Please note that the full air quality offset programme has not rolled out yet. Eskom is not in the lead implementation phase yet. Eskom has completed the air quality offset pilot project in which it is testing the effectiveness of the different technologies that can be implemented to improve the air quality in Kwazamokhuhle. Eskom is considering all the effective options first before implementation.</p> <p>At Kwazamokhuhle approximately 3000 households will benefit from the lead implementation project roll out. Eskom's commitment to the community was that it will be able to implement an offset project to reduce PM pollution. The intent is not to replace existing electric stoves at units but rather to identify houses that still operate coal stoves and replace such with an electric stove or gas stove.</p>
10.7	<p>We want to achieve justice. We want to achieve health.</p> <p>The unemployment level at Pullen's Hope is the same as at Kwazamokhuhle. Their exposure to pollution is the same. Yet Eskom says it wants to implement offsets in a portion of Kwazamokhuhle. The rest of the settlement is exposed to the same levels of pollution as before. Is that justice for the community? Or is it creating conflict in the community based on 'the</p>	<p>Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018</p>	<p>Hendrina Arnot Komati</p>	<p>The criteria for Eskom to implement the air quality offsets are:</p> <ul style="list-style-type: none"> ▪ The area must be impacted by the point source/power station emissions; ▪ Area must be viable for offsets. ▪ Non-compliance with the ambient standards must be prevalent <p>Different areas have different levels of exposure. The offsets target the direct exposure to air pollution caused by burning coal within a household. The emission plume from a power station disperses. By the time the plume reaches the ground, e.g. in Kwazamokhuhle, it will be diluted. There are different levels of exposure. Eskom also continues to implement abatement technology at power stations to improve the air quality in the air shed itself.</p>

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	<p>haves and the have not's'?</p> <p>There will be a social conflict in the community. The offset programme is going to create social conflict. How is Eskom going to manage it?</p>			
10.8	<p>The studies show that the emissions from your facilities are responsible for 2000 premature deaths. Let us not make assumptions.</p> <p>We need to understand in what radius people are affected by the emissions from power stations. So let us not agree on such assumptions.</p> <p>In Kwazamokhuhle Extension 7 people are directly and indirectly exposed. We need to establish what the actual benefit of offsets to the communities is.</p>	<p>Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018</p>	<p>Hendrina Arnot Komati</p>	<p>Eskom does not consider offsets as the only method of reducing emissions. Eskom is trying through the offset programme to reduce the cumulative impact by lowering the risk of people breathing poor air quality in their homes.</p>
10.9	<p>Air quality offsets should never be a substitute for MES compliance. We dispute that Eskom's pilot offset projects to date have resulted in any meaningful improvements in air quality. They have most certainly failed to "offset" the impacts of the MES postponements.</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment</p>	<p>All</p>	<p>Responded to in 10.5 above</p>

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10.10	Where is Eskom implementing the air quality offsets and when will it be implemented at Thubelihle?	Tony Mahlangu Thubelihle Resident Thubelihle Public Meeting 20 November 2018	Kriel Matla	The air quality offset pilot projects are currently being implemented at Kwazamokuhle and Ezamokuhle. Next year in 2019 Eskom will progress to other areas. The planning is to start a pilot project for the air quality offset program in Thubelihle and Rietspruit by the year 2020.
10.11	The air pollution does not only come from Eskom but also from coal and wood burning in households. But gas and electricity is expensive. Are there other solutions?	Mapholi Mdhluli Emalahleni Public Meeting 21 November 2018	All	DEA has imposed a condition in the previous postponement approval in which it requires Eskom to reduce its emissions and peoples direct exposure to emissions at household level through the implementation of Air Quality Offsets. The offsets involve providing alternative equipment for heating and cooking namely gas and electric stoves which are more efficient to reduce the use of coal and reduce emissions at household levels. Eskom aims to start with offsets in Emalahleni area by 2021 in order to determine how it can reduce emissions at a household level. Eskom is already undertaken a pilot project for offsets in Kwazamokuhle after which it will determine the most feasible equipment to install at houses to reduce emissions followed by implementation.
10.12	Why does Eskom ask for postponement from the MES? This area is the most polluted of all of the Mpumalanga Highveld. My kinds have Asthma. Eskom should have budgeted to retrofit the power stations. It is sad that the community is so badly affected by the power station yet does not even benefit from it. A lot of money is stated to be required to retrofit the power stations and reduce emissions. What is Eskom going to do to	Spongo Ogies Community Member 21 November 2018 Ogies Public Meeting		The most significant pollutant is PM. Eskom will be retrofitting the Electrostatic Precipitators (ESP's) at Kendal power station by 2023 to be completed by 2025 to reduce PM emissions. Please note there are several sources of air pollution which contribute to the PM concentrations in the air namely dust from coal mines, power station emissions and also domestic fuel burning from households. DEA has imposed a condition in the previous postponement approval in which it requires Eskom to reduce its emissions and peoples direct exposure to emissions at household level through the implementation of Air Quality Offsets. The offsets involve providing alternative equipment for heating and cooking namely gas and electric stoves which are more efficient to reduce the use of coal and reduce emissions at household

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	reduce the emissions breathed at ground level?			<p>levels.</p> <p>Eskom is already undertaken a pilot project for offsets in Kwazamokuhle after which it will determine the most feasible equipment to install at houses to reduce emissions followed by implementation.</p> <p>Eskom must still identify a date at which it aims to start with offsets in and at Phola in order to determine how it can reduce emissions at a household level. The anticipated date is between 2020-2021.</p>
10.13	<p>How many houses will be targeted for the air quality offset program in Kwazamokuhle?</p> <p>What were the selection criteria?</p>	<p>Thomas Nguni Groundwork 22 November 2018 Kwazamokuhle Public Meeting</p>	<p>Hendrina Arnot Komati</p>	<p>Eskom has budgeted for 3500 houses. The selection criterion is still being ironed out. Eskom will still do the activation process and call on house owners to register.</p>
10.14	<p>How many people will benefit from the air quality offsets?</p> <p>Who will pay for the cost of the air quality offset?</p>	<p>Thomas Nguni Groundwork 22 November 2018 Kwazamokuhle Public Meeting</p>	<p>Hendrina Arnot Komati</p>	<p>The Air Quality Offset Program will address 42 000 households from 2020 – 2025 at the cost of R 4.2 billion.</p> <p>The air quality offsets have already been budgeted for in the current tariff increase. It is much less than the cost to retrofit power stations.</p>
10.15	Does the current 15% tariff increase being applied for by Eskom address the retrofits and air quality offsets?	<p>Thomas Nguni Groundwork 22 November 2018 Kwazamokuhle Public Meeting</p>	<p>Hendrina Arnot Komati</p>	<p>The present NERSA application includes the cost of the Eskom emission reduction plan and air quality offsets, the costs are presented as per NERSA requirements and not as overnight costs as in the case in the postponement application.</p>
10.16	The postponement of the MES compliance timeframes will have a negative impact on people's health and the environment. The air quality offsets are a disaster and are going to create	<p>Thomas Nguni Groundwork 22 November 2018 Kwazamokuhle Public Meeting</p>	<p>Hendrina Arnot Komati</p>	<p>The AIR shows that the levels of PM are exceeded in the Kwazamokuhle area. The exceedances of the NAAQS are due to Eskom and high SO₂ loading in the Emalahleni area owed to the cumulative impact from the clustered power stations.</p>

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	social conflicts.			<p>The air quality offsets will have a positive impact on households and will reduce emissions in houses which cause health issues.</p> <p>There were some issues with the offset programme but Eskom believes the pilot was generally positive. Eskom will continue to engage with the community through PPP to address any problems and conflicts.</p>
10.17	There are various problems emanating at houses from the air quality offset pilot project. We want a follow up meeting with NOVA before the lead implementation project is rolled out so we can discuss the issues experienced at the offset houses.	Doktor Skosana Kwazamokuhle Ward Councillor 22 November 2018 Kwazamokuhle Public Meeting	Hendrina Arnot Komati	Eskom will schedule follow up engagements with the offset houses.
10.18	Does Eskom plan to continue with the air quality offset program even though it will implement the ERP to reduce the mortality rate and its emissions?	Robby Makgalaka Groundwork 23 November 2018 Midrand Public Meeting	All	Eskom will implement the ERP and has already committed to implement the air quality offset program. Hence the program will continue and will allow Eskom to deal directly with emissions at a household level.
10.19	Eskom said Kwazamokuhle's air quality offset pilot project was not a success. Groundwork visited the community. There were a lot of inconveniences to the community and they just don't like the offsets.	Robby Makgalaka Groundwork 23 November 2018 Midrand Public Meeting	Hendrina Arnot Komati	There are no Eskom documents which make statements to that effect. Eskom undertook a pilot study which delivered a range of successes yet there were some technological failures. Based on Eskom's findings the air quality offset program does have the potential to reduce emissions and has the potential to be accepted by communities and as such Eskom plans to go ahead with the program.
10.20	Has Eskom made any attempts to go to the community to conduct an assessment as to the level and status of air quality offset successes?	Robby Makgalaka Groundwork 23 November 2018 Midrand Public Meeting	Hendrina Arnot Komati	Eskom does recognize that in some instances some community members were unhappy with the air quality offset pilot project. Eskom had engagements with the community during the pilot project and had follow up engagements with the councilors in the area. Hence the project will continue and Eskom is now in the phase of procuring. Once Eskom has appointed a company to continue with the lead rollout project, it will again engage with the community in 2019 to test the equipment and investigate

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				some of the issues which come up during the pilot project.
10.21	<p>Last year Eskom and DEA discussed an air quality offset guideline. DEA tried to engage with the community to discuss the guideline. Groundwork facilitated the process of getting the community of Kwazamokuhle to form part of the discussion and to voice their experience. During the meeting Eskom committed to engage with the community again in May 2018. None of the meetings took place. The community also does not have a liaison official between themselves, Nova and Eskom. Therefore it is important for Eskom to understand the flaw in the process.</p> <p>How will Eskom fund the air quality offset program? How will it impact on the tariff increase?</p> <p>We know Eskom cannot afford to implement the offset program. Hence the tariff increase is in some form of unequal as not all will receive offsets but all must pay for it.</p>	<p>Thomas Mnguni Groundwork 23 November 2018 Midrand Public Meeting</p>	<p>Hendrina Arnot Komati</p>	<p>The Air Quality Offset Program will address 42 000 households from 2020 – 2025 at the cost of R 4.2 billion. The number of houses and the cost is significant but much less compared to the cost for retrofitting power stations.</p> <p>Eskom will still need to consult with the communities to determine who is to be targeted for offsets and what the tariff implications will be to minimize any disruptions.</p> <p>It term of the tariff increase, all aspects be it the emission reduction and or offset program go into Eskom's tariff application. For example somebody in Cape Town will not be affected by Eskom's air quality issues generally but there will always be some form of unequalness. Eskom will need to manage how it communicates the issue.</p> <p>There are people paying for tariff increases but who are not necessarily the recipients of offsets. But then again there are many things which government contributes to citizens, yet other people paying for it, but are not necessarily the beneficiaries.</p> <p>There is no official document from Eskom which state that offsets are unsuccessful.</p> <p>Eskom was in Kwazamokuhle three times in 2017, twice with Nova and visited a number of houses and received different feedbacks from house owners. Eskom agrees with the request that there should be a community liaison official between the community, Nova and Eskom.</p>

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10.22	<p>When one looks at the impact map over Emalahleni. There are about 42 000 people, yet those people still incur medical bills and some of those people can't even go to work and lose their source of income. We need to be realistic on the level of impact this offset will have.</p> <p>Let's say there are 42 000 households in Kwazamokuhle and the offset only targets 10 000 households, yet the majority of the households still burn coal. What kind of impact will the offset really have then?</p> <p>Why does Eskom not across the board install offsets at every household that burns coal?</p> <p>Also, implementing gas stoves how are people going to transport LPG to their households and buy it? They don't have transport and many are not working.</p> <p>The key is not to go to communities with readymade solutions. Go to communities and speak to them about their energy needs.</p>	<p>Thomas Mnguni Groundwork 23 November 2018 Midrand Public Meeting</p>	<p>Hendrina Arnot Komati</p>	<p>The most significant reduction in emissions will be addressed by installation of the ERP emission reduction equipment and decommissioning of power stations. That is the high level plan that Eskom will implement. The air quality offset program is targeted to areas/communities where a high number of exceedances of the NAAQS are recorded.</p> <p>Evident from the map there are many people who experience air quality issues, but from the analysis of air quality monitoring stations there are less areas/communities which are in noncompliance with the NAAQS than indicated on the map.</p> <p>Eskom will target individual communities where a high level of exceedances is monitored to reduce the emissions at ground level and at household level.</p> <p>Eskom will assess the effectiveness of the air quality offset interventions and determine the overall reduction in emissions brought by the offset. Eskom will also do another health study to determine what the health issues where air quality offset interventions have been implemented and in areas where no inventions were implemented. Through these studies Eskom will be able to determine if the offset program does deliver results by reducing emissions and health impacts.</p>

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10.23	(111) This is verbatim from Eskom's Summary Motivation Report in its 2013 postponement application. We reiterate that we and our clients do not agree with the principle of air quality offsetting, especially as a means to avoid legal compliance, as is the case here. We reiterate that, in the absence of an overarching framework, policy, and legislation properly developed to regulate air quality offsets, Eskom's offset proposal should not have been permitted in the first instance. The Air Quality Offsets Guideline published in March 2016, which, without explanation, replaced the 2014 Draft Air Quality Offset Policy, does not provide the necessary framework, policy or legislation required to legitimise air quality offsets, but rather suffers from fundamental shortfalls. In any event, there is no credible evidence that Eskom's air quality offsets have, to date, offset the impacts of its non-compliance with the MES. In other words, the condition of the postponements granted in February 2015 has not been met. This is one of the reasons that the postponements previously granted should be withdrawn – or, at the very least, reviewed.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	As CER itself indicates Eskom has to date only completed pilot studies in respect of its offset programme. Notwithstanding CER's comments to the contrary and some of the challenges experienced with the offset pilot Eskom believes the offset programme offers the potential to reduce the local pollution load experienced by households and as such will be a positive intervention. One of the elements of the offset programme which was unfortunately delays was a long term health study aimed at measuring the impact of the offset programme. Eskom is happy to indicate that a contract has been signed with the Medical Research Council to undertake this work which should factually determine the impact of the offset programme on human health.

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10.24	(112.1) As stated by the WHO, indoor air pollution is a complex socio-economic problem which can only be addressed by an integrated programme which creatively incorporates a range of measures appropriate for a particular society, with targeted interventions regarding: the pollution source; the living environment; and user behaviour. The State must therefore take action to address the air pollution problem and to protect the constitutional rights of those affected by formulating a comprehensive programme which includes different categories of interventions for different aspects of the problem.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Noted
10.25	(112.2) The DEA – together with other relevant departments – published a “Draft Strategy to Address Air Pollution in Low Income Settlements” in June 2016, in an attempt to improve air quality at household level. Although the draft Strategy is currently inadequate and there is a significant delay in finalising the document, such document has the potential to incorporate the coherent programme of interventions essential to effectively reduce household emissions. Except for the effect of outsourcing government’s responsibility	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Eskom's offset plan has been approved by the relevant licensing authorities and is in alignment with the DEA Air Quality Offset Guideline.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	toward human settlements in need of alternative forms of clean energy, which is unacceptable, it is unclear how Eskom's pilot project relates to this draft Strategy;			
10.26	(112.3) If Eskom does not meet the MES, it is unclear how offsets can rectify this situation. If Eskom does not meet the NAAQS, offsets would have to demonstrate that the required changes in air quality have, in fact, been met, i.e. the specific variables that would be exceeded by granting Eskom's applications have been reduced to acceptable levels. Offsets must result in a balancing of losses and gains in the same attribute or variable of concern. A true offset would be a ton-for-ton offset for each of the pollutants. Therefore air pollution/emissions exceedance of local or regional SO ₂ standards by Eskom must be counterbalanced by equivalent reductions in SO ₂ in the same receiving environment; the public and affected communities or the environment affected by the exceedance must benefit from the reductions, too, so that they are no worse off.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	We reject the assertion that the offset must be a ton for a ton and argue instead that the offset must be about a net improvement in ambient air quality. The health implications that are described happen due to exposure to high concentrations of air pollution at ground level where people are exposed. Diurnal variability of pollutant concentrations shows a clear morning and afternoon peak for NO ₂ and PM concentrations and a clear midday peak for SO ₂ concentrations. This patterning suggests that the NO ₂ and PM peaks concentrations derive from domestic fuel use and other low altitude sources while the SO ₂ derives from elevated sources. Given that the most serious air quality problem is the massive non-compliance with the PM NAAQS, a situation that may well continue even with full compliance with the MES, the offsetting principle is one where the most serious risk of adverse health effects is tackled first.
10.27	(112.4) Eskom has not provided	Timothy Loyd	All	It is really unclear as to why the CER tries to argue that indoor and

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	detailed findings of the extent to which household emissions contribute to local/regional air pollution levels and it is difficult to understand how, if ambient air quality levels of SO ₂ and PM ₁₀ are already over the NAAQS, reducing household contributions would remedy the problem. Offsets would, if successfully implemented, principally reduce indoor pollution, but not the bigger issue.	Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment		outdoor air quality are two totally different things, and that indoor air quality is the sole purview of domestic fuel use and outdoor air quality is the sole purview of emissions from power stations. The highly stable condition that characterises the atmospheric boundary layer over the Highveld (especially in the winter) traps atmospheric emissions at the altitude where they are emitted. In the late afternoon and in the early morning the peak PM and NO ₂ concentrations are directly related to domestic fuel combustion regardless of whether that combustion happens inside or outside the dwelling. Ironically, the stable air actually ‘protects’ people at ground level from exposure to emissions from elevated stacks because the plumes cannot penetrate downwards in a stable atmosphere. It is only during the day when there is convective mixing that the tall stack plumes are brought to ground level.
10.28	(112.5) It is also not clear how offsetting tall stack emissions with household emissions would resolve the non-compliance by Eskom of the MES, and how this would result in achieving NAAQS compliance. An analysis of the environments and parties that bear costs of and/or benefit from these different emissions should be conducted. Even though households could benefit, what effect would this have on local and regional air quality as a whole?	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	It could potentially have a very pronounced improvement in air quality especially in respect of ambient PM. As an example consider the ambient PM ₁₀ concentrations in Sharpeville. The NAAQS allows 4 exceedances of the limit value in a year, yet in 2016 there were 208 exceedances of the limit value. The major emitters in the area are Sasol and Eskom, yet all of Sasol’s plants comply with the PM MES and Lethabo is no more than 30% over the PM MES. Dispersion modelling indicates that all of Eskom’s power stations combined, together with secondary particulates (again from all the power stations combined) an annual average ambient PM _{2.5} concentration of 1,1µg/m ³ . Given that validation studies indicate a possibly modelling error of 2 times, that concentration can be doubled to 2,2 µg/m ³ . In Sebokeng in 2015 the annual average PM _{2.5} concentration was 62,9 µg/m ³ (with a 95,3% data recovery), which is three times the annual average NAAQS and more than 25 times what the predicted concentrations of PM are for all the power stations combined. Assuming that full MES compliance at Lethabo, indeed at all the power stations, gets ambient PM _{2.5} to no better than the 2.2 µg/m ³ currently predicted, there would still be concentrations of nearly three times the annual average limit

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				in Sebokeng with all the associated health risks of such concentrations. That is the potential benefit of off-sets.
10.29	(112.6) While some proposed interventions at domestic level would be beneficial (e.g. better insulation reducing the need to heat houses using solid fuels), the reach of those benefits would be limited. In effect, therefore, the offsets could endorse higher levels of regional pollution while reducing pollutants at a localised level, implying that areas and parties at a regional level would be worse off, and effectively subsidising improvements in a specific area only. In other words, those households in which offsets are implemented could benefit from improved health and wellbeing impacts; and other households would not. This has enormous implications for equity and justice and the potential for conflict within and between neighbouring communities.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Notwithstanding the arguments presented the offset programme is seen by Eskom as practical way to reducing the pollution load experienced by households in areas affected by its emissions.
10.30	(112.7) The offset pilot projects fail to take into account broader environmental health effects, for example, impacts on soil, plants, animals and agricultural productivity.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA	All	As indicated the offset programme is aimed at reducing household or local emissions and is not aimed at addressing the broader environmental issues. The legal requirements of other broader environmental impact issue associated with Eskom's operations are managed through the applicable regulatory process e.g. the National Water Act.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		4 February 2019 Official Comment		
10.31	(113) 4 years have passed since the 2013 postponement application was granted and Eskom advises that implementation of the air quality offset projects in the 'selected' KwaZamokuhle and Ezamokuhle communities are planned for mid-2019. It is striking that over this period of time, Eskom has got no further than the pilot stage. This is while Eskom continues to operate with, and exceed, its relaxed AEL limits, which are supposedly offset by this programme to reduce indoor household emissions.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	All	Eskom acknowledges the slow progress of its offset programme and is working to ensure delivery in the identified pilot communities as soon as practical.
10.32	(114) The conclusion of the pilot project in no way alleviates or provides clarity in relation to our concerns listed above. In fact, despite Eskom's "initial assessment" that "indicates a significant reduction in exposure to indoor air pollution", evidence on the ground illustrates that recipients from the pilot interventions have not benefitted and regional air pollution remains dire. In August 2018, representatives from gW and other coal-affected community representatives visited the KwaZamokuhle community	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Kwazamo kuhle	Eskom has acknowledged the problems experienced by a small number of participants in the pilot project and will work to address these issues during further interventions with the community.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	to assess the effectiveness of the intervention projects. As presented in the brief report attached as Annexure “3”, the visit revealed a number of challenges experienced by the community, including the way the project was presented and communicated, the financial implication of replacing coal stoves with electric ones, poor workmanship and promises that were never fulfilled.			
10.33	(115) The fundamental purpose of conducting a pilot study is to examine the feasibility of the approach that is intended to be implemented on a larger scale. This means that if the pilot study fails the approach is not feasible for a larger project. In Eskom’s case, particularly in the KwaZamokuhle community, where Eskom admitted that there were many concerns raised by the project recipients, which we submit were not adequately attended to, it clearly indicates that the offset pilot study was not effective in its objective.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Kwazamo kuhle	Eskom rejects the submission that the offset pilot failed. Our work indicates that notwithstanding issues which must be addressed the pilot has shown the potential success of the interventions. The planning for the forth coming interventions in communities is learning from the negative issues identified in the pilot and will seek to ensure similar issues minimised and positive benefits maximised.
10.34	(116) In addition to the finding that the pilot interventions in selected communities appear to be failing, we reiterate our major concern with how Eskom has determined the impact zone and which households would qualify for the	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA	All	As indicated Eskom accepts it is a major contributor to emissions in the area of impact but also recognises it is not the only source of pollution. Local level air pollution from sources such as coal burning for heating and cooking, roads and mines does impact on the air quality experienced by many. The Eskom Emission reduction plan does reduce emissions over time in Eskom's belief in an effective and sustainable manner. The offset programme is an additional measure which is aimed at improving the local

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	offsets. This issue was revisited during the public meeting in Midrand, and Eskom's response was that the "most significant reduction in emissions will be addressed by installation of the ERP emission reduction equipment and decommissioning of power stations. That is the high level plan that Eskom will implement. The air quality offset program is targeted to areas/communities where a high number of exceedances of the NAAQS are recorded." The insurmountable problem Eskom faces, however, is that despite its emission reduction plan, it remains the most significant contributor to ambient levels of PM2.5, which directly (and in many cases fatally) impacts a large portion of the Mpumalanga Highveld - a much larger number of communities and individuals than those selected for the air quality offset programme.	4 February 2019 Official Comment		air pollution issues of communities directly impacted by station emissions.
11. HIGHVELD PRIORITY AREA (HPA) & VAAL TRIANGLE AIRSHED PRIORITY AREA (VTAPA)				
11.1	The Vaal Region is a declared priority area. Priority areas do not comply with the ambient air quality standards.	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	When the application for postponement from the MES is submitted to the NAQO, the officer will consider the fact that the application is lodged in a priority area. The NAQO will make a decision based on the recognition that there are already many sources of pollution in the Vaal Triangle.
11.2	The coal power stations listed in the BID are in the Vaal Triangle and the Mpumalanga Highveld. The AQA	Richard Hasley Project 90 by 2030 Cape Town	Lethabo (VTAPA) All	The extent of impact based on Eskom's activities will be shown in the AIR and DEA will consider this and the legal framework in making their decision

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	<p>declared both these as air pollution priority areas by 2007, and this meant that urgent action was needed to improve the air quality in these areas. The HPA, where the majority of Eskom's coal power stations are, does not meet the NAAQS. This application for further postponement of MES compliance is counter to the objectives of the AQA, and on this basis should not be considered.</p> <p>The HPA does not currently meet the NAAQS and that is reason enough to reject this application. Even if the air quality in the HPA was acceptable in terms of NO_x, SO₂ and PM, Eskom would then need to prove that their non-compliance with the MES would still result in air quality that was acceptable in terms of the NAAQS, if a postponement application is to be entertained. This has not been done.</p>	11 September 2018 Official Comments	stations in HPA	
11.3	We do not support a postponement application in the VTAPA.	Johan van Tonder Brakfontein Homeowners Association Leeukuil, Vereeniging 11 September 2018 Comments and Registration Form	Lethabo	Noted. The application will be assessed by DEA which will make the decision.

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11.4	I am concerned about the impact of granting the postponements for the community's health and welfare surrounding the Mpumalanga Highveld based plants, where air sheds have already been declared as National Priority Areas.	Ian Gildenhuys City of Cape Town Head Specialised Environmental Health, Air Quality Officer City Health 11 September 2018 Comments and Response Form	Stations in HPA, VTAPA	Independent consultants have been appointed to conduct a very detailed HRA and CBA. The assessments will analyse the number of people exposed to the emissions, cost to human health verses the cost to retrofit power stations. The AIR, HRA and CBA are available for public review and comment as part of the 2 nd round of public engagement.
11.5	Granting Eskom postponement will result in increased pollution in the Priority Airshed Area, contrary to the declaration of areas as priorities for interventions to reduce emissions. Power stations listed in the BID fall within 2007 declared VTAPA and HPA where urgent action is needed to improve air quality. The AQA does not provide for exemptions from the MES compliance timeframes but postponements of the compliance timeframes are possible only if the ambient air quality standards for the area are met and will remain in compliance even if postponement is granted. The further application for postponement is counter to objectives of the AQA, and on this basis should be rejected.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	Lethabo (VTAPA) All stations in HPA	The AIR will provide an indication of air quality impact. Eskom understands in terms of the legal framework it is allowed to apply for additional postponements. The application will be assessed by DEA which will make the decision based on all available information.

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11.6	<p>11 of 14 Power stations to which the postponement application applies are located in the HPA; which was designated an air pollution priority area in November 2007 since the ambient air quality in the area was not in compliance with the NAAQS. Lethabo power station is located in the VTAPA declared for the same reason in 2006. Based on DEA's own data and reports, both HPA and VTAPA continue to be in non-compliance with the NAAQS. Postponement applications are only permissible in areas where the ambient air quality standards are in compliance, and will remain in compliance even if postponement is granted. Eskom's application must be denied.</p> <p>Only if the area under application is in compliance with the NAAQS may the NAQO, in concurrence with the licensing authority, consider a postponement application, if the following conditions are met:</p> <ul style="list-style-type: none"> • Submit AIR in terms of Section 30 of the AQA • Submit Concluded PPP in terms of the NEMA EIA Regulations; • Submit detailed justification and reasons for application; 	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	<p>Lethabo (VTAPA) All stations in HPA</p>	<p>The application will be assessed by DEA which will make the decision.</p>

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	<ul style="list-style-type: none"> • Submit application to NAQO 1 year before specified compliance date; • If applicant can prove its current and proposed air emissions are/will not cause any adverse impacts on the surrounding environment <p>The NAQO may review and withdraw a postponement granted if ambient air quality standards are not met in the affected area and having considered representations from the affected plant and communities.</p>			
11.7	Eskom's AELs should contain stricter emission limits than the MES as all its operations are in priority areas where there is a consistent non-compliance with the NAAQS.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	Lethabo (VTAPA) Power stations in HPA	The DEA will set the AEL limits based on all the available information.
11.8	The AQA AQMP has been in place since 2012 with the primary aim to bring air quality in the Highveld in line with the NAAQS. By 2020, it aims to reduce industrial emissions to achieve compliance with the NAAQS and dust	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018	Power stations in HPA	Eskom has proposed a plan to reduce its emissions. Eskom is however not the only source of emissions in the HPA.

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	fallout limit values. Continued MES postponement will render these goals impossible. On-going air pollution in the HPA is a perpetuation of environmental injustice (particularly against vulnerable and disadvantaged people).	Official Comment		
11.9	Since its declaration 11 years ago, air quality in the HPA has not improved and remains in non-compliance with the NAAQS. It is reflected in the DEA's 'State of Air Reports' comprising HPA MSRG meetings and DEA's mid-term review of the HPA AQMP. The report states 'many South Africans may be breathing air that is harmful to their health and well-being especially in the priority areas'. A 9 year trend of pollutants shows air quality has not improved.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	Power stations in HPA	Noted. The AIR will show the extent of Eskom's impact on local air pollution.
11.10	The HPA AQMP states power generation, trailed by mining haul roads and mines (some of which supply power plants) are the largest contributors to air pollution in the Highveld. In respect of PM ₁₀ : <ul style="list-style-type: none"> • Power stations account for 12% • Mine haul roads account for 49% • Household fuel burning accounts for 6% of overall PM in the HPA 	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment		Whilst Eskom is a significant source of emissions it as the studies referred to illustrate it is not the only source of emissions. The AIR completed will make comment on ambient air quality trends and possible source apportionment.

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	<p>In respect of NO_x and SO₂:</p> <ul style="list-style-type: none"> Power stations account for 73% of NO_x and 82% of SO₂; Household fuel burning accounts for 1% of NO_x and 1% of SO₂. <p>The DEA's mid-term review of the HPA AQMP indicates:</p> <ul style="list-style-type: none"> Industrial sources account for 99.57% of SO₂ and 95.97% of NO_x in the HPA; Mining is the largest contributor to PM₁₀ emissions in the HPA No significant decrease in emission of either sources 			
11.11	<p>Similarly the 2006 VTAPA (home to Lethabo) and the 2012 WBPA (home to Medupi and Matimba), both remain in non-compliance with the NAAQS. Granting further MES postponements will only exacerbate this position and worsen the health impacts. None of the 3 priority areas has any reasonable prospect of being withdrawn in foreseeable future.</p>	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	<p>Medupi Matima (WBPA) Lethabo (VTAPA)</p>	<p>Responded to in 10.11 above</p>
11.12	<p>Any granting of postponements in HPA, VTAPA and WBPA would be <i>ultra vires</i> the Constitution, AQA and its regulations, the List of Activities, NEMA and the Framework.</p>	<p>Timothy Loyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	<p>Lethabo (VTAPA) All stations in HPA Medupi Matimba</p>	<p>Eskom believes it is within the legislative framework for DEA to issue a postponement decision. The application will be assessed by DEA which will make the decision.</p>

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			(WBPA)	
11.13	We do not see Eskom at the HPA Information Task Team meetings. Eskom must represent their emissions at the meetings. It is a way to meaningfully participate in air pollution issues. Eskom shows no willingness to care for people and reduce its emissions.	Robby Mokgalaka Groundwork 21 November 2018 Emalahleni Public Meeting	All stations in the HPA	Eskom does attend the HPA ITT and also the MSRG meetings.
11.14	The current SO ₂ standard is 500mg/Nm ³ . All of the power stations for which Eskom is applying for postponement are located in a Highveld Priority Area which is not in compliance with the NAAQS. The legislation says one can only apply for postponement if the affected area is in compliance with the NAAQS.	Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting	All stations in the HPA	In the postponement applications for the individual power stations Eskom explicitly highlights that the applications are being made in a HPA. It is the NAQO's decision whether to approve the applications or not.
11.15	On page 13 of the Summary Motivation Document it lists the requirements for a postponement / suspension application I noticed one of the criteria which is 'the area must be in compliance with the NAAQS' has not been listed in the Summary Motivation Document.	Timothy Loyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	All stations in the HPA	Eskom is aware of the clause in the legislation; the clause was not deliberately omitted. In each of the individual power station Motivation Documents Eskom clearly recognises that the application is made in the Highveld Priority Area.

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	Is there any reason for the omission or is it just an oversight?			
11.16	<p>My concern is that people given priority are not from Zamdela. You are here to talk about environmental issues, but the Department of Environmental Affairs (DEA) is not at the meeting.</p> <p>I am not sure if the pollution under discussion only comes from Lethabo Power Station it also comes from Sasol and Natref.</p> <p>Is the DEA aware of the PM problem in the Vaal Triangle?</p>	<p>Zamdela Community Member 27 November 2018 Zamdela Public Meeting</p>	Lethabo	<p>The Department of Environmental Affairs (DEA) and District Authority and Local Municipalities were invited to attend the public meetings. DEA is aware of the air pollution issue in the Vaal Triangle, thus DEA has declared it the Vaal High Priority Area. There are several processes at DEA in which it is trying to improve air quality in the Vaal area.</p>
11.17	<p>From the NEM:AQA GNR 898, Section 21 listed activities which result in atmospheric emissions, for Category 1, Combustion Installations, the following special arrangement shall apply –</p> <p>(i) Continuous monitoring of PM, SO₂ and NO_x is required, however, installations less than 100MW heat input per unit must adhere to periodic emission monitoring as stipulated in Part 2 of this above</p>	<p>H.A. De Koningh Energy & Climate Change Engineer, Heidelberg 16 January 2019 Official written comments</p> <p>Reiterated in 4 February 2019 Official written comment</p>	All	

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>notice.</p> <p>Continuous stack monitoring will be required in areas that area not in compliance with the NAAQS, especially within declared priority areas where the emissions from the stack significantly contribute to poor air quality in the area. From the <i>'World Bank, Pollution Prevention and Abatement Handbook'</i> continuous stack monitoring involves sophisticated equipment that requires trained operators and careful maintenance.</p> <p>From the <i>AIR, Tutuka Power Station, Naledzi, September 2018</i>, this will include the initial capital cost and an associated operating cost, as well as the cost of emission monitoring equipment (such as particulate emission monitors, gaseous emission monitors and ambient air quality monitoring equipment).</p>			

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM																																																																
	<p>Table with more elaborate Standards for air quality in South Africa.</p> <table><tr><th>Pollutant</th><th>Averaging Period</th><th>Concentration</th><th>Frequency of Exceedence</th></tr><tr><td rowspan="2">Sulphur dioxide (SO₂)</td><td>10 minutes</td><td>500 µg/m³ (191 ppb)</td><td>526</td></tr><tr><td>1 hour</td><td>350 µg/m³ (134 ppb)</td><td>88</td></tr><tr><td rowspan="4"></td><td>24 hours</td><td>125 µg/m³ (48 ppb)</td><td>4</td></tr><tr><td>1 year</td><td>50 µg/m³ (19 ppb)</td><td>0</td></tr><tr><td colspan="3">The reference method for the analysis of Sulphur dioxide shall be ISO 6767</td></tr><tr><td></td><td></td><td></td></tr><tr><td rowspan="2">Nitrogen oxides (NO₂)</td><td>1 hour</td><td>200 µg/m³ (106 ppb)</td><td>88</td></tr><tr><td>1 year</td><td>40 µg/m³ (21 ppb)</td><td>0</td></tr><tr><td rowspan="4"></td><td>24 hours</td><td>75 µg/m³</td><td>4</td></tr><tr><td>1 year</td><td>40 µg/m³</td><td>0</td></tr><tr><td colspan="3">The reference method for the determination of the Particulate Matter fraction of suspended Particulate Matter shall be EN 12341</td></tr><tr><td></td><td></td><td></td></tr><tr><td rowspan="2">Particulate matter (PM₁₀)</td><td>24 hours</td><td>40 µg/m³</td><td>4</td></tr><tr><td>1 year</td><td>20 µg/m³</td><td>0</td></tr><tr><td rowspan="4"></td><td>24 hours</td><td>40 µg/m³</td><td>4</td></tr><tr><td>1 year</td><td>20 µg/m³</td><td>0</td></tr><tr><td colspan="3">The reference method for the determination of the Particulate Matter fraction of suspended Particulate Matter shall be EN 12341</td></tr><tr><td></td><td></td><td></td></tr></table> <p>In degraded air sheds such as VTAPA, HPA and WBPBWPAHPA the air quality is improved over certain timeline set in any municipal and/or provincial Air Quality Management Plan applicable to this area (meeting the proposed Ambient Air Quality Implementation Targets for the VTAPA). These areas were not declared as priority areas in terms of the National Framework for Air Quality Management in SA. The areas</p>	Pollutant	Averaging Period	Concentration	Frequency of Exceedence	Sulphur dioxide (SO ₂)	10 minutes	500 µg/m ³ (191 ppb)	526	1 hour	350 µg/m ³ (134 ppb)	88		24 hours	125 µg/m ³ (48 ppb)	4	1 year	50 µg/m ³ (19 ppb)	0	The reference method for the analysis of Sulphur dioxide shall be ISO 6767						Nitrogen oxides (NO ₂)	1 hour	200 µg/m ³ (106 ppb)	88	1 year	40 µg/m ³ (21 ppb)	0		24 hours	75 µg/m ³	4	1 year	40 µg/m ³	0	The reference method for the determination of the Particulate Matter fraction of suspended Particulate Matter shall be EN 12341						Particulate matter (PM ₁₀)	24 hours	40 µg/m ³	4	1 year	20 µg/m ³	0		24 hours	40 µg/m ³	4	1 year	20 µg/m ³	0	The reference method for the determination of the Particulate Matter fraction of suspended Particulate Matter shall be EN 12341								
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	The reference method for the determination of the Particulate Matter fraction of suspended Particulate Matter shall be EN 12341																																																																			

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	<p>require specific air quality management action to rectify the situation. Environmental Quality Officers at the power stations should be aware of the consequences of an area being a high priority area and the effect their power station emissions have on these areas e.g. via their pollution prevention plan according to Section 29 of the AQA (Vaal and Highveld declared priority areas in 2006 and 2008 respectively and midterm reviews were conducted in respectively 2013 and 2017).</p> <p>Do any plans like these exist for Tutuka power station? (they exist but are applicable to the whole of the HPA)?</p> <p>With reference to the DEA VTAPA AQMP.</p> <p>S02 emission reduction: A comprehensive study by Eskom into retrofitting the power station with FGD proved not feasible or economically viable. An investigation is currently underway to assess the feasibility of coal beneficiation with respect to sulfursulfursulphur removal. If this is feasible, steps will be taken to implement it. Energy efficiency measures: Extend</p>			<p>Eskom responds on the status of projects with which it is involved below, queries in respect of the other projects should be routed to the relevant government departments.</p> <p>Tutuka and each station has an emission reduction plan as described in this MEs postponement application and provides this and updates to it to the local licencing authority.</p> <p>DEA in consultation with stakeholders is presently updating the VTAPA AQMP which will should an update on the status of the interventions mentioned.</p> <p>The energy efficiency/lighting project was implemented at the Lethabo.</p> <p>Lethabo was not extensively involved on the Sasa Njengo Mgogo project which was driven by SASOL and its consultants and cannot comment on that project.</p>

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	<p>energy supplies and reducing greenhouse gas emissions. Lethabo initiated a lighting programme to further improve energy at the power station, resulting in a saving of 735 MWh a year. Offset projects: Eskom was involved in the 'Winter Clean Fires Campaign 2008' together with Sasol on the Sasa Njengo Magogo activities in the Vaal Triangle Area. Eskom is also using the Eskom Energy and Sustainability Programme for education and awareness creation.</p> <p>Additional short-medium term (2012) interventions to be implemented by government on the power generation sector include:</p> <ul style="list-style-type: none"> ▪ Investigate the feasibility of solar energy and why it is not advanced in South Africa. Eskom has experience in the form of the Shell Renewable-Eskom joint venture conducted in 1999. This should further be investigated by Eskom in partnership with DEA T and DME. ▪ Electrification of low cost houses as included in Eskom's interventions. DEAT and DME to also be involved in the project. ▪ DME to develop and enforce 			

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	<p>stricter regulations for start-up emissions/cleaner technologies.</p> <ul style="list-style-type: none"> ▪ DME to develop regulations on the restriction of export of high quality coal. ▪ DEAT should not allow any new power stations in the stressed area until such time as the ambient concentrations are within compliance with the VTAPA AQ Targets. This can be based on the EIA regulations falling under the Chief Directorate: Environmental Impact Management. <p>What has become of these above mentioned initiatives?</p>			
11.18	<p>From the HPA AQMP Executive Summary by DEA we can obtain about similar actions for improvement of the HPA as for the VTAPA such as improvement of efficiency, looking for BAT in the Air Quality, development of Renewable Energy and by 2020, <i>industrial emissions are equitably reduced to achieve compliance with ambient air quality standards and dust fallout limit values.</i></p> <p>As emissions of particulate are mostly by open cast coal mining and emissions of</p>	<p>H.A. De Koningh Energy & Climate Change Engineer, Heidelberg 16 January 2019 Official written comments</p>	All	<p>For particulate matter a distinction must be drawn between different size fractions namely PM10 (PM with an aerodynamic diameter of less than 10 micron and PM2.5 PM with an aerodynamic diameter of less than 2.5 micron. In general terms open cast coal mining is certainly a significant source of particulate matter but this tends to be larger fractions and manifests as a problem during windy conditions. PM is also emitted from power stations but, again in general terms, this tends to be smaller fractions. In addition emissions of SO2 and NOx result in the secondary formation of the small fraction particulates (PM2.5), which also needs to be considered. Ambient PM concentrations are seen not to comply with the NAAQS for both PM10 and PM2.5 and this is obviously cause for concern in terms of air quality.</p>

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	<p>NOx and SOx by power stations obviously in that regard the measures should be taken timeously.</p> <p>How is this developing? As can be seen Kendal, Camden and Komati are some “hot spots”. Some answers can be found in the document Eskom ENV18-R242 rev 1Matla (see e.g. chapter 7 Emission Offsets).</p>			

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11.19	A comprehensive and detailed answer should be given as to what actions in the declared Priority Areas have been taken to reach the 2020 goals.	H.A. De Koningh Energy & Climate Change Engineer, Heidelberg 16 January 2019 Official written comments Reiterated in 4 February 2019 official comments	All	<p>DEA in consultation with stakeholders is presently updating the VTAPA AQ management plan – a workshop for this is planned on 13 March 2019, this will provide an update on the goals set for the area.</p> <p>With regards to the projects or actions in the declared Vaal Priority Areas have been taken to reach the 2020 goals; the below were the actions that Lethabo planned to implement, however will not be able to be completed in order to reach the 2020 goals. These projects are tracked at the 2 weekly emission reduction forum meeting at Lethabo. The feedback below is as per the latest information and has also been supplied to the Sasolburg ITT.</p>		
				Project	Pollutant	Update
				<ul style="list-style-type: none">➤ Installation of high frequency transformers;➤ SO₃ plant upgrade;➤ ESP upgrade;	Particulate matter	<ul style="list-style-type: none">➤ Plan to have a contract in the 3rd quarter➤ Contract to be placed in the 4th quarter➤ Contract to be placed in the 4th quarter

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11.20	<p>SA has a severe air pollution crisis.</p> <ol style="list-style-type: none"> 1. Air pollution is a significant problem, particularly in the priority areas such as the Highveld, where air quality remains poor or has further deteriorated from 'potentially poor' to 'poor'. 2. New satellite data show that for the period between 1 June to 31 August 2018, Mpumalanga Province had the worst NO₂ air pollution in the world. 3. There is clear evidence that coal-fired power stations are having huge impacts on the air quality in the region and that they are not complying with emission standards. For example, between April 2016 and December 2017 the 17 Eskom coal-fired power stations reported nearly 3,200 exceedances of applicable daily AEL limits for PM, SO₂ and NOx. 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	<p>All stations in HPA</p>	<p>NOx issues responded to in 13.22</p> <p>The number of exceedances responded to in 1.23</p>

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11.21	<p>South Africa has an air pollution crisis.</p> <p>Almost 13 years since NEM:AQA was promulgated, and nearly 12 years since the 2007 Framework was established, many of NEM:AQA's aims continue to be largely unrealised. Air pollution, with its devastating impacts on human health and well-being, remains a significant problem in our country, particularly in the high priority areas, where air quality has further deteriorated from 'potentially poor' to 'poor'. This means that all of the steps that have been taken to date are inadequate.</p> <p>New satellite data shows that during the period between 1 June to 1 August 2018, Mpumalanga Province had the worst NO₂ air pollution in the world.</p> <p>Despite the fact that the Vaal Triangle Airshed was declared 12 years ago, and the Highveld Priority Area more than ten years ago - for the purpose of reducing pollution so that it no longer exceeds the National Ambient Air Quality Standards (NAAQS) - regular, significant exceedances of the NAAQS are common in these areas. The third priority area, Waterberg-Bojanala,</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	<p>Lethabo (VTAPA) All stations in HPA</p>	<p>We don't disagree that South Africa has an air quality challenge. The ERP is one method of improving air quality. In addition we argue that it is critical to addressing the air quality, specifically PM in low-income dense settlements. While it is fully accepted that Eskom is a major source of atmospheric emissions, the dispersion climatology of the Mpumalanga Highveld and indeed the Vaal Triangle, results in a circumstance where atmospheric emissions generated at ground level are trapped at ground level and concentrated into the multiple non-compliances with the PM NAAQS that is evident across the monitoring record. Diurnal variability of pollutant concentrations shows a clear morning and afternoon peak for NO₂ and PM concentrations and a clear midday peak for SO₂ concentrations. This patterning suggests that the NO₂ and PM peaks concentrations derive from domestic fuel use and other low altitude sources while the SO₂ derives from elevated sources. Given that the most serious air quality problem is the massive non-compliance with the PM NAAQS, a situation that may well continue even with full compliance with the MES, the offsetting principle is one where the most serious risk of adverse health effects is tackled first.</p> <p>Our concern is that full compliance with the MES will not materially improve that situation and people residing in low income dense settlements will continue to face largely the same health risks that they face today.</p>

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	declared six years ago, also fails to comply with the NAAQS. This is despite the fact that South African NAAQS are weaker than the out-dated 2005 World Health Organisation (WHO) guidelines.			
11.22	(33) Eskom has 12 coal-fired power stations located in the Mpumalanga Highveld. The application seeks to either postpone compliance with the new plant MES to 2025, request alternative limits for 4 of these coal-fired power stations (Majuba; Kendal; Duvha; and Matla), or apply for suspension of compliance until decommissioning by 2030 for the other 5 coal-fired power stations (Kriel; Arnot; Hendrina; Camden; and Komati). As an alternative to the suspension applications, Eskom also applies for alternative emission limits per station until decommissioning. The application for Lethabo station, located in the VTAPA, is to postpone compliance with the new plant MES to 2025, or meet alternative limits “until decommissioning”.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Power station in HPA and VTAPA	Correct.
11.23	(34) Due to the significantly-polluted air in the Highveld, the then Minister had declared the Mpumalanga Highveld as a priority area in 2007. The declaration of a priority area is possible in terms of	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA	Power station in HPA and VTAPA	Correct

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	<p>section 18 of AQA, if the Minister believes that NAAQS are being or may be exceeded in the area, or any other situation exists which is causing, or may cause, a significant negative impact on air quality in the area, and this requires specific air quality management action to rectify the situation. In terms of section 19, a priority area air quality management plan (AQMP) is required to be prepared and approved. A priority area's declaration can only be withdrawn if the area is in compliance with NAAQS for more than 2 years, and the AQMP lapses when the declaration is withdrawn. Section 19 sets out the requirements for an AQMP, which must: (a) be aimed at coordinating air quality management in the area;</p> <p>(b) address issues related to air quality in the area; and (c) provide for the implementation of the plan by a committee representing relevant role-players.</p>	4 February 2019 Official Comment		
11.24	(35) The HPA AQMP has been in place since 2012, and its primary objective is to bring the air quality in the Highveld in line with all NAAQS. Among other goals, by 2020, it aims to reduce industrial emissions in order to achieve	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019	Power station in HPA	<p>The extent of Eskom's contribution to exceedances in the HPA has been described in the AIR. In summary the results of the station specific AIR's completed show that individual stations generally contribute to a limited extent to non-compliances around the specific stations.</p> <p>The results of the analysis of the monitoring data and the cumulative AIR</p>

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	<p>compliance with NAAQS and dust fallout limit values.⁴⁵ It is submitted that continued MES postponements will render compliance with this goal impossible. It is not disputed that the deteriorating air quality within the HPA has a devastating effect on people living within the area. Indeed, this is acknowledged in the Preamble of the AQA. It is submitted that the ongoing air pollution is a perpetuation of environmental injustice, unfairly discriminating against vulnerable and disadvantaged persons, in particular.</p>	Official Comment		<p>show a complex picture where Eskom stations are but one of various pollution sources which impact on air quality in the regions. The ERP and the shutting down of stations will allow the progressive achievement of the HPA goals.</p> <p>See also 11.21</p> <p>The decision in respect of the postponement must be taken in cognisance of the broad Constitutional requirements and NEMA principles which require a consideration of the broad socio economic considerations and a sustainable development view.</p>
11.25	<p>(36) Unfortunately, more than 11 years since the declaration, air quality in the HPA has not improved, and remains non-compliant with the NAAQS, despite the fact that South African standards are weaker than the World Health Organisation (WHO)'s 2005 guidelines (which are themselves outdated and under review). The continued NAAQS non-compliance is reflected in the DEA's own annual State of the Air reports, the reports presented at the HPA multi-stakeholder reference group meetings, and the DEA mid-term review of the HPA AQMP. The DEA's 2018 State of the Air report</p>	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	Power station in HPA	<p>The contribution of Eskom to the HPA air pollution is described in the completed air quality report. For further analysis see 11.21 and 19.1.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	states that “many South Africans may be breathing air that is harmful to their health and well-being especially in the priority areas”, and a 10 year trend of pollutants indicates that the air quality has not improved. The dire air pollution situation in the HPA, and its implications for human health and for the environmental right is extensively reported in the “Broken Promises” report, which was submitted to the DEA in October 2017.			
11.26	(37) The HPA AQMP also states that power generation, followed by mining haul roads and mines (some of which supply the power generating plants), are by far the largest contributor to air pollution in the Highveld. For instance, in respect of PM ₁₀ , power generation accounts for 12%, and mine haul roads 49% of overall PM in the HPA. Further, power generation accounts for 73% of all NO _x and 82% of SO ₂ in the Highveld. In comparison, household fuel burning accounts for a mere 6% of PM ₁₀ , 1% of SO ₂ , and 1% of NO _x in relation to overall ambient air pollution in the Highveld. The DEA’s mid-term review of the HPA AQMP, dated December 2015 but made available for	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Power stations in HPA	The sections of the HPA AQMP quoted talk to total emissions and fail to differentiate between local/low level emissions as experienced by communities and high level emissions. The state of compliance and significant emission sources is described in the AIR and in 11.21 and 19.1.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM											
	<p>comment in February 2016, indicates that:</p> <p>(37.1) “industrial sources in total are by far the largest contributor of SO₂ and NO_x in the HPA, accounting for approximately, 99.57 % of SO₂ and 95.97% of NO_x, while mining is the largest contributor of PM₁₀ emissions”; and</p> <p>(37.2) “there has not been a significant decrease in emissions of industrial and mining sources... Nonetheless, industrial sources are still the largest contributors of SO₂ and NO_x in the HPA with mining being the main contributor of PM₁₀.”</p>														
11.27	<p>(38) Similarly, despite the declarations of the VTAPA (home to Lethabo power station) in 2006, and the WBPA (home to Medupi and Matimba power stations) in 2012, both remain in non-compliance with NAAQS, and granting further MES postponements will only exacerbate this position and worsen the health impacts. Based on the evidence before us, none of the 3 priority areas has any reasonable prospect of being withdrawn in the foreseeable future.</p> <p>(39) As contemplated in terms of</p>	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	<p>Power stations in HPA, VTAPA</p>	<p>Granting the postponement and approving the ERP and decommissioning schedule will result in a substantial reduction in PM, SO_x and NO_x between 2025 and 2035 as illustrated in Section 2 and Table 1 of the Eskom Summary Motivation extracted below.</p> <p>Table 2: Percentage reduction in relative emissions from 2020 with implementation of emission reduction plan</p> <table><tr><th rowspan="2">Pollutant</th><th colspan="3">Year</th></tr><tr><th>2025</th><th>2030</th><th>2035</th></tr><tr><td>PM</td><td>38 %</td><td>49 %</td><td>58%</td></tr></table>	Pollutant	Year			2025	2030	2035	PM	38 %	49 %	58%
Pollutant	Year														
	2025	2030	2035												
PM	38 %	49 %	58%												

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	<p>paragraph 5.4.3.4 of the 2017 Framework, the law, as amended, is clear that only in such cases where the areas in which the power stations are based are in compliance with NAAQS (which the HPA, VTAPA, and WBPA are not), can postponement, suspension, or alternative limit applications even be considered. In terms of section 1(a)(ii) of the Promotion of Administrative Justice Act, 2000 (PAJA), the powers to exercise administrative action are derived from and only extend insofar as the legislation allows. Therefore, we submit that granting any of these applications for coal-fired power stations in the HPA or the VTAPA would be ultra vires the Constitution, the AQA, the amended List of Activities, the 2017 Framework, and the provisions of NEMA.</p> <p>(40) As such, Eskom's application for postponement, suspension, and/or alternative limits for Majuba, Kendal, Duvha, Matla, Kriel, Arnot, Hendrina, Camden, and Komati must be denied because the requisite demonstration of the areas being in compliance with the NAAQS has not been satisfied.</p>			SO ₂	18 %	52 %	66 %
				NO _x	15 %	32 %	46 %
				Est. Production from Coal PS (GWh)	210 730	189 047	159 103
				<p>The requirement for consideration of MES postponement applications in terms of the MES regulations of October 2018 are "material compliance" and the fact that such a state exists is illustrated in 19.1 below.</p> <p>Granting the postponement considering the relevant regulations and the broad Constitutional and NEMA requirements would we would argue thus not be ultra vires.</p>			

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11.28	<p>(45)With the exception of the multitude of sources of pollution in the Highveld (and recognising that some – such as Eskom’s power stations and Sasol’s Secunda complex – are more significant than others), we and our clients otherwise oppose this proposition. The latter suggestion also appears to contradict the earlier concession that “Minimum Emission Standards (MES) serve to ensure that there is compliance with the National Ambient Air Quality Standards (NAAQS)”. It is common cause that Eskom’s power stations are significant emitters of SO2 and NOx and, consequently, secondary PM2.5. Therefore, reducing emissions from Eskom’s multiple power stations by enforcing compliance with the new plant MES, or alternatively, “eliminating” the emissions through decommissioning, is very much a central element in a ‘holistic approach’ to ensure that there is compliance with the NAAQS. In the circumstances, doing otherwise - by granting Eskom’s applications for postponement, suspension and/or alternative limits - would, we reiterate, be ultra vires the Constitution, the object of the AQA and</p>	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment</p>	<p>Power stations in HPA,</p>	<p>See 11.27 above</p> <p>Eskom takes the contrary view that approving the balanced approach proposed by Eskom in its application actually meets the Constitutional objective of securing ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (Constitution of RSA S24(b) iii and the NEMA objective that "Development must be socially, environmentally and economically sustainable" (NEMA S2 (3)).</p>

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	List of Activities, the 2017 Framework, and the provisions of NEMA.			
11.29	We submit that Eskom's reliance on the contribution of other less significant (by percentage) sources of emissions - which must, of course be reduced and, where possible, eliminated through other appropriate policy and legal means - is, however, an obfuscation of the immediate issue of compliance with the law and should be dismissed.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official Comment	Power stations in HPA,	The fact that Eskom is but one contributor to pollution is a factual situation which should be considered by decision makers in evaluating the appropriateness of any decision. Failure to do so could result in the decision maker forcing Eskom to implement a range of expensive measures which increase the cost of electricity such that poor individuals move from electricity to other more locally polluting energy sources such as low grade coal which increases local air pollution and further negatively impacts on human health.
12. COMPLIANCE AND COMMISSIONING				
12.1	Medupi is a newly built power station and should be 100% compliant with the MES.	Michele/Mike Rivarola Eastern Cape Region 10 August 2018 Comments and Registration Form	Medupi	Medupi power station does not form part of this current postponement application process. Eskom has in September 2018 obtained a postponement from the MES compliance timeframes for Medupi in respect of SO ₂ which was granted in 2018. Medupi power station will fitted with a FGD Plant to bring down the SO ₂ emissions to come into compliance with the 'new plant' MES. Postponement has been requested until the power station has been retrofitted with the stated emission abatement technology.
12.2	Will there be a plan within the 5 year postponement period when units come into operation with the abatement technology installed and ready to operate and emit in compliance with the MES?	Rob Jones: Sedibeng District – Midvaal Ward 5 Councillor 20 August 2018	Lethabo	It takes 6 years to install abatement technology at a power station since it is implemented in a phased manner. At Lethabo power station retrofits are planned to abate particulate matter from 2020 – 2026. There are however no plans, at the moment, to install abatement technology for NO _x or SO ₂ at the station.

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		Vereeniging Public Meeting		Eskom will apply for postponement of the MES for NO _x or SO ₂ for Lethabo power station due to the costs for controlling these emissions. It costs about R 30 billion retrofit for SO ₂ , NO _x is not as expensive yet costs R 2 million to retrofit per station. Eskom will request that the existing power station comply with the 'existing plant' standards and not the 'new plant' standards.
12.3	<p>On page 6 of the BID, MES is provided for coal and liquid fuel fired power stations. The PM limit for coal stations are 100 milligrams/Nm³ yet for liquid fuel fired stations the limit is 75 milligrams/Nm³. Please explain why the limit for coal is higher than for the liquid fuel station.</p> <p>Similar question for NO_x. The limit for coal powered station is 750 milligrams/Nm³ and for liquid fuel fired stations its 250 milligrams/Nm³. What is the reason for the lower limit?</p>	<p>Jimmy Rakaki Ward 14 Councillor, Sharpeville Sharpeville Public Meeting 20 August 2018</p>	Lethabo	<p>Liquid fuel fired power stations use a much cleaner fuel for the combustion process as appose to coal used at coal fired power stations. Therefore a more stringent limit is applicable to liquid fuel fired power stations. Yet the operating cost of liquid fuel fired power stations is more expensive.</p> <p>The liquid fuel stations have gas turbines and can be started up immediately when there is peak electricity demand. Coal stations are large stations that require a long time to start up.</p>
12.4	It is indicated that Lethabo power station is in full compliance. Is Lethabo in full compliance with the postponement limits granted by DEA in the last 5 years, or in compliance with its Atmospheric Emission License?	<p>Samson Mokoena VEJA Sharpeville Public Meeting 20 August 2018</p>	Lethabo	<p>Lethabo is in compliance with the existing SO₂ and NO_x MES. The station will comply with the 'new plant' MES for PM by 2026. Eskom will implement a number of interventions to reduce its PM emissions.</p> <p>Lethabo's Atmospheric Emission License limits are the 'existing plant' MES.</p>
12.5	Grootvlei power station is complying with the existing plant MES for PM, SO ₂ and NO _x as well as the 'new plant' MES for PM. Why is Eskom applying for	<p>Monto Sbeloane Balfour (Siyathemba) Public Meeting</p>	Grootvlei	On 1 April 2020 'new plant' MES come into effect relevant to PM, SO ₂ and NO _x . Grootvlei power station cannot comply with the new plant limits for SO ₂ and NO _x . Hence Eskom must apply for postponement from complying with the MES for the two pollutants. Eskom has decided not to

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	postponement then?	21 August 2018		pursue the postponement for Grootvlei power station at this stage given there is no immediate need for this postponement.
12.6	Eskom must develop a plan to come into compliance with the MES.	Nomasonto Mofokeng Balfour (Siyathemba) Public Meeting 21 August 2018	Grootvlei	Eskom has developed an updated Emission Reduction Plan which schedules completed and future planned retrofits which target the highest polluting power stations to reduce emissions.
12.7	How many of Eskom power stations actually comply with the MES?	Community Member Zamdela Public Meeting 21 August 2018	All	<p>Each power station has an AEL issued by government. The power stations compliance with the AEL is reviewed by several parties namely Eskom, the district – and provincial authority. Most power stations do comply with the AEL limits. Yet Eskom does inform the licensing authority of any non-compliance, if any, and then investigates the resulting impact.</p> <p>This project relates to the coming into effect of new plant MES, which Eskom is/will not be able to meet. Accordingly several of Eskom power stations are applying for postponement to comply with the MES within the compliance time frame.</p>
12.8	<p>As we speak Eskom is polluting more than what is required in the MES. Eskom is struggling to comply with less stringent existing plant standards.</p> <p>For what emission limit did Eskom apply for in the 2014 postponement application?</p> <p>What emission limit was granted by the NAQO?</p> <p>What limit is Eskom applying for now as</p>	Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018	Hendrina Arnot Komati	<p>The emission limits applied for in 2014, subsequently granted by DEA and what is applied for under the 2018 postponement application will be included in the motivation documentation for the Application for Postponement from the MES for the power stations. It will be clearly tabulated in the motivation documentation and will be available for public review and comment in the 2nd round of public engagement.</p> <p>Secondly, it is not the case for all pollutants that we are not complying with the ‘existing plant’ MES. In most cases power stations do comply in terms of most pollutants with the ‘existing plant’ MES. In many cases it’s the NOx for which the emission limit is slightly higher, yet this is included</p>

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	part of the 2018 postponement application?			within the variation request
12.9	When will Eskom comply with the MES?	Lyndon Mardon DEDEA EC Provincial Air Quality Officer East London Public Meeting 28 August 2018	Port Rex	Planned compliance for the fleet is detailed in the BID per individual power station. No retrofits are scheduled for Port Rex station since the peaking station would be decommissioned within the next 7 – 8 years. Eskom has decided not to pursue the postponement applications for Port Rex at this stage as there is no immediate need to change the licence.
12.10	In general the Eastern Cape does not have an ambient air quality problem and there is space for additional sources. Good air quality is reflected in the ambient air quality measurements from the various monitoring stations. The closest air quality monitoring station to Port Rex station is approximately 2km away. Only in 2009 there was non-compliance with the NAAQS. The non-compliance was due to a nearby refuse site which caught fire.	Lyndon Mardon DEDEA EC Provincial Air Quality Officer East London Public Meeting 28 August 2018	Port Rex	The general compliance to the ambient air quality standard in the Eastern Cape is recognised.
12.11	How do the current MES compare to the international standards?	Valerie Viljoen Ward 18 Committee East London Public Meeting 28 August 2018	Port Rex	The existing plant MES are considered more lenient than the international standards. The new plant MES are aligned with international good practice.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
12.12	<p>While this application is couched as a postponement, if you look at Table 4 in the BID, by the year 2030 Eskom does not plan to have any of its completed coal power stations compliant with new SO₂ MES and only Matimba will be complaint with new NO_x. When viewed in conjunction (SA's new MES being weak by international standards), and (that these standards were published in 2010) we see that over a 20 year period Eskom does not plan to have 92% of its existing fleet compliant with NO_x and SO₂ emissions standards, that are among the weakest in the world.</p> <p>A number of power stations are never planned to be compliant before decommissioning starts.</p> <p>Considering these factors, it appears that Eskom is, in many cases, trying to be exempted from meeting MES for various pollutants at its power stations. It is unacceptable that this situation of exemption be allowed to occur.</p>	<p>Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments</p>	All	Eskom is only granted 5 year postponements and as such these applications are being applied for. Eskom may apply for further postponements depending on the life of the station.
12.13	<p>The overall message that comes out of the BID is that, as far as possible, Eskom will try to avoid taking measures to meet the various MES. The Government must ensure that as a state owned entity,</p>	<p>Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments</p>	All	Eskom has implemented various measures to reduce emissions as shown in the BID. DEA will make the decision on the postponement based on all available information.

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	Eskom is held to account and that activities that directly affect our people and the environment are prioritized.			
12.14	SA's 2020 MES are already weak compared to international standards (China, India, and Germany). The standards Eskom is unable to comply with are weak and do not provide a level of protection that ensures a health environment. Coal-fired power stations unable to comply should be decommissioned sooner taking into account a just transition.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	The standards to which Eskom must comply are set by DEA and the postponement decision will also be assessed by DEA. See 1.23 for further comment on international comparisons.
12.15	SA's MES are very weak compared to other developing countries. Our SO ₂ existing plant MES are 17.5 times weaker than China, Germany and the European Union (EU), 6 times weaker than India, 5 times weaker than Indonesia, double as lax as Thailand's. Existing plant PM MES are 3 times weaker than China, 5 times weaker than Germany and EU. SA's new plant MES also does not compare favourably to other jurisdictions.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	All	Refer to response under 12.14
12.16	Section 24 of our Constitution says we have a right to an environment that is not harmful. We call for our right! Eskom must adhere to the agreement with the Paris Accord, Millennium Development Goals and other International Commitments.	Xolani Ndlovu Balfour (Siyathemba) Public Meeting 21 August 2018	Grootvlei	The Constitution of South Africa protects the Rights of people that is why Naledzi is independent and doing the studies on behalf of Eskom so that the results will not be manipulated. Eskom is implementing emission reduction measures so that power stations comply with the applicable legal requirements.

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12.17	<p>Compared with international standards, the MES for coal fired power stations are significantly weaker than many other countries. Consequently higher amounts of pollution per volume are permitted to be released from a power plant.</p> <p>Analysis of consolidated data from report <i>'Emission standards and control of PM2.5 from coal-fired power plant dated July 2016 © IEA Clean Coal Centre'</i> shows this trend. Comparatively the 2020 'new plant' MES for NOx is 7.5 times higher than permitted by China since 2011. The 2015 'existing plant' MES is 11 times higher.</p> <p>For SO₂ we get 5 and 17.5 time higher respectively.</p> <p>Overall the existing and new MES for NOx and SO₂ in SA are weaker than China, Germany, India, Japan, USA and EU. While this report only looked at 10 countries or regions, SA ranked last for existing NOx and SO₂ MES, second last for new NOx MES and third last for new SO₂.</p> <p>Despite having some of the weakest MES</p>	<p>Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments</p>	All	<p>The legal applicable standards in SA are the MES. Eskom will comply with the applicable legal requirements.</p> <p>See also 1.23</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	for coal-fired power stations in the world, Eskom still wants to postpone compliance. If SA's MES were stricter, then the postponement could be somewhat understood, but in fact we have the opposite.			
12.18	<p>At the previous public meeting in Hendrina on 28 August 2018 we requested Eskom to furnish us, in the 2nd round of engagement, with its power stations Atmospheric Emission Licenses (AEL) and to present its AEL performance reports.</p> <p>This has not been presented at the 2nd round public meeting.</p>	<p>Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting</p>	All	<p>In the individual power station AIR's Eskom and NEC do provide indicators where the power stations stand in terms of their current emissions and how it performs in accordance with its AEL. Eskom submits monthly performance reports to DEA and the atmospheric emission licensing authority.</p> <p>The Annual Performance Reports were uploaded onto the NEC website for public review and comment. A notification in this regard was sent to registered I&APs on 10 December 2018.</p>
12.19	<p>In Parliament it was said that Eskom has more than 2000 exceedances of the NAAQS per year at its power stations. Eskom did not dispute this report in Parliament.</p> <p>What will Eskom do to address this issue?</p>	<p>Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting</p>	All	<p>The 2000 exceedances were recorded during the power stations start-ups and shutdowns, which are allowed for in the MES Regulations.</p> <p>See 1.23 for a further discussion on the number of exceedances.</p>
12.20	<p>The Department of Environmental Affairs conducted PPP on the MES Regulations on the proposal to set the SO₂ limit value to 500mg/Nm³. Yet during the PPP it set up a panel to determine why Eskom had so many SO₂ exceedances and post a site visit with Eskom changed the proposed limit value agreed to during the PPP</p>	<p>Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting</p>	All	<p>The power stations will not comply with the MES SO₂ limit and thus the applications for suspension and alternative emission limits.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>process from 500mg/Nm³ to 1000 mg/Nm³.</p> <p>Why is Eskom applying for postponement of the MES SO₂ limit value if its power stations individually are in compliance with the MES and NAAQS?</p>			
12.21	To what limit will Eskom's power stations be able to comply in terms of the MES?	Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting	All	<p>The Application Documents prepared for the individual power stations state the proposed alternative emission limits. These documents were subject to 30 days public review and comment..</p> <p>Eskom will comply with the new plant MES for PM where power stations have been fitted with FFP's. Where ESP's have been installed and or upgraded at power stations Eskom will comply with the existing plant MES for PM.</p> <p>Power stations generally comply with the NO_x.</p> <p>For SO₂ Eskom will apply for suspension of the emission limits for power stations to be decommissioned by 2030 and for alternative emission limits for the remaining power stations.</p>
12.22	<p>Twice in the Summary Motivation Document, Eskom states that the need for the postponement, suspension applications are for the continued legal operation of the Eskom plants.</p> <p>We strongly dispute that all of Eskom plants have been operating legally and in full compliance with its Atmospheric Emission Licenses. CeR has done some</p>	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	All	<p>In terms of Section 30 of the NEMA and Eskom's power station licenses, the startup and shutdown period of power stations are excluded from general compliance periods.</p> <p>See 1.23 for further comment on the number of exceedances.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	expert analysis of Eskom's emissions for 2016 – 2017; this will be elaborated on in our written submissions to be made later on.			
12.23	There have been 3500 exceedances over 14 of Eskom's power stations. These are quite a few Section 30 incidences.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	All	The monitoring and audit reports including supporting information submitted to the licensing authority by Eskom indicate that there is general compliance. See 1.23 for further comment on the number of exceedances.
12.24	Does the Three Rivers AQMS indicate compliance with the NAAQS or not?	Dalene Venter Three Rivers Ward Councillor 26 November 2018 Vereeniging Public Meeting	Lethabo	The Three Rivers AQMS shows compliance with the NAAQS. Sebokeng and Sharpeville AQMS show noncompliance with the NAAQS.
12.25	Eskom wants to kill our community with air pollution. Government is trying to stop them from doing so but now they want to ask Government to give them 5-10 years postponement to continue killing our community with even more pollution. The legislation says Eskom must comply with the MES, but now it does not want to comply	Zamdela Community Member 27 November 2018 Zamdela Public Meeting	Lethabo	Eskom plans to implement an Emission Reduction Plan (ERP). As part of the ERP Lethabo Power station will install PM abatement equipment from 2019 – 2020 to reduce the PM emissions. By 2025 Lethabo Power Station will comply with the MES limit for PM. Eskom is requesting a 5 year postponement of the compliance timeframe to install emission abatement equipment. It takes Eskom 6 years to retrofit the power station. There is therefore not enough time to comply in time with the MES and thus will only be completed by 2025.
12.26	The air quality monitors in Zamdela don't work. There is non-compliance with the NAAQS in Sasolburg. The people of	Zamdela Community Member	Lethabo	The air quality monitoring station in Zamdela does work and ambient air quality data is available for that station at a comparatively high

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	Zamdela are always breathing these gasses that are harmful. We are concerned about our children that are living in this pollution.	27 November 2018 Zamdela Public Meeting		availability of 75%. What is indicated in that data is compliance with the NAAQS for SO ₂ and NO ₂ but not for either PM ₁₀ or PM _{2.5} . As detailed in the AIR, such an air quality circumstance does indeed pose a high risk of adverse health effects. Our argument is though that the use of domestic fuels is an important contribution to the non-compliance with the NAAQS in Zamdela.
12.27	<p>We live in a modern democracy yet air – and water quality is substandard. Who is the referee for these standards? If it's international I accept but if it's local I question it.</p> <p>Does Eskom have legislation internally which controls air quality?</p>	Coenie Dafele Chairperson, Amersfoort Agricultural Union 29 November 2018 Amersfoort Public Meeting	Majuba	<p>The NAAQS were published by government but are derived through a consultative process. The NAAQS are generally in line with international standards. It's only the daily SO₂ limit which is set at 125mg/m³ similar to the USA, which the World Health Organization (WHO) states should be 20mg/m³.</p> <p>Legislation for air quality and the environment states that if the power station is exceeding the air quality limits the licensing authorities must conduct an inspection. If it is found that there is noncompliance with the MES, authorities will determine who was responsible for the noncompliance. Eskom have had instances where power station managers were called to a meeting with the National Prosecutor and have had to bring legal representation due to noncompliance issues.</p>
12.28	According to the report ' <i>Emission standards and control of PM_{2.5} from coal-fired power plant dated July 2016</i> © IEA Clean Coal Centre', which compares internationally used emission standards of larger coal fired power stations, SA's coal fired power station emission limits with regard to PM, SO _x and NO _x are rather	H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written comment	All	That is true.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	high compared internationally.	Reiterated in official comment dated 4 February 2019		
12.29	<p>In China existing and new coal-fired power plants will have to achieve emission limit values for SO₂, NO_x and PM of 50, 100 and 20 milligrams per cubic metre (mg/m³), respectively.</p> <p>When comparing SA's air pollutant emission standards for coal-fired power plants to those of China, European Union and the United States (mg/m³) it seems to be relatively strict, but not the MES of the power stations and industries.</p> <p>The power station new emission standard compared to international standards seems to be relatively lenient. It is questioned why it can be that lenient while other countries use stricter MES. Is SA overlooking something?</p>	<p>H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written comment</p> <p>Reiterated in official comment dated 4 February 2019</p>	All	<p>Our point of departure is to accept that the derivation of the MES was the outcome of a process run by the National DEA and which included consultation on the proposed standards. We know that the standards proposed are a function of the state of technology of the various emissions sources in South Africa and the practicality of compliance given that technology but that is much as we can offer regarding the strictness of the standards.</p> <p>See 1.23</p>
12.30	I feel there aren't yearly reports available of monitoring results and follow up actions.	H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written	All	Refer to response under Section 12.18

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		comment		
12.31	Emissions can be reduced by load restrictions. From continuous measurement system one should apply a stricter control over exceedances and prevent these by implementing load restrictions. Postponements should go together with load restrictions.	H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written comment Reiterated in 4 February 2019 Official comments	All	We agree that emissions can be reduced by reducing load, but it is not always practical to do so when operating a generation network. Eskom must be in a position to supply the demand and that limits the degree to which generation can be curtailed continuously.
12.32	I came across a report by Dr. Ranajit a Consultant on Energy & Air Quality Issues from Alhambra, CA titled ' <i>Eskom power station exceedances of AEL limit values for PM, SO₂ and NO_x from 2016-2017</i> ' dated 15 November 2018. The document outcome differs considerably from what was presented to us last year at the public meeting. It stated that the Eskom coal fired power stations reported nearly 3,200 exceedances of applicable daily Atmospheric Emissions Licenses (AEL) limits for particulate matter (PM), sulfur dioxide (SO ₂), and oxides of nitrogen (NO _x).	Brian MacKenzie Kriel Resident 25 January 2019 Emailed comment	All	See 1.23 for a response to the number of exceedances.

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12.33	<p>A new report from Dr. Ron Sahu from November 2018 describes the number of exceedances of point source emission standards at Eskom's power stations. Between April 2016 and December 2017, the utility's 17 coal fired power stations reported nearly 3,200 exceedances of applicable daily Atmospheric Emissions Licenses (AEL) limits for particulate matter (PM), sulfur dioxide (SO₂), and oxides of nitrogen (NO_x). We therefore dispute that Eskom is in compliance with various emission limits contained in their relaxed AELs, and the assertion that Eskom is operating legally.</p> <p>Notwithstanding this non-compliance with NAAQS in the priority areas (and the numerous adverse impacts of coal in general) it is important to remember that there are proposals for new, independent power producer (IPP) coal-fired power stations within these priority areas, in addition to Eskom's Medupi (Waterberg) and Kusile (Mpumalanga) power stations. Thabametsi and Khanyisa power stations are both preferred bidders in the coal baseload IPP procurement programme, and are proposed to be based in the Waterberg-</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>See 1.23 for a response to the number of exceedances.</p> <p>The AIR completed provides a comprehensive picture of air quality in the impacted areas. See also 1.23 and 11.21.</p>

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	<p>Bojanala and Highveld Priority Areas, respectively.</p> <p>It is clear that Thabametsi and Khanyisa power stations – which will be amongst the most greenhouse gas emissions intensive plants in the world – will not only exacerbate climate change, but will also contribute to the ongoing air pollution crises in these areas. This is particularly concerning, since, in the Waterberg, Limpopo, the air quality since the 2012 Framework has deteriorated from “potentially poor” to “poor”. Using the precedent of the other two priority areas, and bearing in mind the plans to develop the Waterberg, air pollution can only deteriorate further.</p> <p>Similarly, in Mpumalanga, two out of three district municipalities’ air quality remains poor, and the third (District Ehlanzeni), has further deteriorated from “potentially poor” to “poor”. This non-compliance with NAAQs is reflected in the Department’s own reports presented at priority area meetings, as well as in its mid-term review of the Highveld Priority Area (HPA) air quality management plan (AQMP), and in the</p>			

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	State of Air report presented at the 2017 Air Quality Lekgotla.			
12.34	<p>The NEM:AQA was enacted to give effect to Section 24 of the Constitution and to protect and improve air quality. The NAQF, the declaration of the High Priority Areas, and the establishment of NAAQS and MES are all intended to improve air quality and realise the constitutional right to a health environment. Unfortunately compared with many other countries, SA has a very weak MES, that allow coal-fired power stations to currently emit:</p> <ul style="list-style-type: none"> ▪ close to 100 times more sulfur dioxide (SO₂) than allowed in China (key regions), more than 20 times more than existing stations in India, and more than 45 times more than new plants in India, and 20 times more than current regulations in the European Union; ▪ about 6 times more particulate matter (PM) than allowed in the EU and China (key regions) and almost 5 times that is allowed for new stations in India; and ▪ 15 times more nitrogen oxides (NO₂) than allowed in India (new 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	See 1.23 for a response on the applicability of international standards. South Africa's standards are considered appropriate (if not overly onerous) in the South Africa context.

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	<p>builds) and China (key regions) and more than 7 times more than currently in the EU.</p> <p>Nonetheless, the majority of Eskom's coal-fired power stations do not even comply with these comparatively weak MES.</p> <p>Once new MES come into place in South Africa in 2025, coal-fired power stations in South Africa will still be allowed to emit higher pollution levels than many other coal-producing nations. Under the 2025 MES, coal-fired power stations will be allowed to emit:</p> <ul style="list-style-type: none"> ▪ 10 times more NO₂ than key regions in China and new builds in India; ▪ 5 times more NO₂ than plants in the EU; ▪ 3 times more PM than key regions in China and plants in the EU; and ▪ more than double the PM as new build coal-fired power stations in India. <p>In addition, even if the 500 mg/Nm³ MES for SO₂ starting in 2025 remains in place, and is not unlawfully doubled by the</p>			

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	<p>Department of Environmental Affairs to 1000 mg/Nm³ as has been recently reported , South African coal-fired power stations will be able to emit:</p> <ul style="list-style-type: none"> ▪ 13 times more SO₂ than key regions in China; ▪ almost 7 times more SO₂ than new build coal-fired power stations in India; and ▪ 3 times more SO₂ than power stations in the EU. <p>In our view the MES do not meet the standard of "reasonable measures" required by section 24 of the Constitution and should in fact be made substantially more stringent in order to protect human health and the environment.</p> <p>Emission standards for operating coal-fired power plants compared</p> <p>Unit: mg/Nm³ @10% O₂; most other countries use 6% reference oxygen so values have been converted to South African standard.</p>			

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12.35	Eskom, as an organ of State, is also bound to take reasonable measures to prevent pollution and ecological degradation. Importantly, section 24 does not qualify the State's obligation to protect the environment based on available resources. We have provided clear evidence that emissions from coal-fired power stations pose a major environmental and health risk and cause disease and death. We have also shown that full compliance with the MES would avoid an estimated total of 23,000 premature deaths and reduce the health impacts of air pollution from Eskom's power stations by 40%. Purporting to authorise Eskom to postpone compliance with the MES would amount to condoning the Eskom's on-going breach of its legal duties under the Constitution and NEMA, and would be unlawful.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment	All	<p>Eskom has through the past implementation of its ERP and through the planned implementation of its current ERP taken reasonable measures to reduce emissions as illustrated in its motivation.</p> <p>The issues of the 2300 premature deaths have been responded to in terms of the CBA (see section 1.23 and 8.30).</p> <p>Eskom believes approval of the postponement application is indeed legally permissible and in line with the Constitution and NEMA (see section 1.18).</p>
12.36	<p>Why in the Motivation Document is SO₂ limit value at Kriel given as 3200 µm/m³ daily and at Hendrina 2800 µm/mg³ daily (from: Chapter 3. "REQUESTED POSTPONMENT EMISSION LIMIT" of each power station)?</p> <p>Is this because of less sulfur in the coal of</p>	H.A. de Koningh Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official Written Comment	Kriel Hendrina Matla	The emission limits are established based on the past history of the station noting the technology installed, plant efficiencies and historical coal qualities and projected coal qualities. The predominant factor remains the coal sulphur content from the mines that supply these stations.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	Kriel? How will Matla be able to comply with the alternative limit of SO ₂ emissions of 2600 µm/mg ³ after 2025?			
12.37	Is it viable for Matla to install low NO _x burners by 2027 and see Matla compliant with the new plant NO _x MES by 2027? How can it comply with the alternative limit they propose from 2025 – 2027 of 1200mg/m ³ , when the first unit is installed with Low NO _x burners? Matla cannot comply with the existing and new SO ₂ standard.	H.A. de Koningh Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official Written Comment	Matla	The Matla NO _x reduction project entails the installation of Low NO _x Burners (LNB) with the boiler modified to incorporate Over-Fire Air (OFA). This will ensure that the plant reduces it's NO _x emissions from its current of +1 100 mg/Nm ³ average to below 750 mg/Nm ³ . The project will start in 2022 and be completed by 2027 with one unit being done per year. As each unit is retrofitted and optimised, the limit for that unit (units 4 to 6) can be reduced to 750 mg/Nm ³ . Since units 1 to 3 feed into a common stack, the limit for this stack can only be reduced to 750 mg/Nm ³ once the last unit has been retrofitted and optimised.
12.38	I find it unacceptable that some power stations try to set their own emission standards. Is this not a general accepted practice? (or Best BAT from <i>World Bank-Pollution Prevention and Abatement Handbook</i> which says 'automatic air quality monitoring systems measuring ambient levels of PM ₁₀ sulfur oxides, and nitrogen oxides outside the plant boundary should be installed where maximum ambient concentration is expected or where there are sensitive receptors such as protected areas and population centres.	H.A. de Koningh Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official Written Comment	All	Eskom follows the South African legislative requirements which require continuous stack monitoring and local ambient monitoring stations some of which Eskom owns and others controlled by DEA and other stakeholders.

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12.39	In the context of giving effect to section 24 of the Constitution and embodying the NEM Principles, AQA was promulgated and came into effect in 2005. The AQA aims to ensure that air pollution is not harmful to human health or well-being, and to enhance the quality of air in South Africa. The AQA provides that its interpretation and application must be guided by the NEM Principles and accordingly, the NAQO, licensing authorities, and Eskom (an organ of state) must adhere to the NEM Principles and legal provisions of the AQA in its decision-making and exercise of their functions – including in considering Eskom’s current applications.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	Correct a decision maker must however consider the broad Constitutional objectives and full suite of NEMA principles (see 1.18 above).
12.40	(27) The List of Activities was published on 2 November 2018, provides as follows in relation to applications for postponement and suspension of MES compliance: a) “As contemplated in the paragraph 5.4.3.5 of the National Framework for Air Quality Management in the republic of South Africa,	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	The CER is also referred to the October 2018 MES regulations and 11.1 for a discussion on legal requirements.

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	<p>published in terms of Section 7 of this Act, an application may be made to the National Air Quality Officer for the postponement of compliance timeframes ...”</p> <p>b) “An existing plant may apply to the National Air Quality Officer for a once-off postponement with the compliance timeframes for minimum emission standards for new plant as contemplated in paragraph (10). A once off postponement with the compliance timeframes for minimum emission standards for new plant may not exceed a period of five years from the date of issue. No once-off postponement with the compliance time frames will be valid beyond March 2025”</p> <p>c) “An existing plant to be decommissioned by 31 March 2030 may apply to the National Air Quality Officer before 31 March 2019 for a once-off suspension of compliance</p>			

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	<p>timeframes with minimum emission standards for new plant. Such an application must be accompanied by a detailed decommissioning schedule. No such application shall be accepted the National Air Quality Officer after 31 March 2019”</p> <p>d) “An existing plant that has been granted a once-off suspension of the compliance timeframes as contemplated in paragraph (11B) must comply with minimum emission standards for existing plant from the date of granting of the application and during the period of suspension until decommissioning”</p> <p>e) “No postponement of compliance timeframes or a suspension of compliance timeframes shall be granted for compliance with MES for existing plant”.</p> <p>The amended List of Activities also includes the following amendment specific to existing plants’ compliance</p>			

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	<p>with new plant MES for SO₂:</p> <p>Amendment of Category 1 of the List</p> <p>6. Subcategory 1.1 of Category 1 of the List is hereby amended by special arrangement under subparagraph (a):</p> <p>"(iii) Existing plants shall comply with a new plant emission standard (dioxide (SO₂)."</p>			
12.41	<p>(29) We point out that no amendments to sub-category 1.1 of the List of Activities (which sets out the MES for solid fuel combustion installations, including all of Eskom's coal-fired power stations), were included in the proposed amendments to the List of Activities for comment. We note further that the effect of this amendment doubles the permissible SO₂ emissions - from 500mg/Nm³ to 1000mg/Nm³ - in respect of existing plants that are solid-fuel combustion installations.</p> <p>(30) We have disputed – and continue to dispute - the legality of this amendment which was not the subject of public participation as required by section 57(2)(b) of the AQA, which specifically requires that any amendment made available for comment must “contain</p>	<p>Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment</p>	All	This was a decision by DEA.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	sufficient information to enable members of the public to submit meaningful representations or objections”. In the circumstances, we have called upon the Minister of Environmental Affairs to withdraw this unlawful amendment, or face legal action.			
12.42	(31) Even before the unlawful amendment, South Africa’s MES were already very weak, even compared to other developing countries. For instance, the previous SO ₂ existing plant/2015 MES were 17.5 times weaker than those in China, Germany, and the European Union (EU), nearly 6 times weaker than India’s, almost 5 times weaker than 40Indonesia’s, and almost double as lax as Thailand’s. The recent amendments would only serve to deepen this inequality and worsen the impacts of air pollution in South Africa, through effectively “doubling” the SO ₂ MES limit (and making it twice as weak).	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	Eskom believes the RSA standard SO ₂ has been established by DEA noting the high sulphur content of South African coals and the costs and impacts associated with reducing SO ₂ levels as described in the Eskom motivation section 5. As it stands it is Eskom’s position that the existing standards are in themselves are too high given the South African coal qualities, plant capabilities, water and waste issues and costs of SO ₂ reduction. See 1.23 for further comment on international comparisons.
12.43	(90) Eskom’s claims that the emission reduction plan, in addition to this application for MES compliance	Timothy Loyd Attorney – Pollution and	All	Eskom power stations monitor compliance to their particulate emissions limits as set in their Atmospheric Emission Licences (AEL) on a continuous basis and provide monthly reports on station and emission

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>postponement, suspension and/or alternative limits, is to ensure the “continued” legal operation of its stations. We continue to vigorously dispute that Eskom is in compliance with various emission limits contained in their relaxed AELs, at a number of the coal-fired power stations included in this application.</p> <p>(91) In order to verify the reasonable suspicion of Eskom’s consistent non-compliance with its AEL conditions, following a similar assessment conducted by Professor Cairncross assessing Eskom’s compliance with its AELs over the 105 106period 1 April 2015 to 31 March 2016, the CER commissioned energy and air quality specialist, Dr Ranajit Sahu, to assess Eskom’s monthly emissions reports for the period April 2016 – December 2017 (“The Exceedance Report”). The Exceedance Report is attached as Annexure C2. Dr Sahu reviewed Eskom’s own hardcopy monthly monitoring reports from 14 Eskom coal-fired power stations over this 21 month study period</p>	<p>Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment</p>		<p>performance to the licencing authorities. Included in these monthly reports are details of emissions levels on a daily basis and reasons for any exceedances of the applicable limits. Eskom acknowledges that Dr Sahu report is based on information it provided to CER and it’s clients in a PAIA response. To respond Eskom addresses some general issues in respect of emission monitoring and then makes some comments on Dr Sahu’s report.</p> <p>Emission exceedances are usually associated with times of plant start- up, shut-down or upset conditions.</p> <p>During plant start-up and shut-down times emission reduction equipment due to it’s design does not operate as effectively as when it is running during normal operations – think of it like a car on a cold morning it needs time to heat up to work efficiently. Upset conditions are linked to power station plant malfunctions or emissions reduction equipment problems. The Atmospheric Emission Licences make provision for Eskom to exceed the emission limits during these periods for between 48 and 72 hours and as such these are not treated as non-compliances to the legislation.</p> <p>Where the emission exceedances are associated with upset conditions which can be generally described as unplanned, unexpected, sudden incidents the station is required to report to the licencing authority (the DEA and district authority) in terms of Section 30 of the National Environmental Management Act (Act 107 of 1998).</p> <p>Whilst all exceedances (plant start- up, shut-down or upset conditions) are</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>(April 2016 through December 2017), counting the number of days where reported emissions exceeded the corresponding AEL limit value. Conclusions in the report are conservative and under-estimate the true scope of the problem due to a lack of availability of clear and comprehensive data. In summary, the Exceedance Report reveals the following, based on Eskom's own data:</p> <p>the coal-fired power stations reported nearly 3,181 exceedances of applicable daily AEL limits for PM, SO₂ and NO_x;</p> <ul style="list-style-type: none"> the highest number of exceedances for all three pollutants combined were reported at Lethabo, Matla, Matimba, Kriel and Duvha; the highest number of exceedances of PM AEL limits were reported at Lethabo, Kriel, Kendal, Duvha and Matla. Many plants reported 			<p>reported in the Licensing Authorities monthly reports existing systems and on –line systems do not presently allow a rapid accurate accumulation of this information across the Eskom fleet for a specific time period. However, weekly performance is tracked and instances of high emissions are required to be addressed by the relevant power stations in order to ensure the stations remain in compliance.</p> <p>Providing a detailed analysis to respond to Dr Sahu's report in a short time frame is thus not presently practical.</p> <p>Based on our interpretation of monitoring data it is our position that whilst there are occasions of exceedance Eskom stations generally comply with the conditions of their AEL in respect of emission levels. The authorities have at several times asked Eskom to provide detailed explanations of emission levels due to a perception of a high number of exceedances. Detailed analysis of station records was undertaken to respond to those queries and the following general issues which result in an overstatement of AEL emission exceedances based on the interpretation of the monthly monitoring results were identified. It is believed Dr Sahu's study has been impacted by similar issues.</p> <p>As indicated above the AEL allow for a grace period during shutdown, startup and upset conditions of between 48 and 72 hours and this is often not factored into the interpretation of monitoring results. High emissions during these periods are thus not treated as non-compliances to the AEL.</p> <p>Formally declared NEMA section 30 periods where there is an upset or incident occurred should be excluded from interpretation of days of</p>

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	<p>chronic PM limit exceedances for several consecutive months, particularly Kendal, Lethabo, Kriel, and Duvha;</p> <ul style="list-style-type: none"> the highest number of SO₂ exceedances were reported at Matimba, Tutuka, Medupi, Camden and Grootvlei. Many plants have chronic SO₂ limit exceedances many months in a row, particularly Matimba, Matla and Camden; the highest number of exceedances of NO_x were reported at Matla, Lethabo, Duvha, Camden and Komati. Many plants have chronic NO_x limit exceedances, particularly Matla, Lethabo, and Duvha; and in addition to the number of exceedances reported, it is stated qualitatively that many of these exceedances were significantly greater than the applicable AELs. For example, PM exceedances reached at least 500 mg/Nm³ at Duvha and Lethabo, and 600 			<p>exceedance and the time frame for these periods is often not clearly articulated in the reports which can result in an overstatement of days of non-compliance.</p> <p>Issues with monitoring equipment do occur and whilst these are noted in the monitoring reports the issues are not clearly linked to daily exceedances in the monthly reports.</p> <p>Station AEL's are not identical and this must be factored in the interpretation of any data for example: Kriel has a monthly not a daily particulate emission limit; Lethabo has a 72 hour grace period not the standard 48 hour grace period and Lethabo's AEL does make provision to apply for exemption when the SO₂ is not operating.</p> <p>It is sometimes necessary to re-state emission reports when problems with monitors have been identified and at times analysis is carried out on the older less accurate data.</p> <p>It is believed that Dr Sahu's analysis may have been impacted by some of the common errors in respect of this as highlighted above. Whilst as indicated detailed analysis of Dr Sahu's results have not been undertaken Eskom can make the following specific comments:</p> <p>The report does indicate a high number of SO₂ exceedances at Matimba. Eskom stations with the exception of Kusile and Medupi have not been legally required to install technology to reduce SO₂ emissions. SO₂ emissions are a function of the sulphur content of the burnt coal. Highveld coal used by most stations has relatively low sulphur content and as such exceedances of the SO₂ limit are actually relatively rare. The</p>

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	<p>mg/Nm³ at Kriel (the PM MES is 100mg/Nm³)</p> <p>(92) This report was submitted to both DEA and Eskom on 31 October 2018, for consideration. Although the DEA initially responded and we are in the process of trying to arrange a meeting between DEA officials and Dr Sahu, Eskom is yet to formally respond at the date of these submissions. During the public meeting in Midrand, Mr Brian McCourt, on behalf of Eskom, did state that “In terms of Section 30 of the NEMA and Eskom’s power station licenses (sic), the start-up and shutdown period of power stations are excluded from general compliance periods.” We acknowledge this clause in Eskom’s various AELs; however we dispute that all 3,181 exceedances could have resulted from start-up or shutdown periods. This is especially considering that many of the exceedances were significantly greater than the AEL limits.</p>			<p>Waterberg coal used at Matimba has a substantially higher sulphur level which has increased over time and as such emissions have been at higher and increasing levels. Given this Eskom applied and was granted a postponement and variation to its AEL for Matimba and Medupi in September 2018 which allows the monitoring of SO₂ against a monthly not daily average as was the case when Dr Sahu’s report was compiled.</p> <p>The high number of NO_x (and other SO₂) exceedances at Matla was due to an overstatement of emission levels as a result of drift on the monitoring equipment. The reported emissions reduced to below the limit the immediately following the first calibrations supporting the suspicion that the analysers drifted. The delay in calibration of this equipment was indicated in the monthly reports.</p> <p>(iii) Dr Sahu’s report appears to have wrong interpreted Matla’s PM emission limit as Matla’s limit as 125 mg/Nm³, this is incorrect it is 200 mg/Nm³ for units 1 to 4 and 100 mg/Nm³ for units 5, 6.</p> <p>Based on our interpretation of monitoring data it is our positions that whilst there are occasions of high emission levels Eskom stations generally comply with the conditions of their AEL’s in respect of emission levels.</p> <p>Dr Sahu’s report illustrates that there are periods on exceedance of the emission levels but it is argued that most of these exceedances are not-legal non-compliances and are explainable with detailed review. His report also illustrates the difficulty in interpreting monitoring results without the full understanding on factors and context.</p>

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12.44	Considering these alarming findings, we submit that it is misleading for Eskom to refer to the “continued” legal operation of its power plants. Urgent enforcement action should be initiated against Eskom in terms of its compliance with its relaxed AEL limits at a number of power stations, as opposed to considering this impermissible application to further delay and suspend compliance with the MES. Based on the National Enforcement and Compliance Report for 2017/8, we are aware that DEA has issued either enforcement notices or pre-compliance notices to Kendal, Lethabo and Camden, related to AEL non-compliance. Compliance action against Majuba appears to address waste issues only. We are concerned, however, that these enforcement activities do not seem to correlate to the extent and magnitude of the regular exceedances across 13 power stations scrutinised in the Exceedance Report.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	Noting Eskom's response to 12.43) above Eskom affirms its position that it is in general compliance with its AEL limits. Eskom investigate all instances of AEL non-compliance to identify measures to be implemented to address the reasons for non-compliance.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
12.45	(94) We remain eager to meet with both DEA and Eskom to understand its plan of action in relation to Eskom's apparent rampant state of non-compliance with the majority of its AEL limits.	Timothy Loyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	Eskom denies it is in a "rampant state of non-compliance". Eskom engages regularly with its licencing authorities on issues including compliance. Eskom has previously engaged with the CER and will consider the value of further engagement.
13. ATMOSPHEREIC IMPACT ASSESSMENT AND ATMOSPHERIC DISPERSION MODELLING				
13.1	We need to be presented with an indication of compliance with 2015 and 2020. Eskom's Edgemoor Ambient Air Quality Monitoring Station will provide a good indication of ambient air quality in the immediate vicinity of the Acacia Power Station. The City's Goodwood and Bothasig Station will be able to provide additional supporting ambient air quality monitoring data.	Ian Gildenhuys CoCT Head Specialised Environmental Health, Air Quality Officer City Health 1 August 2018 CoCT and WC Authority Engagement Meeting 10 September 2018 Via Email	Acacia	Eskom has decided not pursue the Acacia postponement application as it is not legally required at present. Update February 2019 – Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.
13.2	The AIR must comply with the AIR Regulations, R747. The ADM must comply with the Regulations regarding ADM, R533 dated 11 July 2014.	Ian Gildenhuys CoCT Head Specialised Environmental Health, Air Quality Officer	Acacia	The reports will meet the legal requirements.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		City Health 10 September 2018 Via Email		
13.3	Will the impact on air quality from ash emitted from the power stations also be assessed? The ash is of concern to us. It is dangerous for our health.	Themba Gulube Ward 19 Councillor – ELM Duvha Park Emalahleni Ward Councillor Briefing 17 August 2018	Duvha	A key tool used in the AIR is dispersion modelling. The model allows NEC to model emissions and determine what the likely ambient air level will be in terms of the exposure of people and the environment. Primary pollutants particulate matter (PM / ash), SO ₂ and NO _x will be modelled.
13.4	What radius is used to calculate the impact from emissions around the power stations and the cumulative impact on human health?	Shimmy Letsatsi Sharpeville Public Meeting 20 August 2018	Lethabo	There is no specific radius. From an assessment point of view NEC investigates a broad area and considers the cumulative emissions from several power stations to determine what contributes to the ambient air quality to which people are exposed.
13.5	Which monitoring stations are used to inform the AIR?	Shimmy Letsatsi Sharpeville Public Meeting 20 August 2018	Lethabo	NEC will make use of monitoring stations that are operated by the DEA and Eskom. NEC recognizes there are a number of monitoring stations in the Vaal Triangle which data we will be using as part of the assessment of the ambient air quality. The data is important for the assessment since it directly measures the quality of air that people breathe. It assists NEC to understand the accuracy of the dispersion model and to determine the potential impacts given the existing air quality.
13.6	We are concerned about the air pollution and water pollution.	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	NEC will assess the air pollution impact from Lethabo power station. The assessment will focus on three primary pollutants; gasses SO ₂ , NO _x and PM from the power station. This application process and its associated assessments do not address water pollution.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
13.7	How can the community trust the emission results from the power station? Who monitors the actual emissions?	Community Member Zamdela Public Meeting 21 August 2018	Lethabo	Emission readings from power stations are verified by government. Eskom monitors its own emissions as well as district-, provincial - and national government. Several of the ambient air quality monitoring stations used to inform the dispersion model is owned by the National Department of Environmental Affairs.
13.8	The modelling carried out as part of this application must adequately and transparently assess the impact of cumulative emissions, through a peer-reviewed study. The current outline in the BID of the ADM that will be used is unclear, and impossible for I&APs to judge in terms of its effectiveness. The outline of the ADM and approach must be revised in order for I&APs to meaningfully give input.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	The approach of the AIR will be described in the draft report which will be circulated for comments.
13.9	If any additional MES postponements were to be considered – which would be illegal – Eskom would be required to show that its air emissions are not causing and will not cause any adverse impacts on the surrounding environment. Given the natures of Eskom's production of electricity from burning coal, we believe that it is impossible for this requirement to be met.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	The AIR will show the impact of Eskom's emissions.
13.10	Eskom is required to show its air emissions do not cause or will not cause	Timothy Lloyd Attorney	All	Independent consultants will conduct a very detailed HRA and CBA. The assessments will analyse the number of people exposed to the emissions,

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>any adverse impacts on the surrounding environment. The AIR Regulations 2013 require that the AIR include :</p> <ul style="list-style-type: none"> • facility's impact on human health • Facility's impact on the environment (soil, water bodies, commercial agricultural operations) to be shown through the ADM. • The ADM must comply with the 2014 ADM Regulations 	<p>LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>		<p>cost to human health verses the cost to retrofit power stations.</p> <p>The ADM will comply with the 2014 ADM Regulations.</p>
13.11	<p>The ADM approach suggested in the BID is not acceptable:</p> <ul style="list-style-type: none"> • We note Sasol Synfuels and numerous coal mining operations are major emission sources within a 100km radius of many power stations seeking postponement. Yet the decision to only include individual Eskom power station emissions in the modelling is unacceptable and not in accordance with international best practice. • To assess cumulative effects only relative to an undetermined 'trend of diurnal variation plots' is unacceptable; • The model validation procedures should include 	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	All	<p>The approach of the modelling will be described further in the AIRs and will comply with existing legal requirements.</p>

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	<p>validation of the meteorological parameters and outputs</p> <ul style="list-style-type: none"> • The model should take cognisance of and encompass the long-range transport of Eskom's emissions from its tall stacks. • The model selected to assess air quality impacts must be capable of modelling both dispersion and chemical transformation (photochemical) processes and should include the modelling of SO₂ and NO_x emissions; • It should include, but not limited to PM_{2.5} emissions with PM_{2.5} stack emission estimated as a fraction (use internationally accepted default values) of PM₁₀ stack emission; • The modelling domain should be significantly large to ensure a proper, full assessment of impacts (based on stack height and emissions); • Modelled outputs (ambient concentrations) should be rigorously validated against ambient monitored data and calibrated in accordance with best practice, if necessary, so that modelled outputs may be used 			

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	<p>with confidence.</p> <p>In Eskom's previous postponement application (Tutuka power station) maintained that the health and environmental impacts of PM_{2.5} could not be assessed due to ambient air quality data from monitoring stations closest to Tutuka being inaccurate and missing. If this is still the case for Tutuka or any other power stations listed in this application, it's an unacceptable justification for not assessing the impacts from PM_{2.5}</p> <ul style="list-style-type: none"> • Model runs for validating the modelling should include emission rates based on measured daily average emission rates, as reported in emission reports required for each AEL and the List of Activities, for most recent reporting year. • Model outputs should include, for each pollutant modelled (for comparison with the NAAQS), 10 minute, hourly, daily (99% percentile values), average concentration isopleths (lines of equal concentrations) drawn at different levels, including WHO 			

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	<p>guideline values;</p> <ul style="list-style-type: none"> Impacts of requested rates should be based on a modelling scenario at the emission rates requested in the postponement application, assuming the station is operating at its design maximum capacity permitted throughput specified in its AEL, throughout the year. There should be full compliance with the ADM Regulations, including provision of all input files and data for public scrutiny. 			
13.12	<p>Since SO₂ and NO_x are precursors to secondary PM_{2.5} formation, and secondary PM_{2.5} contributes to total ambient PM_{2.5}, the AIR should report on the impacts of the postponement application with respect to PM_{2.5}, PM₁₀, SO₂ and NO_x. Exposure to ambient PM_{2.5} as a major health concern cannot be underestimated.</p> <p>Recent research (September 2018) into global estimates of mortality associated with long-term exposure to outdoor fine PM, revealed outdoor air pollution is an even more important population health risk factor than previously thought. GEMM constructed 5 causes of death examined by GBD. It predicts 8.9 million</p>	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	All	<p>The predicted ambient concentrations of PM_{2.5}, PM₁₀, SO₂ and NO_x at ground level have been modelled for the respective power stations through the ADM and are reported on in the AIR currently out for public review.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	deaths in 2015 due to PM _{2.5} , a figure 30% larger than that predicted by the sum of deaths among the five specific causes and 120% larger than the risk function used in the GBD. <i>(related to inadequate monitoring stations and data available around power stations to conduct meaningful AIRs)</i>			
13.13	<p>I will be reviewing the AIR to see the timeframe used for raw data by wind roses to determine the impact on the ambient air quality. I am aware that ADM is expensive but in the past for other power stations incorrect raw data was used and the impact on the ambient air quality was incorrectly predicted.</p> <p>I want to confirm how the AIR has interpreted the impacts on ambient level in terms of the corrosion index based on the cumulative impact from all the power stations.</p> <p>I will also be reviewing to verify if there is a distinction made between PM10 and PM2.5 and its related health impacts in the AIR.</p>	Melanie Gosling Kriel Resident Kriel Public Meeting 20 November 2018	Kriel Matla	<p>The ADM Regulations requires 3 years' worth of modeling. The emissions data are based on meteorological data. 3 Years modeling data (2015-2017) was used to inform the AIR and ADM.</p> <p>The AIR and ADM does assess and consider the differences of PM10 and PM2.5. The concern around the PM2.5 emission is it penetrates deeper into the lungs.</p> <p>The assessment focuses on ambient air quality data from monitoring stations which is physical data from the area. It monitors all the emissions which are present at ground level in the area.</p>
13.14	How far is the air quality monitoring stations from the communities of Emalahleni?	Lindoguhle Emalahleni Public Meeting 21 November 2018	Kendal Duvha	Kendal power station's monitoring station is located close to the power station and Elandsfontein monitoring station far from it. There are also monitoring stations in the communities of Phola, Kriel and

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
			Kriel Matla Komati	Kwazamokuhle. Overall for the Emalahleni area there are monitoring stations in the towns of Witbank and Middelburg, at Komati, Elandsfontein, Kendal, Phola and Kriel. Monitoring Stations are expensive to establish and require a great deal of maintenance to ensure that it records all the data correctly. It would be ideal to have more monitoring stations yet due to its cost the current monitoring stations are used.
13.15	Only Kendal power station has a monitoring station downwind of the station. Must air quality monitoring stations not by default, be downwind from power stations? Or is there a technical explanation for that?	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	Kendal	Eskom has research sites where it wants to understand the behaviour of its emissions. In the case of Kendal, Eskom wanted to understand where its emissions impact most. Eskom placed a monitoring station at Elandsfontein where it represents the best regional air quality. Then Eskom also has air quality monitoring compliance sites which are a condition in the AEL's. In the conditions of the AEL the licensing authority will stipulate where it wants Eskom to place monitoring stations for instance; where people stay. A good example of a compliance monitoring site is at Marapong close to Medupi and Matimba power station. If resources were available one would construct air quality monitoring stations for every power station in every community and at a range of regional sites, however these monitoring stations are expensive to maintain. With the ADM one tries to fill the gaps to find out what is the ambient air quality situation in between the areas of the air quality monitoring stations. In the 1990's there were only 3 monitoring stations across the entire Mpumalanga Highveld.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
13.16	It's just interesting to understand why the air quality monitoring station at Kendal power station is located right next to the power station.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	Kendal	The position of the monitoring station is due to Kendal being a high SO ₂ polluter.
13.17	Is an 80% data recovery from monitoring stations good enough for the air dispersion model? Because to me it looks like the model is informed by patchy data which is highly variable, especially with regards to the SO ₂ emissions. But NEC also included less than 80% accurate data. How much of the current data is then reliable?	Melita Steele Greenpeace Africa 23 November 2018 Midrand Public Meeting	All	<p>If one only uses the 80% data, a substantial number of usable data is lost. A number of the monitoring stations have 50-80% accurate data. In the AIR NEC talks about compliance being implied but not assured. If data with a less than 50% accuracy is used for the ADM, its gives an exaggeration of the concentrations or an under estimation of the concentrations.</p> <p>What NEC has tried to do is too look at what makes sense. From a direct compliance point of view we do not think that there is a major issue with SO₂ and don't expect to see too much noncompliance across the board, but we do expect to see a significant SO₂ loading. NO₂ contributes to secondary pollutants in the formation of PM_{2.5}. In general terms for NO₂ we do not expect to see noncompliance.</p> <p>PM is highly problematic which is evident from the overall outcome of the AIRs. The AIRs pin the essence of the data and modelling.</p> <p>However as stated in the AIRs we cannot assure compliance from use of data of less than 80% accuracy thus compliance is implied.</p>
13.18	It is indicated that the monitoring data from the Sharpeville and Sebokeng AQMS show non-compliance with the PM limit value of the NAAQS. How can	Thami Mvala Ward 12 Councillor, Sharpeville	Lethabo	Eskom must install emission abatement equipment at Lethabo power station to reduce the PM emissions at the stack. By reducing the emissions at the pollution source the impact on ambient air quality is reduced. However many of the low level emissions experienced at Sharpville and

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	we get Sharpeville and Sebokeng to comply with the NAAQS?	27 November 2018 Sharpeville Public Meeting		Sebokeng are associated with sources beyond Eskom e.g. local dust or burning and addressing the power stations alone will not ensure compliance with the NAQS.
13.19	<p>We are not only concerned with Majuba power station. At Amersfoort we suffer the consequence of the cumulative impact from all the coal fired power stations.</p> <p>Former scientific studies conducted in the area show that the airflow from the Vaal Triangle and Mpumalanga Highveld converge at Amersfoort causing a concentration of air pollution in the area resulting in acid rain. Amersfoort experiences the world's worst acid rain showers equivalent to the acid rain experienced in the Black Forest in Germany. This is the significance of the pollution caused at Amersfoort.</p>	Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	All	We would welcome a reference to this study because our understanding of the risk of acid deposition based on work done in South Africa (detailed in the AIR) is that acidification is definitely not at the levels suggested here. We nevertheless accept that the impact of air pollution cannot be considered only from one source (i.e. a single power station such as Majuba) and has to be assessed from multiple sources as has been done in the AIR.
13.20	In terms of the Summary AIR: For a decision to be made on the acceptability of proposed alternative emissions limits the implications for ambient air quality have to be understood. This is not the case at the moment. E.g. with regard to SO ₂ 10-minute average. The Kendal monitoring station which is immediately downwind of the power station shows the highest number of exceedances of the NAAQS limit value, with more than 300	<p>H.A. De Koningh Free Land Consulting Engineer, Heidelberg 16 January 2019 Official written comments</p> <p>Reiterated in 4 February 2019</p>	Kendal	We accept that there are data limitations from the various monitoring stations but disagree with the assertion that we have not been able to characterise the prevailing air quality well enough for a decision to be made on the acceptability of the postponement applications. There are certainly instances of non-compliance with the NAAQS as we have shown in the AIRs but that cannot be taken to mean that the prevailing ambient air quality has not been assessed well enough for a decision to be made.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	in 2015, even with a data recovery of less than 50%.	Official written comments		
13.21	<p>Analysis of monitoring data, wind speed and wind direction can reveal the principal sources of air pollutants responsible for the poor air quality in Mpumalanga.</p> <p>The polar plots at Secunda and Embalenhle show that highest pollutant concentrations occur when wind speeds are low. This suggests that a local source is the primary driver of high pollution levels. The monitoring sites are located within 10 km of the Sasol power plant complex.</p> <p>The polar plots at Middleburg, Hendrina and Ermelo show that highest pollutant concentrations occur when the monitoring sites are down-wind of the nearest power plants in the Mpumalanga power plant cluster. Furthermore, the polar plots at Three Rivers, Sharpville and Zamelda surround the Lethabo Coal power plant. In each case the highest pollutant concentrations occur when the monitoring sites are down-wind of Lethabo Coal power plant.</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>Eskom acknowledges that its emissions have an impact on ambient air quality with the actual extent of this being described in the AIR's are referred to previously.</p> <p>See 11.21 for an assessment of air pollution and the contribution of sources beyond Eskom.</p> <p>Eskom contends that a decision on the MES postponements should be taken in the national interest, weighing up the costs and benefits of compliance. Eskom further contends that the proposed Eskom emissions reductions plan presents a fair balance between cost and benefit whereas full compliance with the MES does not.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	These observations provide evidence that the highest concentrations recorded at these monitoring stations are linked to emissions from coal power plant activity in the region. Compliance with the NAAQS described above is only likely to be achieved by reducing emissions from industrial coal combustion processes in Mpumalanga. This must include strict enforcement of emission standards for PM ₁₀ as well as SO ₂ and NO ₂ which are pollutants in their own right but also contribute to the formation of secondary pollutants such as O ₃ and particulate matter.			
13.22	<p>NO₂ pollution hotspot in Mpumalanga</p> <p>Ground breaking satellite data from 1 June to 31 August 2018 analysed by Greenpeace reveals the extent of the air pollution crisis by mapping the world's NO₂ air pollution hotspots across six continents in the most detail to date. The world's largest NO₂ air pollution hotspot in that period of time was Mpumalanga province in South Africa. The satellite data further reveals that the cities of Johannesburg and Pretoria are also affected by NO₂ pollution which blows across from Mpumalanga and into both cities due to close proximity and</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	Stations in MPU-Highveld	Eskom and other parties including leading academics and officials from the DEA have responded to the Greenpeace NO ₂ hotspot argument previously in a National Assembly Portfolio committee session in 2018. In summary at that session (and it remains Eskom's position) that the hotspots portrayed by Greenpeace are associated with high level NO ₂ emissions which do not impact on local communities. Actual monitoring of ambient air quality clearly indicates there are relatively few areas in the country where NO ₂ is exceeded as a result of industrial emissions.

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	regular eastwinds. This means that plumes of dangerous NO ₂ pollution regularly cover these cities and their 8 million people. Nitrogen Dioxide (NO ₂) is a dangerous pollutant in and of itself and also contributes to the formation of PM _{2.5} and ozone, two of the most dangerous forms of air pollution.			
13.23	<p>Inadequate air pollution monitoring and data</p> <p>Transparency and public accountability are both lacking in terms of the availability of up to date air quality information. Although the South African Air Quality Information Systems (SAAQIS) claims to provide daily updates on air quality monitoring for various pollutants at monitoring stations in the priority areas, this information is not available for dates prior to November 2018 for any station and later in December 2018 for several stations. Some stations are also still completely offline and are not reporting data, as has been confirmed by 41the National Air Quality Officer. Data reports on air quality in the Highveld Priority Area are not available past July 2017, and for other stations the latest written report is from March 2018. This sudden halt in the release of</p>	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 4 February 2019 Official Comment</p>	All	<p>In the AIR the issue of data availability is addressed in detail. Ambient data has been used where it is available and the modelling completed is considered scientifically defensible given the data availability. See 19.1 where data availability does not meet 80% a practical approach to interpretation has been taken making use of “implied compliance”</p> <p>It is also important to emphasize that the dispersion modelling is not directly dependant on the ambient air quality data so the paucity of measured data does not have an impact on the dispersion modelling.</p>

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	<p>written reports is increasingly concerning as time goes on.</p> <p>There are also gaps in monitoring of all major pollutants, and most monitoring stations only report data for one or two pollutants (i.e. only O₃, NO₂, PM, or SO₂, instead of comprehensive data). Transparency and data availability for public accountability are crucial in ensuring that SAAQIS and the Department of Environmental Affairs are providing accurate information on the state of the air. Claims that NO₂ levels have been below standards for the year 2018 cannot be corroborated without such transparency.</p>			
13.24	<p>How good is dispersion modeling of e.g. ambient PM₁₀ concentrations?</p> <p>A combination of SO₂ and NO_x emissions from all the Highveld power stations is predicted to form a significant component of the PM_{2.5} load especially over Emalahleni area, which is in noncompliance with PM standards. This a cause for concern. In addition, the combined SO₂ emissions from all Eskom power stations are predicted to contribute a significant amount to the pollution in and</p>	<p>H.A. de Koningh Free lance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official Written Comment</p>	All	<p>The dispersion modelling has been undertaken in compliance with the applicable regulatory standards by qualified professionals independent of Eskom. The results of the modelling are considered academically defensible given the data available.</p> <p>The comments on the results of the modelling are correct.</p>

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	around the Emalahleni and Middelburg areas and even extending south towards Komati Power Station.			
13.25	<p>Daily average particulate matter (PM₁₀) concentrations indicate that there is wholesale non-compliance with the NAAQS for all stations.</p> <p>Annual average PM₁₀ concentrations indicate that there is non-compliance with the NAAQS for all years for all stations except for Elandsfontein in 2016 and 2017.</p> <p>Daily average particulate matter (PM_{2.5}) concentrations indicate that there is again wholesale non-compliance for all the monitoring stations where at Kendal for example the limit value was exceeded on no less than 201 days (where no more than 4 is allowed) in 2017.</p> <p>Annual average PM_{2.5} concentrations indicate that there is non-compliance with the NAAQS for all years for all the monitoring stations, indicating sustained elevated concentrations of PM_{2.5} in these areas.</p> <p>Eskom is aware that Kriel is situated within the Highveld Priority Area.</p>	<p>H.A. de Koningh Freelance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official Written Comment</p>	All	<p>The results of the AIR as quoted are correct.</p> <p>The Eskom emission reduction plan includes the instilaation of technology and the shutting done of older stations. Eskom supports governments commitments as articulated in the IRP and the Independent Power Producers Programme.</p>

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	<p>Cumulative Assessment of Requested Emission Limits in the Northern Highveld (from: ESKOM ENV18-R242 rev 1 Matla, ESKOM ENV18-R238 rev1 Kriel): Daily and annual average PM₁₀ and PM_{2.5} concentrations could be in noncompliance and for extended periods of time.</p> <p>However, a combination of SO₂ and NO_x emissions from all the Highveld power stations is predicted to form a significant component of the PM_{2.5} load especially over Emalahleni area, which is in non-compliance with PM standards. This a cause for concern.</p> <p>A key consideration is that half of the existing Eskom power stations will be shut down and be decommissioned in the next 10 – 15 years significantly reducing the emissions. In this case I would say that the updated IRP rather makes very sure that REIPPPP is installed timely so that all the focus is on sustainable energy supply with the changing energy mix.</p>			
13.26	Kendal monitoring station experiences large concentrations of SO ₂ by virtue of being directly downwind of the power station. Could coal beneficiation be	H.A. de Koningh Freelance Engineer Energy & Climate Change	Kendal	Sulphur is chemically bound within the coal so the impact of beneficiation is low.

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	applied for Kendal coal to lower the sulfur content of the coal?	Heidelberg 4 February 2019 Official Written Comment		
13.27	<p>In the Summary AIR under 2.2.2 Annual Average it's mentioned: Vaal Triangle monitoring stations have generally larger NO₂ concentrations than the Highveld stations. Lethabo is however not admitting it comes from them. But I do have the query why Lethabo is not installing low NO_x Burners and Matla is, while the impact on air quality standards is for both power stations seen as very low and compliance to air quality standards is very likely?</p> <p>Also for Lethabo it is commented (in "ESKOM ENV18-R241 rev 1 Lethabo", but that NO₂ is generally higher in the Vaal than in the Highveld. Also it says later: of Lethabo indicates that diurnal hourly averages exhibit pronounced morning and late afternoon peaks for PM₁₀, PM_{2.5} and NO indicates that diurnal hourly average exhibit pronounced morning and late afternoon peaks for PM₁₀, PM_{2.5} and NO₂.</p> <p>Installation of Low NO_x burners should also apply to Kendal. The harmful</p>	H.A. de Koningh Freelance Engineer Energy & Climate Change Heidelberg 4 February 2019 Official Written Comment	Lethabo Matla	Lethabo is a source of NO ₂ emissions but there are other industrial sources which are considered significant in the local area.

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	secondary impact of NO ₂ as a precursor to ozone increase at ground level and should be urgently assessed.			
13.28	(42) In our previous objections, we have consistently noted that Eskom's power stations emit very significant volumes of SO ₂ and NO _x , in addition to PM. Indeed, it is highlighted above in paragraph 37 that power generation accounts for 73% of all NO _x and 82% of SO ₂ in the Highveld. This is due to the fact that SO ₂ and NO _x , as primary pollutants, are also transformed through chemical and physical processes in the atmosphere, to secondary PM _{2.5} . This formation contributes significantly to total ambient PM _{2.5} . We have therefore repeatedly recommended that the dispersion model selected to assess the air quality impact must be capable of modelling both dispersion and chemical transformation (photochemical) processes, and should include the modelling of SO ₂ and NO _x emissions.	Timothy Lloyd Attorney-Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	Secondary particulates are formed through chemical reactions in the atmosphere of primary (emitted) pollutants of SO ₂ and NO _x . The CALPUFF model used for the AIR uses a stoichiometric thermodynamic model to estimate the partitioning of total inorganic nitrate between gas phase nitric acid and particle phase ammonium nitrate, using measured ambient background ammonia and ozone concentrations. The secondary particulates include ammonium nitrate and ammonium sulphate. Ambient concentrations of secondary particulates may be assessed against the NAAQS for PM _{2.5} as these are typically fine particulates.
13.29	(44) We note the observation that "analysis indicates that the non-compliance is not only due to Eskom Power Stations but a function of a multitude of sources in the Highveld" and "ambient air quality monitoring data indicate that the elevated pollution	Timothy Lloyd Attorney-Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA	All	Eskom confirms that this is its understanding.

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	levels in the Highveld require a holistic approach, addressing all identified and potential sources. Therefore, a single approach, targeted at only eliminating Eskom power station emissions will not result in acceptable ambient air quality levels that are not harmful to human health and the environment.”	4 February 2019 Official comment		
14. ECONOMICS / COMPLIANCE COSTS / SOCIAL INVESTMENT BY ESKOM				
14.1	Will it not be more cost effective to install retrofit equipment only at the stacks as oppose to each unit?	Rob Jone Sedibeng District Municipality Midvaal Ward 5 Councillor 20 August 2018 Vereeniging Public Meeting	Lethabo	<p>The abatement installation is unitized and so is the stack. There are three flue release units within the stack itself. This is the modern method of building chimneys.</p> <p>To combine all into one flue release unit requires a much larger abatement plant. This in turn is an issue to operate and maintain when switching between units.</p>
14.2	We are all aware that Eskom has financial issues. How will Eskom finance the retrofits at the power stations?	Lucas Motswedi Kwazamokhuhle Public Meeting 28 August 2018	Komati Hendrina Arnot	<p>The cost of full compliance with the MES will be approximately R 300 billion. The full compliance costs will significantly impact on the electricity tariff. To meet the existing plant limits the tariff increase would be 3% and at least 10% to meet the new plant limits, which directly influences the affordability of electricity to the consumer. Eskom does not have the finances to implement all of these retrofits and especially not in the required MES compliance timeframe.</p> <p>Eskom will therefor target the highest polluting power stations for retrofits. The older fleet, which will be decommissioned soon, will not be retrofitted since it would only operate for a few years post-retrofit, before shutting down. It therefore does not make sense to spend the money on the older fleet. Hence Eskom is applying for postponement</p>

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				from the compliance timeframes of the MES.
14.3	Eskom recently requested a 33% increment from NERSA. Why does Eskom want to increase the electricity tariff again to cover the cost for retrofitting?	Thomas Mnguni Groundwork Kwazamokhuhle Public Meeting 28 August 2018	Komati Hendrina Arnot	<p>Eskom is applying for postponement from the MES compliance timeframes to allow for the installation of emission abatement equipment at its power stations in line with Eskom's Emission Reduction Plan. The plan will be implemented over a 10 year period to reduce emissions at its power stations.</p> <p>The planned retrofits are aimed at reducing the emissions and the health risk, because Eskom cares about people's health.</p> <p>The 33% increment application lodged by Eskom to NERSA relates to the costly operation of power stations and does not solely cover retrofits.</p> <p>Eskom is required to run as a going concern and must recover any costs incurred</p>
14.4	Please note our communities are not worried about air pollution. They are desperate for job opportunities.	Khetiwe Nkosi Speaker for DLM Balfour Ward Councillor Briefing 21 August 2018	Grootvlei	In this application process Eskom seeks to apply to the NAQO for postponement so that Eskom can continue with its current operations. Through the process, there are no additional job opportunities to be created. If the postponement application is not approved by the NAQO, Eskom's licence to operate is threatened, and job opportunities enjoyed by all employed at the station, may be at risk.
14.5	<p>Eskom's cost for compliance with the MES may be over-inflated in the BID.</p> <p>A health impact assessment annexed to our submission estimates Eskom's full compliance with MES at a cost saving of R 230 billion over the lifetime of Eskom's power plant, due to avoided premature deaths from air pollution. Eskom has</p>	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	Eskom has provided its best estimate of costs based on its experience and market analysis.

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	heavily over-estimated the costs for compliance with the MES, so too the impact electricity tariff.			
14.6	In the BID Eskom views the compliance cost as too high. If Eskom cannot afford to meet the legal MES, then decommissioning of the coal fired power stations should be brought forward as soon as possible.	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	Eskom's Emission Reduction Plan has been proposed for deployment as a means of driving compliance. The plan further indicates when power stations will reach its 50 year life expectancy. Eskom's older fleet will be decommissioned in the next 12 years according to its 50-year life expectancy and in line with the draft IRP prepared by the Department of Energy. The early closure of stations beyond that which is presently proposed would place the stability of the electricity grid at risk.
14.7	<p>All decommissioning must be done in conjunction with a JET Plan, backed by National Government, to look after workers in the coal sector. The JET plan must address the critical issues of potential job losses in the fossil fuel sector and the mitigation measures of re-skilling, re-training and job placement so that these workers can get suitable alternative employment.</p> <p>The advantages for SA of decommissioning coal fired power stations earlier include:</p> <ul style="list-style-type: none"> - Improved air and water quality, particularly in Mpumalanga. - Contribution to our international climate change commitments - Earlier removal of potential stranded assets from Eskom's balance sheet 	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	Decommissioning will be done in accordance with applicable legal requirements.

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	<ul style="list-style-type: none"> - Stimulation of the renewable energy industry - Faster transition to a low carbon economy 			
14.8	We would like to form part of the solution in providing services to help reduce emissions in an efficient and sustainable manner.	Fanafuthi Tina Nkosi Kubekezela Holdings Carolina 16 August 2018 Comments and Response Form	Hendrina Komati Arnot	Any opportunities for work or services will be advertised through Eskom's standard processes.
14.9	Want to provide a service in Electrical Engineering, Infrastructure, general building and supply of materials.	Thembinkosi Dlamini Balfour 22 August 2018 Comments and Registration Form	Grootvlei	Any opportunities for work or services will be advertised through Eskom's standard processes.
14.10	Our people are more concerned about job opportunities. How would we as a community benefit from this application, if we were to consent to the postponement of the MES compliance time frames?	Enoch Tshabalala Siyathemba Public Meeting, Balfour 21 August 2018	Grootvlei	Grootvlei power station employs some members of the Siyathemba community, and families are benefiting through such employments. Failure to secure the licence to operate would render Grootvlei to be unable to operate, and such would affect the opportunities currently being enjoyed.
14.11	Eskom must decrease air pollution and increase job opportunities. Will Eskom hire local people to assist Naledzi to decrease the air pollution in the area?	Morris Mazibuko Siyathemba Public Meeting, Balfour 21 August 2018	Grootvlei	Eskom is currently busy with retrofitting to reduce emissions, as a means to reduce its impacts. The work being undertaken is a specialized study; hence Eskom contracted NEC, as independent specialists, to undertake the required studies.
14.12	How will we as a community benefit from this project?	Oupa Ndeba Thabakgoadi Public Meeting 21 August 2018	Grootvlei	Grootvlei power station employs some members of the community, and families are benefiting through such employments. Failure to secure the licence to operate would render Grootvlei to be unable to operate, and such would affect the opportunities currently being enjoyed.

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14.13	<p>What is Lethabo power station doing for the people of Metsimoholo?</p> <p>The roads are in bad state. Does the power station assist with learner ships and job opportunities in the local area?</p>	<p>Community Member Zamdela Public Meeting 21 August 2018</p>	Lethabo	<p>Lethabo power station is currently engaging its Lethabo Stakeholder Forum where it involves the community of Zamdela. Through this engagement the power station is investigating the situation in Zamdela to conduct social investment in the community.</p> <p>When learnerships and job opportunities are available, Lethabo power station will make it available to locals.</p>
14.14	<p>We would like to provide professional services for LNB retrofit installation at Lethabo power station.</p>	<p>Linda Khumalo Mtungwa Enterprise Sebokeng Comments and Response Form 11 September 2018</p>	Lethabo	<p>Refer to response under 14.8</p>
14.15	<p>I would like to participate in the construction of Port Rex power station as a service provider in the event that the project goes through.</p>	<p>Zolani Sihola ZN Trading East London Comments and Response form 11 September 2018</p>	Port Rex	<p>Port Rex power station is an existing peaking station and no retrofits are scheduled for the power station. Eskom has decided not to pursue the postponement for Port Rex and there is no immediate requirement for this presently.</p>
14.16	<p>South Africa is signatory to several environmental management protocols, yet it seems as if different socio economic activities are using environmental pollution tactics, such as Eskom, to get an increase in the electricity tariff.</p> <p>Eskom must make a corporate social investment in the community who are bearing the brunt of the pollution. We want to benefit from the economic</p>	<p>Jeffrey Skosana Community Development Forum Kriel Public Meeting 20 November 2018</p>	Kriel Matla	<p>Social investment is valued at Kriel power station. There is a lot of social investment that Kriel and Matla power station has done. We have just built a high school and are busy rebuilding a primary school in Thubelihle. There are many community projects being undertaken by Eskom in the local community. For the last financial year Kriel and Matla power station have spent R 12 million in Bethal and Thubelihle communities.</p> <p>The stations also look at training and education for the local children through provision of bursaries for the youth. We also assist young business people to grow. The power stations also have many job opportunities such as cleaning; tuck shop management and cooking that</p>

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	activities at Eskom. We cannot have external businesses come and reap the economic opportunities in our local area. There are positive communications with Eskom as is. GB (Eskom, Kriel power station)			can be filled by locals. When the power stations have outages it requires low skilled workers which will be appointed from local communities. A meeting took place on 22 November 2018 at Kriel power station to assist the community with job opportunities and to iron out the communities frustrations.
14.17	Is there a possibility that government can fund Eskom the retrofit cost of power stations so that it does not affect consumers? Eskom is in regular communication with government as to keep the price of electricity low, yet it remains an issue. Free basic electricity should be available to people who do not earn enough money.	Baby Mlosho Thubelihle Resident Thubelihle Public Meeting 20 November 2018	Kriel Matla	The cost for retrofitting can only be paid through electricity sold by Eskom. To reduce the impact on the consumer Eskom is therefore proposing to rather implement the ERP, which involves less retrofitting and a reduced tariff increase.
14.18	The youth of Thubelihle are not employed. They have registered companies. Is there no work for the community to do at the power station? What is required for us to get tenders from the power station?	Alina Lebashwa Thubelihle Resident Thubelihle Public Meeting 20 November 2018	Kriel Matla	All tenders available at power stations are advertised on the Eskom Bulletin. A meeting took place at Kriel power station on 22 November 2018 between Matla and Kriel power station general management and the members of the Thubelihle community to discuss available job opportunities and iron out the communities' frustrations. All issues tabled at the meeting were addressed. Since the Thubelihle leadership will change at the end of the term, Matla and Kriel power station General Managers will meet in a follow up meeting with the new community leadership in mid-March 2019.

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14.19	Why can't we as a community benefit from job opportunities at the power station?	Member of Ogies Community 21 November 2018 Ogies Public Meeting	Kendal	There is a standing stakeholder engagement forum for Kendal power station in which Eskom discusses opportunities for work with members.
14.20	What is Eskom doing for the communities that are affected by the power station emissions? We are not even employed at the power station. We want to benefit from the power station and obtain job opportunities and contracts from the power station.	Member of Ogies Community 21 November 2018 Ogies Public Meeting	Kendal	Refer to response above under Section 14.19. A person residing in a low income area earning below a certain income does not pay for electricity. Eskom will implement the ERP to reduce its emissions. It will cost R 46 billion to implement with a tariff increase of 2-3%. Government's requirement to reduce emissions will cost R 187 billion with a tariff increase of up to 10%. Eskom feels the implementation of the ERP is more feasible and will result in lower tariff increase.
14.21	The air quality does not only affect the low income areas it affects all the people around the power station. Why does Eskom not subsidize all the people around the power station? The electricity we purchase from Emalahleni Local Municipality is very expensive.	Member of Ogies Community 21 November 2018 Ogies Public Meeting	Kendal	The consumer must pay for the electricity used. Eskom supplies electricity to the local municipality. The local authority thereafter adds a resale value to the electricity units. The rate per unit in Emalahleni is not determined by Eskom.
14.22	How does Eskom have money for all the specialists but not to retrofit power stations?	Themba Mthimunye ECCG Kwazamokuhle Public Meeting 22 November 2018	All	The law requires that Eskom appoint an independent consultant to conduct the AIR and PPP for the postponement application. Eskom does have money to retrofit power stations. It will spend R 46 billion on retrofits. Eskom is saying it cannot afford to implement all the retrofits required to bring all stations in compliance with the MES as this will cost R 186 billion.

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14.23	<p>The increase in electricity tariff will have a negative impact on the community, since the power stations will be decommissioned and people will be left unemployed.</p> <p>Is there any way the community can have inputs to the electricity tariff?</p>	<p>Doktor Skosana Kwazamokuhle Ward Councillor 22 November 2018 Kwazamokuhle Public Meeting</p>	All	<p>In order for Eskom to implement the ERP it requires R 46 Billion. Eskom can only recover the cost for sale of electricity and hence needs to increase to electricity tariff by 2-3% to recover the costs.</p>
14.24	<p>How much in total will the electricity tariff increase with the planned retrofits?</p> <p>Does the current 15% tariff increase budget for retrofits?</p> <p>So for the next financial year Eskom will increase the electricity tariff by 20%?</p>	<p>Thomas Nguni Groundwork 22 November 2018 Hendrina Public Meeting</p>	All	<p>Every year Eskom submits a budget to NYPP. For the next 10 years Eskom requires R 67 billion.</p> <p>It is up to the National Energy Regulator of South Africa (NERSA) on what tariff will be approved.</p>
14.25	<p>Sasolburg community does not benefit from Eskom. I have never seen Eskom offering anybody from Zamdela learnerships.</p>	<p>Zamdela Community Member 27 November 2018 Zamdela Public Meeting</p>	Lethabo	<p>Lethabo power station engages with the Lethabo Stakeholder Forum where it involves the community of Zamdela. Through this engagement the power station is investigating the situation in Zamdela to conduct social investment in the community.</p> <p>When learnerships and job opportunities are available, Lethabo power station prefers to make it available to locals.</p>

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15. IMPERMISSIBILITY OF POSTPONEMENT APPLICATIONS				
15.1	VEJA is of the view that in terms of the Climate Change, these postponement applications are against the spirit of South Africa's commitment to the Paris Accord.	Samson Mokoena VEJA Sharpeville Public Meeting 20 August 2018	All	<p>SA has agreements on CO₂ limits. With the current IRP Eskom will remain within the limits it agreed upon in the Paris Accord. The switching off of the older stations, as stated in the IRP, will ensure that Eskom stays with the Paris Accord. Eskom cannot retrofit station to stop CO₂, one has to stop generating electricity with coal to stop CO₂ emissions and convert to renewable energies.</p> <p>Eskom has an existing (company-level) Pollution Prevention Plan for its' greenhouse gas emissions which has been approved by the Department of Environmental Affairs.</p> <p>Eskom's greenhouse gas emissions are also subject to a company-level (not facility-level) carbon budget established by the Department of Environmental Affairs.</p> <p>The reason for greenhouse gases to managed at a company-level is due to the fact that there is currently no commercially-available end-of-pipe technology which can be applied to large coal-fired power stations. Carbon capture and storage technology is currently being demonstrated at several international sites and may prove viable in time, bearing in mind that the application would also require a suitable, proven, geological storage site. Geological storage is being explored by the South African Centre for Carbon Capture and Storage based in SANEDI. In the meantime, the only option to reduce greenhouse gas emissions at individual power stations, is to limit production. Indeed with the shutdown of stations as proposed in the Eskom emission reduction plan provided as</p>

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				<p>part of the MES application there should be a decrease in total emissions as older stations are displaced by Kusile and Medupi which are built to achieve higher efficiencies than previous South African power station designs.</p> <p>This postponement application does not deal with any CO₂ requirements directly. It is is not a legal requirement of the MES to address CO₂ emissions.</p>
15.2	In 2014 Eskom applied for postponement from the MES and the NAQO authorised it. Now in 2018 Eskom is applying again for postponement. Rolling postponements are unlawful. Eskom is breaking the law.	Thomas Mnguni Groundwork Kwazamokhuhle Public Meeting 28 August 2018	Komati Hendrina Arnot	The MES makes provision for postponement of the compliance timeframe. It is in line with this provision that Eskom is submitting an application for postponement and following the required application process. Eskom disagrees with the assertion that rolling postponements are illegal.
15.3	<p>The Section 4 of the Constitution of the Republic of SA 1996 states ‘everyone has a right to an environment that is not harmful to their health or wellbeing’. It mandates the President and all other members of government to ‘uphold, defend and protect’ the constitution.</p> <p>It is outrageous for the DEA to approve Eskom’s plea to flour Section 24 of the Constitution. It is unacceptable for government to consider permitting Eskom, knowingly, to continue polluting the environment and both killing and causing other harm to poor and therefore</p>	Shumirai Blessing Mudavanhu AIDC Mowbray, Cape Region 11 September 2018 Written comments	All	<p>Eskom is following the legal process to apply for postponements as permitted in terms of the present regulatory framework and the legally applicable emission standards.</p> <p>DEA will make a decision on the postponement based on all the available information.</p> <p>In making the decision DEA will be bound by the Constitution and NEMA which require it to respect, promote and fulfil the social and economic rights in addition to the environmental right.</p> <p>Further the decision makers must be informed by the requirement that development must be socially, environmentally sustainable.</p> <p>Sustainable development requires the consideration of all relevant factors.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	vulnerable people. Eskom is asking once again for permission to ignore compliance with, by international standard, SA's low emission requirements.			See also 1.18
15.4	The MES are a measure that functions to reduce the pollution and the impact on human health from Eskom power stations. In this regard, to attempt to avoid meeting the MES via this postponement application, Eskom are in opposition to a law that upholds our Constitution.	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	Refer to response under 15.3 and 1.18
15.5	Absolutely no further postponement should be given to Eskom based on our constitutional right to a healthy environment. We opposed the postponement granted in 2015 and so too, Eskom's 2018 application for further postponement. It equates to rolling postponements which is not legally allowed and will have significant detrimental effects on the environment (including health, social conditions, economic conditions, and ecological conditions).	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment	All	Refer to response under 15.3 and 1.18
15.6	We reiterate that exemptions from MES compliance are illegal. Rolling postponements until eventual decommissioning (such as Eskom seeks for SO2 2020 MES for its stations) are	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager	All	Refer to response under 15.3 and 1.18 Eskom's application is in compliance with the applicable legislative provisions (the MES regulations) and is not illegal.

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	illegal as they are equivalent to exemptions.	11 September 2018 Official Comment		
15.7	<p>Should Eskom persist with the intended unlawful postponement applications, and because the NAAQS are out of compliance in the HPA and VTAPA, in addition to current objections, we will request the NAQO to:</p> <ul style="list-style-type: none"> ▪ Review and withdraw any leniency granted to Eskom in its 2015 postponement decision; ▪ Require Eskom's immediate compliance with the existing 2015 MES standards; and ▪ Require that Eskom immediately meet the new plant standards for PM₁₀, SO₂ and NO_x on 1 April 2020. 	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	All	<p>Refer to response under 1.23 and 15.3.</p> <p>Implementing the requested actions would significantly impact on Eskom's ability to ensure the continuity of electricity required by the country.</p>
15.8	<p>Eskom has not met the required timeframes and limits under its 2014 postponement application, clear in the 'Updated Emission Reduction Plan' in the BID. Further application for postponement is now made through the decommissioning of the older fleet of power stations, in effect an illegal exemption from the MES. The application should not be considered, it's not legally permissible.</p>	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>	All	<p>Eskom denies it has not met (all) the required time frames and limits under its 2014 postponement. Eskom has met some of the time frames and has experienced delays in respect of others. Refer to response under 7.33 for a further discussion on the ERP timeframes.</p> <p>Eskom disagrees that consideration of the decommissioning of older fleet as part of the MES decision making process would be illegal. The decommissioning of the older fleet is included as an element of the ERP as it does practically reduce the pollution load across the HPA and VPA and will improve the compliance status with respect to particular pollutants across the area.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
15.9	Eskom is seeking another postponement application for its power plants after its failure to meet not only the timeframes granted in the 2014 postponement, but also the significant number of exceedances of the relaxed emission limits in its AELs. Rolling postponements until eventual decommissioning (sought for SO ₂ 2020 MES for almost all stations) are illegal and equivalent of exemptions.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	All	Refer to response under 15.8 and 7.33 Eskom is not applying for “rolling postponements” but has applied for postponement, suspension and alternate limits as is permissible in terms of the MES regulations.
15.10	Eskom has again failed to provide evidence that it has taken sufficient steps to ensure compliance with the 2015 and 2020 MES. The 2015 granted postponements have not been met and inadequate reasons provided for its failure to meet the required timeframes. At the 2017 Air Quality Lekgotla, DEA stated MES postponements have been subject to abuse; hence Section 24 rights in the Constitution have been undermined. Eskom’s current application is an example and should be refused.	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment	All	Eskom has clearly illustrated the steps it has taken to reduce its emissions generally and in respect of the its MES compliance commitments in section of 2 of its summary motivation. Progress in respect of the postponements and reasons for delays have been addressed in 7.33 above and the Eskom summary motivation. Eskom notes the alleged statement from DEA in respect of abuse of the postponements. The legal regime prior to the October 2018 amendments of the MES regulations allowed for applications for postponements on a 5 year basis and how applying for a legally permissible postponement could be regarded as abuse is questioned. Especially given that in the 2014 MES application Eskom was clear that its ERP would not create full compliance to the MES by 2020.
16. ALTERNATIVE TECHNOLOGY / RENEWABLE ENERGY				
16.1	Aren’t there any other means of generating electricity e.g. Hydroelectricity?	Teboho Sehloho Ward 13 Committee Sharpeville Sharpeville Public Meeting	Lethabo	SA does not have significant hydro potential compared to central Africa. In the Congo hydroelectricity is generated through the flow capacity of the Congo River. It generates the equivalent of SA’s energy mix. However SA is starting to turn towards renewable energy such as PV plants (Solar) and Wind Farms. These are considered renewable forms of

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		20 August 2018		energy. Yet the challenge with renewable energy alternatives is that it will take a long process to build up enough generating capacity as currently produced by Eskom.
16.2	My firm has for the past 20 years been experimenting with renewables in what you call sun electricity by which the sun energy is directly to a satellite and into the high frequency supply system of Eskom. The satellite belongs to South Africa. We can in fact through Ammonia Mazer. Can I demonstrate this to Eskom?	Prof. E. Hadji Sharpeville Public Meeting 20 August 2018	All	Eskom has a research process that is open for suggestions and comments. We would like to encourage you to make contact with Eskom and they will put you in contact their Research Section. The Research Section has a process whereby you can submit a one page proposal. Once the proposal is accepted, Eskom will take it further in researching new technologies.
16.3	Why does Eskom not install solar systems for the communities to ensure continued electricity supply when load shedding is implemented?	Sherlock Selemalsela Lethabo Stakeholder Forum Sharpeville Public Meeting 20 August 2018	Lethabo	Eskom did, during the planning of air quality offsets, consider using renewable energy instead of installing electric or gas stoves in houses. The PV panels did provide enough electricity for lighting and limited cooking but not enough to replace the heat produced for cooking from a coal stove or a coal heater. With time it may become an option for offsets but it still requires further investigation and testing.
16.4	Why does Eskom not simply turn to renewables to manage the additional electricity demand?	Andre Du Plessis Edgemoed resident Edgemoed Public Meeting 29 August 2018	Acacia	There is a need to maintain a variety of generation technologies so that electricity can be supplied literally as someone switches on a plug at the wall.
16.5	Eskom should be promoting alternative source of energy able to meet demand at low cost without compromising the environment and people's health. Renewable energy is a must especially in areas where Eskom says it cannot meet	Shumirai Blessing Mudavanhu AIDC Mowbray, Cape Region 11 September 2018 Written comments	All	Eskom is involved in a limited number of renewable generation projects based on the IRP allocation by government.

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	the legal air quality standards.			
16.6	If Eskom are unable to meet the MES, then the decommissioning of those facilities must be brought forward and the required electricity capacity sourced from renewable sources. The suggestions made in the BID as to why Eskom cannot meet the MES should rather be viewed as reasons to move away from the use of coal for electricity generation. This reinforces the urgent need for national government to develop and implement a plan for a JET away from fossil fuels.	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	Decommissioning coal fired power stations without suitable alternative technologies will not be beneficial to South Africa. Eskom plans to decommission stations in line with the IRP and the agreed decommissioning schedule. Currently the draft Integrated Resource Plan 2018 is based broadly on a 50-year life for coal power stations. For consistency in the MES application the decommissioning dates as defined in the Eskom Consistent Data set (Eskom 36-623 rev 3) for planning have been used. There is a variance of one year at some stations between the draft IRP and Eskom Consistent Data Set dates. The final shut down and decommissioning dates of power stations and units within stations are determined based on economic, technical and environmental criteria.
16.7	Wind and solar are now the cheapest form of new build electricity in SA and form the basis of a least-cost energy system for our country. With further support and investment the LCOE from these renewables should drop below the marginal cost of Eskom's coal based electricity (in line with international trends). In this case the country will save money and reduce electricity prices by moving away from coal.	Richard Hasley Project 90 by 2030 Cape Town 11 September 2018 Official Comments	All	Debates exist in terms of the costing of electricity technologies. Eskom's operations are guided by the IRP.
16.8	The required electricity capacity should be sourced from renewable energy, instead of coal, which would safeguard our constitutional right to a healthy environment, and to water.	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager	All	Eskom's fleet mix is guided by the IRP.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		11 September 2018 Official Comment		
16.9	We need clean renewable energy as far as possible.	Dirk Grobler Ward Councillor for Kriel Kriel Public Meeting 20 November 2019	Kriel Matla	Eskom is guided by the IRP in terms of what sources of energy it can use for generation
16.10	Why is Eskom not facing up to the enormity of the health impact? Eskom must stop using coal. There are other alternatives for energy generation.	Themba Mthimunye ECCG 23 November 2018 Midrand Public Meeting	All	<p>Eskom recognises the health impact of its emissions as quantified through its AIR and the health CBA.</p> <p>Eskom cannot however implement all the required emission abatement technology required at its power stations to ensure compliance to the MES for the reasons explained in the postponement application. Eskom has an ERP in place and the retrofits which Eskom thinks are feasible for South Africa will be implemented if the postponement application is approved. Eskom cannot just decommission its power stations since this will have an impact on South Africa. Power stations will be decommissioned in line with the Integrated Resource Plan (IRP). Currently the draft Integrated Resource Plan 2018 is based broadly on a 50-year life for coal power stations. For consistency in this application the decommissioning dates as defined in the Eskom Consistent Data set (Eskom 36-623 rev 3) for planning have been used. There is a variance of one year at some stations between the draft IRP and Eskom Consistent Data Set dates. The final shut down and decommissioning dates of power stations and units within stations are determined based on economic, technical and environmental criteria.</p> <p>There are other alternatives for energy generation but based on Eskom's</p>

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				fleet and provision of electricity to South Africa there are no immediately available alternative energy sources to address the electricity need of the country. The IRP addresses the need for energy transition.
16.11	What alternative energy supplies will be added to the energy mix, besides coal? Will it include nuclear energy or will it be renewable energy and if so what is the cost of installing renewables?	Guilliam Smalberger Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	Majuba	The new power stations Medupi and Kusile will offset the energy supply of mothballed power stations. Medupi and Kusile comply with the MES and hence will produce cleaner electricity. Under the present IRP Eskom does not propose to construct any renewable solar or wind power plants, these will be developed by independent electricity suppliers.
16.12	Underground Coal Gasification (UCG) was investigated by Eskom some time back yet it was waved due to financial issues. From an environmental point of view UCG is a much cleaner process. It was also waved from a political point of view since it reduces the need for transport and other services. Eskom must reconsider the UCG project. It was a positive project which was to deliver cheaper and cleaner energy. The demand for electricity will grow in future.	Guilliam Smalberger Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	All	The UCG project completed to date was a pilot and demonstration project. The project is presently on care and maintenance and Eskom is seeking a partner for further development. The closing down of the older power stations is scheduled since there is significant additional capacity available from Medupi and Kusile power stations which will operate in compliance with the MES.
16.13	The use of Renewable Energy in combination with the power plants should be exploited more to lower the emissions.	H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written	All	Refer to response under section 16.11

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		comment		
16.14	One of the problems of SA electricity generating industry is that the price of electricity is not market driven. The cost to combat health and welfare impacts of power stations are carried by society. These costs for the electricity industry become externalities for Eskom because of the electricity price set by a semi-state supported company. The polluter-pay-principle should be in place by a more market driven electricity price. The introduction of IPP with renewable energy is a start of making the electricity industry in SA more market driven as it becomes clear that accelerated building of renewable energy is required to allow for the required timely shutdown of older inefficient and more expensive coal fired power stations.	H.A. De Koningh Free Land Consulting Engineer, Heidelberg 4 February 2019 Official written comments	All	The planned unbundling of Eskom may improve energy pricing efficiencies. Eskom's energy tariff is determined through the NERSA process.
16.15	In 2017/18 11 units at Eskom's most costly and oldest plants, namely Grootvlei, Hendrina and Komati, were shut down for reserve storage. Based on the current electricity demand these three power stations will be fully shut down and later decommissioned by 2025. Further, Arnot, Camden, and Kriel will be decommissioned by 2030). Because the electricity industry should be market	H.A. De Koningh Free Land Consulting Engineer, Heidelberg 4 February 2019 Official written comments	All	Eskom is guided by the IRP in terms of what it can generate at this stage. The desire to push for more renewables is recognised.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>driven but complying with the government regulations, implementation of cheaper and cleaner renewable energy should be accelerated above the present proposed updated IRP 2018. Acceleration of this implementation makes that two important objectives can be met:</p> <ul style="list-style-type: none"> the targets of greenhouse gas emission reductions can be met (40 % reduction by 2030 and 100 % by 2050, see all recent IPCC reports reference 7 and 8), which for the energy industry is controlled via the updated IRP 2018 still too made final corrected with public comments), this target can be met in a planned and controlled manner making sure that one sticks to the proposed shutdown plan as per within the present proposed updated IRP. In that case no gaps will exist in the coming years in the adequacy of electricity supply with timely shutdown of the coal fired power stations. More focus on renewable and sustainable energy supply will also ensure continuation of work creation in this industry. I.e. all the focus should be on implementation of renewable energy instead of trying 			

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	to prolong the more and more costly coal fired electricity generation.			
17. DECOMMISSINING OF POWER STATIONS AND DECOMMISSIONING SCHEDULE				
17.1	The BID does not indicate which power stations are being targeted for decommissioning and in what period of time?	Samson Mokoena VEJA Sharpeville Public Meeting 20 August 2018	All,	<p>The IRP indicates that if power stations reach 50 years it should be decommissioned. Based on the IRP currently out for public review, Eskom has several power stations in the Mpumalanga Highveld that will reach its 50 year life expectancy. Eskom and government will decide when to switch off such stations. Some of the stations are already operating on lower levels such as Grootvlei and Hendrina.</p> <p>See 17.24 for further discussion on shutdown and decommissioning.</p> <p>Currently the draft Integrated Resource Plan 2018 is based broadly on a 50-year life for coal power stations. For consistency in this application the decommissioning dates as defined in the Eskom Consistent Data set (Eskom 36-623 rev 3) for planning have been used. There is a variance of one year at some stations between the draft IRP and Eskom Consistent Data Set dates. The final shut down and decommissioning dates of power stations and units within stations are determined based on economic, technical and environmental criteria.</p>
17.2	If Grootvlei will be decommissioned soon why spend all this money on postponements and retrofits? Why does Eskom not just close the station?	Willem Davel DA PR Councillor Balfour Ward Councillor Briefing 21 August 2018	Grootvlei	<p>Currently Grootvlei power station still serves as a backup power supply. Eskom has already retrofitted the power station with a FFP to reduce PM. Grootvlei was one of the highest polluting power stations targeted for retrofits to reduce the impact on the ambient air quality.</p> <p>No further retrofits are planned for the power station from this point forward. The power station will operate up to 2026, in line with the 50 year life plan. In 2020 the power station must comply with more stringent</p>

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				new plant limits. Eskom has decided not pursue the postponement from Grootvlei given the present licence.. See 17.24 for further discussion on shutdown and decommissioning
17.3	Will Grootvlei power station close or not and when will the station close?	Enoch Tshabalala Balfour (Siyathemba) Public Meeting 21 August 2018	Grootvlei	Grootvlei power station will be decommissioned from 2025 to 2028 based on the draft IRP by Department of Energy. See 17.24 for shutdown dates
17.4	Only 30% of our community is employed by Eskom. 70% of the community has no work. When will Eskom be closing Grootvlei? This closure will greatly impact on the community	Community Member Siyathemba Public Meeting, Balfour 21 August 2018	Grootvlei	The postponement application process does not trigger additional job opportunities. A positive result from this application will allow the community and family members who are currently employed by Grootvlei to continue working, while failure to secure a positive response might put those jobs at risk. Grootvlei power station will be decommissioned from 2026 to 2029 based on the draft IRP by Department of Energy.
17.5	What is the life span of a power station? When will Lethabo power station be decommissioned?	Community Member Zamdela Public Meeting 21 August 2018	Lethabo	The lifespan of a power station is approximately 50 years. Lethabo power station would be decommissioned from 2035 to 2040 based on the draft IRP prepared by Department of Energy.
17.6	Don't close Majuba power station, we would not allow it as a community. We don't want to lose any jobs.	Samuel Magadula Amersfoort Public Meeting 22 August 2018	Majuba	Majuba power stations still have sufficient lifespan left. The lifespan of a power station is approximately 50 years. Majuba power station would be decommissioned from 2046 to 2051 based on the draft IRP prepared by Department of Energy.
17.7	We don't want government to close the power stations. We fear that many people	Amos Mbokodo Ward Committee Member	Komati Hendrina Arnot	Power stations have a 50 year life expectancy. Once stations reach their end of life they need to be decommissioned. This cannot be changed.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	will lose their jobs.	Kwazamokhuhle Public Meeting 28 August 2018		The Department of Energy has an IRP which also speaks to the decommissioning of power stations and timeframes for such. The government must still however conduct socio-economic studies to determine the impact of job loss on the surrounding areas, where new jobs would be created.
17.8	<p>The Department of Energy draft IRP is available for comment since 27 August 2018. It also speaks of decommissioning of power stations and indicates the years.</p> <p>Eskom needs to talk about the just transition to cleaner energy. It needs to move away from coal.</p> <p>Why does Eskom not come up with a decommissioning plan for these power stations?</p>	Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018	Hendrina Arnot Komati	<p>The IRP is out for a 60 day public review period. The plan discusses the future of energy in South Africa and addresses the periods from 2030, 2040 until 2050. It further indicates that socio-economic studies still need to be done around decommissioning of power stations. It also specifies future studies need to be done to investigate cleaner energy technologies.</p> <p>Eskom is guided by the IRP which includes provision for the existing coal fired power stations. The coal fired power stations are a significant capital investment and decommissioning them without suitable alternatives would not be in the interest of South Africa.</p> <p>Eskom will prepare the necessary decommissioning plans for stations as per legal requirements and in consultation with relevant stakeholders.</p>
17.9	<p>We recommend that the power stations Hendrina, Arnot and Komati be decommissioned.</p> <p>Hendrina power station alone is responsible for 2000 premature deaths alone. This only takes into consideration one pollutant which is PM.</p> <p>Now Eskom is applying for another postponement from the MES. It is in the best interest of the people's health that</p>	Thomas Mnguni Groundwork Hendrina Public Meeting 28 August 2018	Hendrina Arnot Komati	<p>Retrofits are not planned for Hendrina, Arnot and Komati stations since they will be decommissioned soon as indicated in the draft IRP.</p> <p>In terms of your statement on premature deaths; Direct exposure to poor air quality is felt at home e.g. domestic fuel burning. Indirect exposure is considered as people who are indirectly exposed to emissions from power stations. Direct exposure has a much more significant impact than indirect exposure.</p> <p>Eskom's studies indicate the number of deaths associated with power stations is substantially less than the numbers indicated by Greenpeace see 1.23 and 8.30 for a further response.</p>

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	Eskom decommission its old power stations.			See 17.24 for further discussion on shutdown and decommissioning
17.10	The decommissioning of Acacia must be expedited.	Richard Hasley Project 90 by 2030 Edgemoor Public Meeting 29 August 2018	Acacia	Acacia is only operated when required given its cost of operations. Eskom has decided not pursue the postponement for Acacia as there is no legal need for the application at present. Update February 2019 – Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.
17.11	In the 2013 round of postponement applications it was stated that Port Rex power station would be decommissioned by 2025. Is this still the argument?	Lyndon Mardon DEDEAT Eastern Cape Provincial Air Quality Officer East London Public Meeting 28 August 2018	Port Rex	The station will be decommissioned by 2026, possibly prior to 2026. The original reason for siting Port Rex station in East London is due to only one transmission line coming into the city. The circumstance has since changed and the plant's operation life may not be extended beyond 2026. Eskom has decided not pursue the postponement for Port Rex as there is no legal need for the application at present. Update February 2019 – Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.
17.12	Where coal-fired power stations cannot meet MES, they should not operate and/or their decommissioning dates brought forward. The accelerated closures of the coal-fired power stations, and their	Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager	All	Eskom's operations and energy mix will be guided by the IRP. Any closure of stations must be cognisant of the presently available energy supply and as such the accelerated closure of the coal fired power stations beyond the ERP and IRP commitments is not considered feasible.

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	associated mines, must be done in a way that allows for a just energy transition.	11 September 2018 Official Comment		Where required Eskom applies for postponement from compliance to the MES.
17.13	<p>Eskom's power stations should not be granted postponements of MES compliance; instead, where stations cannot meet MES, they should not operate and/or their decommissioning dates should be expedited.</p> <p>Closures of coal-fired power stations (and mines) should be done in a way that facilitates a just energy transition. As one crucial feature to enable this transition, we believe that Eskom should actively plan, together with its workers, for a just transition to renewable energy, rather than risk stranding the workforce, along with redundant coal-fired plants.</p>	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA	All	<p>Responded to in 17.2 above</p> <p>Eskom will prepare the necessary decommissioning plans for stations as per legal requirements and in consultation with relevant stakeholders.</p>
17.14	What will become of Port Rex power station when decommissioned?	Susan Van Scheltema Ward 18 Office East London Public Meeting 28 August 2018	Port Rex	<p>The station will be dismantled and probably sold off as scrap metal. The area will be rehabilitated back to its previous land use. The peaking station will not be replaced since there is ample peaking capacity from other stations.</p> <p>The peaking station was previously required in East London when the transmission lines were of lesser capacity than currently, yet there are now higher capacity power lines that render the peaking station redundant in terms of that role.</p> <p>Eskom has decided not pursue the postponement application at Port Rex as there is no legal requirement for this presently.</p>


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17.15	With what does Eskom plan to substitute the energy mix once the 5 power stations are decommissioned?	LM Smith Kriel Resident Kriel Public Meeting 20 November 2018	All	Based on the IRP and projections Medupi and Kusile power stations will replace the energy supply of the 5 power stations. Also Independent energy producers are coming online to produce renewable energy in the Northern Cape. There are also 2 new power stations planned in Lephalale by independent power producers. Government wants to bring in competition in the energy sector and does not want Eskom to be the sole supplier of energy in the country.
17.16	How can it be that government wants to close Kriel in 2029? What about the job opportunities? We do not even have jobs at the moment.	Dolly Nkombo Thubelihle Resident Thubelihle Public Meeting 20 November 2018	Kriel	The decommissioning of Kriel power station is in line with the Integrated Resource Plan (IRP) prepared by the Department of Energy. Eskom has aligned its decommissioning plan in line with the IRP. Before any power stations are decommissioned government will conduct studies to assess the closure effect on communities. See 17.24 for further discussion on shutdown and decommissioning
17.17	Is there no way Eskom and government can stop the closure of Kriel power station? Can Eskom not implement plans and community upliftment projects to alleviate poverty?	Baby Mloshe Thubelihle Resident Thubelihle Public Meeting 20 November 2018	Kriel	Before any power stations are decommissioned government will conduct studies to assess the closure effect on communities and present plans on how to provide job opportunities for such communities.
17.18	It is difficult to comment on such a vague decommissioning plan. If we are not clear as to when the decommissioning of the power stations will take place, it is difficult for us to assess the impact of the suspension application.	Melita Steele Greenpeace Africa 23 November 2018 Midrand Public Meeting	All	Eskom states in the ERP the specific dates at which each power station will be decommissioned. The decommissioning dates are also specified in the individual Motivation Documents. The requirement of the MES regulations is a detailed decommissioning schedule. Eskom has provided a clear indication of the time periods over


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				<p>which station units will be shut down and latter decommissioned based on the best presently available information. Eskom is in a process to confirm the necessary regulatory requirements associated with shutdown and decommissioning and will ensure these are met. Issues such as when EIA processes and labour relations process will occur and the level of detail to provide when in terms of financial provision will be determined in consultation with the relevant stakeholders and to share such information prior to finalisation of this consultation and necessary techno-economic studies would in Eskom's opinion be inappropriate. Eskom states in the motivations the power station decommissioning date and therefore propose the alternative limits.</p> <p>The ERP is included in the summary motivation document on the NEC website.</p> <p>See 17.24 for further discussion on shutdown and decommissioning</p>
17.19	In the current draft Integrated Resource Plan (IRP) for example; it is said that the decommissioning date for Hendrina power station is from 2019 – 2021. This is a different date to what is indicated in the Eskom ERP. We are aware that at some of the power stations some of the units are already offline.	Thomas Nguni Groundwork 23 November 2018 Midrand Public Meeting	Hendrina Arnot Komati Camden Grootvlei	<p>The decommissioning dates which are stated in the ERP should be in line with the IRP. Eskom is clear that decommission dates are aligned. Eskom will review the figure in the motivation document and update where necessary.</p> <p>Eskom is already shutting down some power station units early and taking them out of the daily operations yet ensuring that its available to start up in emergencies due to past electricity constraints. For example; Komati power station will shut down and stop emissions by 2021. But the power station will continue to operate by providing water to communities and do</p>


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				<p>continual maintenance until decommissioning is concluded by 2028 - 2029.</p> <p>The present status and plans re the shutdown of units is illustrated in the tables provided in 17.24 below.</p>
17.20	It is understood that the power stations will be shut down or kept in cold reserve in case government needs to respond to an electricity shortage. Yet it will take a year turnaround time to get it up and running again. Surely that is too long to wrap too quickly?	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	Hendrina Arnot Komati Camden Grootvlei	Eskom is looking at a period up to a 2030 to decommission stations and an immediate switch off will not be possible it will require planning.
17.21	Will there be a fluctuation in emissions or spike during the shutdown and startup process if units are brought online again?	Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 23 November 2018 Midrand Public Meeting	Hendrina Arnot Komati Camden Grootvlei	All the power stations that are or will be decommissioned are fitted with bag filters and are on low PM emissions and there will not be a significant increase in PM when started up again. But there will be fluctuations in SO ₂ and NO _x emissions.
17.22	In the introduction of each power station Motivation document is said “The exact date of decommissioning is determined by current and future demand, the performance of other electricity generating plants and the cost of generation”. This should not be subject to current and future demand but should be determined by enough installed RE. RE	H.A. de Koningh Free land Engineer Energy & Climate Change Heidelberg 4 February 2019 Official written comments	All	<p>The IRP at the time of writing is a draft document which guides Eskom’s planning to a very large extent. Eskom has made some comments in respect of the hard stop decommissioning date. It is however planned to decommission Kriel between 2026 and 2029.</p> <p>See 17.24 for further discussion on shutdown and decommissioning</p>

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	instalment as per updated 2018 IRP should strictly adhere to the required capacities to operate and supply electricity where Kriel shuts down at these dates.			
17.23	<p>Our key position is that Eskom must either comply with the MES at the specified timeframes, or decommission all of its coal-fired power stations that do not comply with the MES at an accelerated pace. No further postponements or suspensions should be granted to the utility by the NAQO. We take this position given the air pollution crisis in Mpumalanga, the length of time that Eskom has had available in which to prepare to comply, and the premature deaths and health impacts that will be caused if Eskom does not comply, and is granted postponements and/or suspensions. We note that Eskom has presented no evidence in its MES Applications or otherwise that indicates its commitment to decommissioning and find the decommissioning table included as Figure 1 by Eskom as completely inadequate to indicate the utility's commitment to decommissioning, or create certainty around timelines. We believe that Figure 1 does not meet the List of Activities requirements, as</p>	<p>Melita Steele Greenpeace Africa Climate Change and Energy Campaign Manager 4 February 2019 Official written comment</p>	All	<p>Eskom cannot implement all the required emission abatement technology required at its power stations to ensure compliance to the MES for the reasons explained in the postponement application.</p> <p>The reasons include limited water availability, a low reserve margin for which means that retrofits have to be carefully phased to maintain the reserve margin, public pressure to keep the electricity tariff low and other negative environmental consequences including greenhouse gas emissions, transport related impacts and waste. Eskom contends that a decision should be taken in the national interest, weighing up the costs and benefits of compliance. Eskom further contends that the proposed Eskom emissions reductions plan presents a fair balance between cost and benefit whereas full compliance with the MES does not.</p> <p>Eskom cannot just decommission its power stations since this will have an impact on the supply of electricity to South Africa.</p> <p>There are other alternatives for energy generation but based on Eskom's fleet and provision of electricity to South Africa there are no immediately available alternative energy sources to address the electricity need of the country. The IRP addresses the need for energy transition.</p> <p>See 17.24 for a full discussion on the decommissioning plan and additional detail on unit shutdown dates.</p>

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	contemplated in the 2017 National Framework for Air Quality Management in the Republic of South Africa „The 2017 Framework“ for a detailed and clear decommissioning framework. No indication is given of Environmental Impact Assessment timelines, and no specific dates are given for any unit decommissioning. Neither is there an indication of what budget has been set aside for this process, leading us to believe that there is in fact no plan around decommissioning, nor any commitment to it.			
17.24	<p>(71) The Summary Motivation Report states the following:</p> <p><i>“Eskom has an emission reduction plan (described further in this report), and in addition to the contribution that Eskom’s current Emission reduction plan will have on future air quality improvement, six power stations will be decommissioned by 2030, as per the Integrated Resource Plan (IRP). Two more power stations will be decommissioned by 2035, and a further three will be decommissioned by 2043. The progressive decommissioning along with the planned retrofits/upgrades significantly reduces Eskom’s</i></p>	<p>Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment</p>	All	<p>The requirement of the MES regulations is a detailed decommissioning schedule. Eskom has provided a clear indication of the time periods over which station units will be shut down and latter decommissioned based on the best presently available information. Eskom is in a process to confirm the necessary regulatory requirements associated with shutdown and decommissioning and will ensure these are met. Issues such as when EIA processes and labour relations process will occur and the level of detail to provide when in terms of financial provision will be determined in consultation with the relevant stakeholders and to share such information prior to finalisation of this consultation and necessary techno-economic studies would in Eskom's opinion be inappropriate.</p> <p>Additional detail on the timing of shutdown for units at Komati, Grootvlei, Hendrina, and Komati is provided in the tables below.</p>

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	<p><i>environmental footprint and the impact on air quality. As such, the ambient air quality going forward will be better than what it has historically been. In addition, in 2017/18 eleven (11) units at Eskom’s most costly and oldest plants have been shut down and placed on extended cold reserve, which has already yielded some benefit.</i></p> <p><i>While Eskom is committed to implementing the technology elements of its emission reduction plan it has identified this need to submit suspensions, postponements and alternate limit requests to ensure the continued legal operation of its plant where the MES compliance time frames cannot be met or the decommissioning of the plant will occur before 2030.</i></p> <p>....</p> <p><i>The updated planned retrofit schedule is depicted in Figure 1. The decommissioning dates for a 50-year power station life are shaded grey. Currently the Integrated Resource Plan is based on a 50-year life for all power stations however the actual shut down and</i></p>			<div><div>Presently shutdown units - 2 units (Duvha u3 and Hendrina u3) in Extended Inoperability 10 units in Reserve Storage</div><div></div></div> <table><thead><tr><th>Station</th><th>Unit</th><th>Capacity</th><th>Shutdown date</th></tr></thead><tbody><tr><td>Duvha</td><td>u3</td><td>575 MW</td><td>30/03/2014</td></tr><tr><td>Hendrina</td><td>u3</td><td>185 MW</td><td>22/05/2018</td></tr><tr><td>Hendrina</td><td>u1</td><td>180 MW</td><td>01/12/2017</td></tr><tr><td>Komati</td><td>u1</td><td>91 MW</td><td>01/12/2017</td></tr><tr><td>Komati</td><td>u2</td><td>91 MW</td><td>12/08/2018</td></tr><tr><td>Komati</td><td>u3</td><td>84 MW</td><td>30/08/2018</td></tr><tr><td>Komati</td><td>u6</td><td>114 MW</td><td>21/12/2017</td></tr><tr><td>Komati</td><td>u8</td><td>114 MW</td><td>22/06/2018</td></tr><tr><td>Hendrina</td><td>u9</td><td>185 MW</td><td>29/09/2018</td></tr><tr><td>Grootvlei</td><td>u4</td><td>190 MW</td><td>22/09/2017</td></tr><tr><td>Grootvlei</td><td>u5</td><td>180 MW</td><td>09/01/2018</td></tr><tr><td>Grootvlei</td><td>u6</td><td>180 MW</td><td>01/12/2017</td></tr></tbody></table>	Station	Unit	Capacity	Shutdown date	Duvha	u3	575 MW	30/03/2014	Hendrina	u3	185 MW	22/05/2018	Hendrina	u1	180 MW	01/12/2017	Komati	u1	91 MW	01/12/2017	Komati	u2	91 MW	12/08/2018	Komati	u3	84 MW	30/08/2018	Komati	u6	114 MW	21/12/2017	Komati	u8	114 MW	22/06/2018	Hendrina	u9	185 MW	29/09/2018	Grootvlei	u4	190 MW	22/09/2017	Grootvlei	u5	180 MW	09/01/2018	Grootvlei	u6	180 MW	01/12/2017
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	<p><i>decommissioning dates of power stations are determined based on economic, supply and demand side criteria.”</i></p> <p>(72) Further to our main objections substantiated above, we submit that Eskom’s emissions reduction plan, its proposed decommissioning schedule, and its current shut-down strategy is neither a justifiable ‘compromise’ to compliance with the MES, nor is the decommissioning schedule “detailed” or “clear”, as required by the List of Activities and 2017 Framework. We place on record that the actual shut-down and decommissioning dates of the power stations are also, and we argue more importantly, determined by legal compliance. The decommissioning schedule is too broad – setting out a wide range of several years over which each power station is expected to be decommissioned; with no particularity regarding the specific process, per unit and date. For instance, no indication is given as to when the relevant EIA processes would commence for such decommissioning, and all the relevant timelines for each phase in the EIA</p>			<div><div>7 units from Grootvlei and Komati reach dead-stop dates in the next 4 years and expected to be shut down and placed in Reserve Storage</div><div></div></div> <table><thead><tr><th>Station</th><th>Unit</th><th>Capacity</th><th>Dead-stop date</th></tr></thead><tbody><tr><td>Grootvlei</td><td>u1</td><td>190 MW</td><td>31/05/2019</td></tr><tr><td>Grootvlei</td><td>u2</td><td>190 MW</td><td>08/11/2020</td></tr><tr><td>Grootvlei</td><td>u3</td><td>190 MW</td><td>02/05/2019</td></tr><tr><td>Komati</td><td>u4</td><td>91 MW</td><td>08/09/2021</td></tr><tr><td>Komati</td><td>u5</td><td>91 MW</td><td>03/04/2019</td></tr><tr><td>Komati</td><td>u7</td><td>91 MW</td><td>28/05/2019</td></tr><tr><td>Komati</td><td>u9</td><td>114 MW</td><td>05/07/2022</td></tr></tbody></table> <div><div>Key insights</div><div><ul style="list-style-type: none">* Dead-stop dates are determined from allowable turbine operating hours before complete refurbishment is required.* For some Units, additional statutory works on pressure vessels are also required prior to the turbine dead-stop dates.* Komati u9 expected to be shut down after MYPD4 period.</div></div>	Station	Unit	Capacity	Dead-stop date	Grootvlei	u1	190 MW	31/05/2019	Grootvlei	u2	190 MW	08/11/2020	Grootvlei	u3	190 MW	02/05/2019	Komati	u4	91 MW	08/09/2021	Komati	u5	91 MW	03/04/2019	Komati	u7	91 MW	28/05/2019	Komati	u9	114 MW	05/07/2022
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	process; which procedures would be followed in terms of the Labour Relations Act, 1995, and when, for each station; which other internal processes Eskom would conduct with potentially affected staff members and when; and the associated expenditure, per station, and when.			<div>7 units from Hendrina reach their dead-stop dates in the next 4 years and are expected to be shut down and placed in Reserve Storage</div> <div></div> <table><thead><tr><th>Station</th><th>Unit</th><th>Capacity</th><th>Dead-stop date</th></tr></thead><tbody><tr><td>Hendrina</td><td>u2</td><td>190 MW</td><td>08/11/2022</td></tr><tr><td>Hendrina</td><td>u4</td><td>190 MW</td><td>04/08/2021</td></tr><tr><td>Hendrina</td><td>u5</td><td>190 MW</td><td>12/10/2021</td></tr><tr><td>Hendrina</td><td>u6</td><td>190 MW</td><td>01/03/2022</td></tr><tr><td>Hendrina</td><td>u7</td><td>158 MW</td><td>23/01/2021</td></tr><tr><td>Hendrina</td><td>u8</td><td>190 MW</td><td>18/06/2019</td></tr><tr><td>Hendrina</td><td>u10</td><td>185 MW</td><td>13/07/2020</td></tr></tbody></table> <div>Key insights<ul style="list-style-type: none">▪ Dead-stop dates determined from allowable turbine operating hours before complete refurbishment is required.▪ For some Units, additional statutory works on pressure vessels also required prior to turbine dead-stop dates.▪ Hendrina u2 expected to be shut down after MYPD4 period.</div> <div>10</div>	Station	Unit	Capacity	Dead-stop date	Hendrina	u2	190 MW	08/11/2022	Hendrina	u4	190 MW	04/08/2021	Hendrina	u5	190 MW	12/10/2021	Hendrina	u6	190 MW	01/03/2022	Hendrina	u7	158 MW	23/01/2021	Hendrina	u8	190 MW	18/06/2019	Hendrina	u10	185 MW	13/07/2020
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17.25	(73) Eskom portrays its plan as beneficial because, it says, it would reduce its total emissions of SO ₂ , NO _x , and PM in comparison to a 2020 baseline in which the company does nothing to reduce emissions from their current levels. But that do-nothing baseline ignores the fact that, in the absence of Eskom’s requested postponement, suspension, or alternative limits, the company would have to reduce its emissions in order to comply with the 2020 MES. This, we submit, is misleading and inappropriate.	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	The facts are that Eskom is submitting a postponement application and with that an emission reduction plan and a decommissioning schedule. Eskom is thus illustrating to stakeholders that with implementation of this plan and decommissioning that it's total emissions over time will decrease compared to the present situation. Eskom is making it clear to I&AP's that it is not its intent to increase emissions through this application. It is correct that if Eskom were to implement all the measures required to ensure full MES compliance it's emissions would decrease further. However full compliance with the MES would incur all the impacts and costs as described in the motivation and it is because of these of the postponement application is being submitted.																																

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	<ul style="list-style-type: none"> ▪ The proper frame of reference for evaluating Eskom's postponement, suspension, and alternative limits plan is by comparing it to the full compliance with the 2020 MES that would otherwise be required. Such a comparison would properly show that what Eskom is actually proposing here is not an "emissions reduction plan" but, instead, substantially higher emissions than the law would otherwise allow. ▪ By way of an example, for SO₂, the 2020 MES requires each coal plant to reduce its emissions from 3,500 mg/Nm³ to 1,000 mg/Nm³ starting in 2020. Eskom seeks suspension of such reductions until 2030 at five of its coal plants, and postponement of any SO₂ reductions until 2025 at seven of its coal plants. And for after 2025, Eskom seeks emission limits that are 2.5 to 3.5 times higher than the new plant MES that it is otherwise supposed to comply with by 2020 (and 5 to 7 times higher than the 500 mg/Nm³ new plant MES that should apply). In short, what Eskom is 			

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	proposing here has nothing to do with emission reductions but, instead, is a “continued excessive emissions plan.			
17.26	<p>(95) Existing facilities applying for a once-off suspension of compliance timeframes with new plant MES for a period not beyond 31 March 2030, must provide a detailed decommissioning schedule. If an existing facility is granted a suspension of the compliance timeframes, which we reiterate Eskom should not be, it is required by the List of Activities to comply with existing plant MES during the suspension period until decommissioning at latest by 31 March 2030.</p> <p>(96) As part of this current application, Eskom seeks to apply for suspension of compliance until decommissioning by 2030 for 5 coal-fired power stations (Kriel; Arnot; Hendrina; Camden; and Komati). Eskom notes that in 2017/18 11 units at Eskom’s “most costly and oldest plants” have been shut down and placed on extended cold reserve.</p>	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	The requirement of the MES regulations is a detailed decommissioning schedule. Eskom has provided a clear indication of the time periods over which station units will be shutdown and latter decommissioned based on the best presently available information. Issues such as when EIA processes and labour relations process will occur in support of station decommissioning will be determined in consultation with the relevant stakeholders and to share such information prior to finalisation of this consultation would in Eskom's opinion be inappropriate.
17.27	(97) We submit that although the “decommissioning dates” in Figure 1 in the Summary Motivation Report may (or	Timothy Lloyd Attorney – Pollution and	Hendrina Komati Arnot	See 17.24 above for a response to the adequacy of the decommissioning plan

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	<p>may not) suffice for the purposes of the draft 2018 Integrated Resource Plan for Electricity , it is not a “detailed” or “clear” decommissioning schedule, as is legally required by the List of Activities and the 2017 Framework for applications for suspension. It is our firm stance that it is not permissible for the NAQO and licensing authorities to consider the suspension applications, based on the non-compliance with NAAQS and the fatal health impacts associated with Eskom’s coal-fired power stations. In the event that the NAQO elects to disregard the reasons for our objections, which we would argue would be irrational and unlawful in itself, and considers Eskom’s decommissioning dates, we submit that it is not a “detailed” or a “clear” decommissioning schedule for the following reasons:</p> <p>(97.1) The decommissioning information in Figure 1 is limited to approximate decommissioning dates, as opposed to a precise schedule presenting the key actions and timelines to enable the decommissioning of at least the 5 stations included in the suspension application.</p>	<p>Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment</p>	Camden Grootvlei	<p>In terms of the planning presented in the Eskom motivation Figure 1 Hendrina will begin shutdown for reserve storage from 2018 and decommissioning from 2022/23. The date of 2020 for Camden is correct but as indicated this could be delayed.</p>

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	<p>(97.2) As a minimum, Figure 1 and/or the explanatory text around it should specify the commencement date/planned commencement date of the necessary regulatory requirements to authorise the decommissioning process, including, inter alia:</p> <p>(97.2.1) As a Listed Activity, the decommissioning of an Eskom coal-fired power station must conduct a basic impact assessment in accordance with the Environmental Impact Assessment Regulations, 2014 (the “EIA Regulations”). This should include details of any financial provision for the rehabilitation, closure, and on-going post decommissioning management of negative environmental impacts, particularly the coal ash dumps.</p> <p>(97.2.2) Considering the social impact of decommissioning an Eskom power station, and Eskom’s duties as an organ of state, we submit that it is both necessary and appropriate that an inclusive and transparent social and labour closure plan is developed for the decommissioning process. This should account for, among other critical</p>			

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	<p>issues, the redeployment of staff employed at the station.</p> <p>(97.3) The processes identified above require both lead-time and budget – Eskom’s decommissioning table addresses neither. In fact, in its 2017/8 Integrated Report, Eskom’s Corporate Plan “does not include any specific costs or impacts of the decommissioning of power stations, although it does include cost reductions associated with the extended cold reserve strategy”. Hendrina power station was supposed to commence with decommissioning from 2018 and Camden power station from the beginning of 2020, yet there appears to be no decommissioning schedule, plan, or financial resources allocated to these processes.</p>			
17.28	(97.4) In relation to Camden power station, we further note that “*Possible delay of decommissioning” – there is no explanation, reasonable or otherwise, for the cause of this possible delay or a revised decommissioning period.	<p>Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment</p>	Camden	The possible delay in decommissioning of Camden is due to re-assessment on the technical and financial viability of the station given the extensive refurbishment work carried out at the station, the relatively low operating cost of the station and the present electricity supply situation.
17.29	(98) In the Summary Motivation Report, it is confirmed that Grootvlei (excluded	Timothy Lloyd Attorney –	Hendrina Komati	Technical reasons for the shutdown of units at Duvha, Hendrina, Grootvlei

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	from this application), Hendrina and Komati power stations will be shut down by 2022. We, and our clients, oppose Eskom's approach of shutting down stations instead of initiating the decommissioning process – especially for Hendrina power station, which has reached its end-of-life. At the public meeting in Midrand, Eskom stated that “Eskom is already shutting down some power station units early and taking them out of the daily operations yet ensuring that its available to start up in emergencies”. . . “For every year a station is shut down it will take an equivalent year to restart the unit due to past electricity constraints. We submit that the motive for shutting down the stations and not commencing with decommissioning is irrational – given the start-up time required for a unit that has been shut down, it does not provide a realistic contingency plan for supply emergencies. Rather, this appears to be a convenient reason to avoid both the installation of emission abatement technology and the obligations and necessary costs associated with the decommissioning process. Eskom should explain the time lag and other difficulties in relation to resuming operations at	Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment		<p>and Komati include:</p> <p>Duvha u3 and Hendrina u3</p> <ul style="list-style-type: none"> • have experienced significant failures and are not able to return to service in the short-term. • Have been placed in Extended Inoperability and removed from the Regulatory Asset base (RAB – list of official generating stations in terms of NERSA processes) <p>Grootvlei, Hendrina and Komati</p> <ul style="list-style-type: none"> • Are lowest on the merit order (have the highest unit costs of production) and are thus not expected to be required to operate to meet demand as availability of Eskom's fleet improves and new capacity comes on line. • Approaching their planning end of life. • Ten units of these stations have reached stage where significant investment (mostly Capex) is required for them to continue operating. Have thus been shut down and placed in Reserve Storage. • The remaining units at these 3 stations (14) will be reaching dead stop dates, where significant investment will be required for them to continue operating, in next 4 years. They will also be shut down and placed in Reserve Storage. 2 units are only expected to be

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	stations that have been shut down.			<p>shut down after MYPD4 period.</p> <p>The CER's opinion that the approach of shutdown and latter decommissioning is irrational is noted. From an Eskom perspective the approach is rational in that it allows the opportunity to manage supply and Eskom's asset base with cost savings for Eskom. Eskom will undertake all the required processes in terms of decommissioning at an appropriate stage in consultation with relevant stakeholders.</p> <p>Once a unit is placed in shutdown it is under a care and maintenance regime which means while it would not be immediately available to generate it would be possible to restart with sufficient capital expenditure</p>
17.30	<p>(99) We therefore submit that the decommissioning table in Figure 1 does not satisfy the List of Activities and 2017 Framework requirements for a detailed and clear decommissioning schedule. Notwithstanding the NAAQS non-compliance requirement and the health impacts attributed to Eskom's power stations, the suspension applications should be dismissed on this basis. Alternatively, we submit that Eskom should provide a detailed and clear decommissioning schedule that at least reflects the plans and process referred to above, on the following conditions:</p> <p>(99.1) the detailed decommissioning</p>	<p>Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment</p>	<p>Kriel Arnot Hendrina Camden Komati (Grootvlei)</p>	<p>The decommissioning argument is responded to in 17.24 above and additional detail on shutdown has been provided.</p> <p>As indicated detailed time-frames for activities associated with decommissioning will be decided in consultation with relevant</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>schedule, as updated, is available for public comment as part of this application process and every 6 months through to 2030 for the purposes of progress monitoring;</p> <p>(99.2) the 5 “most costly and oldest plants” – Kriel, Arnot, Hendrina, Camden and Komati (and Grootvlei which is excluded from this application) – should immediately commence with decommissioning arrangements, required by law or otherwise, and provide evidence of these initiatives to the NAQO, competent licensing authorities and all I&APs; and</p> <p>(99.3) The social impact of decommissioning is clearly outlined in an inclusive and transparent social and labour closure plan developed for the decommissioning process.</p>			<p>stakeholders and communicated appropriately.</p> <p>Shutdown and decommissioning will take place as per the decommissioning schedule.</p> <p>All necessary processes including labour related processes will be completed as per the necessary legal requirements.</p>
18. EMISSIONS / FUGITIVE EMISSIONS				
18.1	<p>There is no emission reduction plan for Acacia.</p> <p>What has been done to reduce emissions Eskom’s overall emissions since the previous postponement application?</p>	<p>Dr Joy Leaner – WC DEADP Provincial Air Quality Officer CoCT and WC Authorities Engagement</p>	Acacia	<p>No retrofits are planned for Acacia power station.</p> <p>Eskom has an original Emission Reduction Plan but faced challenges with its implementation as a result of governance processes. FFP’s have been installed at various stations. Another consideration in the new reduction plan is the initiative to install flue gas conditioning processes (SO₂ Plants) and high frequency performances to reduce PM.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
		Meeting 1 August 2018		Eskom has decided not pursue the postponement application at Acacia as there is no legal requirement for this presently. Update February 2019 – Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.
18.2	The amount of CO ₂ added to the atmosphere is not even quantified or estimated in this application.	Michele/Mike Rivarola Eastern Cape Region 10 August 2018 Comments and Registration Form	All	Carbon dioxide is a greenhouse gas. As part of the postponement application we are focusing on a specific set of MES set for Listed Activities scheduled in terms of the NAQA. The MES for power generation plants control three primary pollutants PM, NO _x and SO ₂ and does not prescribe a limit for greenhouse gasses. This does not imply that greenhouse gasses are not important to consider, merely it does not fall within the regulatory context of the postponement application. (see 15.1)
18.3	I am concerned about the impact the Acacia power station gas turbine emissions will have on the Edgemead Community who reside adjacent to the power station/plant.	Ian Gildenhuys CoCT Head Specialised Environmental Health, Air Quality Officer City Health 11 September 2018 Comments and Response Form	Acacia	Eskom has decided not pursue the postponement application at Acacia as there is no legal requirement for this presently. Update February 2019 – Eskom is presently re-evaluating the need for a postponement application for Acacia, Port Rex, Grootvlei, Medupi and Matimba. Any postponement applications will follow the required legal processes but a condonation for late submission of the application will be made.
18.4	What percentage of ambient air pollution in Sharpeville, Evaton, Vereeniging, Sasolburg and Vanderbijlpark is	Rob Jones: Sedibeng District – Midvaal Ward 5	Lethabo	The investigation conducted as part of the AIR includes modelling the impact of Lethabo on surrounding communities. The outcome of the AIR, HRA and CBA is available for public review as part of the 2 nd round of

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	contributed to Lethabo power station?	Councillor 20 August 2018 Vereeniging Public Meeting		<p>public engagement.</p> <p>NEC will as a function of the ADM and as a function of the AIR conduct a detailed analysis of the ambient air quality data available for those areas and will determine what percentage of the ambient pollution is contributed to Lethabo.</p> <p>Based on the analysis done for Eskom's 2014 postponement application the contribution from domestic fuel burning in low income areas surrounding Lethabo were the most significant contributor to particulate matter measured at the air quality monitoring stations.</p> <p>The source proportioning study is a function of National and Provincial government.</p> <p>Multi-stakeholder Research Group (MSRG) is currently preparing a study which addresses source proportioning for the Vaal – and Mpumalanga Highveld Priority Area. The study is eminent.</p> <p>See 11.21 for comment on air quality in the area.</p>
18.5	Will the outcome of source proportioning be communicated to the public?	Rob Jones: Sedibeng District – Midvaal Ward 5 Councillor 20 August 2018 Vereeniging Public Meeting	Lethabo	<p>The AIRs will include the source proportioning. The outcome of the study will be communicated to the public in the 2nd round of public engagement.</p> <p>The NAQO must consider the implications on ambient air quality when granting postponement from the MES therefore the AIRs must present a clear picture of the contribution of pollution from the power station verses other potential sources in the area in terms of the ambient air quality.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
18.6	<p>Discussions focus on PM yet we are also concerned with the SO₂ emissions. I am aware that power stations have the option of using high or low Sulphur content coal.</p> <p>Is there a programme to source low Sulphur coal for Lethabo power station? Or is it too expensive to source low Sulphur coal?</p>	<p>Rob Jones: Sedibeng District – Midvaal Ward 5 Councillor 20 August 2018 Vereeniging Public Meeting</p>	Lethabo	<p>Lethabo power station uses the lowest Sulphur content coal verses the rest of the fleet. The coal used at power station is already washed to significantly reduce the organic Sulphur content.</p>
18.7	<p>Will a study be done to determine the impact from greenhouse gases for CO₂ emissions?</p>	<p>Rob Jones: Sedibeng District Municipality Midvaal Ward 5 Councillor 20 August 2018 Vereeniging Public Meeting</p>	Lethabo	<p>Greenhouse gases are considered more on a global scale as oppose to a local scale. The MES does not prescribe limits for greenhouse gases. NEC will focus on the pollutants that are listed for coal power generation under the MES.</p> <p>There are however a number of processes at Eskom that are looking into greenhouse gas emissions. If you are interested we can provide you with reference sources that you can review.</p> <p>It's further important to distinguish between climate change gasses such as CO₂ and the other pollutants. One can make a power station more efficient by lowering the quantity of CO₂ per unit sent out. But essentially to lower the CO₂ emissions Eskom needs to change its energy mix for e.g. use of new clear energy. But this is dealt with at a National level. (see 15.1 for more detail)</p>
18.8	<p>Non-compliance with the MES brings forth many issues such as global warming and will impact on the community of Sharpeville. Do these postponements help us as a country?</p>	<p>William Mphuthing Sedibeng Business Chamber Sharpeville Public Meeting 20 August 2018</p>	Lethabo	<p>Greenhouse gases induce global warming. This application does not deal with greenhouse gases. There are various processes at Eskom which deal with limiting greenhouse gases from power stations.</p> <p>The present application will not result in any significant Greenhouse gas increase (see 15.1 for more detail).</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
18.9	There was no detail which talks to greenhouse gasses.	Mduduzi Tshabalala VEJA Sharpeville Public Meeting 20 August 2018	Lethabo	<p>As part of the postponement application NEC will focus on a specific set of MES set for Listed Activities scheduled in terms of the NAQA. The MES for power generation plants control three primary pollutants PM, NOx and SO₂ and does not prescribe a limit for greenhouse gasses. This does not imply that greenhouse gasses are not important to consider, merely it does not fall within the regulatory context of the postponement application.</p> <p>For the regulated primary pollutants, Eskom can retrofit generating units to control the emissions by installing FFP, Flue Gas Desulphurization Plants (FGD). To control or limit greenhouse gasses Eskom needs to change its energy mix by switching off coal fired power stations. South Africa has agreements on the limits. With current the current Integrated Resource Plan (IRP) Eskom will remain within the limits that were agreed upon in the Paris Accord. The switching off of the older power stations will ensure that Eskom stays with the Paris Accord. Eskom cannot retrofit power station to stop CO₂, one has to stop generating electricity with coal to stop CO₂ emissions and use renewable energies. (see 15.1 for more detail)</p>
18.10	Will the NOx and SO ₂ emissions be eliminated completely?	Philemon Tshabalala Thabakgoadi Public Meeting 21 August 2018	Grootvlei	<p>No. Eskom faces challenges to abate SO₂ levels due to its requirement for high volumes of water and the additional waste stream created by its operation. Also to abate NOx, Eskom needs to install of LNB. Grootvlei has not been targeted for retrofits to reduce SO₂ and NOx. Hence Grootvlei will seek postponement from the MES compliance timeframe.</p> <p>In November 2018 Eskom halted work on the Grootvlei postponement application and as of March 2019 Eskom is considering the need for a postponement application for Grootvlei. Any postponement application will follow the necessary administrative and public participation processes.</p>

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18.11	Has ozone pollution been considered?	VEJA Zamdela Public Meeting 21 August 2018	Lethabo	Ozone is one of the precursor chemicals that create Nitrogen dioxide (NO ₂). NO ₂ is in compliance with the standard. NEC does not foresee an issue with the NO ₂
18.12	<p>I have an issue with how Majuba power station disposes of the ash. It affects the environment. Reasons being:</p> <ul style="list-style-type: none"> During windy conditions the ash dumpsite is exposed and ash is blown far and wide polluting the air. The water sources that surround the ash dump are also polluted; NEC must note that there are trucks that remove some of the ash to New Castle for cement making. Yet this is not effective enough to manage the impact or to reduce the dump size. <p>Why does Eskom not contract local people from the Majuba area to remove the ash and make cement?</p> <p>Why does the power station not contract several local service providers to remove the ash and make cement to reduce the size of the dump? This will empower the local people and help to solve the problem</p>	Samuel Magadula Amersfoort Public Meeting 22 August 2018	Majuba	<p>Eskom is currently installing a binding polymer to reduce fugitive emissions from the ash dump. Installation started in July 2018 and will be concluded by September 2018. It has recently been installed at Tutuka power station and found to be effective. Eskom expects the polymer binder to limit further ash fallout from the dump. Initial results from application of the polymer show it is effective where it is applied but there is a very large working face at Majuba and the emission reduction has not been as successful as hoped. The station is planning additional measures to further reduce dust before the next windy season.</p> <p>The ash is removed to New Castle for brick making. Eskom started the brick making initiative 3 years ago. Eskom has placed the removal of ash from the dump on tender since mid-August 2018. The community must participate in the tender process since the power station is trying to secure the contract for local people, yet the local people are not responding to the tender.</p>

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18.13	The polymer being referred to has not reduced the impact from the ash dump yet. Naledzi must monitor the situation.	Samuel Magadula Amersfoort Public Meeting 22 August 2018	Majuba	<p>The effect of the binding polymer will be visible after September 2018.</p> <p>Majuba power station is working on addressing these challenges. It is also planning on implementing additional mitigation measures. Eskom expects to have the fugitive dust full under control before July-September 2019.</p> <p>Update February 2019 – topsoil shall be placed on the dump in April 2019 and the full rehabilitation project will be completed by the end of September 2019.</p>
18.14	What is Eskom's programme to mitigate the fugitive emissions from the ash dams and covering it with topsoil?	Brian MacKenzie Kriel Resident Kriel Public Meeting 20 November 2019	Kriel Matla	<p>Eskom does face challenges with the management of ash dam fallout. Kriel currently has an ash dam expansion project planned. As part of the project Eskom have agreed with the Department of Environmental Affairs to use the topsoil removed for the expansion project to cover the exposed ash dam areas to minimize fugitive ash.</p> <p>Another measure implemented is the use of a controlled sprinkler system. Currently the system is not optimally used, and needs to be optimized. There is a risk when applying too much water whereby the ash dam face becomes soft and collapses. Specialist inputs have been sourced in this regard to further reduce and mitigate the impact.</p>
18.15	<p>I have come across black silt building up in the rivers around Kriel, not white ash. The coal mines in the area are large contributors to pollution not solely Eskom.</p> <p>Surely when considering the air pollution sources contributing to the NAAQ one should consider the significant contribution from the coal mines.</p>	Dirk Grobler Ward Councillor for Kriel Kriel Public Meeting 20 November 2019	Kriel Matla	<p>The outcome of the ADM does highlight that there are significant other sources of air pollutants contributing the ambient air quality such as other industries, mines, domestic fuel use, motor vehicles.</p> <p>A Stakeholder meeting took place on 22 November 2018 between the Kriel and Matla power stations, local mines and local farmers relating to the local water pollution issues. Mr. Grobler was an attendee at the meeting.</p> <p>The meeting dealt with the quality of water released from the power stations into the receiving watercourses. Kriel and Matla power station</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
				made a commitment at the meeting to ensure that water discharge from the power stations meet the DWS water quality standards.
18.16	To manage the ash fallout from the ash dam Eskom can harvest topsoil for ash dam covering from 2 farms adjacent to Matla power station which is Eskom owned. Eskom can harvest 2mm of topsoil from these farms and it's close to the power stations.	Melanie Gosling Kriel Resident Kriel Public Meeting 20 November 2018	Kriel Matla	Matla will investigate this options further.
18.17	The use of coal for power generation and the emissions from the power stations are hazardous for our health. The ash from the power station is a particular issue.	Member of Ogies Community 21 November 2018 Ogies Public Meeting	Kendal	The fugitive ash from the power station ash dam is a dust issue and must be managed.
18.18	<p>The dust from Kendal power station affects the children of the area. What measures are being implemented to suppress the dust at the power station ash dam?</p> <p>The suppression methods are not effective. What is Eskom doing to absorb more local people in business? We can together come up with a solution to adequately address the ash dust issue and in turn benefit economically from it. We did submit proposals and ideas to Eskom</p>	Member of Ogies Community 21 November 2018 Ogies Public Meeting	Kendal	<p>Kendal power station implements dust suppression at the ash dam by pumping water through a sprinkler system onto the dry ash. Once certain sections of the ash dam reach their maximum profile the power station implements rehabilitation whereby a 1 meter layer of topsoil is used to cover the ash, thereafter the soil is revegetated. The rehabilitation method protects the ash dam and reduces the windblown ash emissions.</p> <p>There are different stakeholder groups at the power station. Ideas and proposals can be submitted via the Kendal power station stakeholder forum. The power station will submit the ideas and proposal to Eskom innovations for consideration.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	but nothing happened.			
18.19	At Arnot the dust fallout from mine trucks and the ash dump result in several health impacts and people's medical bills are millions.	Fanie Venter Rietkuil Resident 22 November 2018 Hendrina Public Meeting	Arnot	The mine truck emissions are a dust issue. The fugitive ash from the ash dam must be managed.
18.20	<p>Fugitive ash from the Majuba's ash dam is a major problem in our area. It must be managed correctly.</p> <p>Is Eskom satisfied with the present management of the Majuba ash dam?</p> <p>The ash dam is poorly managed. All the ash blows onto our farms and into the surrounding area. It looks like smoke and as if there is a major veld fire in the area.</p>	Coenie Dafel Chairperson, Amersfoort Agricultural Union 29 November 2018 Amersfoort Public Meeting	Majuba	<p>Majuba is experiencing technical problems with its ash dump related to the profile of air movement, engineering design and increase of the face of the ash dump. Based on design criteria the ash dump should be lower and requires pumping significant volumes of water to suppress the ash. This is a challenge due to water pressure.</p> <p>Majuba's ash dump extension project has been approved. A binding polymer will now be installed to cover the ash dump. The project will be completed by September 2019. Eskom has also redesigned the ash dam profile and will provide progress to local farmers in this regard.</p> <p>Eskom presently expects to have the fugitive dust full under control before July-September 2019. Progress in the ash dump project will be shared at station stakeholder meetings.</p>
18.21	We have been struggled for 20 years with Eskom to resolve the ash issue; now we are told Majuba has a problem to pump water 120m up to the ash dam to suppress ash?	Landowner/Farmer Amersfoort 29 November 2018 Amersfoort Public Meeting	Majuba	<p>Majuba does not have sufficient water pressure pumps to suppress the fugitive ash. There is a need to extend and lower the ash dump to a lower wind speed area. The project to extend and redesign the ash dump has been approved and will be completed by April 2019.</p> <p>Update Febraury 2019: Top soiling of the dump has commenced and will be completed by April 2019. Full ash dump rehabilitation will be</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>How can Eskom not have an Engineer to pump water 120m from the water pit to the ash dam? Why does Eskom not appoint a consulting engineer to resolve the issue?</p> <p>It's purely because of poor management and incompetency that we are experiencing the ash issue. I can hear from the station manager's response that there is no future plan to address this issue. Guaranteed by April 2019 the situation will not have changed. Tons of ash blow over our land and over Daggaskraal. We breathe the ash in on a daily basis.</p> <p>Majuba power station does not care about the communities of Amersfoort or their health; there have been no improvements or attempts to address the issue. How can Eskom ask us to assent to the postponement of the MES?</p> <p>There are numerous engineers at Majuba yet nothing is done to resolve the lingering issues. The community is fed up</p>			completed by the end of September 2019.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>and wants to close Majuba power station.</p> <p>The face of the ash dam has been left open for years; Eskom does not cover it with topsoil and rehabilitate it. Why does this remain an engineer challenge, it's a heap of ash, close it!</p>			
18.22	<p>Majuba conducts an annual meeting with the local farmers. I have been the only attendee at the last three meetings as there is no improvement or change on the management of the ash dam for the past 20 years. Farmers don't want to attend these meetings anymore; it's a waste of time.</p> <p>The farmers made a proposal to Eskom on how to manage the ash dam and submitted a BID in this regard. Our BID was rejected since we do not comply with the necessary B-BBEE criteria.</p> <p>We then invited the Majuba power station manager to visit our pilot project to prove its effectiveness. The station manager did not even bother to visit the site and we received no feedback or support from</p>	<p>Guilliam Smalberger Landowner/Farmers 29 November 2018 Amersfoort Public Meeting</p>	Majuba	Refer to responses above under Section 18.20 and 18.21.

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	Eskom. This was a potential sustainable product which could have been implemented to address the issue.			
18.23	<p>We as a community cannot support the MES postponement application!</p> <p>Majuba power station does not have an emission problem it has a management problem.</p> <p>Daggaskraal is the most affected by the ash dam fugitive dust. There are 400 000 people living at Daggaskraal. They are suffering the consequences of the mal management of the ash dam. Hence, it is morally impossible for us to agree to Eskom's request for postponement of the MES.</p> <p>Eskom has no money, it's overstaffed. This MES postponement is a smokescreen to run away from compliance. I have heard it is much cheaper to pay the fine for noncompliance than to actually comply.</p> <p>Eskom must agree to have the ash dam</p>	<p>Coenie Dafel Chairperson, Amersfoort Agricultural Union 29 November 2018 Amersfoort Public Meeting</p>	Majuba	<p>Eskom is legally allowed to request for postponement from MES and is hence applying under these provisions of the MES Regulations.</p> <p>In terms of Daggaskraal; Eskom has appointed independent consultants to conduct a health impact related cost benefit analysis to investigate health impacts and cost to society. The CBA is available for public review and comment at the stated public venues and on the NEC website.</p> <p>Majuba power station undertakes to resolve the ash dump issue based on the current project in place for completion by April 2019. Eskom will keep landowners updated on the progress.</p> <p>February 2019: Top soiling has commenced and will be completed by April 2019. The full ash dump rehabilitation project will be completed by the end of September 2019.</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	issue resolved by April 2019.			
18.24	Does Eskom still monitor the ash fallout at the surrounding farms?	Landowner/Farmer 29 November 2018 Amersfoort Public Meeting	Majuba	No. Eskom was requested to monitor the ash fallout for 1 year. It has been completed. 6 Dust monitoring buckets were installed at 6 monitoring points on surrounding farms. No exceedances were recorded. The ash fallout was monitored for a full year which gave a good indication of the trend.
18.25	NOx emissions are indirectly greenhouse emissions. These have also high priority and are nowadays also part of air quality.	H.A De Koningh Engineer: Energy and Climate Change Heidelberg 16 January 2019 Official written comment Reiterated in 4 February 2019 Official comments	All	That is true to an extent where the concern in respect of greenhouse gas emissions is N ₂ O (nitrous oxide). We would accept the statement that greenhouse gas emissions are important but disagree with what we think is implied that greenhouse gas emissions (and resultant ambient concentrations) should be considered as a local air quality issue. Greenhouse gas emissions are important in terms of their contribution to changes in <i>global</i> greenhouse gas concentrations in the atmosphere. Please refer to response under Section 18.9.
18.26	The ash from Majuba power station is a major problem and concern: <ul style="list-style-type: none"> Ash is blown over a very large area and affects the health of the people, animals as well as the lifespan of infrastructure; The farming community have offered a long term 	Coenie Dafel Chairperson, Amersfoort Agricultural Union 4 February 2019 Official written comment	Majuba	Majuba's ash dam extension project has been approved. A binding polymer will now be installed to cover the ash dam. The project will be completed by April 2019. February 2019: Topsoiling has commenced and will be completed by April 2019. The full ash dump rehabilitation project will be completed by the end of September 2019.

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	<p>environmentally friendly solution for the ash problem, but have been completely ignored by Eskom.</p> <ul style="list-style-type: none"> ▪ The problem at Majuba power station is poor management of the ash dams. The same issue has been discussed several times over the past 20 years and to date the problem has not been resolved. ▪ Eskom committed to resolve the problem by April 2019, but this needs to be seen based on our experience and all the promises on this issue for the last 20 years. 			
18.27	<p>Meeting South African targets of CO₂ emission reductions:</p> <p>Accelerated renewable energy implementation is required to ensure targets of reduction of GHG emissions by 2030 of 40 % and 100% by 2050 are met. If these are not met, the next generation will experience a destabilizing atmospheric temperature increase of 2° C</p>	<p>H.A De Koningh Engineer: Energy and Climate Change Heidelberg 4 February 2019 Official written comment</p>	All	<p>The need to change energy mix to address GHG emissions is accepted. Eskom will follow government policy in this respect. (See 15.1 for more detail on CO₂ emissions)</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	or more.			
19. APPLICATION FOR ALTERNATIVE LIMITS UNTIL DECOMMISSIONING				
19.1	(100) The List of Activities and the 2017 Framework requires that the NAQO, after consultation with the licensing authority, may grant an alternative emission limit or emission load, provided there is compliance with NAAQS in the area for pollutant or pollutants applied for; or the AIR does not show increased health risk where there is no ambient air quality standard. We submit that, like the provisions that apply to postponement and suspension applications, the overriding condition is compliance with NAAQS in the area, despite the demonstration of previous emission reductions and compliance with other emission standards. We also dispute that there is “material” NAAQS compliance, as required by the List of Activities, considering the non-compliance figures for PM, PM _{2.5} and SO ₂ in the cumulative AIR referred to from paragraph 41 above. In any	Timothy Lloyd Attorney – Pollution and Climate Change LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment	All	<p>The results of the station specific AIR’s completed show that individual stations generally contribute to a limited extent to non-compliances around the specific stations.</p> <p>The results of the analysis of the monitoring data and the cumulative AIR show a complex picture where Eskom stations are but one of various pollution sources which impact on air quality in the regions .</p> <p>The general conclusions of the analysis indicate that the quality of air will be in compliance with NO₂ National Air Quality Standards (NAAQS), but noncompliance with the daily and annual SO₂ standards in several limited areas across the Highveld – this does we suggest illustrates material compliance.</p> <p>Further if the ambient air quality monitoring data, that has been sourced from some 19 monitoring stations spread throughout the Highveld and Vaal Triangle, is considered then the following emerges (recognising that there are a number of stations where there is less than 80% data recovery, hence the use of the term ‘implied’ rather than ‘assured’):</p> <p>For SO₂</p> <p><input type="checkbox"/> Full (all stations and all years) compliance with 10 min NAAQS is</p>

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<p>event, granting the multiple applications for alternative limits would, we submit, be inconsistent with the Constitution.</p> <p>(101) Alternative limits ('option 3'), in the alternative to postponement applications ('option 1'), are applied for in relation to Majuba, Kendal, Lethabo, Duvha and Matla stations. We note, with concern, that the majority of these applications request an alternative limit post-2025 "until decommissioning" that is weaker than the new plant MES. We refer, for example, to the alternative limit for SO₂ at Majuba, for PM and SO₂ at Kendal, and for all three pollutants at Lethabo and Duvha. We submit that these applications for limits through to decommissioning that are weaker than the new plant MES are tantamount to an exemption from the MES and are unlawful. That much is clear from the List of Activities and the Framework. 1 April 2025 is the latest date for compliance with new plant MES.</p>			<p>implied</p> <ul style="list-style-type: none"> <input type="checkbox"/> Full compliance with hourly NAAQS is implied <input type="checkbox"/> Compliance with the daily NAAQS for 47 of the monitoring years (3 years for each monitoring station) with non-compliance for 8 monitoring years is implied. Non-compliance in the Emalahleni area, downwind of Kendal power station and KwaZamakuhle is noted. <input type="checkbox"/> Compliance with the annual average NAAQS for 53 monitoring years with 2 monitoring years that are not compliant is implied. <p>For NO₂</p> <ul style="list-style-type: none"> <input type="checkbox"/> Compliance with the hourly NAAQS for 46 monitoring years and non-compliance for 4 monitoring years is implied. There is also general monitoring compliance for stations close to Eskom stations. Further in the South African context vehicle emissions are generally a more significant source of NO₂ in low level ambient monitoring than industrial sources . (Ths issue of atmospheric NOx hotspots being discussed in xx above) <input type="checkbox"/> Compliance with the annual NAAQS for 43 monitoring years and non-compliance for 8 monitoring years is implied.

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
				<p>For PM₁₀</p> <ul style="list-style-type: none"> <input type="checkbox"/> Compliance with the daily NAAQS for 9 monitoring years and non-compliance for 46 monitoring years is implied. <input type="checkbox"/> Compliance with the annual NAAQS for 18 monitoring years and non-compliance for 37 monitoring years is implied. <p>For PM 2.5</p> <ul style="list-style-type: none"> <input type="checkbox"/> Compliance with the daily NAAQS for 9 monitoring years and non-compliance for 33 monitoring years is implied. <input type="checkbox"/> Compliance with the annual NAAQS for 9 monitoring years and non-compliance for 33 monitoring years is implied. <p>In these terms the data for SO₂ and NO₂ speaks for itself and given the number of years of compliance it can be said there “material compliance”.</p> <p>In respect of the PM, the contribution of the power stations of PM directly and indirectly is modelled to be up to 15 µg/m³ (75% of the annual NAAQS for PM_{2.5}) in and around the Emalahlene area. However measured concentrations of PM_{2.5} are seen to be as high as 46.1 µg/m³ at Kriel, 43.2 µg/m³ at Secunda and 61.5 µg/m³ at Kendal implying a significant additional source of PM_{2.5} that does not derive from the power stations but rather from low elevation sources specifically domestic fuel use. With domestic fuel use being the specific target of the Eskom offset</p>

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				<p>programme which is undertaken in support of the Eskom emission reduction plan.</p> <p>The modeling and ambient monitoring thus illustrates that there is “material” compliance to the standards and further that Eskom is but one contributor to emission levels. Given this and the need for the decision maker to consider the Constitutional aspects and the range of NEMA principles it can be argued that failing to approve the application would in fact be inconsistent with the Constitution and NEMA.</p> <p>The need for the authorities to consider the broad Constitutional imperatives and NEMA requirements to consider development which is socially, and economically sustainable in addition to environmentally sustainable has been addressed in 15.3 above and as such approval of the postponement applications is we argue not inconsistent with the Constitution and its supporting legislation and frameworks.</p> <p>Eskom submits that in terms of the MES regulations (GNR 893 as amended par 11B) it is within its rights to submit requests for alternative limits.</p> <p>It is also clear that in terms of GNR 893 par 12A Eskom may "submit an application regarding a new plant standard". The reasons for requesting these alternative limits are spelled out in the summary motivation but include the water and waste impact of compliance and the socio-economic cost of compliance.</p>
19.2	(102) We reiterate that stations that cannot comply with the MES should not operate and/or their	Timothy Lloyd Attorney – Pollution and Climate Change	All	As argued above the application for alternative limits is legally acceptable (19.1) and the decommissioning schedule is appropriate (17.24). Further as illustrated in the AIR and in above there is not chronic non-compliance

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	decommissioning should be expedited. Applying for a 'tailored' set of limits that are weaker than the new plant MES through to decommissioning (based on a table that is deficient in detail) in areas where there is chronic non-compliance with the NAAQS, cannot be permitted and undermines the Constitution, NEMA, the AQA, the List of Activities and the Framework. As foreshadowed in our email correspondence of 28 January 2019, we reserve our right to supplement these submissions to include a report from the Energy Research Centre, currently being completed. We understand that this report will, among other things, demonstrate the rationale for the early decommissioning of Duvha and Matla stations, as opposed to retrofitting for their remaining lives, respectively.	LAC joint campaign by CeR, ELA, HEJN, VEJA 4 February 2019 Official comment		<p>with the NAAQs (19.1).</p> <p>If stations were forced to close as a result of a decision not to grant the postponement this would significantly curtail the ability of Eskom to meet the required electricity demand.</p> <p>The failure to meet demand result in extended load shedding with the resultant economic, environmental and health impacts throughout South Africa.</p> <p>Eskom similarly reserves it rights to respond to further submissions as necessary.</p>
20. IMPACT ON AGRICULTURAL SECTOR				
20.1	A few years ago our cattle started to break their legs. We had it tested at Onderstepoort. It was evident that there	Carel Opperman Broodsniersplaas Farmers Union 22 November 2018	Komati	Eskom commissioned investigative studies to determine where the SO ₂ was coming from. The SO ₂ could not be traced back to Komati power station. This was verified in 2012 – 2013.

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	<p>were substantial SO₂ trace elements in the soils affecting the grazing pastures. The cattle ingest high levels of SO₂ contained in the grass causing calcium deficiency and cattle end up breaking their legs. This is a major problem for the farmers in the area.</p> <p>We have documents to substantiate the statement. We understand that Eskom has financial constraint to implement the retrofits at power stations, yet we as farmers bear the brunt of pollution, losing cattle which has a direct impact on our livelihoods.</p> <p>Gert Grobler a local landowner raised the issue with Eskom and the local power stations. We have not received any feedback on the report from the power station.</p> <p>Gert Grobler is currently busy with newer studies and a new report will be available soon which speaks to this issue.</p>	Hendrina Public Meeting		Mr Opperman is to submit the latest report to Komati power station Environmental Unit to address the issue.
20.2	This application is dealt with from Eskom's viewpoint. There is a price being	Francois Lotz Landowner/Farmer 29 November 2018	Majuba	Eskom is not pleased that anyone is impacted by its operations. Hence Eskom is commissioning the ERP to reduce its emissions. There are

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	<p>paid by landowners and not the larger public namely deterioration of our property due to acid rain and having to replace fencing every 5 years due to corrosion. SO2 trace elements build up in the soils hampering grazing potential of the land forcing us to buy feed and supplementary cattle licks to remain in production. We bear the direct cost for which we are not compensated for.</p> <p>Eskom is destroying the environment and this has a direct impact on the sustainability of farming.</p> <p>Cost to individuals should be managed.</p>	Amersfoort Public Meeting		<p>however residual impacts at an individual level.</p> <p>There are instances in which Eskom conducts investigations based on individual claims laid by landowners for damages resultant from its power stations. In the past at Arnot power station insurance claims were made to Eskom due to fugitive ash from its ash dam. Eskom evaluated the claims.</p> <p>Eskom has appointed an independent consultant to conduct a health related cost benefit analysis (CBA) to address the health risks and cost to individuals. The CBA considers the financial issues, cost of mortalities and health impact costs as well as the impact on agriculture. Historically it is difficult to determine the impact of emissions on the agricultural sector since the statistics related thereto are limited.</p> <p>The CBA is available for download from the NEC website for public review and comment until 4 February 2018.</p>
20.3	A large number of our members have to produce food, in a sustainable way, next to these power stations. They will not be in a position to do it much longer except if Eskom reduce the air pollution dramatically. These producers also have to comply with certain health regulations set by local as well as international	Robert Davel General Manager Mpumalanga Agricultural Union 4 February 2019 Emailed comments	All	<p>Comment on the impact of Eskom's emissions on agriculture has been made in section 25 of the Cumulative AIR.</p> <p>In summary it is difficult to determine the impact of emissions on the agricultural sector since the statistics related thereto are limited and it is not possible for Eskom to calculate the impact of its emissions on agriculture. Studies available to indicate that that long-term emissions of acidic gases such as SO2 and NO2 pose a risk of acidification, but principally in areas of sensitive soils. Given the long-term nature of the</p>

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	<p>markets.</p> <p>By continuing with the current status quo and allow Eskom not to comply with MES, the damage to the agricultural sector in Mpumalanga will become irreversible and the negative effect of that on food security in SA will be enormous. Currently in Mpumalanga and parts of Eastern Free State are the most stable areas for maize and soya bean production, in regards average rainfall, in the country. In a drought year, like the current one (2018/2019), our province most probably will provide the biggest part of the national maize and soya crop in SA. Imagine the disaster if Mpumalanga was not in the position to plant maize because of air pollution that is out of control.</p>			<p>effect it must be recognized that there will be an overall reduction in SO2 and NO2 emissions in the longer term across the fleet, as the RTS and older power stations are progressively decommissioned. In addition the significance of the acidification risk has not been presented so it is not possible to assess the potential consequences (biodiversity loss, reductions in land potential and so forth) in any meaningful way. More importantly perhaps it is simply not possible to weigh up the benefits of reduced acid gas emissions (that would occur if there was full compliance with the MES) against the financial and non-financial costs of full MES compliance.</p>
21. INFORMATION REQUESTS FROM I&APS				
21.1	Please send me a scanned copy of the attendance register for the East London public meeting held on 28 August 2018.	<p>Lyndon Mardon EC DEDEA Air Quality Officer King Williams Town 3 September 2018</p>	Port Rex	The minutes of the East London Public Meeting as well as the attendance register has been sent to all meeting attendees on 25 September 2018 via email for review and comment.

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		Via Email		
21.2	Please send us the AIRs as soon as is available for review and comments. Please also send us the Emission Reduction Plan for Komati-, Hendrina- and Arnot power stations which fall within the jurisdiction of Steve Tshwete Local Municipality.	Kagiso Mohale STLM Environmental Management and Air Quality Management Middelburg 3 September 2018 Via Email	Hendrina Arnot Komati	<p>The AIRs for Hendrina-, Koma - and Arnot power stations will be available for public review and comment during the 2nd round of public engagement from 12 November to 11 December 2018. Stakeholders will be notified of its availability through newspaper advertisements and emailed notifications. The documents will be available for download from the NEC website: www.naledzi.co.za/publicdocuments.</p> <p>Eskom's current Emission Reduction Plan, as presented at the Hendrina Public Meeting on 28 August 2018, is included in the BID on page 8, and was circulated for public review. NEC has resent the BID on 4 September 2018 to Steve Tshwete Local Municipality to highlight the Emission Reduction Plan on page 8 of the document.</p>
21.3	<p>Brakfontein Homeowners Association represents a residential estate at Leeukuil Vereeniging, approximately 15km from Lethabo power station. The power station stacks are clearly visible from the estate. We doubt that Lethabo complies with its AEL especially related to particulate matter emissions.</p> <p>We request that the following information be made available to us to support the statement that Lethabo is fully compliant with its AEL:</p> <ul style="list-style-type: none"> - Last external audit report on the AEL conditions - Continuous analyser emission results (at least hourly or 24 	Johan van Tonder Brakfontein Homeowners Association Leeukuil, Vereeniging 11 September 2018 Comments and Registration Form	Lethabo	<p>Information on compliance will be provided in the AIR.</p> <p>Eskom provides monthly reports on its emission to its licencing authority these can be provided to the Association on request if the information provided in the AIR is not deemed sufficient.</p> <p>Compliance with the AEL is monitored by the authorities, no further external audits of compliance are undertaken.</p>

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	<p>hourly averages</p> <ul style="list-style-type: none"> - Independent emission survey 			
21.4	<p>We support the LAC campaign that Eskom must provide the following information to I&APs to enable us to make a meaningful input to the application:</p> <ul style="list-style-type: none"> - Confirmation of pollutants and timeframes for compliance Eskom intend to apply for in this postponement application and future applications; - Details of the ADM chosen <ul style="list-style-type: none"> ▪ Explanation why particular model chosen ▪ Assumptions that will be made in ADM - Data and information to be inserted into the ADM <ul style="list-style-type: none"> ▪ Pollutants considered (PM₁₀, PM_{2.5}, SO₂, NO_x) ▪ Most recent daily emissions data for PM₁₀, SO₂ and NO_x over a full calendar year in CSV or Excel for power stations mentioned in the application; - Monitored hourly average pollutant (PM₁₀, PM_{2.5}, SO₂, NO_x) for all 	<p>Melita Steele Greenpeace Africa Senior Climate and Energy Campaign Manager 11 September 2018 Official Comment</p>	All	<p>Much of the information requested will be provided where required given the scope of the MES application in the AIR, CBA and motivation documents which will be made available for public comments.</p> <p>The ADM will comply with the 2014 ADM Regulations.</p> <p>It is suggested that once the final reports are made available for public review a specific technical engagement on the air quality modelling and CBA be arranged with the LAC if possible to explain methodologies directly.</p> <p>The CER and partners have been provided with access and copies to the 2014 postponement application and compliance roadmaps included therein previously. Please confirm if these must be resent.</p> <p>Eskom made no decisions not implement abatement technology and has actively pursued implementation of the committed to projects.</p> <p>FFP was installed at Grootvlei power station as per previous commitments.</p> <p>Despite progress made in 2015 and 2016, project teams for Medupi Flue Gas Desulphurisation and Tutuka and Kriel Fabric Filter Plant (no longer included in the plan) retrofits have notified the organisation of delays of one to four years for these projects. These delays are due to funding constraints, lengthy planning, engineering, commercial processes and delayed PFMA approvals. Examples of these delays include:</p> <p>The (PFMA) application for the Kriel FFP retrofit project was declined on</p>

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	<p>Eskom's monitoring stations in the HPA and VTAPA including:</p> <ul style="list-style-type: none"> ▪ Monitoring stations ▪ Downtime percentage; ▪ Values and protocol used in case of downtime and or missing data in CSV or Excell; <p>- All meteorological data that may be used in the ADM;</p> <p>- details for the health impacts study forming part of the cost-benefit analysis</p> <p>- previous compliance roadmaps submitted to DEA in the 2014 postponement and subsequent updates of the compliance roadmaps to date (more detailed information than is provided in the BID's Table 3);</p> <p>- the full explanation for the delay in installing abatement technologies including:</p> <ul style="list-style-type: none"> ▪ reasons why it was decided not to commence with and adequately progress that abatement technology measures for 3 years since the DEA postponement decision in 2015, which required milestones to be achieved of PM by 2019; 			<p>09 February 2018 by the Department of Public Enterprises (DPE). In June 2018 Board approved implementation of a HFT and ESP update without FFP. Replanning is thus underway.</p> <p>For Tutuka it was only possible to obtain PFMA approval in January 2017. Several procurement packages have been put out on tender but the tender responses did not meet requirements and it has become necessary to re-advertise further delaying progress.</p> <p>Lethabo upgrades were approved in the ERA in August 2018. Tenders were advertised for the Lethabo upgrades but the bids received did not meet the local production and content requirements. National Treasury approval being sought for enquiry cancellation. Six(6) months cooling off period will be needed before re-issue to market.</p> <p>Eskom has provided a high level plan of intended actions for the future projects and will report on these to authorities as required. The provision of detailed information prior to finalisation of procurement processes could result in commercial risks and is not supported.</p> <p>Mercury studies are beyond the legal scope and administrative requirements of the MES application.</p>

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	<ul style="list-style-type: none"> ▪ Detailed MES compliance measures Eskom has taken from 2015 to now in respect of meeting SO₂, PM and NO_x objectives (incl. any contracting deadlines, funding deadlines, tenders etc.) ▪ If there was a delay, the nature of the delay and steps taken to solve the issue; ▪ Detailed timeframes of what it intends to do from 2019 – 2024 with micro deadlines which DEA can hold Eskom to account for between 2019 – 2024; <p>- the costs-benefit analysis of addressing the mercury emissions from Eskom's power stations as calculated by the consultants appointed by the DEA to undertake the Minamata Initial Assessment for South Africa; and the mercury emissions data Eskom submitted to DEA for the mercury inventory.</p> <p>Should Eskom not be willing to make this information (or a part of it) available, kindly provide us with the reasons for this refusal. Our rights in this regard are reserved.</p>			

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
21.5	<p>We request Eskom provide the following information to enable us to make a meaningful input on this application:</p> <ul style="list-style-type: none"> ▪ detailed confirmation of pollutants, timeframes for compliance Eskom intends to apply for in this postponement application and future postponements; ▪ Details of ADM chosen, explanation why particular model was chosen and assumptions made in ADM ▪ Data and information to be inserted into model (PM₁₀, PM_{2.5}, SO₂ and NO_x), the almost recent daily emission data for PM₁₀, SO₂ and NO_x over a full calendar year in CSV or Excel for power stations mentioned in application; ▪ Monitored hourly average pollutant (PM₁₀, PM_{2.5}, SO₂ and NO_x) data for all Eskom's monitoring stations in the HPA and VTAPA, including monitoring station's downtime/missing data in CSV / Excel; ▪ All meteorological data used in ADM ▪ Details, methodology, all 	<p>Timothy Lloyd Attorney LAC joint campaign by CeR, ELA, HEJN, VEJA 11 September 2018 Official Comment</p>		Refer to response under 21.4

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	<p>parameters and assumptions used for the health impact study;</p> <ul style="list-style-type: none"> ▪ Former compliance roadmaps submitted to DEA in 2014 postponement and subsequent updates for of compliance roadmaps to date (more detailed information that provided in BID table 3); ▪ Full explanation on delay in installing abatement technology including: <ul style="list-style-type: none"> - Reasons why it has decided not to commence with/adequately progress the abatement technology measures for 3 years since DEA postponement decision in 2015; - Detailed MES compliance measures Eskom has taken from 2015 until now to meet SO₂, PM and NO_x objectives (contracting deadline, funding deadlines, tenders), and if there was a delay, nature of delay and what steps it has taken to solve the issue; - Detailed timeframe of what it intends to do from 2019-2024 with ‘micro deadlines’ which DEA can hold Eskom to account for between 2019 – 2024; 			

NO	ISSUE RAISED	BY WHOM AND WHEN	POWER STATION	RESPONSE GIVEN BY PROJECT TEAM
	<ul style="list-style-type: none"> ▪ CBA of addressing mercury emissions from Eskom's power stations as calculated by consultants appointed by DEA to undertake Minamata Initial Assessment for SA; and mercury emissions data Eskom submitted to DEA for mercury inventory. <p>Should Eskom not be willing to make this information (or part of it) available, kindly provide us with the reasons for this refusal.</p>			

ANNEXURE A

COMMENTS RECEIVED DURING THE 1ST ROUND OF PUBLIC ENGAGEMENT

A1 – WRITTEN SUBMISSIONS BY NON GOVERNMENTAL ORGANISATIONS

A2 – EMAILED COMMENTS, COMPLETED COMMENTS AND RESPONSE FORMS,
REGISTRATION AS I&APS

ANNEXURE B

COMMENTS RECEIVED DURING THE 2ND ROUND OF PUBLIC ENGAGEMENT