

Mr. Mondli Shoji

National Energy Regulator South Africa

By email: irp-procurement.techrange@nersa.org.za

16 September 2022

Dear Sir

COMMENT ON THE PROPOSED CONCURRENCE WITH THE MINISTERIAL DETERMINATION ON THE PROCUREMENT OF NEW GENERATION CAPACITY OF 3000 MW FROM GAS

1. The groundWork Trust¹ ("**groundWork**"), the South Durban Community Environmental Alliance² ("**SDCEA**"), Natural Justice³ ("**NJ**") and the Centre for Environmental Rights⁴ ("**CER**") make this joint submission on the above proposed determination. These comments have been endorsed by Earthlife Africa,⁵ The Green Connection⁶ 350Africa.org,⁷ Oceans Not Oil,⁸ and Project 90 by 2030.⁹
2. We refer to the Consultation Paper published by the National Energy Regulator of South Africa ("**NERSA**") on 26 August 2022 in relation to NERSA's concurrence with three proposed Ministerial Determinations on the procurement of new generation capacity, from the Minister of Mineral Resources and Energy ("**the Minister**") ("**the Consultation Paper**"). We also note and refer to an Erratum issued by NERSA on 12 September 2022 correcting errors in relation to the determination for 3000 MW gas to power, the details of which are addressed below ("**the Erratum**").

¹ groundWork is a non-profit environmental justice service and developmental organisation working primarily in Southern Africa in the areas of climate and energy justice, coal, environmental health, global green and healthy hospitals, and waste. groundWork seeks to improve the quality of life of vulnerable people in South Africa, and increasingly in Southern Africa, through assisting civil society to have a greater impact on environmental governance. groundWork places particular emphasis on assisting vulnerable and previously disadvantaged people who are most affected by environmental injustices.

² South Durban Community Environmental Alliance (SDCEA) is an environmental justice organisation based in South Durban, South Africa. It is made up of 19 affiliate organisations and has been active since its formation in 1995. It is a non-government organization existing solely on finances sourced from funders and sponsors in order to remain totally independent. It makes no profit and exists solely for the benefit of the people it represents.

³ Natural Justice is a team of pioneering lawyers and legal experts specialising in human rights and environmental law in pursuit of social and environmental justice.

⁴ The Centre for Environmental Rights is a non-profit organisation and firm of environmental rights lawyers that helps communities defend their right to a healthy environment. We do this by advocating and litigating for transparency, accountability and compliance with environmental laws.

⁵ Earthlife Africa is a non-profit organisation, founded in Johannesburg, South Africa, in 1988, that seeks a better life for all people without exploiting other people or degrading their environment.

⁶ The Green Connection is a registered non-governmental organisation which believes that economic growth and development, improvement of socio-economic status and conservation of natural resources can only take place within a commonly understood framework of sustainable development. The Green Connection aims to provide practical support to both the government and non-governmental/civil society sectors, which are an integral part of sustainable development.

⁷ 350.org is an international environmental organisation addressing the climate crisis with a goal to end the use of fossil fuels and transition to renewable energy by building a global, grassroots movement.

⁸ Oceans Not Oil is a network that facilitates and supports any public voice raised against the impacts of escalating reconnaissance/prospecting activities in the form of seismic surveys and exploration wells on the coast of South Africa and their consequence to marine life and climate change.

⁹ Project 90 by 2030 is a social and environmental justice organisation inspiring and mobilising South African society towards a sustainably developed and equitable low-carbon future. We work with stakeholders and decision makers to identify policies and actions that support climate justice; with a specific focus on developing environmental leadership in our youth, and increasing people's ability to engage government – through active public participation – to address climate change, energy poverty, and the social injustices that intersect in their communities.

3. We commend the decision to place different generation capacities in separate Ministerial determinations. We hope that this separation will enable the procurement for renewables and storage to be prioritised. As such, we do not presently intend to object to the procurement of 14 791 MW from solar PV, wind and storage. Nor do we, at this stage, object to the proposed determination for 1000 MW from co-gen, biomass and landfill, although our rights in this regard are reserved.
4. Given the ongoing human suffering and costs to the economy due to loadshedding; the clear responsibility of the Minister of Mineral Resources and Energy “to ensure the continued uninterrupted supply of electricity”; and therefore the urgency to get megawatts onto the grid, we support plans to prioritise and expedite the establishment of renewable energy and storage capacity as the quickest and least-regret option to address South Africa’s electricity supply issues. We emphasise, however, that such prioritisation should not prejudice community rights and interests, or the interests and rights of affected members of the public, to an environment that is not harmful to their health and well-being, to be meaningfully consulted on these decisions and to have an adequate opportunity to make submissions. It is the obligation of NERSA and the Minister to conduct public participation and conduct a fair process in the making of all section 34 determinations. Our rights are reserved in this regard.
5. The following comments relate to Annexure C, i.e. the Consultation Paper on NERSA’s concurrence with the Minister’s s34 Determination, containing the Minister’s proposed second determination for the procurement of 3000 MW gas to power (“**the draft gas determination**”). The draft gas determination provides for the procurement of 3 000 MW of gas power, where the plant must be at Richards Bay which falls under the City of Umhlathuze, procured by Eskom and, according to the Consultation Paper, purchased by Eskom.
6. In summary, these comments contain our objections to the draft gas determination on the bases that, *inter alia*:
 - 6.1. the public consultation process preceding the draft determination has, to date, been woefully inadequate;
 - 6.2. the draft gas determination lacks key information and is not (to our knowledge) informed by any electricity needs and least-cost planning or crucial impact assessments, and is thus irrational and unreasonable;
 - 6.3. the draft determination as it currently stands is vague and ambiguous and fails to meet applicable legal requirements; and
 - 6.4. the substance of the gas determination is in conflict with the law and Constitution in that plans to develop new gas power capacity pose unjustifiable harms to the people of South Africa and threats to constitutional rights, and are not aligned with the legal requirements set out in the Electricity Regulation Act, 2006.
7. We also address the questions posed by NERSA in the Consultation Paper below from paragraph 93 onwards.
8. While we do not comment on the other two determinations in this submission, we record that the absence of specific comments cannot be in any way construed as agreement or acceptance thereof, and our rights are reserved in this regard.

A tailor-made Ministerial Determination without rational basis

9. At the outset, we wish to strongly object to the manner in which the draft gas determination has, on the face of it, been tailor-made and retro-fitted to an existing, authorised, Eskom gas-to-power project. This is inferred from the contents of the Erratum.
10. In December 2019, Eskom was granted an environmental authorisation for the construction and operation of a 3 000 MW combined cycle power plant (“**the Eskom Gas Power Plant**”) in Richards Bay. In October 2020, the Minister of Forestry, Fisheries and the Environment refused an appeal by SDCEA and groundWork, and subsequently, these organisations approached the North Gauteng High Court¹⁰ (“**the judicial review**”) to review

¹⁰ *South Durban Community Environmental Alliance & Another v Minister of Forestry, Fisheries and the Environment & Others* (Case No. 17554/2021).

and set aside these decisions, on a number of grounds, many of which are referred to in this submission. At the time of this submission, judgment is reserved.

11. Based on the available information, more particularly as contained in the environmental impact assessment (“EIA”) documents for the Eskom Gas Power Plant and the pleadings in the judicial review, it is understood that Eskom intends to commission and operate the plant. We are not aware of any plans by Eskom to outsource the operation of the plant, or on-sell the (disputed) environmental authorisation. If any such plans do exist, we call on Eskom, NERSA and the Minister to make these plans publicly available.
12. Pertinently, throughout the EIA process, the administrative appeal and the judicial review processes, Eskom has sought to rely on the various Integrated Resources Plans of 2019 (“IRP 2019”) to justify the need for, and desirability of, the plant. In the Supplementary Founding Affidavit filed by the organisations in September 2021, the organisations pointed out that this failed to account for the fact that this capacity is, in terms of the IRP 2019 and the 2020 Determination, to be procured from independent power producers. In January 2022, Eskom filed its notice of opposition to the litigation.
13. Whilst the Consultation Paper is ambiguous and contradictory as to the scope of the draft gas determination (which is described more fully at paragraph 45 below), the Erratum makes it clear:
 - 13.1. that the 3 000 MW of gas to be procured falls outside the scope of the IRP;
 - 13.2. that the determination is proposed in response to an “application” by Eskom on 13 January 2022; and
 - 13.3. that the determination is for the sole purpose of implementing Eskom’s 3 000 MW Combined Cycle Gas Power Plant in Richards Bay.
14. Whilst Eskom’s “application” documents have not been made available for public comment, it appears from the Erratum that the draft gas determination has been tailor-made and retro-fitted to serve Eskom’s objectives, to pave its administrative way to implement its own Power Plant project. It is also not premised on any robust, comprehensive assessment of South Africa’s electricity needs or assessment of its economic feasibility, as set out in more detail as a ground of objection at paragraphs 47 to 92 below. This directly contradicts legislative imperatives to ensure effective energy planning under the National Energy Act, 2008 and the Electricity Regulation Act, 2006 (“ERA”), amongst others.

The Legal Context of this Submission

The Constitution of the Republic of South Africa

15. The supreme law of the Republic is the Constitution of the Republic of South Africa, 1996 (“**the Constitution**”).
16. The issuing of a Ministerial determination is a decision with far-reaching impacts for health, well-being, the economy, the climate, our air and water resources and the environment more broadly. It has implications for numerous fundamental rights enshrined in the Bill of Rights in the Constitution. Government and NERSA must ensure that the determination respects, protects, promotes and fulfils these rights, as opposed to conflicting with them.
17. The Constitution guarantees an unqualified right to an environment that is not harmful to health or well-being;¹¹ and it confers the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that – (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.¹²

¹¹ S24(a), the Constitution.

¹² S24(b), the Constitution.

18. Other Constitutional rights that are relevant include: the right of access to water, food, and social security;¹³ the right to equality;¹⁴ the right to human dignity;¹⁵ the right to life;¹⁶ children's rights;¹⁷ the right to just administrative action;¹⁸ and of access to information¹⁹ - that the state (including NERSA) has an obligation to ensure that there is adequate public consultation and engagement with the public in relation to the draft determination.
19. We submit that many of the various issues detailed below, render the draft gas determination in conflict with the Constitution, as the supreme law of the Republic.

Promotion of Administrative Justice Act

20. The Promotion of Administrative Justice Act, 2000 ("**PAJA**") is based on section 33 of the Constitution - the right to just administrative action.
21. The issuing of a Ministerial determination constitutes administrative action affecting the public. This was confirmed in the judgment by the Western Cape High Court in the case of *Earthlife Africa Johannesburg and Southern African Faith Communities Environment Institute v the Minister of Energy & Others* ("**the nuclear case**").
22. As such, **a decision to issue a determination (including NERSA's concurrence therein) must meet the requirements set out in PAJA**. These include, *inter alia*, that it must be procedurally fair; reasonable; lawful; and rationally connected to, for example, the purpose for which it was taken, the purpose of the empowering provision, and the information before the administrator. Administrative action must, *inter alia*, be taken in good faith and cannot be materially influenced by an error of law.
23. In relation to the requirements for a fair consultation process – which must be conducted by NERSA and the Minister - section 4 of PAJA states that:

"4.(1) In cases where an administrative action materially and adversely affects the rights of the public, an administrator, in order to give effect to the right to procedurally fair administrative action, must decide whether

(a) to hold a public inquiry in terms of subsection (2);

(b) to follow a notice and comment procedure in terms of subsection (3);

(c) to follow the procedures in both subsections (2) and (3);

(d) where the administrator is empowered by any empowering provision to follow a procedure which is fair but different, to follow that procedure; or

(e) to follow another appropriate procedure which gives effect to section 3".

National Environmental Management Act

24. The determination would also have to be aligned, and comply with, the National Environmental Management Act, 1998 ("**NEMA**"). NEMA was enacted to give effect to section 24 of the Constitution. This is national legislation binding on all state bodies, to develop, *inter alia*, a framework for integrating good environmental management into all development activities.
25. Section 2 of NEMA lists principles which are guidelines by reference to which any organ of state (including the Minister and NERSA) must exercise when making any decision which may significantly affect the environment. Decisions in relation to the procurement of electricity, and especially the procurement of electricity from fossil fuels, must therefore be aligned with section 2 of NEMA. This includes, for example, the principle that *"environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a*

¹³ S27, the Constitution.

¹⁴ S9, the Constitution.

¹⁵ S10, the Constitution.

¹⁶ S11, the Constitution.

¹⁷ S28, the Constitution.

¹⁸ S33, the Constitution.

¹⁹ S32, the Constitution.

manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons". NEMA also calls for a "risk averse and cautious approach, which takes into account the limits of current knowledge about the consequences of decisions and actions" ("**the precautionary principle**").

26. Further, Section 28 of NEMA places a duty of care on every person who "causes, has caused or may cause significant pollution or degradation of the environment [to] take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment." This duty extends to all organs of state, including the Minister and NERSA. Given the current, ongoing impacts of pollution caused by fossil fuels in South Africa and the potential risk of significant harm from procuring gas to power, the Minister and NERSA are under an obligation to ensure that their decision to promulgate the gas determination does not give rise to continued or recurring pollution and environmental degradation.

Electricity Regulation Act

27. The ERA establishes a national regulatory framework for the electricity supply industry and, *inter alia*, makes NERSA the custodian and enforcer of the national electricity regulatory framework. The objects of the ERA, as set out in section 2, are to, *inter alia*:

*"(a) achieve the **efficient, effective, sustainable** and orderly development and operation of electricity supply infrastructure in South Africa;*
*(b) ensure that the **interests and needs of present and future electricity customers and end users are safeguarded** and met, having regard to the governance, efficiency, effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic;... and*
(g) facilitate a fair balance between the interests of customers and end users, licensees, investors in the electricity supply industry and the public" (emphasis added).

28. Section 34 of ERA states that:

"(1) The Minister may, in consultation with the Regulator –

*"(a) determine **that new generation capacity is needed to ensure the continued uninterrupted supply of electricity;***

(b) determine the types of energy sources from which electricity must be generated, and the percentages of electricity that must be generated from such sources;

(c) determine that electricity thus produced may only be sold to the persons or in the manner set out in such notice;

(d) determine that electricity thus produced must be purchased by the persons set out in such notice;

(e) require that new generation capacity must –

*(i) be established through a tendering procedure which is **fair, equitable, transparent, competitive and cost-effective;***

(ii) provide for private sector participation" (emphasis added).

29. Electricity Regulations on New Generation Capacity ("**the New Generation Regulations**"),²⁰ were enacted in 2011 under the ERA and updated in 2020. Amongst other things, the regulations seek to facilitate planning for the establishment of new generation capacity.²¹ These Regulations apply to the procurement of new generation capacity, by organs of state, including:

"(a) new generation capacity derived from renewable energy sources and co-generation;

"(b) base load, mid-merit load and peak load new generation capacity; and

"(c) cross border projects".²²

²⁰ GN R399 and GN 500.

²¹ Regulation 3, New Generation Regulations.

²² Regulation 2, New Generation Regulations.

30. The draft gas determination states that the generation capacity “*must be procured by Eskom Holdings SOC Ltd through one or more tendering procedures which are fair, equitable, transparent, competitive and cost effective*”. The New Generation Regulations define ‘procurer’ as “*the person designated by the Minister in terms of section 34 as being responsible for the preparation, management and implementation of the activities related to procurement of new generation capacity under an IPP procurement programme including the negotiation of the applicable power purchase agreements, which person may or may not be the buyer*”.
31. We note that, per NERSA’s Consultation Paper, Eskom is intended to be the designated procurer and buyer of the 3000 MW of gas to power - although Eskom is not specified as buyer in the draft determination itself. Based on Eskom’s designation as procurer in the draft determination, it appears that this capacity is to be established through a procurement process by an independent power producer (“**IPP**”), though the wording of the draft gas determination and Consultation Paper is ambiguous and confusing.
32. Regulation 6 of the New Generation Regulations states that:
- “6 Ministerial determinations*
(1) The Minister may, in consultation with the Regulator, make a determination in terms of section 34 of the Act.
(2) A determination under section 34(1) shall include a determination as to whether the new generation capacity shall be established by Eskom, another organ of state or an IPP.
(3) If the determination referred to in subregulation (2) requires that the new generation capacity be established by an IPP, the Minister shall also determine the identity of the buyer or, where applicable, the procurer and the buyer.
(4) The determination referred to in subregulation (2) may require or contemplate that new generation capacity be established through a cross border project, provided that the Minister is satisfied that adequate agreements, memoranda of understanding or arrangements are in place or will be in place between the Government and the relevant foreign government or international organisation, as are necessary to enable such cross border project.
(5) A determination contemplated in this Regulation is binding on the buyer and the procurer.” (emphasis added)
33. Based on regulation 6, where a determination envisages a procurement process by an IPP, that determination must specify the identity of the buyer.
34. The Minister’s power to determine if new electricity capacity is required, must be exercised in consultation with NERSA; it must be exercised in accordance with the objects of the ERA, the Constitution and PAJA, and the determined generation capacity itself must be aligned with legal requirements in ERA, the Constitution and other laws.
35. The Minister may, having regard to the need for new generation capacity as provided for in the IRP 2019,²³ undertake or commission the buyer or another party to undertake feasibility studies in respect of such new generation capacity requirement.²⁴ The considerations and outcomes for a feasibility study must include the anticipated cost of the proposed new generation capacity, and demonstrate the anticipated value for money to be achieved through the new generation capacity project.
- 35.1. **We understand that this 3000 MW capacity in the gas determination falls outside the IRP of 2019, nevertheless, if such a feasibility study has been conducted in respect of the draft gas determination (and we submit that it should be), we request that it be made available.**
- 35.2. In any event, the anticipated cost of the proposed new generation capacity in the draft gas determination, and whether it is “value for money”, are certainly relevant considerations that need to inform decision-making on a section 34 determination.

²³ Integrated Resource Plan, GG 42784 of 18 October 2019.

²⁴ Regulation 5, New Generation Regulations.

36. “Value for money” is defined in the New Generation Regulations as *“that the new generation capacity project results in a net benefit to the prospective buyer or to Government having regard to cost, price, quality, quantity, risk transfer or a combination thereof, but also where applicable to the Government’s policies in support of renewable energy”* (emphasis added).
37. Assuming that the gas generation capacity is to be generated by an IPP – it would need to be demonstrated that this capacity provides a net benefit to Eskom and that it is, *inter alia*, value for money. In terms of Regulation 5, the Minister may undertake or commission the buyer (unknown in this instance) or another party to undertake feasibility studies in respect of such new generation capacity requirements.
38. Regulation 9 of the New Generation Regulations sets out requirements for the conclusion of a power purchase agreement (“PPA”) for new generation capacity. It states that:
“(1) A power purchase agreement between the buyer and an IPP must meet the following requirements
(a) value for money;
(b) appropriate technical, operational and financial risk transfer to the seller;
(c) effective mechanisms for implementation, management, enforcement and monitoring of the power purchase agreement; and
(d) satisfactory due diligence in respect of the buyer’s representative and the proposed seller in relation to matters of their respective competence and capacity to enter into the power purchase agreement.”
39. We have, in previous submissions to the DMRE and Eskom, submitted that gas for power capacity would not provide “value for money” and would thus not meet the requirements of the New Generation Regulations. Evidence of this is the unjustifiably high costs involved in gas to power generation, particularly when compared with less harmful renewable energy - as addressed in more detail below (paragraphs 53 to 93).
40. We shall illustrate below that, due to procedural and substantive issues, the decision to proceed or concur with the draft gas determination would: be procedurally unfair, not providing affected persons with an adequate opportunity to submit their views and present relevant facts and evidence to NERSA;²⁵ be based on irrelevant considerations or to the exclusion of relevant considerations;²⁶ not be rationally connected to the purpose for which it was taken;²⁷ is so unreasonable that no reasonable person could have so exercised the power or performed the function;²⁸ and is unconstitutional or unlawful.²⁹

The National Energy Regulator of South Africa Act

41. NERSA has its own specific legal obligations when it comes to making decisions, including decisions to concur in the issuing of a Ministerial determination for new generation capacity. NERSA is legally obliged, under the National Energy Regulator of South Africa Act, 2004 (“**NERSA Act**”), to ensure that all of its decisions are:
- 41.1. consistent with the Constitution and all applicable laws including the NEMA principles;
 - 41.2. in the public interest;
 - 41.3. within the powers of the Energy Regulator, as set out in the NERSA Act, the ERA, the Gas Act, 2001 and the Petroleum Pipelines Act, 2003;
 - 41.4. taken within a procedurally fair process in which affected persons have the opportunity to submit their views and present relevant facts and evidence to the Energy Regulator;
 - 41.5. based on reasons, facts and evidence that must be summarised and recorded; and
 - 41.6. explained clearly as to its factual and legal basis and the reasons therefor.³⁰
42. We submit and support herein that generation of electricity from gas is not in the public interest or aligned with the Constitution and other applicable laws, given the unacceptable risks of harm for the climate, human health,

²⁵ Section 6 (2)(c) of PAJA.

²⁶ Section 6 (2)(e) of PAJA.

²⁷ Section 6 (2)(f) of PAJA.

²⁸ Section 6 (2)(h) of PAJA.

²⁹ Section 6 (2)(i) of PAJA.

³⁰ S10, NERSA Act.

water resources and the environment more broadly, and the inordinately high costs involved in gas to power generation. This is set out in detail below.

Procedural Issues

Inadequate Public Participation

43. Appendix 2 of the Consultation Paper itself refers to sections 9 and 10 of the NERSA Act, in that it demands that the Energy Regulator must factor in public interest in the decision-making and that the decision be taken within a fair process, recognising sections 33 and 195 of the Constitution and giving effect to section 4 of PAJA. It goes further to say that NERSA's public participation process enables input from stakeholders to have an influence in the decision-making, therefore the process must be timely, effective, adequate, formal, contain appropriate information, proper notification and consideration of inputs received.
44. However, we submit that the consultation process being conducted by NERSA in relation to the draft gas determination does not meet the above requirements. Communities that would be impacted by the draft gas determination have been dealing with a proliferation of proposed gas projects in the Richards Bay area (the Eskom Gas Power Plant, the proposed Phinda Power 320 MW gas to power station, the proposed Richards Bay Gas Power 400 MW gas to power station, the proposed Phakwe Richards Bay Gas Power 2000 MW gas to power station, one of three proposed Karpowership gas to power via powership projects, which is to be located within the Port of Richards Bay, and the Nseleni Independent Floating Power Plant. This, in addition to other industrial projects and infrastructure in the Richards Bay area - including Fermantech Fertiliser Supplier, Bidvest Tank Terminal, Bayside Aluminium Richards Bay, Foskor Richards Bay, Mondi Richards Bay, Port Richards Bay, Richards Bay Coal Terminal, South32 Aluminium, and Tata Steel, and offshore exploration proposals). Failing to provide an adequate opportunity to the affected communities around Richards Bay to comment on the determination would fall woefully short of NERSA's legal obligations.
45. The Consultation Paper contains contradicting statements and lacks key information which, paired with a shortened consultation period, has resulted in a process which is not adequate or fair. The reasons for this are as follows:
- 45.1. **Ambiguity on the deadline for comment:** The first notice, published on 26 August 2022 (Annexure A) indicated that the comment period is open until 23 September. However, an updated notice was published (on an unknown date) indicating that the commenting period would close on 16 September 2022. This deadline change causes uncertainty. The fact that NERSA has sought to remedy the uncertainty through the undated erratum (Annexure B) less than 5 days before the deadline and without a widely published notice, may well (and understandably) result in different deadlines being followed.
- 45.2. **Inadequate time provided for consideration and comment:** We submit that the time period (16 working days) provided for public consideration and comment on the draft gas determination is woefully inadequate and falls short of the requirements for a fair and adequate consultation process under the NERSA Act, ERA, PAJA and the Constitution. As a justification for not adhering to proper public participation processes, NERSA states in paragraph 6 of Appendix 2 of the Consultation Paper that *"...the number of days that will be generally undertaken [are to] be minimised. This has been informed by the fact that the technology being considered is not new in the dispensation, stakeholders have been engaged previously and NERSA still has the records of the input."* It is assumed that when NERSA refers to stakeholders being previously engaged on gas to power, it is referencing the Minister and NERSA's section 34 determination for 3000 MW of gas technology of 25 September 2020, and the public participation process that preceded that determination (**"the 2020 gas determination"**). If this is the case, it should follow that the draft gas determination of 26 August 2022 replaces the 2020 gas determination. However, until such time as the 2020 gas determination is formally set aside, or an undertaking provided by the Minister and Department of Mineral Resources and Energy (**"DMRE"**) that no steps will be taken to procure the capacity in the 2020 gas determination, it must be assumed that that 2020 gas determination still stands - making this draft gas determination a separate determination altogether. Further, the erratum implies that this is in fact an additional 3000 MW of gas to be determined – over and above that

which was determined in 2020, being specifically designated for Richards Bay and for procurement by Eskom - unlike the 2020 gas determination. In other words, the draft gas determination seeks to add an additional 3000 MW to an existing 3000 MW determined in 2020, which is double the gas to power allocation under the IRP 2019. This is a decision with far-reaching and significant impacts for our fiscus, the climate and our health and environment – and poses threats to constitutional rights. As such, it requires **thorough** public participation. At least 30 days should be provided for consideration and comment and public hearings must be held.

- 45.3. **Absence of critical information to enable public participation:** While the 2022 determination states that “3000 MW of gas power new generation capacity at Richards Bay is needed to be procured to contribute towards energy security”, pertinent information such as load capacity has not been provided. It is safe to assume that the Minister and NERSA understand that the differences between a baseload gas to power plant, mid-merit plant and a peaker plant are substantial. Without such information, it is impossible for stakeholders to engage with the draft gas determination and its impacts, let alone provide adequate comments thereon, thus rendering the public participation process inadequate and futile.
- 45.4. **Lack of clarity from NERSA:** Various stakeholders have queried the above, and NERSA has responded with varying and contradictory statements (for example, confirming that the draft gas determination replaces the 2020 gas determination), or has simply not responded at all. CER has emailed NERSA directly to enquire on the status of the draft gas determination in relation to the IRP). We have yet to receive a response, despite the looming deadline for comment. This severely prejudices our rights to comment on the draft gas determination. It is paramount that this is clarified. Since we have not received any responses to date, the requested clarity for all stakeholders has yet to be provided.
- 45.5. **Failure to consult in any alternative language:** The Environmental Impact Assessment Report (“EIR”) for the Eskom Gas Power Plant notes that the most commonly spoken language in the affected areas is isiZulu, with 79% of people speaking that language,³¹ and that the affected region includes traditional areas.³² Despite this, we are not aware of any notices of this consultation process, either in print or otherwise, being conducted in isiZulu, or of any attempt being made to consult with communities in traditional areas.
46. We submit that the conflicting statements, lack of appropriate information in the documentation, lack of an inclusive consultation process and lack of adequate time for consideration and comment has rendered this consultation process and period procedurally unfair. This is particularly so in light of: the potential extensive negative impacts posed by developing 3000 MW of gas to power capacity; and the communities exposed to the impacts of this decision. To our knowledge, NERSA has made no attempt to engage with communities in Richards Bay on this draft gas determination. This is unacceptable.

Absence of key information to inform the determination for 3000 MW gas to power

47. It appears that the capacity in this draft gas determination falls outside, and will be in addition to, the allocation to gas in the IRP 2019. This is confirmed in the Erratum. Further, the full 3000 MW gas allocation in Table 5 of the IRP 2019 has already been allocated under the 2020 gas determination.
48. The IRP 2019 allocated an average load factor of 12%³³ for the proposed 1000 MW and 2000 MW gas power capacity. This means that not only can we now expect an additional 3000 MW-worth of GHG emissions and

³¹ Page 169 of the Final Environmental Impact Assessment Report for the Richards Bay Combined Cycle Power Plant, August 2019. Accessible at <https://www.eskom.co.za/OurCompany/SustainableDevelopment/EnvironmentalImpactAssessments/RichardsBayCCPP/Documents/RBay%20CCPP%20EIAr%20Final%20Report.pdf>.

³² Page 164 of the Final Environmental Impact Assessment Report for the Richards Bay Combined Cycle Power Plant, August 2019. Accessible at <https://www.eskom.co.za/OurCompany/SustainableDevelopment/EnvironmentalImpactAssessments/RichardsBayCCPP/Documents/RBay%20CCPP%20EIAr%20Final%20Report.pdf>

³³ IRP 2019 Decision 7, paragraph 5.3.5.

impacts beyond that envisaged in the IRP 2019, but also that if this gas determination capacity is allocated a higher 'base load' load factor, it would further increase the cost impact on the weighted-average power cost and defer any GHG emissions reduction benefits of the renewable energy roll-out.

49. While we do not concede the validity or constitutionality of the 2020 gas determination or the gas allocation in the IRP 2019, we do note that the decision to be taken under the current draft gas determination is not aligned with South Africa's electricity plan (the IRP), and appears to be uninformed by any feasibility studies, impact assessments or energy modelling, given that it is not based on any IRP or electricity plan. In other words it is to be taken without any reasonable basis or rationale whatsoever.
50. As it stands, the information underlying the decision to grant environmental authorisation for the Eskom Gas Power Plant has been challenged by SDCEA and groundWork on a number of bases, including that it is inaccurate and missing key information.³⁴
51. In this regard, we call on NERSA to advise on the following:
 - 51.1. **Has there been an assessment by NERSA of the impacts of developing this gas capacity on:**
 - 51.1.1. **South Africa's climate commitments as set out in its Nationally Determined Contribution under the Paris Agreement;**³⁵
 - 51.1.2. **anticipated costs of electricity;**
 - 51.1.3. **South Africa's water resources;**
 - 51.1.4. **health and well-being of the people most likely to be impacted; and**
 - 51.1.5. **the Richards Bay area, including cumulative impacts on air quality taking into account existing and planned emissions (such as the Liquefied Natural Gas ("LNG") terminal, other industrial and gas to power plants, vehicle emissions, fugitive leaks and flaring)?**
 - 51.2. **Has a risk assessment been undertaken in relation to the proposed, and existing, gas capacity to be established in Richards Bay? This should include emergency, communication, evacuation and control plans in case of an emergency, including an explosion or unforeseen weather event.**
 - 51.3. **What modelling and assumptions informed this determination?**
52. Below we set out further, the substantive reasons why the proposed determination for 3000 MW gas to power warrants a full and complete public participation process, including public hearings. Without such, NERSA cannot hope to obtain input from all relevant stakeholders, which are particularly wide-ranging in this instance, or to make an adequately informed decision.

Substantive Issues

53. In addition to the submissions herein, we incorporate by reference, the Centre for Environmental Rights' submissions to NERSA on 30 October 2020 with regard to the 2020 determination, as well as those submitted on 7 May 2020 in relation to NERSA's consultation papers on the 2020 determination – while pertaining to different decisions and a different determination, these submissions set out in detail the harms, risks and concerns in relation to the development of gas power. It further demonstrates that the Centre for Environmental Rights, on behalf of groundWork and the Life After Coal Campaign, has been raising concerns on gas to power more generally since at least 2020.
54. Below we set out and explain:

- 54.1. the defects in the draft determination;

³⁴ South Durban Community Environmental Alliance & Another v Minister of Forestry, Fisheries and the Environment & Others (Case No. 17554/2021). The court papers can be accessed here: <https://naturaljustice.org/ground-breaking-litigation-sees-organisations-challenge-new-power-plant-in-richards-bay/>.

³⁵ See the 2021 Nationally Determined Contributions here: <https://www.climatecommission.org.za/publications/south-africas-ndc-targets-for-2025-and-2030>

- 54.2. the harms of gas to power from a climate, health, water, broader environmental and economic perspective;
- 54.3. inadequate mitigation of GHG emissions from the proposed 3 000 MW gas power;
- 54.4. the social costs of the proposed 3000 MW gas capacity;
- 54.5. the need for an urgent just transition away from harmful fossil fuels; and,
- 54.6. the absence of any justification for the harms of gas to power based on the existence of feasible cleaner alternatives, which do not have the same harmful impacts, and based on the fact that justifications typically relied on are false.

The defects in the draft determination

- 55. The draft gas determination is vague, ambiguous and lacking in key, and legally-required, details.
- 56. The draft gas determination makes provision for Eskom to be the procurer of the capacity through a tendering process. Yet no buyer is specified nor is it clearly stated whether the capacity will be established by Eskom or an IPP - as required by regulations 6(2) and 6(3) of the New Generation Regulations. As the designated procurer - the implication is that there will be a procurement process, where the capacity is procured from an IPP - yet this is not clearly set out in the draft gas determination. If Eskom will establish the capacity, then it is unclear what procurement process will follow.
- 57. Furthermore, the absence of a specified buyer in the draft determination is in direct non-compliance with regulation 6(3) of the New Generation Regulations.
- 58. We refer to the submissions at paragraphs 13 above, wherein we refer to the Erratum's clear reference to an application by Eskom for a determination for the implementation of a 3000 MW combined cycle gas power plant in Richards Bay. Nowhere is this referenced in the draft determination. In fact, the draft gas determination envisages quite the opposite - a bidding process to be run by Eskom (as opposed to a specified and already envisaged gas project, which is currently owned and proposed by Eskom). Not only does this further add to the ambiguity and uncertainty around the proposed gas determination, but it also renders redundant (and highly conflicted) the proposed procurement process in the draft gas determination.
- 59. NERSA and the Minister must rectify the various fatal irregularities in the draft determination, and subject an amended and clear determination (where it is clearly stated what is being proposed and regulations 6(2) and (3) requirements complied with) to an adequate public consultation process. In any event, and for the reasons below, we maintain that rectifying the process and errors in the determination alone would not be sufficient for it to pass muster. We set out below the basis for our objections to the draft gas determination in relation to, *inter alia*, the harms of gas power.

The harms of gas to power

- 60. There is extensive evidence to demonstrate the harms to human health, the climate, the environment and the economy from burning gas for electricity. These harms cannot be justified, particularly given the availability of feasible and cost-effective alternatives which do not have the same harmful impacts. On this basis, we record that any decisions by NERSA and the Minister to proceed with gas to power through this allocation would be in conflict with section 10 of the NERSA Act (in NERSA's case), as well as the Constitution, PAJA, ERA and NEMA.
- 61. Burning gas at power plants emits nitrogen oxide (NO_x) and carbon dioxide (CO₂), as well as volatile organic compounds, methane and hazardous air pollutants like formaldehyde as a result of inevitable incomplete combustion.^{36, 37} Further, the extraction, processing, transport and use of natural gas cause significant amounts of

³⁶ U.S. Environmental Protection Agency (EPA), *Clean Energy*, <https://www.nrc.gov/docs/ML1006/ML100600773.pdf>.

³⁷ U.S. Environmental Protection Agency (EPA), *Natural Gas Combustion*, https://www3.epa.gov/ttnchie1/old/ap42/ch01/s04/final/c01s04_jul1998.pdf.

methane to be released into the atmosphere³⁸ – all of which are important as the lifecycle impacts of gas to power must be considered.

62. According to the United Nations, methane is an 82.5 times more potent greenhouse gas than carbon dioxide over a 20-year period, and 28-34 times more potent over a 100-year period. More research is also showing that methane often leaks during the production, transport and use of natural gas. Therefore, its contribution to climate change is significantly unaccounted for. New methane monitoring technologies, such as drones, laser absorption spectroscopy, and satellites have improved identification and quantification of emissions across the gas lifecycle, leading researchers to conclude that national governments have almost universally underestimated these emissions.^{39,40,41,42,43} Methane leaks and purposeful venting of this methane from gas contribute 40 million tonnes of methane to the atmosphere annually.⁴⁴ These emissions have contributed to significant growth in global atmospheric methane over the past two decades. This, of course, has significant negative implications for climate change.
63. The International Energy Agency estimates that the burning of natural gas globally contributed some 7.5 billion tonnes (Gt) of carbon dioxide to the atmosphere in 2021 which equates to approximately 21% of global carbon dioxide emissions - a substantial contribution to the world's carbon footprint.⁴⁵
64. At low levels the NOx from gas-to-power plants results in respiratory symptoms such as coughing, shortness of breath, and throat irritation, and at high levels may cause more severe symptoms, airway damage, and even death.⁴⁶ NOx also creates additional health and environmental impacts when it reacts with other chemicals in the atmosphere to form acid rain, particulate matter, and ozone.^{47,48,49,50,51}
65. If 3000 MW of new gas-to-power facilities were to be brought online and the plants were fueled by imported LNG, the annual emissions resulting from this fuel use would be over 2,5 million tonnes of CO₂e (carbon dioxide equivalent) annually if the plants ran at 75% capacity. This is equivalent to the greenhouse gas (“GHG”) emissions of over half a million gasoline-powered vehicles being driven for a year.⁵²

³⁸ A study by the National Energy Technology Laboratory evaluating emissions from of several LNG import and export locations demonstrated that these segments emit approximately 84 kg CO₂e (100 yr GWP) per MW delivered: Selina Roman-White et al. Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States: 2019 Update, (2019), National Energy Technology Laboratory (NETL), www.energy.gov/sites/prod/files/2019/09/f66/2019%20NETL%20LCA-GHG%20Report.pdf.

³⁹ Jonathan Mingle, *Methane Detectives: Can a Wave of New Technology Slash Natural Gas Leaks?*, YALE E360, (2019), <https://e360.yale.edu/features/methane-detectives-can-a-wave-of-new-technology-slash-natural-gas-leaks>.

⁴⁰ Ramon A Alvarez et al. *Assessment of methane emissions from the U.S. oil and gas supply chain*, Science, (2018), <https://www.science.org/doi/10.1126/science.aar7204>.

⁴¹ International Energy Agency, *Global Methane Tracker 2022- Overview*, <https://www.iea.org/reports/global-methane-tracker-2022/overview>.

⁴² South Africa is likely among those that are underreporting because the Technical Guidelines for GHG reporting uses outdated emission factors from the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines.

⁴³ Srijana Rai et al. Industry Partnerships & their Role in Reducing Natural Gas Supply Chain Greenhouse Gas Emissions- Phase 2, at p. 52 (full data provided upon request) (2021), NETL, <https://netl.doe.gov/projects/files/NETL-Industry-Partnerships-and-their-Role-in-Reducing-Natural-Gas-Supply-Chain-Greenhouse-Gas-Emissions-Phase-2-12FEB2021.pdf>. Bottom-up studies like this one, built from averages of emissions from individual technologies, generally show lower emissions across the gas lifecycle than top-down studies from aerial measurements over a whole basin, for example, because they often fail to include super-emitters that make up a relatively small percentage of total emitting sources, but have an outsized impact of overall total lifecycle emissions.

⁴⁴ International Energy Agency, *Global Methane Tracker 2022- Overview*, <https://www.iea.org/reports/global-methane-tracker-2022/overview>.

⁴⁵ International Energy Agency, *Global Energy Review: CO₂ Emissions in 2021*, (2022), <https://iea.blob.core.windows.net/assets/c3086240-732b-4f6a-89d7-db01be018f5e/GlobalEnergyReviewCO2Emissionsin2021.pdf>.

⁴⁶ Agency for Toxic Substances and Disease Registry (ATSDR). Nitrogen Oxides, (2002), <https://www.atsdr.cdc.gov/toxfaqs/tfacts175.pdf>.

⁴⁷ U.S. Environmental Protection Agency (EPA), *Basic Information about NO₂*, <https://www.epa.gov/no2-pollution/basic-information-about-no2>.

⁴⁸ U.S. Environmental Protection Agency (EPA), *Effects of Acid Rain*, <https://www.epa.gov/acidrain/effects-acid-rain>.

⁴⁹ U.S. Environmental Protection Agency (EPA), *Ecosystem Effects of Ozone Pollution*, <https://www.epa.gov/ground-level-ozone-pollution/ecosystem-effects-ozone-pollution>.

⁵⁰ U.S. Environmental Protection Agency (EPA), *Health Effects of Ozone Pollution*, <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>.

⁵¹ U.S. Environmental Protection Agency (EPA), *Effects of Acid Rain*, <https://www.epa.gov/acidrain/effects-acid-rain>.

⁵² EPA, *EPA equivalency calculator*, <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>.

66. In terms of water impacts, although combined cycle gas plants use approximately one-half to one-third of the water than that used by a coal power plant using similar cooling technology, water use is still high. Climate impacts in the Richards Bay area are also likely to decrease available water supply through warming and droughts.⁵³ For example, the operation of the proposed 3000 MW Richards Bay combined cycle power plant would require between 2000 - 5000m³ of water per day. By comparison, renewable energy like solar and wind generation requires far less water along the value chain. It does not require water for energy conversion, nor is there the same level of risk of contamination of water as with gas production. Water is used to wash panels and blades when needed.⁵⁴ For example, a 2019 study comparing the lifecycle water withdrawals for different energy sources, including natural gas combined cycle, wind, and solar, found that *“if renewable electricity generation replaces coal generation, the water consumption savings will be even greater than the transition to natural gas...while water withdrawals will be negligible compared to those of coal and natural gas.”*⁵⁵

Inadequate mitigation of GHG emissions from the proposed 3000 MW gas power

67. There are no mitigation measures proposed, either by Eskom in the Eskom Gas Power Plant EIA or as conditions or requirements in the draft gas determination or in the Consultation Paper, which will adequately mitigate the impacts of the GHG emissions to be caused by the procuring of 3000 MW of gas power.
68. We note that the EIR and the Climate Report,⁵⁶ produced as part of the EIA process for the power plant, refer to two mitigation measures in respect of GHG emissions: the use of biogas or biodiesel, and the use of carbon capture technologies. However, in the EIA process no consideration had been given to the cost, availability, feasibility or environmental impacts of these mitigation measures. No evidence is available to suggest that any of these aspects have been considered in the draft gas determination.
69. Further, groundWork and SDCEA provided expert opinion of climate scientist, Dr Brett Cohen, in the judicial review that:
- 69.1. Carbon capture and storage systems (“**CCS Systems**”) are expensive to implement and are likely to double the cost of a power plant;
 - 69.2. CCS Systems are likely to reduce the fuel efficiency of a power plant, and are likely to increase water use.
 - 69.3. CCS Systems do not capture all of a power plant’s emissions;
 - 69.4. CCS Systems are not likely to be feasible within the plant’s lifetime;
 - 69.5. There are very few carbon storage sites in South Africa and the proposed Zululand basin is not likely to be feasible;
 - 69.6. CCS Systems use pressurised carbon dioxide pipelines which are potentially explosive and pose serious safety concerns; and
 - 69.7. The use of biofuels to mitigate a meaningful amount of the Power Plant’s GHG emissions is not likely to be feasible given South Africa’s capacity to produce biofuels and the limitations in transporting such fuel.
70. Consequently, no evidence has been adduced that the harms associated with gas to power, and in particular the harms associated with procuring 3000 MW of gas power in Richards Bay, can be adequately mitigated.

The social costs of the proposed 3000 MW gas capacity

71. It is undeniable that significant additional GHG emissions will occur as a consequence of the procurement of 3000 MW of gas-based electricity, whether the capacity is established by Eskom or another entity. These additional emissions will significantly increase South Africa’s overall GHG emissions during the period in which South Africa has committed to reducing its emissions to net zero (by 2050). It is also undeniable that these emissions will be

⁵³ Page 21 of the Specialist Climate Change Assessment of the Proposed Richards Bay Combined Cycle Power Plant (CCPP) Power Plant and Associated Infrastructure, Promethium Carbon, February 2019. Accessible at <https://sahris.sahra.org.za/sites/default/files/additionaldocs/RBay%20CCPP%20App%20J%20-%20Climate%20Change%20Assessment.pdf>.

⁵⁴ Andrew J. Kondash et al., Quantification of the water-use reduction associated with the transition from coal to natural gas in the US electricity sector, Environmental Research Letters (4 December 2019), available at <https://iopscience.iop.org/article/10.1088/1748-9326/ab4d71>.

⁵⁵ *Ibid.*

⁵⁶ Page 12 of the Specialist Climate Change Assessment of the Proposed Richards Bay Combined Cycle Power Plant (CCPP) Power Plant and Associated Infrastructure, Promethium Carbon, February 2019. Accessible at <https://sahris.sahra.org.za/sites/default/files/additionaldocs/RBay%20CCPP%20App%20J%20-%20Climate%20Change%20Assessment.pdf>

detrimental to human health and well-being, will cause ecological degradation, and will have socio-economic impacts.

72. In his affidavit in the review application, climate expert Dr Brett Cohen explains why it is important to evaluate the social cost of carbon:
- 72.1. *"... it is not possible to link emissions from a single facility to either local or global impacts of climate change, nor to a single point in time, there is a widespread agreement that each and every additional tonne of carbon entering the atmosphere can be associated with a damage cost. One approach that has been proposed is to represent this cost as the "Social Cost of Carbon", a measure of the long-term damage done by an additional tonne of GHG emissions in a given year."*
- 72.2. *"... the WG II contribution of the latest IPCC 6th Assessment Report published in 2022 provides an extensive review, analysis and discussion of methodologies for calculating the social cost of carbon, and highlights the importance of this and similar metrics in supporting planning towards addressing the climate challenge."*
- 72.3. *"The WG III contribution of the IPCC Report also acknowledges that there are a number of available approaches to calculating the social cost of carbon, and recognises its importance. It highlights that "A 'social cost of carbon' can be used to evaluate government and regulatory decisions, to compensate for inadequate carbon prices in actual markets, and by companies to reflect the external damage of their emissions and strategic risks of future carbon controls".*
73. We submit that a full and proper assessment of the social cost of carbon, in relation to the proposed determination, must be undertaken to inform this proposed additional capacity, and energy planning more generally, and the decisions that follow.

The need for an urgent just transition away from harmful fossil fuels

74. The government has confirmed South Africa's extreme vulnerability to the impacts of climate change. These impacts will largely be felt through: significant warming (as high as 5–8°C, over the South African interior by the end of this century, as a conservative estimate);¹⁸ impacts on water resources, such as decreased water availability; and a higher frequency of natural disasters. These are in fact highlighted in the National Development Plan 2030 (**"the NDP"**), on which this Gas Master Plan is motivated:

*"South Africa is not only a contributor to greenhouse gas emissions – it is also particularly vulnerable to the effects of climate change on health, livelihoods, water and food, with a disproportionate impact on the poor, especially women and children. While adapting to these changes, industries and households have to reduce their negative impact on the environment. This will require far-reaching changes to the way people live and work. The impact of climate change is global in scope and global solutions must be found, with due consideration to regional and national conditions."*¹⁹

And further that: *"Climate change is already having an impact on South Africa, with marked temperature and rainfall variations and rising sea levels. Over the short term, policy needs to respond quickly and effectively to protect the natural environment and mitigate the effects of climate change. Over the long term, with realistic, bold strategies and global partnerships, South Africa can manage the transition to a low carbon economy at a pace consistent with the government's public pledges, without harming jobs or competitiveness"*.²⁰

75. Already the impacts of drought, extreme weather events, and fires in South Africa have cost the country billions. Virtually every province in the country has recently experienced, or is currently experiencing, severe, extended drought. The impacts of climate change are crippling livelihoods and jobs, and will have long-term impacts on food security, food prices, human settlements, and health. Government is having to subsidise these high costs, and will increasingly have to do so. A recent report²¹ titled "Climate Change Implications for SA's Youth" by Nicholas King states that *"South Africa ... will suffer enormous negative physical, socio-economic and ecological impacts, under all scenarios. These will include extreme heat stress, extreme weather events, including storms, flooding and droughts, sea-level rise and coastal damage, crop failures and food insecurity, water stress, disease outbreaks, various forms of economic collapse and social conflict and mass migration to informal settlements around urban areas. Impacts do not rise linearly with rising temperature, but with an ever-steepening curve, rapidly making large*

parts of the interior of the country, as well as vulnerable low-lying coastal areas, uninhabitable. All of these impacts together will dramatically alter the lives and prospects for today and tomorrow's youth, who will suffer significant harms, in a combination of detrimental physical health and wellbeing, mental trauma, social upheaval and reduced opportunities for self-advancement." These are impacts that will be exacerbated by a decision to develop new and additional gas power capacity.

76. The United Nations International Children's Emergency Fund ("**UNICEF**") released its global report titled "The Climate Crisis Is a Child Rights Crisis: Introducing the Children's Climate Risk Index" in August 2021.²² This report highlights how children and young people in South Africa are among those most at risk of the impacts of climate change, threatening their health, education and protection - effectively threatening their constitutional rights. Again, a decision by NERSA and the Minister to develop 3000 MW of gas power capacity (with high climate-changing GHG emissions as highlighted above), directly contributes to these harms.
77. In a speech given by President Ramaphosa at a Virtual Leaders' Summit on Climate Change in April 2021, he referred to the South African government's position on addressing climate change, stating, *inter alia*, that "*We remain committed to contributing our fair share to reduce global emissions, and to do so in the context of overcoming poverty, inequality and underdevelopment. **Climate change is the most pressing issue of our time***" (emphasis added).
78. The United Nations' Intergovernmental Panel on Climate Change ("**IPCC**") has confirmed a dramatic increase in risk and impact severity if the global average temperature increase exceeds 1.5 °C for our climate. South Africa's revised 2021 Nationally Determined Contribution ("**NDC**") under the Paris Agreement states that South Africa "*warmly welcomed the IPCC's special report on global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways*", and "*considers the IPCC reports to be of the highest importance in guiding our actions*".²⁶ However, South Africa is already falling behind on its global and constitutional obligations to address climate change. While the revised NDC target range is an important step forward for climate action in South Africa, only the lower limit of the range (of 350 Mt CO₂-eq) is consistent with South Africa's fair share of greenhouse gas emissions for a 1.5°C global pathway, as calculated by international research group the Climate Equity Reference Project (CERP). The higher limit (of 420 Mt CO₂-eq) is well above a 1.5°C trajectory.⁵⁷
79. This, while it has been recognised that Africa and South Africa, are warming at a rate that is about twice the global average temperature increase rate.^{58 59} At present trajectories of global climate action, including South Africa's currently in place NDC, South Africa is on a pathway for 3 to 4°C of warming by 2100. The effects of this will be catastrophic – impacting particularly on the most vulnerable sectors of South African society.
80. It is the constitutional imperative of the government to ensure that people in South Africa are protected against these impacts – that their rights enshrined in the Constitution are upheld and protected. There is no justifiable basis on which the rights to life, dignity, an environment not harmful to health and wellbeing could be limited by plans to develop further fossil fuel capacity, where less harmful alternatives are available. Further, economic development and sustainable livelihoods will be compromised in a country devastated by the effects of climate change, and it should be noted that, ultimately, there will be no jobs on an uninhabitable planet.
81. In the next 10 years, significant ambition is needed to sufficiently reduce GHG emissions within the necessary trajectory range and to get South Africa where it needs to be to avoid the worst impacts of the climate crisis. Doing this requires a commitment to phase out existing fossil fuels and halt new fossil fuel investment as soon as possible – and certainly to refrain from locking-in to new fossil fuel infrastructure, which is not needed.

⁵⁷ CERP, and others like it, weigh each country's required reductions according to its historical and current responsibility for contributing to global warming, as well as its socio-economic capacity to decarbonise. In South Africa's case, CERP has calculated that the fair share range to be 274 to 352 Mt CO₂-eq (including emissions from Land Use Land Use Change and Forestry (LULUCF)). This range represents the GHG emissions SA needs to stay within in order to be on a safe pathway for global temperature increases to not exceed 1.5°C.

⁵⁸ South Africa First Nationally Determined Contribution under the Paris Agreement, 2021. At page 13.

⁵⁹ In her SONA Response Address (see footnote 3), Minister Creecy noted that "Science tells us that our country and our continent are warming much faster than the rest of the world. Whereas the world on average, has warmed by roughly 1 degree, above pre-industrial times, in southern Africa, the rate of warming is twice that".

82. However, despite available science, evidence of harms and the incontrovertible acknowledgement by the government of SA's exposure to the harms of climate change, the draft determination to procure 3000 MW of gas to power stands in contradiction to the just transition and climate response imperative. We submit that it is both unreasonable and irrational, in addition to posing a substantial threat to the Constitutional rights of the people of South Africa.

The absence of any justification to utilise harmful fossil gas capacity

83. Even if the harms described above were acceptable – which they are not – the inclusion of harmful new fossil fuels in the draft determination is made further unacceptable by the lack of any reasonable or lawful justification for these impacts.
84. The Vital Ambition Report⁶⁰ by Meridian Economics in collaboration with the Council for Scientific and Industrial Research (“CSIR”) Energy Centre (“Vital Ambition Report”) states that gas to power is only justified in the South African energy mix in so far as it is required for low-utilisation flexible capacity (peaker plants) for balancing the system during peak power demand. The report confirms that no investments in gas power are needed now or in the near future, because existing open-cycle gas-turbine (“OCGT”) plants powered by diesel can provide needed capacity for at least the next 10 years and into the late 2030s, in all realistic mitigation scenarios. Rocky Mountain Institute (“RMI”) – an independent nonprofit that advises on transformation of global energy systems through market-driven solutions – recently reviewed and validated Meridian and CSIR’s approach in the context of Eskom’s proposed 3000 MW gas project at Richards Bay.⁴⁵ Taking into consideration Meridian’s findings, RMI made the following specific conclusions concerning the proposed 3000 MW closed-cycle gas-turbine (“CCGT”) plant at Richards Bay:
- 84.1. There is no need for new combined cycle gas capacity in the next decade, and no need for 3 GW of such capacity until 2041. Gas and peaking resources contribute just 1.1% of total electricity generation in 2025, and 2.4% by 2035.
 - 84.2. South Africa would be better served by focusing on investment in infrastructure to enable a 21st century electricity system, which CSIR/Meridian’s findings and global trends show to be largely renewable.
 - 84.3. If the Richards Bay plant is commissioned within the next five years, it would come online as much as a decade prior to the economically optimal addition of any type of new non-peaking gas capacity. This would mean that for a third or more of its operational life, it would represent an uneconomic and unnecessary addition to South Africa’s electricity system. This cost would be passed on to South African taxpayers.
 - 84.4. In summary, the RMI report concludes: *“Based on the study’s results, we ... emphasize that investing in the proposed gas-fired power plant at Richards Bay is more expensive for South African electricity customers and not required for reliable electricity generation.”*
85. We refer to the government's agenda to push gas as a “bridging fuel”—allegedly cleaner and with lower carbon dioxide emissions than coal or oil. However, expert analyses have shown this narrative to be false and outdated. In fact, evidence confirms that gas is not a low emissions technology.
86. A 2022 report by Meridian Economics titled “Hot Air About Gas”⁶¹ evaluated the economic and environmental case for LNG to replace diesel as the fuel for both existing and new peaking capacity. It found that if there is absolutely no leakage of methane across the lifecycle of gas, the gas is 25% lower in emissions than diesel. However, literature varies from 0 to 9% methane leakages across the lifecycle. Assuming a conservative statistic of 3.5% leakage, there is parity in emissions between diesel and gas. They have highlighted that the transition from diesel to gas in peaker plants would not be made on an emissions basis. This highlights, again, that gas is in fact not a low emission technology.

⁶⁰ Meridian Economics, 2020. A Vital Ambition: Determining the Cost of Additional CO2 Emission Mitigation in the South African Electricity System. See at <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>

⁶¹ <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

87. Any gas to power utilisation above 5% is thus not in line with any modelled least cost electricity plan (including those of Meridian Economics and CSIR Energy Centre and the DMRE's own IRP modelling). Procurement of basecase or mid-merit gas to power will expose the country to high costs, increased electricity costs and high risk. The administrative decision to proceed therewith would be reckless, unreasonable, and poses an unjustifiable threat to Constitutional rights.
88. A recent report by Robert W. Howarth titled "Gas Lifecycle Methane Emissions, Richards Bay Review", prepared for the judicial review, concludes that the climate impacts of gas are greater than those of coal per unit of energy produced when evaluated in a 20-year timeframe, the period most relevant for climate change if humans are to avoid catastrophic run-away warming. Though gas emits less carbon dioxide at combustion per unit energy than coal, its upstream GHG emissions are more problematic for the climate, as it releases potent methane in leaks and venting throughout its lifecycle; researchers have been able to better detect emissions across the lifecycle of gas ever more accurately given new methodologies and technologies (particularly "top-down" measurements using satellite and aerial assessments).
89. Because of the need to urgently address global warming, the use of fossil fuels must be phased out rapidly. For example, a recent study published in *Nature* - the world's leading multidisciplinary science journal - found that "By 2050, we find that nearly 60 percent of oil and fossil methane gas, and 90 percent of coal must remain unextracted to keep within a 1.5 °C carbon budget."⁶² The study further concluded that "most regions must reach peak production now or during the next decade, rendering many operational and planned fossil fuel projects unviable."⁶³ Thus, gas plants built now run the risk of becoming stranded assets in order to achieve global climate goals.
90. Moreover, as renewable energy and storage technologies become more cost-competitive, moving forward with gas also risks that gas-related infrastructure will soon become stranded assets.⁴⁶ Further, it is worth noting that Carbon Border Adjustment Mechanisms will impose restrictions on exports of products with a high carbon footprint – placing further risks for South Africa's economy in developing gas to power, instead of clean renewable alternatives. Our concerns with this proposed gas determination include concerns over high electricity costs and risks to socio-economic circumstances of the people of South Africa. Such an approach is reckless, unreasonable, and poses an unjustifiable threat to Constitutional rights.
91. **We request that NERSA provide a recent techno-economic analysis that supports the procurement of 3000 MW gas to power, and please specify the intended load capacity of such a plant, with evidence to support it.** Due to the constantly changing economics of natural gas, and gas price volatility internationally, any techno-economic study older than 6 months would be outdated.
92. **Did NERSA conduct its own investigation into the need, desirability and local feasibility of gas to power? On what basis did NERSA conclude that gas to power technologies would be feasible? In addition to the above, kindly provide any further evidence and supporting documentation considered by NERSA in reaching these conclusions.**

Questions posed by NERSA in the Consultation Paper

93. The consultation paper requests stakeholder input on the questions listed below. To the extent that they are appropriate and relevant to our interest and expertise, our responses are stated below.

New Generation Capacity from Gas Technology

- i. In your view, is gas the type of technology that is in line with best practice and will the determined capacity ensure security of supply?

⁶² Welsby, D., Price, J., Pye, S. *et al.* Unextractable fossil fuels in a 1.5 °C world. *Nature* 597, 230–234 (2021). <https://doi.org/10.1038/s41586-021-03821-8>.

⁶³ *Ibid.*

This question should not be whether gas technology will ensure security of supply of electricity, but whether South Africa needs, or should rely on, gas to do so, and whether there are alternative technologies that could meet the same supply objectives but with less harm and risk. As the examples within this submission illustrate, renewable energy and/or storage can substitute gas to provide reliable and cost-effective generating capacity, while vastly minimising the environmental and health risks associated with gas.⁶⁴

Across the globe, renewable energy, in particular wind and solar, and/or storage are replacing gas and coal plants that provide smaller-scale power, relieve the energy grid during peak hours, and help facilitate the further integration of renewable energy into the grid.⁶⁵ For example, in the Philippines, the Terra Solar and Battery project will produce 850 MW of electricity replacing 1.4 million tonnes of coal.⁶⁶ The project is slated to be fully operational by 2027. In December 2021, the Manatee Energy Storage Center was completed in Florida, and has a 409 MW power capacity with a storage capacity of 900 MWh of energy.⁶⁷ The project, which was completed in only 10 months, is expected to push two gas power plants totalling more than 1600 MW into retirement. As an another example, in 2018, USA California's Public Utilities Commission approved Pacific Gas and Electric's proposal *"to replace three gas peaking power plants with four lithium-ion battery storage systems, including the 300 MW/1,200MWh (four hours) Vistra Moss Landing project"*;⁶⁸ and Utility Southern California Edison chose energy storage projects of varying sizes as an alternative to a proposed 262 MW gas peaker plant to provide power to Oxnard.⁶⁹

In addition, gas runs the risk of becoming a stranded asset as renewable energy prices continue to fall and increasingly drastic and urgent measures are necessary to curb global warming. For example, we refer to the study in *Nature* discussed in paragraph 89 above which found that fossil fuels must be rapidly phased out to avert a climate disaster.⁷⁰

ii. Provide your comments on the availability of natural gas in South Africa.

We refer to comments submitted by the Life After Coal Campaign on the Gas Master Plan Basecase Report to the DMRE on 31 January 2022 (as Annexure C), in which we recorded the impacts and risks associated with the exploration and production of gas reserves in South Africa.⁷¹

iii. Is the determined capacity sufficient to ensure uninterrupted supply of electricity?

The determined capacity from gas is not needed to ensure uninterrupted supply of electricity. Our response to this question is that renewables, with other flexible generation, can meet the demand currently being proposed for gas. Renewable energy options provide diverse types of secure energy

⁶⁴ See, e.g., Union of Concerned Scientists, Turning Down the Gas in California (13 July 2018), https://www.ucsusa.org/resources/turning-down-gas-california?_ga=2.79265367.2135392956.1587590973-34786515.1587590973#ucs-report-downloads ("We found that California does not need to build any additional gas plants in the [California Independent System Operator] territory to meet projected 2030 energy or reliability needs.")

⁶⁵ Dennis Wamsted, Advances in Electricity Storage Suggest Rapid Disruption of U.S. Electricity Sector: Utility-Scale Batteries Will Provide a Major Lift to Renewables, Further Undercut Coal, Challenge Fracked Gas at 2, Institute for Energy Economics and Financial Analysis (June 2019), <https://ieefa.org/wp-content/uploads/2019/06/Advances-in-Electricity-Storage-SuggestPotential-Rapid-Disruption-of-U.S.-Electricity-Sector-1-1.pdf>; Environmental and Energy Study Institute, Fact Sheet: Energy Storage (2019) (22 Feb. 2019), <https://www.eesi.org/papers/view/energy-storage-2019>.

⁶⁶ Interesting Engineering, The 'worlds largest' solar power and storage project will displace 1.4 million tons of coal (9 June, 2022), <https://interestingengineering.com/innovation/the-worlds-largest-solar-power-storage-project-will-displace-14m-tons-of-coal>.

⁶⁷ Energy Storage News, World's biggest solar-charged battery system unveiled in Florida (15 Dec. 2021), <https://www.energystorage.news/worlds-biggest-solar-charged-battery-storage-system-unveiled-in-florida/>.

⁶⁸ Andy Colthorpe, Peak time to take action, Energy Storage News (12 March 2019), <https://www.energystorage.news/blogs/peak-time-to-take-action>

⁶⁹ Julian Spector, Southern California Edison Picks 195MW Battery Portfolio in Place of Puente Gas Plant, Greentech Media (25 April 2019), <https://www.greentechmedia.com/articles/read/sce-picks-major-battery-portfolio-in-place-of-puente-gas-plant>.

⁷⁰ Welsby, D., Price, J., Pye, S. et al. Unextractable fossil fuels in a 1.5 °C world. *Nature* 597, 230–234 (2021). <https://doi.org/10.1038/s41586-021-03821-8>.

⁷¹ See comments here: https://cer.org.za/wp-content/uploads/2022/02/LAC-Comments-on-Gas-Master-Plan-Basecase-Report-2022_vf.pdf

supply, meeting needs for peak or base demand. South Africa thus has a range of different size plant options it can build using renewable energy system options instead of gas.

In any event, there are a number of uncertainties around the current draft gas determination that make it impossible to engage with this question and the alleged need for this capacity, even if any gas capacity were required for security of supply, which it is not. The gas allocation in the draft determination references Eskom as the procurer. As above, the draft determination, read with the Erratum, appears intended to accommodate the Eskom Gas Power Plant. However neither this, nor the designation of the generator of this capacity, have been clarified. What is proposed in the draft gas determination, goes over and above the gas capacity envisaged in the IRP 2019, and we have seen no evidence or modelling to demonstrate any need or requirement for this gas capacity to supply uninterrupted electricity.

'Baseload' - an outdated term

In relation to the question of security of supply, it is necessary to address the issue of the alleged need for baseload. In this regard we refer to this excerpt from the November 2022 report titled "Assessment of new coal generation capacity targets in South Africa's 2019 Integrated Resource Plan for Electricity" by the University of Cape Town's Energy Systems Research Group: *"Proponents of fossil fuels for electricity often argue that power systems need "baseload" plants because of when the "wind doesn't blow and the sun doesn't shine". This, however, is an outdated approach to managing power systems that ignores that technology has advanced and that the costs of alternatives such as renewables have vastly improved, to the point that variable renewable energy (such as wind and solar) can be technically and economically supplemented by flexible dispatchable generators. Essentially the argument that we "need baseload" assumes that only large continuously running power plants can consistently meet demand and maintain reliable supply. The term is a reference to the alignment of minimum ("base") electricity demand ("load"), and the profile and economics of generators such as large coal and nuclear plants.*

Historically, it was the cheapest option to build and most cost-efficient to run these plants at close to maximum capacity with only slight variations in output due to their high capital costs and low variable costs. Given the lack of viable technology alternatives in general in the past (depending on the system and available resources), "baseload" plants became the standard in electricity systems with high levels of coal, nuclear, and hydro built in the 20th century. However, the fluctuating nature of electricity demand and the economics of such generators meant that these plants were typically supplemented by mid-merit and peaking capacity plants. These resources were used as back-up to meet fluctuations in demand at lower costs, for example short increases in the day (mid-merit) or during peak hours (such as in the evenings in South Africa).

With the emergence of cost-effective renewable energy, baseload plants are no longer the least-cost option for most markets, and indeed are raising costs for consumers in some markets. The changing nature and operations of power systems is clear, with major grid and system operators moving away from the outdated concept of managing systems based on baseload, mid-merit, and peaking plants towards understanding how to integrate high levels of variable renewable energy and flexible capacity. This includes various energy system operators, such as the UK's National Grid, California Independent System Operator, the Irish Transmission System Operator, and the Australian Electricity Market Operator, and entities which manage systems that are highly reliant on renewables. The changing nature and operations of power systems has also been recognised by industry leading bodies such as the International Energy Agency.

A stable or reliable electricity system requires the system operator to ensure that supply meets demand at every moment, regardless of how much demand fluctuates. It is these changes in demand and increasingly, in supply (because renewables are dispatched by the weather), that underpin the need for flexibility in the system, based on more responsive demand side measures and supply options that complement variable renewable energy. What differentiates more modern approaches to power systems from the baseload approach is that instead of relying on continuously running nuclear or coal plants, electricity is generated by a complementary mix of resources. With the decline in renewable energy costs,

renewables are now often the most cost-competitive capacity, complemented by flexible generators. There are a growing number of real-world examples of large, industrialised countries maintaining a stable electricity supply with renewables constituting a substantial and growing share of the electricity mix.

It is apparent that power systems do not require “baseload”, that such plants are no longer economically viable nor technically necessary. Electricity systems in which renewables constitute a large share of the energy sources can meet demand reliably while remaining cost competitive - or even, as described above, lowering costs” (emphasis added).

iv. Provide what you consider to be the risks and challenges associated with this new capacity.

According to a recent 2021 study “Put Gas on Standby”⁷², internationally, and in particular, in the EU and USA, a fifth of European gas power and a third of US gas power is running at a loss. Further, in both the US and EU, it is already cheaper to build and operate new wind and solar power than to continue to operate gas plants; and renewables with battery storage will become cheaper than gas by 2030. In terms of new build gas capacity, more than a third in Europe and all planned gas in the US will be unable to recover the original investment. Lastly, there may be stranded assets in the amount of USD 15 billion if closures are to happen in line with net zero 2050 goals and timelines. To put it simply, in the EU and the US, gas is already not profitable, and there is significant risk in investing in new gas projects.

Closer to home, and as indicated above at paragraph 83 to 90 above, research is indicating that a gas power plant at Richards Bay will result in more expensive energy for South African customers and is not necessary for electricity security. The cost of the gas is the largest cost component of the power produced from a gas plant. We note that global monthly average LNG prices have, since 2021, increased more than 4-fold, with the Japan Korea Marker price index likely to apply to South African imports, currently more than 10 times the 2021 average.⁷³ The already high cost of producing power from gas will be exposed to extreme volatility, at least in the short to medium term and the power produced would become prohibitively expensive, rendering the investment stranded from the outset. From the high costs and stranded asset risk perspective alone, as well as impacts on consumers, gas to power production is risky for the South African public, and the economy, and cannot be said to meet the objectives of ERA and NERSA Act.

Although many governments and the gas industry have touted gas as a much cleaner alternative to coal-fired power plants, particularly in terms of its GHG emissions, this claim is not true. The burning of gas poses substantial risks to the climate, environment and human health. These risks are set out in detail at paragraphs 60 to 66 above. There are also risks that the projects themselves will become stranded assets and/or unable to operate for their full expected lifespans due to carbon constraints, climate risks and impacts. In the interests of the public and transparency, any power purchase agreements (“PPAs”) to be entered into between Eskom and any new gas project IPPs, must be made publicly available for consultation and input, as these agreements will have significant impacts on public money. The agreements must make clear that entities entering into a contract to supply gas power to Eskom are aware of the climate risks, and as such, cannot claim costs or penalties for electricity not sold for the duration of the PPA.

v. Provide your comments on whether the country will benefit more optimally from gas and the benefits of establishing a gas market.

As mentioned, gas power would create significant harms and risks to South Africa. At a time when urgent action is necessary to avert a climate disaster, and when alternative, cost-effective, and cleaner renewable and storage technologies are available, South Africa should not promote a gas market.

⁷² <https://carbontracker.org/reports/put-gas-on-standby/>

⁷³ See: <https://globallnghub.com/gas-price-benchmarks-reach-new-highs-in-august.html>

- vi. What do you think is the optimal timelines within which this capacity should be made available on the grid, considering the urgency that is required to deal with load shedding in the country?

We have already stated above that renewables and storage are more appropriate and better suited to closing the energy gap than gas. Further, in line with the cautious approach dictated by NEMA and the need for regular review of electricity demand and cost, as necessitated by the IRP 2019, it is not appropriate that this determination has been published outside of the IRP 2019 and in the absence of any key modelling and impact assessments.

Cost Recovery Mechanism and the Impact on Tariffs

We record at the outset of this section that it is impossible to adequately engage with these questions without seeing the cost assumptions that informed this determination and without any information on the proposed load factor for this capacity. This is further demonstration of the inadequacy of the public consultation process in relation to the draft gas determination.

- i. Should NERSA continue with the current cost recovery mechanism stipulated in section 13 of the current Multi-Year Price Determination Methodology (MYPD) and section 14 of NERSA's CRM Rules? If not, please propose the most suitable cost recovery mechanism for the gas project that would ensure that investment in a gas-to-power facility is economic, resulting in a good opportunity cost for the investor over the life of the asset, while also ensuring that electricity remains affordable.

The volatile price of gas makes the proposed gas determination both risky for the investor (i.e. if gas prices are low) and for rate-payers if gas prices are high as they are now.

Texas recently experienced historic low natural gas prices in April 2020 when spot prices dropped into negative territory several times because demand dropped dramatically during the COVID-19 lockdown. Just about a year later (February 2021), prices increased substantially during a winter storm that sent demand up and supply could not keep up.^{74 75}

The risk of a facility becoming a stranded asset long before the end of the typical 40-year lifespan of a new gas plant is a particular risk. Renewables are out-competing new gas plants in most markets, as will soon be the case in Southern Africa. For South Africa this would mean either the government bailing out the gas plant(s), putting a strain on the national purse, or unnecessarily high electricity rates which would drag down the national economy.

If Eskom has not included this in their MYPD5 application, then this determination could seriously affect tariffs.⁷⁶ **We insist that an assessment of how the 3000 MW gas plant will affect tariffs be conducted and submitted to NERSA with opportunity for public comment.**

- ii. Provide your thoughts on the costs that will be associated with establishing the new allocated generation capacity in line with the mandate to ensure the long-term sustainability of the electricity supply industry, as well as affordability and equity.

A recent analysis of the costs of developing the 3000 MW combined-cycle power plant facility at Richards Bay calculated that it would cost 47 billion ZAR to build the plant and the associated floating storage and regasification unit at Richards Bay to supply the plant with gas.⁷⁷ This is an exorbitant investment for a plant of this scale, which models show would not be needed until a decade from now or more (see paragraphs 86 and onwards), and is unlikely to be needed by that time given additional renewable roll out and long-duration

⁷⁴ See <https://oilmanmagazine.com/volatile-natural-gas-prices-hinder-future-progress/>

⁷⁵ See also: <https://www.theguardian.com/business/2022/jul/05/global-oil-gas-prices-supply-demand-us-europe>

⁷⁶ Eskom Multi-Year Price Determination (MYPD) 5 Revenue Application for FY2023 – FY2025 generation table does not include the 3000 MW plant: https://www.eskom.co.za/wp-content/uploads/2021/12/Generation-Licensee-Submission_MYPD5.pdf

⁷⁷ R. Halsey, et al., *Gas Pressure: Exploring the case for gas-fired power in South Africa*, IISD, p. 45, (March 2022), <https://www.iisd.org/system/files/2022-03/south-africa-no-need-for-gas.pdf>.

storage technologies. Where the plant is made to compete with renewables on cost, it will be unable to do so, and will quickly be stranded. As Meridian's June 2022 "Hot Air" report demonstrates, "*With no economic rationale for large-scale gas use in power, following such a strategy would deliver assets that are stranded before their first kWh of power is generated.*"⁷⁸ Given the availability of much lower cost solutions that better meet the needs of the South African grid, it would be unjustifiable for Eskom to pass these substantial capital costs off to consumers via rate increases.

- iii. Provide your thoughts on the impact of adding the additional capacity of 3000MW from gas in relation to NERSA's mandate to ensure the long-term sustainability of the electricity supply industry, as well as affordability and equity?

As explained throughout these comments, the additional 3000 MW of gas undermines these goals, as it would increase costs for all ratepayers, increase dependence on foreign fuel suppliers and volatile fuel prices, and intensify climate change via the gas capacity's own emissions, and substantial greenhouse gas emissions along the gas supply chain.

- iv. How should the cost associated with the fuel for this technology be dealt with within the cost recovery mechanism in order to mitigate against rapid changes in prices of gas?

Long term contracts and provision of government subsidies (to maintain a given gas price in the face of global spikes) both result in many problems and distortions. Fossil fuel subsidies are simply unjustifiable today.⁷⁹

- v. What will be the anticipated tariff impact to customers or end users in R/kWh if 3 000MW of gas-to-power is procured?

The exact numbers will depend on the capacity factor of the plant and on gas prices. However, an analysis of the tariffs that the Karpowerships would have generated in October 2021 were about ZAR 6/kWh – or over ten times that of renewables in the same period.⁸⁰ These are exceptionally high costs, which cannot be justified.

- vi. Provide your comments on the socio-economic impact of the determined capacity in terms of the number of jobs that can be created, including the objective of a just-transition from coal to clean technologies.

While short-term jobs will be created during the plant construction phase, gas plant operations require notoriously few employees – perhaps a few dozen full-time employees will be needed to run the plant.⁸¹ Moreover, it is unclear that even the development of an upstream gas production industry in South Africa to fuel the proposed gas power capacity would have significant economic benefits. The *Hot Air* report shows that this new industry would have to generate significant socio-economic benefits (thus far, entirely unproven) to beat out its costs and the benefits that displaced renewable alternatives would provide:

"Thus, for it to make sense to follow a large scale gas solution instead of the peaking / renewables option from a socioeconomic perspective, the net upstream socio-economic benefits flowing from prospecting, extraction and delivery of 90 PJ of gas would need to outweigh the following:

- *The annual direct power cost saving of R6.1 Bn;*
- *The additional multiplying economic benefit of power that does not carry a 44% cost premium;*
- *The additional annual saving in carbon tax that by 2030 will be R2.9 Bn;*
- *Any impacts to South Africa's global competitiveness and GDP that will result from border tax adjustments or similar initiatives due to the seven-fold higher emissions intensity of the large-scale gas solution; and,*

⁷⁸ A. Roff, et al., *Hot Air About Gas: An economic analysis of the scope and role for gas-fired power generation in South Africa*, Meridian Economics, p. iv, (June 2022), <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>.

⁷⁹ See: <https://oversight.house.gov/sites/democrats.oversight.house.gov/files/Erickson%20Testimony.pdf>

⁸⁰ L. Steyn, *Sky-high gas prices ring warning bell for powerships plans*, BusinessLIVE (2021), <https://www.businesslive.co.za/bd/national/2021-10-19-sky-high-gas-prices-ring-warningbell-for-powerships-plans/>

⁸¹ D. Wagman, *Automation is engineering the jobs out of power plants*, IEEE Spectrum, (2017), <https://spectrum.ieee.org/automation-is-engineering-the-jobs-out-of-power-plants>

- *The socio-economic benefits flowing from an annualised R3.3 Bn of localised renewables industrial activity, supporting a growing local renewables industrial complex, versus R460 m per year of maintenance spend on turbine infrastructure.*⁸²

Environmental Impact of the New Generation Capacity of 3 000MW from Gas at Richards Bay

- Do you think that it is proper for the Energy Regulator to deviate from its mandate and consider other Government Departments mandates when concluding section 34 determinations?

NERSA should not, and cannot, stray from its mandate - which lies in enacted legislation, the NERSA Act and ERA. In considering this question, in relation to paragraph 5.1 and 5.2 of the Consultation paper, NERSA provided the context of this question in that *"stakeholders and affected parties raised concerns around environmental and human health associated with the concurrence with new generation capacity like coal and gas."* Moreover that *"during the licensing stage, NERSA undertakes a process that must satisfy the dictates of section 10(1)(e) (sic) of the Act, which requires the person who has to hold a licence to provide plans and the ability of the applicant to comply with applicable labour, health, safety and environmental legislation, subordinate legislation and such other requirements as may be applicable. **This means that NERSA does not have the mandate to decide on these aspects, as it falls on other Government Departments, such as the Department of Forests, Fisheries and the Environment (DFFE), among others**"* (emphasis added). The obligation to consider the compliance with various other legislation in terms of section 10(2)(e) of ERA is not a duplication or consideration of other government departments' mandates, but an obligation instilled on NERSA. With respect, NERSA has misinterpreted its obligations in asking this question.

The Constitutional Case of *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others*⁸³ clearly outlines how different departments should consider specific aspects or principles of the law contained in separate pieces of legislation by different departments without leading to duplication. The court held that: *"It is no answer by the environmental authorities to say that had they themselves considered the need and desirability aspect, this could have led to conflicting decisions between the environmental officials and the town-planning officials. If that is the natural consequence of the discharge of their obligations under the environmental legislation, it is a consequence mandated by the statute. It is impermissible for them to seek to avoid this consequence by delegating their obligations to the town-planning authorities. What is of grave concern here is that the environmental authorities did not even have sight of the motivation placed before the local authority relating to need and desirability, let alone read it."*⁸⁴ Accordingly the court concluded that there was an obligation to consider the need and desirability from an environmental perspective by the Department of Environmental, even if need and desirability has been considered by the Local Council from a town planning perspective under a different law.

Similarly, in this instance, NERSA has a specific duty to consider and apply its own legal obligations in terms of section 10(2)(e) of ERA from an energy perspective in terms of ERA, the NERSA Act and other laws governing it, and cannot delegate or defer those considerations away to other departments. Specifically, in the NERSA Act, which gives power to NERSA, section 10 outlined in paragraph 34, above, clearly indicates that every decision of the energy regulator must be consistent with the Constitution and applicable laws, and in the public interest.

In light of the above, NERSA cannot ignore or stray from its mandate, or its Constitutional obligations as set out in section 24, and considerations under NEMA as outlined above.

⁸² A. Roff, *et al.*, *Hot Air About Gas: An economic analysis of the scope and role for gas-fired power generation in South Africa*, Meridian Economics, p. 43, (June 2022), <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>.

⁸³ *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others* 2007 (6) SA 4 (CC).

⁸⁴ (2007) (6) SA 4 (CC) (7 June 2007), para 92.

- ii. Is it proper for the Energy Regulator to consider matters that will be dealt with at licensing stage during the concurrence process?

NERSA's legal obligations under the ERA and NERSA Act, including the Constitution, apply at **all stages** of decision-making - they cannot be deferred or kicked down the line for consideration at later stages including licensing.

Procurement Process Under the IPP Procurement Programme

There are a number of ambiguities and contradictions that arise in the Consultation Paper and the draft gas determination, which make it difficult, if not impossible, to understand the procurement process envisaged for this gas allocation. It is thus equally impossible to effectively engage in this consultation process and the questions below.

- i. Provide your thoughts on Eskom as the chosen procurer (and buyer) of this new generation capacity?

Eskom should not be forced to lock itself into unaffordable PPAs using expensive gas to power technologies, which are also at risk of becoming stranded assets, and contributing to high electricity costs (which will have negative impacts for Eskom's revenues). The Public Finance Management Act, 1999 ("**PFMA**") sets out numerous additional obligations and requirements relevant to the signing of a PPA by Eskom, including:

Section 50(1), which deals with the fiduciary duties of accounting authorities states that the accounting authority for a public entity (in this instance, Eskom's board) "***must— (a) exercise the duty of utmost care to ensure reasonable protection of the assets and records of the public entity; (b) act with fidelity, honesty, integrity and in the best interests of the public entity in managing the financial affairs of the public entity; ... and (d) seek, within the sphere of influence of that accounting authority, to prevent any prejudice to the financial interests of the state***" (emphasis added).

According to section 51(2) "***If an accounting authority is unable to comply with any of the responsibilities determined for an accounting authority in this Part, the accounting authority must promptly report the inability, together with reasons, to the relevant executive authority and treasury***" (emphasis added).

Section 54(2) states that "***Before a public entity concludes any of the following transactions, the accounting authority for the public entity must promptly and in writing inform the relevant treasury of the transaction and submit relevant particulars of the transaction to its executive authority for approval of the transaction ... (b) participation in a significant partnership, trust, unincorporated joint venture or similar arrangement ... (e) commencement or cessation of a significant business activity...***" (emphasis added).

Section 66 places restrictions on borrowing, guarantees and other commitments, and section 70, which deals with guarantees, indemnities, and securities by Cabinet members, states that "***[a] Cabinet member, with the written concurrence of the Minister (given either specifically in each case or generally with regard to a category of cases and subject to any conditions approved by the Minister), may issue a guarantee, indemnity or security which binds - ... a national public entity referred to in section 66(3)(c) in respect of a financial commitment incurred or to be incurred by that public entity.***"

As such, Eskom's Board has fiduciary duties to exercise the duty of utmost care to ensure reasonable protection of the assets and records of Eskom and to act in the best interests of Eskom. The Board is also obliged to seek to prevent any prejudice to the financial interests of the State. We submit that the procurement of gas to power would constitute a breach of those duties.

The Eskom Board is also obliged to comply with the principles of the King Code on Governance for South Africa (King IV) and the statutory duties set out in the Companies Act, 71 of 2008 ("**Companies Act**"). In this regard, sections 76(3)(a) - (b) set out the further fiduciary duties of directors and state that, when acting in the capacity

of a director, such director must exercise his/her powers and functions in good faith and for a proper purpose and in the best interests of the company.

Section 77 states that a director of a company may be held liable— in accordance with the principles of the common law relating to breach of a fiduciary duty, for any loss, damages or costs sustained by the company as a consequence of any breach by the director of a duty contemplated in Section 75, 76(2) or 76(3)(a) or (b) (the duty to act in good faith and for a proper purpose and in the best interests of the company).

We submit that based on the information in this submission, the procurement of 3000 MW gas to power is not in the best interests of Eskom and that the Eskom Board of Directors would be breaching their fiduciary duties in terms of the PFMA, the Companies Act and the King Code,⁸⁵ if it enters into the PPAs and procures gas to power projects.

- ii. Provide your thoughts on the method of procurement chosen for the procurement of the new generation capacity.

The draft determination states that the electricity procured from the new generation capacity will be procured through tendering processes which are “*fair, equitable, transparent, competitive and cost effective*”.⁸⁶ We dispute that previous tender processes have been fair, equitable, cost-effective and particularly, we dispute that they have been transparent. For example, the IPP procurement processes for the coal IPPs were not preceded by any public consultation or democratic process – despite the significant impacts of such procurement for the public and the fact that the determinations, as administrative action, required public participation. Previous new generation procurement processes have been transparent only to industry, if at all, but not to citizens. There has been no transparency on, for example, the tender and procurement requirements for the various IPP procurement programmes; or the financial and commercial close deadlines. The public should have full access to all of this information, and should be notified of all stages of the processes. The DMRE, the IPP office and NERSAs’ past failures to ensure increased transparency and public consultation in these processes have been unacceptable. This is not in line with the legal requirements for just administrative action and a fair process.

Further, we submit that the tender process for this 3000 MW gas plant is unlikely to be fair, cost effective or competitive as the Erratum states, as a foregone conclusion, that the Eskom Gas Power Plant is to be the generator, thereby excluding and prejudicing the tender process provided for in the draft gas determination.

- iii. Section 5 of the Section 34 determination attached hereto as APPENDIX 1 says that the procurement of primary energy and its associated logistics infrastructure must be done in a manner supportive of the State’s participation through other State Owned Companies which have the relevant mandate(s), provide your thoughts on this requirement.

We do not have specific comments on this requirement, suffice to say that we object to the draft gas determination as a whole.

Conclusion

94. We request that NERSA respond to our questions in paragraphs 35, 51, 91 and 92.


95. We request that NERSA call for proper hearings and an extended comment period (once we have all the necessary information) should it intend to proceed.

Yours faithfully

⁸⁵ The King Report and King Code sets out what ethical and effective leadership is. King IV focuses on achieving outcomes and not just applying principles. Corporate governance, for the purposes of King IV, is defined as the exercise of ethical and effective leadership by the governing body towards the achievement of the governance outcomes: ethical culture; good performance; effective control; and legitimacy.[#]

⁸⁶ Paragraph 6.1 in the Consultation Paper.

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INVITATION TO COMMENT ON THE CONCURRENCE WITH THE MINISTERIAL DETERMINATION ON THE PROCUREMENT OF NEW GENERATION CAPACITY OF 18 791 MEGAWATTS DIVIDED UNDER THE FOLLOWING TECHNOLOGIES: 14 791 MEGAWATTS FROM SOLAR PV, WIND AND STORAGE, 3000 MEGAWATTS FROM GAS AND 1000MW FROM CO-GEN, BIOMASS AND LANDFILL, ALLOCATED UNDER THE HEADINGS: 'PV', 'WIND', 'STORAGE', 'GAS/DIESEL', 'BIOMASS', 'CO-GEN' AND 'LANDFILL' IN TABLE 5 OF THE IRP 2019

The National Energy Regulator of South Africa (NERSA) is a regulatory authority established as a juristic person in terms of section 3 of the National Energy Regulator Act, 2004 (Act No. 40 of 2004). NERSA's mandate is to regulate the electricity, piped-gas and petroleum pipelines industries in terms of the Electricity Regulation Act, 2006 (Act No. 4 of 2006), Gas Act, 2001 (Act No. 48 of 2001) and Petroleum Pipelines Act, 2003 (Act No. 60 of 2003).

NERSA received three section 34 determinations from the Minister of Mineral Resources and Energy for the procurement of the following capacities:

- 14 791 megawatts (MW) in accordance with the headings "Storage", "PV" and "Wind", for the years 2024 to 2030, in Table 5 of the Integrated Resource Plan for Electricity 2019 – 2030 (published by Government Notice 1360 of 18 October 2019 in *Government Gazette* No. 42784) ("IRP 2019").
- 3000 megawatt (MW) in accordance with the heading 'GAS/DIESEL', for the years 2024 to 2027, in Table 5 of the Integrated Resource Plan for Electricity 2019 – 2030 (published by Government Notice 1360 of 18 October 2019 in *Government Gazette* No. 42784) ('IRP 2019').
- 1000 megawatts ("MW") in accordance with the headings "Other Distributed Generation, Co-Gen, Biomass, Landfill", for the years "2023" and "2024", in Table 5 of the Integrated Resource Plan for Electricity 2019-2030 (published under Government Notice No. 1360 of 18 October 2019 in *Government Gazette* 42784) ("the IRP 2019").

According to section 34 of the Electricity Regulation Act, 2006, NERSA is required to appropriately apply its regulatory reviews and make a decision prior to the conclusion of the determination process by the Minister of Mineral Resources and Energy. The consultation papers are available on NERSA's website at www.nersa.org.za under 'Electricity/Consultation/Notices'. Stakeholders and members of the public are requested to provide written comments on the ministerial determination.

The written comments must be submitted separately to NERSA for the attention of **Mr Mondli Shoji** at:

Email: irp-procurement.techrange@nersa.org.za

Or hand deliver at:

Physical address: The National Energy Regulator of South Africa
Kulawula House
526 Madiaba Street
Arcadia
Pretoria
0083

The closing date for comments is 23 September 2022.

For further information or any queries, please contact **Mr Mondli Shoji** at:

Tel: 012 401 4769

Fax: 012 401 4700



ERRATUM

CONSULTATION PAPER ON 3000MW NEW GENERATION CAPACITY

The National Energy Regulator (NERSA) is a regulatory authority established as a juristic person in terms of section 3 of the National Energy Regulator Act, 2004 (Act No. 40 of 2004). NERSA's mandate is to regulate the electricity, piped-gas and petroleum pipelines industries in terms of the Electricity Regulation Act, 2006 (Act No. 4 of 2006), Gas Act, 2001 (Act No. 48 of 2001) and the Petroleum Pipelines Act, 2003 (Act No. 60 of 2003).

NOTICE TO CORRECT AN ERROR ON THE REFERENCING OF 3 000MW ON GAS TECHNOLOGY IN THE NOTICE AND COMMENT IN THE CONSULTATION PAPER PUBLISHED ON THE NERSA WEBSITE ON 25 AUGUST 2022

Notice is hereby given regarding the correction of an error contained in the NERSA Consultation paper on the 3 000 megawatts (MW) from Gas published on NERSA website on 25 August 2022 for concurrence with the ministerial determination. Whereas the Consultation has erroneously indicated that the 3 000MW from Gas is from table 5 of the IRP2019, the capacity is actually based on an application by Eskom on 13 January 2022 to the Minister for a Section 34 determination for the implementation of a 3 000 MW Combined Cycle Gas Power Plant at Richards Bay.

Furthermore, the closing date for comments is 16 September 2022 at 16:30, and not 23 September 2022 as indicated in the previous notification.

For further information or any queries, please contact **Mr Mondli Shozi** at:

Tel: 012 401 4769
Fax: 012 401 4700
Email: irp-procurement.techrange@nersa.org.za



Department of Mineral Resources and Energy

Chief Director: Planning

Mr Thabang Audat

Attention: Zitha Harber and Thilivhali Mulangaphuma

By email: zita.harber@dmre.gov.za, thilivhali.mulangaphuma@dmre.gov.za

31 January 2022

Dear Sirs/Mesdames

COMMENTS ON THE GAS MASTER PLAN BASECASE REPORT

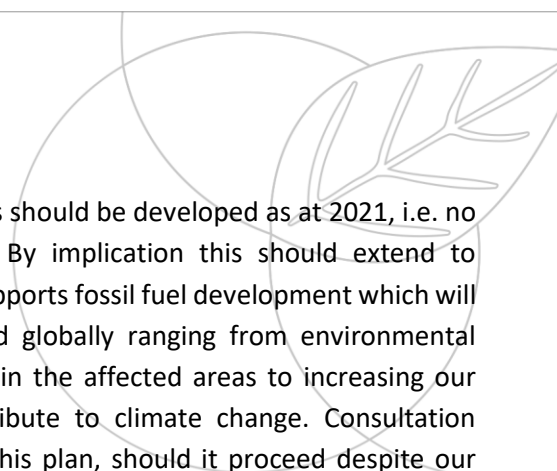
1. We refer to the draft Gas Master Plan Basecase Report ("the Report"), published for public comment on 14 December 2021 by the Department of Mineral Resources and Energy ("the Department").
2. Thank you for the opportunity to make input on the Report. We submit these comments on behalf of the Life After Coal Campaign.¹
3. Our general and overriding submissions are summarised below:
 - 3.1. The Report has failed to consider the implications of the Gas Master Plan in the context of, inter alia, the climate emergency; South Africa's policy position on addressing the climate emergency; and government's obligations per the Constitution of the Republic of South Africa, 1996 ("the Constitution")² to uphold the rights in the Bill of Rights, and in doing so, to refrain from exposing the people of South Africa to the harms of the climate crisis. South Africa, and the African continent generally, are extremely vulnerable to the impacts of climate change. Temperatures in the region are increasing at twice the rate of the global average.³ It is the government's constitutional imperative to protect the people of South Africa against the impacts of climate change. This includes committing to the transition away from fossil fuels. As a default position (and to avoid additional cost and exposure to climate risk) government should **not** be putting frameworks in place that facilitate or accelerate new fossil fuel development, such as gas infrastructure. The International Energy Agency said in a recent report⁴ that if the world is to avoid

¹ Life After Coal is a joint campaign by organisations Earthlife Africa, groundWork, and the Centre for Environmental Rights, which aims to: discourage the development of new coal-fired power stations and mines; reduce emissions from existing coal infrastructure and encourage a coal phase-out; and enable a just transition to sustainable energy systems for the people. See <https://lifeaftercoal.org.za/>

² Act 108 of 1996.

³ South Africa First Nationally Determined Contribution under the Paris Agreement, September 2021. See at <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa%20Updated%20first%20NDC%20September%202021.pdf>

⁴ <https://www.iea.org/reports/net-zero-by-2050>



irreversible, catastrophic climate change, no new oil or gas fields should be developed as at 2021, i.e. no new investments should be made in gas production fields. By implication this should extend to downstream gas power projects as well. The Gas Master Plan supports fossil fuel development which will have far reaching implications for people both nationally and globally ranging from environmental impacts to the displacement of people and their livelihoods⁵⁶ in the affected areas to increasing our greenhouse gas (“GHG”) emissions, which will in turn contribute to climate change. Consultation processes - and further consultation processes in developing this plan, should it proceed despite our objections - therefore need to be meaningful, accessible and inclusive of all communities on a national scale.

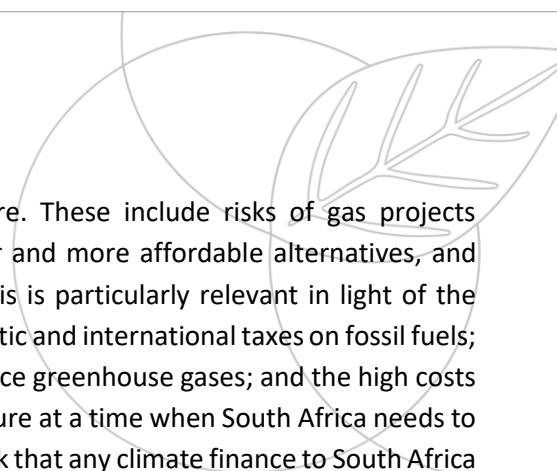
- 3.2. The Gas Master Plan supports fossil fuel development which will have far reaching implications for people both nationally and globally, ranging from environmental impacts to the displacement of people and their livelihoods⁷⁸ in the affected areas, to increasing our greenhouse gas (“GHG”) emissions, which will in turn contribute to climate change. Consultation processes - and further consultation processes in developing this plan, should it proceed despite our objections - therefore need to be meaningful, accessible and inclusive of all communities on a national scale.
- 3.3. The National Environmental Management Act, 1998 (“NEMA”)⁹ is referred to as a barrier to the development of the gas market, and boldly states that ‘adherence to’ and ‘fully complying’ to the regulations is time-consuming and expensive. However, it should also be noted that NEMA is fundamental environmental legislation, enacted to give effect to section 24 of the Constitution and therefore uphold and protect the right to an environment not harmful to health and wellbeing. A Gas Master Plan that does not align with NEMA, including its section 2 principles and requirements, would stand contrary to NEMA and the Constitutional section 24 right, among others. Government cannot opt out of its legal and Constitutional obligations.
- 3.4. The National Political, Economic, Social, Technology, Environmental and Legal factor (“PESTEL”) analysis, which is stated as being a tool used for environmental and market analysis to support strategic decision-making, inadequately describes the environmental factors associated with the development of the gas market. The analysis accurately mentions that the gas industry affects the environment negatively but provides no examples or elaboration. More concerning, it mentions these negative impacts as an inhibiting factor for industry, that would ‘challenge the industry’s social license to operate’ but does not recognise the negative environmental impacts on the health and lives of the people of South Africa as a justifiable reason to refrain from the development of gas infrastructure. Of even more concern is that little to no mention is made of climate or transition risks.¹⁰ Fundamental to any decision-making on gas

⁷ See reference to such impacts: <https://www.aljazeera.com/opinions/2020/2/24/gas-rich-mozambique-may-be-headed-for-a-disaster>

⁸ Adam, A.B & Owen, J & Kemp, D (2015) Households, livelihoods and mining-induced displacement and resettlement. The Extractive Industries and Society. 2. See at: https://www.researchgate.net/publication/278049856_Households_livelihoods_and_mining-induced_displacement_and_resettlement

⁹ Act 107 of 1998.

¹⁰ Climate risk can be categorised as either physical risk or transition risk. Physical risk is the risk of actual damage or disruption to people, communities, assets or infrastructure due to climate change induces impacts. Transition risk is that risk that arises out of social, financial economic, regulatory, political or market responses to climate change. e.g changes in regulations and laws, consumer patterns, investment patterns, technology changes as the like. as an example, the business case for building a coal



infrastructure investment is the consideration of risk exposure. These include risks of gas projects becoming stranded assets as they are outcompeted by cleaner and more affordable alternatives, and become unaffordable to operate and/or obsolete in future. This is particularly relevant in light of the global shift away from fossil fuels, including gas; increased domestic and international taxes on fossil fuels; increased litigation and liability of governments in failing to reduce greenhouse gases; and the high costs associated with being locked into outdated fossil fuel infrastructure at a time when South Africa needs to be increasingly frugal with its limited resources. There is also a risk that any climate finance to South Africa would be prejudiced and/or refused on the basis of the government's continued and long-term commitment to fossil fuel exploitation. The large-scale commitment to gas exploitation evidenced in the Report, certainly prejudices South Africa's prospects of accessing international support in its climate crisis response, and in being a potential leader in the just transition space. The World Economic Forum ("WEF") Energy Transition Index 2021 ranked South Africa globally as the sixth worst-prepared country for the energy transition,¹¹ meaning the country is regarded – even by the WEF - as being far behind in terms of our preparedness for the inevitable transition away from fossil fuels. We have long submitted that South Africa needs to do more to protect the people of South Africa in the transition and to adopt a credible, just and consultative plan as soon as possible to move away from fossil fuels.

- 3.5. The Report reflects the Department's intention to prioritise the development of the fossil fuel industry, which is incongruous to actual energy modelling and forecasts for South Africa. The Vital Ambition Report¹² by Meridian Economics in collaboration with the Council for Scientific and Industrial Research ("CSIR") Energy Centre ("the Meridian Report") states that gas to power is only justified in the South African energy mix in so far as it is required for balancing the system during peaking power demand and confirms that no investments in gas power are needed now or in the near future. The Meridian report also confirms that **there is no need for the government to commit to gas at this stage from an energy security perspective**. The Report states that "South Africa has taken the first steps in a gas-to-power programme to be executed under the Integrated Resource Plan 2019, aiming to increase the national energy mix natural gas contribution from 2.6% to 15.7% by 2030."¹³ This statement is not supported in the Integrated Resource Plan 2019 ("the IRP") which simply indicates a requirement for 1000MW in 2023 and 2000MW in 2027. According to the IRP this "represents low gas utilisation, which will not likely justify the development of new gas infrastructure and power plants predicated on such sub-optimal volumes of gas."¹⁴ The Report further contradicts the draft National Infrastructure Plan which states that "... a least cost path would see coal and gas respectively accounting for about 5% and 3% [by 2050]". Embarking on the Gas Master Plan, and attempting to create the "anchor demand" through the electricity sector to facilitate a localised gas demand, is thus not in line with any modelled least cost plan (including those of Meridian Economics and CSIR Energy Centre, the Department of Public Works and Infrastructure, and the Department's own IRP modelling). As a result, these plans will expose the country to high costs, increased electricity costs and high risk.

fired power station is negatively impacted by changes in affordability, desirability and acceptability - as a result of these transition risks, it no longer remains viable. If already built it could become a stranded asset.

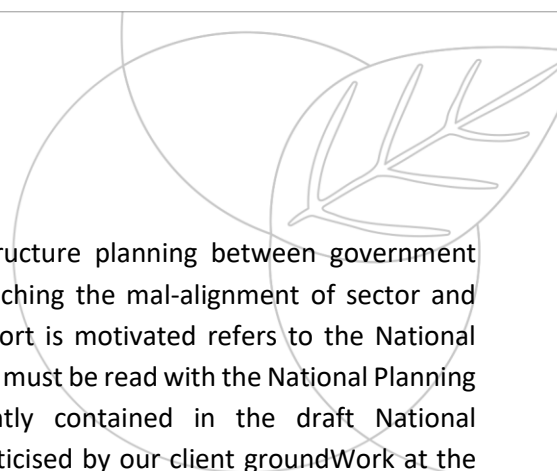
¹¹ World Economic Forum, 2021. Fostering Effective Energy Transition Insight Report. See at:

https://www3.weforum.org/docs/WEF_Fostering_Effective_Energy_Transition_2021.pdf

¹² Meridian Economics, 2020. A Vital Ambition: Determining the Cost of Additional CO2 Emission Mitigation in the South African Electricity System. See at <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>

¹³ Gas Master Plan Basecase Report at Page 1.

¹⁴ South African Integrated Resource Plan, 2019. Page 49.



3.6. The Report exposes a drastic difference in electricity infrastructure planning between government departments and government advisory forums, further entrenching the mal-alignment of sector and national policy documents. The background on which the Report is motivated refers to the National Development Plan 2030 (“the NDP”) which, as a living document, must be read with the National Planning Commission's regular reviews, including those most recently contained in the draft National Infrastructure Plan 2050 (“NIP 2050”). The NDP was heavily criticised by our client groundWork at the time of drafting for reproducing environmental injustice through its infrastructure development plans,¹⁵ and the National Planning Commission (“the NPC”) has, over the years, had a number of social dialogues on the Just Transition and prepared reports which reflect how the NDP should be implemented to reflect changing priorities. The NPC has handed over its reports on the Just Transition to the Presidential Climate Commission. This should include the reports developed under the Pathways for a Just Transition Project including the Concluding Conference Report and each individual province Pathways Report. which contain the vision and pathways toward achieving a zero carbon, net zero economy by 2050. In December 2020, the NPC also prepared a large-scale review which called for “course correction” and one of the requirements related to energy. As mentioned above, the Report also errs in its reference to the gas allocation of the IRP. The Gas Master Plan would, in its support for the development of a gas industry, contradict the NPC in its development of the above-mentioned documents and pathways.

3.7. On the basis of the above, the Department and government more broadly, should not be embarking on a process of gas infrastructure development at all, and certainly not of the scope and scale envisaged by the Report. Such a plan is not only reckless and unnecessary, but it also flies in the face of the rights enshrined in the Constitution, and is contrary to Government’s own policies and plans.¹⁶

4. In our comments, we seek to provide a more comprehensive picture of the climate crisis context; gas’s harmful impacts and contributions to climate change; and the applicable legal position as it relates to the development of a gas market; which, if taken up, would provide a more level, objective Basecase picture in South Africa to appropriately guide policy planning.

Part A: General Comments on the Gas Master Plan in the context of climate emergency - the case for abandoning the Master Plan entirely

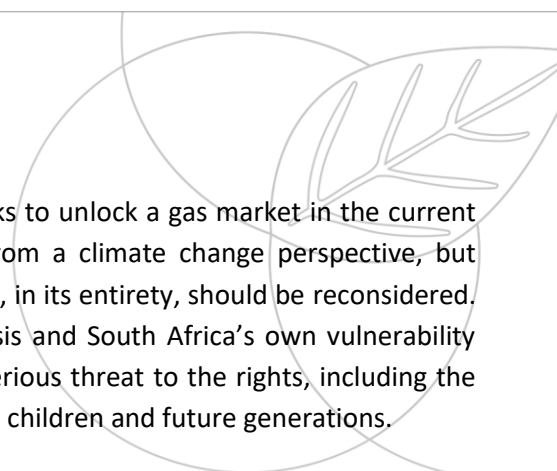
5. We note that the objects of the Report include: *“to establish baseline information for the natural gas sector in South Africa as well as outline the Gas Master Plan roadmap. Such baseline information includes an overview of the gas value chain and regulatory framework. The report also sets the scene for the Gas Master Plan development process”*.¹⁷

6. We note that the object of the Gas Master Plan is to serve as a policy instrument, providing a roadmap for taking strategic, political and institutional decisions which will guide industry investment planning and coordinated

¹⁵ groundWork, 2014. Planning Poverty: The NDP and the infrastructure of destruction. See at: <https://www.groundwork.org.za/reports/Planning%20Poverty%20gWReport%202014.pdf>

¹⁶ Including but not limited to the National Climate Change Response White Paper, National Climate Change Adaptation Strategy, Low Emission Development Strategy 2050, the National Development Plan 2030, the draft National Infrastructure Plan 2050, the Just Transition Framework

¹⁷ <https://www.dmr.gov.za/news-room/post/1941/dmre-releases-the-gas-master-plan-basecase-report>



implementation of the gas market. We submit that any plan that seeks to unlock a gas market in the current circumstances will give rise to serious harmful impacts, not only from a climate change perspective, but environmental, health and social harms as well. On this basis, the plan, in its entirety, should be reconsidered. In light of the scientific consensus on the impacts of the climate crisis and South Africa's own vulnerability thereto, the development of a gas industry in South Africa poses a serious threat to the rights, including the health, livelihoods and futures of rural and poor communities, women, children and future generations.

7. The government has confirmed South Africa's extreme vulnerability to the impacts of climate change. These impacts will largely be felt through: significant warming (as high as 5–8°C, over the South African interior by the end of this century, as a conservative estimate);¹⁸ impacts on water resources, such as decreased water availability; and a higher frequency of natural disasters. These are in fact highlighted in the NDP, on which this Gas Master Plan is motivated:

*"South Africa is not only a contributor to greenhouse gas emissions – it is also particularly vulnerable to the effects of climate change on health, livelihoods, water and food, with a disproportionate impact on the poor, especially women and children. While adapting to these changes, industries and households have to reduce their negative impact on the environment. This will require far-reaching changes to the way people live and work. The impact of climate change is global in scope and global solutions must be found, with due consideration to regional and national conditions."*¹⁹

And further that: *"Climate change is already having an impact on South Africa, with marked temperature and rainfall variations and rising sea levels. Over the short term, policy needs to respond quickly and effectively to protect the natural environment and mitigate the effects of climate change. Over the long term, with realistic, bold strategies and global partnerships, South Africa can manage the transition to a low carbon economy at a pace consistent with the government's public pledges, without harming jobs or competitiveness"*.²⁰

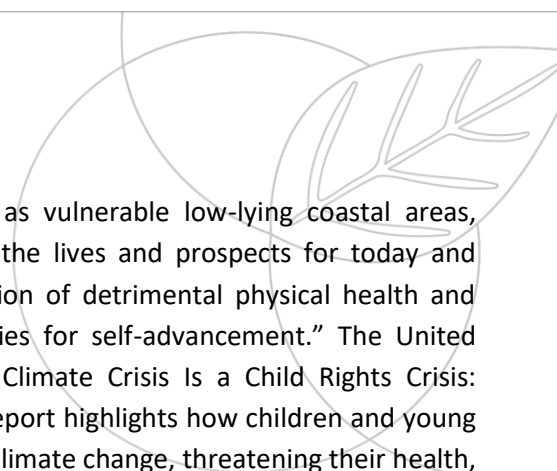
8. Already the impacts of drought, extreme weather events, and fires in South Africa have cost the country billions. Virtually every province in the country has recently experienced, or is currently experiencing, severe, extended drought. The impacts of climate change are crippling livelihoods and jobs, and will have long-term impacts on food security, food prices, human settlements, and health. Government is having to subsidise these high costs, and will increasingly have to do so. A recent report²¹ titled "Climate Change Implications for SA's Youth" by Nicholas King states that "South Africa ... will suffer enormous negative physical, socio-economic and ecological impacts, under all scenarios. These will include extreme heat stress, extreme weather events, including storms, flooding and droughts, sea-level rise and coastal damage, crop failures and food insecurity, water stress, disease outbreaks, various forms of economic collapse and social conflict and mass migration to informal settlements around urban areas. Impacts do not rise linearly with rising temperature, but with an ever-steepening curve,

¹⁸ P8, National Climate Change Response White Paper 2011, at https://www.environment.gov.za/sites/default/files/legislations/national_climatechange_response_whitepaper.pdf. See also the Address by the Minister of Environment, Forestry and Fisheries, Ms Barbara Creecy in the National Assembly in response to the State of the Nation Address (SONA) on 18 February 2020 ("SONA Response Address"), available at <https://www.gov.za/speeches/minister-creecy-18-feb-2020-0000> where Minister Creecy noted those impacts occurring across the country in the form of prolonged periods of drought, severe storms and flooding.

¹⁹ National Development Plan 2030 at page 23.

²⁰ Ibid at page 48.

²¹ King, 2021. Climate Change Implications for SA's Youth. See at <https://cer.org.za/wp-content/uploads/2021/09/Nick-King-Report-Final.pdf>



rapidly making large parts of the interior of the country, as well as vulnerable low-lying coastal areas, uninhabitable. All of these impacts together will dramatically alter the lives and prospects for today and tomorrow's youth, who will suffer significant harms, in a combination of detrimental physical health and wellbeing, mental trauma, social upheaval and reduced opportunities for self-advancement." The United Nations Fund ("UNICEF") released their global report titled "'The Climate Crisis Is a Child Rights Crisis: Introducing the Children's Climate Risk Index' in August 2021.²² This report highlights how children and young people in South Africa are among those most at risk of the impacts of climate change, threatening their health, education and protection.

9. The South African government has repeatedly acknowledged the reality of climate change and the severe threat that this poses to the country.
 - 9.1. The government's National Climate Change Response White Paper published in October 2021 ("White Paper"), sets out the government's "vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower carbon economy and society".²³ The White Paper acknowledges that "Even under emission scenarios that are more conservative than current international emission trends, it has been predicted that by mid-century the South African coast will warm by around 1 to 2 °C and the interior by around 2 to 3 °C. By 2100, warming is projected to reach around 3 to 4 °C along the coast, and 6 to 7 °C in the interior. With such temperature increases, life as we know it will change completely: parts of the country will be much drier and increased evaporation will ensure an overall decrease in water availability. This will significantly affect human health, agriculture, other water intensive economic sectors such as the mining and electricity-generation sectors as well as the environment in general."
 - 9.2. The NDP acknowledgments of climate change risks are quoted in paragraph 7 above.
 - 9.3. The harms of climate change have also been recognised in the cabinet-approved National Climate Change Adaptation Strategy ("Adaptation Strategy"). The Adaptation Strategy provides a common vision of climate change adaptation and climate resilience for the country, and outlines priority areas for achieving this vision. It recognizes that South Africa is already experiencing the negative impacts of climate change and is expected to suffer significant consequences in the future.²⁴
 - 9.4. Our country's specific vulnerability is also recognized in the government's Low Emission Development Strategy 2050.²⁵ This strategy was published by the government in 2020, in terms of the Paris Agreement obligation to "formulate and communicate long-term low greenhouse gas emission development strategies" by 2020. The Strategy states that "South Africa is particularly vulnerable to the impacts of climate change. These changes will impact on water resources and food production, and increase the

²² UNICEF, 2021. The Climate Crisis Is a Child Rights Crisis: Introducing the Children's Climate Risk Index. See at: <https://www.unicef.org/reports/climate-crisis-child-rights-crisis>

²³ National Climate Change Response White Paper. See at:

https://www.dffe.gov.za/sites/default/files/legislations/national_climatechange_response_whitepaper_0.pdf

²⁴ National Climate Change Adaptation Strategy, 2019. See at:

https://www.dffe.gov.za/sites/default/files/docs/nationalclimatechange_adaptationstrategy_ue10november2019.pdf

²⁵ Low Emission Development Strategy 2050. See at:

https://www.dffe.gov.za/sites/default/files/docs/2020lowemission_developmentstrategy.pdf

vulnerability of impoverished communities, amongst others. For this reason, the South African government regards climate change as a considerable threat to the country and its socio-economic development, having the potential to undermine many of the advances made in recent years.”

- 9.5. In a speech given by President Ramaphosa at a Virtual Leaders’ Summit on Climate Change in April 2021, he referred to the South African government’s position on addressing climate change, stating, inter alia, that “We remain committed to contributing our fair share to reduce global emissions, and to do in the context of overcoming poverty, inequality and underdevelopment. **Climate change is the most pressing issue of our time.**”
10. The United Nations’ Intergovernmental Panel on Climate Change (“IPCC”) has confirmed a dramatic increase in risk and impact severity if the global average temperature increase exceeds 1.5 °C for our climate. South Africa’s Nationally Determined Contribution (“NDC”) under the Paris Agreement states that South Africa “warmly welcomed the IPCC’s special report on global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways”, and “considers the IPCC reports to be of the highest importance in guiding our actions”.²⁶ However, South Africa is already falling behind on its global and constitutional obligations to address climate change. The NDC falls outside the fair share range; and is not consistent with the Paris Agreement 2°C target – let alone the 1.5°C benchmark set by the IPCC.²⁷ This, while it has been recognised that Africa and South Africa, are warming at a rate that is about twice the global average temperature increase rate.²⁸ ²⁹ The effects of this will be catastrophic – impacting particularly on the most vulnerable sectors of South African society.
11. The World Economic Forum’s annual “Global Risks Report 2022”³⁰ which is used as an indicator of investor and business sentiment, states that “extreme weather and climate action failure are among the top five short term risks to the world, but the five most menacing long-term threats are all environmental. Climate action failure, extreme weather and biodiversity loss also rank as the three most potentially severe risks for the next decade.” It also states that “...increasing concern with climate action failure reveals respondents’ lack of faith in the world’s ability to contain climate change, not least because of the societal fractures and economic risks that have deepened”.³¹ The risks that this report analyses are risks which have already materialised and will become more severe unless urgent meaningful action is taken.
12. It is the constitutional imperative of the government to ensure that people in South Africa are protected against these impacts – that their rights enshrined in the Constitution are upheld and protected. There is no justifiable basis on which the rights to life, dignity, an environment not harmful to health and wellbeing could be limited by

²⁶ South Africa First Nationally Determined Contribution under the Paris Agreement, September 2021. See at <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa%20updated%20first%20NDC%20September%202021.pdf>

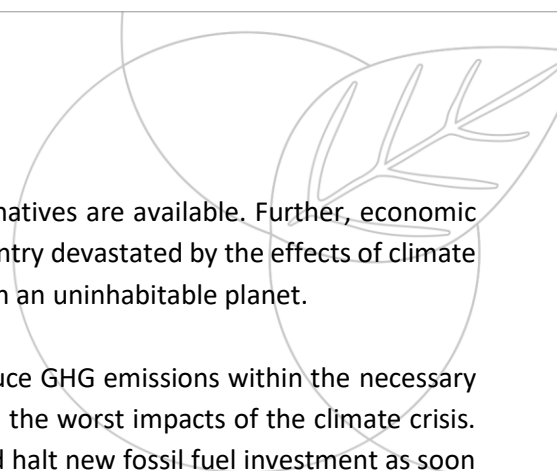
²⁷ <https://climateactiontracker.org/countries/south-africa/>

²⁸ South Africa First Nationally Determined Contribution under the Paris Agreement, 2021. At page 13.

²⁹ In her SONA Response Address (see footnote 3), Minister Creecy noted that “Science tells us that our country and our continent are warming much faster than the rest of the world. Whereas the world, on average, has warmed by roughly 1 degree, above pre-industrial times, in southern Africa, the rate of warming is twice that”.

³⁰ World Economic Forum, 2022. The Global Risks Report 2022. See at: https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2022.pdf

³¹ Ibid at page 23.



plans to develop further fossil fuel capacity, where less harmful alternatives are available. Further, economic development and sustainable livelihoods will be compromised in a country devastated by the effects of climate change, and it should be noted that, ultimately, there will be no jobs on an uninhabitable planet.

13. In the next 10 years, significant ambition is needed to sufficiently reduce GHG emissions within the necessary trajectory range and to get South Africa where it needs to be to avoid the worst impacts of the climate crisis. Doing this requires a commitment to phase out existing fossil fuels and halt new fossil fuel investment as soon as possible – and certainly to refrain from locking-in to new fossil fuel infrastructure, which is not needed. Yet – despite available science, evidence of harms and the incontrovertible acknowledgement by the government of SA’s exposure to the harms of climate change, the Report’s primary aim is the development of an oil and gas sector (fossil fuel exploitation) in SA. This stands in contradiction to the just transition and climate response imperative, and we submit that it is both unreasonable and irrational, in addition to posing a substantial threat to the Constitutional rights of the people of South Africa.
14. Given South Africa’s extreme vulnerability to the impacts of climate change³² - arguably any decision to lock the country in to more harmful GHG emissions, through fossil fuel exploitation, which is neither necessary nor desirable, would be in direct contravention of the state’s constitutional obligations to protect the rights of the people of South Africa, and the duty of care embodied in section 28 of NEMA. On this basis, we urge the Department to abandon the Report, and strongly recommend, and request, that the Gas Master Plan, which seeks to develop a gas market in South Africa, be abandoned in its entirety.
15. We note the frequent reference³³ in the Report to gas power as a cleaner energy option. Below we address this and explain why this is a fallacy.

The Myth that Gas Power provides a clean energy alternative to enable decarbonisation

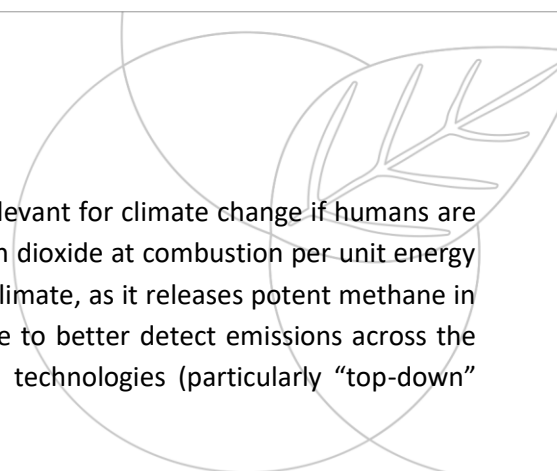
16. We note the agenda to push gas as a “bridging fuel”—cleaner and with lower carbon dioxide emissions than coal or oil—and with the flexibility to enable renewable energy uptake, in order to help address climate change. Expert analyses have shown this narrative to be false and outdated, particularly now in light of available and cleaner flexible energy alternatives and increased evidence of the high GHG emissions associated with gas exploitation. Non-conventional gas technologies - Liquefied Natural Gas (“LNG”), shale gas, coal bed methane and underground coal gasification - are particularly dirty and prone to leaking. In addition, the massive investments in new infrastructure to support this industry, including pipelines, liquefaction facilities, export terminals, and tankers, creates new fossil fuel dependence, making the transition to actual low-carbon and no-carbon energy even more difficult.³⁴
17. Expert analyses have increasingly shown that relying on gas as a bridge fuel towards transitioning to clean energy cannot be supported³⁵. A recent report by Robert W. Howarth titled “Gas Lifecycle Methane Emissions, Richards Bay Review” concludes that the climate impacts of gas are greater than those of coal per unit of energy

³² P8, National Climate Change Response White Paper 2011, at https://www.environment.gov.za/sites/default/files/legislations/national_climatechange_response_whitepaper.pdf.

³³ On pages 1,2,22,28,47 and 51 of the Report.

³⁴ <https://www.nrdc.org/sites/default/files/sailing-nowhere-liquefied-natural-gas-report.pdf>, page 4

³⁵ Ibid at page 2.



produced when evaluated in a 20-year timeframe, the period most relevant for climate change if humans are to avoid catastrophic run-away warming. Though gas emits less carbon dioxide at combustion per unit energy than coal, its upstream GHG emissions are more problematic for the climate, as it releases potent methane in leaks and venting throughout its lifecycle; researchers have been able to better detect emissions across the lifecycle of gas ever more accurately given new methodologies and technologies (particularly “top-down” measurements using satellite and aerial assessments).

18. Research has shown the Paris Agreement’s 1.5°C target cannot be met with new gas development; gas reserves already found in the ground must be left in the ground and all new fossil fuel development must be halted; essentially, gas plants cannot replace coal plants if we are to reach that target.³⁶ In fact, even emissions from existing and proposed energy infrastructure represent more than the entire carbon budget that remains if we are serious about not exceeding a 1.5°C temperature increase.³⁷
19. Compared with coal, burning gas emits half as much carbon dioxide. However, the extraction, processing, and transport of gas also emits GHGs, including large amounts of methane from leaks and intentional releases at wells, pipelines, and storage and processing facilities. Methane, which is the principal component of gas, does not persist in the atmosphere as long as carbon dioxide, but its climate impact is more than 80 times stronger in the short-term (20-year) time frame and 28 times stronger over the long term (100-year) time frame; it is the second-biggest driver of climate change.³⁸³⁹⁴⁰ Gas is therefore as emission-intensive as coal, if not more so.
20. Additionally, emissions relating to the full life cycle of gas activities are often under-reported or under-assessed. These include emissions at liquefaction, overseas tanker transport, and regasification during which even more carbon dioxide and methane are emitted. These increase the total GHG emissions resulting from the use of gas— and raise serious questions about the effectiveness of LNG as a strategy to reduce emissions and combat climate change.⁴¹

Part B: Comments on specific sections within the Report

21. In the event that the Report is to be retained and plans for the Gas Master Plan proceed despite our strong objections, we reserve our clients’ rights in this regard and make the comments and recommendations in the section below on the specific provisions of the Report. We have structured Part B of these comments under the following headings to coincide with the relevant Report sections:

³⁶ IPCC Special Report: Global Warming of 1.5 degrees C. See at: https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf

³⁷ Ibid at page 127.

³⁸ Ibid page 8.

³⁹ One ton of methane has the same climate-forcing impact as 84 tons of CO₂ over a 20-year period and the same impact as 28 tons of CO₂ over a 100-year period.

See G. Myhre et al., “Anthropogenic and Natural Radiative Forcing,” Table 8.7, in *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, T. F. Stocker et al., eds. (Cambridge, U.K., and New York, N.Y.: Cambridge University Press, 2013), https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf.

⁴⁰ U.S. Environmental Protection Agency (hereinafter U.S. EPA), “Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017,” April 2019, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017>.

⁴¹ Ibid page 9.

Section 2: Natural Gas as an Energy Source
Section 8.1.6: Legislative Gaps, Overlaps and Barriers
Section 9.1.2: National PESTEL Analysis: Economic Factors
Section 9.1.3: National PESTEL Analysis: Social Factors
Section 9.1.5: National PESTEL Analysis: Environmental Factors
Section 9.3.1: Role of Gas in National Development



Section 2: Natural Gas as an Energy Source

22. Section 2 states that “when burned, natural gas is one of the cleanest and most powerful forms of energy available” and “considering that only 2.6% of South Africa’s primary energy needs are currently sourced from natural gas and Government’s international climate change and carbon reduction commitment, exploitation of natural gas will play an integral part of South Africa’s future energy mix diversification.”
23. As made clear above, we regard the Department’s use of decarbonisation as a motivation to develop another fossil fuel, and GHG-intensive market as misguided and incorrect in light of the reports and evidence referenced above. The knowledge that has been gained around natural gas lifecycle emissions (which will be further discussed in paragraph 34 to 43 below), and the technological advancements that have been made in cleaner alternatives make clear that gas power is neither clean nor necessary in SA’s energy sector.
24. We submit that South Africa cannot justify allocating very limited carbon space to a GHG emission-intensive sector in light of the global need to urgently phase out fossil fuels and the availability of cleaner alternatives. In 2018, the IPCC found that to limit warming to 1.5°C, countries must reduce CO₂ emissions by 45% within the next decade and achieve net zero emissions around 2050.⁴² The IPCC has estimated that limiting warming to 1.5°C would require limiting atmospheric CO₂ concentration to no more than 430 parts per million (ppm), a level we are getting closer to daily, and that mitigation pathways consistent with a 1.5°C target involve “decarbonisation of electricity and other fuels”.⁴³
25. The Report mentions on numerous occasions that the electricity sector, through the “development of a gas to power programme” would create significant gas anchor demand, which would in turn enable distributed gas and in turn localised gas demand. We submit that the reliance on gas to power to facilitate adequate demand for the development of the gas market is, again, misguided and incorrect in light of: knowledge on gas to power GHG emissions, the availability of viable, clean alternatives; and the high costs and risks. In this discussion of need and desirability of gas to power projects, we submit the following:
- 25.1. The Meridian Report, referenced in paragraph 3.5 above, shows clearly that the least-cost scenario for the grid does not require new mid-merit gas capacity until the 2030s, if at all.⁴⁴ Rocky Mountain Institute - an independent nonprofit that advises on transformation of global energy systems through market-

⁴² IPCC Special Report executive summary, page 12.

⁴³ IPCC Special Report at Page 51 and 95.

⁴⁴ Meridian, 2021. A Vital Ambition. Page 59. See: <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>

driven solutions - recently reviewed and validated Meridian and CSIR's approach in the context of another proposed gas project.⁴⁵

- 25.2. The Meridian Report confirms that South Africa “does not need to expand gas infrastructure to support the power sector for the foreseeable future” because existing open-cycle gas-turbine (“OCGT”) plants powered by liquid fuels (diesel) can provide needed fuel capacity for at least the next 10 years and into the late 2030s, in all realistic mitigation scenarios.
- 25.3. Moreover, because renewable energy may soon become cheaper than gas, moving forward with gas now risks that gas-related infrastructure will soon become stranded assets as renewable energy and storage technologies become more cost-competitive.⁴⁶
- 25.4. In summary, new mid-merit gas capacity is simply not needed in South Africa. What is clear is that any gas power envisaged by the IRP 2019 and other energy models would be a limited amount for peaking capacity. This is woefully at odds with the gas infrastructure build out that the Report (and ultimately the Gas Master Plan) seek to justify, based on a fabricated need and in light of known harms. Such an approach is reckless, unreasonable, and poses an unjustifiable threat to Constitutional rights.

Section 8.1.6: Legislative Gaps, Overlaps and Barriers

- 26. The National Environmental Management Act is referred to as a barrier to the development of the gas market, and the Report boldly states that ‘adherence to’ and ‘fully complying’ with the regulations is time consuming and expensive. The implication is that the requirement for ‘full compliance’ is a barrier to be overcome by applicants for gas development projects. This is dismissive of our constitutional dispensation, and reflects an agenda to weaken environmental regulation to enable and serve industry interests.
- 27. We suggest that this wording be revised, to reflect the binding nature of NEMA, together with the rights afforded to the people of South Africa through the Constitution, which are paramount.

Section 9.1.2: National PESTEL Analysis: Economic Factors

- 28. The economic factors listed in the Report do not adequately consider the economic risks associated with gas developments, or the economic risks and effects of climate change. For less developed countries such as South Africa (with already constrained fiscal resources) disaster response, relief work and rebuilding will very likely overwhelm the state’s ability to respond adequately, compromising every aspect of future service delivery and socio-economic wellbeing. Addressing rising disaster relief costs and rebuilding will become increasingly unaffordable for a country with an already weak economy, massive unemployment and the world’s greatest inequality and the ensuing growing social support demands.

⁴⁵ RMI, 2021. Assessment of the Need for the proposed Karpowership Power Plant projects (“the projects”) located at the Port of Saldhana Bay (Western Cape), Port of Ngqura (Eastern Cape) and Richards Bay (KwaZulu Natal). See at: https://cer.org.za/wp-content/uploads/2021/08/AJ1-RMI_Report-27.07.2021.pdf

⁴⁶ RMI, C. Bloch et al., Breakthrough Batteries: Powering the Era of Clean Electrification at p. 7 (2019).

29. We urge that the analysis be revised to consider all factors and risks, including the following suggested paragraphs:

- 29.1. Goods and service created using fossil fuel energy are going to have a high carbon footprint due to the direct and indirect GHG emissions caused by their production. This means exposure to increased taxes and other costs. The European Union introduced the Carbon Border Adjustment Mechanism (“CBAM”) which will levy a fee on all imports based on their carbon footprint.⁴⁷ An extensive fossil fuel powered electricity system will ensure that South Africa’s exporters are heavily penalised and their competitiveness is at risk.
- 29.2. As laws and regulations on climate change come into existence and/or are tightened, and as policies, targets and financial pressures become ever more restrictive, there is a very real risk that fossil fuel infrastructure and developments will become inviable and illegal to operate long before the end of their economic lifespan, resulting in stranded assets that will never realise the profits counted on by the owners, and very likely placing burden on the public purse in terms of decommissioning and management costs.⁴⁸
- 29.3. There is a range of climate and transition financing mechanisms becoming available from the Global North for countries embracing accelerated decarbonisation policies and measures. South Africa is viewed as an attractive destination for such financing given the relatively low cost of decarbonisation for the country. While we in no way endorse any finance deals without first having sight of the terms and conditions (which must be subject to a rigorous public consultation process), we do point out that in order to remain attractive, the country needs to embrace strong emission reduction measures and avoid expanding or even maintaining carbon intensive fossil fuel use, such as gas. Financing is known to be needed in order to fund mitigation and adaption measures, and assist with a implementing a Just Transition.⁴⁹
- 29.4. Continued use and development of fossil fuel infrastructure, energy generation and services brings with it reputational risk whereby South Africa is seen as a reckless and unnecessarily intensive carbon emitter.
- 29.5. As more stakeholders align with the imperatives of halting global warming, litigation risk increases, and more than one thousand climate litigation cases have been launched around the world between 2015 and 2020.⁵⁰ South African courts have already recognised that new coal fired power developments pose a risk to climate change imperatives,⁵¹ and the climate science relating to gas will result in similar and increasing challenges to new gas developments.

⁴⁷ See at: <https://economics.rabobank.com/publications/2021/july/cbam-carbon-border-adjustment-mechanism-eu-explained/>

⁴⁸ See at: <https://oilprice.com/Energy/Crude-Oil/A-Third-Of-Fossil-Fuel-Assets-May-Soon-Be-Stranded>

⁴⁹ See at: <https://www.climatechangenews.com/2021/08/20/us-guidance-development-banks-puts-gas-infrastructure-finance-question/>

⁵⁰ See at: <https://energymonitor.ai/policy/litigation-increasingly-the-only-option-when-big-emitters-fail-to-address-climate-change>

⁵¹ See at: <https://cer.org.za/wp-content/uploads/2017/03/Judgment-Earthlife-Thabametsi-Final-06-03-2017.pdf>

Section 9.1.3: National PESTEL Analysis: Social Factors

30. A comprehensive analysis of social factors linked of gas developments must consider the social impacts that climate change will have on the people of South Africa.
31. Although an environmental issue on the face of it, climate change is in fact also a social issue, an economic issue, a health and safety issue; an energy issue, an infrastructure and human settlements issue, a food and water security issue and more. The climate crisis is a crisis with far-reaching implications for the full spectrum of human rights in our Constitution – rights which all spheres of government are obliged to respect, protect, promote and fulfil. This notwithstanding, the primary responsibility of managing South Africa’s climate change response resides.
32. Climate change impacts will include huge emotional trauma induced by physical, social, economic and cultural disruption. The increasing inability to cope with climate impacts, and the knowledge that government services are overwhelmed and unable to help, will almost certainly create feelings of abandonment, hopelessness and depression amongst a growing proportion of the populace. Many people will likely lose their sense of place and identity through dramatic changes in their surroundings, the breakdown of social ties and cultural connections as they are forced to move, to try and survive and access services such as health care, education and social grants. Informal settlements will expand dramatically, including with in-migration from countries to the north as climate change impacts compromise livelihoods across the region, with conflicts and xenophobia leading to violence. All of this will reduce people’s economic status and compromise their physical and mental wellbeing. Children in particular, will be traumatised at these upheavals and the inability of their parents to provide for them, and their health and safety.⁵²
33. The Report states that the development of the gas sector will enable social upliftment on a national level through job creation and skill development. We submit that any alleged social benefits will be woefully overshadowed by the negative resultant social harms outlined above. Further, the upstream gas sector in particular is dependent on highly skilled resources which will result in very few local jobs in the offshore upstream activity or onshore in fracking activities.

Section 9.1.5: National PESTEL Analysis: Environmental Factors

34. The PESTEL Analysis, whilst done at a high level for all factors, provides an insufficient picture of the environmental factors associated with the full lifecycle of gas projects. As this is the only section in the Report that provides an opportunity for an objective view on whether a gas market should be pursued in the current environmental climate, we propose amending the section to include a thorough description of direct, indirect emissions across the full life-cycle of the gas industry.
35. For gas, or any other fossil fuel, life-cycle analysis is used to quantify the total amounts of GHG emissions (predominantly carbon dioxide and methane) from every step in the process, from extracting the fossil fuel at the well or mine to burning it at a power plant or other facility - this is because these are all ancillary and inextricably linked activities, which cannot be viewed in isolation. More specifically, such an analysis must

⁵² King, 2021. Climate Change Implications for SA’s Youth. See at <https://cer.org.za/wp-content/uploads/2021/09/Nick-King-Report-Final.pdf>

include extraction of the gas; transportation to the plant; construction of the plant, operation of the plant; and decommissioning.

36. The consideration of the full lifecycle GHG emissions and the full footprint of the sector is essential in considering whether it is the best option for investment in South Africa. Furthermore, including reference to a holistic and cumulative impact assessment approach would be in line with national environmental legislation and the Best Practice Principles for impact assessments, as published by the International Association of Impact Assessment.⁵³
37. As mentioned in paragraph 22 above, the Report states that “when burned, natural gas is one of the cleanest and most powerful forms of energy available.”⁵⁴ However, as explained above, the extraction, processing, and transport of gas also emits GHGs, including large amounts of methane from leaks and intentional releases at wells, pipelines, and storage and processing facilities.⁵⁵
38. Additionally, overseas export of gas extends the gas life-cycle, adding steps for liquefaction, overseas tanker transport, and regasification during which even more carbon dioxide and methane are emitted.⁵⁶ These increase the total GHG emissions resulting from the use of gas, thus negating the misperceived use of LNG as a strategy to reduce emissions and combat climate change.
39. Finally, the expanded production, export, and use of LNG will require large amounts of massive, long-lived, and single-purpose infrastructure such as pipelines, liquefaction plants, LNG terminals, and tankers, as well as gas-fired power plants.⁵⁷ These types of investments lock in fossil fuel dependence and the associated emissions, making the transition to clean energy even more difficult.
40. It is patently false to refer to gas as “one of the cleanest forms of energy available” particularly in light of available alternatives from renewable resources (solar and wind), which do not pose the same threats of harm as those posed by fossil fuels (gas).
41. We strongly object to any references to gas as being a cleaner energy alternative, throughout the report and recommend that this wording be deleted and revised.
42. We propose that the following breakdown also be included in the PESTEL Analysis:
UPSTREAM: Extraction of gas at the well, processing, and domestic pipeline transport; occurs in exporting country; greenhouse gas emitted: predominantly methane.

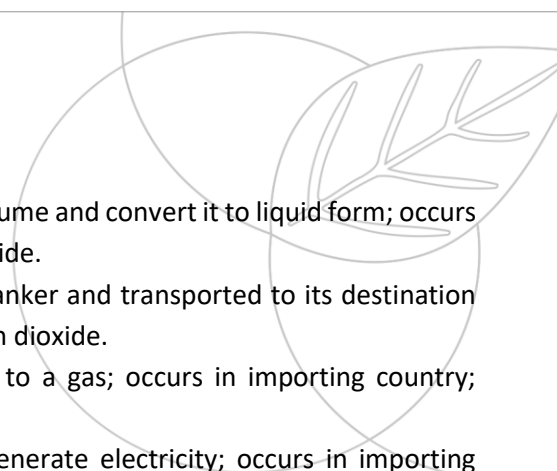
⁵³ Byer, P., Cestti, R., Croal, P., Fisher, W., Hazell, S., Kolhoff, A., and Kørnø, L. (2018) Climate Change in Impact Assessment: International Best Practice Principles. Special Publication Series No. 8. Fargo, N.D., USA: International Association for Impact Assessment at Page 2.

⁵⁴ Basecase Report at page 2.

⁵⁵ Ramón A. Alvarez et al., “Assessment of Methane Emissions From the U.S. Oil and Gas Supply Chain,” *Science* 361, no. 6398 (July 13, 2018): 186-188, <https://science.sciencemag.org/content/361/6398/186>.

⁵⁶ Leslie Abrahams et al., “Life Cycle Greenhouse Gas Emissions From U.S. Liquefied Natural Gas Exports: Implications for End Uses,” *Environmental Science & Technology* 49, no. 5 (February 2015): 3237–3245, <http://pubs.acs.org/doi/full/10.1021/es505617p>.

⁵⁷ Peter Erickson et al., “Assessing Carbon Lock-In,” *Environmental Research Letters* 10, no. 8 (August 2015), <http://iopscience.iop.org/article/10.1088/1748-9326/10/8/084023/pdf>.



LIQUEFACTION: Gas is cooled to -162 degrees Celsius to reduce its volume and convert it to liquid form; occurs in exporting country; greenhouse gas emitted: almost all carbon dioxide.

TANKER TRANSPORT: Liquefied natural gas is loaded onto an LNG tanker and transported to its destination port; occurs on the high seas; greenhouse gas emitted: mostly carbon dioxide.

REGASIFICATION: Liquefied natural gas is re-warmed to convert it to a gas; occurs in importing country; greenhouse gas emitted: mostly methane.

POWER PLANT OPERATIONS: Gas is burned in a power plant to generate electricity; occurs in importing country; greenhouse gas emitted: almost all carbon dioxide.

43. A thorough PESTEL analysis would consider all environmental factors associated with gas developments, particularly marine impacts from offshore exploration and production, water use and pollution for fracking, toxics in fracking fluids, intensive land use, intensive trucking and associated spills, and high air emissions from landfill gas (“LFG”).⁵⁸

Section 9.3.1: Role of Gas in National Development

44. As mentioned in Part A above, the reliance on the NDP for the development of a gas market in South Africa is misguided.
45. We submit that the Department is at risk of acting outside of national policy guidance on the development of the Energy Sector. In this regard, the NIP 2050⁵⁹ states that “by 2050, energy supply should be enabling, and not a constraint of economic growth and development. This will require reduced reliance on coal and growing reliance on renewable energy, especially solar and wind which are the least-cost technology, and where SA has significant comparative advantage.”
46. To achieve this vision, the NIP 2050 recommends that “the transition away from fossil fuels progresses in a convincing and just manner. New installed capacity consists primarily of wind and solar where South Africa has comparative advantage. Stakeholders, whether business, workers or communities) involved in fossil fuels are supported through this transition.” our interpretation of this is that the development of gas infrastructure should be avoided.
47. It is clear therefore that the role of fossil fuels (including gas) is to diminish and that least cost technology such as solar and wind should be prioritised. We submit that the Department, in developing a Gas Master Plan, would undermine national policy aimed at a just energy transition.

Part C: Conclusion

48. We submit that before any decision to proceed with the development of a Gas Master Plan can be made, consideration must be given to: the multifaceted impacts of a Gas Master Plan for the climate crisis, including the additional GHG emissions that would arise from the production, use and transportation of gas, which would

⁵⁸ Impacts and environmental factors are more thoroughly considered in the Report titled: “Shale Gas Development in the Central Karoo: a scientific assessment of the positive and negative consequences”. See at: https://www.researchgate.net/publication/313768592_Shale_Gas_Development_in_the_Central_Karoo_A_Scientific_Assessment_of_the_Opportunities_and_Risks


⁵⁹ GN 44951 dated 10 August 2021.

be accelerated under this Plan – including indirect emissions from construction, transportation and decommissioning, rehabilitation etc. – and the implications of the Gas Master Plan for the following:

- 48.1. the exacerbation of South Africa's own vulnerability to the climate crisis, including the social, external costs of these GHG emissions, the resultant climate impacts for South Africa and the constitutional rights of people in South Africa;⁶⁰
 - 48.2. South Africa's international climate commitments under the Paris Agreement and its GHG emission reduction targets; and,
 - 48.3. the extent to which the further exploitation of gas would even be economically and legally viable in a market where fossil fuels are increasingly constrained and such projects are likely to become stranded assets with high economic costs for the country.
49. We dispute the Department's suggestion that the development of the gas and petroleum industry in South Africa would further economic development or resolve the energy crisis. Any economic development from gas is not justifiable against the environmental costs. A ramped up rollout of renewable energy would provide more jobs than the gas sector and, given the development timeframes applicable to renewables, it would be a more immediate and unquestionable solution for addressing the energy crisis. We urge the Department to abandon its Gas Master Plan, and to focus increased attention onto the development of much-needed clean renewable energy in South Africa.
50. We thank you for the opportunity to submit comments on the draft Gas Master Plan Basecase Report and invite discussion on any aspect hereof, should this be necessary or useful.

Yours faithfully

CENTRE FOR ENVIRONMENTAL RIGHTS

per: 

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⁶⁰ The Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) in the USA has attributed global amounts in scope and applicability, representing the costs of global climate impacts. This is a widely used method for calculating the cost of projects' GHG emissions. The social cost of carbon, as determined by the IWG, is a consensus of the estimate of the social cost of carbon as calculated by three proprietary models: FUND, DICE, and PAGE, as described in the Technical Support Document available at https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf (p5):

"We rely on three integrated assessment models (IAMs) commonly used to estimate the SCC: the FUND, DICE, and PAGE models. These models are frequently cited in the peer-reviewed literature and used in the IPCC assessment. Each model is given equal weight in the SCC values developed through this process, bearing in mind their different limitations."