

APPENDIX C7
COMMENTS RECEIVED





forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

F 033 342 8783

☎ DFFE

✉ Mr. T. Sibozana

T 033 392 7721

Forestry Regulations & Support

07 July 2022

✉ tsibozana@dfpe.gov.za

P/Bag X9029

Pietermaritzburg 3201

SAVANNAH ENVIRONMENTAL

Cnr Woodlands Drive & Western Service Road

Woodmead

2191

Attention: Nicolence Venter

PROPOSED DEVELOPMENT OF THE PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT, RICHARDS BAY IDZ ZONE 1F, RICHARDS BAY, KWAZULU-NATAL.

The Department of Forestry, Fisheries and Environment (DFFE) appreciates the opportunity given to review and comment for the above-mentioned project. DEFF through the sub-directorate Forestry Regulations and Support is the authority mandated to implement the National Forests Act No. 84 of 1998 by regulating the use of natural forests and protected trees species in terms of the said Act.

“Natural forest” means a group of indigenous trees-

- (a) whose crowns are largely contiguous; or
- (b) which have been declared by the Minister to be a natural forest under section 7(2); (xxviii)

With reference to the above-mentioned project received on 14 June 2022, the proposed development of the Phakwe Richards Bay gas power 3 combined cycle power plant, Richards Bay IDZ zone 1F, Richards Bay, KwaZulu-Natal. The proposed development is likely to affect grassland and Maputaland wooded vegetation. Terrestrial Biodiversity assessment study have the following findings regarding the area of development, “A small thicket dominated by *Dichrostachys cinerea*, and with the species *Phoenix reclinata*, *Psidium guajava*, *Osteospermum moniliferum*, *Searsia nebulosa*, *Syzygium cordatum* and *Diospyros lycioides* (low abundance) also present, was embedded within the hygrophilous grassland on a slightly elevated area and more representative of terrestrial vegetation than hygrophilous grassland vegetation).”

However, the proposed project will not affect natural forests and there are no protected trees within the vicinity of the developmental footprint, as per The Natural Forests Act (Act No 84 of 1998) as amended. Therefore, the department does not object the proposed development of Phakwe Richards Bay gas power 3 combined cycle power plant but, it is strongly recommended that indigenous trees endemic to the area be incorporated on rehabilitation plan to promote green industry.

This letter does not exempt you from considering other legislations.

Should any further information be required, please do not hesitate to contact this office.

Yours faithfully

T. Sibozana



Senior Forester: Forestry Management

Forestry Regulations and Support



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA 0001· Environment House 473 Steve Biko Road, Arcadia,· PRETORIA

DFFE Reference: 14/12/16/3/3/2/2117

Enquiries: Ms Mathodi Mogorosi

Telephone: (012) 399 9388 **E-mail:** MMogorosi@dffe.gov.za

Ms Jo-Anne Thomas
Savannah Environmental (Pty) Ltd
PO Box 148
SUNNINGHILL
2157

Telephone Number: (011) 656 3237
Email Address: joanne@savannahsa.com

PER MAIL / E-MAIL

Dear Ms Thomas

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT (CCPP) AND ASSOCIATED INFRASTRUCTURE WITHIN THE RICHARDS BAY IDZ PHASE 1F, RICHARDS BAY, CITY OF UMHLATHUZE LOCAL MUNICIPALITY, KWAZULU-NATAL PROVINCE

The Application for Environmental Authorisation and Draft Environmental Impact Assessment Report (EIAr) received by the Department on 12 November 2021 and 05 June 2022, respectively, refer.

This letter serves to inform you that the following information must be included in the final EIAr:

(a) Specific comments

- Recommendations provided by specialist reports must be considered and used to inform the layout.
- Please ensure that all mitigation recommendations are in line with applicable and most recent guidelines.
- The final EIAr must provide the technical details for the proposed facility in a table format as well as their description and/or dimensions.
- Please ensure that all softcopy maps are clear and legible.
- Please ensure that the final EIAr complies with the requirements of Appendix 3 of the NEMA EIA Regulations, 2014, as amended.

(b) Listed Activities

- Please ensure that all relevant listed activities are applied for, are specific and can be linked to the development activity or infrastructure as described in the project description. Only activities applicable to the development must be applied for and assessed. Activity 15 of Listing Notice 3 has been applied for even though the geographical area in which the activity is proposed (KwaZulu-Natal Province) is not part of the geographical areas listed in Listing Notice 3 for this particular activity. This activity may

not need to be applied for, given that it is proposed in the KwaZulu-Natal Province. Kindly confirm this and amend the application form accordingly.

- If the activities applied for in the application form differ from those mentioned in the final EIAr, an amended application form must be submitted. Please note that the Department's application form template has been amended and can be downloaded from the following link <https://www.environment.gov.za/documents/forms>.
- The relevant authorities with jurisdiction in respect of geographically designated areas in terms of GN R. 985 (Listing Notice 3) Activities must be continuously involved throughout the environmental impact assessment process. Written comments (or proof of consultation) must be obtained from the relevant authorities and submitted to this Department. In addition, a graphical representation of the proposed development within the respective geographical areas must be provided. Please also ensure that the potential impacts on the affected Critical Biodiversity Areas indicated in Listing Notice 3 are fully assessed in the EIAr.

(c) Public Participation Process

- Please ensure that comments from all relevant stakeholders are submitted to the Department with the EIAr. This includes but is not limited to the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, the KwaZulu-Natal Department of Agriculture and Rural Development, the Department of Water and Sanitation, Ezemvelo KZN Wildlife, AMAFA, SANRAL, Transnet, Richards Bay Industrial Zone, Eskom, the City of uMhlathuze Local Municipality, the King Cetshwayo District Municipality, the relevant Atmospheric Air Emission Licence (AEL) Authority, the South African Civil Aviation Authority, the Department of Environment, Forestry and Fisheries: Directorates: Biodiversity and Conservation (BCAdmin@environment.gov.za), Climate Change, Air Quality (Derrick Makhubele: DMakhubele@dfef.gov.za) and Protected Areas. Furthermore, ensure that the management of the three schools (i.e., Little Junior, Batesda Primary School and Batesda High School) identified to be in close proximity to the proposed development is consulted.
- You are reminded to provide proof that the key stakeholders received written notification of the proposed activity as well as of the availability of the draft EIAr for comment. Proof of correspondence with the various stakeholders must be included in the final EIAr. Should you be unable to obtain comments, proof must be submitted to the Department of the attempts that were made to obtain comments. The Public Participation Process must be conducted in terms of Regulation 39, 40, 41, 42, 43 & 44 of the EIA Regulations 2014, as amended and the approved Public Participation (PP) Plan.
- A comments and response (C&R) trail report must be submitted with the final EIAr. The C&R report must incorporate all historical comments for this development. The C&R report must be a separate document from the main report and the format must be in a table format, which reflects the details of the interested and affected parties (I&APs) and the date comments were received, actual comments received, and responses provided. Please ensure that comments made by I&APs are comprehensively captured (copy verbatim if required) and responded to clearly and fully.
- Please ensure that all issues raised, and comments received on the Scoping Report and comments on the draft EIAr from registered I&APs and organs of state which have jurisdiction in respect of the proposed activity, including this Department's comments, are adequately addressed in the final EIAr. Please note that a response such as "Noted" is not regarded as an adequate response to I&AP's comments. The final EIAr must also comply with all conditions of the acceptance of the scoping report dated 24 February 2022.

(d) Cumulative Assessment

- Should there be any other similar projects within a 30km radius of the proposed development site, the cumulative impact assessment for all identified and assessed impacts must be refined to indicate the following:

- Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e. hectares of cumulatively transformed land.
- Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
- The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
- A cumulative impact environmental statement on whether the proposed development must proceed.

(e) Specialist Assessments

- Specialist studies must provide a detailed description of their methodology, as well as all other associated infrastructures that they have assessed and are recommending for the authorisation.
- The specialist studies must also provide a detailed description of all limitations to their studies. All specialist studies must be conducted in the right season and providing that as a limitation, will not be accepted.
- Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads is allowed in the 'no-go' areas.
- Should the specialist definition of 'no-go' area differ from the Department's definition; this must be clearly indicated. The specialist must also indicate the 'no-go' area's buffer if applicable.
- All specialist studies must be final, and provide detailed/practical mitigation measures for the preferred alternative and recommendations, and must not recommend further studies to be completed post EA.
- Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defensible reasons; and where necessary, include further expertise advice.
- You are reminded that the Climate Change Impact Assessment must assess the impacts of the development on climate change and vice versa, and accordingly must consider both mitigation and adaptation measures to climate change.
- Please include a table in the EIAR or relevant appendix, summarising the specialist studies required by the Screening Tool, a column indicating whether these studies were conducted or not, and a column with motivation for any studies not conducted. Please note that if any of the specialists' studies and requirements recommended in the Department's Screening Tool are not commissioned, motivation for such must be provided.
- It is further brought to your attention that the *Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation*, which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. "the Protocols"), and in Government Notice No. 1150 of 30 October 2020 (i.e. protocols for terrestrial plant and animal species) have come into effect. **Please note that specialist assessments must be conducted in accordance with these protocols**, except where the applicant provides proof to the competent authority that the specialist assessment affected by these protocols had been commissioned before the date on which the protocols came into effect, in which case Appendix 6 of the Environmental Impact Assessment Regulations, 2014, as amended, will apply to such applications. Please indicate in the EIAR whether the protocols were applied.
- Please note further that the Protocols require the specialists to be SACNASP registered.

(f) Environmental Management Programme

- The EMP must also include the following:

- All recommendations and mitigation measures recorded in the EIAr and the specialist studies conducted.
- An environmental sensitivity map indicating environmental sensitive areas and features identified during the assessment process.
- Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments, and other environmental sensitive areas from construction impacts including the direct or indirect spillage of pollutants.
- In addition to the above, the EMPr must comply with Appendix 4 of the EIA Regulations, 2014, as amended.

General

Please ensure that the final EIAr includes the period for which the Environmental Authorisation is required and the date on which the activity will be concluded as per Appendix 3 of the NEMA EIA Regulations, 2014, as amended.

Should you fail to meet any of the timeframes stipulated in Regulation 23 of the NEMA EIA Regulations, 2014, as amended, your application will lapse.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Yours sincerely



Ms Millicent Solomons

Acting Chief Director: Integrated Environmental Authorisations

Department of Forestry, Fisheries and the Environment

Signed by: Ms Sindiswa Dlomo

Designation: Deputy Director: National Infrastructure Projects

Date: 08/07/2022

cc:	J Teyane	Richards Bay Gas Power 3 (Pty) Ltd	Email: thabiso@phakwegroup.co.za
-----	----------	------------------------------------	---



Savannah Environmental
P O Box 148
Sunninghill
2157

ATTENTION: Nicolene Venter
Email: publicprocess@savannahsa.com

Dear Madam

COMMENTS ON THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: EIA REPORT FOR THE PHAKWE RICHARDS BAY POWER 3 COMBINED CYCLE POWER PLANT, RICHARDS BAY, IDZ 1F.

The City of uMhlathuze has reviewed the Environmental Impact Assessment Report, dated June 2022, in respect of the above application. We further refer to the public meeting held on the 20th June 2022 following presentations of various specialist studies undertaken. We accordingly submit the following comments for due consideration:

General

Please note the following points pertaining to this application:

1. The City of uMhlathuze has recorded an increasing number of *Gas to Power* applications being proposed within a 10km radius in Richards Bay.
2. It is therefore important that the cumulative impacts of such proposed developments are addressed.

Biodiversity Assessment

1. The proposed project is located within critically endangered ecosystem and the clearance of vegetation will significantly contribute to the fragmentation of habitats.
2. The applicant must investigate mechanisms to re-building local ecological networks by creating an environmental for new habitats to thrive using landscaping designs.
3. Due to the sensitivity of the site fauna and flora species, an on-site due diligence inspection must be conducted prior to construction.

All correspondence must be addressed to the City Manager

Quantitative Risk Assessment Report

1. The report details that some events identified on site have risks beyond the site boundary, hence mitigation measures must be implemented by ensuring competent designs, compliance with statutory requirements and guidelines.

You are welcome to direct further queries regarding the above to Ms. Nokubonga Duma from the office of the Deputy Municipal Manager: City Development on Tel: 035 9075174; Mobile: 061 480 8973; or email: Dumanl@umhlathuze.gov.za

Yours faithfully



NONTSUNDU NDONGA Pr PIn A/080/2008

DEPUTY MUNICIPAL MANAGER: CITY DEVELOPMENT

DMS 1544648

All correspondence must be addressed to the City Manager

Savannah Public Process

From: Rishi Rampershad (R) <RishiR@openseve.co.za>
Sent: Thursday, 21 July 2022 15:07
To: Savannah Public Process
Cc: Nico Fourie (LN)
Subject: EWIP_NATH2028_22
Attachments: customer topo.pdf

Importance: High

Our Ref. No: EWIP_NATH2028_22
Your Ref. No: NONE

SAVANNAH ENVIRONMENTAL
FIRST FLOOR, BLOCK 2
5 WOODLANDS DRIVE OFFICE PARK
Cnr WOODLANDS DRIVE & WESTERN SERVICE ROAD
WOODMEAD
2191

Dear Sir or Madam:

**PROPOSED DEVELOPMENT OF THE PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT,
RICHARDS BAY IDZ ZONE 1F, RICHARDS BAY, KWAZULU-NATAL PROVINCE (DFFE REFERENCE NO :
14/12/16/3/3/2/2117)**

Your notification dated 25 February 2022 refers.

In reference to the Electronic Communications Act no. 36 of 2005.

No UNDERGROUND telecommunication infrastructure owned by Telkom SA SOC Ltd is affected.

Approval of the proposed is valid for six months. If construction has not yet commenced within this time period then the file must be resubmitted for approval. Any changes and deviations from the original planning during construction must be immediately communicated to this office.

Yours Faithfully



.....
Rishi Rampershad
Wayleave Officer

Regards

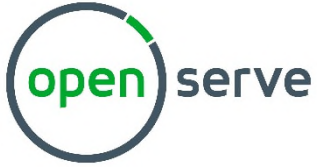
Rishi Rampershad
Wayleave Officer
Network Engineering and Build

Durban – Umbilo Workshops & Offices
2 Oliver Lea Drive, Durban, 4001

Tel : +27 31 459 1768

Fax : +27 864 786 950

Email : rishir@openserve.co.za



This e-mail is subject to the Openserve electronic communication legal notice, available at:
<http://www.openserve.co.za/OpenserveEmailLegalNotice>

==== This e-mail and its contents are subject to the Telkom SA SOC Ltd. E-mail legal notice
<http://www.telkom.co.za/TelkomEMailLegalNotice.PDF> ====

APPENDIX B: Co-ordinates

TELEKOM REF. NO.: EWIP_NATH2028_22

NO RECORD OF TELEKOM INFRASTRUCTURE IN AFFECTED AREA

 Right Reserved
Wayleave Officer

 DATE: 18/07/2022



Google Earth

Image © 2022 CNES / Airbus



**forestry, fisheries
& the environment**

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, Tel: +27 12 399 9000, Fax: +27 86 625 1042

Reference: 14/12/16/3/3/2/2117

Enquiries: Ms. Portia Makitla

Telephone: 012 399 9411/9627 **E-mail:** pmakitla@environment.gov.za

Ms Nicolene Venter
Savannah Environmental
PO Box 148
SUNNINGHILL
2147

Telephone Number: +27 (11) 656 3237

Email Address: publicprocess@savannahsa.com

PER E-MAIL

Dear Ms Venter

COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT (CCPP), RICHARDS BAY, KWAZULU- NATAL PROVINCE

The Directorate: Biodiversity Conservation acknowledge receipt of the report for review.

Based on the information provided in the report the proposed site is located within the Richards Bay Industrial Development Zone, Phase 1F. The site is designated for noxious industry such as the proposed gas to power plant. It is also noted that the Richards Bay Industrial Development Zone received environmental Authorisation, which includes the development of two of the wetland areas. However, the remaining third wetland is not in a position in the landscape to be affected by the development

The study area includes wetlands and medium sensitivity vegetation (Maputaland Wooded Grassland) within the project site. The site has been determined to have a moderate Ecological Importance. Many of the anticipated project- specific impacts during the construction and operational phases can be successfully mitigated to moderate, low, and minor levels of significance, and are thus considered acceptable.

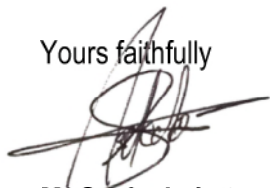
It is the Directorate's view that with stringent mitigation measures the proposed development will not pose significant impacts. Therefore, the proposed development is supported.



COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT (CCPP), RICHARDS BAY, KWAZULU- NATAL PROVINCE

NB: The Public Participation Process documents related to Biodiversity EIA for review and queries should be submitted to the Directorate: Biodiversity Conservation at Email; BCAdmin@environment.gov.za for attention of Mr. Seoka Lekota.

Yours faithfully



Mr Seoka Lekota
Control Biodiversity Officer Grade B: Biodiversity Conservation
Department of Forestry, Fisheries & the Environment
Date: 22/07/2022





KWAZULU-NATAL PROVINCE

ECONOMIC DEVELOPMENT, TOURISM
AND ENVIRONMENTAL AFFAIRS
REPUBLIC OF SOUTH AFRICA

Directorate: Environmental Services

Private Bag X 20018, Empangeni, 3880

Aloe Loop Street ,Veldenvlei, Richards Bay, 3900
Fax: N/A

Their reference: 14/12/16/3/3/2/2117

www.kznedtea.gov.za

Programme/Sub-Programme: 7

Enquiries: Felicia Mdamba

Telephone: 081 431 3220

Email: Felicia.Mdamba@kznedtea.gov.za

Email Transmission

Savannah Environmental (Pty) Ltd

P.O. Box 148
Sunninghill,
2157

Contact person: Nicole Venter

Tel No: 011 656 3237

Cell: 060 978 8396

Email: publicprocess@savannahsa.com

Dear Madam,

14/12/16/3/3/2/2117: COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED DEVELOPMENT OF THE PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT ON VARIOUS ERVENS WITHIN THE RICHARDS BAY INDUSTRIAL DEVELOPMENT ZONE(IDZ), PHASE 1F WITHIN THE JURISDICTION OF UMLATHUZE LOCAL MUNICIPALITY AND THE KING CETSHWAYO DISTRICT MUNICIPALITY.

1. The draft Environmental Impact Assessment Report dated June 2022 for the above-mentioned proposed development, refers;
2. **Background:**
 - (a) The Phakwe Richards Bay Gas Power 3 (Pty) Ltd proposes the development of the Phakwe Richards Bay Gas Power 3 Combined Cycle Power Plant (CCPP) which involves the construction of a gas power station that will occupy 11, 8 ha on ervens: 16820, 16819, 1/16674 and a subdivision of Erf 17442 within the Richards Bay, IDZ Zone Phase 1F;
 - (b) The Phakwe Richards Bay Gas Power 3 CCPP will provide baseload power supply estimated at 16 to 24 hours daily operation. The power station will have an installed

"GROWING KWAZULU-NATAL TOGETHER"

14/12/16/3/3/2/2117: COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PHAKWE RICHARDS BAY GAS TO POWER 3 COMBINED CYCLE POWER PLANT ON VARIOUS ERVENS WITHIN THE RICHARDS BAY IDZ PHASE 1F AT UMLATHUZE LOCAL MUNICIPALITY , KING CETSHWAYO DISTRICT.



KWAZULU-NATAL PROVINCE

ECONOMIC DEVELOPMENT, TOURISM
AND ENVIRONMENTAL AFFAIRS
REPUBLIC OF SOUTH AFRICA

capacity of up to 2000MW, to be operated on natural gas or a mixture of natural gas and hydrogen. A dedicated pipeline to connect into an on-site gas receiving and conditioning station will provide the natural gas or the mixture of natural gas and Hydrogen, The pipeline which will be subject to a separate environmental authorization process, will be connected to the proposed Transnet supply pipeline network of Richards Bay or it will extend directly to the Regasification facilities in the Richards Bay Harbour.

- (c) The Plant will be connected to the national grid via a 275kV or 400kV Eskom Switching Station and underground transmissions cables that will connect to the selected Eskom grid connection point. A separate EIA process will be undertaken for the switching station and transmission line.

3. Alignment of the proposed development to the National Policy and Planning Context:

- (a) The Phakwe Richards Bay Gas Power 3 CCPP is aligned with the aims of the following policies and planning instruments: the Integrated Resource Plan (IRP), 2019; SIP; the National climate change response bill, 2018; the National Climate Change Response Policy, 2011; the Gas Utilization Master Plan; the KwaZulu- Natal Provincial Growth and Development Plan (PGDP) (2019); the KwaZulu- Natal Provincial Growth and Development Strategy (PGDS) (2016); the KwaZulu-Natal Spatial Economic Development Strategy (2016); the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, Revised Strategic Plan 2015-2020; 2012 KwaZulu-Natal Systematic Conservation Plan; the KwaZulu-Natal Provincial Spatial Development Framework (PSDF); the KwaZulu-Natal Climate Change Response and Sustainable Development Plan; the King Cetshwayo District Municipality Draft Intergrated Development Plan (2020/21 – 2021/22); King Cetshwayo District Municipality Intergrated Development Plan (2019/20 – 2021/22); uMhlathuze Municipality Intergrated Development Plan (IDP), 2019/2020 and the City of uMhlathuze Spatial Development Framework 2017/2018 – 2021/2022) (May 2017).

"GROWING KWAZULU-NATAL TOGETHER"

14/12/16/3/3/2/2117: COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PHAKWE RICHARDS BAY GAS TO POWER 3 COMBINED CYCLE POWER PLANT ON VARIOUS ERVENS WITHIN THE RICHARDS BAY IDZ PHASE 1F AT UMHLATHUZE LOCAL MUNICIPALITY , KING CETSHWAYO DISTRICT.



4. Comments based on proposed development:

- (a) The KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (the Department) has reviewed the draft Environmental Impact Assessment Report dated June 2022 and accepts the specialist studies that have been undertaken, the mitigation measures that have been suggested by the aforesaid report to minimize the level of impact of the proposed development to the surrounding environment, the public participation process conducted on the proposed development together with the Environmental authorization that was issued on 27 September 2016; for the construction of the Richards Bay Industrial Development Zone Phase 1F; However; the Environmental Assessment Practitioner (EAP) is requested to take note of the following comments:
- (i) The Department would have loved to know more details about the source of gas which will serve as fuel to the proposed development, the environment that will be traversed by the pipeline transporting the liquefied natural gas to the proposed development site; the level of impact of the gas pipeline to the natural environment. However the draft Environmental Impact Assessment Report dated June 2022 has indicated that this activity will be undertaken separately to the current EIA process of the Phakwe Richards Bay Gas Power 3 CCPP.
- (ii) The recommendations of **all the undertaken specialist studies must be strictly adhered to** during the implementation of the Phakwe Richards Bay Gas Power 3 CCPP;
- (iii) The conceptual wetland plan developed for the Richards Bay Industrial Development Zone Phase 1F by Royal Haskoning ,DHV, 2015 must be adhered to during the implementation of the Phakwe Richards Bay Gas Power 3 CCPP;
- (iv) The Department has noted with concerns that the proposed development will utilize large quantities of the municipal water during its operation whereas some communities within uMhlathuze local municipality are struggling with supply of potable water, as such the EAP is advised to come up with water saving techniques/strategies which could decrease the water demand of the proposed power plant, during its operation or else explore other alternative water sources.

"GROWING KWAZULU-NATAL TOGETHER"

14/12/16/3/3/2/2117: COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PHAKWE RICHARDS BAY GAS TO POWER 3 COMBINED CYCLE POWER PLANT ON VARIOUS ERVENS WITHIN THE RICHARDS BAY IDZ PHASE 1F AT UMLATHUZE LOCAL MUNICIPALITY , KING CETSHWAYO DISTRICT.



KWAZULU-NATAL PROVINCE

ECONOMIC DEVELOPMENT, TOURISM
AND ENVIRONMENTAL AFFAIRS
REPUBLIC OF SOUTH AFRICA

- (v) The Department appreciates that the access road off the Alumina Alley road in Alton to the proposed site, will be upgraded as part of the proposed development, to cater for the construction vehicles and abnormal vehicles during the project implementation; furthermore the department would also appreciate if the proposed development could look at ways of addressing the current situation of the degraded roads in Alton, Richards Bay;
- (vi) The EAP is also requested to include in the final Environmental Impact Assessment Report to be submitted to the competent authority (Department of Forestry, Fisheries and Environment), the comment and response table which should show all the comments that have been provided by the project stakeholders to-date and the EAPs responses to the comments in accordance with Appendix 1, h (iii) of the Environmental Impact Assessment (EIA) Regulations, 2014 as amended.
5. Further to the above, the Department trust that the principles of sustainable development will apply during the implementation of the proposed development to ensure the benefit of future generation.

Should you have any queries regarding this correspondence please do not hesitate to contact this office of the Department.

Yours faithfully,

For: Head of Department:

KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs

Date: 25/07/2022

Signed by: Mr. Sikhali Mathenjwa

**Control Environmental Officer: Environmental Planning, Governance & Information Management
King Cetshwayo District**

"GROWING KWAZULU-NATAL TOGETHER"

14/12/16/3/3/2/2117: COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PHAKWE RICHARDS BAY GAS TO POWER 3 COMBINED CYCLE POWER PLANT ON VARIOUS ERVENS WITHIN THE RICHARDS BAY IDZ PHASE 1F AT UMLATHUZE LOCAL MUNICIPALITY, KING CETSHWAYO DISTRICT.



Savannah Environmental
P O Box 148
Sunninghill
2157

ATTENTION: Nicolene Venter
Email: publicprocess@savannahsa.com

Dear Madam

AIR QUALITY COMMENTS ON THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: EIA REPORT FOR THE PHAKWE RICHARDS BAY POWER 3 COMBINED CYCLE POWER PLANT, RICHARDS BAY, IDZ 1F.

The City of uMhlathuze has reviewed the Environmental Impact Assessment Report, dated June 2022, in respect of the above application. We further refer to the public meeting held on the 20th June 2022 where presentations of various specialist studies made. Further to our comment letter submitted on 22 July, herewith please find comments relating to air quality management specifically for due consideration:

Air Quality Management

1. The proposed mitigation measures for PM exceedances during construction and decommissioning stages have to be adhered to.
2. The applicant must investigate mitigation measures on the simulated 1 hour NO₂ exceedances during startups as outlined on pages 81-82 as these are of great concern, especially considering areas that might be impacted during such startups.

You are welcome to direct further queries regarding the above to Ms. Nokubonga Duma from the office of the Deputy Municipal Manager: City Development on Tel: 035 9075174; Mobile: 061 480 8973; or email: Dumanl@umhlathuze.gov.za.

Yours faithfully


NONTSUNDU NDONGA Pr PIn A/080/2008
DEPUTY MUNICIPAL MANAGER: CITY DEVELOPMENT
DMS 1545680

All correspondence must be addressed to the City Manager

Lakeview Terraces, Penny Ln,
Richards Bay, 3900
Tel: +27 31-003-5526
Fax: +27 31-468-1257
www.sdcea.co.za

South Durban
Community
Environmental
Alliance



24 June 2022

Nicolene Venter
Public Participation and Social Consultant at Savannah Environmental
Email: publicprocess@savannahsa.com
Cell: +27 60 978 8396
Tel.: +27 11 656 3237
Fax: +27 86 684 0547

Des Sir/ Madam

RE: Cancellation of the Phakwe Gas Power 3 Public Meeting on the 23rd of June at 5pm.

On the 23rd of June at 5pm, a public meeting was supposed to be held by Savannah Environmental with regards to the above-mentioned gas to power plant development. It was to be held at 5pm at the ZCBF grounds in Richards Bay. At around 2:30pm on the day of the meeting, we got notified that the meeting will be cancelled due to load shedding at the venue from 4pm-6pm. You mentioned in your correspondence that the presentation that was supposed to be presented at this meeting will be emailed to us.

We as the South Durban Community Environmental Alliance (SDCEA) would like to know if this meeting will be rescheduled? How will the public be notified of further public meetings to be hosted?

Thank you.

Regards,

Tanica Naidoo
Just Energy Transition & Environmental Justice Project Officer
Cell: 067 112 7344
Tel.: 031 003
Email: tanica@sdceango.co.za



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

DEFF REF: 14/12/16/3/3/2/2117

Nicolene Venter

Public Process, Savannah Environmental

By e-mail: publicprocess@savannahsa.com

22 July 2022

Dear Savannah Environmental Representatives

COMMENTS ON THE PROPOSED DEVELOPMENT OF THE PHAKWE RICHARDS BAY GAS-TO-POWER 3 2000MW COMBINED CYCLE POWER PLANT, RICHARDS BAY IDZ ZONE 1F, RICHARDS BAY, KWAZULU-NATAL PROVINCE (DEFF Reference No.: 14/12/16/3/3/2/2117)

1. groundWork submits these comments on the proposed development of the Phakwe Richards Bay Gas-To-Power 3 2000mw Combined Cycle Power Plant (Phakwe CCPP). According to Savannah Environmental's Notification of Environmental Impact Assessment Report for Review and Comment:

"Phakwe Richards Bay Gas Power 3 (Pty) Ltd (PRBGP3) proposes the development of a combined cycle (CC) gas to power plant, with a capacity of up to 2 000MW, on various erven within the Richards Bay IDZ Phase 1F, Richards Bay. The proposed project is to be known as the Phakwe Richards Bay Gas Power 3 CCPP. The project site is located approximately 5km north-east of Richards Bay and 1km north of the suburb of Alton, within the jurisdiction of the City of uMhlathuze Local Municipality and the King Cetshwayo District Municipality, KwaZulu-Natal Province. The power plant will operate at mid-merit to baseload duty...."

The Environmental Impact Assessment Report (EIAR) of the project is available for review and comment until **Friday, 22 July 2022**.

2. groundWork has a particular interest and expertise in environmental justice issues, and a long-standing history of working with, and representing, the interests of historically disadvantaged communities within the KwaZulu-Natal Province

Trustees: Judy Bell (Chairman), Farid Esack, Richard Lyster, Angela Conway, Johan Riekert



3. We submit comments on the following overarching issues:

- Need and desirability
- Alternatives analysis
- Climate change impacts
- Socio-economic impacts
- Gas Supply

3.1. The EIAR's Stated Need And Desirability For The Project Is Misguided

- 3.1.1 The EIAR asserts that the overarching objective for the Phakwe CCPP is to be capable of operating across a wide variety of dispatch profiles, from baseload to mid-merit.¹ The EIAR further asserts that the Phakwe CCPP is being developed in direct response to the IRP 2019 purported allocation for 3000 MW of new gas generation technology to meet demand growth up to 2030.² Finally, the EIAR suggests that gas is “critical” as a transition fuel for a net-zero grid, including for enabling the uptake of renewable energy.³ None of these assertions are supporting by the best-available science or evidence, and cannot justify the need for building this massive, costly, and polluting project.
- 3.1.2 The stated need for the project is unreasonable and arbitrary, particularly because the proposed project does not align with the 2019 IRP, and because the EIA fails to consider best-available science and evidence when assessing whether renewable energy or other alternatives could provide “baseload” supply.⁴
- 3.1.3 The proposed project—a 2,000-MW gas to power plant which would operate nearly around-the-clock—does not align with South Africa’s energy goals outlined in the 2019 IRP.⁵ The IRP underscores that “low gas utilization [of 3000 MW] . . . will not likely justify the development of new gas infrastructure and power plants predicated on such sub-optimal volumes of gas.”⁶ Instead, “[c]onsideration must . . . be given to the conversion of the diesel-powered peakers on the east coast of South Africa, as this is taken to be the first location for gas importation infrastructure and associated gas to power plants.”⁷ The EIAR conveniently does not mention or discuss these recommendations in the 2019 IRP. This is likely because the Phakwe CCPP, which is a mid-merit to baseload power plant, does not align with the RIP’s 2019 findings.
- 3.1.4 We note that gas has been supported by business (NBI and BUSA) in its initial contribution to the Presidential Climate Commission in June 2021. This followed the narrative developed in the gas roadmap, which sees the power sector providing ‘anchor demand’ for gas and thus supporting construction of the infrastructure to get gas to non-power users. However, recent modelling and reports by Meridian Economics, CSIR, Rocky Mountain Institute, and others have clarified that these recommendations do not hold water. The best available science and evidence clearly show

¹ EIAR at 45.

² EIAR at 45-46.

³ EIAR at 47, 147.

⁴ Thomas at 41-42.

⁵ See Republic of South Africa Energy Department, *Integrated Resource Plan (IRP2019)*, Government Gazette (18 October 2019), p. 47 (detailing the federal government’s plan to phase out coal as an energy source in South Africa).

⁶ See *id.* (emphasis added).

⁷ IRP 2019, at 47.



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

that no gas power is necessary in South Africa well into the next decade, if at all, beyond a small amount for peaker use.⁸

- 3.1.5 A June 2022 report by Meridian Economics concludes that the capacity factor for peaking plant should be between 3% and 5%, providing very little gas demand. This puts in question the role for any gas whatsoever since building the infrastructure for small gas-to-power will not be economic unless ‘anchor demand’ comes from other non-power sectors. It thus inverts and then voids the gas roadmap narrative.⁹

These conclusions are supported by a previous study by CSIR and Meridian, and validated by the Rocky Mountain Institute (RMI).

A July 2020 assessment by Meridian Economics and CSIR of the South African electric power system shows clearly that the least-cost scenario for the grid involves rapidly building large amounts of wind and solar generation in the near term.¹⁰ Gas plants are added to the grid to improve flexibility, but until the mid-2030’s the only need is for “peaking” capacity that is used very infrequently (~2% of its availability). Until then, diesel can continue to be used by existing generators to meet reliability needs during limited hours of peak electricity demand. This least-cost pathway avoids building expensive gas infrastructure unless and until the need arises and is economically justified, avoiding locking-in to long-term fuel cost commitments prematurely.

The Meridian study’s least-cost pathway also shows battery and pumped hydro storage being built to provide flexibility during hours when there is low renewable generation. Building new coal, nuclear, or hydro is not in line with a least-cost optimization due to high costs. Coal plants are operated at low levels and gradually closed.

RMI has also reviewed and validated these findings.¹¹

- 3.1.6 The Phakwe CCPP is also economically undesirable. Because South Africa does not need new combined cycle gas capacity until at least the mid-2030s, that alone renders the proposed project uneconomical. That aside, Meridian recent report notes that gas prices remain volatile and unpredictable, leading to high electricity costs for consumers.¹² Large-scale gas generation have additional hidden costs including carbon taxes, border adjustments (as all fuel costs associated with a facility such as the proposed one require fuel

⁸ See, e.g., Joanne Yawitch and Lucas Chaumontet, *It all hinges on renewables: the urgent energy transformation SA needs to get right*, Business Live, 6 June 2022.

⁹ Adam Roff, Celeste Renaud, Rian Brand, Lonwabo Mgoduso, Grové Steyn, Emily Tyler, *Hot air about gas: An Economic Analysis of the Scope and Role for Gas Fired Power Generation in South Africa*, Meridian Economic, June 2022.

¹⁰ Adam Roff et al., *A Vital Ambition: Determining the Cost of Additional CO₂ Emission Mitigation in the South African Electricity System* at p. 69 (July 2020).

¹¹ Available upon request.

¹² Roff et al at 40.



imports *and* selling generated fuel exported would be subject to foreign tariffs and carbon taxing), and inflation—whereas renewables are generally only subject to inflation costs.¹³

- 3.1.7 There is also a material risk that the plant becomes more expensive to continue operating than new clean energy resources are to build, well before its anticipated end-of-life. The global benchmark costs of new solar, wind, and battery costs have fallen faster than expected for over a decade, and analysis²² in other countries has shown that continued advancement in these technologies – even at a much slower rate of change than experienced since 2010 – will allow combinations of new wind, solar, and storage projects to undercut the operating costs of existing gas-fired generation by the mid-2030s, leading to early retirement for gas capacity and significant financial losses.²³
- 3.1.8 Nor does the power crisis provide any justification for this project. In a separate report, Meridian Economics show that resolving the energy crisis by 2024-26 requires a suite of measures centred on building new renewables fast. In their telling, those measures do include building some additional thermal peaking plant as ‘insurance’ against late delivery on other measures. But not a 2000 MW mid-merit or baseload CCPP plant. In other words, one would hope not to use any gas at all and diesel is the more practical option given existing infrastructure.¹⁴ Given limited capacity in the sector and in government, it would be better to focus on energy conservation and early delivery of the core measures.

3.2 The EIAR’s Failure to Assess the Use of Renewable Energy Alternatives Is a Fatal Flaw.

- 3.2.1 The EIAR did not consider alternatives to the CCPP because it asserts that such “fundamental energy generation alternatives were assessed and considered within the development of the IRP [2019] and the need for the development of both gas generated energy and highly flexible generation capacity to support uptake of renewables as part of the energy mix has been defined”.¹⁵ Both reasons are misguided and cannot be relied upon to comply with the required alternatives assessment under the EIA regulations.¹⁶ This flawed reasoning 1) again mischaracterizes the findings within the 2019 IRP, 2) fails to acknowledge the viability of renewable energy technologies, which present the least-cost energy option for South Africa.
- 3.2.2 Concepts such as “baseload” and “mid-merit” are evolving and losing relevance

Generation plants have historically been characterized as “baseload”, “peaking”, and “mid-merit”. We define these terms below, but then explain how they are antiquated, do not address actual electricity system values or services in a modern grid, and do not correspond with economic or reliability considerations.

- **“Baseload” power plants:** Historically, coal and nuclear were seen as essential to supply electricity since there were few alternatives. These plants tend to run at maximum levels, generally only shut down for maintenance and do not change their output quickly. The term “baseload” refers to the minimum level of demand on an electrical grid, and this demand was generally met using coal or nuclear energy, hence these power plants were referred to as “baseload plants”.

¹³ See Roff *et al* at 40-41; *see also id.* at 41, Fig. 12.

¹⁴ Grové Steyn, Dr Peter Klein, Adam Roff, Celeste Renaud, Lonwabo Mgoduso and Rian Brand, *Resolving the power crisis Part B: An achievable game plan to end load shedding*, Meridian Economics, June 2022.

¹⁵ EIAR at 41.

¹⁶ Republic of South Africa Department of Environmental Affairs, *National Environmental Management Act, 1998 – Environmental Impact Assessment Regulations, 2014* (4 December 2014), app’x I.



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

- **“Peaking” power plants:** Peaking generators are those that are needed and/or used only during periods of peak demand, when there is much higher demand than usual. For example, peaking plants often run on hot summer afternoons when air conditioning demand is greatest. This type of seasonal peak load has historically been met with gas and hydro plants, which were either more expensive or have less energy availability than coal and nuclear plants. More recently, energy storage technologies including batteries have effectively competed with gas plants to provide peaking power in many global power markets.
- **“Mid-merit” power plants:** To meet fluctuating levels of electricity demand throughout the day and over the course of the year, between the levels at which “baseload” and “peaking” plants tend to operate, utilities have historically used “mid-merit” plants (e.g., gas, diesel or hydro plants) which can easily adjust their output to match changing demand.

Though useful in characterizing the grid operations and planning paradigms for 20th Century electricity systems, these terms are rapidly losing relevance in modern grids where emerging technology, especially variable renewable energy resources (e.g., wind and solar) as well as energy storage, are proving their ability to meet reliability needs at least cost without falling neatly into these historical categories of resources. For example, even in the United States where gas is available at near-record low global prices in 2021, both utilities in traditionally regulated territories as well as private investors in restructured markets¹⁷ are using modern planning studies to determine that emerging technologies like wind, solar, and storage can be lower-cost solutions than traditional power plants.¹⁸ Moreover, battery storage is increasingly filling in energy gaps and alleviating risks of gas lock-in.¹⁹

Geographically dispersed renewable generation can provide consistent energy production to meet base load requirements and can also be curtailed to meet fluctuating demand levels. Energy storage can also be used to accommodate fluctuating demand and to meet peak loads.

3.2.3 Renewables can increasingly provide services that have historically been met by fossil plants.

Many leading global utilities have shifted in their approach to resource planning, and in doing so have found that emerging technologies, and specifically wind, solar, and storage, can provide the same sort of grid services that were provided by “baseload,” “peaking,” and “mid-merit” power plants in the 20th Century:

- The world’s largest auction for renewables and storage took place in India in 2020 for 1.2 GW of capacity. The requirement was for energy during morning and evening hours, which is traditionally met by “mid-merit” generators. Successful bids comprised of renewables, battery storage, and pumped hydro storage. One of the bids by ReNew Power set a world record for the lowest priced renewables

¹⁷ M. Keleher *et al.* *Clean Energy Is Canceling Gas Plants*, RMI, (2020), <https://rmi.org/clean-energy-is-canceling-gas-plants/>.

¹⁸ See L. Schwisberg *et al.* *How to Build Clean Energy Portfolios*, RMI, Chapter 3, (2020), <https://rmi.org/how-to-build-ceps/>; see also M. Keleher *et al.* *Clean Energy Is Canceling Gas Plants*, RMI, (2020), <https://rmi.org/clean-energy-is-canceling-gas-plants/>.

¹⁹ Roff *et al.* at 50, 57.



plus battery storage capacity, with this and other recent renewable tenders being cheaper than energy from coal in India.¹⁰

- A 350 MW pumped hydro storage plant in Morocco is being constructed and plans to be completed in 2022. It will be coupled with existing wind generation to meet demand during peak hours, otherwise provided by “peaker” plants.¹¹
- In the Atacama Desert in Chile, the planned Valhalla project will use a 600 MW solar PV farm coupled with a 300 MW pumped hydro storage plant to provide continuous power to meet load, avoiding building a “baseload” plant.¹²
- In Thailand, the 500 MW Lam Ta Khong pumped hydro storage facility built in 2004 replaced older peaker plants which ran on oil, to provide energy during periods of high demand.¹³
- In Colorado, USA, the largest utility in the state (Xcel Energy) is retiring two of its largest coal-fired power plants¹⁴, without direct replacement with new gas-fired power plants. Instead, the utility is replacing these “baseload” plants with a combination of wind, solar, and storage projects, marrying the low-cost energy from wind and solar with flexibility from batteries and the remaining coal and gas fleet to provide both “baseload” and “mid-merit” electricity.
- In Indiana, USA, one of the state’s largest utilities (NIPSCO), is similarly prioritizing¹⁵ a transition plan for all of its coal plants, seeking to replace them with very low-cost wind and solar energy, and avoiding any investment in new gas-fired generation. This plan is anticipated to save the utility’s customers USD \$4 billion over the lifetime of the renewable projects, relative to continued reliance on coal or investment in new gas-fired power plants.
- In Oklahoma, USA, a large utility has signed a contract¹⁶ for a new power plant that includes wind, solar, and storage technologies at a single site, and will provide power to the utility’s customers at a price considerably lower than alternative investment in “peaking” or “mid-merit” gas-fired generation, while maintaining reliability.
- In North Dakota, USA, a major utility will cease operations of an 1,100 MW coal-fired power plant, replacing its “baseload” power output with electricity from new wind and solar projects¹⁷, relying on other existing gas plants as well as a new long-duration energy storage project to balance wind and solar variability.
- In South Australia, Neoen and Tesla have shown with the Hornsdale Power Reserve¹⁸ that large-scale batteries can economically play many of the same roles as “mid-merit” and “peaking” generators, helping to provide critical grid stability services even in times of contingency on the renewables-dominated regional grid.

There is ample support for following this trend away from large gas plants, like the Phakwe CCPP.

3.3 The Climate Change Impact Assessment Is Inadequate.

The Climate Change Impact Assessment (CCIA) for the Phakwe CCPP shows that the project will result in significant emissions of almost 5 million tonnes of CO₂e annually. Yet the CCIA makes light of these emissions, attempting to paint a rosy picture of the overall climate impacts of the project by suggesting that these emissions would be counterbalanced by the plant’s role on the grid replacing coal and enabling renewables. Scrutiny of the assessment reveals several significant flaws that have resulted in the CCIA’s underestimation of the overall greenhouse gas emissions from the project, and unjustified confidence that the project will result in so-called ‘avoided emissions.’ These flaws are detailed below:



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

3.3.1 The CCIA makes unsubstantiated claims about avoided emissions grounded in misinterpreted and outdated research.

The CCIA concludes that the project will avoid 236 million tCO_{2e} ‘through the displacement of the coal baseline,’ and ‘could avoid 556 million tons through increasing the ability of the Eskom grid to accept intermittent renewable energy over the lifetime of the project.’²⁰ These ‘avoided emissions’ calculations are then used to assert: ‘The positive impact of the project on climate change...far outweighs the contribution of the project to national GHG inventory.’²¹

However, the assumptions underlying this key conclusion are unsubstantiated or based on misinterpretations of outdated work that has since been updated and would have been available at the time of drafting of the CCIA. Below, we document the unsubstantiated assumptions and misinterpretations throughout the CCI.

- i. The ‘theoretical maximum for a renewables-based grid is 70%, with the remainder being gas-to-power technologies (30%).’

This conclusion is supposedly based on 2017 comments from CSIR on the proposed IRP update from 2016.²² There are several problems with this interpretation of CSIR’s work. First, the CSIR authors do not state that 70% is a ‘theoretical maximum,’ for renewables on the grid in their comments, and it is unclear what the justification is for this maximum’s inclusion in the CCIA’s avoided emissions scenario. More problematically, CSIR’s comments do not suggest that gas-to-power would make up the remaining 30% of power on the grid in this high-renewables scenario. While CSIR’s least-cost scenario includes a greater role for gas than in the current power mix (10% of energy produced), this scenario, which they say will have 75% renewable energy by 2050, also includes roles for hydro and pumped storage, unspecified peaking technology (which could be batteries, for example), and 11% remaining coal-based electricity production.²³

These CSIR comments, which were not published as a formal report, are already quite outdated, and responded to an old version of the IRP. CSIR has since published several more relevant analyses with updated modelling that the CCIA should have instead relied upon. In particular, as we discuss above, CSIR’s 2020 report, ‘A Vital Ambition,’ published in collaboration with Meridian Economics, shows that baseload levels of gas to firm up high renewables concentration on the grid would not need to be considered until the late 2030s, when major coal capacity will have come

²⁰ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at i, (2022).

²¹ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at ii, (2022).

²² J.G. Wright, J. Calitz, & R. van Heerden, *Formal comments on the South African Integrated Resources Plan (IRP) Update Assumptions, Bas Case and Observations 2016*, CSIR Energy Centre, (2017), https://researchspace.csir.co.za/dspace/bitstream/handle/10204/9627/Wright_18803_2017.pdf?sequence=1&isAllowed=y.

²³ J.G. Wright, J. Calitz, & R. van Heerden, *Formal comments on the South African Integrated Resources Plan (IRP) Update Assumptions, Bas Case and Observations 2016*, CSIR Energy Centre, (2017), https://researchspace.csir.co.za/dspace/bitstream/handle/10204/9627/Wright_18803_2017.pdf?sequence=1&isAllowed=y.



offline.²⁴ As mentioned, Meridian reiterated this point in its 2022 report, ‘Hot Air About Gas,’²⁵ emphasizing that there is no reason for large-scale gas power plants like the Phakwe plant to be considered until that time, and that there may well be far cheaper and less carbon intensive alternatives to gas by then. As detailed in the alternatives section, large-scale gas plants like the Phakwe CCPP risk locking in greenhouse gas emissions across the lifetime of the plant and potentially beyond, if new gas infrastructure developed to support the plant must be paid off.

ii. The Phakwe Richards Bay CCPP would fit within South Africa’s 2019 IRP

The CCIA states: ‘It is expected that the introduction of the proposed Phakwe Richards Bay Gas Power 3 CCPP to South Africa’s electricity generation fleet will not have an impact on the energy mix used for electricity generation stipulated in the IRP. Thus, this CCIA does not consider any rebound emissions.’²⁶ This statement suggests that the 2000 MW CCPP aligns with South Africa’s IRP and would thus produce no emissions additional to the business-as-usual emissions that would result from adherence to the IRP. However, this conclusion is patently false, as the IRP, in agreement with Meridian’s ‘Hot Air’ report, states that new gas-to-power capacity should come only from the conversion of ‘existing diesel-fired power plants (Peakers) to gas.’²⁷ A 2000MW single CCPP running 67% of the time, as assumed in the Phakwe CCIA, is quite distinct from gas peakers across the country running at ‘a 12% average load factor,’ which is the role for gas proposed in the IRP.²⁸ The Phakwe CCPP would have a completely different role on the grid than those peakers, and therefore it cannot be assumed, as it is in the CCIA, that the project ‘would not have an impact on the energy mix for electricity generation stipulated in the IRP’ and not generate additional emissions.²⁹

iii. A 2000 MW CCPP today would enable renewables expansion on the South African grid.

The CCIA repeatedly states that the CCPP would enable ‘the increased uptake of renewables on the grid.’³⁰ However, the assumption within the CCIA that the plant would run 67% of the time suggests that the CCPP is, again, not planned for operation as the kind of low capacity factor peaking plant (running at 3-5% of the time) needed to enable variable renewables, but rather would be used in a baseload capacity.³¹ The CCIA undertakes no modelling to show how the 2000MW facility in particular would enable renewables, building instead on its misinterpretations of the outdated CSIR’s outdated 2017 comments to conclude that by enabling renewables the plant would contribute to avoided emissions of ‘793 000 ktCO₂e across the lifetime of the

²⁴ A. Roff et al., *A Vital Ambition: Determining the cost of additional CO₂ emission mitigation in the South African electricity system*, Meridian Economics with CSIR Energy Centre, (2020), <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>.

²⁵ 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, (2022), <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>.

²⁶ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 9, (2022).

²⁷ Department of Energy, *Integrated Resource Plan 2019*, at 47, (2019), <http://www.energy.gov.za/IRP/2019/IRP-2019.pdf>.

²⁸ Department of Energy, *Integrated Resource Plan 2019*, at 47, (2019), <http://www.energy.gov.za/IRP/2019/IRP-2019.pdf>; Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 18, (2022).

²⁹ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 9, (2022).

³⁰ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 38, (2022).

³¹ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 18, (2022).



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

project.³² As noted above, it is quite possible that a plant of this size run as baseload would instead crowd out renewables and therefore increase overall emissions on the grid not only through its lifecycle emissions, but also through this additional crowding-out effect.

iv. The Phakwe CCPP would necessarily replace coal power production

A recurring assumption of the CCIA is that the Phakwe CCPP would replace coal-fired power generation. This assertion appears repeatedly throughout the document, including in the assertion that ‘avoided emissions can be achieved because...natural gas is a less intensive fuel than coal.’³³ However, there is no clear statement of the source of this assumption. To the contrary, the CCIA also admits that this conclusion ‘is not offered as a calculation of what emissions will be avoided by the implementation of the project, as there are too many unknowns in the development of the national grid in the near future to do such a calculation.’³⁴ One could just as easily assume that the CCPP generation would simply be added atop current coal generation, rather than replacing it, and indeed could be crowding out even cleaner generation and/or storage, such as pumped hydro and batteries, that could play a similar role at a lower cost over their lifetimes. However, despite this, the assumption that the gas plant will be replacing coal-fired generation is used to calculate avoided emissions from the project.³⁵

3.3.2. The CCIA’s claims about alternative fuels are unrealistic and misleading

The only climate change mitigation measure proposed in the CCIA is the ‘option to switch to renewable gaseous fuels to supplement/replace the use of natural gas.’³⁶ The CCIA makes reference to green hydrogen, biogas, biomethane and ‘other fuels that are generated from renewable resources,’ for this ‘renewable fuel’ role.³⁷ However, claims about the viability of replacement of fossil gas in the future with renewable fuels, and the suggestion that emissions would be reduced to zero if renewable fuels were used to fully power the CCPP, are inaccurate for several reasons, as detailed below.

³² Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 38, (2022). Moreover, we note that the CCIA claims there would be avoided emissions in full from year one, long before a 70% renewable grid would be in place. Hence, the numbers are inflated even the CCIA’s other assumptions were accepted.

³³ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 9, (2022).

³⁴ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 9, (2022).

³⁵ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 38, (2022).

³⁶ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 51, (2022).

³⁷ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 51, (2022).



i. Green hydrogen and biofuels are cost prohibitive

First, green hydrogen and all the biofuel sources referenced in the climate mitigation section of the CClA are currently entirely cost prohibitive and likely will be for several more years at minimum. While they may become cost-effective eventually, it is by no means safe to assume that this switch will take place in the lifetime of the gas plant. Moreover, new turbines, or at minimum retrofitted turbines, would be required to run the plant on hydrogen or biofuels, raising the overall cost of the plant and its electricity significantly.

ii. Using green hydrogen to run a gas plant is inefficient

Using green hydrogen to run a gas plant is highly inefficient. Rather than using large quantities of renewables to turn water into H₂ via electrolysis, which would then be shipped at great cost to a gas plant for burning, it would make much more sense to use the renewables for electricity production directly.³⁸ With the costs of renewables and storage technologies falling, it is very unlikely that a highly inefficient gas plant run on green hydrogen could compete with electricity from a combination of renewables and storage in the future. Green hydrogen should instead be saved for harder to abate sectors like high-heat industrial processes.³⁹

iii. Both biofuels and green hydrogen produce additional emissions across their lifecycles

On page 51 of the CClA, there is a graph showing that 100% uptake of 'renewable fuel' at the CCPP would result in zero emissions. This is misleading, as all forms of 'renewable fuels' have associated emissions. Hydrogen itself is a secondary greenhouse gas, meaning that fugitive emissions of hydrogen across the lifecycle of the gas, just like methane, will accelerate climate change.⁴⁰ The combustion of hydrogen in the types of turbines that would be used in the CCPP releases NO_x,⁴¹ which is also a potent greenhouse gas – 273 times more potent than CO₂ at a 100-year timescale.⁴²

Biofuels, meanwhile, have also been shown in some cases to drive land use change that results in *greater* greenhouse gas emissions than fossil fuel use, meaning that their supposed benefits in a narrow view are undermined by considering the full lifecycle of the fuel and its indirect effects on land, soils, and other vegetation.⁴³ These biofuels generally compete with other uses of the land, including food production. While biomethane captured from waste may be less emissions-intensive, it is unlikely to be produced, captured, and transported in the consistent quantities necessary to run the turbines at the gas plant.

Thus, the assumption that hydrogen or biofuels would present viable zero-emissions mitigation strategies for the CCPP is dubious at best.

³⁸ S. Saadat and S. Gersen, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Fossil Fuel Industry Spin from Zero-Emission Solutions*, Earthjustice, at 16-17, (2021), <https://earthjustice.org/features/green-hydrogen-renewable-zero-emission>.

³⁹ S. Saadat and S. Gersen, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Fossil Fuel Industry Spin from Zero-Emission Solutions*, Earthjustice, at 22, (2021), <https://earthjustice.org/features/green-hydrogen-renewable-zero-emission>.

⁴⁰ N. Warwick *et al.*, *Atmospheric implications of increased hydrogen use*, (2022), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1067144/atmospheric-implications-of-increased-hydrogen-use.pdf

⁴¹ S. Saadat and S. Gersen, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Fossil Fuel Industry Spin from Zero-Emission Solutions*, Earthjustice, at 18, (2021), <https://earthjustice.org/features/green-hydrogen-renewable-zero-emission>.

⁴² EPA, *Understanding Global Warming Potentials*, (2022), <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>.

⁴³ Timothy Searchinger *et al.*, *Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land-Use Change*, 319, *Science*, 1238–1240 (2008), <https://www.science.org/doi/10.1126/science.1151861>.



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

3.3.3. The CCIA uses outdated gas leakage and venting assumptions

The CCIA quantification of emissions is based on the use of fossil gas, primarily composed of methane. The CCIA's calculations show that GHG emissions from the operational phase will be 7.87 Mt a year and 236 Mt over the predicted 30-year lifespan of the plant, as shown in Table 1 below. This includes very significant emissions from upstream fuel and energy use in extracting, liquifying, transporting and regasifying the gas, as well as upstream 'fugitive emissions' – leaking or venting gas – from both national emissions (those release in South Africa) and those released beyond South Africa's borders. In the sections that follow we detail deficiencies in the assumptions used for these calculations that lead the CCIA to underestimate lifecycle emissions.

i. The CCIA uses conservative estimates of upstream methane venting and leakage

The CCIA calculates fugitive emissions following the IPCC's 2019 emission factors.⁴⁴ It acknowledges research that shows that such emissions 'have been significantly underestimated' but argues that these reports are a minority and that the IPCC takes account of them.⁴⁵ However, fugitive methane emissions have only recently been subject to intensified critical scrutiny, using new technologies including satellites, drones, airplanes, and special imaging tools.⁴⁶ Many of the papers using these technologies at scale have been published since the 2019 IPCC update⁴⁷, leading the IEA to conclude that governments have been universally underestimating these emissions.⁴⁸ The IPCC update was based on papers published at least several months before the reports publication, including from industry and state agencies with an interest in such underestimation, and cannot take account of the most recent work.

The IEA's conclusion that countries are universally underrepresenting emissions in their official estimates,⁴⁹ and the concentration of new research on methane leaks in North America, is also relevant for the CCIA's decision to use 'emission factors that represent the global pool of natural gas sources, rather than a specific source.'⁵⁰ While this makes sense in theory, the dearth of quality research on leakage in most countries will most likely lead to underestimates of leakage when using global reporting averages.

⁴⁴ IPCC 2019, *2019 refinement to the 2006 IPCC guideline for national greenhouse gas inventories*, Vol.2, Ch.4.

⁴⁵ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 21, (2022).

⁴⁶ 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>.

⁴⁷ E.g., Jeffrey S. Rutherford *et al.*, *Closing the methane gap in US oil and natural gas production emissions inventories*, 12, *Nat Commun*, 4715 (2021), <https://www.nature.com/articles/s41467-021-25017-4>; Katlyn MacKay *et al.*, *Methane emissions from upstream oil and gas production in Canada are underestimated*, 11, *Sci Rep*, 8041 (2021), <https://www.nature.com/articles/s41598-021-87610-3>.

⁴⁸ International Energy Agency, *Global Methane Tracker 2022- Overview*, <https://www.iea.org/reports/global-methane-tracker-2022/overview>.

⁴⁹ International Energy Agency, *Global Methane Tracker 2022- Overview*, <https://www.iea.org/reports/global-methane-tracker-2022/overview>.

⁵⁰ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 21, (2022).



The CCIA further notes that increased heat under climate change will lead to increased leaks as heat surpasses equipment thresholds.⁵¹ This will be compounded by ageing equipment. Nonetheless, the CCIA fugitive methane leakage quantifications does not attempt to account for these increasing leaks over time.

ii. The CCIA does not consider the most relevant 20-year global warming potential of methane

Methane (CH₄) is an extremely powerful but relatively short-lived GHG. After a decade or so, it breaks down to CO₂ and water (H₂O). Its impact as a greenhouse gas is therefore different over different time horizons. Conventionally, a 100-year time horizon has been used, and the 100-year global warming potential for a tonne of CH₄ is 29.8 times more than a tonne of CO₂. This is the measure used in the Phakwe CCIA. On a 20-year time horizon, however, the impact of CH₄ is about 82.5 times greater than CO₂.⁵²

Given that the 1.5°C 'carbon budget' is nearly spent, that the 2°C budget is also fast closing, and that the risk of triggering natural feedbacks that lead to runaway climate change escalates between 1.5 and 2°C, the short-term impact of greenhouse gases is critical. Hence, the 20-year global warming potential for methane is more relevant than the 100-year global warming potential.

3.3.4. Project emissions are high, and nearly double if including international emissions and using a 20-year global warming potential

For the CCIA's formal emissions quantification, only national emissions are counted, leaving out the greater part of upstream emissions that take place abroad or en route to South Africa. Hence, Phakwe's direct and indirect operational emissions are given as 4.98 Mt/y and 149 Mt over the lifespan.⁵³ Projects with emissions of 1.5 to 15 MtCO₂e/y are considered in South Africa to have a *high* climate impact. Projects with emissions over 15 MtCO₂e/y are categorized as having a *very high* impact. Phakwe is thus assessed to have a high climate impact.

In the table below, we list Phakwe's direct and indirect operational emissions as quantified by the CCIA. International emissions are in italics. We have added the final two columns to recalculate fugitive emissions of methane on the 20-year horizon. This assessment shows that inclusion of international emissions and use of the 20-year global warming potential for methane nearly doubles the emissions annually (from 4.98 MtCO₂e/y to 9.63MtCO₂e/y) and over the lifetime of the project (from 149.25 MtCO₂e/y to 288.69 MtCO₂e/y). These underestimations through the manipulation of assumptions are fatal flaws in the CCIA.

⁵¹ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 42, (2022).

⁵² Forster, P., T. Storelvmo, K. Armour, W. Collins, J.-L. Dufresne, D. Frame, D.J. Lunt, T. Mauritsen, M.D. Palmer, M. Watanabe, M. Wild, and H. Zhang, 2021: The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity. In *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1017, doi:10.1017/9781009157896.009, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf.



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

Table 1: Phakwe operational emissions (Mt CO₂e)

Category	Source	Annual	Lifespan (30 yrs)	CH ₄ 20 y GWP, Annual	CH ₄ 20y GWP, Lifespan (30 yrs)
Direct emissions	Burning fossil gas	4.74	142		
Indirect emissions	Fuel & energy emissions of suppliers	2.13	64		
	Fugitive emissions (national)	0.242	7.25	0.67	20.08
	Fugitive emissions (international)	0.755	22.60	2.09	62.60
Total indirect national and international emissions		3.13	93.85	4.89	146.68
Total national direct and indirect emissions		4.98	149.25	5,41	162,08
Total national and international direct and indirect emissions		7.87	235.85	9.63	288.69

NB: 20-year GWP for methane used is 29.8; 100-year GWP for methane used is 82.5

3.3.5. The EIA relies on outdated climate studies

The EIA relies on an outdated Intergovernmental Panel on Climate Change (“IPCC”) data from its Fifth Assessment Report (“AR5”), whereas the most recent Sixth Assessment Report (“AR6”) emphasizes that the world is far worse off than previously predicted and underscores limiting the implementation of new fossil fuel projects and increasing investment in renewables.⁵⁴

3.3.6. Vulnerability to climate change

The CCIA notes climate risks relating to rising heat and humidity, heat stress for workers, and rainfall – floods and drought – but it finds ‘no significant risk factors’ and calls for no adjustments to account for these impacts.⁵⁵ This is a significant underestimation of risk.

⁵⁴ Shukla *et al*, *Summary for Policymakers: Report on Mitigation of Climate Change*, IPCC (2022), Secs. B.7 and B.7.2.

⁵⁵ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 53, (2022).



i. Floods and cyclones

The CCIA notes that increased flooding and tropical cyclones can be expected in the future.⁵⁶ The implications can be judged in relation to the 2022 floods, and cyclones Domoina and Idai.

The 2022 April floods dropped 230mm over four days on Richards Bay, with 120mm falling on the night of 11 April. Reports mention gale force winds (i.e. between 50 and 100 km/h) but the focus is on flooding. In uMhlathuze Municipality 22 homes were destroyed and many more were damaged. Roads were also damaged.⁵⁷ Durban took the brunt of the storm with over 300mm falling in 24 hours at Virginia Airport and winds gusting at 70 km/h at the port.⁵⁸ Across KZN, about 450 people died and more were missing, 40,000 were displaced and 12,000 homes were completely destroyed.⁵⁹ Roads and bridges were swept away, particularly in black townships, and water and sewage pipes were broken.

In 1984, Domoina, classified as a severe tropical storm, moved south down the Mozambique channel. Peak windspeeds reached 100 km/h before the storm made landfall in Mozambique. It weakened as it moved inland, pushed up against the eastern escarpment and then turned to move back out to sea with the eye passing over St Lucia. The storm dropped over 900mm at Pigs Peak in Swaziland before turning south along the escarpment to produce massive flooding in the Usuthu, Pongolo and Mfolozi catchments. The Zululand coast from Richards Bay north experienced intense rainfall with St Lucia recording 548mm in one day and 700mm over three days.⁶⁰ Across the three countries, 242 people died.

In 2019, Cyclone Idai developed as a category 3 to 4 cyclone in the Mozambique Channel off Beira. Windspeeds were 195 km/h gusting up to 280 km/h but weakening to 177 km/h when it made landfall in Beira on 15 March 2019. It brought a 4.5 metre storm surge and 660mm rain over five days. More than 1,000 people were killed in Mozambique and Zimbabwe and about 300,000 were left without shelter as their homes were partially or wholly destroyed.⁶¹

Climate scientists have warned that tropical cyclones are moving further south as the oceans heat up. Francois Engelbrecht of the Wits Climatology Global Change Institution comments on 'the possibility of a category 3 or 4 hurricane making landfall at Maputo or Richards Bay or moving into the Limpopo river valley.' He adds, 'I don't think we are prepared at all for that kind of event.'⁶² The CCIA does not anticipate it or propose strategies to prepare for this kind of severe weather.

⁵⁶ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 40, 33, and 10, (2022).

⁵⁷ T. Head, *City of uMhlathuze sources provincial and national funding for storm repairs*, (21 April, 2022),

<https://zululandobserver.co.za/268433/city-of-umhlathuze-sources-provincial-and-national-funding-for-storm-repairs/>

⁵⁸ Lyse Comins, *KZN FLOODS: 20 dead, Durban port operations, logistics come to grinding halt*, Freight News, 12 April 2022.

⁵⁹ Relief Web, *South Africa: Floods and Landslides - Apr 2022*, <https://reliefweb.int/disaster/fi-2022-000201-zaf> at 8 July 2022.

⁶⁰ Z Kovács, D Du Plessis, P Bracher, P Dunn, G Mallory, 1985, *Documentation of the 1984 Domoina Floods*, Department of Water Affairs.

⁶¹ JBA Risk Management, *Cyclone Idai causes extensive flooding across Mozambique, Malawi, and Zimbabwe*, (2022), <https://www.ibarisk.com/flood-services/event-response/cyclone-idai>.

⁶² Carol Paton, *A Day Zero in Gauteng is SA's most serious immediate climate risk*, Business Live, 19 August 2021. See also Jennifer Fitchett, *Climate change has already hit southern Africa. Here's how we know*. The Conversation, 24 October 2021.

ii. Drought, heat, fire

The CCIA says that Richards Bay will become hotter, with more extreme hot days, and likely dryer overall with increased drought and fire risk.⁶³ Hot weather will increase power demand and water demand including at the plant. Drought will reduce water supply. The CCIA merely asserts that the water allocation from uMhlathuze is sufficient for the plant's substantial water demand.⁶⁴ The CCIA states that the 2013-2017 drought resulted in level 4 water restrictions affecting industry, communities and agriculture, but does not acknowledge that such droughts, likely to increase and be exacerbated by El Niño, may affect the plant.⁶⁵

iii. Social vulnerability

The CCIA's description of the ways that climate change affects local populations is cursory and fails to consider the particular role of the plant in exacerbating the vulnerabilities amplified by climate change. The industrial development of Richards Bay and the surrounding countryside has already destabilised local communities. This process is ongoing and still marked by violence and conflict. It gives rise to a volatile social order which increases vulnerability to climate impacts even as global heating winds up the social stresses. The gas plant would add to these stresses. In addition, as noted in the alternatives section, the uneconomical nature of the gas plant mean that electricity will be more expensive for local populations than it would be if it were to come from more economical renewables. These higher costs, passed on to consumers, will stress these populations, particularly as they are more dependent on electricity as ever with rising heat necessitating air conditioning. The CCIA says nothing of these interacting stresses.

3.4. Socio-Economic Impact

3.4.1. Economic impacts

The EIA report claims that economic impacts are wholly good: security of electricity supply; increased national and local investment and GDP and hence also taxes; increased local jobs and skills development.

The security of supply issue is discussed above. In short, CCGT is not called for.

Investment, GDP growth and jobs can be, and invariably are, claimed for any project whatever. However, the investment in gas comes at the cost of investments in renewables which gives better returns on all

⁶³ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 33-34, (2022).

⁶⁴ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 41, (2022).

⁶⁵ Promethium Carbon, *Specialist Climate Change Impact Assessment, Phakwe Richards Bay Gas to Power 3 CCPP*, at 41, (2022).



these indicators. The Phakwe economic assessment uses an Input-Output Multiplier Model to calculate impacts. For jobs, it claims 600 direct jobs during 3 year construction period, 1,267 indirect jobs and 621 induced jobs; followed by 60 direct jobs during operation, 53 indirect and 44 induced jobs. The direct jobs are presumably given by the project. The numbers for indirect jobs (in companies that supply the plant), and induced jobs (from local spending by employees) are generated by the model and may be taken with a pinch of salt. Skills development is narrowly focused on how to run a gas plant.

Meridan Economics June 2022 report shows that high demand gas plants come at a price premium of about 40% relative to equivalent renewable capacity backed by low demand OCGT or storage. It will thus add to the cost of electricity. At the Nersa hearings into Eskom's tariff applications since 2009, opposition to price hikes is common to all sectors from big industry to local business to community. For community, it should be recalled that some 60% of South Africans are poor and already have to choose between food and the means to cook it. Further, many of those in the next income band (60-80%) are vulnerable to being tipped into poverty.

This contradicts the Phakwe economic impact assessment which asserts that the project will improve energy efficiency and therefore the international competitiveness of industry and hence contribute to the balance of trade.⁶⁶

Somewhat oddly, the assessment ignores the rather more direct impact of importing capital equipment or gas. For imported plant, it says that benefits accrue to the exporting country and are excluded from the assessment. It does not discuss gas imports at all but merely cuts and pastes from the now very dated IRP 2019 which notes, without discussion, a 'gas supply and foreign exchange risk', but assumes that short term gas imports will be replaced by local and regional gas resources – as if regional gas (from Mozambique) is not also imported.

Thus, the assessment ignores the foreign debt, balance of trade and currency exchange implications of the project. The volatility of gas prices, coupled with the volatility of the Rand, adds a dimension of uncertainty and the risk will be imposed on the public, not the project. Both the price and the physical supply of gas will also be subject to geo-political shocks as the Europeans have learnt following Russia's arbitrary and unconscionable invasion of Ukraine.

3.4.2 Social impact

The social impact study is very thin and occasionally risible. For example, it suggests that local mental health may improve because people will not be stressed by loadshedding. This is entirely speculative. People living next to Eskom's existing power stations are not spared loadshedding.

As may be expected, it sees the jobs having a positive social impact. Construction jobs are likely to peak at around 1,300 with an average of 600 over three years. It says this is likely to create a very minor 'demographic impact' as most of the workers will be local and the project is not big enough to make a material difference. So the EIA does not expect a big influx of men looking for work and it sees no gender impact. There is no discussion of where in uMhlathuze workers will come from or if they will be bussed in and out daily. Nor does the EIA consider the effects of a short term windfall of employment, mostly of men, or of what follows as the jobs dry up.

⁶⁶ P.46. There is no real evidence given for this claim but it presumably reflects the results of input-output modelling described in the methodology.



groundWork

Environmental justice action

NPO number: 045-235-NPO

P.O. Box 2375, Pietermaritzburg, 3200, South Africa ● 8 Gough Road, Pietermaritzburg, 3201, South Africa
Tel: +27-33-342 5662 ● team@groundwork.org.za ● www.groundwork.org.za

Such considerations might require a close look at how people live in Richards Bay. In this assessment, however, the social is reduced to an entirely abstract set of indicators: demographics, education, employment etc. This covers over a long history of dispossession driven by the industrial development of Richards Bay itself and the surrounding mines and timber plantations and extreme levels of violence and conflict linked with local political control of patronage – notably in relation to contracts and jobs.⁶⁷ Of this, there is no mention.

3.5. Gas supply

The viability of the project depends on the gas supply by pipeline from an LNG regassification plant in the port. This plant figures in a strategic environmental assessment (SEA) commissioned by the port authority. It will also be subject to an EIA. The pipeline will also need a separate EIA. The viability of this investment in turn will depend on the offtake of gas from Phakwe and other projects.

Yours Sincerely,

groundWork

Avena Jacklin

Climate and Energy Justice Campaign Manager

⁶⁷ Mary de Haas at The Violence Monitor. <https://www.violencemonitor.com/2021/04/11/terror-returns-to-empembeni>; Ed Stoddard, *Richards Bay Minerals GM shot dead in latest violent incident to hit operations*, Business Maverick, 24 May 2021.

Trustees: Judy Bell (Chairman), Farid Esack, Richard Lyster, Angela Conway, Johan Riekert



22 July 2022

Savannah Environmental
Nicolene Venter/ Nondumiso Bulunga
P.O. Box 148, Sunninghill, 2157, Johannesburg
Telephone Number: 011 656 3237
Fax Number: 086 684 0547
Mobile: 060 978 8396
Email Address: publicprocess@savannahsa.com
Website: www.savannahsa.com

RE: Comments on the Phakwe Richards Bay Gas Power 3 (Pty) Ltd (PRBGP3) proposed development of a combined cycle (CC) gas to power plant, with a capacity of up to 2000MW, on various erven within the Richards Bay IDZ Phase 1F, Richards Bay.

The South Durban Community Environmental Alliance (“SDCEA”) is a non-governmental organisation representing 21 community and environmental organisations concerned with environmental justice and sustainable development in South Durban, Richards Bay and KwaZulu-Natal. SDCEA represents vulnerable and disadvantaged persons whose lives and livelihoods depend on the protection of the coastal ecosystems of KwaZulu-Natal, in the vicinity of Durban. Its members include the following institutions:

a. BioWatch	l. Merebank Civic Committee
b. City of Love Ministries	m. Bluff Ridge Conservancy
c. Poor Flat Dwellers Association	n. Urban Futures Centre
d. Airport Farmers Association	o. Chatsworth Civics
e. Merebank Ratepayers Association	p. Active Citizens Movement
f. Silverglen Civics	q. Ubunye Bamahostela
g. Anti-Pollution Watchdogs	r. Wentworth Development Forum
h. KZN Subsistence Fisherfolk Forum	s. Clairwood Social Forum
i. Christ the King Church	t. Clairwood Ratepayers Association
j. Earthlife Africa	u. Treasure Beach Environmental
k. Athlone Park Residence Association	

Legislative Context

a) Our legislative framework on Section 24 of the Constitution and codified in the National Environmental Management Act, emphasises the duty of the state to protect the environment and to ensure when authorising potentially polluting activities, that an environment is not created that will be detrimental to our health and wellbeing. Members of the public living in the vicinity of the proposed power plant will suffer from an environment that is harmful to their health and wellbeing due to the localised impacts of the proposed

power plant. Further, the contribution of new fossil fuel electricity generation will increase greenhouse gas emissions and exacerbate climate change. The impacts of climate change are already depriving South Africans of their right to an environment not detrimental to our health and wellbeing, as the current water crisis in Nelson Mandela Bay and recent flooding in KwaZulu-Natal clearly demonstrate. Therefore, approving new power generation projects reliant on fossil fuels, including gas, undermines this constitutionally protected right. The question that a decision-maker must answer is whether the stated need and desirability of the activity justifies the risks.

b) It is submitted below that not only must the regulator now reject any fossil fuel source for future energy, given the severity of the climate catastrophe, but also that insufficient information about negative environmental impacts is placed before the regulator to apply the best environmental practice and to make this decision, in a manner compliant with the regulatory scheme. This duty requires an assessment of the likely pollution levels, the impact (including socio-economic cost) that such pollution would have on the immediate environment, and whether there are other methods or activities that achieve what the project hopes to achieve, without these potential risks. The EIA fails to analyse these issues so as to enable the decision-maker to make a decision that is compliant. The basis of this legal argument is as follows:

c) NEMA Section 23, which seeks to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities, requires that impacts on the environment are identified with a view to minimising negative impacts, maximizing benefits, and promoting compliance with the principles of environmental management set out in section 2.

d) Relevant to the NEMA principles applicable to the granting of the environmental authorisation is principle 2(4)(a)(iii): consideration of factors so that pollution and degradation of the environment are avoided or where they cannot be avoided altogether, are minimised and remedied.

e) Principle 2(4)(b) requires that the best practicable environmental option must be applied.

f) Principle 2(4) (c) requires that the principle of environmental justice be applied to a decision of this nature.

g) It follows that in granting the environmental authorisation under NEMA the decision-maker must not only ensure that there is compliance with prevailing legislation. It must also seek to understand the level of impact that activity could have on the surrounding environment and communities, establish the cost thereof and then determine whether there is sufficient need and desirability to take on such risk using the best practicable environmental option.

A Combined Cycle (CC) Gas to Power Plant

A gas-fired power plant is a type of fossil fuel power station in which [chemical energy](#) stored in natural gas, which is mainly methane, is converted successively into: thermal energy, mechanical energy and, finally, electrical energy. Natural gas power stations generate almost a [quarter](#) of world electricity and a significant part of global greenhouse gas emissions and thus climate change.

[How is electricity generated using gas?](#) Gas is a fossil fuel which can be used to generate electricity. By burning gas, we create heat which powers a turbine. The rotation of this turbine spins a generator which creates electricity. As hot combustion gas expands through the turbine, it spins the rotating blades. The rotating blades perform a dual function: they drive the compressor to draw more pressurized air into the combustion section, and they spin a generator to produce electricity. A high efficiency, natural gas-fired combined-cycle power plant might consume about 7000 Btus of gas to produce one kilowatt-hour of electricity. That would be about 7 cubic feet of natural gas. It would therefore take about 7000 cubic feet of gas to produce one megawatt-hour. However, according to an analysis of the South African electrical grid, gas supply is not theoretically required until at least 2035, if ever. In recent years, either the risks linked with gas have increased or our awareness of the present concerns has grown. As a result, establishing a substantial gas-to-power infrastructure today may have significant negative consequences for South Africa. The reason for this is that gas investment can be predicted to result in higher consumer costs, just transition issues for labor, and losses for investors. These hazards, together with a global trend toward decarbonization, as well as cost decreases for renewable energy provisions such as wind, solar, and battery storage, constitute a foreseeable risk for gas investment for the state and its citizens. Given the dangers, developing the electricity supply sector necessitates an understanding of the existing risks connected with gas, as well as the necessity of mitigating such risks through the construction of an electricity system that is reliant on inexpensive and easily available bulk supply. Renewable energy, such as wind and solar, is the most cost-effective source of bulk supply. Furthermore, in a future system based on fully developed renewables and storage, flexible and dispatchable generators such as gas turbines will be required—if at all—only on very rare occasions. Furthermore, GHG emissions will diminish the carbon budget in the energy sector, resulting in South Africa failing to satisfy its climate change obligations, putting the country at further danger of trade levies or restrictions on any domestic exports to the global north.

Gas to power plants are [non-renewable fuel-limited](#) and will run out and it produces carbon dioxide and sulphur dioxide, major contributors to climate change.

A combined-cycle power plant uses both a gas and a steam turbine together to produce up to [50%](#) more electricity from the same fuel than a traditional simple-cycle plant. It is an assembly of heat engines that work in tandem from the same source of heat, converting it into mechanical energy. On land, when used to make electricity the most common type is called a combined cycle gas turbine plant. Waste heat from a gas turbine is routed to the nearby steam turbine, which generates extra power.

The [primary disadvantage](#) of multiple stage combined cycle power plant is that the number of steam turbines, condensers and condensate systems and perhaps the cooling towers and circulating water systems increases to match the number of gas turbines. Gas turbine power plant require a special type of cooling system or method. The lifetime of gas turbine power plants are less. Layout of this plant is more complex than that of a diesel plant. Gas turbine plants are more dangerous or riskier than diesel plants.

The external health damage costs of the combined cycle natural gas-fired power plant of Qom were [investigated](#) via the simplified impact pathway approach. Emitted particulate matter (PM₁₀) and gaseous pollutants (NO_x, CO, and SO₂) from the power plant stack were measured. The health effects and related costs were estimated by QUERI model from AirPacts according to the emissions, source and stack parameters, pollutant depletion velocities, exposure-response functions, local and regional population density, and detailed meteorological data. The results showed that the main health effect was assigned to the nitrate as restricted activity days (RAD) with 25,240 days/year. For all pollutants, the maximum health damage costs were related to the long-term mortality (49 %), restricted activity days (27 %), and chronic bronchitis (21 %). The annual health damage costs were approximately 4.76 million US\$, with the cost being 0.096 US per kWh of generating electricity. Although the health damage costs of gas-fired power plant were lower than those of other heavy fuels, it seems essential to consider the health and environmental damages and focus on the emission control strategies, particularly in site selection for the new power plants and expanding the current ones.

Emissions From Combined Cycle Gas Turbine

The environmental impact assessment is carried out considering the power plant working continuously, and neglecting the transient contribution (start-up (cold/warm/hot start-up), shut down, load change, inclement weather and power surges which cause the plant to trip hence unexpected flaring), this approach is seen to be highly conservative according to table 4.3, this in itself could also be misleading since, on one hand, it can be interpreted as an overestimated pollutant mass emitted during the real normal operating hours (since actually, the annual fired hours are less and the power plant's operator maintain a safety margin on the emission threshold during normal operation), and, on the other hand, it doesn't consider the transients at all, potentially underestimating the associated emissions.

There is no mention of how dispersion of the emissions will have far-reaching impacts North or South. Nowhere does the application indicate how will monitoring be done to address this problem beyond your fence line and how will incidents of this nature be dealt with. Impacts on the health of local communities will be far more devastating, and according to this application there is no evidence that this was factored in to any assessment and has been down played.

Therefore, looking at Table 4:3 this is further explained:

Table 4.3 – Atmospheric pollutant emission rates for the project (Emission Factors)

- Fails to consider what these emission rates would be annually.
- Under the “**type of emissions column**” there is no indication of what a set of **routine emissions** looks like? Over how many days will this “**routine emissions**” situation possibly occur and under what circumstances would this like occur.
- As above under the “**type of emissions column**” there is no indication of what **intermittent Emissions** look like or what type of situations contribute to “**intermittent emissions**”.
- Lastly under the “**type of emissions column**” there is no warning of what is to be expected under **emergency only** situations. Due to the lack of this critical information how can we take these emission factors seriously because they do not reflect worst case scenario. Worst case scenarios give people an indication of what to expect in emergencies, what to do when being exposed to toxic chemicals and must be accompanied with practical steps for communities to follow for example people should not to leave their homes if a plume of pollutants is blowing in the direction of their community (also taking into consideration wind direction that can move pollutants anywhere in a matter of seconds). This relevant information is lacking and must be declared up front and not after the fact.

Furthermore, critical information lacking in this impact assessment is: emissions during start-up and shutdown.

Impacts of Methane

‘Natural gas’ has long been advertised by the fossil fuel industry as clean, green, and an answer to our climate woes. But gas is a fossil fuel and we see right through the [greenwashing](#).

Wikipedia defines fossil gas or liquid Natural Gas (LNG) as “ A [natural gas](#) (predominantly [methane](#), CH₄, with some mixture of [ethane](#), C₂H₆) that has been cooled down to liquid form for ease and safety of non-pressurized storage or transport. It takes up about 1/600th the volume of natural gas in the gaseous state (at [standard conditions for temperature and pressure](#)). LNG is [odourless](#), colourless, [non-toxic](#), and [non-corrosive](#). Hazards include flammability after vaporization into a gaseous state, freezing, and [asphyxia](#).

Natural gas has long been considered by many to be a “[bridge fuel](#),” a safer, cleaner alternative to coal and oil, and an incremental step to reduce the greenhouse gas (GHG) emissions that are driving climate change. It is true that, compared with coal, burning gas emits just half as much carbon dioxide, the GHG that is the primary driver of climate change. However, gas extraction, processing, and transport also emits GHGs, including large amounts of methane from leaks and intentional releases at wells, pipelines, 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. Gas production systems are already the second-largest emitters of methane in the country.

Methane is a fast-acting greenhouse gas with enormous short-term impacts on climate. It [leaks](#) at every stage of the natural gas production and transportation process. Methane leakage may make natural gas as bad as coal, but it's not the reason gas has no future. While gas itself is less carbon-intensive than coal, if enough methane leaks during its production, its greenhouse gas advantages are wiped out. Methane in general is marketed as "clean" fossil fuels, but this is a relative term and applies only when comparing the combustion emissions of methane to the combustion of coal, a notorious polluter.

This fossil gas growth is incompatible with a healthy climate. In order to achieve the Paris Agreement goal of keeping warming under 1.5 degrees Celsius – a goal scientists warn must be achieved to avoid the worst impacts of the climate crisis – gas production and consumption must drop by [40%](#) worldwide over the next decade. Yet in a vicious cycle, increasing gas exports promotes new gas production, and new gas production drives an expansion of gas exports.

The concentration of methane in our atmosphere is steadily increasing, reaching record-high levels in 2019 that were nearly [15 percent](#) higher than in the 1980s. Methane persists in the atmosphere for less time than carbon dioxide but traps much more heat. That's why it has a stronger climate impact in the near-term, 20-year time frame than over the 100-year period that is used in most life-cycle assessments, climate modelling, and goal setting. However, the IPCC has concluded that we have only a few decades to rapidly reduce GHG emissions and limit global warming; emissions need to be cut by more than 75 percent in the next two decades and reach net-zero by mid-century. This makes LNG exports and, indeed, the continued and potentially increased use of gas, a more immediate—and less appreciated—climate threat than is indicated by simply comparing carbon dioxide emissions from gas combustion with those of other fuels or by using life-cycle assessments of GHG emissions that use the 100-year time frame.

A report suggests that wind and solar farms in South Africa are now [57%](#) cheaper than combined-cycle gas plants for bulk electricity supply, while three-hour battery storage was 30% cheaper than simple cycle gas plants for covering peak power demand (when calculated on the Levelised Cost of Energy Analysis metric).

Air Emission Impacts

We require to know if a cumulative air quality assessment has been done for the current gas to power plants already implemented in Richards Bay. This is to ensure proper fence line monitoring of all the chemical emissions. We also require the assessment of the increase in the number of vehicle emissions from the development of gas to power plants, both land and sea transportation. We also require the current and proposed cumulative emissions, storage tanks, effluent and sludge dams, onsite traffic, fugitive leaks (facility-wide), in-stack monitoring, and flaring emissions. They need to assess what the worst-case scenario is and the risk assessment approach to be done not just on the fence line community but on the inside of the plant.

Safety and Security Threats

What are the evacuation and control plans in case of an emergency, explosion or unforeseen weather event? We also require a functional emergency plan with mitigation measures for all these extreme weather scenarios, and must also include alternative routes, and safety zones.

What communication methods will you have to let people know in the event of an emergency and at what radius will there be an evacuation?

In the case of an explosion of a certain part of the plant, what is your first layer of protection, and what is the next step of protection to prevent other parts from exploding?

Social Enhancement Study

A social enhancement study needs to be done and this project will affect both the livelihoods of people in communities and in businesses.

Health Study

A comprehensive pre-health study needs to be done as this will have serious health impacts on the people in Richards Bay and in the surrounding areas.

A risk assessment of the worst case scenario needs to be done on the senseline and beyond. A risk assessment on all the routes, equipment, pipelines, vehicles and machinery is needed as there are homes, businesses and malls in close proximity to the proposed development.

Public Participation

There has been 1 public meeting that was supposed to be held in June, but due to loadshedding, it was cancelled. There has been no other public meetings after this, besides a poster viewing. The meeting was only advertised in the local newspaper, but many people do not have access to it. No requests were received from I&APs or community members to reschedule the Public Meeting that had to be cancelled due to unscheduled loadshedding. All parties who registered to attend this meeting were informed of the meeting cancellation via email and invited to attend the poster session, which one of our members duly attended. The Savannah Environmental project team were at the venue until after 5pm in order to receive any such requests should parties arrive at the meeting in response to the newspaper advert in the Zululand Observer. No attendees arrived.

How do you plan on broadening your reach to include the people that will be affected, such as fishermen, land owners, business owners, rural communities and all people in Richards Bay and its surroundings?

Alternatives

It is required by law to investigate alternatives. We need an investigation done on environment-friendly, renewable alternatives. This is critical in order for people to weigh their options. All information to alternatives, such as costs, job creation, environmental and health impacts is needed.

Emergency Preparedness and Response Plan

What is the Emergency Preparedness and Response Plan for the operation phase? What is the emergency preparedness and response activities offsite? There needs to be an assessment done measuring the cumulative impact of the **Combined Cycle Gas to power plant** together with all surrounding industries, chemical plants risk assessments.

Site-specific risks:

- Identification of areas where accidents and emergency situations may occur
- Consideration of flood risks
- Identification of communities and individuals that may be impacted and have a dedicated line for complaints
- Establishment of response procedures
- Provision of equipment and resources
- Designation of responsibilities
- Communication with workers and the public
- Training of safety workers, emergency response personal, fence line communities on dedicated warning signals and the associated plan of evacuation

Collaborate with the potentially affected communities and local government agencies in their preparation to respond effectively to emergency situations. Phakwe gas to power plant must provide appropriate information to potentially affected communities and relevant government agencies. The emergency preparedness and response activities must be periodically reviewed and revised.

Climate Change Impacts and Failure to Consider Renewable Energy Alternatives

The EIAR claims that the project will have a positive impact on climate change with respect to avoided emissions from coal power generation and the increase of the grid to accept intermittent renewable energy. Both claims are misguided and ignore the findings of current climate science and economic policy research.

First, the EIAR's climate change assessment presents a false dichotomy between coal power generation and gas power generation without providing adequate analysis of the most economical and practical alternative source of power generation—renewable energy. This is the same false dichotomy on which the National Development Plan and 2019 Integrated Resources Plan (IRP) rest. As a recent report from Meridian Economics indicates, these policies pit only coal against gas while ignoring renewable energy alternatives, which have seen unprecedented cost reductions since the 2012 NDP (on which the 2019 IRP is based) was released. As the report states, "The assumption that gas-fired power generation would replace coal ignores the fact that other technology combinations are now better at replacing coal-fired power than gas, and it is against these technologies that gas-fired generation should

actually be compared.”¹ The result of the EIAR and CCIA embracing this false dichotomy is that renewable energy alternatives were not considered. The EIA Regulations require that the positive and negative impacts of the proposed activity *and alternatives* on the environment and on the community that may be affected, including an analysis of economic impacts (EIA Regulations, Appendix 3, Regulation 3(1)(h)(vii)). The EIAR and CCIA fail to assess the negative impacts of gas as compared with renewable energy alternatives as required by law.

While the EIAR echoes gas proponents in claiming that gas is preferable to coal due to lower CO₂ emissions, when all greenhouse gases are considered, it can be little or no better than coal. Methane has a global warming potential around 85 times that of carbon dioxide over a 20-year period, and it can escape into the atmosphere along the gas value chain (extraction, phase transitions, transportation, and storage).² When studied over a 20-year period, a full supply chain study in 2019 indicated that energy produced from gas could have comparable or worse GHG emissions than power produced from coal.³ Therefore when making climate change investment decisions, gas-to-power should not be compared to coal; instead, it should be compared to alternatives such as renewables plus storage, which can provide a similar function to gas during the coal phase-out. These non-fossil fuel-based resources emit substantially fewer GHG emissions during their entire life cycle, and several are also more cost effective.⁴ If investments in these technologies are delayed or substituted by gas investments, the cumulative GHG emissions from these gas pathways may be larger than those from non-gas pathways.

Second, the EIAR claims that the project will have a positive impact by enabling more renewables to come onto the grid. This claim rests on a misguided assumption that renewables are unreliable and that gas is needed as a support fuel. As a recent report from Meridian Economics states, “It is necessary to debunk the myth that wind and solar resources require support from high-utilisation flexible capacity in order to maintain security of supply.”⁵ The need for existing flexible dispatchable resources in order to maintain security electricity supply could be provided by the coal power that is already online and that there is little or no requirement for combined-cycle gas technology as long as coal capacity continues

¹ Meridian Economics, *Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa* (2022), page 1, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

² Myhre, G., Shindell, D. Bréon, F.-M., Collins, W., Fuglestedt, J., Huang, J., Koch, D., Lamarque, J.-F., Lee, D., Mendoza, B., Nakajima, T., Robock, A., Stephens, G., Takemura, T., & Zhang, H. (2013). Anthropogenic and natural radiative forcing. In T. F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex & P. M. Midgley (Eds.). *Climate change 2013: The physical science basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, pp. 659–740. Cambridge University Press.

³ Roman-White, S., Rai, S., Littlefield, J., Cooney, G., & Skone, T. J. (2019). *Life cycle greenhouse gas perspective on exporting liquefied natural gas from the United States: 2019 update*. National Energy Technology Laboratory. <https://www.energy.gov/sites/prod/files/2019/09/f66/2019%20NETL%20LCA-GHG%20Report.pdf>

⁴ United Nations Economic Commission for Europe. (2021). *Life cycle assessment of electricity generation options*. <https://unece.org/sites/default/files/2021-10/LCA-2.pdf>

⁵ Meridian Economics, *Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa* (2022), pages 46-47, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

to exist on the system.⁶ Under even the most ambitious coal retirement scenarios for South Africa, this is well into the late 2030s—at which point it is likely that the already rapidly progressing technology improvements in storage technology will render any need for such flexible dispatch unnecessary.⁷ The only potential role for gas that is currently considered economical is to provide low-utilisation peaking capacity after all coal-fired power is removed from South Africa's grid.⁸ As indicated, this minor role for gas will only exist well after 2030 and will likely cease to exist at all with improvements in storage technology, but even if such a role does in fact exist, diesel can provide this peaking capacity with negligible economic and environmental impacts relative to gas.⁹

Thirdly, there is increasing international pressure to move away from gas due to climate change impacts. According to the International Energy Agency, "no new investments in oil, gas, and coal" are permitted beginning in 2021 in order to reduce global warming to 1.5°C.¹⁰ According to their Net Zero by 2050 report, "much of the liquefied natural gas... liquefaction facilities presently under development or in the planned stage are also unnecessary."¹¹ Given the international consensus (including Costa Rica, Belize, Denmark, New Zealand, France, Spain, Portugal, Ireland, and Greenland), there is an increasing need to avert a climatic disaster. This pressure will be heightened by the European Union's implementation of a Carbon Border Adjustment Mechanism beginning in 2023. This is a levy on imports into the European Union depending on the quantity of carbon emissions caused by their production, and it encourages the use of electricity sources that emit less carbon than gas-to-power. Should South Africa lock itself in to gas to power projects, it does so to its own detriment.

Need and Desirability of a Combined Cycle Power Plant

One of the primary objectives of the environmental assessment process is to describe the need and desirability of the proposed activity (EIA Regulations, Appendix 3, Regulation 2(b)). As such, an environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application,

⁶ Meridian Economics, Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa (2022), pages 46-47, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

⁷ Meridian Economics, Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa (2022), pages 46-47, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

⁸ Meridian Economics, Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa (2022), page 46, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

⁹ Meridian Economics, Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa (2022), pages 23-24, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

¹⁰ Harvey, F. (2021). No new oil, gas or coal development if world is to reach net zero by 2050, says world energy body. The Guardian. <https://www.theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist>;

¹¹ International Energy Agency. (2021). Net zero by 2050—A roadmap for the global energy sector. https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf

including a motivation for the need and desirability of the proposed development (EIA Regulations, Appendix 3, Regulation 3(1)(f)).

The EIAR states that the 2019 Integrated Resource Plan (IRP) includes the allocation of 3,000MW of new gas capacity by 2030. The need and desirability analysis also relies heavily on a presumption that South Africa will require significant amounts of gas as part of its energy mix as soon as 2030. As indicated in the comments above, the only economical role for gas to play in South Africa's energy mix is as a source of flexible peaking power, and this role will only be necessary in the late 2030s—if ever. In addition to the 2019 IRP's factually incorrect assumption that gas power will be needed or economically practicable prior to 2030, the EIAR and CCIA's reliance on the 2019 IRP is flawed in two key respects. First, reliance on the 2019 Integrated Resource Plan (IRP) does not excuse the EAP from undertaking a thorough need and desirability analysis, including consideration of climate change. Second, the IRP does not indicate a need for significant gas power generation by 2030, and the 3000MW of gas power generation that is called for under the 2019 IRP is already far surpassed by the over 14000MW of proposed gas power generation projects current authorised or in the environmental authorisation application process.

First, while the EIAR states that the extent of gas contained in the IRP is within the imposed emissions trajectory for the country, it fails to address whether the allocation of gas fits with the emissions reductions required by South Africa's 2021 nationally determined contribution, made pursuant to the Paris Agreement. As the High Court in *Earthlife Johannesburg v Minister of Environment and Others* stated with respect to a decision-maker's reliance on the IRP in rendering a decision on an application for environmental authorisation:

“Policy instruments developed by the Department of Energy cannot alter the requirements of environmental legislation for relevant climate change factors to be considered.”¹²

The need and desirability analysis as presented in the EIAR relies on the supposed need for gas power set forth in the 2019 IRP instead of establishing need and desirability for gas power based on the climate change factors that must be considered by law.

The 2019 IRP bases its analysis on the National Development Plan (NDP), but South African's carbon space has significantly narrowed since the NDP was drafted. South Africa's current NDC commitments and net zero aspirations have led to a finite carbon space—the upper bound of which is now 50% lower than the upper bound of the range envisaged as acceptable at the time of the NDP's drafting.¹³ Therefore, it is not sufficient for the EAP to rely on the 2019 IRP in stating that the construction and operation of the Phakwe facility will comply with South Africa's carbon emissions limits. The climate change assessment must include an up-to-date analysis of the project's compliance with current international climate commitments, and this analysis must situate the project's emissions in the context of the numerous other

¹² *Earthlife Johannesburg and Another v. Minister of Energy and Others* 2017 2 All SA 519 (GP), para. 97.

¹³ Meridian Economics, *Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa* (2022), pages 2-3, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

proposed gas-to-power facilities currently authorised or applying for authorisation. If the individual emissions of the Phakwe project or the cumulative impact of these gas-to-power projects on climate change renders them undesirable, the Phakwe development should not be authorised.

Second, though its inclusion of gas in the energy mix defies current scientific and economic analysis, even the 2019 IRP fails to support the necessity or desirability of this project in light of the numerous existing gas power applications which have already received authorisation or are in the process of applying for authorisation. The 2019 IRP, which is rooted in an outdated and scientifically and economically unsound understanding of the necessity for any gas in the energy mix,¹⁴ only projects the collective contribution of gas and diesel to the 2030 energy mix to be 1.3% combined.¹⁵ The EIAR fails to mention the fact that, though only 3,000MW of new gas power capacity are allocated under the 2019 IRP, over 14,000 MW of gas power capacity have received environmental authorisation or are in currently applying for environmental authorisation as of March 2022.¹⁶ There is clearly no need for the Phawke project to move forward if the amount of new gas power capacity allocated by the 2019 IRP is already being met nearly five times over by existing gas-to-power proposals.

This over-saturation of gas-to-power plants will have significant negative economic consequences. According to a report by the International Institute for Sustainable Development¹⁷, the 14,000 MW of proposed gas-to-power projects is comparable to 36% of Eskom's nominal coal fleet capacity or 2.8 times the operating utility wind and solar capacity. If the 9,500 MW of onshore gas plants, along with LNG import terminals and pipelines, were built near three ports, the construction costs could exceed ZAR 184 billion (USD 12.1 billion). This could expose the energy sector and consumers to negative outcomes such as future government subsidies or bailouts to keep an uncompetitive sector afloat, as well as costly lock-ins to gas infrastructure that will be vulnerable to reduced security of affordable gas supply and LNG price volatility.

The project, if built, may be subject to the risk of becoming a stranded asset given the over allocation of existing gas to power facilities being constructed. Internationally, gas-to-power infrastructure is already being stranded.¹⁸ For example, the Ministry of Power declared 60 percent (or 14.3 GW) of total gas-fired capacity in India to be stranded in 2015, and the State

¹⁴ Meridian Economics, *Hot Air About Gas: An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa* (2022), pages 2-3, <https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>

¹⁵ 2019 Integrated Resource Plan, page 42.

¹⁶ International Institute for Sustainable Development. 2022. "Gas Pressure: Exploring the case for gas fired power in South Africa". IISD Report, at page 4 see <https://www.iisd.org/systems/files/2022-03/south-africa-no-need-for-gas.pdf>

¹⁷ International Institute for Sustainable Development. 2022. "Gas Pressure: Exploring the case for gas fired power in South Africa". IISD Report, at pages 8-13, see <https://www.iisd.org/systems/files/2022-03/south-africa-no-need-for-gas.pdf>

¹⁸ Muttitt, G., Sharma, S., Mostafa, M., Kühne, K., Doukas, A., Gerasimchuk, I., & Roth, J. (2021). Step off the Gas: International public finance, natural gas and clean alternatives in the Global South. International Institute for Sustainable Development. <https://www.iisd.org/publications/natural-gas-finance-clean-alternatives-global-sout>

Bank of India suggested in 2019 that they would need to write down these assets. Climate Tracker believes that 31 percent of existing gas-fired capacity in the United States is already unprofitable, and that all of the anticipated 28.1 GW of new gas capacity in deregulated grid areas will fail to recoup their initial investment.¹⁹ The Climate Tracker project finance modeling yields a clear recommendation for both Europe and the United States: "constructing new gas plants is ill-advised and will result in projects that are unlikely to provide returns on investment in most countries." If these global North trends are replicated in South Africa, prospective gas generators and associated infrastructure may become stranded before reaching a break-even position. Due to the considerable period it takes for these types of developments to be developed and operational, the state will incur more losses as a result of stranding occurring considerably earlier in project time. This again warrants the consideration of whether the project is needed and desirable. It is argued that it is not so.

Sincerely,



Desmond D'Sa
Coordinator of the South Durban Community Environmental Alliance (SDCEA)
Email: desmond@sdceango.co.za
Tel: 031-4611991
Cell: 083 982 6939

Tanica Naidoo
Project Officer
Email: tanica@sdceango.co.za
Tel: 031-0035526
Cell: 067 112 7344
Richards Bay

¹⁹ Sims, J., von der Neyen, C., D'souza, D., Chau, L., González-Jiménez, N., & Sani, L. (2021). Put gas on standby. Carbon Tracker. <https://carbontracker.org/reports/put-gas-on-standby/>



P O Box 10299, Meerensee, 3901 Tel: +27 (35) 7892471 or +27 (83) 515 2384
Office A6-A7, Smart Plan Building, 95 Dollar Drive, Richards Bay
E-mail: info@rbcaa.co.za Web Site: www.rbcaa.org.za

25 July 2022

Savannah Environmental
P O Box 148
Sunninghill
2157

Attention: Nicolene Venter publicprocess@savannahsa.com

**PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT (CCPP), RICHARDS BAY,
KWAZULU-NATAL PROVINCE
ENVIRONMENTAL IMPACT ASSESSMENT REPORT
(DEFF Reference No.: 14/12/16/3/3/2/2117)**

The Richards Bay Clean Air Association (RBCAA) has reviewed the Environmental Impact Assessment Report (EIAr) prepared by Savannah Environmental, dated June 2022, and associated Appendices.

APPENDIX C9 - COMMENTS AND RESPONSES REPORT

It is noted that the comments submitted by the RBCAA, on 14th December 2021, on the Scoping Report have **NOT** been included in the Comments & Responses Report (Appendix C9), and as such the RBCAA has not had sight of responses.

APPENDIX C7 - COMMENTS RECEIVED

It is noted that the comments submitted by the RBCAA, on 14th December 2021, on the Scoping Report have **NOT** been included in the Comments Received report (Appendix C9), and as such the RBCAA has not had sight of responses.

The RBCAA's comments which are attached as APPENDIX A, appear not to have been considered.

AIR QUALITY IMPACT ASSESSMENT

It should be noted, and report corrected, that Tata Steel no longer exists. The facility is now known as Richards Bay Alloys

1. It is noted that, the assessment of **Malodourous Compounds** from the retention ponds has been highlighted as a limitation by the Specialist due to insufficient information being available regarding the water quality.

- 2. Diesel Generator:** The Specialist states that “emissions for the back-up diesel powered generator was not estimated since the generator will only be used for cold start-ups and based on the conservative operational cycles (described above) the use of the generator would be limited and for short periods of time.

If the plant operates 16 hours a day to meet mid-merit demand, then this would equate to a cold start-up every day (365 days), and given that the stack release heights are only 18m the impacts may be significant.

- 3. Sensitive Receptors:** The AQIA has not identified the schools located at the ZCBF as sensitive Receptors, namely, Litte Junior, Batesda Primary and Batesda High School. This issue was raised by Ms Strachan, from the City of uMhlathuze, in her comments on the Scoping Report, to which the EAP responded that schools within a 2-3km radius would be included, and that the Specialist would be informed.
- 4. RBCAA Felixton Data:** The statement on page 50, Section 5.3.6, states that there was no PM10 data available for Felixton for 2021 due to a faulty analyser. This is not entirely correct.

5.3.6 RBCAA Felixton Station

There were no exceedances of the short-term or long-term NAAQS for any of the pollutants measured at the RBCAA Felixton Station for the period 2016 to 2021, although one exceedance of the daily PM₁₀ NAAQ limit value occurred in 2018 (Table 5-9). SO₂ appears has higher concentrations occurring just after midday (Figure 5-15). The PM₁₀ appears to have higher concentrations occurring in the afternoons and during winter and the beginning of spring (Figure 5-15). There was no PM₁₀ data available for 2021 due to repairs required to the analyser pump (AIMS, 2021).

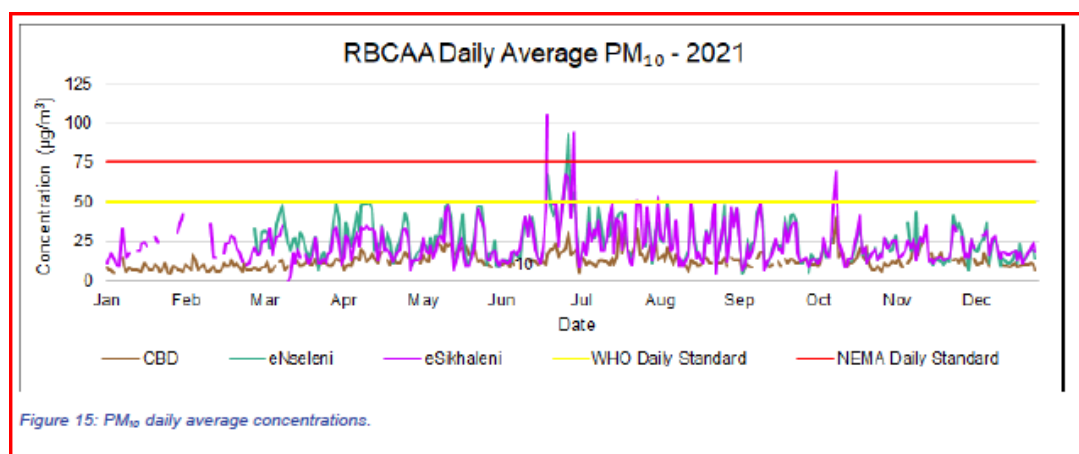
The PM10 analyser was faulty and out of service from Jan – March 2021. From April 2021 the PM10 E-Sampler was converted to monitor PM2.5 for which there is data available.

The AQIA does not include the PM2.5 data for Felixton.

There were Fifteen (15) measured exceedances of the PM_{2.5} Daily NEMA Standard (40 µg/m³) recorded at Felixton during 2021.

- 5. RBCAA Esikhaleni and eNseleni Data;** Table 5-7 shows zero (0) exceedances recorded at eNseleni during 2021. This is not correct. There was one (1) exceedance of PM₁₀ Daily NEMA Standard (75 µg/m³) recorded at the eNseleni station during 2021.

Table 5-8 shows zero (0) PM10 exceedances recorded at Esikhaleni. This is not correct. There were two (2) exceedances of the PM₁₀ Daily NEMA Standard (75 µg/m³) recorded at the Esikhaleni station during 2021



- 6. Start-Up NO2 Emissions:** It is predicted that hourly NO2 concentrations associated with start-up could exceed the NAAQ limit concentrations at **15 receptors** and **8 AQMS**.

Given that the plant is expected to have 365 start-ups a year the impacts are likely to be significant.

7. **Dispersion Maps:** Dispersion maps have not been provided for the NO2 and PM10 simulations.
8. **Worst Case Scenario:** The AQIA has not modelled the worst-case scenario
9. **Cumulative Impact Significance Rating:** The AQIA findings are that there will be non-compliances for NO2 and Particulates, with these being given a “Medium” significance rating. Exceeding the NAAQS should be rated as “Significant.”
10. **Simulated 2016 Baseline:** It warrants mentioning that the Baseline inventory is outdated and that this should be stated as a “limitation”. There has been a significant increase in the handling of dusty products within Richards Bay. The Port is now open stockpiling and handling significant volumes of coal, most of which is transported by road. Alton has seen a proliferation of “unauthorized” open stockpiles storage facilities, mostly coal, which are having a catastrophic effect on small businesses and posing a significant risk to human health.

TRAFFIC IMPACT ASSESSMENT

The RBCAA strongly disagrees with the Specialist’s cumulative impact significance rating of “medium.” The current traffic situation in Alton, and to the Port is catastrophic, requiring urgent mitigation.

The collapse and ineffectiveness of Transnet Freight Rail has contributed directly to the significant increase in heavy vehicle volumes within the City. Equally Transnet National Ports Authority cannot cope with the volumes of truck, and do not have sufficient truck staging capacity.

The proposed Phakwe development within IDZ 1F is going to contribute to the current negative traffic impacts.

RISK ASSESSMENT

Section 5.3.2.1 requires clarification. The text refers to AMMONIA, however the Figure description references NITROGEN

5.3.2.1 Toxic Vapour Clouds

Ammonia is a highly toxic component and could result in fatalities associated with a loss of containment.

ERPG-3 is the maximum air concentration below, which it is believed that nearly all individuals could be exposed without experiencing or developing life-threatening health effects. The ERPG-2 concentration is the maximum air concentration below, which it is believed nearly all individuals could be exposed without experiencing or developing irreversible or serious health effects or symptoms that could impair an individual’s ability to take protective action. The ERPG-2 is used for emergency planning to indicate the furthest downwind distance to evacuation of nearby populations in the event of a release.

Figure 5-3 illustrates the ERPG-2 endpoint distances for various release scenarios in worst-case meteorological conditions. The ERPG-2 for the worst case (release of contents in 10 minutes) would extend 9 km downwind under a low wind speed condition (1.5 m.s⁻¹).

The thick lines indicate the shape of the plume from a westerly wind direction, while the thinner lines indicate the extent of the plume from all directions. The westerly wind direction used does not indicate the predominant wind, but is used for illustrative purposes only.



Figure 5-3: The extent of the ERPG-2 values of nitrogen following a large release, using the ERPG-2 value (832 000 ppm)

The Risk Assessment finds that the major risk for the proposed PRBGP3 is the ammonia storage.

Cumulative Risks: Phakwe Richards Bay Gas Power 3 is being proposed adjacent to an already Authorised Gas to Power Facility. Both facilities are MHI's. The cumulative risks associated with the development of these gas to power facilities adjacent to one another has **not been** assessed.



RAPID APPRAISAL HEALTH RISK ASSESSMENT /HEALTH RISK ASSESSMENT:

The Rapid Appraisal Health Impact Assessment (RAHIA) and Health Risk Assessment have only been undertaken for the proposed Phakwe facility.

In the comments submitted by the RBCAA on the Scoping Report(see appendix A), the RBCAA requested that the RAHIA be undertaken for cumulative impacts and not based only on the emissions from the proposed Phakwe facility.

The schools located at the ZCBF have not been identified as sensitive receptors.

RECOMMENDATIONS \ SHORTCOMINGS:

1. The RBCAA must be provided with responses to the comments submitted by the Association on the Scoping Report and afforded the opportunity to respond.
2. Appendix C7 and C9 must be updated to include the RBCAA's comments.
3. This application should not be considered until the proponent has provided sufficient information regarding water quality from the retention ponds, so that the Specialist is able to assess the impacts of malodorous compounds, and impacts of discharge.
4. Should the proposed development receive Authorisation, the Conditions of Approval should clearly state that NO diesel, heavy fuel oil or light fuel oil may be used during normal operations.
5. The AQIA Report must be amended to include the assessment of the back-up diesel generator.
6. The AQIA Report must be updated to include the sensitive receptor schools located at the ZCBF.
7. The AQIA Report must be updated to include the Dispersion maps for NO₂ and PM.

8. The AQIA Report must be updated to include the modelling of the worst-case scenario. Dispersion maps must be presented.
9. A **Site Specific** cumulative AQIA must be undertaken for IDZ 1F. A directive in this regard should be issued to the Richards Bay IDZ. The residential areas of Brackenham, Aquadene and Wildenweide are in close proximity, and directly downwind of IDZ 1F. This places these communities at significant risk.
10. A key finding of the AQIA is that; *“The impact of start-up on ambient NO2 concentrations was estimated and exceedances of the NAAQS could result at residential receptors, schools, and medical facilities. The impacts can be reduced if the turbines reach Minimum Emission Standards in less than 30 minutes, and if the frequency of start-up events is reduced”*

The plant is designed to operate as a mid-merit plant so start-up events are unlikely to be reduced, and there is no evidence provided to suggest that the turbines will reach Minimum Emission Standards with 30 minutes, or how this would be achieved. The risk and impacts are therefore **significant**, and unlikely to be mitigated.

11. The TIA must be amended to include the assessment of cumulative traffic impacts.
12. The Richards Bay IDZ has a responsibility to quantify the impacts of developments, within IDZ 1F, on the Richards Bay road network and infrastructure. The TIA undertaken by the IDZ in 2013 must be updated.
13. The Risk Assessment must be amended to include the cumulative assessment of the proposed Phakwe Gas Power 3 facility, and the adjacent authorized Richards Bay Gas 2 Power facility.
14. The Rapid Appraisal Health Risk Assessment must be expanded on to include the assessment of cumulative health risks.
15. Should the application receive Authorisation, membership of the RBCAA should be a Condition of Approval.

CONCLUSION

To assertion that the proposed facility will have a low contribution to baseline and therefore the development is acceptable is **not supported**. In contributing to the baseline, the proposed Phakwe facility will contribute to exceedances of the NAAQS, thereby contributing to poor air quality.

The RBCAA supports the argument that *“any potential mitigation will require a co-ordinated response from all industrial (including agro-industry) contributors, local authorities and local community stakeholders to reduce domainwide emissions”*

However, this does not justify the acceptability of the proposed Phakwe development adding to the pollution load, irrespective of how low the percentage contribution might be.

In view of the above, the RBCAA **cannot support** the development of the Phakwe Richards Bay Gas Power 3 Combined Cycle Power Plant as currently proposed.

Thank you for affording the Richards Bay Clean Air Association (RBCAA) the opportunity to comment.

The RBCAA reserves the right to provide further comment.

Yours faithfully,



MS S CAMMINGA
CHAIRMAN EIA COMMITTEE

APPENDIX A

From: Sandy Camminga <camminga@iafrica.com>
Sent: Tuesday, 14 December 2021 10:57
To: 'Public Process' <publicprocess@savannahsa.com>
Cc: 'Nicolene Venter' <nicolene@savannahsa.com>; Dladla, Nelisa (RBM) <Nelisa.Dladla@riotinto.com>; Franz Schmidt <Franz.Schmidt@rballoys.com>; Ismail, Zaine <Zaine.Ismail@south32.net>; Khumbulani Buthelezi <KhumbulaniBu@foskor.co.za>; 'khumbulani.mbatha1@gmail.com' <khumbulani.mbatha1@gmail.com>; Webb Candice (ZA, Richards Bay) <Candice.Webb@mondigroup.com>
Subject: RBCAA Comment RE: SE2662: Phakwe Richards Bay Gas-to-Power 3 CCPP Project: Focus Group Meeting Presentation

Dear Nicolene

Please find attached comment from the RBCAA.

Thank you for affording us the opportunity to submit our comments today.

Kind regards,

Sandy Camminga | Director & Founder Member | **Richards Bay Clean Air Association** [NGO]
P O Box 10299, Meerensee, 3901, Office A6-A7, Smart Plan Building, 95 Dollar Drive, Richards Bay
T: +27 (35) 786 0076 | **C:** +27 (83) 515 2384 | **E:** camminga@iafrica.com | www.rbcaa.co.za

“IMPROVING THE ENVIRONMENT FOR ALL”

From: Public Process <publicprocess@savannahsa.com>
Sent: Thursday, December 9, 2021 3:43 PM
To: Percy Langa <percy.langa@rbidz.co.za>; Sethabile Gcume <Sethabile.Gcume@rbidz.co.za>; Dominic Wieners <dominic.wieners@kznwildlife.com>; Simthembile Mapu <Simthembile.Mapu@rbidz.co.za>; Nozipho Khathi <khathin@uthungulu.co.za>; Sandy Camminga <camminga@iafrica.com>; Letitia Moodley <letitia.moodley@rbidz.co.za>
Cc: nondumiso@savannahsa.com; nicolene@savannahsa.com; tumelo@savannahsa.com; Nicolene Venter <nicolene@savannahsa.com>
Subject: SE2662: Phakwe Richards Bay Gas-to-Power 3 CCPP Project: Focus Group Meeting Presentation

Dear Richards Bay IDZ Environmental Review Committee Members,

As promised during the Focus Group Meeting held with you as Members of the Richards Bay Industrial Development Zone Environmental Review Committee yesterday, Wednesday, 08 December 2021, attached the presentation material.

For ease of reference, herewith the link to the project on our website to download the Scoping Report [click here](#) and the release code is BbTvP7gD

Please remember that the comment period is ending on **Monday, 13 December 2021**.

Kind regards,



t: 011 656 3237
f: 086 684 0547

Nicolene Venter
Public Process

e: publicprocess@savannahsa.com
c: +27 (0) 60 978 8396

SAWEA Award for Leading Environmental Consultant on Wind Projects in 2013 & 2015



P O Box 10299, Meerensee, 3901 Tel: +27 (35) 7892471 or +27 (83) 515 2384
Office A6-A7, Smart Plan Building, 95 Dollar Drive, Richards Bay
E-mail: info@rbcaa.co.za Web Site: www.rbcaa.org.za

13 December 2021

Savannah Environmental
P O Box 148
Sunninghill
2157

Attention: Nicolene Venter publicprocess@savannahsa.com

PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT (CCPP), RICHARDS BAY, KWAZULU-NATAL PROVINCE

The Richards Bay Clean Air Association (RBCAA) has reviewed the Scoping Report prepared by Savannah Environmental, dated November 2021, and associated appendices.

SCOPING REPORT:

1. **Alternative Site:** An alternative site has not been considered. The RBCAA is of the opinion that the site next to Mondi RBIDZ 1D would be suitable for the following reasons;
 - a) Currently earmarked for similarly sized Eskom plant – which is unlikely to proceed regardless of having environmental approval for generation and power evacuation.
 - b) It is essentially the same technology, same landlord, similar environmental impacts and concerns, with no sensitive receptors (residential areas) in close proximity.

Would it not be prudent for Phakwe to explore opportunities with Eskom to utilize this site?

2. **Fuel Supply:** The fuel supply is stated as;

“A dedicated pipeline to connect into an on-site gas receiving and conditioning station will provide the natural gas or the mixture of natural gas and hydrogen. The pipeline will be connected to the proposed Transnet supply pipeline network of Richards Bay (the location of this network has not yet been confirmed), or it will extend directly to the regasification facilities within the Port of Richards Bay.”

There is currently no LNG or Regasification facility within the Port of Richards Bay, and no indication of any application for either.

So, the question remains, where is the fuel supply coming from and how will it be evacuated from the Port to the proposed Phakwe facility?

The supply and evacuation of gas to the proposed facility should be assessed as part of this application so that the cumulative impacts of the proposed facility can be assessed.

Registration Number 96/13031/08

Directors: Ms. C. Webb (Managing Director), Ms. S. Camminga, Mr. A. Roberts, Mr. K. Buthelezi,
Mr. F. Schmidt, Ms. N. Dladla, Mr. S. Shezi, Mr. Z. Ismail

3. **Hydrogen:** The EIA should assess the risks and impacts associated with hydrogen, specifically the increased risk of fire and explosion.

- Where will the hydrogen be sourced?
- Where will the hydrogen be stored?
- At what point will the hydrogen be blended with the LNG?
- What are the risks associated with the blending process?
- Will an odorant (Mercaptan) be added to the hydrogen for leak detection purposes? If so, the storage and application must be assessed, as well as potential odour impacts and TRS emissions.
- What leak detection systems will be implemented?

The inclusion of hydrogen in the fuel mix is stated to lower carbon emissions of the power plant. This is only true if the hydrogen is produced by renewable energy resources (i.e., green hydrogen).

4. **Water Consumption \ Wastewater Discharge:**

- a. **Consumption:** Water consumption (operations) given (SR p28) appear low (by an order of magnitude). For a CCGT plant of 2000MW (electrical output) running for 16 – 24 hours daily, and at energy efficiency of around 60 – 63% the water consumption would be 9 – 14 million m³ per year, which is understood to be potable (i.e. municipally treated water?). (Assumption: CCGT 780 litre/MWh water consumption; source: <https://www.wartsila.com/energy/learn-more/technical-comparisons/combustion-engine-vs-gas-turbine-water-consumption>)
 - b. **Wastewater Discharge:** What are the environmental impacts associated with the discharge of heated wastewater? Detailed information pertaining to the evacuation system\ s should be provided. The footprint of the plant does not seem large enough for anything but forced evaporative cooling.
5. **Risk Assessment:** This is not listed in the plan of study (Chapter 10). The facility will be an MHI and as such a Risk Assessment must be undertaken, which should include the assessment of the City's disaster management capacity.

AIR QUALITY IMPACT ASSESSMENT:

1. **Cumulative Impacts:** The EIA should include the floating gas to power plants as both are still active under appeal.
2. **PM2.5:** The RBCAA this year commenced monitoring of PM2.5 which is emerging as a pollutant of concern in the region and should be included and modelled as part of the EIA cumulative impacts.
3. **Start-Ups:** Emissions during start-ups must be quantified.
4. **Fuel Source:** AQIA should assess different scenarios using different fuel sources, i.e., LNG gas versus a blend of LNG and hydrogen, versus 100% hydrogen.
5. **Rapid Appraisal Health Impact Assessment (RAHIA).** Will the RAHIA to be undertaken by INFOTOX be undertaken for cumulative impacts and not based only on the emissions from the proposed Phakwe facility?

Thank you for affording the Richards Bay Clean Air Association (RBCAA) the opportunity to comment.

The RBCAA reserves the right to provide further comment.

Yours faithfully,



MS S CAMMINGA
CHAIRMAN EIA COMMITTEE

Savannah Public Process

From: SDCEA- Tanica <tanica@sdceango.co.za>
Sent: Wednesday, 03 August 2022 09:55
To: Savannah Public Process
Cc: Desmond Dsa; Shanice
Subject: RE: PUBLIC PARTICIPATION MEETING CANCELLATION- PHAKWE GAS POWER 3

Good Day.

On behalf of the South Durban Community Environmental Alliance, I would like to enquire again about the public meeting in June that was cancelled regarding the Phakwe Gas Power 3 development proposed for Richards Bay.

The SDCEA represents the communities of Durban and Richards Bay, therefore we request for this public meeting to be rescheduled for another date.

By law, a public participation meeting is required (we mentioned it in our EIA comments document that was submitted) when going through with an EIA.

The community of Richards Bay did not want the meeting cancelled, it was cancelled due to loadshedding and the people of Richards Bay need a public participation meeting in order to know what is going on in their community. These are the people that will be directly affected by such a development so need to be properly informed.

This meeting will need to be advertised better and would need to be able to reach all communities. Many communities do not have access to technology for emails or even access to the local newspaper. They will need to be properly notified.

Do let me know your response.

Thank you.

Regards,

Tanica Naidoo

Just Energy Transition & Environmental Justice Project Officer - Richards Bay

South Durban
Community
Environmental
Alliance



Email: tanica@sdceango.co.za

Tel.: 031 003 5526 | Cell: 067 112 7344

www.sdcea.co.za | Facebook: @SDCEAngo | Instagram : @sdcea_ngo

DISCLAIMER:

This message and any attachments are confidential and intended solely for the addressee. If you have received this message in error, please notify the system manager/sender. Any unauthorized use, alteration or dissemination is prohibited. The South Durban Community Environmental Alliance (SDCEA) further accepts no liability whatsoever for

any loss, whether it be direct, indirect or consequential, arising from this e-mail, nor for any consequence of its use or storage.

SCOPING PHASE

Organs of State

Savannah Public Process

From: John Geeringh <GeerinJH@eskom.co.za>
Sent: Friday, 12 November 2021 14:04
To: Savannah Public Process
Subject: RE: [CAUTION:EXTERNAL EMAIL] - SE2662: RICHARDS BAY GAS-TO-POWER 3 2000MW Background Information Document and Notification of Availability of Scoping Report
Attachments: Eskom requirements for work in or near Eskom servitudes.doc

Please send me KMZ files of the development area and proposed grid connection. Please find attached Eskom general requirements for works at or near Eskom infrastructure and servitudes.

Kind regards

John Geeringh (Pr Sci Nat) Reg. EAP (EAPASA)
Senior Consultant Environmental Management
Grid Planning: Land and Rights
Eskom Transmission Division
Megawatt Park, D1Y42, Maxwell Drive, Sunninghill, Sandton.
P O Box 1091, Johannesburg, 2000.
Tel: 011 516 7233
Cell: 083 632 7663
Fax: 086 661 4064
E-mail: john.geeringh@eskom.co.za

From: Savannah Environmental Public Process <publicprocess@savannahsa.com>
Sent: Friday, 12 November 2021 13:59
To: John Geeringh <GeerinJH@eskom.co.za>
Subject: [CAUTION:EXTERNAL EMAIL] - SE2662: RICHARDS BAY GAS-TO-POWER 3 2000MW Background Information Document and Notification of Availability of Scoping Report

**PROPOSED DEVELOPMENT OF THE RICHARDS BAY GAS-TO-POWER 3 2000MW COMBINED CYCLE POWER PLANT,
RICHARDS BAY IDZ ZONE 1F, RICHARDS BAY, KWAZULU-NATAL PROVINCE
(DEFF Reference No.: To be Issued)**

Dear Stakeholder and Interested & Affected Party,

Phakwe Richards Bay Gas Power 3 (Pty) Ltd (PRBGP3) proposes the development of a combined cycle (CC) gas to power plant, with a capacity of up to 2 000MW, on various erven within the Richards Bay IDZ Phase 1F, Richards Bay. The proposed project is to be known as the Phakwe Richards Bay Gas Power 3 CCPP. The project site is located approximately 5km north-east of Richards Bay and 1km north of the suburb of Alton, within the jurisdiction of the City of uMhlathuze Local Municipality and the King Cetshwayo District Municipality, KwaZulu-Natal Province. The power plant will operate at mid-merit to baseload duty.

Savannah Environmental has been appointed as the independent environmental consultant to undertake the Environmental Impact Assessment (EIA) for the project to identify and assess all potential environmental impacts associated with the projects and recommend appropriate mitigation measures in the Environmental Management Programme (EMPr). A Scoping & EIA and public participation process will be conducted for the application.

Please find attached for your perusal the following:

- Background Information Document
- Registration and Comment Form
- Notification letter informing you of the availability of the Scoping Report for your review and comments.

The Scoping Report is available for downloading from our website [CLICK HERE](#).

Please do not hesitate to contact us should you require any additional information and/or clarification regarding these projects. Our team welcomes your participation and look forward to your involvement throughout the Environmental Impact Assessment Process.

Kind regards,

[Unsubscribe this type of email](#)



t: 011 656 3237

f: 086 684 0547

Nicolene Venter

Public Process

e: publicprocess@savannahsa.com

c: +27 (0) 60 978 8396

[SAWEA Award for Leading Environmental Consultant on Wind Projects in 2013 & 2015](#)

NB: This Email and its contents are subject to the Eskom Holdings SOC Ltd EMAIL LEGAL NOTICE which can be viewed at http://www.eskom.co.za/Pages/Email_Legal_Spam_Disclaimer.aspx

TO WHOM IT MAY CONCERN

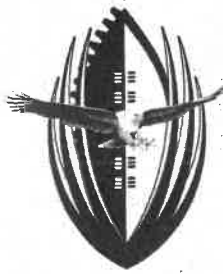
Eskom requirements for work in or near Eskom servitudes.

1. Eskom's rights and services must be acknowledged and respected at all times.
2. Eskom shall at all times retain unobstructed access to and egress from its servitudes.
3. Eskom's consent does not relieve the developer from obtaining the necessary statutory, land owner or municipal approvals.
4. Any cost incurred by Eskom as a result of non-compliance to any relevant environmental legislation will be charged to the developer.
5. If Eskom has to incur any expenditure in order to comply with statutory clearances or other regulations as a result of the developer's activities or because of the presence of his equipment or installation within the servitude restriction area, the developer shall pay such costs to Eskom on demand.
6. The use of explosives of any type within 500 metres of Eskom's services shall only occur with Eskom's previous written permission. If such permission is granted the developer must give at least fourteen working days prior notice of the commencement of blasting. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued in terms of the blasting process. It is advisable to make application separately in this regard.
7. Changes in ground level may not infringe statutory ground to conductor clearances or statutory visibility clearances. After any changes in ground level, the surface shall be rehabilitated and stabilised so as to prevent erosion. The measures taken shall be to Eskom's satisfaction.
8. Eskom shall not be liable for the death of or injury to any person or for the loss of or damage to any property whether as a result of the encroachment or of the use of the servitude area by the developer, his/her agent, contractors, employees, successors in title, and assignees. The developer indemnifies Eskom against loss, claims or damages including claims pertaining to consequential damages by third parties and whether as a result of damage to or interruption of or interference with Eskom's services or apparatus or otherwise. Eskom will not be held responsible for damage to the developer's equipment.
9. No mechanical equipment, including mechanical excavators or high lifting machinery, shall be used in the vicinity of Eskom's apparatus and/or services, without prior written permission having been granted by Eskom. If such permission is granted the developer must give at least seven working days' notice prior to the commencement of work. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued by the relevant Eskom Manager

Note: Where and electrical outage is required, at least fourteen work days are required to arrange it.

10. Eskom's rights and duties in the servitude shall be accepted as having prior right at all times and shall not be obstructed or interfered with.
11. Under no circumstances shall rubble, earth or other material be dumped within the servitude restriction area. The developer shall maintain the area concerned to Eskom's satisfaction. The developer shall be liable to Eskom for the cost of any remedial action which has to be carried out by Eskom.
12. The clearances between Eskom's live electrical equipment and the proposed construction work shall be observed as stipulated by *Regulation 15* of the *Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993)*.
13. Equipment shall be regarded electrically live and therefore dangerous at all times.
14. In spite of the restrictions stipulated by Regulation 15 of the Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), as an additional safety precaution, Eskom will not approve the erection of houses, or structures occupied or frequented by human beings, under the power lines or within the servitude restriction area.
15. Eskom may stipulate any additional requirements to highlight any possible exposure to Customers or Public to coming into contact or be exposed to any dangers of Eskom plant.
16. It is required of the developer to familiarise himself with all safety hazards related to Electrical plant.
17. Any third party servitudes encroaching on Eskom servitudes shall be registered against Eskom's title deed at the developer's own cost. If such a servitude is brought into being, its existence should be endorsed on the Eskom servitude deed concerned, while the third party's servitude deed must also include the rights of the affected Eskom servitude.

John Geeringh (Pr Sci Nat)(EAPASA)
Senior Consultant Environmental Management
Eskom Transmission Division: Land & Rights
Megawatt Park, D1Y42, Maxwell Drive, Sunninghill, Sandton.
P O Box 1091, Johannesburg, 2000.
Tel: 011 516 7233
Cell: 083 632 7663
Fax: 086 661 4064
E-mail: john.geeringh@eskom.co.za



CITY OF
UMHLATHUZE
VISION INTO ACTION

5 Mark Strasse Civic Centre
Business District
Private Bag X1004
Richards Bay 3900
E: reg@umhlathuze.gov.za
T: 035 907 5000
F: 035 907 5444/5/6/7
Toll Free No: 0800 222 827

www.umhlathuze.gov.za

Your ref: SE2662

Contact: B Strachan

Our file ref:

In response to DMS No: **DMS 1501382 &
DMS 1506056**

Date: **9 December 2021**

Savannah Environmental
publicprocess@savannahsa.com / nicolene@savannahsa.com

Attention: Ms Nicolene Venter

Dear Madam

SCOPING REPORT: COMMENTS ON PROPOSED 2000MW PHAKWE COMBINED CYCLE POWER PLANT AT RBIDZ 1F

The City of uMhlathuze has reviewed the Scoping Report, dated November 2021, in respect of the above application and have attended the Focus Group Meeting (FGM) on 25 November 2021 as well as the Stakeholder Workshop on 9 December 2021 and submit following comments for due consideration.

General:

- i. It is noted from the documentation submitted, and based on comments made during the FGM that the infrastructure for the supply of gas as well as the evacuation infrastructure is not part of this process and will be subject to another process. Also, no gas will be supplied via trucks to the site.
- ii. Whereas the socio-economic benefits of the proposed development are well understood. It is understood that semi-skilled locals will benefit from employment opportunities during the construction phase. An indication is needed of benefits to semi-skilled locals during the operational phase as well. Furthermore, care must be taken to mitigate detrimental impacts on the existing developments, the environment and ensure no adverse impacts on the health of communities residing in the vicinity of the proposed development.
- iii. A number of similar applications have been submitted in recent months within a 10km radius of Richards Bay. The complexity of these proposed developments warrants an integrated and cumulative assessment and engagements are needed with relevant government stakeholders. Impacts identified should not be site specific; surrounding land use and environmental conditions needs to be considered and include climate change as gas to power projects are associated with methane gas emissions. As such, the Municipality reserves the right to amend our comments on the application in the event of being presented with further information.



ALL CORRESPONDENCE MUST BE ADDRESSED TO THE MUNICIPAL MANAGER

- iv. It is noted that various specialist investigations are preliminary and in some instances, based on desktop assessments, and that will require more detailed investigations during subsequent phases.

More sectoral specific comments are provided herewith:

Air Quality:

- i. During the construction phase, there may be direct impact of elevated PM_{10} which may result in a non-compliance with NAAQS daily PM_{10} concentration. It should be noted that according to 2020 State of Air Report, PM is still the greatest national cause for concern in terms of air quality due to numerous pollution sources and climatic conditions being also a major factor.
- ii. It is noted that **nuisance dustfall** may also be elevated during construction phase. The project construction phase also has the potential to elevate **ambient gaseous concentration** that are detrimental to human health.
- iii. It is recommended that mitigation measures are outlined and included in the process going forward to address the above.
- iv. **Ambient air pollutant concentrations** could be elevated during the operation phase that has a detrimental effect to the human health. It is also recommended that mitigation measures are outlined and included in the process going forward to address the above.
- v. Furthermore, there are at least three schools located in close proximity (1,8 km South East) of the proposed development, i.e. Little Junior, Batesda Primary School and Batesda High School.
- vi. During the EIA process going forward, due attention should be given to cumulative impacts and the other industries, not just the 11 referenced in the Scoping Report, should be considered. The King Cetshwayo District AEL (Atmospheric Emission License) team should be consulted for assistance with a comprehensive list of industries around Richards Bay.

Waste and Disaster Management:

- i. It has to be clear which streams of waste are expected from this operation and the management thereof to curb water contamination, littering and illegal dumping has to be outlined.
- ii. The proposed development can be classified as an MHI (Major Hazardous Installation). More details are needed, specifically with regard to management thereof, disaster response preparedness etc. More information/control measures on the potential health risks associated with the operating of similar facilities elsewhere in the world to mitigate such potential health risks is requested.

Transport

- i. The Traffic Impact Assessment (TIA) only considered the construction stage and not the normal operations phase and details are needed on traffic generation when the plant is operational. It also has to be confirmed conclusively how gas will be transported to the proposed development in the TIA.



ALL CORRESPONDENCE MUST BE ADDRESSED TO THE MUNICIPAL MANAGER

- ii. The load on the roads must be limited to standard axle loads. A trolley with additional axles must be used to distribute the load evenly to allowable axle loads.
- iii. Any damages to infrastructure must be repaired by the developer. Before and after inspections must be arranged with the Municipality on the transport route to be taken.
- iv. It has to be confirmed whether the developer will provide in the local power needs of the City as a priority and then feed into the national grid (Eskom).
- v. Two routes to be used for the development are preferred, i.e. the R34 / Alumina Allee and R619 / Alumina Allee. The route options through the Richards Bay CBD/town are not supported.
- vi. Transportation of Abnormal Loads must not be done during peak times.
- vii. Authorization of route clearance must be obtained from Municipal Traffic Section, Roads Section and Traffic Signal Section.
- viii. It has to be confirmed whether the trip generation during normal operations will be in line with the original TIA estimations. If not, the influence on intersections with mitigating factors must be indicated.

Biodiversity: Freshwater and Terrestrial:

- i. Whereas freshwater and terrestrial scoping studies were undertaken it is noted that these were completed at a desk top level and that more functional/detailed assessments are to be undertaken.
- ii. It is also noted that a wetland offset strategy is proposed to identify and quantify the wetland offset target. The environmental authority has to be engaged on this matter in context of the Environmental Authorization obtained during September 2016 for the installation of bulk infrastructure at Richards Bay IDP Phase 1F.

Land Use Management:

- i. The property is zoned as Noxious Industry and the proposed land use is permissible as free entry (primary right). Compliance with all relevant legislation and policy framework is required, amongst others, the submission of building plans in line with National Building Regulations, Building Control Bylaw and uMhlathuze Green Building Guidelines.
- ii. By definition, "Industry-Noxious" means the use of any building, land or other premises to conduct an activity/ies that is/are deemed to be noxious, offensive or harmful or injurious to public health, safety or physical well-being including the production and bulk storage of gaseous and liquid fuels, as well as petrochemicals from crude oil, coal, gas or biomass and other trade in connection with the processing of by-products or petroleum refining. It is important to note that the above definition is reliant on outcomes of relevant legislation and frameworks such as the Occupational Health and Safety Act No.85 of 1993, as amended, the National Environmental Management: Air Quality Act No.39 of 2004 as amended, the Explosives Act 2003, No. 15 of 2003, as amended etc.

Electrical:

The submission of technical design drawings for consideration by the City Electrical Department are noted.



Water quality:

- i. Discharge of effluent from Water Treatment Plant: Water quality status of the effluent will have to be shared with Water Quality Management Section of the Municipality in order to establish if there is a need for a discharge permit and the possibility of discharging into the Council sewer system. The comment is, amongst others, motivated by the presence of brine in the effluent and the adverse impacts the receiving environment will be prone to.
- ii. It is noted that brine discharge has an elevated water temperature with higher salinity than oceanic water. Troublesome chemicals associated with brine discharge are copper and chlorine with the potential for chronic toxicity to aquatic biota for several km's around discharge points. Dirty water may not be permitted for release into the environment.
- iii. As such, the requirement and need for water quality monitoring and discharge into a closed system (Council sewer system) is emphasized.

You are welcome to direct further queries regarding the above to Mrs. Brenda Strachan from the City Development Department on Tel.: 035 9075415 or email: StrachanB@umhlathuze.gov.za

Yours faithfully



NONTSUNDU NDONGA Pr Pln A/080/2008
DEPUTY MUNICIPAL MANAGER: CITY DEVELOPMENT
DMS 1506060





forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA 0001· Environment House 473 Steve Biko Road, Arcadia,· PRETORIA

DFFE Reference: 14/12/16/3/3/2/2117

Enquiries: Ms Mathodi Mogorosi

Telephone: (012) 399 9388 **E-mail:** MMogorosi@dffe.gov.za

Mr Gideon Raath
Savannah Environmental (Pty) Ltd
PO Box 148
SUNNINGHILL
2157

Telephone Number: (011) 656 3237
Email Address: gideon@savannahsa.com

PER MAIL / E-MAIL

Dear Mr Raath

COMMENTS ON THE DRAFT SCOPING REPORT FOR THE PROPOSED PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT (CCPP) AND ASSOCIATED INFRASTRUCTURE WITHIN THE RICHARDS BAY IDZ PHASE 1F, RICHARDS BAY, CITY OF UMHLATHUZE LOCAL MUNICIPALITY, KWAZULU-NATAL PROVINCE

The Application for Environmental Authorisation and Draft Scoping Report (SR) dated November 2021 and received by the Department on 12 November 2021, refer.

This letter serves to inform you that the following information must be included to the Final Scoping Report:

(a) Listed Activities

- (i) Please ensure that all relevant listed activities are applied for, are specific and can be linked to the development activity or infrastructure (including thresholds) as described in the project description. Only activities (and sub-activities) applicable to the development must be applied for and assessed. When including activities in the application form and Scoping Report, take note of the word OR in between the activities (sub-activities). Furthermore, kindly ensure that the latest listed activities, as amended in 2021, are applied for.
- (ii) The project description must be expanded to include thresholds, footprints and capacities of the associated infrastructure, particularly those that trigger a listed activity.
- (iii) It is imperative that the relevant authorities are continuously involved throughout the environmental impact assessment process, as the development property falls within geographically designated areas in terms of Listing Notice 3 Activities. Written comments must be obtained from the relevant authorities (or proof of consultation if no comments were received) and submitted to this Department. In addition, a graphical representation of the proposed development within the respective geographical areas must be provided.
- (iv) If the activities applied for in the application form differ from those mentioned in the final SR, an amended application form must be submitted. Please note that the Department's application form template has been amended and can be downloaded from the following link <https://www.environment.gov.za/documents/forms>.

(b) Layout & Sensitivity Maps

- (i) Please provide a layout map which indicates the following:
 - Positions of the proposed facility as well as all associated infrastructure;
 - Permanent and temporary laydown area footprints;
 - All supporting onsite infrastructure e.g. roads (existing and proposed); and
 - All existing infrastructure on the site.
- (ii) The above map must be overlain with a sensitivity map which indicates the following:
 - The location of sensitive environmental features on site e.g. CBAs, NPEAS focus areas, heritage sites, wetlands, drainage lines etc. that will be affected;
 - Buffer areas; and,
 - All “no-go” areas.
- (iii) Provide a map of the Richards Bay Gas Power 3 CCGP facility in relation to the existing electrical grid and gas pipeline infrastructure (the potential connection points and distances), to support the feasibility of the facility.
- (iv) A cumulative map showing the development in relation to similar neighbouring industrial/energy developments and air pollutant emitters must also be provided.
Google maps will not be accepted.

(c) Alternatives

- (i) Design and layout alternatives must also be considered under the alternatives section of the SR.

(d) Public Participation Process

- (i) Please ensure that all issues raised and comments received during the circulation of the SR from registered I&APs and organs of state which have jurisdiction in respect of the proposed activity are adequately addressed in the Final SR.
- (ii) Proof of correspondence with the various stakeholders must be included in the Final SR. Should you be unable to obtain comments, proof must be submitted to the Department of the attempts that were made to obtain comments.
- (iii) The final SR must provide evidence that all identified and relevant competent authorities have been given an opportunity to comment on the proposed development and SR, particularly, this Department’s Climate Change; Air Quality, Biodiversity Conservation; and Protected Areas Directorates, the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs, the relevant Atmospheric Emissions Licence (AEL) Authority, the Department of Agriculture, Rural Development and Land Reform; Department of Water and Sanitation, Ezemvelo KZN Wildlife, AMAFA, SAHRA, SANRAL and the District and Local Municipalities.
- (iv) The Public Participation Process must be conducted in terms of the approved public participation plan and Regulation 39, 40 41, 42, 43 & 44 of the EIA Regulations 2014, as amended.
- (v) Proof of the newspaper advertisement must be included in the final SR.
- (vi) A comments and response trail report (C&R) must be submitted with the final SR. The C&R report must incorporate all comments received (pre and post submission of draft SR) for this development. The C&R report must be a separate document from the main report and the format must be in the table format which reflects the details of the I&APs and date of comments received, actual comments received, and response provided. Please ensure that comments made by I&APs are comprehensively captured (copy verbatim if required) and responded to clearly and fully. Please note that a response such as “Noted” is not regarded as an adequate response to I&AP’s comments.

(e) Specialist Assessments

- (i) Specialist studies to be conducted must provide a detailed description of their methodology, as well as indicate the locations and descriptions of the development footprint, and all other associated infrastructures that they have assessed and are recommending for authorisations.
- (ii) The specialist studies must also provide a detailed description of all limitations to their studies. All specialist studies must be conducted in the right season and providing that as a limitation, will not be accepted.
- (iii) Please note that the Department considers a 'no-go' area, as an area where no development of any infrastructure is allowed; therefore, no development of associated infrastructure including access roads is allowed in the 'no-go' areas.
- (iv) Should the specialist definition of 'no-go' area differ from the Department's definition; this must be clearly indicated. The specialist must also indicate the 'no-go' area's buffer if applicable.
- (v) **All specialist studies must be final, and provide detailed/practical mitigation measures for the preferred alternative and recommendations, and must not recommend further studies to be completed post EA.**
- (vi) Should the appointed specialists specify contradicting recommendations, the EAP must clearly indicate the most reasonable recommendation and substantiate this with defensible reasons; and where necessary, include further expertise advice.
- (vii) It is further brought to your attention that Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation, which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. "the Protocols"), and in Government Notice No. 1150 of 30 October 2020 (i.e. protocols for terrestrial plant and animal species), have come into effect. **Please note that specialist assessments must be conducted in accordance with these protocols.** Please indicate whether the protocols were applied.
- (viii) Please note that the protocols require certain specialist's to be SACNASP registered. As such, the Specialist Declaration of Interest forms must also indicate the scientific organisation registration/member number and status of registration/membership for each specialist.
- (ix) Please include a table in the report, summarising the specialist studies required by the Department's Screening Tool, a column indicating whether these studies were conducted or not, and a column with motivation for any studies not conducted. Not all of the studies identified by the screening tool have been included in Table 7.4 of the final SR (e.g., the Geotechnical Assessment, Hydrological Assessment, Air Quality Impact Assessment and Ambient Air Quality Impact Assessment).
- (x) Please note that if any of the specialists' studies and requirements/protocols recommended in the Department's Screening Tool are not commissioned, motivation for such must be provided in the report, inclusive of the necessary site sensitivity verification reports and specialist compliance statements.
- (xi) The terms of reference for the Climate Change Impact Assessment must assess the impacts of the development on climate change and vice versa, and accordingly must consider both mitigation and adaptation measures to climate change.
- (xii) It is noted that a number of sensitive receptors occur within 3km of the proposed gas power plant. As such, please ensure that the major hazard risks of the facility are also assessed.

(f) Cumulative Assessment

- (i) Should there be any other similar Gas to Power plants proposed within a 30km radius of the proposed development site, the cumulative impact assessment for all identified and assessed impacts must be refined to indicate the following:
 - Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e., hectares of cumulatively transformed land.
 - Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in

the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.

- The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
- A cumulative impact environmental statement on whether the proposed development must proceed.

(g) Specific comments

- (i) The EAP must provide details of what the proposed facility will entail, including the associated infrastructure.
- (ii) The EAP must provide details of the specific locations in the final SR, and not provide vague locations of the proposed developments. All associated infrastructure must be clearly indicated in the final SR and its associated layout plans.
- (iii) Please provide evidence that the application for an air emissions licence has been submitted to the relevant AEL authority and that consultation with that authority has taken place, since the AEL process is to be run parallel to the EIA process. The AEL authority must have been given the opportunity to comment on the SR, including the terms of reference for the Air Quality Impact Assessment.
- (iv) Please provide an indication of what activities have already been authorised on the proposed Richards Bay Gas Power 3 CCGT site in terms of the Environmental Authorisation (EA) for the IDZ Phase 1F dated 27 September 2016 (DFFE Ref No.: 14/12/16/3/3/2/665), versus those being applied for in this application. Please confirm that the EA is still valid.
- (v) Please ensure that landowner consent is provided with the final SR.
- (vi) Ensure that the final SR includes confirmation of the availability of services from the relevant authorities.
- (vii) Under the legislation and policy section of the SR, which discusses the National Environmental Management: Waste Act No 59 of 2008, please indicate whether the proposed development will require a Waste Management Licence.
- (viii) It is noted that the electrical grid infrastructure and gas pipeline for the facility are to be applied for separately. These components should ideally be assessed holistically together with the gas power plant. The gas power plant, if approved, would therefore not be allowed to commence, without these other authorisations also being in place. The applicant is advised to take this into consideration in the planning and timing of the project.

General

You are further reminded to comply with Regulation 21(1) of the NEMA EIA Regulations 2014, as amended, which states that:

“If S&EIR must be applied to an application, the applicant must, within 44 days of receipt of the application by the competent authority, submit to the competent authority a scoping report which has been subjected to a public participation process of at least 30 days and which reflects the incorporation of comments received, including any comments of the competent authority”

You are further reminded that the final SR to be submitted to this Department must comply with all the requirements in terms of the scope of assessment and content of Scoping reports in accordance with Appendix 2 and Regulation 21(1) of the EIA Regulations 2014, as amended.

Further note that in terms of Regulation 45 of the EIA Regulations 2014, as amended, this application will lapse if the applicant fails to meet any of the timeframes prescribed in terms of these Regulations, unless an extension has been granted in terms of Regulation 3(7).

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No. 107 of 1998, as amended, that no activity may commence prior to an Environmental Authorisation being granted by the Department.

Yours sincerely



Mr Sabelo Malaza

Chief Director: Integrated Environmental Authorisations

Department of Forestry, Fisheries and the Environment

Letter signed by: Ms Fiona Grimett

Designation: Deputy Director (Acting): National Infrastructure Projects

Date: 10/12/2021

cc:	J Tenyane	Richards Bay Gas Power 3 (Pty) Ltd	Email: thabiso@phakwegroup.co.za
-----	-----------	------------------------------------	----------------------------------



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, Tel: +27 12 399 9000, Fax: +27 86 625 1042

Reference: 14/12/16/3/3/2/2117

Enquiries: Ms. Aulicia Maifo/Mrs. Portia Makitla

Telephone: 012 399 9411/9627 **E-mail:** pmakitla@environment.gov.za

Ms Nicolene Venter
Savannah Environmental
PO Box 148
SUNNINGHILL
2157

Telephone Number: +27 (11) 656 3237
Email Address: publicprocess@savannahsa.com

PER E-MAIL

Dear Ms., Venter

COMMENTS ON THE DRAFT SCOPING REPORT (DSR) FOR THE PROPOSED PHAKWE RICHARDS BAY GAS TO POWER 3 2000MW COMBINED CYCLED POWER PLANT, RICHARDS BAY IDZ ZONE 1F, KWAZULU NATAL PROVINCE

The Directorate: Biodiversity Conservation has reviewed and evaluated the report and does not have any objections to the Draft Scoping Report & Plan of Study provided that all relevant National and Provincial biodiversity guidelines will be considered in the final report.

NB: The Public Participation Process documents related to Biodiversity EIA for review and queries should be submitted to the Directorate: Biodiversity Conservation at Email; BCAdmin@environment.gov.za for attention of Mr. Seoka Lekota.

Yours faithfully

Mr Seoka Lekota
Control Biodiversity Officer Grade B: Biodiversity Conservation
Department of Forestry, Fisheries & the Environment
Date: 10/12/2021



Batho pele- putting people first

Savannah Environmental
First Floor, Block 2
5 Woodlands Drive Office Park
Cnr. Woodlands Drive and Western Service Road
Woodmead, 2191

RE: SCOPING REPORT FOR PHAKWE RICHARDS BAY GAS POWER 3 COMBINED CYCLE POWER PLANT (CCPP), RICHARDS BAY, KWAZULU-NATAL.

1. GENERAL

- 1.1. The Provincial Department of Agriculture and Rural Development: Agricultural Resource Management, Land Use Regulatory Unit acknowledges the receipt of the above mentioned application.
- 1.2. The main objective of the application is to request Provincial Department of Agriculture and Rural Development to recommend, provide valuable inputs and comments on the proposed establishment of Richards Bay Gas Power 3, Combined Cycle Power Plant.

2. BACKGROUND

- 2.1. Phakwe Richards Bay Gas Power 3 (Pty) Ltd (PRBGP3) proposes the development of a combined cycle power plant with a capacity of up-to 2 000MW on various erven within the Richards Bay IDZ Phase 1F, Richards Bay.
- 2.2. The properties that will be affected by this proposed development are **ERF 16820, ERF 16819, ERF 1/16674 and Subdivision of ERF 17442**. The land where CCPP is proposed is currently zoned industrial and it is vacant.
- 2.3. The submitted report is trying to unpack the potential environmental impacts of their activities, early in the development process. Hence a comprehensive environmental specialist studies will be required and are in accordance with EIA Regulations as to provide competent authority with sufficient information in order to make an informed decision.
- 2.4. The proposed CCPP and associated infrastructure is in response to the provision for gas-to-power technology as part of the energy mix within the integrated Resources Plan (IRP), 2019 and is planned to be bid into future requirement processes to be initiated by the Department of Mineral Resources and Energy (DMRE).
- 2.5. It has been identified that the proposed project will have a potential impact on the environment so an Environmental Impact Assessment is required to be completed in support of an application for Environmental Authorisation prior to construction and operation of the project.
- 2.6. This is deemed important because South Africa needs to grow its energy supply to support economic expansion and in so doing, alleviate supply bottlenecks and supply- demand deficit.
- 2.7. The power plant will operate at mid-merit to baseload duty and will include the following main infrastructure;
 - 2.7.1. Gas turbines for the generation of electricity through the use of natural gas or diesel.
 - 2.7.2. HRSG to capture heat from high temperature exhaust gases to produce high temperature and high pressure dry steam to be utilised in the steam turbines.

- 2.7.3. Steam turbines for the generation of additional electricity through the use of dry steam generated by the HRSG.
- 2.7.4. Bypass stacks associated with each gas turbine.
- 2.7.5. Dirty water Retention dams and Clean water dams
- 2.7.6. Stormwater channels.
- 2.7.7. Waste Storage facility (general and hazardous).
- 2.7.8. Exhaust stacks for the discharge of combustion gases into the atmosphere.
- 2.7.9. A water treatment plant of potable water and the production of demineralised water (for steam generation).
- 2.7.10. Water pipelines and water tanks to transport and store water of both industrial quality and portable quality
- 2.7.11. Dry-cooled system consisting of air cooled condenser fans situated in fan banks.
- 2.7.12. Closed fi-fan coolers to cool lubrication oil for the gas and steam turbines.
- 2.7.13. A gas pipeline and a gas pipeline supply conditioning process facility for the conditioning and measuring of the natural gas prior being supplied to the gas and steam turbines. It must be noted however that the environmental permitting process for the gas pipeline construction and operation will be undertaken under a separate EIA process.
- 2.7.14. Diesel off-loading facility and storage tanks.
- 2.7.15. Ancillary infrastructure including
 - Roads (Access and internal)
 - Warehousing and buildings
 - Workshop building
 - Fire water pump building
 - Administration and control building
 - Ablution facilities
 - Storage facilities
 - Guard House
 - Fencing
 - Maintenance and cleaning area
 - Operational and maintenance control centre
- 2.7.16. Electrical facilities including
 - Power evacuation including GCBs, GSU transformers, MV busbar, HV cabling and 1*275 kV or 400kV GIS Power Plant Substation
 - Generators and auxiliaries
- 2.7.17. Service infrastructure including
 - Stormwater channels
 - Water pipelines
 - Temporary work areas during construction phase.
- 2.8. As per submitted application no generation of gas inside power plant however it will be outsourced from overseas.

3. COMMENTS ON PROPOSAL

- 3.1. The proposed project will not directly affect agricultural lands but its impact might be huge in agricultural production in relation to expected emissions.
- 3.2. As this is a new project over a vacant land; Land Use Regulatory Unit assume that there will be clearance of Natural vegetation.
- 3.3. It is clear that the proposed development is under Local Town Planning Scheme that is Zone 1F of the Richards Bay Industrial Development Zone but as per KZN Land Potential Categories the land is classed

as Secondary agricultural land therefore every effort should be put in place to take care of it as per CARA regulations.

- 3.4. It is recommended that the excavated furrows be back-filled and levelled proper in order to alleviate soil erosion.
- 3.5. Vegetation clearing must be kept at minimum during site preparation and re-vegetation of disturbed areas after construction is highly recommended.
- 3.6. Proper mitigation measures should be put in place, mitigation measures must highlight how the project will avoid disturbance and pollution of agricultural natural resources.

4. CONCLUSION

Please be advised that the Provincial Department of Agriculture and Rural Development: Land Use Regulatory Component **has no objection** to the activity in principle. No objection is subject to

- Assurance that possible carbon emission is going to be eliminated.
- Submission of air quality report
- The applicant has a draft plan for mitigation measures pertaining demineralised water.



FOR HEAD OF DEPARTMENT

AGRICULTURE AND RURAL DEVELOPMENT

LETTER SIGNED BY: THABEDE S. B.

DESIGNATION: Acting Scientific Manager: Land Use Regulatory Unit.

DATE: 15 / 12 / 2021

Cc Mashudu Marubini, DAFF, Fax no: 012 329 5938

INTERESTED AND AFFECTED PARTIES

Savannah Public Process

From: Percy Langa <Percy.Langa@rbidz.co.za>
Sent: Friday, 12 November 2021 09:42
To: Savannah Public Process
Cc: Sethabile Gcume
Subject: FW: Phakhwe RBGP3 EIA Notice

Hi Nicolene,

I hope that you are well.

I noted the notice below in yesterday's Zululand Observer. Will this application replace the existing EIA approval for RGTP 2 (400 MW)? If not, is the plan to integrate the two power plants? See map below.



What is the proposed public consultations dates? This EIA will need to be presented to our Environmental Review Committee.

Regards,
Percy

From: Percy Langa [mailto:percylanga@icloud.com]

Sent: Friday, 12 November 2021 08:44

To: Percy Langa <Percy.Langa@rbidz.co.za>

Subject: Phakhwr RBGP3 EIA Notice

Savannah Public Process

From: Michelle Koyama <mkoyama@cer.org.za>
Sent: Monday, 06 December 2021 13:24
To: Savannah Public Process
Subject: RE: SE2662: PHAKWE RICHARDS BAY GAS-TO-POWER 3 2000MW: Scoping Report review and comment period ending soon

Dear Savannah

We note that the document for public participation is password protected. This is not in line with public participation process, where documents should be widely accessible and examined by the public without any hinderance.

Please remove the password protection so that the public can have access to the documents.

Kind regards

Michelle Koyama
Attorney

Centre for Environmental Rights NPC

A non-profit company with registration number 2009/020736/08

PBO No. 930032226, NPO No. 075-863, VAT No. 4770260653

and a Law Clinic registered with the Law Society of the Cape of Good Hope and the Law Society of the Northern Provinces
2nd Floor, Springtime Studios, 1 Scott Road, Observatory 7925, Cape Town, South Africa

Tel 021 447 1647


mkoyama@cer.org.za www.cer.org.za

www.facebook.com/CentreEnvironmentalRights www.twitter.com/CentreEnvRights



Centre for
Environmental Rights
Advancing Environmental Rights in South Africa

Honouring a decade of activism, advocacy and litigation for environmental justice

 @CentreEnvRights

 @CentreEnvironmentalRights

 @centreenrights

Report violations of environmental rights to the 24-hour Environmental Crimes & Incidents Hotline on **0800 205 005**. More reports of environmental violations assist in justifying more investment in more inspectors, and more enforcement of environmental laws. Numbers matter! Take the time to report violations, even if you have done so elsewhere. For more information about this CER campaign, visit <http://cer.org.za/news/numbers-matter-join-us-in-reporting-violations-of-environmental-rights>.

From: Savannah Environmental Public Process [mailto:publicprocess@savannahsa.com]

Sent: 06 December 2021 13:16

To: Michelle Koyama <mkoyama@cer.org.za>

Subject: SE2662: PHAKWE RICHARDS BAY GAS-TO-POWER 3 2000MW: Scoping Report review and comment period ending soon

**PROPOSED DEVELOPMENT OF THE PHAKWE RICHARDS BAY GAS-TO-POWER 3 2000MW COMBINED CYCLE POWER PLANT, RICHARDS BAY IDZ ZONE 1F, RICHARDS BAY, KWAZULU-NATAL PROVINCE
(DEFF Reference No.: 14/12/16/3/3/2/2117)**

Dear Stakeholder and Interested & Affected Party,

With reference to the attached notification letter sent on Friday, 12 November 2021, this e-mail serves to inform you that the review and comment period for the Scoping Report is ending on **Monday, 13 December 2021**.

As you may recall, the review and comment period for the Scoping Report commenced on Friday, 12 November 2021.

The Scoping Report is available on our website [click here](#)

Thank you to those Stakeholders and Interested and Affected Parties who submitted their written comments and those who had not yet to please do so before on **Monday, 13 December 2021**.

Kind regards,

[Unsubscribe this type of email](#)



t: 011 656 3237

f: 086 684 0547

Nicolene Venter

Public Process

e: publicprocess@savannahsa.com

c: +27 (0) 60 978 8396

SAWEA Award for Leading Environmental Consultant on Wind Projects in 2013 & 2015

18 Major Calvert
Austerville, Durban 4052
Tel: +27 31-461-1991
Fax: +27 31-468-1257
www.sdcea.co.za
Registration No: 028-964-NPO

South Durban
Community
Environmental
Alliance



13 December 2021

Nicolene Venter

Savannah Environmental (Pty) Ltd

P.O. Box 148, Sunninghill, 2157

Tel No: +27 11 656 3237

Cell: +27 60 978 83 96

Email: publicprocess@savannahsa.com

RE: COMMENTS FOR PROPOSED DEVELOPMENT OF RICHARDS BAY GAS TO
POWER 3 2000MW COMBINED CYCLE POWER PLANT, RICHARDS BAY IDZ ZONE
1F, RICHARDS BAY

Background

The SDCEA (South Durban Community Environmental Alliance) is an environmental justice organisation based in south Durban. It is made up of 19 affiliate organisations, and has been active since its formation in 1996. It is considered successful for many reasons. One of which is that it is a vocal and vigilant grouping in terms of lobbying, reporting and researching industrial incidents and accidents in this area. It contributes to the struggle against Environmental Racism for Environmental Justice and Environmental Health. The SDCEA hosts activities such as awareness campaigns, workshops, protests and meetings; to discuss any facets of environmental justice, including community health, unsustainable development, industrial pollution and disproportionate governmental representations.

The Right to Know | The Duty to Inquire | The Obligation to Act

SDCEA Members

Earthlife Africa- Durban
Clairwood Ratepayers Association
Umkomaas Anti-Pollution Watchdogs
Isipingo Environmental Committee
Athlone Park Residence Association
Airport Farmers Association
KZN Subsistence Fishermen Forum
Poor Flat Dwellers Association

SDCEA MEMBERS

Blowatch
Clairwood Social Forum
Project Steering Committee
Active Citizens Movement Umbilo
City of Love Ministeries
Merebank Civic Committee
Urban Futures Centre DUT
Chatsworth Civics

SDCEA Members

Silverglen Civic Association
Wentworth Development Forum
Treasure Beach Environmental Forum
Christ the King Church
Ubunye Bama Hostela
Bluff Ridge Conservancy
Merebank Ratepayers Association

Documents

The documents provided online are only in English. The documents need to be available in isiZulu, so that the majority of communities in and around the area can understand and provide sound comment on the proposed project. The isiZulu documents need to be entirely accessible to the public, therefore hard copies will have to be distributed. Many community members do not have access to the internet therefore they cannot download the documents off the internet to make meaningful comment as data costs money which rural communities do not have given the current economic situation prevalent in the country at the moment. It is the responsibility of the paid independent consultants to ensure that all communities have access to the documents and COVID should not be used as an excuse to not have any hard copies distributed.

Meetings

Engagement in the public participation process is also an obstacle as it is taking place online and the majority of interested and affected parties do not have access to data, computers or smartphones to engage meaningfully. Again, COVID cannot be used as a reason to not have any options for engagement with those who cannot be online.

Terms of Reference

The terms of reference for the appointment of the specialists need to be made available to the public. It is crucial for us to know if these specialists and consultants are people of repute and credibility. We need to understand what process was in place in procurement to appoint these experts and consultants. How was this advertised! How many groups tendered for this project and short listed as communities are concerned with biasness and unfairness when no one follows due process and desk top studies are given as facts?

The Right to Know | The Duty to Inquire | The Obligation to Act

SDCEA Members

Earthlife Africa- Durban
Clairwood Ratepayers Association
Umkomaas Anti-Pollution Watchdogs
Isipingo Environmental Committee
Athlone Park Residence Association
Airport Farmers Association
KZN Subsistence Fishermen Forum
Poor Flat Dwellers Association

SDCEA MEMBERS

Blowatch
Clairwood Social Forum
Project Steering Committee
Active Citizens Movement Umbilo
City of Love Ministeries
Merebank Civic Committee
Urban Futures Centre DUT
Chatsworth Civics

SDCEA Members

Silverglen Civic Association
Wentworth Development Forum
Treasure Beach Environmental Forum
Christ the King Church
Ubunye Bama Hostela
Bluff Ridge Conservancy
Merebank Ratepayers Association

Research

The research done as part of the socio-economic study is inadequate. We want to see evidence that this development will actually create jobs pass the construction phase and will benefit the community long term. Will training be provided to the community to upskill them to be employed? What level of real investment in the community is going to actually take place?

Accidents, explosions, gas leaks and disaster management plans

Richards Bay is already a development chemical cocktail. With the addition of this development the current risk increases exponentially. Where there are gas plants of any nature there is always great risk of accidents, and explosions. Several large pipeline failures in the past few years, leading to massive damage and even loss of life, have highlighted this risk. Pipelines can break open and leak. When this happens, the liquid or gas which leaks out can explode and cause fires. Or it could poison water, crops, land and air. When a person is near a leak from a pipeline, he or she may feel tiredness, dizziness, headaches, nausea and/or vomiting and difficult breathing. A person may lose consciousness, and could even die. Gas from leaking pipelines may over a long time even cause diseases like cancer and leukaemia. We demand that a proper health study be conducted, there also needs to be a risk assessment done and a proper and adequate disaster management plan which must include a contingency plan.

Conclusion

Gas power plants are not the energy infrastructure that South Africa needs if it wants to build a clean energy future. Gas plants and gas pipelines will simply add to climate change and commit the country to several more decades of destructive dependence on the oil and gas industry. The concept that natural gas offers a bridge to a low-carbon future is false. If South Africa wants to incorporate a Just Transition, then we need to move away completely from fossil fuels, because according to The International Panel on Climate Change, *“there is only a dozen years for global warming to be kept to a maximum of 1.5C, beyond which even half a degree will significantly worsen the risks of drought, floods, extreme heat and poverty for*

The Right to Know | The Duty to Inquire | The Obligation to Act

SDCEA Members

Earthlife Africa- Durban
Clairwood Ratepayers Association
Umkomaas Anti-Pollution Watchdogs
Isipingo Environmental Committee
Athlone Park Residence Association
Airport Farmers Association
KZN Subsistence Fishermen Forum
Poor Flat Dwellers Association

SDCEA MEMBERS

Blowatch
Clairwood Social Forum
Project Steering Committee
Active Citizens Movement Umbilo
City of Love Ministeries
Merebank Civic Committee
Urban Futures Centre DUT
Chatsworth Civics

SDCEA Members

Silverglen Civic Association
Wentworth Development Forum
Treasure Beach Environmental Forum
Christ the King Church
Ubunye Bama Hostela
Bluff Ridge Conservancy
Merebank Ratepayers Association

hundreds of millions of people (2018). The recommendation is that there must be a transition to renewable energy which South Africa has a vast potential for. And although this development claims to be a move towards a just transition, as it starts off as an energy mix, that 'MAY' eventually reach zero emissions, there is no guarantee that it will reach 100% on green hydrogen as stated, and until then the effects of gas on the environment are far more detrimental than coal.

SDCEA is at the coal-face of the largest oil refinery complex in Africa. We have witnessed countless explosions, leaks and other pipeline accidents. For the sake of local air, water and land quality, and for future generations whose lives are threatened by the climate emergency, the developers and authorities owe South Africa far higher levels of consciousness about the risks of massive gas developments in this, the most unequal society on earth.

Please note: We reserve the right to submit additional comments within 48 hours.

Submitted by:



Desmond Mathew D'Sa

SDCEA Coordinator

Goldman Environmental Prize winner: Africa 2014

The Right to Know | The Duty to Inquire | The Obligation to Act

SDCEA Members

Earthlife Africa- Durban
Clairwood Ratepayers Association
Umkomaas Anti-Pollution Watchdogs
Isipingo Environmental Committee
Athlone Park Residence Association
Airport Farmers Association
KZN Subsistence Fishermen Forum
Poor Flat Dwellers Association

SDCEA MEMBERS

Blowatch
Clairwood Social Forum
Project Steering Committee
Active Citizens Movement Umbilo
City of Love Ministeries
Merebank Civic Committee
Urban Futures Centre DUT
Chatsworth Civics

SDCEA Members

Silverglen Civic Association
Wentworth Development Forum
Treasure Beach Environmental Forum
Christ the King Church
Ubunye Bama Hostela
Bluff Ridge Conservancy
Merebank Ratepayers Association

YOUR REF: SE2662

Nicolene Venter

Savannah Environmental

By email: publicprocess@savannahsa.com; info@savannahsa.com;

Sithembiso Soyaya

Acting Executive Manager: Corporate Affairs: Transnet National Ports Authority

By Email: Sithembiso.Soyaya@transnet.net

Kami Sithole

Port Manager – Transnet National Ports Authority

By Email: thami.sithole@transnet.net

13 December 2021

Dear Savannah Environmental Representatives

COMMENTS ON: SCOPING REPORT FOR THE PROPOSED PHAKWE RICHARD'S BAY GAS POWER COMBINED CYCLE POWER PLANT (CCPP) PROJECT WITHIN THE RICHARDS BAY INDUSTRIAL DEVELOPMENT ZONE (IDZ), KWAZULU NATAL

1. groundWork submits these comments on the Scoping Report (the “SR”) of the proposed gas Power Combined Cycle Power Plant (the “project”) located at the Richards Bay (KwaZulu Natal) Industrial Development Zone (the “IDZ”).
2. groundWork has a particular interest and expertise in environmental justice issues, and a long-standing history of working with, and representing, the interests of historically disadvantaged communities within South Africa



3. Our concerns related to the Scoping Report (hereinafter the 'SR') and Specialist Reports fall into the following categories:

4. Need and consideration of alternatives
5. Costs
6. Climate change impacts
7. Air quality impacts
8. Marine impacts
9. Noise impacts
10. Socioeconomic impacts
11. Participation and landowner consent
12. Severe hazard risks
13. Risks of failure

4. Need and consideration of alternatives

4.1. A 2000MW gas plant is not needed. All our energy requirements can be met with a fast build out of new renewables, connected to the existing grid infrastructure, while building storage capacity and more grid infrastructure, according to Meridian Economics' final report *Accelerating renewable energy industrialisation in South Africa, 2020*. This is not only the least cost pathway, but a cleaner, safer pathway that can create more and better jobs. What is glaringly lacking is the political commitment to renewable energy in South Africa.

4.2. Gas is resource heavy and suitable cleaner alternatives were not considered in the SR. Infinite resources such as the sun's radiation, wind and wave action are sustainable. South Africa averages more than 2500 hours of sunshine per year with average solar radiation levels of 4.5 to 6.5kW hours per square metre per day. The global solar radiation average is much higher compared with parts of the USA and Europe, making South Africa one of the most favourable countries for solar energy production in the world. The feedstock resource for gas and is finite and, worst of all, dependent on extremely high quantities of clean water throughout its lifecycle from extraction to production to combustion. This strain on water resources intensifies vulnerabilities such as displacement of communities, community livelihoods and works against water conservation and ecosystem strategies



required to build climate resilience.

- 4.3. The proposed project is not essential to the Just Transition. Gas is expensive, hazardous, destructive to people and ecosystems and a climate change accelerator. Gas infrastructure plans do not fit into the goal of a just transition to a low carbon economy and it is not needed. There are better pathways to achieve a just transition. With the prioritisation of community driven and owned renewable energy systems, the energy trilemma of addressing energy sustainability, energy security and energy equality can be met, ensuring that we are well on our way to a fair and equitable just transition for all.
- 4.4. It is a legal requirement that alternatives must be considered as a part of the Scoping process. In terms of alternatives, the Environmental Impact Assessment Regulations, 2014 require that it must address not only the location alternatives, but that it must consider alternatives in terms of the type, design, layout and technology of the activity, and different means of meeting the general purpose, including not implementing the activity.¹ Despite this there are only consideration of alternative sites, and there are no details of alternative technologies having been considered in terms of the alternatives to gas (type and technology). As will be indicated below, gas and the pipelines associated with it poses significant risk not only in terms of health, environment and climate change, but significant financial risk, as this project is proposed as a long-term gas project. Moreover, there are alternative renewables which are cost efficient with lower risk in terms of long-term energy procurement.
- 4.5. The no-go option: The SR fails to consider the possibility that renewable alternative energy technologies with far fewer social and environmental impacts could be used to respond to this rising energy demand. It also fails to consider the cost savings that these alternatives would provide in comparison with the project option over ten to twenty years.
- 4.6. The country's energy 'emergency' has been created through poor decision-making skewed towards fossil fuels development. Attempts to resolve the 'emergency' through additional fossil fuel investments, dependent on the whims of global energy markets, will dig a yet deeper hole and put a just transition to a low carbon economy further out of reach. Procuring gas power and building gas infrastructure is effectively locking in gas for a longer period than is required, crowding out space for ever cheaper and more reliable clean

¹ EIA Regulations, 2014



energy, and exacerbating the climate crisis.

- 4.7. According to the IRP, gas is not meant to be considered as the main source of energy, but only complement other sources. This will result in the hardwiring of expensive power at higher rates. Gas generators are expected to burn LNG for much longer periods of time which equates to huge throughput of gas in comparison to peaker plants, which run at less than 5% of the time to supplement the energy deficit. Other analyses, such as work published by Meridian Economics in 2020, reiterate the lack of need and desirability of gas-powered energy such as this 2000MW gas plant in terms of both cost and climate impacts, particularly in the time frames and with the contractual obligations of these projects.²
- 4.8. The proposed project is not needed to provide 'baseload' to the South African grid. The rest of the world is moving into a different paradigm that makes this concept of baseload altogether obsolete. Utilities are increasingly abandoning this terminology and requirements for this kind of energy – requirements that, in today's world of ever-cheaper renewables and storage, were driving electricity prices unnecessarily upward for customers. Renewable energy projects, which include wind, solar and battery storage, will meet baseline criteria within shorter timeframes. Moreover, having a series of such projects would offer more reliable and resilient power to the grid.
- 4.9. The energy production of the project for the grid is not clear. Given the supposed criticality of this electricity for the grid, it would be important to clarify the actual energy production capacity of this plant.
- 4.10. The green hydrogen pathway proposed in the SR is vague and does not contain specified timelines, or consideration of technologies to be used, including conversion requirements from gas to hydrogen or cost implications indicating that it is in fact any kind of viable option. It is largely unproven and untested technology requiring a large build out of renewable energy to support its green hydrogen production in any case, as well as a large water resource input. The socio-economic impacts including high local content job

² A Roff *et al.*, *A Vital Ambition: Determining the cost of additional CO2 Emission Mitigation in the South African Electricity System*, Meridian Economics with CSIR Energy Centre, (2020), <https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf>.



creation over highly specialized jobs is not considered. It is not a solution to the South African energy problem as it does not assess the affordability of this technology to all South Africans, nor their access to energy using this technology, nor its ability to create local, safe, clean and sustainable jobs and livelihoods. To build a gas plant with the ‘vision’ to include to green hydrogen technologies without a concrete plan is nothing but an empty promise and should not mislead the public into thinking that this will in fact happen.

5. Costs

- 5.1. The proposed gas plant is not a least cost option. They are designed to be a short-term resource to fill a narrow gap in case of true emergencies, such as large amounts of critical power being knocked offline by a storm. The application of this technology for a long term contract is quite distinct, and this lock-in will result in higher tariffs and less affordable and accessible energy – quite the opposite of what is intended for the social goals of these procurement processes.
- 5.2. A far more cost-effective solution would be for the system operator to balance the system to bring on least-cost solar and wind during their production times and complement these in renewable trough production hours with flexible resources such as pumped storage and utility scale batteries. Gas leads to much higher electricity prices for all by favoring more expensive and volatile power systems, and therefore to less reliable power as customers, utilities, and governments cannot pay these high costs.³
- 5.3. Inadequate cost analysis of the project compared with other renewable energy options over the proposed operation period, including revenue and tax implications.⁴ The cost of renewable energy generation will provide local content, as well as reduce the cost of energy over time.

6. Climate change

- 6.1. The 2017 judgment in the case of *Earthlife Africa Johannesburg v the Minister & Others* (“**the Thabametsi case**”) confirmed that a Climate Change Impact Assessment (CCIA) is a

³ See, for example, S. Nicholas, *Ghana: Reliance on LNG means increased fuel price risk and further unaffordable generation contracts*. IEEFA (March 30 2021), Available at: <https://ieefa.org/ieefa-ghana-reliance-on-lng-means-increased-fuel-price-risk-and-further-unaffordable-generation-contracts/>

⁴ A Vital Ambition



necessary component of an EIA for projects with climate impacts. In this case, the court acknowledged the need for a CCIA much broader than a mere assessment of anticipated emissions. It confirmed the need for a comprehensive assessment, which assesses, *inter alia*, the impacts of climate change on the project and the ways in which the project might aggravate the impacts of climate change in the area.⁵ The Pretoria High Court concluded that “[w]ithout a **full assessment** of the climate change impact of the project, there was no rational basis for the Chief Director to endorse these baseless assertions” (emphasis added).⁶

6.2. A CCIA must analyse the following:

- the indirect and full life-cycle emissions, these being the GHG emissions arising from extraction of gas; transportation of gas; construction of the plant, operation, and decommissioning;
- cumulative emissions (the additive contribution of the project to pre-existing GHG emissions for South Africa); and
- the environmental and social cost of the GHG emissions, that is, the contribution of the project’s GHG emissions to South Africa’s climate costs and impacts;
- the ways in which the project area will be impacted by climate change and the extent to which the project would aggravate these impacts. In other words, the project’s impacts on the area’s climate resilience and ability to adapt to a changed climate. Given that this is a long-term and large-scale project, consideration must be given to the ways in which climate change will impact on the area and communities where the project will be based, and how the project’s own impacts will affect the area’s resilience or vulnerability to the effects of climate change as they intensify; and
- the ways in which the effects of climate change will impact on the project itself, and its ability to operate optimally and efficiently for its full anticipated lifespan.

⁵ See para 44, Thabametsi judgment.

⁶ Para 101, Thabametsi judgment. The “baseless assertions” to which reference is made are the statements in Thabametsi’s EIR - on which the Chief Director relied exclusively - that the climate change impacts of the project were relatively small and low.



6.3. The SR fails to adequately address these impacts. Of particular concern are the following gaps:

- 6.3.1. Emissions from gas production, gathering, processing, initial transport, and LNG liquification are not considered in the emissions assessment. Given that a range of studies have shown that these upstream emissions, a result of methane leaks and venting, as well as the energy needed to transport and liquefy gas, make gas equivalent to or worse than coal for the climate, this omission is highly problematic.⁷
- 6.3.2. The current primary exporters of LNG – Qatar, Australia, the United States, and Malaysia, are all over 10,000 km long distance from South Africa. There are not only many emissions generated by the ship to travel this distance, but large quantities of LNG boil off over this distance. Many LNG carriers vent much of this boiled off methane to the atmosphere to control pressure in the ship tanks.
- 6.3.3. At minimum, the climate change assessments should compare emissions from the gas-to-power plant to both coal and renewables alternatives.
- 6.3.4. The latest IPCC report concludes that methane has between 28 and 36 times the global warming potential of CO₂ over a 100-year time scale. Given that this has been established since 2013 the study should rely on the 2007 IPCC Assessment Report's figures.⁸ Moreover, there is good reason to use the 20-year global warming potential for methane, given the short-lived gas's contribution to warming that could unlock major climate tipping points in the next twenty years.⁹
- 6.3.5. Mitigation measures need to be proposed for the *significant* greenhouse gas impacts of these plants. Carbon offsets are notoriously inadequate at successfully offsetting fossil fuel emissions, with problems of faulty baselines, lack of additionality, impermanence, and leakage plaguing almost all forms of carbon offset projects¹⁰.

⁷ S. Roman-White *et al.*, *Life cycle greenhouse gas perspective on exporting liquefied natural gas from the United States: 2019 update* 54 (2019).

⁸ Intergovernmental Panel on Climate Change, Working Group 1, *Chapter 8 - Anthropogenic and Natural Radiative Forcing*, in *Climate Change 2013 - The Physical Science Basis, Fifth Assessment Report of the IPCC* 659–740 (5th ed. 2014), <http://www.ipcc.ch/core/books/working-group-1/working-group-1-report-1-2013-the-physical-science-basis/anthropogenic-and-natural-radiative-forcing/63EB1057C36890FEAA4269F771336D4D>.

⁹ T. M. Lenton *et al.*, *Climate tipping points — too risky to bet against*, 575 *Nature* 592–595 (2019), <http://www.nature.com/articles/d41586-019-03595-0> (last visited Apr 24, 2020).

¹⁰ C.f. M. Cames *et al.*, *How additional is the Clean Development Mechanism?* *Oko-Institute* (2016), https://www.infras.ch/media/filer_public/11/0f/110fae5f-d1ff-4e8f-9f97-f83a34c86dd1/clean_dev_mechanism_en.pdf



6.3.6. The increasing frequency of powerful coastal storms and their likely impact on these facilities¹¹ is not covered in the SR. The “protection” supposedly afforded by the bays is clearly insufficient in the face of a cyclone, for example.¹²

7. Air quality

7.1. The SR lacks adequate pollution controls.

7.2. The location of the plant means that communities living closeby will be exposed to the emissions from the plant at all times that the predominant onshore wind is blowing, which is typically during the day and therefore exactly when these plants will be generating power.

7.3. While it is often assumed that the coastal location of these facilities will reduce their degradation of local air quality because of more breeze along the coast, these areas are also subject to strong inversion layers, particularly during June and July.¹³ These inversions trap air pollutants so that they cannot disperse, severely degrading local air quality.

7.4. In this context, the Atmospheric Impact Report has several glaring flaws:

7.4.1. Air toxics emitted by natural gas combustion in the plants, including carcinogenic formaldehyde and acetaldehyde¹⁴, are not evaluated or quantified in the Report.

7.4.2. Toxic volatile organic compounds (VOCs) emitted by natural gas leaks, likely to occur in one or multiple parts of the chain of gas connections between the plants and the mainland, also go unmentioned in the Report.

7.4.3. Hazardous secondary pollutant formation as a result of NO_x, SO₂, and VOC emissions from the plant, particularly ground-level ozone, is also not evaluated in the report.

7.4.4. The CALPUFF models used do not include emissions from other proposed facilities within the Richard’s Bay port and surrounding area, but rather add the plant’s emissions only to current air quality monitoring data, thereby leaving out critical

¹¹ E.L. Molua *et al.*, *Economic vulnerability to tropical storms on the southeastern coast of Africa*, 12 Jamba (2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7669996/>.

¹² J. Fitchett, *Southern Africa must brace itself for more tropical cyclones in future*, The Conversation, 2018, <http://theconversation.com/southern-africa-must-brace-itself-for-more-tropical-cyclones-in-future-103641>.

¹³ H. Tularam *et al.*, *Harbor and Intra-City Drivers of Air Pollution: Findings from a Land Use Regression Model, Durban, South Africa*, 17 Int J Environ Res Public Health (2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7432936/>.

¹⁴ A.R.B. Pereira *et al.* *Experimental evaluation of CO, NO_x, formaldehyde and acetaldehyde*

emission rates in a combustion chamber with OEC under acoustic

excitation, Energy Reports (2019), <https://www.sciencedirect.com/science/article/pii/S2352484719301556>



cumulative impacts of emissions from other industrial activity in the future (*e.g.* Mondi, other gas plants and fuel storage tanks)

- 7.4.5. The report therefore fails to assess the worst-case scenario adequately, in which these cumulative emissions are emitted on a day when a temperature inversion prevents dispersion of these hazardous pollutants.
- 7.5. The risks of an explosion resulting from the plant in busy and economically important port areas are not to be taken lightly, nor are the air quality impacts that would follow such an explosion. Nonetheless, these scenarios are not considered in the air quality assessment reports.
- 7.6. While the SR makes reference to the decision not to use Heavy Fuel Oil (HFO) in these dual-fuel engines, it also references impacts of HFO use, leaving doubt about the claim that HFO will not be used such as in the event that LNG is not available. Air quality and climate impacts would be even greater in the case of the use of HFO.
- 7.7. These engines require constant rotating maintenance. Without this, they will run much less efficiently and emit more pollutants per MW of power. Direct, continuous emissions monitoring both on stacks and at the border (typically called “fenceline monitoring”) of the plant should be required, both to assess standard emissions levels, and to detect any anomalies in emissions.
8. Marine Ecology Impacts
- 8.1. There is no information on the source and discharge points of water, quantities of water required and permissions required for the usage of water within the IDZ
- 8.2. There is no information on the temperature of the water to be discharged into the receiving environment, both from the plant and storage facility, and the LNG carrier supplying the plant.
- 8.3. The impacts of waste and discharge of water from the generators and cooling of the generators has not been adequately assessed and only modelling was used to determine the effects of discharge of heated water on the receiving environment. Nor how it will be monitored and reported during operations in South African ports.
- 8.4. The Marine Ecology Impact Assessments screen out a series of important impacts that a regularly visiting LNG carrier, is likely to have on the local marine environment in the port



over the duration of the project.

- 8.5. Dredging activities, piling and impacts on water flow for the installation of pipelines, transmission lines and storage facilities are not adequately described or addressed.
- 8.6. Plant and vessel management practices, oil spill contingency plans and other relevant considerations for operating within the port and IDZ are not adequately addressed
- 8.7. The risk of an LNG or gas spill to local marine life is not addressed. Research suggests that methane not only dissipates into the atmosphere, but can also dissolve in water, changing the chemistry and affecting marine life.¹⁵

9. Noise

- 9.1. There is no information provided on actual noise levels of similar operations in South Africa or other parts of the world, including the CCPP and servicing LNG vessel. No mitigation options are considered for the benefit of workers. And cumulative noise impacts of the IDZ are not considered
- 9.2. Underwater noise studies are not suggested in the noise assessments for the inland and marine environments, despite the significant impacts that this noise has on many species, and marine mammals in particular.

10. Socio-economic impacts

- 10.1. The costs of this energy relative to renewable sources over the operating time-frame is not considered in the Socio-Economic study.
- 10.2. Half of the jobs associated with the project are expected to be short term site establishment construction jobs, while the long-term production ones are high-skilled positions likely to be filled by foreigners. The precise job numbers in the socio-economic impact assessments are not provided. The renewable energy sector with local content creates, not just more jobs, but decent jobs. The International Labour Organisation (ILO) in a recent brief 'Green jobs and renewable energy: low carbon, high employment' stated that renewable energy has a *demonstrated job creation effect*. And that energy created through solar photovoltaic cells, for example, have a higher number of jobs created per

¹⁵ S. B. Joye *et al.*, *Magnitude and oxidation potential of hydrocarbon gases released from the BP oil well blowout*, 4 Nature Geoscience 160–164 (2011), <https://www.nature.com/articles/ngeo1067>.



unit of energy than energy produced through fossil fuels. The positive job creation effect of renewable energy is the result of longer and more diverse supply chains, higher labour intensity, and increased net profit margins, while providing the benefit of less hazardous working conditions.

10.3. Gas on the other hand requires a limited number of highly specialised jobs throughout its lifecycle, subject to market volatility

10.4. There are also several communities that can be potentially harmed from the power plant, including fishing and farming communities. Land use changes to gas operations will impact on subsistence fishers, recreational fishers, and fishers that depend on fishing for their livelihoods. The socio-economic impacts assessment must comprehensively assess the potential risks and costs of the power plant to these and other local communities that subsist on natural resources nearby to the project site.

11. Public participation

11.1. Online Scoping Report documentation was password protected, preventing people from accessing and assessing the documentation. This issue was raised with Savannah Environmental on previous occasions and they chose to dismiss our concerns and continue to password protect documentation that is meant to be in the public domain and with impacts to the public.

11.2. Public participation has not been sufficient, and information related to the project has not been easily accessible to affected communities. The tribal authorities and communities of Dube and Mkhwanazi near the Richard's Bay port were not identified as potentially impacted communities and were not notified or included in the public participation processes.

11.3. Informal settlements and land users that include market gardeners in the affected areas have not been notified or included in the list of potentially affected parties. The market gardeners that work their gardens along the canal in Richard's Bay for example have not been notified and included in the decision-making process.

11.4. Fisher communities, and especially subsistence fishers that are dependent on the oceans for their livelihoods and food security were not notified and made aware of the proposed development.

11.5. Adequate notice must be given to reach out to people in the affected areas. Public



participation is a two-way process and should allow for engagement and understanding of the impacts of the proposed developments. The pandemic should not be used to fast track development while excluding and restricting people's ability to participate. It is violating people's right as public trustees to the environment and their role in maintaining a healthy and vibrant democracy.

11.6. Many communities were also excluded from any online and digital consultation as they are unable to afford the technology and data to access this information.

11.7. The landowner consent documentation for sites were missing and we seek confirmation of the plant's compliance in relation to conducting the environmental impact assessments with the correct authorising bodies and their representatives.

12. Explosion Risks

12.1. LNG carriers and Storage Regasification Units (SRUs) are essentially hazardous bombs, composed of huge quantities of latent energy. The dangers of having these directly beside an active port and IDZ that contains many other fuel sources, chemicals storage and stores fertilizers, are significant, and cannot be underestimated. These risks come from:

12.1.1. Accidents

12.1.2. Severe storms, which are also poised to become more common with climate change

12.1.3. Terrorism

12.2. There is very little consideration of these possibilities within the SR, however, or assessment of what such an explosion would mean for workers or communities.

13. Risks of failure:

13.1. The company does not have a track record of running for long periods and it is largely unproven technology. Attempting to shore up a national grid on the back of technology that has not been proven for the purpose for which it is intended, and which is dependent on global gas markets over that period questions the consistent provision of this power.

13.2. An LNG fuel disruption during the operational period may result in ships being either inoperable or granted "emergency" exemptions that enable Heavy Fuel Oil (HFO).

There is no indication of how will fuel usage be monitored, reported and regulated.

13.3. Risk of one line being affected

13.4. Risk of plant failure – no track record



In conclusion, the proposed 2000MW gas plant does not fit into the presidential commitment to a just transition towards a low carbon, inclusive, climate change resilient economy and society. It is not the best technology available, but rather, it is expensive, dangerous, exclusionary and will lock South Africa into gas which will increase our carbon and greenhouse gas emissions and fast track the effects of climate change. The gas plant is not needed. There are better alternatives that will meet our electricity demand are cleaner, safer, cost effective, inclusive and will improve our climate resilience in the just transition. These alternatives were not considered in the Scoping Report.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Avena Jacklin'.

groundWork

Avena Jacklin

Climate and Energy Justice Campaign Manager