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30th March 2020

RE: DRAFT EIA REPORT FOR THE PROPOSED GAS TO POWER PROJECT AT THE PORT OF NGQURA - DEFF REF NO: 14/12/16/3/3/2/2005

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A. INTRODUCTION AND EXECUTIVE SUMMARY

1. These comments on the draft Environmental Impact Assessment Report (the Draft EIA Report) for the Proposed Gas to Power Powership Project¹ at the Port of Ngqura, Eastern Cape are submitted by the Green Connection.

¹ DEFF REF NO:14/12/16/3/3/2/2005 dated 17 November 2020

2. The Green Connection is a registered non-governmental organisation, that believes economic growth and development, improvement of socio-economic status and conservation of natural resources can only take place within a commonly understood framework of sustainable development. It aims to provide practical support to both the government and non-governmental/civil society sectors, which are an integral part of sustainable development.
3. This submission will look at four issues, namely flaws in the assessment of
 - 3.1. socio-economic impacts;
 - 3.2. marine pollution;
 - 3.3. impacts of a major industrial accident;
 - 3.4. the no go option.
4. The socio-economic impact assessment fails to take cognizance of the economic impact of tax and other incentives afforded to the project by virtue of the Coega Special Economic Zone as well as the reported blanket exemption from complying with a 40% local content stipulation that has been granted to the Powerships
5. The Draft EIA report fails to consider the impacts of marine pollution on the incorrect assumption that because effluent from ships is governed by regulation it does not require to be assessed under an application for environmental authorisation in terms of section 24 the National Environmental Management Act (NEMA).²
6. The assessment of the risks of the project as a major hazard installation is fatally flawed in that the risks of a pipe burst where the pipe traverses land is not considered.
7. Given these deficiencies that EIA is not capable of properly assessing the no-go option and the best practicable environmental option. The analysis of the no-go option fails to meet the requirements for such assessment set out in National Guidelines with the result that this is not only a fatal deficiency in the report but the decision maker is also as a consequence unable to apply its mind to all relevant considerations when considering the EIA, including the best practicable environmental option.

² Act 107 of 1998

B FLAWS IN THE ASSESSMENT OF SOCIO-ECONOMIC IMPACTS

8. The socio economic impact assessment (SEIA) for the Proposed Powership Project at the Port of Ngqura is aimed at determining whether the project has an overall positive impact or not.³ The report refers to the fact that the project will generate jobs, promote local businesses and skills development and in summary will contribute R186.8 million per annum to the GDP in the construction phase and R321.0 million per annum in 2020 prices in the operational phase.⁴ It is estimated that 778 full time jobs will be created during the construction phase and 240 jobs will be created in the operational phase.⁵ Other positive impacts mentioned are the provision of electricity and reduction in load shedding. The overall conclusion of the socio economic impact assessment report is that the benefits of the project outweigh the negative economic impacts.
9. The assessment fails to indicate the fact that the project is unlikely to pay taxes and has, according to media reports, been exempted from 40% of local content requirements, and how this will impact on its assessed benefit to the overall economy.
10. It also does not indicate to what extent projected local economic benefits will be impacted by the fact that the ships and gas will be sourced overseas.
11. It also does not indicate the cost of climate change impacts generated by the project, and which will be felt most keenly in sub Saharan Africa.

Local content requirements

12. It has been reported in the media that the Karpowerships project has been granted a blanket exemption from complying with a 40% local content stipulation designed to encourage the development of locally based manufacturers and suppliers by the Department of Trade, Industry and Competition (DTIC).⁶ This fact will impact on projected local economic benefits and needs to be assessed in the socio-economic impact assessment.

³ Socio-Economic Impact Assessment For The Proposed Power Powership Project At The Port of Ngqura Within the Coega Sez In The Nelson Mandela Bay Metropolitan Municipality, Eastern Cape February 2021 at Page 69

⁴ SEIA Pages 33 and 44

⁵ Id page 46

⁶ <https://www.dailymaverick.co.za/article/2021-03-14-floating-gas-powerships-plan-gets-another-free-pass-from-south-african-government/>

13. The following local benefits are indicated and the report needs to clarify how these and other local economic benefits will be affected by the local content exemption referred to above.

“The current regulations prescribes that a minimum of 1% of the revenue derived by a project should be allocated towards the socio-economic development community and a further 0.4% to enterprise development. These contributions are verified by the Department of Energy via quarterly audits to ensure that the figures are achieved. In-line with these regulations, it is anticipated that the development will contribute R15.7 million to enterprise development, and a further R39.4 million to socio-economic development annually over a 20-year period. Approximately 80.0% of both these contributions will accrue directly to the local community, while the remaining 20% will accrue to communities in other parts of the province.”⁷

Tax exemption in the Special economic zones

14. The project is described as The “Proposed Gas to Power Powership Project at the Port of Ngqura within the Coega SEZ, Nelson Mandela Bay Metropolitan Municipality, Eastern Cape” and it is therefore assumed that the project will be entitled to all the tax and other monetary exemptions that flow from location within a special economic zone in South Africa. However this is not mentioned in the socio economic impact assessment.
15. Instead it is stated:

“During the construction phase of the Powerships and its related infrastructure will generate revenue for the government during the construction period through a combination of personal income tax, VAT, companies tax, etc. Additional government revenue will also be earned through corporate income tax. Government earnings will be distributed by national government to cover public spending which includes amongst others the provision and maintenance of transport infrastructure, health and education services as well as other public goods.”⁸

Cost of climate change impacts

16. The Draft EIA report fails to assess the economic cost of the greenhouse gas emissions of the proposed Powerships. Considering the three planned powership projects countrywide: the Climate Change Impact Assessment for the proposed Powership at

⁷ SEIA p 50

⁸ Id page 38

Saldanha Bay, Western Cape admits to the following expected emissions of greenhouse gases:

“Over the expected operating lifespan of the Powership project of 20 years at constant 100% capacity, **cumulative generation emissions are 15.21 million tons CO₂e under the worst-case scenario.**”⁹

17. The Climate Change Impact Assessment for the proposed Powership at Richards Bay, KwaZulu- Natal admits to the following expected emissions of greenhouse gases.¹⁰

“Over the expected operating lifespan of the Powerships of 20 years (74 460 operational hours), at constant 100% capacity, **cumulative generation emissions are 19.56 million tons CO₂e.**”

18. The Climate Change Impact Assessment for the proposed Powership at Port of Ngqura, Eastern Cape, admits to the following expected emissions of greenhouse gases.¹¹

“Over the expected operating lifespan of the Powerships of 20 years (74 460 operational hours), at constant 100% capacity, **cumulative generation emissions are 19.56 MT CO₂e.**”

19. Cumulatively, the three powerships would emit **54.33 million tons CO₂e**. The Climate Change Impact Assessments do not evaluate the social costs associated with these emissions. Economists with the School of Global Policy and Strategy, University of California San Diego, published the updated information about the social cost of carbon:

“The social cost of carbon (SCC) represents the economic cost associated with climate damage (or benefit) that results from the emission of an additional tonne of carbon dioxide (tCO₂). One way to compute it is by taking the net present value of the difference between climate change damages along with a baseline climate change pathway and the same pathway with an additional incremental pulse release of CO₂. The SCC provides an economic valuation of the marginal impacts of climate change. ...

“The GSCC is the sum of the CSCC values. We calculated CSCC for each set of scenario, parameter and model specification assumptions, and established an uncertainty range based on a bootstrap resampling method (Methods and Supplementary Information) and then aggregated to the global level. The median estimates of the GSCC (Fig. 1) are significantly higher than the Inter-agency Working Group estimates, primarily due to the higher damages associated with the empirical macroeconomic production function,

⁹ Climate Change Impact Assessment, for Saldanha Bay page 34

¹⁰ CCIA for Richards Bay Page 32

¹¹ CCIA for Ngqura page 31

although similar SCC values have been estimated in the past using other methodologies. Under the ‘middle-of-the-road’ socio-economic scenario (SSP2) and its closest corresponding climate scenario (RCP6.0), and with the central specification of Burke–Hsiang–Miguel (BHM) damage function (short run, no income differentiation) we estimated a median GSCC of US\$417 per tCO₂ (ρ, 2%; μ, 1.5).”¹²

20. Applying the median GSCC from the 2018 study demonstrates that CO₂e emissions from the three power ships would cause social costs of at least **US\$22.65 billion** (US\$417/tCO₂ x 54.33 million tCO₂).

Economic impacts on the no-go option

21. The assessment of the no-go option requires a comparison of the economic benefits and disadvantages of the proposed project against the benefits and disadvantages of not proceeding with the project. This is not feasible if the climate change impacts and costs (ie economic impacts) are not assessed, as one of the most likely outcomes of the no go option would be that the demand for energy would be taken up by development of renewable energy sources such as wind, geothermal energy or solar energy which do not generate greenhouse gas emissions. The EIA without an assessment of the costs of its greenhouse gas emissions is therefore incomplete.
22. Furthermore the socio-economic impact assessment does not give a comparative cost to the fiscus, consumer and taxpayer of the electricity generated by the Powerships, compared to the provision of that electricity in the no-go option through renewable energy and potentially other sources of energy. This omission results in the Draft EIA report failing to place all relevant information and considerations before the decision maker.

D. FAILURE TO CONSIDER IMPACT ON THE MARINE ENVIRONMENT

23. The Draft EIA report fails to assess the impact on the marine environment of the Powerships moored in Ngqura harbour. This failure results from the fact that significant

¹² Ricke, K., Drouet, L., Caldeira, K., & Tavoni, M. (2018). Country-level social cost of carbon. *Nature Climate Change*, 8(10), 895.

potential sources of pollution from the Powerships were excluded from the study without proper justification.

24. The Draft Marine Ecology Specialist Study states that regular discharge of vessel wastes, ballast water exchange procedures, and hydrocarbon leakages from vessels are screened out of this assessment because it is assumed they will be adequately controlled in terms of the Port Ngqura's existing harbour rules, port reception facilities, vessel management practices, oil spill contingency plans and other relevant domestic law.¹³ At a public meeting regarding this environmental impact assessment on 17th March 2020 it was stated - in answer to a question by Ms Andrews regarding the absence of an assessment of the impacts of marine pollution from the ships - that all wastes will be removed from the ships, and hence the impacts of marine pollution were not studied in the Draft EIA.
25. The fact that regulations exist which govern discharges of pollution into the ocean in no way exempts the applicant from assessing the potential impacts, including cumulative impacts of such pollution on the marine environment in terms of section 24 of NEMA, whether as a result of normal or accidental releases. This contention, if correct, would undermine and render superfluous most of the scheme for environmental impact assessments under NEMA.
26. The unstated assumption of the EIA is therefore that there will be no marine pollution in the operational phase. This assumption is not mentioned in the section of the EIA dealing with assumptions however. The failure to do so is a fatal flaw.
27. This assumption is in conflict with the clear recognition in the EMPR that there may or indeed will be marine pollution resulting from the project. Discharging, with potential significant impacts, is contemplated as part of the activity as it is mentioned in the EMPR. It is clear that the impact of accidental spills on the marine environment should have been assessed as part of the EIA. See for example in regard to the construction phase:

“The potential for pollution from shipping (including Spent oil and lubricants, Paint, solvents and waste detergents, Waste from ship maintenance activities, Sewage, Galley waste, Sweepings from hatches and engine rooms, Slops from holds and tanks,

¹³ Lwandle Marine Environmental Services: DRAFT MARINE ECOLOGY SPECIALIST STUDY G2P DEVELOPMENT, PORT OF NGQURA REPORT REF: LT 889 EIA NGQURA V 3 February 2021, paragraph 3.2 .

Ballast water, General domestic waste, Medicinal/Medical waste, Spent Batteries, discharge of heated water etc.) as a result of the proposed gas to power process is considered to be high and specific controls will need to be incorporated into the environmental authorisation, if approved.”¹⁴

and

“All solid waste must be removed to an appropriate disposal facility; In the event of a large-scale marine pollution event, every effort must be made to prevent it reaching and negatively impacting the Coega Estuary, even though the system is ephemeral and often closed.”¹⁵ (emphasis added)

and

“Impact 4: Chemical pollution arising from construction related spills of hazardous substances

During the construction period, there is the potential for accidental spills of hydrocarbons, oils from construction vehicles and equipment, and other harmful substances and chemicals used (e.g. concrete). Incorrect handling and improper spill management, will result negative impacts on marine and estuarine sediment and water quality. Considering the sensitive nature of these environments, accidental spills, regardless of volume or concentration, could lead to significant ecological damage.”¹⁶

28. Discharging in the operational phase mentioned in the EMPR, and could lead to pollution of the marine environment.

- “Discharging from the Powership must be as per the environmental authorisation, preferably within the deep water and/or where water circulation by tidal flushing would be maximised. EMPR Discharges would need to be compliant with the South African Water Quality Guidelines for Coastal and Marine Waters (DWAF, 1995; DEA, 2018b)
- All effluent and solid (general, hazardous and domestic) waste to be disposed through registered and certified service providers as per the NPA and MARPOL requirements.
- Implementation of awareness, inspections, contingency plans, compliance with port protocols and reporting of environmental incidents.
- training in environmental awareness, including the minimisation of disturbance to sensitive areas, management of waste, identification of protected biodiversity, water conservation and prevention of erosion and water pollution.”¹⁷

¹⁴ Draft EIA report page 150

¹⁵ Id page 155

¹⁶ Id page 151

¹⁷ EMPR page 116

- Risk reduction programmes must be continually investigated to reduce the impact from accidental fires and explosions on surrounding communities.
- The employees and sub-contractors of Karpowership must receive basic training in environmental awareness, including the minimisation of disturbance to sensitive areas, management of waste, identification of protected biodiversity, water conservation and prevention of erosion and water pollution.¹⁸

29. It should be noted that there is reference in the Saldanha Bay Powerships Draft EIA (but not in the Ngqura Draft EIA), that as a consequence of the no-go option:

“The specific positive impacts that inform the above assessment findings of the no-go alternative (include the following) are as follows:

Impacts to dynamic coastal processes or potential for pollution from shipping (including spent oil and lubricants, paint, solvents and waste detergents, waste from ship maintenance activities, sewage, galley waste, sweepings from hatches and engine rooms, slops from holds and tanks, ballast water, general domestic waste, medicinal/medical waste, spent batteries, discharge of heated water etc.”¹⁹

By implication one can assume that the converse situation - where the project goes ahead - will generate marine pollution.

30. Even if provision is made for the removal of certain wastes from the vessels to land for disposal, a full inventory must be provided in the EIA of potential marine wastes whether they occur by way of normal or abnormal operations including accidental releases, and the impact of these potential and releases on the marine environment must be assessed in the environmental impact assessment.
31. The failure to properly assess the impact of the ships on the marine environment is a fatal flaw in the environmental impact assessment.

E. FAILURE TO ASSESS THE IMPACTS OF A MAJOR INDUSTRIAL ACCIDENT

E1: FAILURE TO CONSIDER LAND BASED PIPELINE RUPTURE AND FIRE

32. The draft Scoping Report indicates that a specialist risk assessment will be undertaken in terms of the Major Hazard Installation (MHI) Regulations published in terms of the Occupational Health and Safety Act (OHSA).

¹⁸ Id page 124

¹⁹ Saldanha Bay Powerships Draft EIA Page 180

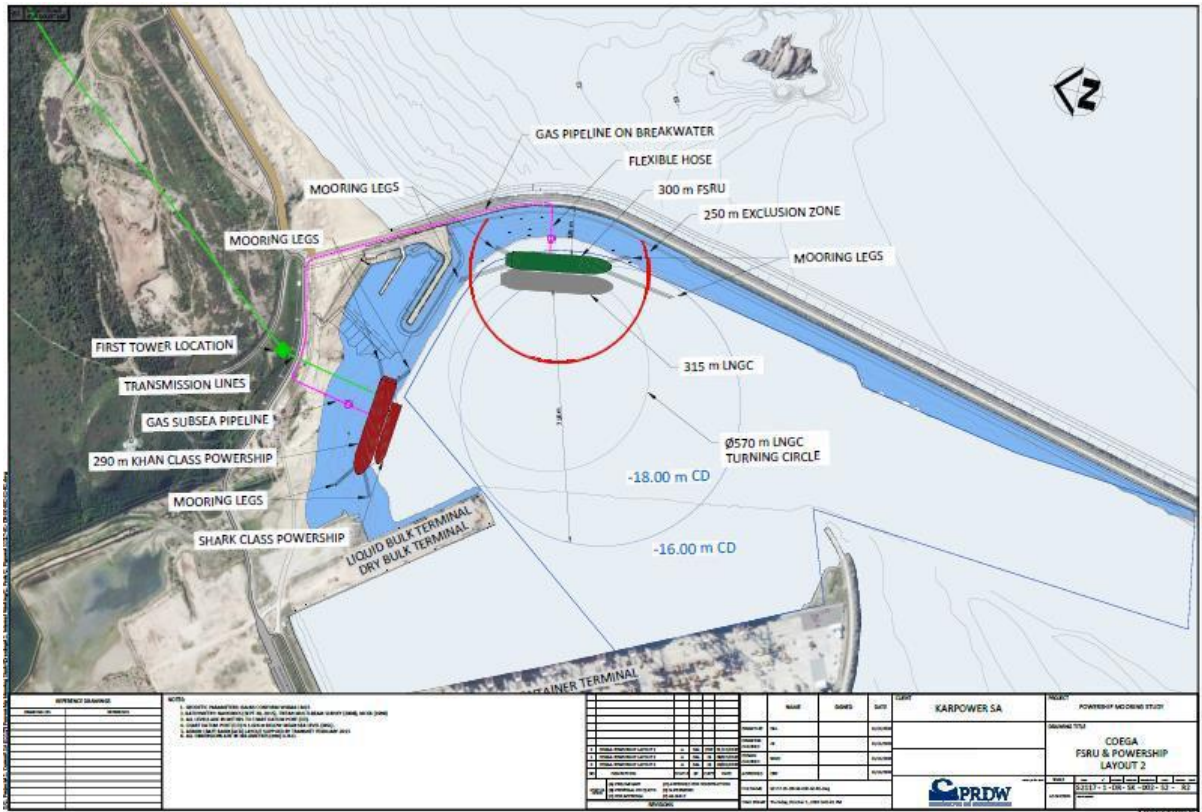
33. The Major Hazard Assessment (MHA) for the Powership at the Port of Ngqura has a flaw very similar to the flaw of the Major Hazard Assessment for the Powership at the Port of Saldanha Bay.
34. Pages 40-41 of the MHA has information about the extent of injuries caused by a jet fire from a pipeline shear:

“For a pipeline shear, the subsequent jet fire the flame length was calculated at 192.08m with a wind speed of 1.5m/s. The effects from a jet fire from a 12-inch hose shear could not extend beyond the transfer area.”

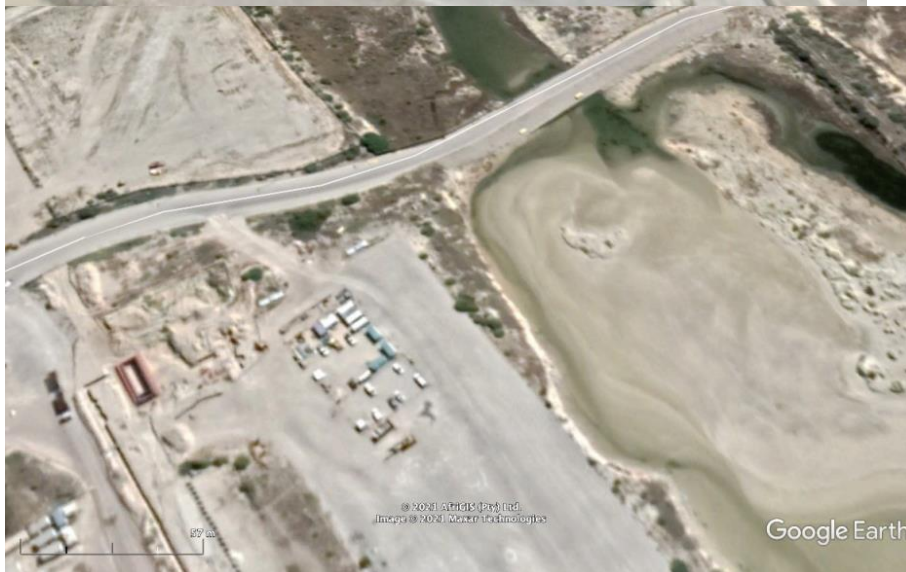
However, a jet fire from a pipeline shear can occur at any location along the route of the pipeline, not at the precise location indicated in the MHA.

35. The route of the pipeline, shown in Figure 2-9 (The Preferred Location and gas line route (Alternative 1)) of the draft EIR, would extend along a breakwater.





36. With respect to a jet fire as the result of a pipeline shear, these jet fires could occur anywhere along the route of the pipeline. Page 41 of the Quantitative Risk Assessment shows a consequence of a jet fire from a pipeline shear at a location that is surrounded almost entirely by the sea. However, this is a location that is least likely to kill or injure a person. If the same jet fire from a pipeline shear were to be considered in all potential locations along the route of the pipeline the consequences would be different depending on the location.
37. As shown below, there are several places of work within 192.08 meters of the pipeline where people would be injured or killed by a jet fire from a pipeline shear:



40. The risk assessment is therefore incomplete and not a basis for decision making.

F. FAILURE TO PROPERLY CONSIDER ALTERNATIVES AND THE NO-GO OPTION

F1: Legislative context – consideration of alternatives and the no go option

41. The National Environmental Management Act ²⁰ sets out the basic requirements for the consideration of alternatives and the no-go option in section 24 (4) (b):

“Procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment – must include, with respect to every application for an environmental authorisation and where applicable— (i) investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of

²⁰ Act 107 of 1998

those potential consequences or impacts, including the option of not implementing the activity;

42. The NEMA environmental impact assessment regulations define what is meant by alternatives in the EIA context: ²¹

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the - (a) property on which or location where the activity is proposed to be undertaken; (b) type of activity to be undertaken; (c) design or layout of the activity; (d) technology to be used in the activity; or (e) operational aspects of the activity; and includes the option of not implementing the activity (otherwise referred to as the “no-go option”).²²

43. 2014 EIA Regulations (as amended), Appendix 3 require

“(h) a full description of the process followed to reach the proposed development footprint within the approved site as contemplated in the accepted scoping report, including: (i) details of the development footprint alternatives considered”

44. The recognition that the no-go option must be considered as would an alternative be assessed is recognised in the EIA which states:

“The No-Go Option is also an alternative that is required to be assessed as part of the EIA.”²³

45. Guidelines published by the Department of Environmental Affairs describe how alternatives must be determined.²⁴ They state:

- a. The ‘no-go’ alternative is also regarded as a type of alternative, but is described separately to emphasize its importance in EIA.
- b. In a situation where negative environmental impacts have high significance, the ‘no-go’ alternative takes on particular importance. In some cases, the ‘no-go’ alternative may be the only realistic alternative and then it has a critical role to play.

²¹ Appendix 3 section 1

²² EIA regulations 2014 published under the NEMA - GNR 982 published in GG 38282 dated 4 December 2014 (the EIA regulations) section 1 definitions

²³ DEIAR page 110

²⁴ DEAT (2004) Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11, Department of Environmental Affairs and Tourism (DEAT), Pretoria ISBN 0-9584729-1-2 , page 7

- c. The baseline, or 'no-go' option, as well as all other relevant alternatives must be described, assessed and evaluated at the same scale and level of detail that enables adequate comparison with the proposed project.

46. The Western Cape Government Environmental Affairs and Development Planning has also published a guideline on Alternatives.²⁵ Although not binding on applications for environmental authorisation in the Eastern Cape they provide guidance as to relevant considerations when considering alternatives.

These guidelines state:

"The "feasibility" and "reasonability" of and the need for alternatives must be determined by considering, inter alia, (a) the general purpose and requirements of the activity, (b) need and desirability, (c) opportunity costs, (d) the need to avoid negative impact altogether, (e) the need to minimise unavoidable negative impacts, (f) the need to maximise benefits, and (g) the need for equitable distributional consequences."²⁶

47. Regarding the no-go option these guidelines state:

"The no go option. The assessment of alternatives must at all times include the "no-go" option as a baseline against which all other alternatives must be measured. The option of not implementing the activity must always be assessed and to the same level of detail as the other feasible and reasonable alternatives.²⁷ (emphasis added)

48. The Best Practicable Environmental Option

The NEMA principles apply to all actions of the state that may significantly affect the environment.²⁸

49. Consideration of the Best Practicable Environmental Option (BPEO)

The best practicable environmental option principle is defined as follows:

"(4) (a) Sustainable development requires the consideration of all relevant factors including the following..... (b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

²⁵ Western Cape Government Environmental Affairs and Development Planning - EIA GUIDELINE AND INFORMATION DOCUMENT SERIES (MARCH 2013)- Guideline on Alternatives,. Available at Publication):<https://www.environment.gov.za/sites/default/files/docs/guidelineontransitionalarrangements.pdf>

²⁶ Id, Page 10 (page 72 of 129 of the publication)

²⁷ Id Page 12 (page 74 of 129)

²⁸ NEMA section 2(1)

'best practicable environmental option' means the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term."²⁹

50. It follows that the no-go option, which is also an alternative to the proposed project, needs to be considered in light of the National guidelines, which are relevant considerations as contemplated in section 6 of the Promotion of Administrative Justice Act. The no-go option is also an option for consideration in determining the best practicable environmental option.
51. The Draft EIA report for Ngqura Bay does not consider alternatives to the proposed activity - in the sense of alternative means of meeting the general purpose and requirements of the activity which do not burn fossil fuels, relying on the decision of the scoping stage and acceptance of the plan of study which did not include this form of alternative.
52. The reason for the applicant not considering alternatives is based primarily on the applicant's business model as stated in correspondence from the EAP consultants in response to submissions made on the draft scoping report, for the Saldanha Bay Karpowerships application.³⁰ It is assumed the same reasoning applies to the Ngqura application. This reason is rejected as being without legal basis and Green Connection reserves the right to challenge the authorisation if granted on the basis that the application has failed to properly consider alternatives to the project.
53. As a result of the failure to consider alternatives (which would not result in fossil fuel combustion), there is therefore only one alternative to the project as a whole and it is the no-go option.

²⁹ Section 1 definitions

³⁰ A response to submissions on the Draft Scoping report for the Saldanha Bay Karpower project states as follows.. "Section 240(1)(b)(iv) NEMA requires technological and financially feasible alternatives to the project to be considered. Karpowership's business model provides for the generation of power using HFO's or natural gas. Thus, in terms of the definition of alternatives "different means of meeting the general purpose and requirements of the activity", HFO as an alternative fuel to generate power from the Powership was addressed in the Scoping report as a technological alternative. The use of natural gas as a cleaner technology was thus proposed as the most feasible activity and BPEO alternative within Karpowerships energy generation activity" see Triplo4 Sustainable Solutions (Pty) - letter dated 17 November 2020 to Adrian Pole Attorneys in response to Green Connection submissions on the Draft Scoping Report

F2: Failure to consider the no-go option and best practicable environmental option

54. As will be set out below, the Draft EIA report fails to assess the no-go option and the best practicable environmental option in a manner compliant with the regulatory scheme for environmental impact assessments under section 24 of NEMA, and this is a fatal flaw in the assessment.
55. The Draft EIA report fails to consider the no-go option and BPEO in accordance with the requirements for environmental impact assessments set out above. The no-go option is the option of not proceeding with the project. However consumer demand for electricity will in all likelihood remain, as will the imperative to replace coal generated electricity with sources that generate less or no GHG emissions.
56. In order to pursue the Best Practicable Environmental Option (BPEO), as well as the consideration of the no-go option, the harm and benefit of currently available alternative electricity generating sources must be considered and the Draft EIA report has failed to do so. No analysis or even mention is made of the harm or benefit of any other feasible technology in the Draft EIA report, apart from unsubstantiated speculation that alternatives would probably emit more GHG if the no go option was pursued. Only heavy fuel oil is mentioned in passing as a possible alternative source of electricity.³¹ It states:

“The result — a transitional risk — is likely to be that the electricity baseload which would have been provided by the Powerships will be procured elsewhere to stabilize the national grid, potentially from a higher-emitting fuel source such as coal or heavy fuel oil (HFO).”

57. The following is described as a benefit of the no-go option, and makes little sense.

“While the no-go alternative will not result in any negative environmental impacts, it will also not result in any positive socio-economic benefits. It will also not assist government in addressing its set target for a sustainable energy supply mix, nor will it assist in supplying the increasing electricity demand within the country. Hence the “no-go” alternative is not the preferred alternative.”³²

³¹ Draft EIA Report Page 217

³² Draft EIA report page 218

58. The report confirms that the “The No-Go Option is also an alternative that is required to be assessed as part of the EIA.”³³ However the report fails to consider the no-go option to the same level of detail as the other feasible and reasonable alternatives.³⁴
59. The no go alternative is dismissed - rather than comprehensively analysed - with the following statement, which is contested:

“NO-GO ALTERNATIVE

Should the Karpowership gas-to-energy project is not implemented, the benefits of the proposed activity will not be realised (with the status quo remaining) and neither will the associated negative impacts/risks. This means that the supply of additional electricity to the national grid will not be supplemented by an IPP. The status quo with regard to the national supplier will remain, i.e. the national grid will continue to be strained as a result of aging and failing systems within the fleet. This will be exacerbated by the time taken for the national supplier to design, assess, receive authorisation, construct and bring online any new power generation facilities. The negative impacts on the physical and social environmental will also not occur. In contrast, any positive impacts or opportunities that will be created by the proposed development, such as job creation or social upliftment, will not be realised.”³⁵

60. The above assertions are not substantiated with facts. Reliance is made on broad generalisations which are overly positive towards the proposed activity. The only figures provided are for economic impacts, but these are incomplete in material respects as set out above in comment on the socio economic impact assessment. General, unsubstantiated statements are also made as to the negative consequences of not proceeding with the activity. For example the report makes unsubstantiated claims as to the negative impact on climate change when analysing the consequences of the no go option:

“Supplementary baseload will have to be sought elsewhere, possibly from sources with higher GHG emissions than LNG.”³⁶

³³ Draft EIA report page 123

³⁴ Id Page 12 (page 74 of 129)

³⁵ Id page 216

³⁶ Table 8-5 Impact of the No-Go Alternative page 216

60. The cost to society of the additional green house gasses emitted by the plants is not assessed. The no-go option was merely presented as a lost opportunity to generate electricity from gas, in line with general government policy and projections of economic benefit.
61. The consequence of these omissions is that the decision maker is not able to apply its mind to relevant considerations about the socio-economic impacts of the proposed project as compared with the effects of filling the power requirements with other technologies, such as renewable energy that are available the Eastern Cape, and which will not have the following negative impacts of Powerships
- a. Tax exemptions
 - b. Costs of greenhouse gas emissions;
 - c. Exemption from local content requirements;
 - d. Possible contamination of marine resources;
 - e. Possible contamination of marine resources;
 - f. Noise;
 - g. Potential for major industrial accidents.

F3: Renewable energy

62. It is noted that recent media reports refer to the availability and/or feasibility of renewable energy projects and plans in the vicinity of Saldanha Bay, Coega and Richards Bay. Hence these alternative options, their consequences and impacts including socio-economic impacts should have been investigated and considered in the consideration of the no-go option and the BPEO, and were not:
- Potential for renewable energy generation in Ngqura is planned with an overall capacity of 183 MW, a 12 MW Photovoltaic (PV) solar farm, with Bioenergy projects in the pipeline.³⁷
 - Research into prospects for renewable energy potential in Kwazulu Natal indicates that KZN province has a RE potential exploitable of about 45 GW divided into 53.63 % of global normal irradiance (GHI), 23.28 % of direct normal irradiance (DNI), 13.52 % of wind energy, 9.51 % of geothermal and 0.06 % of biomass energy that can be converted into electricity, ocean energy and

³⁷ See <https://www.coega.co.za/Content2.aspx?objID=193>

hydropower excluded. Northern KZN has considerable potential for solar power generation.³⁸

- Significant wind energy is already being generated in the Saldanha Bay area at the Umoya Wind farm which is located 125km north of Cape Town on the R45 in the Saldanha Bay Municipality in the Western Cape province, Umoya Energy Wind Farm generates approximately 176 600 MWh of clean renewable energy every year.³⁹

63. Finally, the no-go option is presented in a confused manner that is incomprehensible. For example included in the **benefits** that will occur if the no go alternative is implemented is the following statement – which does not align with the identical statement made in the Saldanha Bay Powerships EIA’s statements elsewhere it is asserted that the failure to authorise the Powerships would not be a benefit to the energy mix (which is disputed)⁴⁰

“The primary direct impact of not implementing the proposed project relates to a missed opportunity to align with South Africa’s prevailing energy policy, the Integrated Resource Plan which calls for diversification of electricity supply sources, including natural gas in the transition to an energy mix dominated by renewables in the long-term. The result — a transitional risk — is likely to be that the electricity baseload which would have been provided by the Powerships will be procured elsewhere to stabilize the national grid, potentially from a higher-emitting fuel source such as coal or heavy fuel oil (HFO).”⁴¹

64. The failure to properly consider the no-go option are fatal to the application for authorisation.

65. Apart from the tax relief and exemption from local content requirements mentioned above, the comparative cost to the taxpayer of electricity generated by Powerships (including cost of providing supporting marine infrastructure) as compared with the costs to the taxpayer of the equivalent electricity generated by renewable energy is not provided in the Draft EIA report;

³⁸ Assessment of renewable energy potential in Kwazulu-Natal province, South Africa N. Marc-Alain Mutombo B.P. Numbi Energy Reports Volume 5, November 2019, Pages 874-881, at page 876
<https://www.sciencedirect.com/science/article/pii/S2352484719300319>

³⁹ <https://umoyaenergy.co.za/wind-farm/>

⁴⁰ Draft EIA report for Saldanha Bay page 180

⁴¹ Draft EIA report for Ngqura Page 217

66. Also the potential cost of the potential adverse economic consequences as result of increased marine pollution or a potential marine pollution incident in Ngqura harbour was not considered.
67. The consequence is that the information necessary to consider the best practicable environmental option is absent and it is hence it is impossible for the decision maker is apply its mind to this factor in making a decision to authorise the plant. This is a fatal flaw.

G. THE ISSUE OF BASE LOAD

60. The Draft EIA report states that a positive impact, rated as high, of the Powership operations is the addition of 540 MW of baseload electricity to the national grid.⁴² The approach of the Draft EIA to base load is however outdated. It reflects the approach of the National Electricity Regulator's (NERSA). In its definitions, NERSA states that

“base load generation means the generating facilities within a utility system, which are operated to the greatest extent possible to maximise system mechanical and thermal efficiency and minimise system operating cost. Typical example is the coal power station”.

61. The view has been expressed by *inter alia* the CEO of UK National Grid, Steve Holliday that base-load is an outdated concept.⁴³ The US Energy Information Administration holds the view that base load is “the minimum amount of **electric power** delivered or required over a given period of time at a steady rate.”⁴⁴

62. NERSA and the Powerships Draft EIA report appear to conflate the need for the electricity system to deliver a minimum demand at all times with a power station needing to produce power at all times. This can be likened to a factory that runs 24 hours a day. It does not mean that each factory worker has to work 24 hours a day, as

⁴² Draft EIA Report Page 198

⁴³ <https://energypost.eu/interview-steve-holliday-ceo-national-grid-idea-large-power-stations-baseload-power-outdated>.

⁴⁴ US Energy Information Administration. Online glossary, available at: <https://www.eia.gov/tools/glossary/index.php?id=B>

long as there is sufficient work going on to produce the expected output.⁴⁵ With regard to base load, the Rocky Mountain Institute's Amory Lovins explains:

"That widely heard claim is fallacious. The manifest need for some amount of steady, reliable power is met by generating plants collectively, not individually. That is, reliability is a statistical attribute of all the plants on the grid combined."⁴⁶

63. Accordingly the base load that is potentially available from the Powerships will also be available from generating plants collectively including new renewable energy plants.

H. HEAVY FURNACE OIL

64. The Draft EIA refers to the fact that the ships run on HFO. The air pollution impacts of use of this fuel need to be assessed in the EIA. Furthermore the public needs to be assured that the ships will not be burning HFO to generate electricity given its high emissions of greenhouse gasses and air pollutants.

CONCLUSION

61. The Draft EIA report contains a significant number of fatal flaws as set out above.
62. In light of the significant deficiencies in the Draft EIA report a proper assessment of the best practicable environmental option is not feasible and no decision to authorise the project will be lawful.
63. Accordingly the application for environmental authorisation should not be granted

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30th March 2021

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⁴⁵ Steve Thomas. January 2021. "Submission to NERSA on South Africa's proposed nuclear power programme."

⁴⁶ Amory B Lovins. 13 October 2009. Rocky Mountain Institute. "Four Nuclear Myths." Available online at:

https://rmi.org/wp-content/uploads/2017/05/RMI_Document_Repository_Public-Reperts_2009-09_FourNuclearMyths.pdf