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14 December 2022

Re. THE GREEN CONNECTION COMMENTS ON TEEPSA DWOB - DRAFT SCOPING REPORT

Authority Reference: 12/3/224

Contents

1.

A. INTRODUCTION

These comments are submitted by the Green Connection.[1]

2.

The comments are in respect of an application by TotalEnergies EP South Africa B.B.(TEEPSA) for environmental authorisation to undertake exploration well drilling in License Block Deep Western Orange Basin (DWOB) off the West Coast of South Africa. A draft Scoping Report (DSR) prepared as part of the Environmental and Social Impact Assessment (ESIA) process being undertaken has been made available for public comment. TEEPSA propose to undertake various exploration drilling activities within the license block, including:

- Sonar bathymetry surveys throughout the year;
- Drop core sampling; and
- Exploration well drilling.

3.

TEEPSA proposes to drill up to ten exploration wells (depending on the success of the initial well) in water depths ranging between 1000m and 3000m. The License Block is located approximately 150 km from the shoreline at its closest point, and the Area of Interest (AOI) for exploration drilling is at its closest point approximately 188 km from the shoreline (Hondeklip Bay).

4.

The duration for the drilling of each well is indicated as approximately 9 months (from mobilisation to finalisation of demobilisation), or 90 months if ten wells are drilled (i.e. could

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

take up to approximately 7.5 years to complete if the wells are drilled consecutively and if all phases are undertaken for each well). The drilling phase (exploration and appraisal) alone is estimated to take up to 7 months per well, or 70 months if ten wells are drilled (i.e. the drilling phase could take approximately 6 years to undertake). The seabed coring (20 cores) has an estimated duration of approximately 4 weeks, while the sonar surveys are estimated as taking approximately 4 weeks over an area of approximately 15 000 km^2.

5.

The DSR indicates that the earliest anticipated date for commencement of drilling (if environmental authorisation is granted) is between the first quarter of 2024 (Q1 2024) and third quarter of 2024 (Q3 2024). The DSR states that TEEPSA's strategy for future drilling is that drilling can be undertaken throughout the year (i.e. not limited to a specific seasonal window period).[2]

6.

These comments are submitted with a view to having the Green Connection's concerns and comments taken into account in finalising the DSR, including its concerns and comments regarding the terms of reference for the specialist studies and modelling to be undertaking in the subsequent impact assessment phase of the ESIA. It is at this stage in the ESIA process that interested and affected parties (I&APs) have an opportunity to influence these terms of reference to ensure that sufficient and relevant information is placed before the competent authority in the final EIA report.

7.

B. TECHNICAL MODELLING STUDIES & SPECIALIST REPORTS

The DSR indicates that three Technical Modelling Studies will be undertaken, namely Drilling Discharges Modelling, Oil Spill Modelling (OSM) and Underwater Noise Modelling. In addition, a Marine Ecology Impact Assessment, Fisheries Impact Assessment, Socio-Economic Impact Assessment and Climate Change, Cultural Heritage Impact Assessment and Climate Change

[2] DSR, p6-7.

and Air Emissions Impact Assessment will be undertaken.

8.

(i) OSM Study does not make provision for modelling worst-case scenario relating to duration of an uncontrolled oil spill

It is noted that the terms of reference for the OSM study indicate that the trajectory and fate of a 20-day crude oil blow-out will be modelled for a 90 day period.

9.

The DSR indicates that capping stacks are available in Saldanha (10K capping stack) and others in the UK (15K capping stack) and Singapore, and that the mobilisation of these and other incident response equipment and services will be contained in TEEPSA's Oil Spill Contingency Plan (OSCP) and Blow-out Contingency Plan (BOCP).[3]

10.

The DSR indicates further that TEEPSA motivate that 20 days is a reasonable and realistic assumption for the installation of a capping stack in the unlikely event of a blow-out, and states that '*the duration of the Deepwater Horizon event is not considered relevant as a benchmark of a reasonable response period*'[4] as a result of advances in the current state of knowledge, available technology and approach to well blow-out responses since, and because of, the Deepwater Horizon spill. These statements are not referenced or validated (but will be subject to a 'peer review').

11.

It is relevant to note that the *Deepwater Horizon* oil spill duration was 87 days (before it was finally capped).[5] Elsewhere in the world, much longer 'worst case scenario' durations have been selected for the purposes of OSM. For example:

[3] DSR, p Xi. See also p6-39.
[4] Ibid.
[5] https://www.epa.gov/enforcement/deepwater-horizon-bp-gulf-mexico-oil-spill

- OSM by RPS carried out in relation to an impact assessment conducted by ERM for the *Tamirand Resources – Tui Field* in New Zealand covered a 45-day and 110-day well blowout scenario.[6]
- A European Commission (EC) for a Regulation on Offshore Safety[7] technical peer review meeting report highlights that:

> JRC and other Commission representatives questioned if using the lower duration interval (15-50 days) is appropriate. One study indicates that once a blowout remains out of control for more than 14 days, chances are higher that it can only be controlled within 50-80 days (to allow time to drill a relief well)… [8]

and

> The Commission remarked that in the Maitland report of December 2011 (containing an independent review of the UK regulatory regime for offshore oil and gas), a recommendation has been made to plan for a worst-case scenario of 90 days for a blowout.[9]

- In a 2015 peer-reviewed report commissioned by the Wilderness Society South Australia Inc. (WSSA) by Lebreton titled *Stochastic analysis of deep sea oil in the Great Australian Bight* (hereinafter referred to as the 'Lebreton report'),[10] it is pointed out

[6] Technical Review of Oil Spill Modelling - Tamarind Taranaki Ltd. Application EEZ100016, conducted by Coffey on behalf of the New Zealand Environmental Protection Authority (26 June 2018), at pages 3 – 4. Available online at https://www.epa.govt.nz/assets/FileAPI/proposal/EEZ100016/External-advice-and-reports-EPA-reports/Coffey-technical-review-oil-spill-modelling-v3-26-06-2018-EEZ100016.pdf

[7] Which was subject to technical peer reviews by the EC in 2012, chaired by an independent representative of UK Health and Safety Laboratory, and was accompanied by an Impact Assessment regarding policy alternatives, their effects on risk reduction of a major offshore incident, and the costs associated with the implementation of the alternatives. See PEER REVIEW MEETINGS ON THE ASSESSMENT OF RISKS IN THE OFFSHORE OIL AND GAS INDUSTRY 28 MARCH 2012 & 2 MAY 2012 SUMMARY REPORT, available online at: https://ec.europa.eu/energy/sites/ener/files/20120703_summary_report_en.pdf

[8] PEER REVIEW MEETINGS ON THE ASSESSMENT OF RISKS IN THE OFFSHORE OIL AND GAS INDUSTRY 28 MARCH 2012 & 2 MAY 2012 SUMMARY REPORT at p8, available online at: https://ec.europa.eu/energy/sites/ener/files/20120703_summary_report_en.pdf, citing *Report for Statoil ASA: Miljørisikoanalyse for letebrønn 30/6-28 Crux I Nordsjøen – App. 1 Technical note to blowout scenario analysis (DNV reference: 2011-0830 / 13GN2EA-2, Rev. 00, 2011-07-12).*

[9] Ibid, p9.

[10] Lebreton (2015) *Stochastic analysis of deep sea oil in the Great Australian Bight*, p2. The report relates to a [then] proposed exploration drilling programme by British Petroleum (BP), joined by Norway's Statoil, in the Great Australian Bight (GAB). WSSA had expressed serious concerns regarding the likely impacts on the environmental values of marine ecosystems in the GAB, including [then] recently proclaimed Marine Parks, as well as over the oil spill response capabilities in a region where the oil industry was not established and did not have significant support resources available locally like in the Gulf of Mexico. The Lebreton report presents an assessment of socio-economic and ecological impacts of deep water oil spill scenarios based on best available information and industry standard numerical modelling methods.

with regard to oil spill duration that estimating the release duration for a deep-water oil spill associated with a loss of well control event requires calculating the minimum time for the relief equipment to arrive on site and perform the blowout kill operations. BP's oil spill trajectory modelling study indicated two release duration scenarios: 35 days corresponding to the time required to place a capping system on the damaged well; and 158 days being the estimated time to drill a relief well. However, only the 35-day duration was used in the BP numerical modelling results as BP purported that this was the most credible worst case scenario. The choice of this duration was questioned by Australian Government officials. Lebreton indicates that the 35 day duration scenario was based on detailed logistics for the mobilisation and installation of a capping stack (see capping schedules shown in Tables 5 and 6 of the Lebreton Report).[11] Lebreton indicates that while best practice should be to take a conservative approach and use a release duration equivalent to the time required to drill a relief well, the 35 day and 87 day scenarios were selected to better compare with BP's modelling assessment.[12]

12.

The duration of a blowout is clearly a key input to an OSM study. An assumed low duration will necessarily lower the prediction of the amount of oil that may be spilled into the ocean, and will also lower the significance of potential environmental and socio-economic impacts arising from any catastrophic spill (for example by underestimating the significance of nearshore and shoreline oiling).

13.

The Green Connection submits that assuming a crude oil blow-out with a 20-day duration is not a worst-case scenario for oil spill dispersion modelling (it is more likely a best-case scenario having regard to the closest capping stack located at Saldanha). On the face of it, a 20-day duration would be unrealistic if the capping stack located at Saldanha is unavailable (and a capping stack has to be sourced from the UK or Singapore), if the wellhead pressure

[11] Lebreton, p20.
[12] Lebreton, p21.

exceeds 10 000 psi (and a capping stack has to be sourced from the UK or Singapore), or if capping efforts are unsuccessful and it becomes necessary to drill a relief well.

14.

In light of the above, and having regard to strong currents combined with frequent extreme weather and wave conditions in the area of interest that could frustrate any rapid response to a deep-sea or ultra-deep sea blow-out, it is submitted that as best-practice the OSM study should also include a worst-case scenario duration in addition to the best-case 20 day scenario proposed. This worst-case scenario should be selected either having regard to the time it took to successfully cap the Deepwater Horizon spill (87 days), the time it would take for capping stacks located in the UK and Singapore to arrive on site and for the blowout kill operations to be performed, or the time required to drill a relief well (whichever is longest). The results of modelling a worst-case spill is necessary in order for I&APs to be informed about the fate and significance of a worst-case catastrophic oil spill scenario, and for the relevant authority to be able to make an informed decision on authorisation.

15.

(ii) Relevant Parameters and Assumptions for OSM not provided

It is noted that the DSR indicates that details on the relevant parameters and assumptions used in the OSM will be provided in the Assessment Phase, and that these parameters and assumptions will be reviewed in the 'independent' peer review study.[13]

16.

The Green Connection objects to the relevant parameters and assumptions being excluded from the DSR. Doing so prevents I&APs (and their experts) from commenting meaningfully on the appropriateness of these parameters and assumptions at the Scoping Phase, and denies I&APs the opportunity to influence the parameters selected and assumptions made before the OSM is undertaken.

[13] DSR, p9-3.

17.

The selection of relevant parameters and assumptions made are particularly relevant in relation to the planned Oil Spill Modelling of a crude oil blowout, and the Terms of Reference provided in the DSR for the OSM study should provide sufficient information to enable Green Connection (and other I&APs) to make meaningful comments.

18.

In particular, the Terms of Reference do not indicate (among other things):

- What the assumed flow-rate will be for the modelling, including a worst-case oil spill scenario assumed flow-rate;
- What the assumed total volume of oil spilled into the ocean will be over the modelled durations, including worst-case scenario volumes (for example, the *Deepwater Horizon* oil spill released approximately 507,245m^3 of oil into the ocean over 87 days);
- What critical threshold assumptions will be used for significant slick thickness and significant shoreline mass flux, including critical threshold assumptions that will be used to determine impacts on socio-economic resources;
- With regard to sub-surface spill modelling, what parameter will be used to show contamination, how the magnitude and direction of currents used in any such sub-surface modelling will be determined (including variabilities in current instantaneous velocities, localisation, whether any jet and plume will been simulated), what information will be provided e.g. the diameter of the pipe from which the oil escapes to enable calculation of oil exit velocity, whether the distribution of oil on the sea floor from multiple pathways will be predicted etc.;
- What the assumed viscosity of anticipated spilled crude oil will be; and
- How underlying data informing the various assumptions made in the OSM study will be validated, especially where such data is provided by the applicant.

19.

Assumptions made for the purposes of the OSM study have the potential to have a significant

bearing on the results of the OSM study. The Green Connection submits that in order for the OSM report to be credible and the EIA process procedurally fair, these assumptions should be clearly stated in the Terms of Reference provided in the DSR, and I&APs should be afforded an opportunity to provide comment on these assumptions.

20.

Given that the OSM will in turn inform the various specialist studies to be undertaken, a flawed OSM study will in turn undermine the credibility of these subsequent specialist studies as well as the assessment of the significance of potential impacts.

21.

A catastrophic oil spill can result in significant environmental and socio-economic impacts. It is for this reason that an EIA for offshore oil and gas exploration is a listed activity under NEMA, and a robust, accurate and objective OSM study is required in order to determine (among other things) the potential ecological and socio-economic impacts of a worst-case scenario oil spill resulting from a wellhead blowout.

22.

(iii) 'Independent' Review of Drilling Discharges and OSM

It is noted that the DSR indicates that an 'independent' peer review of drilling discharges and oil spill modelling studies will be undertaken. The brief terms of reference provided for this review indicates that this will include a review and comment on *'modelling methodology document'*, which in turn will include (among other things) a '[*d]escription of model post-processing <u>including the thresholds to be applied (i.e. oil thickness, suspended sediment concentration</u>, etc.) and example outputs'*.[14]

23.

While no issue is taken regarding the independence of Mr. Luger (PRDW) from the applicant

[14] DSR, p9-5.

(within the meaning of 'independent' as described in the NEMA EIA Regulations), it is submitted that any review conducted by Stephen Luger should not be characterised as being independent of the EAP and the planned OSM study. As described in Table 3.1,[15] Mr. Luger clearly forms part of the ESIA project team and specialists.

24.

The Green Connection submits that a credible peer review mechanism should be established as part of the EIA process for all Technical Modelling Studies and Specialist Reports. The Green Connection submits further that, in order to make the EIA process credible, I&APs should be afforded a reasonable opportunity to comment on the selection of proposed peer reviewers.

25.

(iv) Socio-Economic Impact Assessment

While the DSR includes terms of reference for a Socio-Economic Impact Assessment, the terms of reference limit this assessment to the social impacts and benefits associated with the proposed exploration drilling activities, and to seek to identify the social impacts of a major oil spill. The DSR suggests that the:

> …assessment of the economic impacts as a result of **unplanned events** (such as a well blow-out) is challenging to accurately perform due to the many variables, assumptions and uncertainties that would be involved. The outputs of such an assessment are likely to be so broad that it would be of little direct value in informing the impact assessment process or the development of mitigation measures and ultimately decision-making'.[16]

26.

Despite acknowledging that the greatest potential risk of oil and gas exploration activities, in the marine environment, is the impact of an unplanned event such as a well blow-out with negative environmental, social and economic impacts, the DSR instead simply indicates that a key response to a major oil spill is a well-specific OSCP and OSM. It is also suggested in the DSR that the management of compensation in the event of a major oil spill falls outside of the

[15] DSR, table 3.1 p3-1.
[16] DSR, p9-6.

scope of the ESIA process and will not be addressed directly, and that a process of determining the economic effects and related compensation would be initiated.

27.

Notwithstanding that it may be difficult to perform, the Green Connection submits that this is a crucial aspect of the EIA which cannot be ignored, and that an assessment of the economic impacts of a major spill and the adequacy of provisions made by TEEPSA to compensate anyone impacted by such a spill, should be conducted in the assessment phase of the EIA. Not only would such an assessment be directly relevant to a consideration of the Need and Desirability of the planned exploration drilling activities, but the potential economic impact of a major oil spill (including but not limited to the potential economic impact on small-scale fishers and communities that are dependent on the oceans for their livelihoods) is a highly relevant factor that the decision-maker will have to take into account when making the decision on authorisation. An *ex post facto* determination of the economic impacts of an oil spill defeats the objective of an EIA process, which is to identify and assess the potentially significant impacts of a proposed project.

28.

(v) Underwater Noise Modelling

It is noted that the DSR makes provision for an underwater noise modelling study to be undertaken, which is largely a desktop exercise.

29.

The Green Connection submits that the underwater noise modelling should include *in situ* testing to 'ground truth' the modelling and accurately determine the potential noise impacts associated with various aspects of the proposed exploration drilling programme (sound in the ocean is affected by pressure, salinity, temperature and temperature gradients, and can travel many kilometres from the source). The Green Connection submits further that the impacts of noise on all species should be assessed (different species have different sensitivities to noise), including (but not limited to) potential impacts on the migration of snoek (a species that is

important to the livelihoods of small-scale fishers) and juvenile turtles (which are significant from a biodiversity perspective given their endangered status) that are in turn dependent on other species.

30.

C. BLOWOUT CONTINGENCY PLAN (BOCP) AND OIL SPILL CONTINGENCY PLAN (OSCP)

As noted above, the DSR acknowledges that a well blow-out is a worst-case scenario that provides the greatest environmental risk during drilling operations. The DSR states further that TEEPSA will have a BOCP in place that sets out its detailed response plan and intervention strategy.

31.

The DSR also indicates in relation to an uncontrolled wellhead blow-out that *'[a] key response to such unplanned events, is a well-specific Oil Spill Contingency Plan (OSCP) that is driven by well-specific oil spill modelling, intensive pre-planning and appropriate preparation*'.[17]

32.

The DSR states further that *'[t]he ESMP will specify commitments on the approach to and key components of an OSCP. Framework documents for OSCP and Blow-Out Contingency Plan (BOCP), which give an indication of the typical content, will be included in the ESMP'*.[18]

33.

It is submitted that the final Scoping Report should clearly indicate that an OSCP and BOSCP will be included in the draft EIA report document set to be made available for public comment. Among other things, these plans should deal with specific equipment that will be available (including any offshore drilling equipment should a relief well need to be drilled), as well as the logistics informing actual response time etc. (such as – but not limited to - transport or shipping requirements for both the Saldanha Bay, UK and Singapore capping stack

[17] DSR, p9-6.
[18] DSR, p9-7.

mobilisation scenarios, implications of attempting to install a capping stack at a deep sea location in potentially adverse and challenging weather conditions, implications of having to drill a relief well should capping fail, and associated time requirements for all scenarios).

34.

It is submitted that a failure to make these plans available for comment by I&APs during the EIA process will be procedurally unfair, and will result in any future decision on authorisation being unlawful and vulnerable to being set aside on appeal and/or judicial review.

35.

D. NEED AND DESIRABILITY

The NEMA EIA Regulations stipulate that a scoping report must include a motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location.[19]

36.

With regard to need and desirability, a distinction is drawn between the 'general purpose and requirements' of the proposed activity and 'need and desirability'. The 2017 *Guideline on Need and Desirability* states as follows:

> **In order to properly interpret the EIA Regulations' requirement to consider "need and desirability", it is necessary to turn to the principles contained in NEMA, which serve as a guide for the interpretation, administration and implementation of NEMA and the EIA Regulations**. With regard to the issue of "need", it is important to note that this "need" is not the same as the "general purpose and requirements" of the activity. While the "general purpose and requirements" of the activity might to some extent relate to the specific requirements, intentions and reasons that the applicant has for proposing the specific activity, **the "need" relates to the interests and needs of the broader public**.
> …
> The consideration of "need and desirability" in EIA decision-making therefore requires the **consideration of the strategic context of the development proposal along with the broader societal needs and the public interest**. The government

[19] NEMA EIA Regulations, Appendix 2, section 1(b).

> decision-makers, together with the environmental assessment practitioners and planners, are therefore accountable to the public and must serve their social, economic and ecological needs equitably. Ultimately development must not exceed ecological limits in order to secure ecological integrity, while the proposed actions of individuals must be measured against the short-term and long-term public interest in order to promote justifiable social and economic development – i.e. ensuring the simultaneous achievement of the triple bottom-line. Considering the merits of a specific application in terms of the need and desirability considerations, it must be decided which alternatives represent the "most practicable environmental option", which in terms of the definition in NEMA and the purpose of the EIA Regulations are that option that provides the most benefit and 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**.[20] (emphasis added)

37.

The Guideline requires need and desirability assessments to address the impact of planned activities on global and international responsibilities relating to the environment, including climate change.[21]

38.

Given that exploration operations are intended to define traps to be tested by drilling of a well with the intention of locating a discovery (of hydrocarbons below the seabed),[22] and which in turn would likely lead to production operations should commercially exploitable hydrocarbon resources be discovered, the Green Connection is of the view that addressing the need and desirability within the context of ecologically sustainable development should give consideration to the potential impacts of the proposed exploration for new offshore oil and gas resources **throughout its life cycle**[23] (rather than ring-fencing the consideration of need and desirability to the exploration well drilling phase only).

[20] DEA (2017) *Guideline on Need and Desirability*, Department of Environmental Affairs, at p 10.
[21] Ibid, paragraph 1.1.8, page 11.
[22] The Mineral and Petroleum Resources Development Act, 2002 defines "exploration operation" as meaning 'the re-processing of existing seismic data, acquisition and processing of new seismic data or any other related activity to define a trap to be tested by drilling, logging and testing, including extended well testing, of a well with the intention of locating a discovery'.
[23] Section 2(4)(e) of NEMA stipulates that responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

39.

The Green Connections submits that a proper assessment of Need and Desirability should have regard to:

- The lifecycle implications of developing new oil and gas fields in DWOB having regard to the climate crisis (including but not limited to the climate warming risk of increased methane emissions associated with natural gas, the risk of stranded assets, the risk of border tax adjustment mechanisms being imposed on South Africa, and the social costs of carbon);
- The lifecycle implications of developing new oil and gas fields in DWOB on South Africa's ability to meet its international climate change commitments (including whether the implications this may have on South Africa's ability to achieve its updated NDC mitigation targets);[24] and
- Ecological and socio-economic impacts associated with a major oil spill (such as an uncontrolled wellhead blowout), including (but not limited to) potential impacts on small-scale fishers and coastal communities that depend on the ocean for their livelihoods, as well as potential impacts on living organisms in South Africa's coastal waters.[25]

[24] Available online at: https://www.dffe.gov.za/sites/default/files/reports/draftnationalydeterminedcontributions_2021updated.pdf#:~:text=South%20Africa%E2%80%99s%20intended%20nationally%20determined%20contribution%20%28INDC%29%28RSA%2C%20n.d.%29,Agreement.%20The%20INDC%20and%20first%20NDC%20are%20identical.

[25] In terms of the National Environmental Management: Integrated Coastal Management Act 24 of 2008 (NEM:ICMA), the '**interests of** the whole community' is defined as meaning the collective interests of the community determined by:
prioritising the collective interests in coastal public property of all persons living in the Republic over the interests of a particular group or sector of society;
adopting a long-term perspective that takes into account the interests of future generations in inheriting coastal public property and a coastal environment characterised by healthy and productive ecosystems and economic activities that are ecologically and socially sustainable; and
taking into account the interests of other living organisms that are dependent on the coastal environment.
(emphasis added)

40.

(i) Climate change

The DSR's 'need and desirability' motivation does not address the need and desirability of ultimately producing and using new oil and gas reserves (including in the context of the climate change crisis and the right to food). And while a *Climate Change and Air Emissions Impact Assessment* specialist report will be undertaken, the terms of reference for this climate change assessment do not extend to assessing the climate change lifecycle implications of developing new oil and gas fields in DWOB having regard to the climate crisis.[26] The DSR also states in its 'ESIA Assumptions and Limitations' section that *'[t]he ESIA considers the assessment of activities proposed as part of the additional exploration activities, but does not aim to identify or assess the impacts or benefits of possible future exploration or production activities or outcomes'*[27]

41.

While the Green Connection is aware that the NEMA EIA listing notices list exploration activities separately to other stages in upstream offshore oil and gas development (such as activities requiring a production right under the MPRDA), it is submitted that in reality these activities are successive steps in a single process (which culminates in the production and combustion of oil and gas and the emission of GHGs that will exacerbate the climate crisis and impact on the livelihoods and access to food of small-scale fishers and fishing-dependent communities). The Green Connection submits that it is artificial to exclude a consideration of the impacts of future offshore oil and gas production, as well as the need for and desirability of producing oil and gas, when assessing the potential impacts of the exploration activities. Under the MPRDA, the close connection between exploration and production is also clear: section 82 of the MPRDA provides that the holder of an exploration right *'has the exclusive right to apply for an be granted a production right in respect of the petroleum and the exploration area in question'.* The granting of environmental authorisation for exploration drilling lays the foundation for the future approval of an environmental authorisation for

[26] DSR, p9-8.
[27] DSR, p3-3.

production (as well as the future granting of a production right under the MPRDA).

42.

Further to the above, the issue of whether the decision-maker properly considered climate change impacts was referred to in the judgment of the full bench of the Makhanda High Court in the Shell Wild Coast seismic survey case.[28] The court stated in its judgement that the intervening parties' contention that the decision-maker gave no proper consideration to climate change impacts of the decision to grant the exploration right is an important factor to be considered in the process of granting an exploration right. The court referred to expert testimony relied upon to support this contention, which showed that '*most of the discovered reserves of oil and gas cannot be burnt if we are to stay on the pathway to keep global average temperature increases below 1.5 degrees Celsius. Authorising new oil and gas exploration, with its goal of finding exploitable oil and/or gas reserves and consequently leading to production, is not consistent with South Africa complying with its international climate change commitments*'.[29]

43.

The court noted that according to the respondents (Shell and others) in the case, climate change considerations are irrelevant when considering an application for an exploration right, and these considerations are premature because they fall to be considered at a much later stage.

44.

The court pointed out that on the authority of the *Save the Vaal* case,[30] the '*processes are discrete stages in a single process that culminates in the production and combustion of oil and gas, and the emission of greenhouse gases that will exacerbate the climate crisis and impact communities' livelihoods and access to food'.*[31] The court stated further that the respondent's

[28] *Sustaining the Wild Coast NPC & Others v Minister of Mineral Resources and Energy & Others*, High Court of South Africa, Eastern Cape Division, Makhanda – Case No. 3491/2021, at paras 120 to 125.
[29] Ibid, at para 121.
[30] *Director: Mineral Development, Gauteng Region and Another v Save the Vaal Environment and Others* (133/98)[1999] ZASCA 9 (12 March 1999).
[31] Ibid, para 123.

thesis did not find support in *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* either, and referred approvingly to the following passage in Murphy J's judgement:

> The absence of express provision in the statute requiring a climate change impact assessment does not entail that there is no legal duty to consider climate change as a relevant consideration and does not answer the interpretative question of whether such a duty exists in administrative law. Allowing for the respondents' argument that no empowering vision in NEMA or the regulations explicitly prescribes a mandatory procedure or condition to conduct a formal climate change assessment, the climate change impacts are undoubtedly a relevant consideration as contemplated by section 24O of NEMA for the reasons already discussed. A formal expert report on climate change impacts will be the best evidentiary means of establishing that this relevant factor in its multifaceted dimensions was indeed considered, while the absence of one will be symptomatic of the fact that it was not.[32]

45.

The court in the Shell Wild Coast seismic survey case went on to state the following:

> It seems clear from the aforegoing, even taking into account the contentions raised by the respondents, that, had the decision-maker had the benefit of considering a comprehensive assessment of the need and desirability of exploring for new oil and gas reserves for climate change and the right to food perspective, the decision-maker may well have concluded that the exploration is neither needed nor desirable.[33] (emphasis added)

46.

In light of the above, the Green Connection submits that without at the very least a broad assessment of the climate change impacts should commercially exploitable oil and gas resources be identified through the exploration drilling (and should these resources ultimately be produced and utilised), the Needs and Desirability analysis will be incomplete and the EIA deficient. It would be pointless to authorise this (and other) exploration drilling should such an assessment conclude that the development of new oil and gas fields is incompatible with South Africa's climate change commitments.

[32] Ibid, para 124.
[33] Ibid, para 125.

47.

(ii) The 'climate crisis'

The need and desirability (from a climate change perspective) of conducting exploration drilling (which according to the DSR will result in the gaining of a better understanding of the extent, nature and economic feasibility of extracting these potential resources, and will potentially lead to South Africa optimising its own indigenous resources to provide its identified oil and gas needs) is particularly important given that climate change has been acknowledged as a 'crisis' with human-induced climate change impacts being experienced in every region. It is also recognised that the climate change 'crisis' requires immediate, rapid and large-scale reductions in greenhouse gas (GHG) emissions to limit global warming to 1.5°C (including accelerated action in this decade to reduce global carbon dioxide emissions by 45 per cent by 2030 relative to the 2010 level and to net-zero around mid-century). In support of these submissions, some of the recent developments relating to the climate crisis are discussed briefly below.

48.

In August 2021, the Intergovernmental Panel on Climate Change (IPCC) (an international body for assessing the science related to climate change) released its 6th Assessment Report (AR6).[34] In its summary for policymakers, the IPCC indicates (among other things) that:

- It is unequivocal that human influence has warmed the atmosphere, ocean and land, and that widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred;[35]
- The scale of recent changes across the climate system as a whole – and the present state of many aspects of the climate system – are unprecedented over many centuries to many thousands of years;[36]
- Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes

[34] Climate Change 2021: The Physical Science Basis, available online at: https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/
[35] Para A.1
[36] Para A.2

such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since AR5;[37]

- Global surface temperature will continue to increase until at least mid-century under all emissions scenarios considered, and that global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO_2 and other GHG emissions occur in the coming decades;[38]
- Many changes in the climate system become larger in direct relation to increasing global warming. They include increases in the frequency and intensity of hot extremes, marine heatwaves, heavy precipitation, and, in some regions, agricultural and ecological droughts; an increase in the proportion of intense tropical cyclones; and reductions in Arctic sea ice, snow cover and permafrost;[39]
- Continued global warming is projected to further intensify the global water cycle, including its variability, global monsoon precipitation and the severity of wet and dry events;[40]
- Many changes due to past and future GHG emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea level;[41]
- From a physical science perspective, limiting human-induced global warming to a specific level requires limiting cumulative CO_2 emissions, reaching at least net zero CO_2 emissions, along with strong reductions in other GHG emissions. Strong, rapid and sustained reductions in CH_4 emissions would also limit the warming effect resulting from declining aerosol pollution and would improve air quality.[42]

49.

On 9 August 2021, the IPCC issued a press release relating to its AR6 report. It states that the report provides new estimates of the chances of crossing the global warming level of 1.5°C in the next decades, and finds that unless there are immediate, rapid and large-scale reductions

[37] Para A.3
[38] Para B.1
[39] Para B.2
[40] Para B.3
[41] Para B.5
[42] Para D.1

in GHG emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.[43]

50.

Also on 9 August 2021, UN Secretary-General António Guterres described the AR6 report as nothing less than "*a code red for humanity. The alarm bells are deafening, and the evidence is irrefutable*".

51.

Guterres is reported as noting that the internationally agreed threshold of 1.5 degrees above pre-industrial levels of global heating was perilously close, and that we are at imminent risk of hitting this threshold in the near term. Guterres is indicated as advising that the only way to prevent exceeding this threshold, is by urgently stepping up our efforts, and pursuing the most ambitious path. Guterres is reported as stating that solutions are clear: "*Inclusive and green economies, prosperity, cleaner air and better health are possible for all, if we respond to this crisis with solidarity and courage*". Ahead of the COP26 climate conference in Glasgow in November 2021, Guterres stated that all nations needed to join the net zero emissions coalition, and reinforce their promises on slowing down and reversing global heating "*with credible, concrete, and enhanced Nationally Determined Contributions (NDCs)*" that lay out detailed steps.

52.

In April 2022, Guterres tweeted that *'[c]limate activists are sometimes depicted as dangerous radicals. But the truly dangerous radicals are the countries that are increasing the production of fossil fuels. Investing in new fossil fuels infrastructure is moral and economic madness'*.[44] Addressing graduate students in May 2022, Guterres expressed the view that Investing in fossil fuels is now "*a dead end - economically and environmentally. No amount of greenwashing or spin can change that. So, we must put them on notice: Accountability is coming for those who liquidate our future.*"[45]

[43] https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/
[44] https://twitter.com/antonioguterres/status/1511294073474367488?lang=en
[45] https://news.un.org/en/story/2022/05/1118932

53.

The 26th Conference of the Parties of the UNFCCC (COP26) was held in Glasgow in the last quarter of 2021. Recognition of the climate 'crisis', as well as the urgent need to increase effort and to accelerate action to address climate change (including by developing nations), are reflected in the outcome of COP26 and recorded in the Glasgow Climate Pact. The Glasgow Climate Pact (among other things):

- Expresses alarm and utmost concern that human activities have caused around 1.1°C of global warming to date and that impacts are already being felt in every region;
- Reaffirms the long-term global goal to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
- Recognizes that the impacts of climate change will be much lower at the temperature increase of 1.5°C compared with 2°C and resolves to pursue efforts to limit the temperature increase to 1.5°C;
- Recognizes that limiting global warming to 1.5°C requires rapid, deep and sustained reductions in global GHG emissions, including reducing global carbon dioxide emissions by 45 per cent by 2030 relative to the 2010 level and to net zero around mid-century as well as deep reductions in other GHGs;
- Also recognizes that this requires accelerated action in this critical decade, on the basis of the best available scientific knowledge and equity, reflecting common but differentiated responsibilities and respective capabilities and in the context of sustainable development and efforts to eradicate poverty;
- Invites Parties to consider further actions to reduce by 2030 non-carbon dioxide GHG emissions, including methane (which has been identified as a driver of climate change and the main polluting emission from natural gas);
- Calls upon Parties to accelerate the development, deployment and dissemination of technologies, and the adoption of policies, to transition towards low-emission energy systems, including by rapidly scaling up the deployment of clean power generation and energy efficiency measures, including accelerating efforts towards the phasedown of unabated coal power and phase-out of inefficient fossil fuel subsidies, while providing

targeted support to the poorest and most vulnerable in line with national circumstances and recognizing the need for support towards a just transition;

- Emphasizes the importance of protecting, conserving and restoring nature and ecosystems, including forests and other terrestrial and marine ecosystems, to achieve the long-term global goal of the Convention by acting as sinks and reservoirs of GHGs and protecting biodiversity, while ensuring social and environmental safeguards.

54.

The climate 'crisis' is also recognised by the International Energy Agency (IEA), of which South Africa is an IEA associated country. During or about July 2021, the IEA published its *Net Zero by 2050 – A Roadmap for the Global Energy Sector* report. In the foreword to this report, the Executive Director of the IEA states (among other things) as follows:

> We are approaching a decisive moment for international efforts to tackle the climate crisis – a great challenge of our times. The number of countries that have pledged to reach net-zero emissions by mid-century or soon after continues to grow, but so do global greenhouse gas emissions. This gap between rhetoric and action needs to close if we are to have a fighting chance of reaching net zero by 2050 and limiting the rise in global temperatures to 1.5 °C.
>
> Doing so requires nothing short of a total transformation of the energy systems that underpin our economies…
>
> Despite the current gap between rhetoric and reality on emissions, our Roadmap shows that there are still pathways to reach net zero by 2050. The one on which we focus is – in our analysis – the most technically feasible, cost-effective and socially acceptable. Even so, that pathway remains narrow and extremely challenging, requiring all stakeholders – governments, businesses, investors and citizens – to take action this year and every year after so that the goal does not slip out of reach.
>
> This report sets out clear milestones – more than 400 in total, spanning all sectors and technologies – for what needs to happen, and when, to transform the global economy from one dominated by fossil fuels into one powered predominantly by renewable energy like solar and wind. Our pathway requires vast amounts of investment, innovation, skilful policy design and implementation, technology deployment, infrastructure building, international co-operation and efforts across many other areas.
>
> Since the IEA's founding in 1974, one of its core missions has been to promote secure and affordable energy supplies to foster economic growth. This has remained a key concern of our Roadmap, drawing on special analysis carried out with the International Monetary Fund and the International Institute for Applied Systems Analysis. It shows that the enormous challenge of transforming our energy systems is also a huge opportunity for

> our economies, with the potential to create millions of new jobs and boost economic growth.
>
> Another guiding principle of the Roadmap is that clean energy transitions must be fair and inclusive, leaving nobody behind. We have to ensure that developing economies receive the financing and technological know-how they need to continue building their energy systems to meet the needs of their expanding populations and economies in a sustainable way. It is a moral imperative to bring electricity to the hundreds of millions of people who currently re deprived of access to it, the majority in of them in Africa…

55.

On fossil fuels used in energy production, the report states that:

> ***There is no need for investment in new fossil fuel supply in our net zero pathway.***
> Beyond projects already committed as of 2021, there are no new oil and gas fields approved for development in our pathway, and no new coal mines or mine extensions are required.

56.

When natural gas is burned for energy, it releases carbon dioxide into the atmosphere. More importantly, the extraction, processing, transport and use of natural gas cause significant amounts of methane to be released into the atmosphere too. *According to the United Nations,* ***methane is a 84-86 times more potent greenhouse gas than carbon dioxide over a 20-year period, and 28-34 times more potent over 100-year period.***[46] More research is also showing that methane often leaks during the production, transport and use of natural gas. Therefore, its contribution to climate change is significantly unaccounted for.[47] Drones, laser absorption spectroscopy, and satellites, among other new methane monitoring technologies, have improved the identification and quantification of emissions across the gas lifecycle, leading researchers to conclude that national governments have almost universally underestimated these emissions.[48]

[46] International Energy Agency, Global Methane Tracker 2022- Overview, https://www.iea.org/reports/global-methane-tracker-2022/overview. See also International Energy Agency, Global Energy Review: CO2 Emissions in 2021,(2022), https://iea.blob.core.windows.net/assets/c3086240-732b-4f6a-89d7db01be018f5e/GlobalEnergyReviewCO2Emissionsin2021.pdf.

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

[48] Jonathan Mingle, Methane Detectives: Can a Wave of New Technology Slash Natural Gas Leaks?, YALE E360, (2019), https://e360.yale.edu/features/methanedetectives-can-a-wave-of-new-technology-slash-natural-gas-leaks.

57.

If 3,000 megawatts of new gas-to-power plants were built to meet South Africa's 2019 Integrated Resource Plan for Electricity, and the plants were fuelled by imported LNG, the annual emissions from this fuel use would be more than 2.5 million tonnes of CO2e (carbon dioxide equivalent) if the plants ran at 75% capacity. This is the equivalent of driving over half a million gasoline-powered vehicles for a year.[49] For gas or any other fossil fuel, a life-cycle analysis is therefore necessary to quantify the total amounts of GHG emissions (predominantly carbon dioxide and methane) that result from every step in the energy production process: from extracting the fossil fuel at the well or mine to burning it at a power plant or other facility. This is therefore important because all these processes are linked and should not be viewed in isolation.

58.

(iii) South Africa's international climate change commitments

South Africa is a Party to the United Nations Framework Convention on Climate Change (UNFCCC), which enjoins State Parties to take precautionary measures to anticipate, prevent or minimize the causes of climate change (Article 3.3).

59.

South Africa, as a Party to the UNFCCC that ratified the Kyoto Protocol and adopted the Paris Agreement, has committed to *'working with others to ensure temperature increases are kept well below 2°C above pre-industrial levels, which could include a further revision of the temperature goal to below 1.5°C in light of emerging science'* by reducing GHG emissions. South Africa has also committed (among other things) to:

- Preparing, communicating and maintaining Nationally Determined Contributions (NDCs) that it intends to achieve reach global peaking of GHG emissions as soon as possible, and to undertake rapid reductions thereafter;[50] and

[49] EPA, EPA equivalency calculator, https://www.epa.gov/energy/greenhouse-gasequivalencies-calculator#results
[50] Paris Agreement, Article 4.1 – 4.3.

- Striving to formulate and communicate long-term GHG emission development strategies.[51]

60.

There have been various Conferences of the Parties and meetings since, with decisions related to Nationally Determined Contributions (NDCs) contained in decisions 4/CMA.1 and 18/CMA.1 and their annexes.

61.

South Africa submitted its first Intended Nationally Determined Contribution under the Paris Agreement on 25 September 2015, which became the country's first NDC on 1 November 2016. Subsequently, South Africa revised its NDC in 2021:[52]

Table 2 - South Africa's updated NDC mitigation targets

Year	Target	Corresponding period of implementation
2025	South Africa's annual GHG emissions will be in a range from 398-510 Mt CO_2-eq.	2021-2025
2030	South Africa's annual GHG emissions will be in a range from 350-420 Mt CO_2-eq.	2026-2030

62.

South Africa's energy sector is estimated at contributing about 84% percent to the country's overall GHG emissions (including Carbon Dioxide and Methane).[53]

[51] Paris Agreement, Article 4.19

[52] Available online at: https://www.dffe.gov.za/sites/default/files/reports/draftnationalydeterminedcontributions_2021updated.pdf#:~:text=South%20Africa%E2%80%99s%20intended%20nationally%20determined%20contribution%20%28INDC%29%28RSA%2C%20n.d.%29,Agreement.%20The%20INDC%20and%20first%20NDC%20are%20identical. This revised NDC is indicated as an enhancement and update of South Africa's NDC under the Paris Agreement, 'meeting its obligation under Article 4.9 to communicate NDC's every 5 years, and responding to requests in paragraphs 23 to 25 of decision 1/CP.21'. South Africa's second (next) NDC is intended to be communicated in 2025.

[53] https://www.climatelinks.org/resources/greenhouse-gas-emissions-factsheet-south-africa

63.

In February 2020, South Africa submitted to the UNFCCC its first long-term low GHG emission development strategy titled *South Africa's Low Emission Development Strategy 2050.* It is indicated in the executive summary of this strategy that South Africa, as one of the top 20 global GHG emitters and with a high dependency on fossil fuels, will need to make substantial emission cuts to contribute its fair share to global GHG emission reductions.[54]

64.

Without at the very least a broad assessment of the climate change impacts should commercially exploitable oil and gas resources be identified through TEEPSA's proposed exploration drilling (and should these resources ultimately be produced and utilised), the EIA will not be able to provide any indication (or estimation) of how future GHG emissions (resulting from future exploitation of oil and gas that may be discovered through the exploration drilling project) would impact on South Africa's ability to achieve its updated GHG emissions targets (as set out in South Africa's revised NDC). This is particularly relevant given that the emissions targets for the 2026-2030 period are lower than the targets for the 2021-2025 period, while offshore oil and gas developments could take at least a decade to reach the production stage. This could result in offshore oil and gas investments (as well as associated gas infrastructure developments) in the future becoming unneeded 'stranded assets' and a burden on future generations (who will also ultimately bear the '**social costs**' of carbon dioxide and methane emissions). There is also a risk that in the future tariffs will be levied on various goods exported by fossil-fuel dependent countries – the European Union is reported to be gradually phasing in its Border Adjustment Mechanism as part of the EU's Green Deal.[55]

65.

(iv) Gas as a transition fuel

Chapter 5 of the DSR also seeks to make the case for the use of liquified natural gas (LNG) as

[54] South Africa's Low Emission Development Strategy 2050, pviii.
[55] See for example *Just Energy Transitions and Natural Gas in Africa: Balancing Climate Action and Structural Transformation,* The African Climate Foundation, August 2022, at p14. Available online at: https://africanclimatefoundation.org/wp-content/uploads/2022/10/ACF-GAS-REPORT-V7.indd-final-1.pdf

a transition fuel. In addition to its potential use in peaking plants (in place of diesel currently used), reference is made to the IRP2019, highlighting that while the capacity allocations see a significant increase in renewables and a decrease in hydrocarbons (coal, oil and gas), '*the IRP2019 acknowledges that gas-to-power technologies are required to provide the flexibility required to complement renewable energy in the "just transition" to a net-zero and climate resilient society*'.[56] The DSR acknowledges that South Africa has developed a promising renewable power programme, 'which has been very successful', but points to grid constraints in high yield wind and solar areas restraining further development in the Northern and Western Cape, and seeks to make the argument that '[*i]n any event, renewables capacity inherently expose the system to weather risk (lack of wind and or sun), further current battery technology is unproven at very large-scale for protracted periods. <u>There is, therefore, a potential role for natural gas fired power generation at least as a transition fuel</u>*'.[57]

66.

Reference is also made to DMRE policy relating to accelerating exploration of local resources, while in the short-term pursuing gas import options.

67.

While the DSR sets out various government policies in support of the use of gas as a transitional fuel (and for further offshore oil and gas exploration), importantly the report concedes that '[*t]he use of fossil fuels is, however, not aligned with other national and international agreements, laws, policies and plans, which identify the need to reduce the reliance on fossil fuels and for the global community, including South Africa, to reduce its GHG emissions and meet international law obligations and commitments*.'[58]

68.

Chapter 5 of the DSR also includes a section referring to the "*Just Transition and Climate Pathways Study for South Africa* (NBI, 2021)" in support of the contention that that a lack of

[56] DSR, p5-5.
[57] Ibid.
[58] DSR, p5-25.

gas supply '*poses a risk to the decarbonisation ambitions of key sectors of the South African economy, which will rely on gas as a transition fuel or low carbon feedstock*'.[59]

69.

However, recent independent studies challenge the view that fossil gas is necessary for electricity generation and as a transition fuel.

70.

The International Institute for Sustainable Development's (IISD) *Gas Pressure: Exploring the case for gas-fired power in South Africa* (March 2022) report points out that while there used to be a rational view that fossil gas would be necessary either during a transition to low-carbon energy or as part of the long-term energy mix for electricity production:

> ….revolutions first in renewable energy costs and then in battery storage costs have upended this view. Analysis of the South African electricity system shows that gas supply is not technically necessary until at least 2035, if ever. In the last few years, either the risks associated with gas have increased, or the understanding of existing risks has increased. Consequently, South Africa may see significant negative outcomes from developing a large gas-to-power system now… the trend toward decarbonization, coupled with cost reductions for renewable energy and storage, creates risks for gas investment. Investment in gas can reasonably be expected to lead to higher costs for consumers, just transition challenges for workers, and losses for investors.*[60]*

The ISSD report highlights some of the risks associated with gas-to-power investment in South Africa. These risks include significant contributions to climate change (as a consequence of CO_2 and methane emissions when gas is burned), increasing international pressure to move away from gas due to climate impacts, financial risks linked with gas-to-power, the risk of reduced security of affordable gas supply, the risk of stranded assets, and the risk of creating an additional just transition burden (future gas workers and communities face a repeat of the transition hardships currently faced by the coal sector).[61]

[59] DSR, p5-18.
[60] IISD report, piv. Available online at: https://www.iisd.org/publications/report/south-africa-no-need-for-gas
[61] IISD report, pages 8 – 12.

71.

Meridian Economics' *'Hot Air about Gas – An Economic Analysis of the Scope and Role for Gas-Fired Power Generation in South Africa'* (June 2022) report points out that while South Africa's large-scale use of gas appears to be central to current energy policy direction in South Africa, '*this rests on a 2012 vision which pre-dates dramatic reductions in renewable energy costs and carbon emissions space'*.[62] The report goes on to state that independent analysis of the power sector across multiple recent studies shows that South Africa's power needs can be met both now and in the future with very little use of gas, and that there is '*no evidence to support the large-scale gas envisaged in the GMP; this is uneconomical even before carbon emissions are considered'*.[63] Meridian point out that *'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'*.[64] Meridian demonstrate that existing modelling provides no economic rationale for "big gas" in the power sector, and that *'the impact of using large volumes of gas to generate power will be borne by electricity consumers and will essentially be a subsidy provided by power consumers to otherwise unviable gas use in other sectors'*.[65]

72.

The Vital Ambition Report[66] by Meridian Economics in collaboration with the Council for Scientific and Industrial Research ("CSIR") Energy Centre ("Vital Ambition Report") states that gas to power is only justified in the South African energy mix in so far as it is required for low-utilisation flexible capacity (peaker plants) for balancing the system during peak power demand. The report confirms that no investments in gas infrastructure for energy production and generation is needed now or in the near future.[67] Furthermore the 2019 IRP will likely

[62] Meridian report, page ii. Available online at: https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf
[63] Ibid.
[64] Ibid, p1.
[65] Ibid, p37.
[66] Meridian Economics, 2020. A Vital Ambition: Determining the Cost of Additional CO2 Emission Mitigation in the South African Electricity System. See at https://meridianeconomics.co.za/wp-content/uploads/2020/07/Ambition.pdf
[67] Gas and peaking resources contribute just 1.1% of total electricity generation in 2025, and 2.4% by 2035 according to the same Meridian report.

need to be updated in the foreseeable future to align with South Africa's 2021 Nationally Determined Contribution under the Paris Agreement and to keep pace with quickly evolving science and significant reductions in price for solar and wind energy. However, even 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[68], only projects the collective contribution of gas and diesel to the 2030 energy mix to be 1.3% combined.[69]

73.

According to a recent report prepared by Robert W. Howarth titled "Methane emissions and climate warming risk from hydraulic fracturing and shale gas development: implications for policy"[70] the climate impacts of gas are greater than those of coal per unit of energy produced when evaluated over a 20-year timeframe, the period most relevant for climate change if humans are to avoid catastrophic run-away warming. Though gas emits less carbon dioxide per unit energy than coal, its upstream GHG emissions are more problematic for the climate, as it leaks and vents potent methane throughout its lifecycle; researchers have been able to better detect emissions across the lifecycle of gas ever more accurately thanks to new methodologies and technologies (particularly "top-down" measurements using satellite and aerial assessments).

74.

The use of fossil fuels must be phased out quickly due to the urgent need to address global warming. A recent study published in *Nature*, the world's leading multidisciplinary science journal, discovered that "by 2050, we find that nearly 60% of oil and fossil methane gas, and 90% of coal, must remain unextracted to stay within a 1.5 °C carbon budget." According to the study, "most regions must reach peak production now or within the next decade, making

[68] 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

[69] 2019 Integrated Resource Plan, page 42.

[70] Robert W Howarth. 2015. Methane emissions and climate warming risk from hydraulic fracturing and shale gas development: implications for policy" Energy and Emissions Control Technologies at pages 47-50. See https://www.research.howarthlab.org/publications/f_EECT-61539-perspectives-on-air-emissions-of-methane-and-climatic-warmin_100815_27470.pdf

many operational and planned fossil fuel projects unviable."[71] It is common practice that proposed exploration activities such as reconnaissance, only commence months and sometimes years after the need and desirability assessment is undertaken, with extraction and production only commencing years later.[72] According to one study, the world's largest oil and gas fields took an average of 5.5 years from discovery to first production and 17 years to reach peak output.[73] Chevron Corporation's (CVX) Gorgon natural gas development project off the coast of Australia took 30 years to complete, and another six years to begin producing liquefied natural gas.[74] Therefore exploration projects whose objectives are to locate gas deposits for energy companies to exploit through the construction and production of fossil fuels, run the risk of creating risks for such infrastructure to become stranded assets which invariably impacts on the development potential of South Africa in achieving its climate goals. With no economic justification for large-scale gas use in power, such a strategy would result in assets that are stranded before their first kWh of power is generated. Given this, the proposed reconnaissance project in no way provides a remedy nor will address in the immediate future South Africa's current energy insecurity issues.

75.

Importantly, exploration drilling for oil and gas will not have any immediate impact on South Africa's energy security, as any oil and gas extracted would not belong to South Africa, but would invariably belong to the companies that extract for profit.[75] Energy companies compete for access to petroleum rights granted by governments by either entering a concession agreement, meaning any discovered oil and gas are the property of the producers, or form part of a production-sharing agreement which favours the interest of the producers and ultimately diminishing the general interests of the broader South African Republic.

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

[72] While new wells in developed reservoirs can be drilled and brought online in a matter of months, production from new fields can take years due to complex permitting requirements and the construction of infrastructure such as pipelines and storage facilities

[73] Henrik Wachtmeister, Mikael Höök, "Investment and production dynamics of conventional oil and unconventional tight oil: Implications for oil markets and climate strategies" Energy and Climate Change, Volume 1, 2020, 100010, ISSN 2666-2787, https://doi.org/10.1016/j.egycc.2020.100010 (https://www.sciencedirect.com/science/article/pii/S2666278720300106

[74] https://australia.chevron.com/-/media/australia/our-businesses/documents/Gorgon-Project-Milestones-Fact-Sheet.pdf

[75] Stewart Glickman and Shang Yang Chuah, Oil, Gas & Consumable Fuels Industry Surveys (New York: CFRA, 2019)

76.

The oil and gas that will be eventually extracted by oil and gas companies is ultimately exploited for profit. It is not used to generate a benefit that results in broad-based security for energy production nor does it necessarily lead to the production of energy for South Africa and its citizens (if sold on the international oil and gas markets). If oil and gas found following a successful exploration drilling programme, and that are ultimately exploited, are not used to produce energy for South Africa, this invariably undermines the goal underpinning the need and desirability of this proposed exploration drilling project—its supposed contribution to energy security for South Africa—and provides no tangible benefit for South Africans.

77.

While the increased use of gas as a 'transitional fuel' is promoted by government and vested interest groups, the Green Connection is concerned that the increased use of gas (especially in electricity generation) will lead to increased emissions of climate warming GHGs, and methane (CH_4) in particular. While natural gas combustion is less carbon-intensive than that of coal, fugitive emissions arising from the production, transport, storage and use of natural gas have a much greater climate impact than CO_2. In particular, over a 20-year period (which is particularly relevant since the next 20 years are a critical window for addressing the climate crisis) methane emissions, which make up approximately 70-90% of natural gas emissions, are projected to be 82.5 times as impactful as those of CO_2.[76] The desirability of using gas as a 'transitional' fuel is also questionable having regard to volatile international gas prices, as well as the potential risk of Carbon Border Taxes being introduced in the future. This risk will impose restrictions on the export of products with a high carbon footprint, putting South Africa's economy at greater risk of developing gas to power rather than clean renewable alternatives. This invariably diminishes the need and desirability for promoting new gas development projects, as the negative climate impacts and financial risks undermine the potential for gas to represent a viable solution for South Africa's ambitions to address development whilst respecting universal and regional climate change obligations.

[76] See the IPCC's 6th Assessment Report (AR6), Working Group 1, Chapter 6 *The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity*, Table 7.15 at p1017. Available online at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf

78.

The fundamental outcome of the need and desirability assessment should not be centred on the determination of whether gas technology will ensure security of supply for electricity. Instead, due to the climate crisis, this assessment should be centred on whether South Africa needs, or should rely on, gas to provide security of supply of electricity and whether alternative technologies could meet the same supply objectives with less harm and risk. Renewable energy and/or storage can replace gas to provide reliable and cost-effective generating capacity while greatly reducing the environmental and health risks associated with gas.[77]

79.

The call for gas as part of the energy mix set forth in the 2019 IRP does not excuse the decision-maker from taking climate change impacts into account, including as part of the need and desirability assessment. The case for need and desirability must address climate impacts and cannot simply rest on the 2019 IRP as evidence of need or desirability as relied upon by the EAP in the BAR. In the judgment of the High Court in *Earthlife Africa,*[78] the court expressed that with respect to a decision maker's reliance on the IRP when rendering a decision on an application for environmental authorisation, the following is important to acknowledge:

(a) "Policy instruments developed by the Department of Energy cannot alter the requirements of environmental legislation for relevant climate change factors to be considered".[79]

(b) Establishing the need and desirability of a proposed project, is a key objective of each stage of scoping and impact assessment and must account for South Africa's 2021 NDC under the Paris Agreement. The EAP must therefore provide a broad and robust analysis of multiple alternative literature on renewable energy resources and make a justifiable and reasonable case for a project's need and desirability having considered

[77] See, e.g., Union of Concerned Scientists, Turning Down the Gas in California (13 July 2018), https://www.ucsusa.org/resources/turningdown-gas-california?_ga=2.79265367.2135392956.1587590973-34786515.1587590973#ucs-report-downloads

[78] Earthlife Johannesburg and Another v. Minister of Energy and Others 2017 2 All SA 519 (GP)

[79] Ibid, at para 97.

the available literature, without relying solely on the 2019 IRP and other policy documents. This invariably assists the decision maker to prioritise the granting of the best decision which will prioritize the integrity of the environment, and the social welfare, health and safety aspects of the socio-economic environment for present and future generations.

80.

(v) Ecological and Economic Risk of a Major Oil Spill

Catastrophic oil spills could occur as a result of an uncontrolled wellhead blowout related to offshore oil and gas exploration and/or production drilling. Oceans play a critical role in regulating the climate and mitigating global warming by absorbing carbon dioxide. Oil spills pose a significant threat to functioning marine ecosystems, to living organisms in South Africa's coastal waters,[80] and to communities that depend upon the oceans for their livelihoods. Small-scale fishers and fishing-dependent communities are particularly vulnerable to the negative impacts of a large uncontrolled oil spill which could (among other things) lead to a depletion in the fish stocks upon which the livelihoods of these small-scale fishers and fishing communities depend.

81.

The Green Connection submits that the ecological and socio-economic impacts associated with a major oil spill (such as an uncontrolled wellhead blowout) should be addressed in the Need and Desirability motivation, including (but not limited to) the need and desirability of exposing small-scale fishers and coastal communities that depend on the ocean for their livelihoods to these risks. As is discussed in more detail in section B (iv) of this report above, the terms of reference for the Socio-Economic impact assessment do not include the

[80] In terms of the National Environmental Management: Integrated Coastal Management Act 24 of 2008 (NEM:ICMA), the '**interests of the whole community**' is defined as meaning the collective interests of the community determined by:

(a) prioritising the collective interests in coastal public property of all persons living in the Republic over the interests of a particular group or sector of society;
(b) adopting a long-term perspective that takes into account the interests of future generations in inheriting coastal public property and a coastal environment characterised by healthy and productive ecosystems and economic activities that are ecologically and socially sustainable; and
(c) taking into account the interests of other living organisms that are dependent on the coastal environment**.**

requirement to thoroughly assess and quantify the negative economic impacts of a major oil spill on small-scale fishers and fishing dependant communities.

82.

E. ALTERNATIVES

(i) Location Alternatives

With regard to the proposed exploratory well drill-site locations, the DSR indicates that as TEEPSA is '*the holder and operator of Block DWOB, drilling will be limited to the licence area. TEEPSA is, however, proposing to limit the well drilling to an area of interest within the Block'*.[81]

83.

Given that DSR acknowledges that the greatest potential risk of oil and gas exploration activities, in the marine environment, is the impact of an unplanned event such as a well blow-out with negative environmental, social and economic impacts, the Green Connection submits that location alternatives (alternative License Blocks) should also be considered. The DSR should also factor into its assessment of alternative locations whether coastal public property, the coastal protection zone or coastal access land will be affected, and if so, the extent to which the proposed development or activity is consistent with the purpose for establishing and protecting those areas.[82] In doing so, alternative options would be factored into the evaluation of the appropriateness of exploration drilling and whether such activities would be consistent with the purpose of establishing protective zones within those areas.

84.

(ii) The No-Go Alternative

The DSR includes a section on the 'Implications of the No-Go Alternative', and indicates that

[81] DSR, p6-41.
[82] Section 63 of the ICMA.

the no-go alternative:

> …represents the option not to proceed with the proposed exploration well drilling activities. This would leave the project area of influence in its current state (refer to the baseline description in Chapter 7), except for ongoing natural variations and changes caused by other human activities (e.g., fishing, commercial shipping, etc.). It thus represents the current status quo against which all potential project-related impacts will be assessed. Opting for the No-Go alternative means that none of the impacts anticipated from normal exploration drilling operations would occur. Additionally, the No-Go alternative would preclude the risks associated with accidental drilling-related events.[83]
> (underlining added)

85.

The DSR goes on to state that:

> …the South African Government and international policy both promote the use of natural gas in the energy mix in the pathway to net-zero emissions by 2050, i.e., gas is needed in the just transition. At present, and in the proximate future (and therefore also in the 'No Go' option), this gas will have to be imported; however, there may be local reserves that could be used instead of imports. The government has a continuing view that any existing oil or gas resources should be developed… The presence and activity of TEEPSA, and other oil and gas exploration operators, in South African territory is as a result of this policy.
>
> The No-Go alternative (which here assumes no future oil and gas exploration and production in South Africa) means that any domestic oil and gas resources that might occur in the area of interest cannot be identified and South Africa will not be able to optimise the use of its own domestic oil and gas resources, should they exist, to assist in the transition to the 2050 carbon neutrality.[84]

86.

The DSR goes on to make reference to geopolitical issues (in particular the Russia-Ukraine conflict and the military insurgency in Northern Mozambique) and its influence on global energy markets, the closure of South African oil refineries (potentially exposing South Africa to the risk of high prices), and Eskom's reliability and load-shedding issues. While acknowledging that the cost of onshore wind and solar generation has decreased over the period 2010-2019, the DSR alludes to renewable energy being intermittent especially 'when

[83] DSR, p5-25.
[84] DSR, p5-26.

the sun does not shine or the wind does not blow', and the [purported] need to supplement renewable energy sources with dispatchable energy using gas to operate peaking thermal plants (which currently run on diesel), while claiming (without citing any references) that there are limited opportunities in South Africa for pumped storage schemes,[85] and making reference to batteries offering limited capacity and discharge durations.

87.

The DSR concludes the 'no-go' alternative discussion by expressing the view that:

> South African domestic gas exploration offers an opportunity to seek an energy supply that could be competitively priced, produce relatively low carbon dispatchable power (lower carbon emissions than coal or oil or oil fired generation) without the inherent weather risk of PV or wind generation (in the absence of utility scale batteries) and reduce South Africa's exposure to the highly volatile international energy markets (fluctuating price).[86]

88.

The Green Connection submits that the description of the no-go alternative fails to provide a balanced consideration of the no-go alternative, and fails to set out the negative implications of potential future oil and gas development and attendant economic and social costs that will or may result. This would necessarily include the economic and social costs of GHG emissions that would result from future oil and gas development (including extraction, production and use), as well as the social and economic costs that would result from a major oil spill arising from an uncontrolled wellhead blow-out (during both exploration and subsequent production

[85] In submissions made relating to the DWOB DSR, Prof. Patrick Bond points out that 'One argument on behalf of gas rests upon the back-up role played in the event of cloudy or windless days, and at night. For this purpose, however, already 2724 MW are available to Eskom in the form of pumped storage capacity in which water is lifted uphill by energy during the day, allowing for hydropower to generate electricity on its way down. (For context, demand on a typical winter day is rarely above 30 000 MW, hence at full capacity, pumped storage can provide 9 percent of the grid's power already)'. *Critique of SLR Scoping Report/Environmental and Social Impact Assessment for TotalEnergies Proposed Offshore Exploration in Block 5/6/7, South-West Coast, South Africa*, P Bond, 14 December 2022. The reference in the title to Block 5/6/7 appears to be a typographical error, as the comments are submitted to the DWOB email address.

[86] DSR, p5-28.

phases).

89.

The Green Connection is also of the view that the a proper assessment of the No-Go alternative should identify and assess the potential ecological and socio-economic benefits of the no-go option for small-scale fishers and fishing dependent communities. The assessment should also necessarily include a balanced and properly researched consideration of alternative means to generate energy and provide sustainable feedstocks for associated industrial applications, including renewable energy alternatives that do not pose a significant inter-generational ecological and socio-economic risk.

90.

F. PUBLIC PARTICIPATION

The public participation process for the Scoping and Impact Assessment phases of the EIA are described in chapter 4 of the DSR.

91.

While these steps are noted, the Green Connection records that it is concerned regarding the public participation process given the volume of (highly technical) information contained in the DSR, the number offshore oil and gas authorisation processes that are being undertaken over the same period, as well as the number of public meetings relating to these various applications (which target the same group of I&APs, many of whom are small-scale fishers that are often unable to attend these scheduled public meetings due to the need to go to sea to fish). In recent months, these applications have included the Searcher seismic survey Basic Assessment application (deadline for comment 13 October 2022), the TGS seismic survey Basis Assessment application (deadline for comment 25 November 2022), the TEEPSA 567 exploration drilling EIA (deadline for comment 7 December 2022), the TEEPSA DWOB exploration drilling EIA (deadline for comment extended to 14 December 2022), and the TEEPSA Block 11B/12B production EIA (deadline for comment 3 February 2022). While not

relating to offshore oil and gas exploration, many of the targeted I&APs also have an interest in the Karpowership EIA (deadline for comment 13 December 2022).

92.

Having regard to the issues raised above, the Green Connection is of the view that even the extended commenting period provided was insufficient for I&APs (and small-scale fishers and fishing dependent communities in particular) to have a reasonable opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation.

93.

Given that the draft Environmental Impact Report (EIR) and its appendixes will be even more technical and voluminous, the Green Connection submits that a 90 day public comment period for the Impact Assessment would be more appropriate. It is pointed out that the 30 day public participation process time period referred to in the NEMA EIA Regulations is the minimum amount of time that should be afforded to I&APs:

> Any public participation process must be conducted for a period of at least 30 days.[87]
> (emphasis added)

94.

The Green Connection points out that a 90 day commenting period would be consistent with section 2(4)(f) of NEMA, which requires that the participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

[87] NEMA EIA Regulations, 2014, regulation 3(8).

95.

G. ROLE OF PASA IN NEMA EIA PROCESS

On 18 June 2004, the then Minister of Minerals and Energy designated[88] PASA to perform the functions set out in Chapter 6 of the Minerals & Petroleum Resources Development Act (MPRDA).[89] It is relevant to note that the Minister was exercising powers conferred in terms of section 70 of the MPRDA, and not NEMA.

96.

Section 71 of the MPRDA sets out the functions of PASA as the designated agency, which include (among other things) that the designated agency must:

> review and make recommendations to the Minister with regard to the acceptance of environmental reports and the conditions of the environmental authorisations and amendments thereto.[90] (underlining added)

97.

The MPRDA as the enabling statute thus mandates PASA to perform a very limited role relating to environmental matters, namely to review and make recommendations to the DMRE Minister with regard to:

- the acceptance of environmental reports; and
- the conditions of environmental authorisations and amendments thereto.

98.

In terms of the NEMA EIA Regulations Listing Notice 2 of 2014,[91] the Minister responsible for

[88] GN733 of 18 June 2004: *Designation of the Petroleum Agency South Africa (Proprietary) Limited for the purposes of the Petroleum Resources Development act, 2002 (Act No. 28 of 2002*). Section 70 of the MPRDA provides that the Minister Mineral Resources may designate an organ of state or a wholly owned and controlled agency or company belonging to the State to perform the functions referred to in Chapter 6 of the MPRDA (Petroleum Exploration and Production).
[89] Act 28 of 2002 (as amended).
[90] Section 71(i).
[91] GNR.984 of 4 December 2014 (as amended).

Mineral Resources is identified as the competent authority where the listed activity is or is directly related to (among other things) exploration of a petroleum resource. Section 42B of NEMA provides that the Minister responsible for Mineral Resources may in writing delegate a function entrusted to him/her in terms of the Act to the Director-General (DG) of the Department of Minerals and Energy; or any officer in the department of Minerals and Energy. It is relevant to note that s42B of NEMA does not currently empower the Minister responsible for Mineral Resources to delegate a function to state-owned agencies or companies, such as PASA. Section 42B of NEMA also does not include a power to subdelegate.[92]

99.

The Green Connection notes that key steps in the Scoping Phase included a pre-application meeting held with the Petroleum Agency of South Africa (PASA) on 6 September 2022 '*to inform them of TEEPSA's proposed project and application for Environmental Authorisation, as well as to obtain agreement on the ESIA process*'.[93] The minutes relating to this meeting do not seem to have been included in the DSR document set made available for public comment.

100.

The DSR also indicates that after review of the final ESIA report, PASA will provide a recommendation to DMRE on whether or not to grant an environmental authorisation.[94]

101.

The Green Connection submits that PASA is not empowered in NEMA environmental impact assessment (EIA) processes to hold pre-application meetings with the applicant and agree the

[92] Unlike s42(2)(d) of NEMA, which specifically provides that the Minister responsible for environmental matters may delegate a power or duty vested in him/her to the Director General, an MEC, the management authority of a protected area, or any organ of state (by agreement with that organ of state). In terms of s42(2)(a) this delegation must be in writing and may include the power to subdelegate. While amendments to s42B have been published that will empower the DMRE Minister to delegate a NEMA function to an organ of state (and which may also include the power to sub-delegate), these amendments are still pending and have not yet come into operation.

[93] DSR, piii.

[94] DSR, piv.

ESIA process,[95] or to make recommendations on whether or not to grant environmental authorisation.

102.

The performance of these functions is particularly concerning given that the MPRDA imposes a mandatory obligation on PASA to promote offshore exploration for an production of petroleum,[96] and it is submitted that by allowing PASA to perform functions that should be undertaken by it as the competent authority, the DMRE is unlawfully abdicating its responsibilities in the EIA process. It is also misconstruing the statutory functions of the DMRE as the competent authority in NEMA EIA processes, and the functions to be performed by PASA under the MPRDA (a material error of law).

103.

The Green Connection submits that in order for the EIA process to be lawful and procedurally fair, PASA should strictly limit its role in the EIA process to functions mandated under section 71(i) of the MPRDA.

104.

H. KEY ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

Green Connection submits that in addition to potential impacts discussed elsewhere in these comments, a number of key impacts have not been identified in the Table 8.2 Aspects and Impacts Register, including (but not necessarily limited to):

- Climate change impacts over the lifecycle of the proposed exploration drilling project, including climate change impacts associated with reasonably foreseeable future production activities (as well as end-use of any oil and gas produced) should commercially exploitable oil and gas reserves be identified;

[95] Regulation 8(a) of the NEMA EIA Regulations, 2014 provides that a competent authority (i.e. the DMRE) may advise or instruct the proponent or applicant of the nature and extent of any of the processes that may or must be followed or decision support tools that must be used in order to comply with NEMA and these Regulations.
[96] MPRDA, section 71(a).

- Impacts associated with the use of SSDI in the event of a worst-case scenario oil spill (the DSR indicates that, as part of the major oil spill response strategy, TEEPSA would also initiate the mobilisation of the Subsea Dispersant Injection (SSDI) kit from OSRL);[97]
- Potential impacts of a worst case scenario oil spill due to a wellhead blowout on Marine Protected Areas (MPAs) and Critical Biodiversity Areas (CBAs) that straddle or are located in the vicinity of Block DWOB, and which could be impacted by the trajectory and fate of any surface or sub-surface plume; and
- The risk of hydrocarbon leaks from a plugged and abandoned well. It is noted that the DSR identifies the risk of hydrocarbon leaks from a plugged and abandoned well as an insignificant impact that has been screened out of the impact assessment, notwithstanding that a leak from an abandoned well *'could result in the release of large quantities of oil or gas'*.[98] No information has been provided in the DSR regarding the lifespan of a well plug (concrete can deteriorate over time), while monitoring gauges 'may' be installed on appraisal wells where TEEPSA plans to return in the future for well appraisal or production purposes. No provision appears to have been made for the long-term monitoring of a plugged and abandoned well. In addition, no provision has been made for a comparison of the cost implications of the complete removal of the well infrastructure compared with the cost implications of plugging the well.

105.

The Green Connection submits that the above should also be identified in the draft Scoping Report as key environmental and socio-economic impacts, and should be appropriately assessed during the environmental impact assessment phase of this EIA process.

106.

I. OTHER COMMENTS

(i) Timing of exploration activities

It is noted that the DSR indicates regarding timing of exploration drilling that '*[d]rilling may have impact on marine fauna, such as whales, dolphins and turtles, that have seasonal*

[97] DSR, p6-40.
[98] DSR, p8-13.

occurrences in the Project Area' and that '*[t]he ESIA will consider the implications of drilling in different seasons. The results of the modelling studies (drilling discharge, and underwater noise) will be used in the assessment of impacts on marine fauna and commercial fisheries and the possible need for mitigation e.g., restricting certain activities to specific seasons'*.[99]

(emphasis added)

107.

This assurance contrasts starkly with the statement in the DSR that TEEPSA's strategy for future drilling is that drilling can be undertaken throughout the year (i.e. not limited to a specific seasonal window period),[100] as well as the statement that sonar bathymetry surveys are proposed to be undertaken throughout the year.[101]

108.

(ii) Overboard discharge of oil contaminated cuttings

It is noted that the DSR indicates that:

> Where NADFs [non aqueous drilling fluids] are used (possibly during the risered drilling stage, if WBMs [water based muds] are not able to provide the necessary characteristics), these are sometimes treated onshore and disposed, treated to recover oil and disposed offshore and sometimes re-injected into wells. For the current project TEEPSA, in instances where NADFs are used, cuttings will be treated offshore to reduce oil content to <6.9% Oil On Cutting (OOC) and discharged overboard. An estimated volume of 1 838 t of cuttings and 2 007.7 t of drilling fluid will be discharged per well (based on notional depth of 3 332 m) (refer to Table 6-9). During this drilling stage the circulated drilling fluid will be cleaned and the cuttings discharged into the sea at least 10 m below sea level. The drill cuttings will be treated to reduce their mud content using shakers and a centrifuge as described in Section 6.5.4.2.3'.[102]

109.

The legal basis upon which it is indicated that OOC will be treated to reduce oil content to <6.9% is not provided in the DSR, and it is submitted should be clearly explained in the final Scoping Report and draft EIR.

[99] DSR, 6-42.
[100] DSR, p6-7.
[101] DSR, p1-1.
[102] DSR, 6-33.