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Your ref: 1518

My ref: AP/GC/Searcher2.0 – Draft BAR comments

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Re. THE GREEN CONNECTION COMMENTS ON SEARCHER DRAFT BASIC ASSESSMENT REPORT

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1.

A. INTRODUCTION

These comments are submitted on behalf of the Green Connection, 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.

2.

The comments relate to the draft Basic Assessment Report (BAR) prepared as part of the environmental impact assessment (EIA) process being undertaken in respect of an application for authorisation by Searcher Geodata UK Ltd (Searcher) to undertake a 3D seismic survey over multiple blocks off the West Coast of South Africa.

3.

The proposed project area is located between approximately 256 km offshore of St Helena Bay, extending north along the western coastline to approximately 220 km offshore of Hondeklip Bay over a number of petroleum licence blocks. The survey area at the closest point is approximately 218 km offshore of the coast of the Western and Northern Cape. The area of interest for the proposed 3D seismic survey is approximately 30 000 km^2 in extent. Searcher proposes that a single survey vessel equipped with seismic sources and streamers be used. The proposed 3D survey would be supported by one escort vessel. It is estimated that the 3D survey will take about 127 days (including downtime).[1]

4.

B. PASA'S ACCEPTANCE OF SEARCHER'S RECONNAISSANCE PERMIT APPLICATION WAS UNLAWFUL; NO STATUTORY BASIS FOR SPECULATIVE MULTI-CLIENT

[1] BAR Executive Summary, p1.

SEISMIC SURVEYS

The Green Connection submits that the acceptance of Searcher's reconnaissance permit application in circumstances where exploration rights are held by another person/s over the area, is unlawful.

5.

The draft BAR indicates that PASA accepted Searcher's reconnaissance permit application on or about 7 June 2022 (reference is made to an *Acceptance Letter for reconnaissance permit (Ref: 12/1/043 dated 7th June* 2022).[2]

6.

In terms of s74 of the MPRDA, 'any person' who wishes to apply to the Minister for a reconnaissance permit must lodge the application as indicated in subsection (1)(a) to (c), and PASA **must** within 14 days **accept an application for a reconnaissance permit if**, among other things, '***no other person holds[3] a technical co-operation permit, exploration right*** *or production right* ***for petroleum over any part of the area***' (emphasis added).[4] If the application does not comply with the requirements of this section, the designated agency must notify the applicant in writing within 14 days of the receipt of the application and provide reasons.[5]

7.

In the Searcher judgement referred to above, Thulare J interpreted the meaning of the wording in s75(1)(c) of the MPRDA. While dealing with the issuing of a reconnaissance permit, the wording of s75(1) is similar to the wording used in s74(2): s75(1) provides that the Minister must issue a reconnaissance permit if the provisions of s75(1)(c) are met, namely that the reconnaissance will not result in unacceptable pollution, ecological

[2] Draft BAR, p 12.
[3] Section 1 of the MPRDA defines the 'holder' in relation to *inter alia* a reconnaissance permit or exploration right as meaning '*the person to whom such right or permit has been granted or such person's successor in title*'
[4] MPRDA, s74(2)(b).
[5] S74(4).

degradation or damage to the environment and that an environmental authorisation is granted. Thulare J explained what is required as follows:

> There must be evidence that the proposed reconnaissance will not result in unacceptable pollution, ecological degradation or damage to the environment, an environmental authorization is mandatory and the Minister would act unlawfully in granting a reconnaissance permit where section 75(1)(c) was not satisfied.[6]

8.

Applying the reasoning of Thulare J to section 74(2) of the MPRDA, it follows that there must be evidence that no other person holds an exploration right for petroleum over any part of the area, and that PASA would be acting unlawfully if it accepted a reconnaissance permit application where section 74(2)(b) was not satisfied.

9.

It is noted that the draft BAR states that the reconnaissance permit project area extends over a number of petroleum license blocks, as depicted in Table 3:

Petroleum License Blocks Covered by Application Area	The following license blocks are covered by the application area: • 12/3/274 ER; • 12/3/343 ER; • 12/3/339 ER; and • Open area.

This clearly indicates that three exploration rights have been granted in respect of three of the Petroleum License Blocks covered by the application area. These exploration rights are held by other persons, not Searcher.

10.

Applying the reasoning of Thulare J to s74(2), it is submitted that PASA acted unlawfully in accepting Searcher's reconnaissance permit application (given that other persons

[6] Searcher judgement, para 17.

hold explorations rights for petroleum over a substantial part of the application area).

11.

The Green Connection submits further that there is no statutory basis in the MPRDA for the granting of reconnaissance permits to seismic survey companies to conduct speculative multi-client seismic surveys in Blocks where exploration rights are held by other persons, and that the Minister would be acting *ultra* vires the enabling provisions of the MPRDA should he grant a reconnaissance permit to Searcher.

12.

The absence of enabling provisions in the MPRDA relating to non-exclusive multi-client speculative surveys is highlighted by proposed new enabling provisions included in the Upstream Petroleum Resources Development Bill[7] (which has not yet been enacted and thus does not have the force of law). For example:

- In terms of section 10(b) of the Bill, PASA must formulate [an] exploration strategy that includes acquisition of seismic data through non-exclusive multi-client speculative surveys in frontier or under explored areas ahead of licensing rounds;
- Section 16(1) of the Bill provides that the Minister may, by notice in the *Gazette,* invite applications for a reconnaissance permit from seismic companies to acquire data on a non-exclusive multi-client speculative business model in respect of a block or blocks, or in respect of a wide regional area comprising multiple blocks or areas as specified in the notice. Section 16(2) specifically provides that such a notice may be in relation to multiple blocks or areas which are encumbered by (among other things) exploration rights for purposes of enabling the State to assess the geological potential and establish prospectivity of a wider regional area. Section 16(4) empowers the Minister to grant a reconnaissance permit over an area encumbered by (among other things) exploration rights subject to various conditions. Section 16(5) provides further that, notwithstanding the provisions of

[7] B13-2021.

subsection 16(1), applications for reconnaissance permits may be lodged in terms of section 34 in the prescribed manner with the Petroleum Agency at any time;

- Furthermore, section 38(2)(b) of the Bill provides that PASA must accept an application for a reconnaissance permit if (among other things) no other person holds an exploration right over the same block or blocks. Section 38(3) of the Bill provides that PASA may accept an application for a reconnaissance permit over any part of an area subject to (among other things) an exploration right, subject to the applicant furnishing written consent from the holder of the exploration right giving PASA consent to accept and process the application, while section 38(4) provides that notwithstanding the provisions of subsections (2)(b) and (3), PASA may accept an process an application for a reconnaissance permit over an area encumbered by a permit or a right if the proposed seismic data acquisition will promote and facility the acquisition of petroleum geo-technical data as contemplated in section 2(l).

13.

In summary, the Green Connection submits that the acceptance of Searcher's reconnaissance permit application in circumstances where exploration rights are held by another person/s over the area, is unlawful. The Green Connection submits further that there is no statutory basis in the MPRDA for the granting of reconnaissance permits to seismic survey companies to conduct speculative multi-client seismic surveys, and that the Minister would be acting *ultra vires* the enabling provisions of the MPRDA should he grant a reconnaissance permit to Searcher.

14.

C. 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.[8]

15.

Section 5 of the draft BAR includes a motivation of need and desirability for the proposed 3D seismic survey. Unsurprisingly, the BAR focusses on justifying the 'need and desirability' of the proposed project, and fails to reflect views critical to 3D seismic surveys and offshore oil and gas exploration (and ultimately production). As a consequence, the 'need and desirability' assessment provided in the draft BAR follows the pattern of previous seismic survey EIAs by (among other things) limiting the assessment of potential impacts to the proposed 3D seismic survey, with no assessment of the need and desirability of exploring for (and ultimately producing and using) new oil and gas reserves (including in the context of the climate change crisis and the right to food). The assessment also includes a section motivating the 'need' for seismic data.

[8] NEMA EIA Regulations, Appendix 2, section 1(b). 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 (at p10):

> 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 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**. (emphasis added)

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** (at p11).

16.

The draft BAR Needs and Desirability section commences by stating that the area proposed for the seismic survey is a large under-explored area with potential for both oil and gas, and that this new application area is located further offshore and covers a smaller target area.[9] It points out that Searcher undertook a similar project during 2021, but that Searcher now requires environmental authorisation. The reconnaissance permit application is described as a new application (rather than a renewal of the 'previous permission'). No mention is made of the fact that Searcher was taken to court by community and civil society applicants regarding the 2021 seismic survey, or that the Western Cape Division of the High Court granted an order interdicting Searcher from continuing the seismic survey pending the outcome of (among other things) Part B of the court application. And while it is correct that the application area is located further offshore and covers a smaller target area, it is relevant to note that part of the proposed 3D seismic survey area overlaps with the 2021 Searcher 3D seismic survey area of interest.

17.

It is noted that the draft BAR Needs and Desirability analysis indicates that the proposed project '*aims to identify oil and gas resources to be used in… energy production and/or processing or manufacturing of materials*'.[10] It is stated further that *'[a]s a result of the fact that this project entails only survey activities, it is anticipated that this project will not lead to a significant impact on the receiving environment*'.[11] In line with this, the draft BAR does not consider or assess the potential impacts of subsequent oil and gas exploration, production and use.

18.

Climate change

The draft BAR states that from a climate change perspective, it is '*not currently possible*

[9] Draft BAR, p20.
[10] Draft BAR, item 1.7.1, p23.
[11] Ibid, item 1.8.3, p23.

to accurately assess the risks associated with oil and gas activities, given that the specific details of these potential future activities are not known and therefore climate change impacts would need to be assessed in detail during any subsequent Scoping and EIA processes for any potential subsequent oil and gas production projects'.[12] As a consequence, no climate change impact assessment (even in broad terms) is included in the BAR.

19.

It is relevant to note that 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.[13] 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'*.[14]

20.

The court noted that according to the respondents 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

[12] Draft BAR, p32.
[13] *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.
[14] Ibid, at para 121.

later stage.

21.

The court pointed out that on the authority of the *Save the Vaal* case,[15] 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'.*[16] The court went on to state that the respondent's thesis does 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.[17]

22.

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.[18] (emphasis added)

[15] *Director: Mineral Development, Gauteng Region and Another v Save the Vaal Environment and Others* (133/98)[1999] ZASCA 9 (12 March 1999).
[16] Ibid, para 123.
[17] Ibid, para 124.
[18] Ibid, para 125.

23.

The Green Connection submits that the draft BAR is deficient, and the Needs and Desirability analysis incomplete, without at the very least a broad assessment of the climate change impacts should commercially exploitable oil and gas resources be identified through the proposed seismic survey (and should these resources be produced and utilised). It would be pointless to authorise this (and other) 3D seismic surveys should such an assessment conclude that the development of new oil and gas fields is incompatible with South Africa's climate change commitments.

24.

The 'climate crisis'

The need and desirability (from a climate change perspective) of conducting a 3D seismic survey (which – as mentioned above - the BAR states aims to identify oil and gas resources to be used in energy production and/or processing or manufacturing of materials) 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.

25.

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).[19] In its summary for policymakers, the IPCC indicates (among other things)

[19] Climate Change 2021: The Physical Science Basis, available online at: https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/

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;[20]
- 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;[21]
- Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since AR5;[22]
- 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;[23]
- 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;[24]
- 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;[25]
- 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;[26]

[20] Para A.1
[21] Para A.2
[22] Para A.3
[23] Para B.1
[24] Para B.2
[25] Para B.3
[26] Para B.5

- 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.[27]

26.

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 in GHG emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.[28]

27.

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*". (emphasis added)

28.

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.

[27] Para D.1
[28] https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/

29.

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'*.[29] 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.*"[30]

30.

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;

[29] https://twitter.com/antonioguterres/status/1511294073474367488?lang=en
[30] https://news.un.org/en/story/2022/05/1118932

- 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;
- 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.

31.

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…

32.

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.

33.

South Africa's international climate change commitments

South Africa is a Party to the UN 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).

34.

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;[31] and
- Striving to formulate and communicate long-term GHG emission development strategies.[32]

35.

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.

36.

South Africa revised its NDC in 2021:[33]

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

[31] Paris Agreement, Article 4.1 – 4.3.
[32] Paris Agreement, Article 4.19
[33] 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.

South Africa's energy sector is estimated at contributing about 84% percent to the country's overall GHG emissions (including Carbon Dioxide and Methane).[34]

37.

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.[35]

38.

The draft BAR does not 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 GHG emissions targets (as set out in South Africa's NDC) or 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. 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.[36]

[34] https://www.climatelinks.org/resources/greenhouse-gas-emissions-factsheet-south-africa
[35] South Africa's Low Emission Development Strategy 2050, pviii.
[36] 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

39.

Need for seismic data

Under the sub-heading 'Need for seismic data', the draft BAR states that a discussion of the needs and desirability of the project '*would not be complete without understanding the need for acquisition of the seismic data and possible oil and gas exploration and production that could potentially take place in the future as a result of the survey*'.[37]

40.

Ironically, the draft BAR then quickly goes on to state that *'[i]t cannot be said with absolute certainty that exploration drilling, let alone production activities, will be undertaken in the future. As such, it is not currently possible to accurately assess the risks associated with these activities, given that the specific details of these potential future activities are not known. While it is acknowledged that the risks mentioned would need assessment, such assessment falls outside of the scope of the current application and would need to be assessed in detail during subsequent Scoping and EIA processes, should exploration drilling or production be proposed. The environmental consequences applicable to the planned survey activities have been identified and assessed in this BA Report*'.[38] The views of the Makhanda High Court in this regard (in the context of future production, climate change and the right to food) have been traversed earlier in the Green Connection's comments (see paragraphs 19 to 22 above), and are not repeated here. The Green Connection stands by its view that at the very least a broad assessment of the impacts and risks associated with future invasive exploration activities, production activities and use of any discovered oil reserves should be included in the BAR.

41.

The draft BAR report then proceeds with a glowing (and one-sided) endorsement of the use of natural gas:

[37] Draft BAR, p32-33.
[38] Ibid.

The fastest growing sector for the use of natural gas is for the generation of electric power. Natural gas power plants usually generate electricity in gas turbines, directly using the hot exhaust gases from the combustion of the gas. Of the three fossil fuels used for electric power generation (coal, oil and natural gas), natural gas emits the least carbon dioxide per unit of energy produced. Natural gas emits 30% and 45% less carbon dioxide than burning oil and coal, respectively. Burning natural gas also releases lower amounts of nitrogen oxides, sulphur dioxide, particulates and mercury when compared to coal and oil.

The increased use of natural gas can, in the short term, serve as a transition fuel on the path to the carbon-neutral goal of the Paris Agreement. In addition to gas as a key transitional fuel reducing reliance on coal, the benefits of oil and gas could include significant amount of job creation, especially if local beneficiation takes place. An increase in domestic natural gas reserves would enable South Africa to take steps to secure the countries' energy supply (through diversification), assist in reducing the emissions of greenhouse gases (by reducing the country's reliance on coal for electricity generation) and reduce the need for the importation of gas. As such, exploration for additional domestic hydrocarbon reserves is considered important and supported by national policy, and any discoveries would be well received by the local market and are consistent with the objectives stated in the 2019 IRP. Natural gas emits 30% and 45% less carbon dioxide than burning oil and coal, respectively, and 65% less carbon dioxide than coal when the increased efficiency of Combined Cycle Gas Turbines versus coal fired power stations is considered. Eskom produces over 200MtCO2/yr, over 40% of South Africa's total. South Africa also has SASOL's Secunda coal to liquids plant, the biggest single source of CO2 in the world at 57MtCO2/yr (~12.5% of South Africa's total) to produce 160k barrels of products per day. Supplying these products from conventional oil production and refining would generate approximately 10% of those emissions, 5 to 6MtCO2/yr.

According to the 2019 IRP the availability of gas in the short to medium term is a risk as South Africa does not currently have gas resources. There is also a supply and foreign exchange risk associated with likely increase in gas volumes depending on the energy mix adopted post 2030 when a large number of coal fired power stations are decommissioned. South Africa's economic growth is dependent on the availability of energy, ensuring a sustainable and reliable supply of electricity with sufficient capacity is a key aspect to growing the economy of South Africa in the future. The electricity shortages experienced in South Africa over the past decade are a contributing factor to the significant slowdown in economic growth rate. To enable economic growth within the target rate of between 6% and 8% to be achieved, it will be necessary for Government to continue increasing electricity generating capacity in the country. The use of natural gas for electricity generation is identified in national policy, together with renewable energy technologies, as an alternative in diversifying the domestic energy supply away from its current reliance on coal. Gas is identified in the draft Integrated Resources Plan as significant contributor to South Africa's energy mix in the period up to 2030. Availability of gas also provides an opportunity to convert to Combined Cycle Gas Turbine and run open-cycle gas turbine plants at Ankerlig (Saldanha Bay), Gourikwa (Mossel Bay), Avon (Outside Durban) and Dedisa (Coega IDZ) on gas (IRP 2019).[39]

[39] Ibid.

42.

Perhaps concerned that it is making the case that seismic surveys are indeed the 'thin edge of the wedge' that will lead to increased fossil fuel extraction, production and use (with associated climate change impacts), the draft BAR steps back from its natural gas endorsement to repeat the point that *'[f]rom a climate change perspective, it is not currently possible to accurately assess the risks associated with oil and gas activities, given that the specific details of these potential future activities are not known and therefore climate change impacts would need to be assessed in detail during any subsequent Scoping and EIA processes for any potential subsequent oil and gas production projects'*.[40]

43.

The draft Bar then proceeds to argue that:

> The feasibility of using natural gas for domestic power generation is considered to be dependent on the extent of available domestic reserves of natural gas, as well as the financial cost of importing natural gas should those reserves be insufficient. The acquisition of seismic survey data is therefore considered important with respect to understanding the potential for future oil and gas production as part of the energy mix of the country going forward and the need and desirability of the project is therefore supported from an energy security perspective.[41]

44.

Two recent independent studies (among others) challenge the view that fossil gas is necessary for electricity generation and as a transition fuel.

45.

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

[40] Ibid.
[41] Ibid.

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.[42]

46.

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).[43]

47.

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'*.[44] The report goes on to state

[42] IISD report, piv. Available online at: https://www.iisd.org/publications/report/south-africa-no-need-for-gas
[43] IISD report, pages 8 – 12.
[44] Meridian report, page ii. Available online at: https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf

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'.*[45] 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'*.[46] 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'*.[47]

48.

While the increased use of gas as a 'transitional fuel' is promoted by government and vested interest groups, the Green Connection submits that the increased use of fossil 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.[48] 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.[49]

[45] Ibid.
[46] Ibid, p1.
[47] Ibid, p37.
[48] 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
[49] https://cer.org.za/wp-content/uploads/2022/10/Natural-Gas-factsheet.pdf

49.

Ecological and Economic Risk of a Major Oil Spill

In addition, any catastrophic oil spills that could occur as a result of an uncontrolled wellhead blowout related to future offshore oil and gas exploration and/or production drilling pose a significant threat to functioning marine ecosystems (oceans play a critical role in regulating the climate and mitigating global warming by absorbing carbon dioxide), to living organisms in South Africa's coastal waters,[50] 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.

50.

The Green Connection submits that it is not in the interests of the broader community (including from and intra- and inter-generational perspective) to expose our oceans and coasts to the increased risk of a potentially catastrophic major oil spill during exploration drilling, or during subsequent production operations (should commercially exploitable oil or gas reserves be discovered through the seismic survey).

51.

Synthesis

The Green Connection submits that for the reasons set out above, and having regard to the need to effectively address the climate change crisis and achieve the rapid, deep and sustained reductions in GHG emissions that are required to limit global warming to 1.5°C (including accelerated action in this decade to reduce global carbon dioxide

[50] 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**.**

emissions by 45 per cent by 2030 relative to the 2010 level and to net zero around mid-century), further exploration for oil and gas is not needed, nor is it desirable. It follows that the proposed 3D seismic survey is also not needed or desirable, and environmental authorisation should be refused.

52.

D. SEISMIC SURVEYS CAUSE DIRECT AND INDIRECT PHYSICAL HARM TO INDIVIDUAL SPECIES AND MARINE ECOSYSTEMS; INEFFICACY OF MITIGATION MEASURES

The draft BAR *Biodiversity and Ecosystem Assessment Report* ('Pisces Report') indicates the that potential impacts to the marine fauna as a result of the proposed 3D seismic acquisition include:

- Physiological injury and/or mortality;
- Behavioural avoidance;
- Reduced reproductive success/spawning;
- Masking of environmental sounds and communication;
- Collision of turtles/marine mammals with the survey and support vessels or entanglement in towed acoustic apparatus; and
- Indirect impacts on piscivorous predators due to seismic effects on prey species.

53.

The report goes on to state that the highest sensitivities in response to the proposed 3D survey are:

- Humpback whales, which migrate through the area between June and November (inclusive);
- Sperm whales, beaked whales and other odontocetes that frequent offshore waters;

- Large migratory pelagic fish and shark species that show seasonal association with Child's Bank and Tripp Seamount;
- Leatherback turtles which frequent offshore waters in low numbers and aggregate around seamounts to feed on jellyfish; and
- Various pelagic Albatross, Petrel, Storm Petrel and Shearwater species.

54.

Notwithstanding the above, the report rates the significance of impacts on marine habitats and communities as (mostly) low to medium before mitigation, and very low to low after mitigation. The draft BAR in turn relies on this (and other significance ratings) to reach the conclusion that:

> …there are no environmental fatal flaws that should prevent the proposed project from proceeding, provided that the recommended mitigation and management measures are implemented… it is the opinion of the EIA project team and the EAP that the significance levels of the majority of identified negative impacts can generally be reduced to an acceptable level by implementing the recommended mitigation measures and the project should be authorized.'[51] (emphasis added)

55.

The Pisces Report downplays the impacts of marine seismic surveys by referring to them as 'potential impacts'. This approach stands in stark contrast to the approach taken by our courts in recent seismic survey judgements, where it was accepted that marine seismic surveys do cause harm, as a result of which mitigation measures are proposed. For example:

- In the Shell Wild Coast Seismic Survey urgent interdict application judgment, Bloem J stated that implicit in Shell's contention that harm is not irreparable and that mitigation measures are implemented to minimise harm to marine life, '*is an acknowledgment of harm to marine life, hence the mitigation measures*'.[52]

[51] Draft BAR, at p214.
[52] Shell urgent interdict judgement, para 41.

Regarding the evidence of ten experts put up by the applicants to prove irreparable harm, the court noted that despite the massive body of expert evidence on the harm to marine life, Shell did not adduce any expert evidence to neutralise this evidence. Bloem J stated further that the opinions expressed by these experts '*are based on objective facts contained in their reports and affidavits. There is no reason not to accept their evidence. That evidence establishes that, without intervention by the court, there is a real threat that the marine life would be irreparably harmed by the seismic survey*'.[53]

- In the Shell Wild Coast Seismic Survey judgment in the main case, the court referred to applicants' relying on expert reports for their contention that the anticipated harm to marine and bird life is a fundamental consideration, noting that these experts were in agreement that there is a reasonable apprehension of harm to marine and bird life and that the mitigation measures proposed by Shell did not adequately manage the threat of harm. The court also referred to the experts relied upon by Shell to refute the suggestion of possible harm to marine life, and noted that the respondents suggest that the detrimental effect of seismic surveys are not known and that, in so far as there is a possibility of death or stranding of marine animals from exposure to sound from seismic surveys, there are appropriate mitigating and monitoring measures in place.*[54]* The court went on to point out that *'[b]ecause of the apparent dispute between the experts as to the adequacy of the mitigation measures minimising the known effects of seismic surveys, it would be incumbent on the decision-maker to invoke the precautionary principle'*.[55]

- In the Searcher urgent interdict judgment (which Searcher did not seek leave to appeal against), Thulare J pointed out that:

> Physical damage to marine animals has been directly linked to the kind and level of sound emitted during the nature of seismic survey Searcher is

[53] Ibid, at para 64.
[54] Shell main judgment, para 108.
[55] Ibid, para 109.

> undertaking. This is why Searcher has to mitigate the damage… Some species show physiological stress responses and behavioural changes like moving away rapidly and this increased energy consumption and energy costs which reduced time for foraging and the ability to protect itself. There was a specific concern for beaked whales who were particularly sensitive to anthropogenic noise… The impact on fish assemblages was difficult to interpret and there was a lack of research on confounding effects and multiple stressors were a key concern… Zooplankton was the reason the West coast contained important fishery nursery grounds. As a result, impacts on zooplankton could propagate to other groups. Very little was known about the impact of seismic surveys on zooplankton. Existing observations suggested damage to larval and juvenile lobsters of up to… 1.2km from the survey sound source and that zooplankton mortality increased up to three-fold within the survey aera… Snoek will be impacted…a source of food for the impoverished communities of the West Coast and also provided an income to sustain the small-scale communities… Very little is known about the differential impact of seismic activity on young and smaller fish, turtles and cetaceans, and this could impact fish assemblages, abundances and availability. A precautionary approach was necessary.[56]

56.

If one accepts (as the courts have done) that seismic surveys do cause harm to marine species, the question that arises is whether there is sufficient scientific information to predict the extent of this harm with any certainty, and whether the mitigation measures proposed to minimise this harm will be effective.

57.

In the Searcher urgent interdict seismic survey case, [57] the applicants put up a number of expert affidavits and reports to support their contention that there was a reasonable apprehension that the marine seismic survey would cause irreparable harm to marine species and ecosystems, and that the proposed mitigation measures are not effective in addressing this harm. Given that the proposed 3D seismic survey area partially overlaps with the proposed 3D seismic survey area in the 2021 Searcher EMP,[58] the views

[56] Ibid, paras 26 – 33.

[57] *Christian John Adams & Others v Minister Mineral Resources and Energy & Others* - Annexure JH1 to the Applicants' Founding Affidavit, at p506 - 529, *'Report on Scientific Basis for concerns of significant harm inflicted to marine wildlife by 2D and 3D seismic surveys on the South and West Coasts of South Africa', Harris, Olbers & Wright (14 January 2022).*

[58] Searcher EMP September 2021, see for example the Proposed 3D seismic Area depicted in figure 7-3 (at p54), compared with the reconnaissance permit area depicted in Figure 5 of the Searcher BAR (at p43).

expressed by these experts also have relevance to the current proposed Searcher multiclient seismic survey (taking into account differences in the extent and location of the 3D seismic survey area). These expert affidavit and reports are accessible through the link provided in the footnote below, and should be read as specifically incorporated into these draft BAR comments for consideration by the EIA consultants and the competent authority.[59]

58.

In their report titled *Report on scientific basis for concerns of significant harm inflicted to marine wildlife by 2D and 3D seismic surveys on the South and West Coasts of South Africa,* Harris, Olbers and Wright (Harris *et al*) conducted a review of peer-reviewed literature on the physiological, behavioural and ecological impacts of the Searcher 2021 proposed 3D seismic survey activities on marine wildlife, with specific attention to the relevance of the information to the context of the application, the vulnerable and endangered species known to occur there, and the proposed timing of the seismic survey in the summer austral months. Harris *et al* state that having carefully considered the available information:

> …it is out opinion that seismic surveys do cause harm to both species and ecosystems, and that significant direct harm to induvial animals and harm to populations of endangered species is the most likely scenario… Of specific concern is the impact on humpback whales and southern right whales which are still frequenting the west coast during the summer months (December – February), the impact on critically endangered (leatherback) turtles (migration routes in the area), the critically endangered African Penguin (changes in foraging behaviour and impacts on fitness); and the Cape fur seal (and consideration of current mass die-offs). We conclude that the these seismic surveys are inadvisable in the austral summer months due to the presence of these species in the area, the increasing anthropogenic pressures, and the inability of the prescribed mitigation measures preventing harm to individuals/populations. Furthermore, recent literature provides credible concern about ecosystem/food-chain impacts of seismic surveys, that may in turn have impact on fisheries, the severity and localisation of which will depend on coincidences with spawning and juvenile recruitment events. It is strongly recommend that further studies on the impacts of seismic activities, in the

[59] https://drive.google.com/drive/folders/1OfFSta2iFMtY8iqoZ9zhW54zFKu8zN9r

South African context, are carried out *in situ* before proceeding with further seismic surveys of this nature.[60]

59.

Harris *et al* go on to explain that marine animals use sound in a variety of ways critical to their lifecycles, with various physical and behavioural responses to acoustic disturbances documented. In their summary of findings, Harris *et al* point out that, in addition to the physical damage referred to above, 3D seismic surveys are likely to cause harm in the following ways:

60.

Impacts on Marine Life and Birds

In their summary of findings, Harris *et al* conclude that:

- Based on peer-reviewed scientific literature, it is clear that physical damage to marine animals, including soft tissue trauma damage, embolisms, damage to organs used in balance and orientation, concussions, haemorrhaging, decompression sickness and both temporary and permanent threshold shifts to hearing ability have been directly linked to the kind and level of sound emitted during this nature of seismic surveys.
- There is plausible evidence to suggest that seismic survey activity is likely to affect the conservation status and recovery of populations of vulnerable and threatened species including (IUCN Red list species such as humpback and southern right whales), because sound and the ability to hear and interpret sound is critical for many species to reproduce (both vocalisations on breeding grounds and communications across large distances for mate detection). Therefore it must therefore be assumed that interference in sound perception or utilisation for communication (temporarily or permanently) has the potential to impact a species at the population level.

[60] Available online at: https://drive.google.com/drive/folders/1m-h8MoRfdfIJfKHLiB_uID1KX-dBktua (16. Jean Harris).

- Some species have been shown and documented to display physiological stress responses and behavioural changes to seismic activities, such as moving away rapidly, diving or remaining still. These responses are likely to increase their energy consumption and energy costs, reduce their time to forage, and/or affect their vulnerability to predation, thus having negative impacts on the survival of individuals (especially young or compromised animals) as well as the overall population growth and survival of a species (especially for threatened species that are already at risk of extinction).
- The impacts of seismic activities are most well studied for marine mammals, and evidence suggests that there are distinct avoidance responses such as leaving the area or ceasing to undertake everyday activities such as feeding in preferred areas. This is likely to negatively impact the "fitness" of an affected animal.
- There is genuine conservation concern for beaked whales that are particularly sensitive to anthropogenic noise, including seismic surveys. It has been demonstrated that even minor, non-lethal disturbances, resulting in changes in behaviour such as displacement from preferred habitats, could impact a population.
- The only existing field study in South Africa (that the authors could find) on the impacts of seismic activities in South African waters presents clear evidence that the endangered, endemic African penguin avoided preferred feeding sites when a seismic survey was active nearby. This is particularly of concern for a species which has had a 70% decrease in numbers over the past decade, is stressed by prey depletion creating a greater demand for them to forage further afield, and for which the prospect of extinction is significant.
- The phenomenon of energy-cost (from stress and avoidance behaviour) is of particular concern for some of the species expected to be encountered in the survey area in question, particularly the humpback whales and southern right whales who are at risk of the airgun noise affecting their behaviour or interfering with the communication between mother and calf. Any impact on their energy reserves could impact on their condition (weight-loss and physiological condition)

and affect survival of the animals during a vulnerable time (especially for lactating mothers and their calves) on their long migration to feeding grounds in Antarctica.

- Recent research (2017) has shown significant mortality in zooplankton up to 1.2 km from a seismic survey array. Zooplankton forms the base of many important food webs in the marine environment. Depletion of zooplankton could thus have an impact on food for their predators (such as fish) as well as impact fish eggs and larvae (Ichthyoplankton) with potential local impacts on species important in fisheries. This damage to zooplankton over 1km away from the survey array raises concern that a 500m buffer for other animals that are unable to move away from the sound, is far too small to ensure that damage is not inflicted (even if they were able to evade it). [61]
- The impact on fish assemblages is difficult to interpret, due to multiple factors at play including but not limited to the ability of a species to move from an area as well as the receiving habitat. A global review of the effect of seismic activities on fish and invertebrates acknowledged the limits of the current research due to experimental designs used or due to the focus on single species during investigations. A key concern is a lack of research focused on confounding effects and multiple stressors, therefore potential impacts of seismic surveys that have been previously identified may be reflective of underestimation or overestimation and would depend on the type of interaction (synergistic, additive, or antagonistic).

[61] The Green Connection also notes that the Noise Impact Assessment (Appendix C1 to the draft BAR) states that: *Existing experimental data regarding recoverable injury and TTS impacts for fish eggs and larvae is sparse and no guideline recommendations have been provided. However, based on a subjective approach, noise impacts are expected to be moderate for fish eggs and larvae. Impact is expected to be low for all of them at intermediate and far field from the source location*' (at p4). The Green Connection submits that it is not acceptable to apply a 'subjective approach' in the absence of scientific certainty or guideline recommendations to reach a conclusion on the significance of harm. Instead, the precautionary principle should be applied, and noise impacts of seismic surveys on fish eggs and larvae should be assumed to be unsafe in the absence of credible scientific data showing that the impacts on Zooplankton (which form the basis of many important food webs in the marine environment) are not significant. The Green Connection submits further that it is therefore not possible to state that there would not be irreparable harm to plankton and knock-on negative effects on the entire ecosystem, further justifying the need to properly apply a precautionary approach (see further discussion on Zooplankton in paragraph 61 of these comments below).

- In South Africa, since October 2021, thousands of dead and/or dying Cape fur seals, have washed ashore along the south and west coasts. The cause of these die-offs remains unknown but avian flu has been ruled out and malnourishment appears to be the most widely accepted reason. It is of concern that although the cape fur seal population within South Africa is relatively healthy, they too are under pressure from various anthropogenic pressures. Additional stress from seismic activity at this time is inadvisable.
- The authors are of the opinion that the proposed seismic survey activities are highly likely to both disturb and have an adverse effect on (amongst others) Critical Biodiversity Areas (CBAs) and their associated fauna, which areas are ignored (thus giving no consideration to the biological importance of these areas or the likely impact at such close range). In the Searcher draft BAR, while it is indicated that the proposed 3D survey area does not overlap with Marine Protected Areas (MPAs) or Ecologically and Biologically Significant Areas (EBSAs), CBAs are found within the reconnaissance permit and 3D survey areas, including both CBA1: natural and CBA2: natural areas.[62]

61.

In her expert affidavit filed in support of the Searcher urgent interdict seismic survey case, marine ecologist and Associate Professor (Department of Biological Sciences, UCT) Colleen Maloney points out that the ecosystem off the west coast of South Africa is one

[62] Draft BAR, p14. The Pisces report downplays the ecological significance of the proposed survey area, pointing out that it falls into the Southeast Atlantic Deep Ocean Ecoregions (with the South Atlantic bathyal and abyssal unconsolidated habitat types rated at 'least threatened), with 'only sections along the shelf edge and in the Cape Canyon… rated as 'Vulnerable and Endangered'. The report goes on to state that geological features of note in and adjacent to the proposed survey area include Child's Bank and the Tripp Seamount, while two canyons (Cape Canyon and Cape Valley) also occur to the south of the reconnaissance permit Area. Critical Biodiversity Areas (CBAs) also occur within the reconnaissance permit Area (including CBA1: natural and CBA2: natural areas). The draft BAR (at p131) indicates that seismic surveys ('non-invasive exploration) – restricted compatibility in CBAs – detailed assessment required. Petroleum production 'not compatible' in CBAs. Recommend avoid CBAs in seismic survey area if authorised given that petroleum production in these areas is not compatible with CBAs (being the intended outcome of seismic survey, notwithstanding fudging about its purpose). Proper application of the precautionary approach in relation to these CBAs and the impacts of seismic surveys (as per scientific reports). But note National Coastal and Marine Spatial Biodiversity Plan lacuna about lateral drilling and re-evaluation if significant petroleum resources are identified.

of the world's most productive marine environments, and that:

> This region is fertilised on a large scale and an almost continuous basis by the transport of water rich in nutrients (e.g. nitrogen and phosphorous) from depth to the well-lit surface waters where photosynthesis can occur. This results in a proliferation of microscopic phytoplankton (photosynthetic organisms) and small zooplankton, which feed on phytoplankton and which themselves are food for fishes. The west coast thus has several nursery grounds for fishes, including species that are commercially exploited and non-commercial species. The large abundances of fishes, large crustacean zooplankton and squids also support top predator populations, such as seabirds and marine mammals...
>
> As examples of measured short-term impacts, larval and juvenile lobsters in an Australian study were damaged up to 500 m from a seismic survey sound source…
>
> South Africa's west coast has a large abundance of marine organisms, with much spatial and temporal heterogeneity in the environment, such that impacts need to be understood in the context of localised patches of enhanced abundance and dense aggregations of marine organisms.
>
> In conclusion, current understanding of impacts associated with seismic surveys on zooplankton is too sparse and localised to allow definitive conclusions to be drawn about the extend and ecosystem impact of these surveys off the west coast of South Africa.[63] (emphasis added)

As plankton (which includes larval fish and rock lobsters) are the basis for the food chain, providing food for other species, the impacts of seismic surveys on plankton will have knock-on impacts on the rest of the ecosystem, including juvenile fish, rock lobster and others.

62.

In her expert affidavit filed in support of the Searcher urgent interdict seismic survey case,[64] Principal Researcher Lynne Shannon points out that the marine ecosystem off the West Coast of South Africa is a unique and highly productive one. It includes the southern sub-system of the Benguela Upwelling ecosystem. Upwelling systems cover less than 1% of the world's ocean area but support about one fifth of the world's marine fish catches. Shannon points out that the ecosystem is heavily influenced by

[63] Available online at: https://drive.google.com/drive/folders/1m-h8MoRfdflJfKHLiB_ulD1KX-dBktua, at pp1 – 2 (22. Coleen Moloney).
[64] Available online at: https://drive.google.com/drive/folders/1m-h8MoRfdflJfKHLiB_ulD1KX-dBktua (19. Lynne Shannon).

anthropogenic pressures. Shannon states that the 3D seismic survey proposed by Searcher will further endanger the already endangered African penguin that frequents the West Coast. Shannon points out that these penguins have been shown to suffer disrupted foraging within a 100km radius of seismic activity. Shannon notes that while the penguins returned to their favoured foraging areas once seismic activities ceased, the longer-term impacts on the penguins (stress levels, behaviour and implications of increased foraging effort required to fulfil nutritional requirements, and ultimately the influence these factors have on breeding success and survival) is not known. Shannon concludes that the poor knowledge available as to the extent of both species-level and ecosystem-level impacts of seismic surveys makes the adoption of the precautionary principal appropriate.

63.

In his expert affidavit filed in support of the Searcher seismic survey case[65], Dr Alexander Claus Winkler comments on the likely effects of seismic surveys on line-fish. Winkler points to a study published in 2021 that highlights the direct lasting behavioural effects of seismic surveys on the rhythmic behavioural foraging patterns of cod in the North Sea. He points out that both hake and snoek perform rhythmic diel foraging migrations off the seafloor at night and onto the seabed during the day. Given that seismic surveys are conducted both during the day and night, it is likely that these benthic fish species will migrate higher up the water column at night, bringing them within distances that may expose them to direct injury and mortality impacts from seismic surveys.

64.

Inefficacy of proposed mitigation measures

With regard to the efficacy of the mitigation proposed mitigation measures relating to the acoustic impacts of seismic surveys, Harris *et al* state as follows in their summary of findings:

[65] Available online at: https://drive.google.com/drive/folders/1m-h8MoRfdfIJfKHLiB_ulD1KX-dBktua (21. Alexander Winkler).

- While "Soft starts" mitigation for seismic impacts are likely to reduce the impact for highly mobile large animals, this is unlikely to be adequate for the many species that are prevalent in the area over the austral summer months and are unable to avoid the array or leave the area due to their lower mobility, such as smaller turtles, penguins, invertebrates, some fish species and zooplankton.
- The finding of observer efficiency (from a scientific monitoring study conducted during the 2018/19 and 2019/2020 seasons on the humpback whales on the east coast) suggests that even with trained observers up to 44% of humpback whales in an area went undetected. This casts doubt on the effectiveness and success of Marine Mammal Observer (MMO) sightings of the largest species (humpbacks) as a mitigation measure, indicating that it is most likely that whales go undetected. Furthermore, the detection rate for smaller species, such as dolphins, seals, turtles and flightless birds (penguins), would be expected to be much lower, obviating the effectiveness of visual observations to prevent harm to these species.
- Also of concern, is that the efficacy of a MMO is likely to be low due to the nature of the offshore marine environment in the survey area (frequent high swells and winds affecting surface visibility), putting species who are missed by MMOs and PAM operators at extreme risk, particularly at night or during adverse weather conditions.
- Furthermore, the reliance on observers to do visual sightings to supplement the PAM monitoring during the day, as a mandated mitigation measure, necessitates questioning the acceptability of continuing with survey activities at night. If the visual observations are useful (perhaps sighting large animals around 65% of the time) in addition to PAM, then relying on PAM alone at night cannot be an effective mitigation measure. The authors express the opinion that surveys should not occur between sunset and sunrise each day if a real attempt of maximum avoidance of cetaceans is the objective of this mitigation measure.

65.

Synthesis

The Green Connection submits that the proposed 3D seismic survey will cause physiological, behavioural and ecological impacts on marine wildlife (including vulnerable and threatened species), and that the proposed mitigation measures are not all effective in preventing or minimising this harm (especially in relation to species that are unable to avoid the seismic array, and at night given that PAM does not detect all species). The Green Connection submits that the overwhelming majority of peer-reviewed published scientific studies shows that harm is cause or is the most likely scenario. As a consequence, the Green Connection is of the view that a precautionary approach should be followed. In an expert report prepared for the Green Connection in relation to the TOSACO EIA appeal (see Annexure A), Harris *et al* expressed it thus:

> The body of scientific evidence and literature on seismic surveys has grown over the last few decades in response to significant concern about the impacts of seismic surveys on marine wildlife. Although scientists may debate the nature, magnitude and reach (distance away from the source of seismic blasts) of negative impacts of seismic surveys on marine fauna, the overwhelming majority of the multitude of peer-reviewed published scientific studies (over 538 studies on ocean noise, where the majority found negative effects on marine mammals, and/or adverse impacts on fish and invertebrates) demonstrates that harm is caused or is the most likely scenario. This is a tangible cause for concern and warrants a precautionary approach. The issue at hand is not whether harm will be caused but rather what the magnitude of that harm will be, and whether measures that would prevent or effectively mitigate this harm are in place and effective.

66.

In light of the above and the prevailing lack of information regarding in particular the broader marine ecosystem impacts of marine seismic surveys, the Green Connection disagrees with the draft BAR in respect of the conclusion that there are no environmental fatal flaws and that the project should be authorised. The Green Connection submits that a precautionary approach should be adopted, and that the proposed seismic survey (as well as other seismic survey applications) should be refused until such time as further studies on the impacts of seismic activities in the South African context are carried out *in situ* and provide credible scientific evidence that seismic

surveys do not pose a risk of unacceptable or irreparable harm to marine species and ecosystems.

67.

E. CUMULATIVE IMPACTS

It is noted that the draft BAR acknowledges that should other seismic survey campaigns be undertaken concurrently with Searcher's proposed survey programme, cumulative impacts may be likely and there would be a need for alignment in planning of such concurrent operations to reduce cumulative noise impacts to an acceptable significance.[66] The draft BAR notes that there are two current pending applications with PASA (TGS Geophysical Company and GX Technology Corporation) which both overlap the proposed Searcher 3D seismic survey area.

68.

The draft BAR states that despite the difficultly in undertaking a reliable assessment of the potential cumulative environmental impacts of future seismic acquisition in the Deep Water Orange Basin (due to likely variation in the scope, extent and duration of proposed surveys), the cumulative impacts of three potential surveys occurring concurrently needs to be considered. The draft BAR thus includes a cumulative assessment which assumes that the three surveys (Searcher, TGS and GX Technologies) occur simultaneously during the summer survey window in 2022/23.

69.

In this event, the draft BAR indicates that:

- associated impacts to marine fauna would be of **high intensity** and extend regionally, over the short-term (assuming they take place over the same summer survey window). The impact consequence for cumulative surveys is therefore considered medium.

[66] Draft BAR, para 9.3.5, p202.

- Concurrent activities could also add to the cumulative impact on fisheries. Simultaneous survey operations would result in an increase in the extent and magnitude of the impact on the large pelagic longline sector. The impact duration would remain unchanged. Three seismic surveys of regional extent, undertaken simultaneously, could be expected to result in an impact of **medium negative significance** on the large pelagic longline sector, both with and without the application of mitigation measures.

70.

Curiously, the draft BAR impact table[67] combines cumulative impacts on marine fauna and fisheries and rates the pre-mitigation environmental significance as 'medium' and the post-mitigation impact as 'low'. This does not reconcile with the preceding paragraphs which indicate with regard to cumulative impacts of three concurrent seismic surveys, an impact of medium negative significance could be expected 'both with and without the application of mitigation measures'.

71.

The draft BAR states regarding confounding and cumulative effects that the assessments of impacts of seismic sounds provided in the scientific literature usually consider short-term responses at the level of individual animals only, as the understanding of how such short-term effects relate to adverse residual effects at the population level is limited. The report goes on to state that data on behavioural reactions to seismic noise acquired over the short-term could, however, easily be misinterpreted as being less significant than the cumulative effects over the long-term (i.e. what is initially interpreted as an impact not having a detrimental effect and thus being of low significance, may turn out to result in a long-term decline in the population, particularly when combined with other stressors such as temperature, competition for food, and shipping noise). The report notes that confounding effects are, however,

[67] At p204.

difficult to separate from those due to seismic surveys.

72.

The draft BAR also states that the potential cumulative impacts on individuals and populations as a result of other seismic surveys undertaken either previously, concurrently or subsequently are difficult to assess. The report indicates that a significant adverse residual environmental effect is considered one that affects marine biota by causing a decline in abundance or change in distribution of a population(s) over more than one generation within an area. The report makes reference to numerous 2D and 3D seismic surveys having been undertaken off the West Coast over the past 17 years, and relies on reported increases in the southern right whale and humpback whale populations over a time when seismic surveying frequency has increased as *'suggesting that, for these populations at least, there is no evidence of long-term negative change to population size as a direct result of seismic survey activities'*.[68] The Green Connection questions the assumption made that an increase in whale populations suggests that there is no evidence of long-term negative change to population sizes as a direct result of seismic activities. This is an assumption that cannot be inferred from the facts (the increase could be as a result of any number of other external factors).

73.

The Green Connection submits that it cannot simply be assumed the lack of evidence of long-term negative population changes as a direct result of seismic survey activities means that there are no negative impacts (including potentially significant impacts). In their report relating to the TOSACO EIA appeal, Harris *et al* point out that although the humpback whale population is increasing, there is evidence to suggest that cetaceans in South African waters are being affected by changes in their ecosystem and it is not well understood yet what is driving these changes and what the long terms effects could potentially be to populations.[69] Concerns noted in the report include an observed decrease in southern right whale calving success of the South African population and a

[68] Draft BAR, para 9.3.1.4 at p181.

[69] Wilkinson, C. (2021) *Estimating population changes in humpback whales (Megaptera novaeangliae) migrating past Cape Vidal, South Africa,* MSc thesis, Cape Peninsula University of Technology, p108. Cited in Harris JM, Olbers JM, Wright K (6 April 2022) *Comments on Tosaco Energy Block 1 Exploration Right issued to Tosaco Energy (Pty) Ltd (PASA Reference: 12/3/362).*

strong link between foraging success and reproduction.[70] They suggest an investigation into possible decreases and/or spatial or temporal shifts in their prey availability at higher latitudes due to environmental variability. They also highlight a concern of the continued low numbers of unaccompanied adults along the South African coast which could potentially have serious consequences for cow-calf pairs in relation to the country's whale-watching industry in the future.

74.

The draft BAR states that in the 'unlikely' event that multiple surveys would take place at the same time within the same survey area, 'the risk of cumulative noise impact must be considered and is suggested to be managed'. The draft BAR suggests that mitigation should include maintaining a distance of at least 40 km between survey vessels 'until sufficient objective evidence is obtained that a reduced buffer distance is acceptable'. Where this 40 km buffer distance cannot be maintained, the draft BAR suggests that each of the additional activities to those described in the technical noise report should be modelled or otherwise considered in terms of the cumulative noise level and with reference to the criteria described in the report.[71]

75.

The Green Connection submits that given the lack of certainty regarding cumulative impacts of concurrent 3D seismic survey areas, a risk averse and cautious approach should be applied by not authorising concurrent surveys, and suggests that should the decision-maker be inclined to grant environmental authorisation (which the Green Connection submits should not be granted). a prohibition against concurrent surveys should be included as a condition of any environmental authorisation. There is simply no need to take the risk of conducting concurrent 3D seismic surveys which, on the face of it, is an unnecessary and unneeded duplication.

[70] Vermeulen, E., Wilkinson, C., & G. van den Berg (2020) *Report of the 2019 South African southern right whale aerial survey*, Report to IWC 10.13140/RG.2.2.29556.37766. Cited in Harris JM, Olbers JM, Wright K (6 April 2022) *Comments on Tosaco Energy Block 1 Exploration Right issued to Tosaco Energy (Pty) Ltd (PASA Reference: 12/3/362).*

[71] Draft BAR, p204.

76.

F. CBAs

The underwater acoustics modelling report conducted for the BAR indicates that:

> The proposed survey areas overlap with the proposed Ecologically or Biologically Significant Marine Areas (EBSAs), including Orange Seamount and Canyon Complex, Orange Cone, Childs Bank and Shelf Edge, and Cape Canyon and Associated Islands, Bays and Lagoon. Marine Protected Areas (MPAs) are also situated immediately adjacent to the proposed survey areas, namely the Orange Shelf Edge, Childs Bank, Benguela Muds, Cape Canyon, Robben Island, and the Southeast Atlantic Seamount MPA.[72]

77.

The statement that the proposed survey areas overlap with proposed EBSAs is however contradicted by the Biodiversity and Ecosystem Assessment Report (Pisces Report), which states that 'there is no overlap of the 3D survey area with EBSAs'.[73] Instead, this report seeks to downplay the ecological significance of the proposed survey area by pointing out that it falls into the Southeast Atlantic Deep Ocean Ecoregions (with the South Atlantic bathyal and abyssal unconsolidated habitat types rated at 'least threatened), with 'only sections along the shelf edge and in the Cape Canyon… rated as 'Vulnerable and Endangered'.[74] The report goes on to state that geological features of note in and adjacent to the proposed survey area include Child's Bank and the Tripp Seamount, while two canyons (Cape Canyon and Cape Valley) also occur to the south of the reconnaissance permit Area.

78.

Critical Biodiversity Areas (CBAs) do occur within the reconnaissance permit Area, including CBA1: natural and CBA2: natural areas. The draft BAR[75] indicates that approximately 39.2 % of the proposed 3D seismic survey area is covered by CBA1 and

[72] BAR Appendix C1, p3.
[73] BAR Appendix C2, p iii.
[74] Ibid.
[75] At p129-131.

CBA2 natural areas. Exploration activities (such as seismic surveys and exploration well drilling) are classified as having 'restricted compatibility' with CBA1 and CBA2 natural areas, while petroleum production is classified as 'not compatible' in these areas. However, the draft BAR points out that the National Coastal and Marine Spatial Biodiversity Plan states that petroleum production may be possible in CBAs using lateral drilling or other techniques that do not result in biodiversity impacts. According to the plan, if significant petroleum resources are identified in these areas the selection of the site as a CBA could also be re-evaluated, although this would require alternative CBAs to be identified to meet biodiversity targets.

79.

Notwithstanding that the National Coastal and Marine Spatial Biodiversity Plan states that seismic surveys are classified as having 'restricted compatibility' (i.e. recommended to be a consent activity) with CBA natural areas, the Green Connection submits that the decision-maker has the discretion to (and that properly applying a precautionary approach in this BA application should) refuse consent for Searcher to conduct seismic surveys in these areas. The Green Connection submits further that - given that the main objective of the seismic survey is to identify commercially exploitable oil and gas reserves, and given that petroleum production is incompatible with CBA natural areas (CBAs have been identified as conservation worthy and could in the future be declared Marine Protected Areas) - authorising the seismic survey to be undertaken in an area with 39.2% coverage by CBAs would compromise the protection of these critical biodiversity areas.

80.

G. UNDERWATER NOISE MODELLING

It is noted that the BAR includes an underwater noise modelling study, but that this is largely a desktop exercise.

81.

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.

82.

H. ALTERNATIVES

Location Alternatives

The draft BAR indicates that no location alternatives are considered feasible, that proposed survey area was carefully selected due to the high likelihood of containing significant hydrocarbon reserves, and that the area is considered an optimal area for a seismic survey as it is located well offshore and outside the ringfenced fisheries area.[76]

83.

The Green Connection submits that it is feasible to identify location alternatives, in particular those parts of the proposed seismic survey area (approximately 60.8% thereof) that are not classified as CBA1 and CBA2 natural areas. The Green Connection thus recommends that, in the event that environmental authorisation is granted (which authorisation the Green Connection does not support), a condition should be included in the environmental authorisation restricting the seismic survey to that portion of the proposed survey area that does not contain CBA1 and CBA2 natural areas.

[76] Draft BAR, p34.

84.

Technology Alternatives

The draft BAR also includes discussion on technology alternatives, and states that Searcher must define and enforce the use of the lowest practicable seismic source volume for production, and design arrays to maximise downward propagation, minimise horizontal propagation and minimise high frequencies in seismic source pulses.[77] The draft EMPr (Annexure E to the draft BAR) includes the following as a 'Technical or Management Option' under 'Key Equipment': '*Define and enforce the use of the lowest practical seismic source volume for production. Design arrays to maximise downward propagation, minimise horizontal propagation and minimise high frequencies in seismic source pulses'.*[78]

85.

The Green Connection submits that this 'Technical or Management Option' should, in the event that the seismic survey is authorised (which authorisation the Green Connection does not agree with), be made a mandatory obligation as a condition to any environmental authorisation granted.

86.

The Green Connection points out further that the draft BAR also fails to include other mitigation alternatives, such as requiring the appointment of sufficient numbers of on-board MMOs to ensure 24-hour and 360-degree visual monitoring, and the use of infra-red equipment to improve the likelihood of observing species as night that do not vocalise (and would thus not be detected by the PAM) and would not be seen by any MMOs.

[77] Draft BAR, p35.
[78] Draft EMPR, Annexure E to draft BAR, at p37 (13.13 Key Equipment).

87.

No-Go Alternative

The draft BAR states the following regarding the no-go alternative:

> The no go alternative would imply that no seismic survey activities are undertaken. As a result, the opportunity to identify potential oil and gas resources within the survey area would not exist. This will negate the potential negative and positive impacts associated with the proposed survey activities.[79]

88.

The Green Connection submits that the no-go alternative has not been adequately assessed, and that the BAR should include consideration of 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, as well as the social and economic costs that would result from a major oil spill arising from an uncontrolled wellhead blow-out (during any subsequent exploration or production well drilling). The Green Connection is also of the view that 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 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.

89.

I. SOCIAL IMPACT ASSESSMENT

The draft BAR includes a Social Impact Assessment.[80]

[79] Draft BAR, at p35.

[80] Annexure C5 to the Searcher draft BAR, Social Impact Assessment, Equispectives Research and Consulting Services (Sept 2022).

90.

It is noted that this report states that communities feel that there are significant gaps in the available data, and that from a social perspective the non-technical or social risks can potentially cause significant impacts. The report highlights that potential social impacts identified include:

- Uncertainty;
- Further marginalisation of vulnerable groups;
- Concerns about cumulative impacts;
- Impact on livelihoods;
- Impacts on sense and spirit of place;
- Impacts on social license to operate;
- Community expectations; and
- Social unrest.

91.

The report points out that seismic reconnaissance projects are controversial in South Africa, and that while for many stakeholders it is an emotional matter, for others the potential of impacting on their livelihoods is the biggest fear. The report indicates that some stakeholders feel that the exploration for fossil fuels is not in line with sustainable development and the fight against climate change, while other stakeholders feel that it is imperative for the growth and development of the South African economy to engage in these investigations. The expert describes this as a 'complex and wicked problem'.[81]

92.

The report goes on to state that from a social perspective, it is clear that the communities and the majority of local people are opposed to the project, and that because the project does not happen in a social vacuum, the social environment is much

[81] Ibid, pii.

wider than the footprint of the project area. The report states further that:

> If the social risks and potential damage to cultural and indigenous rights are considered the impact on the social fabric of already vulnerable communities may be significant. From a social perspective the project can only be recommended after meaningful consultation, local research, education, and awareness raising has been done in the project affected communities. At this stage communities feel that they cannot make informed decisions.[82] (emphasis added)

93.

The report goes on to make the following recommendation:

> The recommendation is therefore that the project can only proceed once the social mitigation measures have been implemented and the community are sufficiently informed and educated to [be] able to engage in a meaningful manner.[83] (emphasis added)

94.

The Green Connection submits that in light of the Social Impact Assessment's statement that the project can only be recommended **after** meaningful consultation, local research, education and awareness raising has been done in the project affected communities, as well as its recommendation that the project can only proceed once the social mitigation measures have been implemented and the community are sufficiently informed and educated to [be] able to engage in a meaningful manner, Searcher's application for environmental authorisation should be refused. This approach would be consistent with section 2(4)(f) of NEMA, which stipulates 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. It would also be consistent with section 2(4)(g) of NEMA, which requires that decisions must take into account the

[82] Ibid, pii-iii.
[83] Ibid, piii.

interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.

95.

In addition, the Green Connection notes that the Social Impact Assessment indicates that Searcher and other seismic survey companies do not currently have a social license to operate (in large part due to a lack of meaningful consultation from a community perspective, which '*from a community and social risk perspective is not negotiable*'),[84] and that the seismic survey industry should reassess their position and social license to operate as an industry in the South African context and should conduct a strategic environmental assessment of the impact of the industry.[85] Notwithstanding this, the report makes a one-side assumption that the discovery of commercially exploitable fossil oil or gas resources would be beneficial to the economic development of South Africa: '*Potential future benefits and the economic development of the country should the surveys find any significant resources are not disputed'.*[86] The Green Connection submits that the Social Impact Assessment should also reflect the many negative socio-economic impacts that could or are likely to manifest should commercially exploitable reserves be found and developed through to production and use (including but not limited to the socio-economic costs of climate change[87]). The Green Connection refers the EIA consultants and the decision-maker to report it commissioned titled '*A Literature Review of the Socioeconomic Consequences of Offshore Oil and Gas Activities on South Africa',*[88] which report should be read as specifically incorporated into the Green Connection's comments on the draft BAR to be taken into account by the competent authority when considering its decision on authorisation.

[84] Ibid p109-110.
[85] Ibid p111.
[86] Ibid, p111.
[87] In 2021 an international team of scientists published their findings that economic damage from climate change could be six times higher by the end of this century than previously estimated. See: https://www.ucl.ac.uk/news/2021/sep/economic-cost-climate-change-could-be-six-times-higher-previously-thought
[88] https://thegreenconnection.org.za/wp-content/uploads/2021/10/Economic-impacts-of-offshore-oil-and-gas-on-South-Africa.12042021-1.pdf

96.

J. EXPERT REPORT - CVs

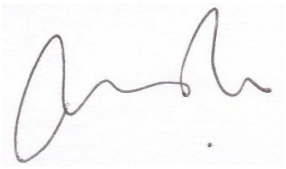
The Green Connection notes that the Pisces expert report[89] does not include the *curriculum vita* (CV) of Andrea Pulfrich. The Green Connection requests that this CV be included in the final BAR.

97.

K. CONCLUSION

The Green Connection submits that for the reasons set out in detail in these comments above, Searcher's application for environmental authorisation to conduct a speculative multiclient 3D seismic survey over various petroleum licensing Blocks located off the West Coast of South Africa should be refused.

Signed at Durban this 13th day of October 2022.



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Adrian Leonard Pole

[89] Draft BAR, Appendix C2.