The Green Connection **Appellant**

GROUNDS OF APPEAL:

Tosaco Energy (Pty) Limited – Environmental Authorisation in terms of Regulation 24 of the NEMA EIA Regulations in respect of the proposed exploration activities in offshore Block 1, off the West Coast of South Africa

Project reference: 12/3/362

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1.

A. INTRODUCTION

The appellant is the Green Connection NPC, a non-profit company established in terms of section 14 of the Companies Act 71 of 2008.

2.

This appeal is brought against the environmental authorisation ("**authorisation**") (see Annexure "A1") granted by the Deputy Director-General: Mineral and Petroleum Regulation on 3 March 2022 Tosaco Energy (Pty) Limited ("**Tosaco**") to undertake the list of activities specified in section 3 of the authorisation, namely listed activity 18 of GN984 of 04 December 2014. As the holder of the authorisation, Tosaco is authorised to conduct the following activities within the application area located in Block 1 off the West Coast of South Africa (which area stretches from Alexander Bay and extends along the western coastline to Hondeklip Bay and approximately 250 km off the coast of the Northern Cape), namely:

- Reprocessing of approximately 5000 km of existing 2D seismic data previously acquired in the block;
- Reprocessing of approximately 750 km^2 of 3D seismic data previously acquired in the block; and
- Acquisition of 3D seismic data over an area of approximately 134 562 ha based on the outcome of existing data analysis.

3.

This appeal is brought in terms of the National Appeal Regulations, 2014.[1]

4.

The appeal authority considering this appeal is the Minister responsible for environmental affairs ("**the Minister**"), who does so in terms of section 43 of the National Environmental

[1] GNR.993 of 8 December 2014: National Appeal Regulations (as amended).

Management Act[2] (NEMA).

5.

The applicant was notified of the authorisation by EIMS on 17 March 2022, and has complied with the requirements of regulation 4(1) of the Appeal Regulations.[3]

6.

The Green Connection made detailed legal and substantive submissions during the EIA process to the environmental assessment practitioner (EIMS) appointed by Tosaco. This included comments on the draft Scoping Report (see Annexure "**A2**") and comments on the draft EIA Report see Annexure "**A3**"). These comments should be read as specifically incorporated into these grounds of appeal.

7.

B. DECISION

The Department of Mineral Resources & Energy's (DMRE) *Reasons for Decision* (Appendix 1 to the environmental authorisation) (see Annexure "**A4**") indicates under the heading 'Key Findings' that '[c]areful consideration of information submitted to the Department have thus resulted in the following conclusions':

> 4.1 All fundamental and procedural requirements prescribed in the applicable legislation have been satisfied.
> 4.2 The proposed exploration method i.e. 3D seismic survey is a widely used exploration technology during early phase of exploration world-wide. The said technology is currently used in South Africa and is generally regarding as non-intrusive in nature, <u>except the potential impact it poses on fisheries and marine fauna</u>. However, the <u>majority of the impacts associated with the planned exploration activities on fisheries and marine fauna have been assessed to be of low to very low significance with mitigation</u>.
> 4.3 The identification and assessment of potential impacts of the activity, including cumulative impacts, was adequately undertaken, and the proposed mitigation and

[2] 107 of 1998.

[3] Regarding notification of registered I&APs, the Department advised as follows: '*You are advised to send your appeal to the Appeals Directorate, the relevant DMRE Regional Office, the EAP as well as the EA holder. It will suffice'*. Email dated 30 March 2022 from Realeboga Tlhoaele (DFFE Appeals and Legal Review).

management measures aligned with potential impacts. Furthermore, the implementation of mitigation measures in all phases of the proposed exploration activities will ensure that the planned activities will not result in any detrimental impact to the environment.

4.4 The public consultation process undertaken adhered to the minimum requirements as prescribed under Chapter 6 'Public Participation' of the EIA Regulations, 2014 and related guidelines. In this regard, objections and concerns related to the proposed activities were addressed in the EIAR and EMPR. It is therefore our view that the EAP has complied with the requirements outlined in Chapter 6 of the EIA Regulations, 2014.

8.

The decision on authorisation concludes as follows:

> In view of the above, and having taken into consideration environmental management principles as set out in section 2 of NEMA, this Department is satisfied that the proposed activities will not be conflict with the objectives of the Integrated Environmental Management set out in Chapter 5 of the National Environmental Management Act, 1998 and will not result to any detrimental risks to the environment and the public. The authorisation is accordingly granted.

9.

C. GROUNDS OF APPEAL

C1. Activity in respect of which authorisation is applied for is not an exploration activity

It is submitted that the activities in respect of which Tosaco seeks environmental authorisation do not fall within NEMA Listing Notice 2 activity 18,[4] which requires environmental authorisation for activities (including the operation of the activity) which require an exploration right as contemplated in s79 of the Mineral and Petroleum Resources Development Act[5] (MPRDA). Accordingly, the Green Connection submits that the environmental authorisation was improperly granted, and should be set aside by the Minister.

10.

NEMA Listing Notice 2 activity 18 is triggered by the following:

[4] GNR.984 of 4 December 2014.
[5] 28 of 2002.

> Any activity including the operation of that activity which requires an exploration right in terms of section 79 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or in Listing Notice 3 of 2014, required to exercise the exploration right, excluding:
>
> (*a*) any desktop study;
> (*b*) any arial survey;
> (*c*) any onshore seismic survey which is included in activity 21C in Listing Notice 1 of 2014, in which case that activity applies;
> (*d*) a hydraulic fracturing activity which is included in activity 20A, in which case activity 20A of this Notice applies; and
> (*e*) the processing of a petroleum resource, including the beneficiation or refining of gas, oil or petroleum products, in which case activity 5 of this Notice applies.

11.

As was pointed out in the Green Connection's comments on the draft EIA Report, determining whether a proposed activity falls within NEMA Listing Notice 2 activity 18 requires a consideration of what activities require an exploration right under s79 of the MPRDA. Section 79 deals with exploration right applications, while section 80 provides that the Minister responsible for mineral resources and energy must grant an exploration right if (among other things) the applicant has the financial resources and technical ability to conducted the proposed exploration operation.

12.

Section 1 of the MPRDA defines 'exploration operation' as meaning:

> The re-processing of existing seismic data, acquisition and processing of new seismic data or any other related activity <u>to define a trap to be tested by drilling</u>, logging <u>and testing, including extended well testing, of a well with the intention of locating a discovery</u>.

13.

An exploration operation thus necessarily includes the re-processing of existing seismic data, acquisition and processing of new seismic data or any other related activity <u>to define a trap to be tested by drilling, logging and testing, including extended well testing, of a well with the intention of locating a discovery.</u>

14.

Badenhorst and Mostert point out that the definition [of 'exploration operation']:

> …contains four elements. First, it requires activities, including re-processing of existing seismic data, acquisition and processing of new seismic data or other related activities. Second, these activities must be conducted with the purpose of defining a trap. Third, the trap must be tested by drilling, logging and testing (including extended well testing) of a well. Finally such testing must be conducted with the intention of locating a discovery.[6]

15.

It is stated in the final EIA Report that Tosaco is proposing to undertake the reprocessing of approximately 5000km of existing seismic lines taken previously in Block 1, as well as approximately 750 km^2 of 3D seismic data previously undertaken. Additional 3D seismic surveys may be conducted over an area of approximately 1340 km^2 should the analysis of the existing data indicate that this will be beneficial, and would take about 4 months to complete.[7] However, '*the current programme does not include any provision for exploration drilling*'.[8]

16.

Given that Tosaco's 'current programme' does not include any provision for exploration drilling, logging and testing of a well with the intention of locating a discovery, it is submitted that the proposed activity does not constitute an 'exploration operation' as defined in the MPRDA, and as a consequence the activities as proposed by Tosaco do not require an exploration right as contemplated in s79 of the MPRDA. It follows that the activity in respect of which environmental authorisation was sought does not trigger NEMA Listing Notice 2 activity 18.

17.

In its response to the Green Connection's comments on this issue in respect of the Draft Scoping Report (draft Scoping Report), EIMS (the environmental assessment practitioner

[6] Mineral & Petroleum Law of South Africa (Juta), at p19-20.
[7] Final EIA report, p19.
[8] Final EIA report, p17.

appointed by Tosaco) acknowledged that the '*definition of exploration operation does refer to the definition of a trap to be tested by drilling, of a well with the intention of making a discovery*'.[9] EIMs go on to state that, at this stage, the intention is to first identify whether there would be any merit in conducting further exploration activities, which would then include drilling. EIMs state that '*[a]s such, it is understood that there is currently no concrete intention to conduct such drilling. EIMs is conducting the impact assessment on the basis of the activities proposed by the applicant*'.

18.

In its response to the Green Connection's comments on the draft EIAR, EIMS states as follows:

> As mentioned previously, it is acknowledged that the definition of exploration operation does refer to the definition of a trap to be tested by drilling, of a well with the intention of locating a discovery. However, at this stage, it is understood that the intention is to first identify, through the re-processing of existing seismic data, acquisition and processing of new seismic data, whether there would be any merit in conducting further exploration activities, which would then include testing by drilling. As such, it is understood that there is currently no concrete intention to conduct such drilling. EIMS is conducting the impact assessment on the basis of the activities proposed by the applicant. It is our understanding that should Tosaco wish to extend their exploration activities to include drilling or other invasive exploration works which are not addressed in the current application, there would be a consequent need to apply for the relevant permissions.
>
> These would include a formal application to amend the approved Exploration Works Programme (EWP) in accordance with Section 102 of the MPRDA as well as either a new Environmental Authorisation or an amendment to the issued EA and approved EMPR (should such be issued). These proposed activities do fall within the definition of exploration operation, and will if successful, lead to the definition of potential drill sites, which could then be tested at a later stage. It our understanding that the Competent Authority has reviewed the application for the Exploration Right and the associated Environmental Authorisation (EA) and agreed that these activities constitute exploration operations. Consequently, the associated Scoping and EIA Process was followed for this application.

19.

The above response does not address the legal submission made by the Green Connection in its comments on the draft EIA Report: Tosaco's application does not include the testing of a

[9] EIMS response to the Green Connection comments on the draft Scoping Report, at p4 – 5.

defined trap by drilling, logging and testing (including extended well testing); and does not include conducting of such testing with the intention of locating a discovery. As a consequence, it does not constitute an exploration operation as defined in the MPRDA, and does not trigger EIA Listing Notice 2 activity 18. An exploration right is not required for reprocessing existing seismic data and acquisition, or for processing of new seismic data to define a trap in the absence of an intention to test a defined trap by drilling, logging and testing, including extended well testing, of a well with the intention of locating a discovery.

20.

Furthermore, NEMA Listing Notice 2 activity 18 specifically excludes desktop studies. Environmental authorisation for the acquisition of new 3D seismic data 'based on the outcome of existing data analysis' should be rather be sought for Listing Notice 1 activity 21B.[10]

21.

In light of the above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

22.

C2. EIA process procedurally unfair

It is submitted that the EIA process was procedurally unfair as a consequence of:

- An irregular pre-application meeting between the Petroleum Agency of South Africa

[10] Listing Notice 1 activity 21B :

'Any activity including the operation of that activity which requires a reconnaissance permit in terms of section 74 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the reconnaissance permit, excluding:

(a) any desktop study; and

(b) any arial survey.'

(PASA) and the EIA consultants;

- An irregular decision made by PASA at this meeting regarding specialist studies required;
- The environmental authorisation application being irregularly submitted to PASA and not the competent authority; and
- Specialist assessments being conducted prior to the EIA phase.

23.

These irregularities, which we detail below, are prejudicial to I&APs, and violate the right of I&APs to procedurally fair decision-making.

24.

While the DMRE has provided its *Reasons for Decision* as Appendix 1 to the environmental authorisation, there is no indication that the decision-maker considered the merits of the procedural irregularities raised by the Green Connection. Instead, the DMRE simply makes the bald statement in its 'Key Findings' that '*objections and concerns related to the proposed activities were addressed in the EIAR and EMPR'.* While the EAP provided responses to the Green Connection's submissions, it is disputed that these responses addressed the Green Connection's objections and concerns (including in relation to the procedural irregularities raised).

25.

In the circumstances, it is submitted that the environmental authorisation is based on an irregular and procedurally unfair EIA process (and is thus itself fatally flawed), and that the DMRE failed to take these relevant factors into account in making its decision on authorisation.

26.

C2.1 <u>Pre-application meeting with PASA irregular</u>

It was pointed out in the Green Connection's comments on the draft Environmental Impact

Assessment (EIA) report that:

- Minutes of a *PASA Pre-Application Meeting* (see Annexure "**A5**") held on 3 Feb 2021 show that the meeting was attended by three representatives of PASA and two representatives of EIMS, and that the minutes were also distributed to Tosaco's Lawrence Mulaudzi;
- No representative of the competent authority (i.e. the DMRE) was present at this meeting.
- In terms of the NEMA Environmental Impact Assessment (EIA) Regulations,[11] a competent authority (i.e. the DMRE in this instance) is empowered to advise or instruct the proponent or applicant of the nature and extent of any of the processes that may or must be followed or decision support tools that must be used in order to comply with NEMA and the EIA Regulations;[12]
- No provision is made in the EIA Regulations for a pre-application meeting to be held with PASA. This irregularity is compounded by the fact that PASA is an agency designated by the Minister to (among other things) promote offshore exploration for and production of petroleum.[13] As a result, this pre-application meeting was held *ultra vires* the enabling provisions of NEMA and the EIA Regulations applicable at the time, with an agency having the statutory mandate to promote offshore exploration for and production of petroleum.

27.

In its response to the Green Connection's comments on the draft EIAR, EIMS states as follows:

> It is our understanding that, Section 70 of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002, as amended, MPRDA), the Minister of Mineral Resources in June 2004, designated various duties pertaining to petroleum exploration and production to the Petroleum Agency of South Africa (PASA). This includes the receipt of applications for different types of permits and rights, some of which require environmental authorisations. Section 71(i) of the MPRDA provides that the designated agency must review and make recommendations to the Minister with regards to the

[11] GNR.982 of 4 December 2014 (as amended at time).
[12] Regulation 8.
[13] MPRDA, section 71(a).

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

In light of the above, EIMS is of the opinion that it was not irregular to undertake a meeting of this nature with the agency that has been assigned certain administrative functions in terms of the MPRDA.

28.

This response does not address the Green Connection's objections and concerns relating to this pre-application meeting. A NEMA EIA process is governed by NEMA and relevant regulations made thereunder, and not by the provisions of the MPRDA. The Green Connection has no issue with PASA preforming its statutory functions under the MPRDA, including reviewing and making recommendations to the Minister with regard to the acceptance of environmental reports and the conditions of environmental authorisations.

29.

However, the Green Connection does take issue with PASA 'stepping into the arena' and performing functions within an EIA process that are *ultra vires* the provisions of NEMA and the relevant regulations thereunder.

30.

The Green Connection thus stands by its submission that the pre-application meeting between PASA and EIMS was *ultra vires* the enabling provisions of NEMA and the EIA Regulations applicable at the time.

31.

C2.2 <u>Decision on sufficiency of expert reports irregular</u>

It was pointed out in the Green Connection's comments on the draft EIA Report that the minutes of the pre-application meeting referred to above show that PASA made an important decision regarding the nature and extent of the EIA process to be followed:

4.3 It was confirmed that for the assessment of the contingent 3D seismic survey

> activities, EIMS proposed that a marine ecology and fisheries assessment be undertaken to assess the impacts of the proposed seismic activities within the block.
>
> PN [Phuti Seanego of PASA] confirmed that these activities would be sufficient for the assessment of the proposed activities considering that no drilling is proposed.

32.

The Green Connection submitted in its comments that:

- PASA was acting *ultra* vires the empowering provisions of NEMA and the EIA Regulations by making this decision regarding what specialist studies should be undertaken;
- Insofar as this decision may be considered advice or an instruction regarding the nature and extent of the EIA process to be followed, it is the DMRE as the competent authority that is empowered to make this decision (and not PASA);[14] and
- As a consequence of this unlawful decision, the specialist studies were limited to the two specialist studies proposed by EIMs, with no opportunity given to I&APs to comment on or influence this decision.

33.

In its response to the Green Connection's comments on the draft EIA Report, EIMS states as follows:

> EIMS is of the opinion that it was not irregular to consult with the with the agency that has been assigned certain administrative functions in terms of the MPRDA and the processing of EA Applications.
>
> It should further be noted that PASA or the DMRE were not necessarily bound by the initial proposal for Marine Ecology and Fisheries assessments due to the fact that there was a further opportunity to request that additional studies be conducted based subsequent to the review of the Plan of Study for EIA, which would have been informed by the content of the Scoping Report. I&AP's were provided with opportunity to comment on the Scoping Report and Plan of Study for EIA, which include the proposed specialist studies. All comments received from I&AP's during this process were considered in the process.

[14] MPRDA, section 71(i).

34.

It is clear from this response that EIMS continues to conflate the statutory functions of PASA (as the designated agency under the MPRDA) and the DMRE (as the competent authority under NEMA).

35.

Furthermore, the pre-application meeting, and the decisions made in this meeting regarding what specialist studies would form part of the EIA, were not disclosed in the draft Scoping Report. As a consequence, interested and affected parties (I&APs) did not have an opportunity to comment on the lawfulness of this meeting or any decisions made therein.

36.

In the circumstances, the Green Connection stands by its submission that the decision made by PASA on the sufficiency of the specialist studies to form part of the EIA was *ultra vires* the empowering provisions of NEMA and the EIA Regulations, and that this irregular decision resulted in a procedurally unfair decision-making process.

37.

C2.3 EIA Application to PASA irregular

According to the Final EIA Report, Tosaco submitted an application for environmental authorisation to PASA on 17 March 2021.[15]

38.

In its comments on the draft EIA Report, the Green Connection averred that the submission of the environmental authorisation application to PASA was *ultra vires* the enabling provisions of NEMA and the EIA Regulations[16] applicable at the time the application was made, for the

[15] Final EIA Report, p1.
[16] GNR. 982 of 4 December 2014: Environmental Impact Assessment Regulations (as amended).

following reasons:

- In terms of the EIA Regulations applicable at the time, an application for an environmental authorisation must be made to the competent authority referred to in regulation 6. The EIA Regulations provide further that if the Minster responsible for mineral resources has delegated any powers or duties of a competent authority in relation to an application, the application must be submitted to the person or authority to whom the powers had been delegated,[17] and that if the Minister responsible for mineral resources is the competent authority in respect of an application, the application must be submitted to the relevant office of the Department responsible for mineral resources as identified by that Department.[18]
- In terms of the Listing Notice 2 of 2014, the Minister responsible for mineral resources was identified as the competent authority where the listed activity is or is directly related to (among other things) exploration of a petroleum resource. Section 42B of NEMA provides that the Minister responsible for mineral resources may in writing delegate a function entrusted to him/her in terms of the Act to the Director-General of the Department of Minerals and Energy; or any officer in the department of Minerals and Energy. It is relevant to note that s42B of NEMA does not empower the Minister responsible for Mineral Resources to delegate a function to state-owned agencies or companies, such as PASA. It is also relevant to note that s42B of NEMA also does not include a power to subdelegate.[19] At the time the application was made by Tosaco, PASA was not acting under any lawful delegation by the Minister. Accordingly, it was irregular and procedurally unfair for the application to have been made to PASA.

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[17] Regulation 6(4) of the NEMA EIA Regulations in force at the time stipulated that *'[i]f the Minister, Minister responsible for mineral resources or MEC has, in terms of section 42, 42B or 42A respectively of the Act, delegated any powers or duties of a competent authority in relation to an application, the application must be submitted to the person or authority to whom the powers had been delegated*'.

[18] Regulation 6(5) of the NEMA EIA Regulations in force at the time stipulated that '[*i]f the Minister responsible for mineral resources is the competent authority in respect of an application, the application must be submitted to the relevant office of the Department responsible for mineral resources as identified by that Department*.'

[19] Unlike s42(2)(d) of NEMA, which specifically provides that the Minister responsible for environmental matters may delegate a power or duty vested in him/her to the Director General, an MEC, the management authority of a protected area, or any organ of state (by agreement with that organ of state). In terms of s42(2)(a) this delegation must be in writing and may include the power to subdelegate.

- While the EIA Regulations were subsequently amended to make provision for the submission of environmental authorisation applications to the designated agency (PASA) where such applications relate to petroleum resources,[20] this amendment was not in force at the time of Tosaco's application (the amendment took effect on the date of publication of the amendment, namely 11 June 2021, and applies to applications submitted on or after that date).[21] The fact that this provision required an amendment to the EIA Regulations clearly supports the Green Connection's submission that Tosaco's environmental authorisation application was improperly and irregularly submitted to PASA on 17 March 2021 (i.e. was *ultra vires* the enabling provisions of NEMA and the EIA Regulations applicable at the time, which continue to apply to the application in terms of the transitional provisions contained in the amendment Notice[22]).

39.

In its response to the Green Connection's comments on the draft EIA Report, EIMS states as follows:

> It is our understanding that, Section 70 of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002, as amended, MPRDA), the Minister of Mineral Resources in June 2004, designated various duties pertaining to petroleum exploration and production to the Petroleum Agency of South Africa (PASA). This includes the receipt of applications for different types of permits and rights, some of which require environmental authorisations. Section 71(i) of the MPRDA provides that the designated agency must review and make recommendations to the Minister with regards to the acceptance of environmental reports and the conditions of environmental authorisations and amendments thereto.
>
> The application was prepared on the Department of Mineral Resources and Energy Application template. The DMR SAMRAD system does not cater for the submissions of Exploration Rights and this function is provided through the PASA's online portal which states that "*Petroleum Agency SA (the Agency) has implemented an Online Application Portal for the submission of applications for permits/rights, and also, for lodging environmental authorization applications*."
>
> At the time of submission of the application for Environmental Authorisation (EA), the

[20] GN517 of 11 June 2021. See regulation 6(5)(b) of the amended EIA Regulations.
[21] GN517 of 11 June 2021 section 31(1) states that '…the amendments contained in this Notice will apply to applications submitted on or after the date of publication of this Government Notice in the Government *Gazette'.*
[22] GN517 of 11 June 2021, section 30(1).

PASA Online Portal mentioned the following:

"*Kindly note that the Online Portal is temporarily unavailable, and in the meantime manual application processes either at the Agency`s offices or through registered mail to the Agency are to be followed for lodging an application*."

It is further noted that the EIA Report will be submitted to the PASA for consideration and review. PASA will then make a recommendation on the acceptance or rejection of the Final EIA Report to the Department of Mineral Resources and Energy (DMRE), who will make the final decision, as part of the application for EA in terms of Chapter 5 of the National Environmental Act (Act No. 107 of 1998, NEMA), as amended.

In light of the above, EIMS is of the opinion that it was not irregular to submit the application to the agency that has been assigned certain administrative functions in terms of the MPRDA.

40.

The response from EIMS does not address the Green Connection's contention that the submission of the NEMA EIA application to PASA (the designated agency under the MPRDA) was in contravention of the mandatory provisions of the NEMA EIA Regulations in force at the time.

41.

The Green Connection thus stands by its submission that the EIA application was irregularly and unlawfully submitted to PASA, and that this (together with other procedural irregularities) resulted in a procedurally unfair decision-making process.

42.

C2.4 <u>Conducting specialist assessments prior to EIA phase irregular</u>

In addition to an unlawful decision having been made in the pre-application meeting held between PASA and EIMs regarding what specialists studies were to be undertaken in the EIA, these studies were irregularly conducted prior to the EIA phase of the environmental authorisation process, effectively preventing I&APs from commenting on what specialists studies were to be undertaken, the aspects to be assessed by specialists, and the proposed

method for assessing all aspects to be assessed by specialists.

43.

With regard to Scoping and Environmental Impact Reporting (S&EIR) processes:

- The EIA Regulations do not make provision for conducting specialist studies during the scoping phase. A scoping report must contain all the information set out in Appendix 2 to the EIA Regulations.[23] Appendix 2 indicates that a scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must (among other things) include a plan of study for the environmental impact assessment process **to be** undertaken, including aspects **to be** assessed by specialists, and a description of the proposed method for assessing the environmental aspects including all aspects **to be assessed** by specialists.[24] It is submitted that the EIA Regulations read with Appendix 2 clearly do not envisage specialist studies being conducted during the scoping phase, but rather that the scoping report should set out relevant information relating the assessment to follow, including the consultation process to be undertaken.
- In contrast, the EIA Regulations do make provision for conducting specialist studies during the environmental impact reporting phase. An EIA report **inclusive of any specialist reports** must be submitted to the competent authority (i.e. the DMRE).[25] The EIA report must contain all the information set out in Appendix 3 to the EIA Regulations,[26] and specialist reports must contain all information set out in Appendix 6 to the EIA Regulations.[27] Appendix 3 indicates that an EIA report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include (among other things) a summary of the

[23] Regulation 21(3).
[24] GN982, Appendix 2, section 2(h)(iii) and (iv).
[25] Regulation 23(1)(a).
[26] Regulation 23(3).
[27] Regulation 23(5).

findings and recommendations of any specialist report complying with Appendix 6, and an indication as to how these findings and recommendations have been included in the final assessment report.[28]

44.

While the plan of study included in the draft Scoping Report indicates that EIA phase specialist studies 'will be undertaken as part of the EIA phase of the project',[29] these studies were conducted prior to EIA phase (and in fact pre-dated the scoping phase). This is evident from the specialist studies annexed as appendices to the draft Scoping Report, namely the *Marine Faunal Impact Assessment* (dated February 2021) and the *Specialist Fisheries Assessment* (dated March 2021). The draft Scoping Report indicates that these specialists studies '*involved the gathering of data relevant to identifying and assessing preliminary environmental impacts that may occur as a result of the proposed project. These impacts were assessed according to pre-defined impact rating methodology (Section 9.1)'*.[30]

45.

It is submitted that conducting these specialist studies (inclusive of 'preliminary' assessment of identified impacts) prior to the EIA phase of the environmental authorisation process is irregular, and taints the procedural fairness of the S&EIR process by effectively precluding I&APs from commenting on what specialists studies should be undertaken, the aspects to be assessed by specialists, and the proposed method for assessing all aspects to be assessed by specialists. Instead, PASA and EIMS had already decided (in the absence of any input from I&APs) what specialist reports would be conducted, and the specialist reports submitted prior to the EIA phase had already concluded that the proposed seismic survey would not impact significantly on marine fauna and fisheries. For example:

- The February 2021 *Marine Faunal Specialist Assessment* rated the significance of preliminary impacts identified as negligible, very low or low. It stated further that if all

[28] Appendix 3, section 3(k). Specialists are also referred to in sections 3(m) and (o).
[29] Draft Scoping Report, p145.
[30] Draft Scoping Report p5.

environmental guidelines, and appropriate mitigation measures recommended are implemented, '*there is no reason why the proposed seismic survey should not proceed*'.[31] Various and detailed recommendations to mitigate potential impacts were also included in the report; and

- The March 2021 *Specialist Fisheries Assessment* included a section on small-scale fishers, and stated that the small-scale fisheries rights cover the nearshore area (i.e. within close proximity of the shoreline) and are unlikely to extend more than 3 nautical miles from the coast, and stated that *'[t]here is no impact of temporary exclusion of fishing operations expected, as the proposed seismic acquisition area lies beyond the expected range of the linefish and rock lobster catch areas'*.[32]

46.

It is hardly surprising that the two specialist studies subsequently attached as appendices to the draft EIA Report were not materially different to the versions attached to the draft Scoping Report:

- As far as we can tell, the *Marine Faunal Specialist Assessment* is substantially the same, save for the date of the report having been changed from February 2021 to July 2021.[33]

- The *Specialist Fisheries Assessment* retains the same report date and is materially the same, but includes some additional information in relation to small-scale fisheries, rock lobster fisheries, abalone ranching, beach-seine and gill net fisheries and seaweed harvesting. This study makes an immaterial concession by assuming that linefish operations could be within the range of the nearshore extent of the proposed 3D seismic survey, but nevertheless concludes that '[t]he impact of temporary exclusion to small scale fishing operations is expected to be of overall LOW NEGATIVE significance'.[34]

[31] Marine Faunal Specialist Report (February 2021), p161 section 5.2.
[32] Specialist Fisheries Assessment (March 2021), p56, section 4.2.10.
[33] The report has the identical number of pages and sections (although in the July 2021 some of the page numbers in the Contents page have changed – however the related pages are still the same and bear the same page number). No changes are indicated for example by highlighting changed sections, or using different coloured font. Various pages sampled by the writer appeared to be identical.
[34] Draft EIA version of Specialist Fisheries Assessment, p59, section 4.1.10.

47.

In its response to the Green Connection's comments, EIMS states as follows:

> EIMS commissioned the specialist studies prior to the EIA Phase, since it was determined at an early stage that the EIA would need to investigate these those specific aspects in greater detail. It is our interpretation that the EIA Regulations do not preclude specialist studies from being undertaken during the scoping phase.
>
> This also increased the ability to accurately describe the receiving environment and it was a proactive step taken to ensure that there are fewer gaps when it comes to the EIA phase. In fact, this provided the I&APs with better, more accurate information and, as such, it cannot be said that their ability to comment on the specialist studies was impeded. EIMS submits that this provided additional time and information to the I&APs with which a better understanding of the project could be gained, and as a result, a more informed decision could be made as to the information to be refined considered, investigated and refined during the EIA Phase.
>
> As mentioned above, the initial proposal for Marine Ecology and Fisheries assessments did not preclude the I&APs or the Competent Authority to request that additional studies be conducted subsequent to the review of the Plan of Study for EIA, which would have been informed by the content of the Scoping Report.
>
> It should also be noted that EIMS specifically applied for additional time to consult with the small-scale fishers and other community members and have given serious consideration to the comments and inputs from the local communities.
>
> Consequently, it is EIMS' contention that conducting the assessments in this way, provided greater transparency and opportunity for informed comment and scrutiny by I&APs and the Competent Authority and can thus not be considered to be irregular.

48.

The *Marine Faunal Specialist Assessment* (Appendix C1 to the final EIA report) has a revised date of October 2021, but as far as we can tell is the same (or substantially the same) as the July 2021 iteration. The *Specialist Fisheries Assessment* (Appendix C2 to the final EIA report) retains the same report date and as appears to be the same (or substantially the same) as the version attached to the draft EIA Report.

49.

C2.5 <u>Synthesis</u>

It was submitted by the Green Connection in its comments on the draft EIA Report that the EIA process had been tainted with procedural irregularities as a result of:

- an *ultra-vires* pre-application meeting between PASA and the EIA consultants;
- an *ultra vires* decision by PASA at this pre-application meeting that specialist studies could be limited to a marine ecology and fisheries assessment;
- the environmental authorisation application being irregularly submitted to PASA and not the competent authority; and
- two specialist assessments being conducted prior to the EIA phase.

50.

In its response to the Green Connection's comments, EIMS states as follows:

> We refer to the individual responses relating to each of the aspects listed here. For the reasons outline above, EIMS contends that these do not constitute irregularities, but that due process was followed and that greater transparency and opportunity for comment was afforded to the affected communities, other I&APs and the Competent Authority.

51.

This response does not address the irregularities raised by the Green Connection, and as a consequence the Green Connection stands by its assertion that these procedural irregularities resulted in material prejudice to I&APs, and resulted in a procedurally unfair decision-making process and a flawed decision on authorisation.

52.

It is submitted that, taken together, these procedural irregularities constitute a fatal flaw in the environmental authorisation process.

53.

In light of the above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

54.

C3. Seismic surveys cause direct and indirect physical harm to individual species and marine ecosystems, and proposed mitigation measures are not effective in preventing the likely harm caused by seismic surveys to marine species and ecosystems

In its comments on the draft Scoping Report and draft EIA Report, the Green Connection highlighted a number of information gaps relating to the magnitude, extent and range of impacts of seismic surveys on marine life and ecosystems. While it is noted intended to burden this appeal by repeating these comments (which should be read as specifically incorporated into these grounds of appeal), the following is highlighted:

- It was pointed out that the specialist reports conducted in the EIA were primarily desktop studies, and were (at least in part) based on a 2001 generic EMPR '*co-funded by the offshore prospecting operators and co-ordinated by the Petroleum Agency SA.*'[35] The generic Environmental Impact Report developed as part of this 2001 EMPR acknowledges regarding the impact of seismic activities on marine animals that *'[a] specific shortfall of information in this regard was identified on the West Coast*',[36] while the Baseline Environmental Report also developed as part of this 2001 EMPR cautions that *'[i]t should be noted that advances in technology are allowing oil and gas exploration activities to extend into deeper water environment (beyond the 10000 m isobath) and that very little information is available on biological communities in these areas'*.[37]
- The specialist studies conducted for the Tosaco EIA also acknowledge a lack of available data relating to the proposed 3D seismic survey area. While these examples are not repeated here, information gaps acknowledged in the *Assumptions and Limitations* section of the draft EIA Report included in respect of details of the benthic macrofaunal

[35] Generic EMPR: Volume 1 - User Manual (2001), at pii.
[36] Generic EMPR: Volume 3 – Environmental Impact Report (2001), p2-3.
[37] Generic EMPR: Volume 2 – Baseline Environmental Report (2001), p2-3.

communities and potentially vulnerable species in deep water habitats, as well as current information on the distribution, population sizes and trends of most pelagic seabird, turtle and cetacean species occurring in South African water and the project area in particular.[38] In addition, with regard to fisheries, the same section of the EIA Report indicates that:

> *The effect of seismic sound on the CPUE* [catch per unit effort] *of fish and invertebrates have been drawn from the findings of international studies.* ***To date there have been no studies focused directly on the species found locally.*** *Although the results from international studies are likely to be representative for local species,* ***current gaps in knowledge on the topic lead to uncertainty when attempting to accurately quantify the potential loss of catch for each type of fishery. Research into the effects of seismic sound on marine fauna is ongoing.***'**[39]
> (emphasis added)

- The Green Connection referred in its comments to a 2015 article by Hawkins *et al* (which study was not considered in the *Marine* Ecology specialist report), which also identifies a number of information gaps relating to understanding the effects of noise on fishes and invertebrates.[40] This study notes that the expansion of shipping and aquatic industrial activities has lead to growing concerns about the effects of anthropogenic sounds on aquatic life, including sound from offshore oil exploration and production.[41] Among other things, the study makes the following relevant observations:

    - There are '*very substantial gaps in our understanding of the effects of these sounds, especially for fishes and invertebrates. Currently, it is almost impossible to come to clear conclusions on the nature and level of man-made sound that have the potential to cause effects upon these animals'*.[42]

[38] Draft EIA Report, p184.
[39] Draft EIA Report, p184.
[40] Hawkins *et al* 'Information gaps in understanding the effects of noise on fishes and invertebrates', Rev Fish Biol Fisheries (2015).
[41] Ibid, 39-64.
[42] Ibid, p39.

- While direct physiological impacts (such as mortality) of seismic impulses are likely limited to species close to seismic airgun arrays, '*research into the effects of acoustic noise exposure has examined only a fraction of fishes or invertebrates*'.[43]
- Furthermore, *'[m]any fishes, and at least some invertebrates, depend on sound to communicate with each other, detect prey and predators, navigate from one place to another, avoid hazards, and generally respond to the world around them*'.[44]
- While there is limited data on the effects of sound on mortality of fish, *'[t]he greater likelihood is that fishes and invertebrates will be injured by high intensity impulsive sounds with rapid rise times, and that some of these injuries could result in fatalities over the short term or over a longer term if animal fitness is compromised…. If an animal is injured it may be more susceptible to infection because of open wounds or a compromised immune system. Even if the animal is not compromised in some way, it is possible that the damage will result in lowering fitness, reducing the animal's ability to find food or make it more subject to predatio*n'.[45]
- Concerns include how anthropogenic sound can alter the general behaviour of fish and invertebrates given that they are '*likely to show behavioural responses to sounds at much greater distances from the sources than those that will result in physical injury. Changes in behaviour could have population level effects as a consequence of keeping animals away from preferred habitats, diverting them from migratory routes…, or interfering with reproductive behaviour*'.[46]
- In their review of studies on the behaviour of wild fishes in response to sounds, Hawkins *et al* point out that *'[s]uch studies have been confined to very few species and the data are often contradictory. There is a lack of information not only for immediate effects on fish that are close to a source but also on fish that are more distant*'.[47]
- There '*is a particular need to investigate the propagation of sound and vibration through the seabed, as this is especially relevant to benthic fishes and*

[43] Ibid, p49.
[44] Ibid, p52.
[45] Ibid, p54.
[46] Ibid, p54.
[47] Ibid, p54-56

> *invertebrates and for exposure to…. seismic airguns,*[48] with many fish and invertebrates sensitive to particle motion rather than sound pressure.

Notwithstanding the lack of baseline data from the area in question and the information gaps acknowledged in the EIA reports and described in other articles, the EIA rates all potential impacts as (very) low to low (especially after mitigation). In its response to the Green Connection's comments on the draft Scoping Report, EIMS simply indicate that the conclusions and significance ratings contained in the specialist reports are in line with similar specialist studies undertaken for seismic surveys over the past 10 years,[49] and that *'[b]ased on discussions with the relevant specialist and with due consideration of the extent, duration, and magnitude of the proposed exploration activities it is understood that there is adequate information to be able to make a reasonable assessment of the likely impacts'*.[50]

55.

In its response to the Green Connection's comments on the drat EIA report, EIMS elaborate upon their response as follows:

> Despite the fact that the studies for this particular area involved desktop assessments, the information that the study was based on was done according to well established research done in the block and, as stated, updated using more recent studies and information from actual marine mammal observers.
>
> It should be recognised that the Generic EMPr was requested by PASA when the compilation of EMPRs became a prerequisite for exploration applications. The Generic EMPR thus forms the foundation of all subsequent EMPRs and EIAs done for hydrocarbon exploration. At the time, it provided a comprehensive summary of the environmental baseline conditions along each coastline (West, South and East Coasts) and the impacts of hydrocarbon exploration on marine fauna and fisheries. In subsequent specialist studies as part of EMPRs/EIAs, both the environmental baseline description as well as the environmental impact section have been updated as new information has become available in the literature.
>
> It should further be noted that the mitigation measures provided in the Generic EMPr, are the basics that were signed off by PASA at that time. These have been much improved over the years to include international recommendations adjusted to be more applicable to the local oceanographic conditions and marine fauna, as well as including specific measures to be implemented by MMOs under various onboard situations.

[48] Ibid, p57.
[49] EIMS response to the Green Connection comments on the draft Scoping Report, at p12.
[50] Ibid, at p13.

> Many of these more specific mitigation measures were compiled in collaboration with experienced MMOs. As such, there has been as significant improvement in the implementation of environmental management measures as part of the surveys since the Generic EMPr was first published. It should therefore be noted that with these constantly updated and improved mitigation measures, both marine fauna and fisheries are now offered better protection, than was the case when the original Generic EMPr was drafted and its contents accepted by the authorities.
>
> With reference to point 52 of your letter, it should be noted that the impacts associated with each of these groups have been assessed in greater detail than the document referenced and have been considered for the specific habitat and species occurring within the proposed seismic acquisition area.
>
> Consequently, it can be stated with regards to the uncertainties and gaps in knowledge, these have specifically been taken into consideration during the assessment of the particular impacts related to the faunal groups and fishing activities. The confidence level of the rating has been stated and, the level and type of mitigation proposed has followed the clear mitigation hierarchy presented in the Specialist reports and also the EIA Report. Accordingly, the mitigation measures proposed are deemed to be sufficient to account for the eventuality that unforeseen events or organisms responses are encountered during the actual survey operations and will ensure that there is independent oversight and feedback to ensure compliance with the EMPr.[51]

56.

The Green Connection disputes that, notwithstanding the clear uncertainties and information gaps, there was adequate information in the EIA documents to enable a reasonable assessment of the likely impacts. The Green Connection also disputes that the mitigation measures proposed are effective in addressing both 'unforeseen event or organism responses' for all species.

57.

In support of this ground of appeal, the Green Connection refers the Minister to an expert report provided by Harris, Olbers and Wright ('Harris *et al*') (see Annexure "**A6**" hereto). The Green Connection also refers to expert reports filed by the Applicants in the recent Searcher seismic survey case, and in particular the expert reports of Lynne Shannon and Dr Claus Winkler

58.

[51] EIMS response to the Green Connection comments on the draft EIA Report, at pages 15-16.

Harris *et al* conducted a review of peer-reviewed literature on the physiological, behavioural and ecological impacts of the proposed 3D seismic survey activities on marine wildlife. Harris *et al* state that the body of 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 these seismic surveys on the marine environment. Harris *et al* point out that 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. Harris *et al* go on to express that in their expert view this is a tangible cause for concern and warrants a precautionary approach, and that 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.

59.

Based on a review of available information, Harris *et al* conclude that seismic surveys do cause harm to both species and ecosystems, and that significant direct harm to individual animals and harm to populations of endangered species is the most likely scenario in the case of this authorised seismic survey on the west coast of South Africa. Of specific concern to Harris *et al* is the impact on: humpback whales and southern right whales which are still frequenting the west coast over this period; 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).

60.

Harris *et al* conclude that Tosaco's proposed seismic survey is inadvisable 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.

61.

Harris *et al* point out that further that 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.

62.

As a result, Harris *et al* disagree with the findings of the Marine Specialist Report that impacts on all species both physiological and behavioural with the mitigation (primarily PAM and MMO) are very low, and state that they do not believe that effective mitigation mechanisms to prevent harm have been specified.

63.

Harris *et al* are of the opinion that the seismic survey should not have been authorised, and strongly recommend that further studies on the impacts of seismic activities in the South African context are carried out *in situ* before proceeding with further seismic surveys of this nature.

64.

C3.1 <u>Impacts on Marine Life and Birds</u>

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*'.

65.

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:

- 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). Harris *et al* state that 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.

- 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.

- The only existing field study in South Africa 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).

- 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).

- In South Africa, since October 2021, thousands of dead and/or dying Cape fur seals (Arctocephalus pusillus pusillus), 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.

- Harris *et* al state that in their opinion, the proposed seismic survey activities are highly likely to both disturb and have an adverse effect on a Marine Protected Areas (MPA), Critical Biodiversity Area (CBA) and Ecologically or Biologically Significant Area (EBSA). It should be noted that the MPA in questions, the Orange Shelf MPA, forms key feeding grounds for the endangered Atlantic Yellow-nosed Albatross, the near threatened Black-browed Albatross and the critically endangered Tristan Albatross.

66.

In her expert affidavit filed in support of the Searcher seismic survey case (see Annexure "**A7**"), 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 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.

67.

In his expert affidavit filed in support of the Searcher seismic survey case (see Annexure "**A8**"), 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.[52] 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.[53]

68.

C3.2 <u>Inefficacy of proposed mitigation measures</u>

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

- 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

[52] At paragraph 11.
[53] At paragraph 13.

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 Marine Mammal Observers (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 MMO's 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 that we question 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 it is unreasonable to rely on PAM alone at night. It is our 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.

69.

C3.3 <u>Synthesis</u>

The Green Connection submits that in light uncertainties and information gaps, insufficient data was presented in the EIA documents to enable credible conclusions to be drawn regarding the significance of seismic survey impacts on marine fauna and fisheries, and that as a consequence the final EIA report does not contain sufficient information necessary for the competent authority to consider and come to a decision on the application.

70.

Furthermore, and notwithstanding the uncertainties and information gaps, the expert report

provided by Harris *et al* shows that seismic surveys do cause harm to both species and ecosystems, and that significant direct harm to individual animals and harm to populations of endangered species is the most likely scenario in the case of the proposed 3D seismic survey off the west coast of South Africa. The report also shows that the mitigation measures relied upon in granting the environmental authorisation are not effective in preventing the likely harm caused by seismic surveys to marine species and ecosystems.

71.

Based in particular on the findings of the expert report of Harris *et al*, the Green Connection therefore disputes the findings of the Marine Specialist Report that 'impacts on all species both physiological and behavioural with the mitigation (primarily PAM and MMO) are very low'.

72.

The Green connection also disputes that DMRE's statement in the reasons for its decision (to grant environmental authorisation to Tosaco) that 3D seismic surveys are non-intrusive in nature, except the potential impact it poses on fisheries and marine fauna, and that the implementation of mitigation measures will ensure that the planned activities will not result in any detrimental impact to the environment. The Green Connection also disputes the DMRE's conclusion that the 3D seismic survey will not result to any detrimental risks to the environment and the public.

73.

The Green Connection submits that the DMRE has erred in relying on the findings of the final EIA Report and specialist studies given the clear uncertainties and information gaps related to the likely impacts of the 3D seismic survey on marine fauna and ecosystems, and submits further that the mitigation measures relied upon are not effective in preventing the likely impacts of seismic blasting.

74.

In light of the above, the Green Connection submits that the DMRE should have properly applied a precautionary approach[54] when considering its decision on authorisation (but failed to do so), and that if it had done so the authorisation should have been refused.

75.

For the reasons set out above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

76.

C4. Failure to undertake acoustic monitoring survey

It is submitted that the environmental impact assessment and decision on authorisation are fatally flawed on the basis that no acoustic modelling has been conducted in respect of the proposed 3D seismic survey.

77.

It is stated in the final EIA Report that '*[d]uring seismic surveys high-level, low frequency sound pulses are generated by an acoustic instrument towed behind a survey vessel, just below the sea surface. The sounds are directed towards the seabed and the seismic signal is reflected by the geological interfaces below the seafloor*'[55]. It is stated further in the draft EIA Report that:

> The proposed survey would involve a **seismic sound source (airgun array)** and multiple hydrophone streamers, which would be up to **10,000 m long**. The streamers would be towed at a depth of 9 m to 10 m below the surface and would not be visible, except for the tail-buoy at the terminal end of the cable. **The sound source or airgun array would be towed 80 – 150 m behind the vessel at a depth of between 5 – 25 m below the surface**…
>
> **Each triggering of a sound pulse is termed a seismic shot**, and these are **fired at intervals of 10 – 20 seconds** and **at an operating pressure of between 2 000 to 2**

[54] Section 2(4)(a)(vii) of NEMA stipulates that sustainable development requires the consideration of all relevant factors, including that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and action.
[55] Final EIA report, p17.

> **500 psi and a volume of 3 000 to 5 000 cubic inches**. Each seismic shot is usually only between 5 and 30 milliseconds in duration, and despite peak levels within each shot being high, the total energy delivered into the water is low.
>
> Airguns have most of their energy in the 5-300 Hz frequency range, with the optimal frequency required for deep penetration seismic work being 50-80 Hz. The maximum sound pressure levels at the source of airgun arrays in use today in the seismic industry are typically around 220 dB re 1µPa at 1 m, with the majority of their produced energy being low frequency of 10-100 Hz. The location where this level of sound is attained is directly beneath the airgun array, generally near its centre, but **the exact location and depth beneath the array are dependent on the detailed makeup of the array, the water depth, and the physical properties of the seafloor**. However, **based on analogue sound sources, sound levels for the seismic survey can notionally be expected to attenuate below 160 dB less than 1 325 m from the source array**. [56] (emphasis added)

78.

The final EIA Report does not indicate what specific array Tosaco is intending to use, or what the 'analogue sound sources' referred to in the draft EIA Report are (the specific or range of 'analogue' sound sources referred to are not revealed or described). The basis on which the analogue sound sources are used to predict potential impacts is therefore unclear and unsubstantiated.

79.

The final EIA Report goes on to state that:

> The **airguns used in modern seismic surveys produce some of the most intense non-explosive sound sources used by humans in the marine environment** (Gordon et al. 2004). However, the **transmission and attenuation of seismic sound is probably of equal or greater importance in the assessment of environmental impacts than the produced source levels themselves, as transmission losses and attenuation are very site specific, and are affected by propagation conditions, distance or range, water and receiver depth and bathymetrical aspect with respect to the source array**. In water depths of 25 - 50 m airgun arrays are often audible above ambient noise levels to ranges of 50 - 75 km, and **with efficient propagation conditions such as experienced on the continental shelf or in deep oceanic water, detection ranges can exceed 100 km and 1,000 km**, respectively (Bowles et al. 1991; Richardson et al. 1995; see also references in McCauley 1994). The **signal character of seismic shots also changes considerably with propagation effects**. **Reflective boundaries include the sea surface, the sea floor and boundaries between water masses of different temperatures or salinities, with each of these preferentially scattering or absorbing different frequencies of the source signal**. This results in the received signal having a different spectral makeup from the initial source signal. **In**

[56] Final EIA report, p19.

> **shallow water (<50m)** at ranges exceeding 4 km from the source, signals tend to increase in length from <30 milliseconds, with a frequency sweep of between 200 – 500 Hz and a longer rise time….
>
> In contrast, **in deep water received levels vary widely with range and depth of the exposed animals, and exposure levels cannot be adequately estimated using simple geometric spreading laws** (Madsen et al. 2006). These authors found that the received levels fell to a minimum between 5 - 9 km from the source and then started increasing again at ranges between 9 – 13 km, so that **absolute received levels were as high at 12 km as they were at 2 km**, with the complex sound reception fields arising from multi-path sound transmission.[57] (emphasis added)

It is stated further that:

> **3D seismic surveys are conducted on a very tight survey grid, typically over a smaller area** within which promising petroleum prospects are suspected, **the acoustic impact within the localised area persists for longer relative to that experienced within a particular location during a widely spaced 2D survey**. Although the overall duration of a 3D survey is not necessarily longer than for a 2D survey, **the impact of seismic noise will be locally somewhat higher for a 3D survey compared to a 2D survey**. 2D surveys in contrast tend to be conducted over a larger area, and the spatial extent of the impact may thus be higher for 2D surveys.[58] (emphasis added)

80.

The above excerpts from the final EIA Report are unchanged from the information provided in the draft EIA Report. In its comments on the draft EIA Report, the Green Connection pointed out that, based on the information provided by EIMS. it is evident that there is no doubt that the high-level, low frequency sound pulses generated by a 3D acoustic array will have sound impacts on the receiving marine environment (and more so than 2D seismic surveys), and that the transmission and attenuation of seismic sound is of equal or greater importance in the assessment of environmental impacts than the produced source levels themselves given that transmission losses and attenuation are very site specific, and are affected by propagation conditions, distance or range, water and receiver depth and bathymetrical aspect.

81.

[57] Final EIA Report, p146.
[58] Final EIA Report, p147.

Notwithstanding the Green Connection having pointed out in its comments that no acoustic modelling had been conducted in the area earmarked for the 3D seismic survey, no such modelling was conducted prior to finalisation of the EIA report and its submission thereof to the DMRE for a decision on authorisation.

82.

Instead, as was pointed out by the Green Connection in its comments on the draft EIA Report, analogue information appears to have been drawn from published literature, as well as '*sound transmission loss modelling undertaken for a licence block on the Agulhas Bank, where the shallowest point modelled was at similar depth to that of the proposed 3D survey area in Block 1'*.[59] The Agulhas Bank stretches from off the Cape peninsular to Port Alfred. Apart from the shallowest point modelled reportedly being at a similar depth to that of the proposed 3D survey area in Block 1, it is difficult to see how this modelling of possibly different sound arrays, in a different region, with different water temperatures and currents, and different habitats and bathymetry, can be sufficiently 'analogous' to serve as a reliable basis for impact assessment and decision-making. Nor is this explained in the draft EIA Report.

83.

It was also pointed out by the Green Connection in its comments on the draft EIA Report that Russell,[60] in his assessment of the impact of seismic surveys on South African Fisheries, states out that '*there is no such thing as a typical seismic survey: research indicates precise responses to air gun and seismic survey noise are species specific and dependent on the actual noise exposure regime'.*[61] Russell states further that:

> Operational aspects such as the "zones of effect" (specific for each airgun signal), how many and how widely spaced they are; the depth and size of the prospecting area; particulars for the data acquisition; and duration of the survey, all need to be incorporated in the planning phase to give some idea of the full impact of a specified seismic survey. **Risk assessments should include characteristics of the specific survey to be used,**

[59] Draft EIA Report, p145. Final EIA Report, p152.
[60] Russell, D. 'Assessing the Impact of Seismic Surveys on South African Fisheries' (5 April 2018). Available online at: www.rfalliance.org.za/wp-content/uploads/2018/10/Assessing-Impact-of-Seismic-Surveys-on-South-African-Fisheries-April-2018.pdf (last accessed 31 August 2021).
[61] Russell, p5.

> **modelling of probable noise propagation in the area to be surveyed and knowledge of the species present and awareness of their biology**.[62] (emphasis added)

84.

In its comments on the draft EIA Report, the Green Connection pointed out that in respect of a reconnaissance permit application made by Spectrum for permission to conduct a multiclient 2D seismic survey in various blocks of the West Coast (including portions of Block 1), the environmental management plan (EMP) published for public comment included an underwater acoustics modelling study.[63] This study was referred to in order to make the point that it is not unusual for underwater acoustics modelling to be undertaken as part of seismic survey authorisation application.

85.

In its response to the comments made by the Green Connection on the draft EIA, EIMS states as follows:

> As part of the marine ecological assessment, a detailed breakdown was provided of the anticipated effects of the sound generated by the airgun array during the 3D survey on each of the faunal groups. The noise effects described included physiological effects (physical injury/permanent threshold shift (PTS) and temporary threshold shift (TTS)) and behavioural disturbance. As most of the impacts were assessed to be of very low or low enough significance, the need for acoustic modelling was not considered necessary, especially given the limited time that the survey would be undertaken for.
>
> Acoustic Modelling was not proposed in the Plan of Study for EIA and this was subsequently accepted by the Competent Authority.
>
> With reference to the Spectrum Multi Client Reconnaissance Application and the acoustic modelling study, it is understood that one of the areas overlaps with a portion of the proposed Tosaco area of interest. The acoustic modelling conducted for this study, found that the impacts would all be of low significance.[64]

86.

For the purposes of this appeal, the Green Connection commissioned acoustic experts Mackenzie Hoy Consulting and Wind Engineers (see Annexure "**A9**") to comment on the final

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[62] Russell, p5.

[63] Proposed Speculative 2D Seismic Survey off the West Coast of South Africa: Environmental Management Plan, PASA Ref. 12/1/033, by SLR for Spectrum. See for example Executive Summary pi-ii, and Appendix 4 *Sound Transmission Loss Modelling Study.*

[64] EIMS Response to the Green Connection comments on the draft EIA Report (15 October 2021), at p11.

EIA Report in relation to the assessment of the noise impacts of a 3D seismic survey. Among other things, Hoy points out that:

- The EIA diagrammatically indicates that sound from the seismic source towed behind the survey vessel travels in a linear form and disperses within the survey area. This is misleading; in fact, sound in the ocean is affected by water depth (viz pressure), salinity, temperature and temperature gradients. and can travel many kilometres from the source. A diagram is given showing the sound travel from the survey vessel.
- The specialist study on the impact of the seismic survey on marine fauna has many errors with respect to its understanding of underwater noise. Referring to Table 90 *Comparison of noise source in the* ocean and Table 17 *Noise exposure criteria in fish for seismic airguns* contained in the Tosaco marine fauna report, Hoy points out that '*Figure 90… indicates that seismic airguns will produce a sound level of 220 dB re 1 µPa at 1 m. Table 17 above indicates that fish and fish larvae will suffer potential mortal injury between 207 dBA re 1 µPa at 1 m. Thus fish will definitely be mortally injured as a result of the seismic survey. It is thus of utmost importance to conduct an acoustic study to determine the extent of the noise impact*'. Hoy states further that '[*t]o have no idea of how the sound will propagate in the search area and then to assume it will be low enough not to affect marine life is inadequate for an EIA*'.
- With regard to EIMS's statement that the Spectrum acoustics modelling study found that the impacts would all be of low significance (and by implication that no acoustics modelling study is required by Tosaco), Hoy points out that '[*a] review of the Spectrum Multi Client Reconnaissance application acoustic modelling study shows that it is not in fact an acoustic study: it is a series of diagrams which indicate now noise will be distributed around the survey vessel and no calculations of noise distribution at various distances and depths from the seismic array*'.

87.

As was pointed out by the Green Connection in its comment on the draft EIA Report, in *Earthlife Africa Johannesburg v Minister of Environmental Affairs* 2017 (2) SA 519 GP, the High Court gave judicial recognition to a climate change assessment being a relevant factor which

must be considered before granting environmental impact authorisations, despite this not being specified in the regulatory framework. Following this reasoning, it was submitted that acoustic sound modelling is required in this EIA in order to more reliably assess the potential significance of the proposed 3D seismic survey on the targeted seismic survey area. The Green Connection stands by this submission.

88.

For the reasons set out above, the Green Connection submits that the final EIA Report is fatally flawed in the absence of a technology-specific acoustic sound modelling conducted in the proposed 3D seismic survey area, and that environmental authorisation should accordingly have been refused. The Green Connection submits that the DMRE, in making its decision on authorisation in the absence of a robust and technology-specific underwater acoustic sound modelling, has failed to take a critical and highly relevant factor into account.

89.

In light of the above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

90.

C5. Failure to adequately consider impacts on Small Scale Fisheries sector

It is submitted that the Tosaco Specialist Fisheries Assessment failed to adequately consider the likely impacts of the proposed 3D seismic survey on the small-scale fisheries sector.

91.

With regard to the potential impacts of the proposed 3D seismic survey on catch rates, the final EIA Report states as follows:

> For most fisheries sectors, the effects of acoustic disturbance on catch rates would be considered to be of overall negligible significance. However, in the case of the Demersal Longline, Tuna Pole-Line, Traditional Linefish, Small Scale Fisheries and Fisheries Research

> sectors, the spread of sound into fishing grounds may affect catch rates and therefore the overall significance of the survey impact on these sectors has been assessed to be low.[65]

92.

The report goes on to state that:

> Based on the current project description, sound levels for the seismic survey can notionally be expected to attenuate below 160 dB less than 1,325 m from the source array. The current assessment is based on an assumption that the maximum potential zone of acoustic disturbance could extend to a distance of up to 1.5 km from the seismic acquisition area. This is based on an assumption that sound pressure levels generated during the survey would attenuate to the minimum threshold level at which behavioural disturbance on fish could be expected.[66]

93.

The Green Connection submits that, contrary to the assumptions made in the final EIA Report, studies show that the effect of 3D seismic surveys on fisheries is not limited to 1.5 km:

- Studies of impacts of seismic surveys on fisheries indicate large-scale displacement of some species. In the area of seismic surveys, catch rates of different fish species decrease (Engås et al. 1996, Streever et al. 2016). Engås et al. observed average decreases in haddock and cod catches of 21% for longlines and 50% for trawling, within a roughly 3000 km^2 area around an airgun survey, and did not return to pre-survey levels during the five days of study that followed.
- Fish catch has been observed to decline within the immediate survey area (104 km^2) by 45-70%. Arctic researchers observed sustained declines in fish catches in Alaskan waters during periods of seismic airgun activity (Streever et al. 2016). The question is whether these decreased catches were due to increased fish mortality or habitat abandonment; but either scenario would be concerning, as they could lead to longer-term declines if airgun surveys are sustained or if fish fail to return.
- Similarly, a seismic survey caused a 78% decrease in fish abundance on an Atlantic coral reef at night, the period when reef wildlife was ordinarily most active, although the

[65] Final EIA Report, p167.
[66] Final EIA Report, p170.

survey came no closer than about 8 km (Paxton et al. 2017). These studies suggest that seismic surveys occurring near locations of high fish abundance could lead to major disruptions in fish habitat use or abandonment of important habitats, and are consistent with the short-term behavioural responses observed in caged-fish studies.

94.

It is noted that the Specialist Fisheries Assessment report states as follows regarding small-scale fisheries:

> Small-scale fishermen along the Northern Cape and Western Cape coastlines are typically involved in the traditional line (refer to Section 3.3.7), West Coast rock lobster (Section 3.3.8) and abalone fisheries, whereas communities on the South Coast would be involved in traditional line, squid jig and oyster harvesting.
>
> The fishing communities situated at Port Nolloth, Kleinzee and Hondeklipbaai target seasonal abundance of snoek from January to July. Availability of snoek is variable from year to year but, in general, optimum landings are expected during the period March to May. The areas targeted are predominantly coastal, with skippers restricted by vessel safety class (SAMSA-regulated) to an offshore range of 1 Nm (vessel category E) or 5 Nm (vessel category D). Snoek is therefore predominantly caught inshore of 5 Nm of the coastline, corresponding to the outer range of the majority of vessels registered in the sector. However, category C vessels can range up to 15 Nm offshore. Fishermen that have access to these larger vessels (and are in possession of the appropriate skipper's licence) are able to search for fish in deeper waters, coinciding with the inshore segment of the proposed seismic acquisition area (see Figure 3.28).[67]

95.

With regard to the assessment of the impacts of the 3D seismic survey on small-scale fisheries, the Specialist Fisheries Assessment states that:

> Most fishing activity is concentrated within 5 Nm of the coastline; however, with access to larger vessels, fishing effort can range to an offshore distance of 15 Nm from the coastline. This range would coincide with the inshore extent of the proposed seismic acquisition area. The impact of temporary exclusion to small scale fishing operations is expected to be of overall MEDIUM NEGATIVE significance (refer to Section 4.1.4 and Table 4.1).[68]

[67] Specialist Fisheries Assessment, at p48.
[68] Specialist Fisheries Assessment, at p59.

96.

In its conclusions and recommendations, the Specialist Fisheries Assessment makes the following recommendation:

> It is recommended that the seismic survey be timed to avoid the seasonal activity of snoek-directed coastal fishing over the period March to July.[69]

97.

It is noted that this recommendation is watered down in the EMPR by the qualification 'if possible':

> Timing: the tuna pole-and-line sector targets snoek seasonally in the vicinity of the proposed seismic survey acquisition area. If possible, time the survey to avoid peak fishing activity during March to July.[70]

98.

The Green Connection submits that the EIA failed to carry out a thorough assessment of the potential impacts of the proposed 3D seismic survey on catch rates, and the knock-on effect such impacts would have on small-scale fishers and communities that rely on fishing for their livelihoods and culture. The assessment underestimates the effects of seismic surveys on catch rates by assuming (without in-field validation) that the maximum potential zone of acoustic disturbance could extend to a distance of up to 1.5 km from the seismic acquisition area: the studies cited herein above show that the impacts on catch rates extend much further. In addition, likely disruptions to hake and snoek within the 3D seismic survey area (due to their diel cyclic behaviour referred to earlier in this appeal), and the likely behavioural effects on hake and snoek (including disruption of feeding behaviour and lasting energy budget effects that are likely to impact on foraging, reproduction and migration of hake and snoek), have not been thoroughly assessed in relation to potential impacts on small-scale fishers and fishing-dependent communities.

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[69] Specialist Fisheries Assessment, at p63.
[70] EMPR, p43.

99.

In light of the above, the Green Connection submits that environmental authorisation should not have been granted in the absence of a thorough assessment (including in-field studies) of the impacts of the 3D seismic survey on snoek and hake catch rates, and in the absence of a thorough assessment of these impacts on the livelihoods and culture of small-scale fishers and fishing-dependent communities.

100.

For the reasons set out above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

101.

C6. Failure to Adequately Assess Need and desirability

The Green Connection submits that the final EIA report and the decision on authorisation based thereon failed to adequately assess the need and desirability of the proposed activities. In particular, the final EIA report does not contain all of the information necessary for the competent authority to consider the application and reach a decision on authorisation, and the environmental authorisation does not take into consideration all relevant factors, including that a risk-averse and cautious approach must be applied[71] (as stipulated in section 2(4)(a)(vii) of NEMA). Furthermore, having regard to the South Africa's international climate change commitments, it is submitted that the proposed and/or likely future exploration and production activities are not needed or desirable.

102.

C6.1 <u>The final EIA Report does not contain all the information necessary for the competent authority to consider the application and reach a decision, and the environmental authorisation does not take into consideration all relevant factors</u>

While the environmental authorisation states that "*[t]he need and desirability of the project*

[71] As stipulated in section 2(4)(a)(vii) of NEMA.

was clearly addressed and covered all the main factors", numerous important factors were absent from the need and desirability analysis.

103.

When considering an application for environmental authorisation, the competent authority is required to take into account all of the factors set out in section 24O of NEMA, including the need and desirability for the proposed project, any guideline published in terms of section 24J and any minimum information requirements for the application. This includes the 2017 Guideline on Need and Desirability, Department of Environmental Affairs (DEA), Pretoria, South Africa ("the Need and Desirability Guideline").

104.

The need and desirability assessment failed to consider all relevant factors, including those contemplated by NEMA and in the Need and Desirability Guideline, including more specifically considerations of intra- and inter-generational equity in the context of sustainability, cumulative impacts, considering intended future phases of this project, site specific need and desirability, and whether the project meaningfully promotes justifiable economic and social development. In other words, despite the fact that exploration activities and production activities are listed separately for purposes of the EIA Regulations, in reality they are steps in a single process, and it is artificial for EIMs as well as the competent authority to exclude consideration of the impacts of the production process, or of the need for, and desirability of, producing oil and gas, when deciding whether or not to authorise exploration activities. If the exploitation of oil and gas in the areas proposed is not necessary or is not desirable, then exploring for that oil and gas cannot be necessary or desirable, particularly given the ecological risks associated with the proposed exploration. In other words, any assessment of the need and desirability of exploration activities, inevitably requires an assessment of the need and desirability of undertaking long-term hydrocarbon production in those areas.

105.

Tosaco intend to explore for oil and gas reserves for the sole purpose of discovering

hydrocarbon deposits that they can exploit, which is to be facilitated through the use of 3D seismic survey technology which is intended to define/map out areas for the drilling of wells subsequent to said discovery.

106.

Chapter 4 of the Need and Desirability Guideline sets out questions to be engaged with when considering need and desirability. They state that the "*need for and desirability of a proposed activity should specifically and explicitly be addressed throughout the EIA process when dealing with individual impacts and specifically in the overall impact summary*". Impacts related to production activities are reasonably foreseeable impacts eventuating from exploration. If the impacts and risks associated with production are unacceptable, then any and all risks and impacts associated with exploration activities are unnecessary, undesirable and completely avoidable. The fact that a further EIA would be necessary in order to obtain another environmental authorisation to commence production of oil and gas, and that more information would be available at that stage than is now available (e.g. about the location of the production wells and the anticipated duration of the production operations) does not obviate the need to assess these impacts on the basis of available information, at the exploration stage.

107.

The final EIA Report has not considered or assessed how the entire potential development will exacerbate the potential ecological and socio-economic impacts that will be associated with a major oil spill or a wellhead blowout during a likely future exploration well drilling and testing and/or production activities. There is no acknowledgement of the risk that a future oil spill or wellhead blowout may have on small-scale fishers and coastal communities and their dependence the ocean for their livelihoods. Furthermore in this regard the final EIA Report has not considered or assessed how the entire potential development will exacerbate the increased dependency that communities will have on the increased use of natural resources to maintain economic growth, nor does it address how the development will reduce resource dependency. Lastly, the limited need and desirability assessment does not acknowledge the risk posed to Critical Biodiversity Areas and Ecological and Biological Significant Areas located

within Block 1 and within the proposed seismic survey area where "*petroleum production is considered incompatible*".[72]

108.

The Appellant further submits that, taking into account the requirements of NEMA, particularly the section 2 principles[73], the proposed exploration activities are not needed nor desirable. When evaluating the project proposal, the strategic context of such exploration activities and the broader societal needs and the public interest, should and must be considered. Currently, no significant short-term positive impacts are associated with the prospecting activities. Financial viability should be considered within the context of justifiable economic development, measured against the broader societal short-term and long-term needs. While the financial viability considerations of the applicant Tosaco might indicate if a development is "do-able", the "need and desirability" will be determined by considering the broader community's needs and interests.

109.

The specific needs of the broader community (which also includes marine and aquatic life as defined in the National Environmental Management: Integrated Coastal Management Act[74]) should therefore be considered together with the opportunity costs and distributional consequences in order to determine whether or not the development will result in the securing of ecological sustainable development and the promotion of justifiable social and economic development – in other words to ensure that the development will be socially, economically and environmentally sustainable. There are legitimate concerns that the development in its needs and desirability analysis, has failed to comprehend the negative impacts that the proposed exploration activities may have on :

- The global climate emergency and South Africa's climate change obligations

[72] Final EIA Report, p130. See also Figure 86, depicting Critical Biodiversity Areas and Ecological Support Areas in the proposed 3D seismic survey area.
[73] Section 2(2) of NEMA; Section 2(4)(d); Section 2(4)(g) and 2(4)(I) and Section 2(4)(o) and lastly Section 2(4)®.
[74] 24 of 2008.

- Critical Biodiversity Areas and Ecological and Biological Significant Areas located within Block 1 and within the proposed seismic survey area (where "petroleum production is considered incompatible"); and
- Fishery sectors.

110.

Reliance on perceived long-term benefits of prospecting and associated activities, but dismissal of the need to consider long-term and associated impacts of prospecting and associated activities on the surrounding environment, runs counter to the NEMA principles. The failure to consider the potential long-term costs flouts the principle of inter-generational equity anchored in the NEMA principles.

111.

Furthermore, the Green Connection submits that the final EIA Report failed to give effect to the Need and Desirability Guideline in the following respects:

- Alternatives, including the no-go option, have not been fully explored when assessing need and desirability. The Need and Desirability Guideline requires that, when considering the need and desirability considerations, it must be decided with alternatives what represents the "most practicable environmental option". Need and desirability must take into account all alternatives, and this must necessarily include the no-go option. Good planning and impact assessment should clearly identify and select those alternatives that offer the greatest overall benefits and avoid undesirable impacts for the good of society. Decision-making, too, should strive to this end. That is, the evaluation of alternatives is an essential part of impact assessment and decision making. According to the EIA Regulations, if no alternatives, including alternative locations for the activity were investigated, the EAP is to set out the motivation for not considering such alternatives.[75]

[75] Regulation 1(1)(f) of Appendix 6; Regulation 3(1)(h)(ix); Regulation 3(1)(j)(iii);

- It is noted that EIMS states the following regarding the identification of alternative locations:

> The potential 3D seismic survey area will specifically target the inner graben syn-rift basin as highlighted in Section 3 above. It is envisaged that the optimization of the acquisition parameters will focus the seismic survey to better define and outline the syn-rift grabens. Through this definition it is also anticipated that a better understanding of the internal structure of possible reservoirs, traps, fault structures and possible sediment input points. As such, no further location alternatives are considered in this assessment.[76]

Given the statement above, there appears to be no evidence of alternative locations having been considered or addressed by the EAP as required by EIA regulations,[77] nor any reasonable motivation offered for a failure to consider and identify such alternatives. The Scoping Report and the final EIA Report fail to provide evidence that the best practicable environmental option has been applied. Even if this is contested, the lack of sufficient evidence which can substantiate for a reasonable motivation for not investigating alternative locations for the activity, renders this particular EIA critically and materially flawed.

- The scoping report and the EIA and EMPR fail to assess what measures were taken to ensure that the responsibility for the environmental, health and safety consequences of the development have been addressed throughout the development's lifecycle - that is not only the exploration stage, but in the event of a successful outcome – including the production, transport and end phases as well. It is a falsity to presume that the lifecycle of the proposed early-stage prospecting activities will end when the phase ends or when prospecting ends.

112.

In light of the above, the Green Connection submits that the need and desirability has not been adequality assessed, that the final EIA Report does not contain all of the information necessary for the competent authority to consider the application and reach a decision on

[76] Final EIA Report, at pages 39 and 173.
[77] See above

authorisation, and the environmental authorisation does not take into consideration all relevant factors, including that a risk-averse and cautious approach must be applied.

113.

In light of the above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

114.

C6.2 <u>Failure to consider climate change impacts from potential oil and gas drilling as part of the need and desirability assessment</u>

As noted above, NEMA requires that development be sustainable and requires the competent authority to "take into account all relevant factors."[78] The EIA Regulations prescribe that a need and desirability analysis that must consider "the context of the development footprint on the approved site" and assess "how the proposed activity complies with and responds to the policy and legislative context" of the proposed activity.[79]

115.

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.[80] Despite South Africa's obligations to addressing climate change through its international commitments, the final EIA Report fails to address climate change considerations in terms of need and desirability. This is material for a number of reasons:

- The exploratory activities are intended to lead to future production of oil and/or gas which would serve to exacerbate fossil fuel dependency, and increase South Africa's vulnerability to climate change impacts due to increased greenhouse gas emissions, with devastating adverse climate change impacts. Furthermore, a recent study indicates that most of the discovered reserves of oil and gas cannot be burnt if we are to stay on

[78] Section 2(3), 24O(1)(b) of NEMA.
[79] item 2(b) of Appendix 3 of the EIA Regulations.
[80] Paragraph 1.1.8, page 11, of the Guideline.

the pathway to keep global average temperature increases below 1.5 degrees Celsius.[81] Therefore, 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.

- South Africa has committed to stay on a pathway to keep global average temperature increases below 1.5 degrees Celsius, which global experts agree can only be achieved if no new oil and gas reserves should be exploited. For example, the recent report by the International Energy Agency ("IEA") "*Net Zero by 2050: A Roadmap for the Global Energy Sector*" states that reaching net zero by 2050 and limiting the increase in average global temperature to 1.5 °C above pre-industrial levels "*requires nothing short of a total transformation of the energy systems*" that underpin the economies of the world (Foreword, p.3) and that the climate goal of limiting global warming to 1.5 °C can be achieved only if there are "*no new oil and gas fields approved for development*". The pathway mapped by the IEA report requires (among other things):

    - an "immediate and massive deployment of all available clean and efficient energy technologies";
    - a 75% drop in methane emissions from fossil fuels over the next ten years; and
    - that with immediate effect, no approvals are granted for the development of (among other things) new oil and gas fields.[82]

- New and Barmand[83] indicate further that:

[81] New. M & Barmand.S. 2021. "*Evidence that current proven reserves of oil and gas exceed CO2 budgets consistent with the Paris Agreement temperature targets*" African Climate and Development Initiative (ACDI), University of Cape Town.
[82] Executive summary of Chapter 2 "*Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development*" in: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.*
[83] New. M & Barmand.S. 2021. *"Evidence that current proven reserves of oil and gas exceed CO2 budgets consistent with the Paris Agreement temperature targets*" African Climate and Development Initiative (ACDI), University of Cape Town.

- While the net emissions that are consistent with the Paris targets have considerable uncertainties due to biogeochemical and geophysical uncertainties about the earth system, net emissions from today need to be below 400 Gt CO2 to have a 50% likelihood of keeping below 1.5°C, and 800 Gt to keep "well below" 2.0°C
- Emissions from fossil fuels greater than 400 and 800 Gt will require substantial carbon dioxide removal (CDR) to meet the Paris temperature targets. Questions remain as to the viability of large scale CDR, especially up to 2050 when net zero emissions are required;
- The emissions from burning already proven oil and gas will substantially exceed the budget available to meet the 1.5°C target;
- Emissions of CO2 from burning proven oil reserves will also substantially exceed the "well below 2.0°C" oil and gas emissions budgets; and
- There is already sufficient proven oil to supply over double the emissions consistent with 1.5°C, while for gas, proven reserves are nearly three times the 1.5°C CO2 budget.

- It is therefore material that need and desirability was not assessed from a climate change perspective as set out, given that most of the discovered reserves 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, contravenes South Africa's international climate change commitments

- Had the final EIA Report included a proper assessment of the need and desirability of exploring for oil and gas that took account of the realities of the measures that are required to address climate change, the decision makers ought to have concluded that the proposed exploration is neither needed nor desirable. However these relevant considerations were not before the decision-maker and were not considered by it in making its decision on authorisation.

- Our courts have now recognised the critical importance of comprehensive climate change impacts to be assessed in EIA processes. This must include the extent to which the authorised activity will contribute to climate change over its lifetime; the resilience of the project itself to climate change such as through extreme weather patterns; and how these may be mitigated or avoided.

- In *Earthlife Africa Johannesburg v the Minister & Others* [2017] 2 All SA 519 (GP) (8 March 2017), the Court confirmed that a climate change impact assessment ("CCIA") is a necessary component of assessing environmental impacts for projects with climate impacts. In this case, the court acknowledged the need for a CCIA much broader than a mere assessment of anticipated emissions. It confirmed the need for a comprehensive assessment, which assesses, inter alia, the impacts of climate change on the project and the ways in which the project might aggravate the impacts of climate change in the area. The Pretoria High Court concluded that "[w]ithout a full assessment of the climate change impact of the project, there was no rational basis for the Chief Director to endorse these baseless assertions" (emphasis added).

- Importantly, it is imperative that a climate impact assessment assesses both climate harms from exploratory activities and from production of oil and/or gas. This is because:

    - the seismic blasting, as exploratory activities, are intended to lead to future production of oil and/ or gas which would serve to exacerbate fossil fuel dependency, and increase South Africa's vulnerability to climate change impacts due to increased greenhouse gas emissions, with significant adverse climate change impacts; and

    - section 82 of the MPRDA closely connects the rights of exploration with production, stating that "the holder of an exploration right … has the exclusive right to apply for and be granted a production right in respect of the petroleum and the exploration area in question".

- Indeed, it is clear from the final EIA Report that the purpose of the exploration phase is to lead to production. For example, the report indicates that he project '*will not, at this stage, involve the use of natural resources identified as part of the proposed exploration project*', while at the same time acknowledging that '[*t]he proposed project aims to identify oil and gas resources to be used in the energy production and/or processing or manufacturing of materials*'.[84]

- However the EAP failed to consider the impacts associated with further exploratory activities, such as drilling, or production (exploitation). Impacts related to both test drilling (as further exploration activities) and production activities are reasonably foreseeable impacts eventuating from the exploration activities described in the final EIA Report.

- In granting the environmental authorisation, the decision-maker did not consider the impacts associated these further intended activities. The fact that a further EIA would be necessary in order to obtain an environmental authorisation to commence production of oil and gas, and that more information would be available at that stage than is now available (e.g. about the location of the test and production wells and the anticipated duration of the production operations), does not obviate the need to assess these impacts on the basis of available information, at the initial exploration stage. The information which such an assessment would yield is clearly relevant to the decision on authorisation.

- In *Director: Mineral Development, Gauteng Region and Another v Save the Vaal Environment and Others* (133/98) [1999] ZASCA 9 (12 March 1999) considered the effect of the granting of a mining licence, and concluded that:

> The issue of a licence in terms of sec 9 enables the holder to proceed with the preparation of an environmental management programme, which, if approved, will enable him to commence mining operations. Without the sec 9 licence he cannot seek such approval. The granting of the sec 9 licence opens the door to the licensee and sets in motion a chain of events which can, and in the ordinary course of events

[84] Final EIA Report, p30. See in particular items 1.6, 1.7.1 and 17.2 of Table 7

> might well, lead to the commencement of mining operations. It is settled law that a mere preliminary decision can have serious consequences in particular cases, inter alia where it lays "the necessary foundation for a possible decision ..." which may have grave results. In such a case the audi-rule applies to the consideration of the preliminary decision (see *Van Wyk N O v Van der Merwe 1957 (1) SA 181 (A) at 188 B - 189 A.).* In my view this is such a case.

- Similarly, the granting of an environmental authorisation and approval of the EMPr for seismic activities lays the foundation for the approval of a subsequent environmental authorisation for exploratory drilling, and later for production, together with the applicable exploration and production rights.

- These were relevant factors which ought to have been carefully considered, but which were not by the decision-makers. Consequently, it is submitted that these relevant factors were not considered, contrary to section 6(2)(e)(iii) of PAJA, and that a decision to authorise such activities is unreasonable and contrary to the NEMA principles, and falls to be set aside on this basis.

116.

In light of the above, the Green Connection submits that the need and desirability has not been adequality assessed, that the proposed and/or likely future exploration and production activities are not needed or desirable having regard to the South Africa's international climate change commitments.

117.

In light of the above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

118.

C7. Failure to identify and assess the potential positive impacts of the 'no go alternative'

With regard to the 'no go alternative', the final EIA Report states as follows:

> The no go alternative would imply that no exploration activities are undertaken. As a result, the opportunity to identify potential oil and gas resources within the Block 1 and proposed 3D survey area would not exist. This will negate the potential negative and positive impacts associated with the proposed exploration activities.[85]

and

> The no go alternative would imply that no exploration activities are undertaken and, as such, the negative impacts as stated above, would not materialise. However, conversely, this will negate the potential positive impacts associated with the proposed exploration activities, including:
>
> • The opportunity to identify potential oil and gas resources within the Block 1 and proposed 3D survey area; and
>
> • Provision of job opportunities (limited during the exploration phase).
>
> Since there are no mitigation measures, the impact significance will be LOW pre- and post-mitigation and final significance will be the same.[86]

119.

The Green Connection submits that the potential positive impacts of the 'no go alternative' have not been adequately identified or assessed. Selecting the 'no go' option would be consistent with the NEMA sustainable development principles that emphasise the need to avoid the disturbance of ecosystems, and to prevent negative impacts on the environment and people's rights.[87] It would also ensure that marine ecosystems in Block 1 would be protected, including the interdependence of these marine ecosystems. Selection of the 'no go' option would result in the avoidance of (for example, but not limited to):

- The negative impacts associated with 3D seismic surveys (such as ecosystem impacts and impacts on small-scale fishers whose livelihoods would be negatively impacted should the 3D seismic survey result in reduced catches); and
- The negative consequences that would arise should commercially exploitable oil and gas resources be discovered in the area, which consequences have not been assessed (such as climate change impacts associated with the future extraction and processing

[85] Fina EIA Report, p40.
[86] Final EIA Report, p173.
[87] NEMA, s2(4)(a)(i) and (vii).

of fossil fuels, and the potentially catastrophic impacts associated with an uncontrolled wellhead blowout).

120.

Given that the final EIA Reports fails to identify and assess the potential positive impacts of the 'no go alternative', it is submitted that the final EIA Report did not contain the information that was necessary for the competent authority to consider and come to a decision on the application.

121.

Accordingly, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

122.

C8. Failure to conduct climate change assessment

It is noted that the final EIA report does not address climate change impacts associated with the exploration for and production of oil and gas in Block 1 (i.e. the likely future extraction and use of greenhouse gas (GHG) emitting fossil fuels), nor does it address how climate change may impact on such exploration and production activities.

123.

The UN Framework Convention on Climate Change enjoins State Parties to take precautionary measures to anticipate, prevent or minimize the causes of climate change.[88] Recently, the UN's Intergovernmental Panel on Climate Change (IPPC) issued a press release relating to its 6th Report, which states that '[t]*he 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 greenhouse gas emissions, limiting warming***

[88] Article 3.3. Available online at: http://unfccc.int/resource/docs/convkp/conveng.pdf

to close to 1.5°C or even 2°C will be beyond reach'.[89]

124.

Having regard to the global Climate Emergency[90] and South Africa's international commitment[91] 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'*[92] by reducing GHG emissions, Tosaco's proposed exploration for offshore oil and gas resources would, if additional commercially viable resources are found and developed to production phase, inevitably add to the South Africa's overall GHG emissions (South Africa's energy sector currently contributes an estimated 84% percent to the country's overall GHG emissions).[93]

125.

In response to the above comments made in relation to the draft Scoping Report, EIMS responded by pointing out that '*it 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 address the need and desirability of such activities given that the specific details of these future activities are not known. On the basis of the exploration activities currently proposed it is unlikely that there will be significant climate change impacts*'.[94] EIMS respond further by stating that *'[w]hile it is acknowledged that the risks mentioned would need assessment, such assessment falls outside the scope and of the current application and would need to be assess* (sic) in *detail during subsequent Scoping and EIA processes, should drilling or production processes be proposed. The environmental consequences applicable to the planned exploration activities have been identified and assessed in the Scoping Report. There is provision in law for future activities (including exploration drilling and production) to*

[89] https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/
[90] https://www.unenvironment.org/explore-topics/climate-change/facts-about-climate-emergency
[91] As a party to the United Nations Framework Convention on Climate Change (UNFCC) that ratified the Kyoto Protocol and adopted the Paris Agreement.
[92] See for example South Africa's *Intended Nationally Determined Contribution (INDC)*, available online at: https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf
[93] https://www.climatelinks.org/resources/greenhouse-gas-emissions-factsheet-south-africa
[94] EIMS response to Green Connection comments on draft Scoping Report (3 May 2021), at p10.

be assessed and decided upon, on their merits as and when they are proposed, and prior to commencement of such'.[95]

126.

In its October 2021 response to the Green Connection's comments on the draft EIA Report, EIMS state as follows:

> EIMS would like to point out that the intention of this EIA is not to do a piecemeal assessment of the proposed project and its impacts on the receiving environment. The focus of this EIA was to identify and assess the impacts applicable to the proposal and this is necessarily limited to the activities presented in the EIA Report.
>
> As mentioned previously, while EIMS agrees 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 processes, should drilling or production be proposed. The environmental consequences applicable to the planned exploration activities have been identified and assessed in the EIA Report. There is provision in law for future activities (including exploration drilling and production) to be assessed and decided upon, on their merits as and when they are proposed, and prior to commencement of such.
>
> As pointed out above, and as per our previous response to the Green Connection in this regard, it 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. On the basis of the exploration activities currently proposed it is unlikely that there will be significant climate change impacts.

127.

The Green Connections stands by its assertion that as reasonably foreseeable future impacts that may become more significant when added to the existing and reasonably foreseeable GHG impacts arising from similar offshore oil and gas exploration and production activities in South Africa's exclusive economic zone, the impacts (including cumulative impacts[96]) of such GHG emissions should have been identified in the draft Scoping Report, and the impact thereof assessed in the EIA phase.

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[95] Ibid, p10-11.

[96] 'Cumulative impact' is defined in the NEMA EIA Regulations as follows: 'in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.'

128.

It is submitted that it is relevant for the competent authority to consider these impacts at this stage in the EIA process, given that if the climate change impacts are found to be unacceptable there is no reason for Tosaco to be permitted to continue with the successive stages of exploration and production authorisation and permitting processes. The failure to do so unfairly prejudices I&APs opposed to further offshore oil and gas drilling operations, as by the time future applications are made and assessments conducted, significant time and resources will already have been expended by Tosaco (potentially shifting the balance of convenience in Tosaco's favour in future authorisation applications).

129.

The Green Connection also stands by its previous submission that including an assessment of the reasonably foreseeable climate change impacts of Tosaco's offshore oil and gas exploration relating to probable future exploration drilling and production activities would also be consistent with the NEMA environmental management principles that emphasise the need to avoid the disturbance of ecosystems, and to prevent negative impacts on the environment and people's rights.[97] It would also be consistent with section 2(4)(e) of NEMA, which stipulates that responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

130.

Such an approach would also be consistent with the approach taken by High Court in *Earthlife Africa Johannesburg v Minister of Environmental Affairs* 2017 (2) SA 519 GP, which - in relation to the issue of whether or not a climate change impact was necessary for a proposed coal-fired power station - stated that '*a climate change impact assessment is necessary and relevant to ensuring that the proposed coal-fired power station fits South Africa's peak, plateau and decline trajectory as outlined in the [NDC] and its commitment to build cleaner*

[97] NEMA, s2(4)(a)(i) and (vii).

and more efficient than existing power stations'.[98] Following this reasoning, the Green Connection stands by its previous submission that is equally necessary and relevant to ensure that proposed exploration activities (including reasonably foreseeable future exploration well drilling and oil and gas production activities) fit South Africa's peak, plateau and decline trajectory as outlined in South Africa's updated Nationally Determined Contributions (NDCs).[99]

131.

The Green Connection also stands by its previous submission that the EIA should address the implications of climate change on oceans. The IPCC[100] has identified that coastal systems will experience climate change-related impacts due to sea level rise and associated storm swells. In addition, there is medium agreement that the Benguela system will experience changes in upwelling intensity as a result of climate change. The Green Connection submits that the EIA should therefore include a study on the potential impacts that changes in ocean currents, increased severity of storms etc. could have on future exploration and production drilling activities.

132.

For the reasons set out above, the Green Connection stands by its submission that as a consequence of the EIA failing to address climate change impacts associated with the exploration for and production of oil and gas in Block 1 (i.e. the extraction and use of greenhouse gas emitting fossil fuels) or the potential impacts of climate change on such exploration and production activities, the draft EIA Report does not contain the information that is necessary for the competent authority to consider and come to a decision on the

[98] At para 90.

[99] It is relevant to note that in 2021 South Africa published an update of its First NDC under the Paris Agreement for public comment, informed by the Talanoa Dialogue and IPCC special report on global warming of 1.5°C above pre-industrial levels. In terms of this update, South Africa commits to reducing the upper range of its 2025 and 2030 targets by 17% and 28% respectively. Among other things, the update indicates that South Africa will be finalising its Just Transition Plan, including pathways compatible with pursuing efforts to limit temperature increase to 1.5°C. South Africa's update of its first NDC is available online at: https://www.environment.gov.za/sites/default/files/reports/draftnationalydeterminedcontributions_2021updated.pdf

[100] https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap22_FINAL.pdf

application. The same applies to the final EIA Report.

133.

In light of the above, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

134.

D. CONCLUSION

For the reasons set out in the grounds of appeal above, the Green Connection submits that the appeal should be upheld, and that the environmental authorisation granted to Tosaco should be set aside. Accordingly, the Minister is respectfully requested to exercise her powers in terms of section 43(6) of NEMA and set aside the environmental authorisation.

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