3. EMP APPROACH AND PROCESS

This chapter introduces the project team and outlines the methodology followed in the EMP process.

3.1 DETAILS OF THE PROJECT TEAM

As noted in Section 1, SLR has been appointed as the independent EAP to undertake the EMP process for the proposed speculative exploration activities. The details of the SLR project team and appointed specialists are provided in Table 3-1 below.

SLR has no vested interest in the proposed project other than fair payment for consulting services rendered as part of the EMP process and has declared its independence as required by the EIA Regulations 2014, as amended (see Appendix 1).

Table 3-1: Details of the EMP project team and specialists.

Company	Name	Qualifications	Experience (years)	Roles
SLR Project Team				
SLR Consulting	Andrew Bradbury	MSc (Env. Assessment & Mgt), Oxford Brookes University	27	Project Director, Report review and QA/QC
	Eloise Costandius	MSc (Ecol. Assessment), University of Stellenbosch	16	Project Management and Report compilation
	Jeremy Blood	MSc. (Cons. Ecol.), University of Stellenbosch	22	Report review and QA/QC
	Bronwyn Gernet	Certificates in Arcview, Advanced Arcview, Projections and Rasters	19	GIS data management and mapping
Specialist Team				
SLR Consulting Australia	Binghui Li	PhD (Physics – Underwater Acoustics), Curtin University	18	Sound Transmission Loss Modelling Study
	Dana Lewis	ME (Mech), University of Queensland	3	
Pisces Environmental Services	Andrea Pulfrich	PhD (Fisheries Biology), Christian-Albrechts University, Kiel, Germany	26	Marine Ecology Impact Assessment
Capricorn Marine Environmental	Dave Japp	MSc (Ichthyology and Fisheries Science), Rhodes University	33	Commercial Fisheries Impact Assessment
	Sarah Wilkinson	BSc (Hons) (Botany), University of Cape Town	18	

Andrew Bradbury is a Technical Director at SLR and leads the Energy Sector for SLR in Africa. Andrew is an environmental professional with over 27 years of consulting experience in the oil & gas, power (conventional, hydro and renewable), finance & legal, chemical, infrastructure and built environment sectors. His areas of experience cover Environmental and Social Due Diligence, Environmental and Social Impact Assessment, Environmental and Social Planning and Management, Compliance, Training and Capacity Building and Policy work. He has worked on some of the largest impact assessment and due

diligence projects in Southern Africa. Andrew's Master's Degree from Oxford Brookes University in the UK is in Environmental Impact Assessment.

Eloise Costandius has worked as an environmental assessment practitioner since 2005 and has been involved in numerous projects covering a range of environmental disciplines, including Basic Assessments, Environmental Impact Assessments and Environmental Management Programmes. She has gained experience in a wide range of projects relating to oil and gas exploration, infrastructure projects (e.g. roads) and industrial developments. She is registered as a Professional Natural Scientist with SACNASP.

Jeremy Blood has 22 years of experience in a range of environmental disciplines, including EIAs, Environmental Management Programmes/Plans, Environmental Auditing and Monitoring in South Africa, Namibia, Mozambique and Kenya. He has expertise in a wide range of projects, including oil and gas, mining and infrastructure. He is a registered South African Environmental Assessment Practitioner as well as a registered Professional Natural Scientist with SACNASP.

CVs of the SLR project team are included in Appendix 2.

3.2 ASSUMPTIONS AND LIMITATIONS

The EMP process assumptions and limitations are listed below:

- SLR assumes that all relevant project information has been provided by CGG and that it was correct and valid at the time it was provided.
- The proposed survey area is indicative and the EMP has considered this and the fact that the final survey layout might change slightly.
- Although CGG propose to commence with surveying in January 2022, this EMP considers the implications of surveying at any time during the year.
- The indicative technical specifications provided (see Table 6-5) are based on generic industry information and previous seismic surveys and it is assumed that the technical specifications used in this EMP are roughly equivalent to that which will be used during the proposed seismic survey.
- This EMP considers potential impacts of the proposed seismic survey activities on the biophysical and social environments that have been identified within the project's area of influence, which encompasses:
    - Activities and facilities that are directly owned, operated or managed by CGG (including contractors and sub-contractors) as part of the project;
    - Unplanned events, which are unintended but may occur as a result of accidents or abnormal operating conditions; and
    - Indirect project impacts on biodiversity or ecosystem services upon which potential affected communities' livelihoods are dependent.
- The EMP considers the assessment of activities proposed as part of exploration, but does not aim to identify or assess the impacts or benefits of possible future exploration or production activities or outcomes.
- The EIA Regulations 2014 (as amended) require the consideration of the "cumulative impact", which includes the 'reasonably foreseeable future impact of an activity'. Cumulative impacts of the proposed activities, in the context of other exploration activities, are considered in the EMP, to the extent that this is feasible and 'reasonably foreseeable' based on the available information about other authorised oil and gas developments at the time the EMP was prepared. While it is foreseeable that further exploration and future production activities could arise from the proposed exploration

activities (if granted), there is not currently sufficient information to make reasonable assertions as to the nature of any future activities. This is due to the current lack of relevant geological information, which the proposed additional exploration activities aims to address.

- No significant changes to the project description or surrounding environment will occur between the submission of the final EMP and implementation of the proposed project that could substantially influence findings and recommendations with respect to mitigation and management.

These assumptions, however, are not considered to have any negative implications in terms of the credibility of the results of the study or the required management actions included in this EMP.

3.3 OBJECTIVES

The overall objectives of this EMP process include the following:

- To identify the relevant policies and legislation relevant to the activity;
- To present the need and desirability of the proposed activity;
- To describe the proposed activity, technology and site(s) (including any alternatives);
- To describe the receiving (baseline) environment to provide an understanding of the environmental and social context and sensitivity within which the proposed project activities would occur;
- To identify and assess potential impacts related to the proposed project;
- To identify suitable mitigation or optimisation measures to minimise potential impacts or enhance potential benefits;
- To provide a reasonable opportunity for I&APs to be consulted on the proposed project;
- Through the above, to ensure informed, transparent and accountable decision-making by the relevant authorities.

3.4 EMP PROCESS

The EMP process steps (excluding public consultation) are set out below. The public consultation process is summarised in Chapter 4.

3.4.1 Application for Reconnaissance Permit

On 06 April 2021, CGG submitted an application for a Reconnaissance Permit to PASA in terms of Section 74 of the MPRDA. PASA accepted the application on 4 May 2021.

3.4.2 Specialist Studies

Three specialist studies were undertaken to address the key issues that required investigation. These included:

- Sound Transmission Loss Modelling Study;
- Biodiversity and Ecosystem Services (Marine Fauna) Impact Assessment; and
- Commercial Fisheries Impact Assessment.

Details of the appointed specialists are provided in Table 3-1.

Specialist studies involved the gathering of data relevant to identifying and assessing environmental impacts that may occur as a result of the proposed exploration activities. These impacts were then assessed according to pre-defined rating scales (see Appendix 7). Specialists also recommended appropriate

mitigation or optimisation measures to minimise potential impacts or enhance potential benefits, respectively.

3.4.3 Integration and Assessment

The specialist studies and other relevant information / assessments have been integrated into this report. Many of the issues associated with seismic surveys are generic in nature and have been assessed based on previous seismic survey programmes off the coast of South Africa and the Generic EMP[1] prepared for seismic surveys in South Africa. Recommendations proposed are based on specialist input and are in line with the Generic EMP and the general principles of the Joint Nature Conservation Committee (JNCC) seismic guidelines.

This report contains the key information from each of the specialist studies, including a description of the affected environment, and the description and assessment of impacts. Each impact is described and assessed in terms of the sensitivity of a receptor, the magnitude/consequence (a combination of the intensity, duration and extent of the impact) and the significance level, which is assigned according to pre-defined rating scales (see Appendix 7).

This report aims to present all information in a clear and understandable format to I&APs and authorities and provides an opportunity for I&APs to comment on the proposed seismic survey and EMP (see Section 1.3). Steps undertaken as part of the public participation process are set out in Chapter 4.

3.4.4 Completion of the EMP Process

The following steps are envisaged for the remainder of the EMP process:

- After closure of the comment period on the draft EMP, all comments received will be incorporated and responded to in a Comments and Responses Report. The EMP will then be updated into a final report, to which the Comments and Responses Report will be appended.
- The final EMP will be submitted to PASA for consideration and review. After its review, PASA will provide a recommendation to DMRE on whether to grant or refuse the Reconnaissance Permit.
- After the Minister has reached a decision, all I&APs on the project database will be notified of the outcome of the application and the reasons for the decision.

[2] Crowther Campbell & Associates and Centre for Marine Studies (1999) Generic Environmental Programme Report for oil and gas exploration off the coast of South Africa. Volume 4: Generic Manual for the preparation of a Lease Specific Environmental Management Programme Report for seismic surveys. Petroleum Agency of South Africa, Cape Town, South Africa.

4. PUBLIC PARTICIPATION PROCESS

This chapter presents the principles of public participation, the process undertaken during the EMP process to date and the proposed tasks for the remainder of the EMP process.

4.1 PRINCIPLES

As stated in Chapter 1, the EMP process undertaken as part of a Reconnaissance Permit application is not a legislated process. However, in order to ensure informed decision-making, the Public Participation guideline in terms of the NEMA EIA Regulations, 2017 is being implemented for this EMP process. The above guideline sets out the principles and characteristics of a comprehensive Public Participation Process. At a minimum, the process undertaken must allow for the following:

- to provide an opportunity for all role players, including potential and registered I&APs, EAPs, state departments, organs of state, and the competent authority to obtain clear, accurate and understandable information about the environmental impacts of the proposed activity or implications of a decision;
- to provide for role-players to voice their support, concerns and questions regarding the project, application or decision;
- to provide an opportunity for role-players to suggest ways for reducing or mitigating any negative impacts of the project and for enhancing its positive impacts;
- to enable the party conducting the public participation process to incorporate the needs, preferences and values of potential or registered I&APs into the proposed project and relevant environmental regulatory application process;
- to provide opportunities for clearing up misunderstandings about technical issues, resolving disputes and reconciling conflicting interests;
- to encourage transparency and accountability in decision-making;
- to contribute toward maintaining a healthy, vibrant democracy; and
- to give effect to the requirement for procedural fairness of administrative action as contained in the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000; PAJA).

The requirements of the public participation process are clearly set out in Chapter 6 of the EIA Regulations, 2014 (GN No. R982, as amended) and will be adhered to during the EMP process.

4.2 IMPLICATIONS OF THE COVID-19 PANDEMIC

Given the threat posed by the COVID-19 pandemic the Government of South Africa declared a National State of Disaster and placed the country under Lockdown in March 2020. A risk-adjusted response has been implemented by government to curtail the threat of the COVID-19 pandemic, which included a variety of restrictions on social and economic activity.

On 5 June 2020, the Minister of Environment, Forestry and Fisheries issued Directions in terms of the Disaster Management Act, 2002 (No. 57 of 2002) for Alert Level 3 regarding measures to address, prevent and combat the spread of COVID-19 relating to national environmental management permits and licences, and in particular to provide directions to ensure fair licensing processes and public participation processes (GN R650). In terms of these Directions a Public Participation Plan, containing proposals on how the identification of and consultation with all potential I&APs will be ensured, had to be submitted to the competent authority.

The COVID-19 Alert was reduced to Alert Level 1 with effect from 1 October 2021. At the time of completing this report and commencing with the public participation process, no new Directions had been issued by the Minister.

4.3 PUBLIC PARTICIPATION STEPS

The public participation steps undertaken/to be undertaken are summarised below.

4.3.1 Stakeholders Identification

A preliminary I&AP database (see Appendix 3.1) has been compiled based on:

- SLR's existing databases for offshore oil and gas impact assessments undertaken for the South and East Coasts of South Africa; and
- Input from the Commercial Fisheries Specialist (CapMarine) in order to ensure the fisheries sector database is comprehensive and up to date.

There are currently 217 stakeholders registered on the project database which may be directly or indirectly affected by the project. These stakeholders have been divided into the following categories:

- Authorities:
  - South African Government (National, Provincial and Local).
  - Maritime Authorities.
- Civil Society:
  - Fishing Associations.
  - Environmental, Social, NGOs and Public -Private Partnerships.
  - General Public.
- Business:
  - Offshore Oil and Gas Operators.
  - Fishing companies.
  - Recreational fishing and tourism

The I&AP database will be continually updated during the EMP process. Additional I&APs will be added based on responses to advertisements and notification letters, and comments received on this draft EMP.

4.4 EMP COMMENT PHASE

4.4.1 Advertising

Advertisements announcing the proposed project and the availability of the draft EMP for review and comment were placed in two regional newspapers: Die Burger (Afrikaans) and Herald (English and isiXhosa) and two local newspapers: PE Express (English) and Kouga Express (English), between 29 October and 4 November 2021 (see Appendix 3.2 for the text of the advertisements). Advertisements were translated into Afrikaans and isiXhosa. Proof of newspaper placement will be provided in the final EMP.

4.4.2 Availability of the EMP for Review

The draft version of the EMP has been released for a 30-day review and comment period from 29 October to 29 November 2021 (see Section 1.3). The objective of this comment period is to ensure that I&APs are notified about the proposed project and given a reasonable opportunity to provide comments on detailed project information and the findings of the EMP process. The full report has been made available on the

SLR website for download, as well as on a zero-data website. The zero-data website enables I&APs to access and download the EMP and Executive Summary from internet enabled mobile devices without incurring any data costs. Hard copies of the report were also made available in public libraries in St Francis, Jeffreys Bay and Gqeberha.

All I&APs registered on the project database were notified of the EMP comment and review period by means of a notification letter (via E-mail). To facilitate the commenting process, a copy of the Executive Summary to the report was attached to the letter. A copy of the letter and proof of distribution will be provided in the final EMP.

While potential I&APs, particularly from vulnerable and disadvantaged communities, may not have access to the internet and email, South Africa has a high level of cell phone usage. In order to facilitate engagement during the EMP process and access to the draft EMP, a cell phone number has been provided in all notifications and SLR can be contacted via SMS or WhatsApp messaging.

4.4.3 Online Focus-Group Meeting

A virtual meeting (via Microsoft TEAMS) will be held with representatives of the commercial fishing sectors active off the Southeast Coast. The purpose of the meeting will be to provide an overview of the project proposal and findings of the draft EMP to the most active users of the offshore environment in the vicinity of the proposed survey area. It will also provide them with an opportunity to ask questions and provide comments. Minutes of the meeting will be presented in the final EMP.

4.4.4 Completion of the EMP Process

The following public participation tasks will be undertaken up to the completion of the EMP process:

- I&AP Comments and Responses: All issues raised by I&APs during the public participation process – by e-mail, telephone or during stakeholder meetings – will be consolidated into a Comments and Responses Report, which will be attached as an appendix to the final EMP.
- EMP submission: All I&APs will be notified via e-mail of the submission of the final EMP to PASA for consideration and recommendation to DMRE. The notification will also include a link to download the final EMP, including the Comments and Responses Report.
- Decision notification: DMRE's decision will be uploaded onto the SLR website for information purposes. All registered I&APs will be notified via e-mail of the issuing of DMRE's decision on the Reconnaissance Permit application.

5. NEED AND DESIRABILITY

This chapter summarises the national and policy framework relevant to the need and desirability for the proposed project. "Need and desirability" is the consideration of the strategic context of a development proposal within the broader societal needs and the public interest.

The DFFE guideline on need and desirability (GN No. R891 of 20 October 2017) notes that while addressing the growth of the national economy through the implementation of various national policies and strategies, it is also essential that these policies take cognisance of strategic concerns such as climate change, food security, as well as the sustainability in supply of natural resources and the status of our ecosystem services. The guideline further notes that at a project level (as part of an impact assessment process), the need and desirability of the project should take into consideration the content of regional and local plans, frameworks and strategies. These are considered below.

5.1 NATIONAL POLICY AND PLANNING FRAMEWORKS

5.1.1 White Paper on the Energy Policy of the Republic of South Africa (1998)

The White Paper on the Energy Policy (1998) is an overarching policy document which was to guide future policy and planning in the energy sector. The policy objectives include the stimulation of economic development, management of energy related environmental and health impacts and diversification of the country's energy supply to ensure energy security.

The paper states that the government will "promote the development of South Africa's oil and gas resources…" and "ensure private sector investment and expertise in the exploitation and development of the country's oil and gas resources". The successful exploitation of these natural resources would contribute to the growth of the economy and relieve pressure on the balance of payments. Before the development of the country's oil and gas resources can take place, there is a need to undertake exploration activities to determine their extent and the feasibility of utilising these resources for production.

5.1.2 New Growth Path (2011)

The New Growth Path (NGP) reflected the commitment of Government to prioritise employment creation in all economic policies and set out the key drivers and sectors for employment which was the focus of Government. The identified focus sectors were infrastructure, agriculture, mining, manufacturing, tourism and the green economy.

The NGP further identified the need to develop macroeconomic strategies and microeconomic measures to achieve sustainable expansion of work opportunities and output. The NGP stated that one microeconomic measure is South Africa being the driving force behind the development of regional energy, transport and telecommunications infrastructure. Priorities in this regard included strengthening the regional integration of energy by undertaking urgent improvements in electricity interconnectors and exploring other opportunities for enhancing clean energy across central and southern Africa, including natural gas.

5.1.3 National Development Plan 2030 (2013)

The National Development Plan (NDP) 2030 provides the context for all growth in South Africa, with the overarching aim of eradicating poverty and inequality between people in South Africa through the

promotion of development. It provides a broad strategic framework to address poverty and inequality based on the six focused and interlinked priorities. One of the key priorities is "faster and more inclusive economic growth". To transform the economy and create sustainable expansion for job creation, an average economic growth exceeding 5% per annum is required. The NDP supports transformation of the economy through changing patterns of ownership and control.

Environmental challenges are in conflict with some of these development initiatives. As such, the NDP emphasises the need to:

- Protect the natural environment;
- Enhance the resilience of people and the economy to climate change;
- Reduce carbon emissions in line with international commitments;
- Make significant strides toward becoming a zero-waste economy; and
- Reduce greenhouse gas emissions and improve energy efficiency.

The NDP makes numerous mentions of the need to act responsibly to mitigate the effects of climate change. Diversification of the energy mix away from fossil fuels will be key as energy generation makes up 48 percent of South Africa's GHG emissions. The NDP indicates that "the country will explore the use of natural gas as a less carbon intensive transitional fuel" and that there is a requirement for "increasing exploration to find domestic gas feedstock… to diversify the energy mix and reduce carbon emissions". Thus, the ongoing exploration of local natural gas reserves is a key action required to ensure that natural gas is a viable transitional fuel for use in the national electricity generation mix.

5.1.4 Draft Integrated Energy Plan (2013)

The Draft Integrated Energy Plan (IEP) (2013) considered how current and future energy needs can be addressed. The plan considered security of supply, increased access to energy, diversity in supply sources and primary sources of energy, and minimising emissions. The plan indicated that projected demand for natural gas between 2010 and 2050 would be second only to petroleum products, primarily due to increased growth in the industrial sector.

The Draft IEP stated that given South Africa is a net importer of oil, the liquid fuels industry and its economy is vulnerable to fluctuations in the global oil market. Current natural gas consumption exceeds production, with the majority of demand being met through imports from Mozambique.

The plan stated that the use of natural gas as an alternative electricity generator must be considered in moderation due to limited proven reserves, but that it has significant potential both for power generation, as well as direct thermal uses. The role of renewable energy to deliver the intended policy benefits of improved energy security and reduced greenhouse gas emissions is also acknowledged in the plan. The availability of untapped renewable energy resources within the country is highlighted. The DMRE (previously under the Department of Energy) has implemented the Renewable Energy Independent Power Producers procurement process to increase the share of renewable energy technologies in the energy mix but, due to the intermittent nature of renewable energy systems and the variability in electricity load requirements, storage remains the most important challenge to the widespread use of renewable energy. Consequently, the need to incorporate fossil fuels and nuclear power to ensure that there is both sufficient base-load electricity generating power to meet the minimum needs and peak-load power to meet the needs during peak periods is acknowledged. The use of natural gas for power generation is also considered as an

option to assist South Africa to move towards a low carbon future given that natural gas has a lower carbon content than coal.

5.1.5 Operation Phakisa (2014)

In July 2014 the South African Government launched Operation Phakisa, which is an innovative, pioneering and inspiring approach that will enable South Africa to implement its policies and programmes better, faster and more effectively. Operation Phakisa aims to unlock the economic potential of South Africa's oceans. In this regard four priority sectors have been selected as new growth areas in the ocean economy, including:

(a) Marine transport and manufacturing activities, such as coastal shipping, trans-shipment, boat building, repair and refurbishment;
(b) Offshore oil and gas exploration;
(c) Aquaculture; and
(d) Marine protection services and ocean governance.

In terms of offshore oil and gas exploration, the goal is to further enhance the enabling environment for exploration of oil and gas, resulting in an increased number of exploration wells drilled, while simultaneously maximising the value captured for South Africa. In this regard, a key target identified by Operation Phakisa is the drilling of 30 exploration wells in ten years.

As the proposal by CGG entails the exploration for future prospects, which could be subjected to possible future exploration drilling, they are deemed to be in line with the objectives of Operation Phakisa.

In terms of marine protection, the 2011 National Biodiversity Assessment had noted that offshore ecosystems in South Africa were poorly protected. An offshore MPA project (2007- 2011) initiated plans to increase protection of offshore ecosystems, the project was advanced towards implementation during Operation Phakisa Oceans Economy. The process culminated in the gazetting of 20 new MPAs, which came into effect on 1 August 2019 and expand the protection of South Africa's mainland ocean territory to 5%.

5.1.6 Integrated Resources Plan (2019)

The Integrated Resource Plan (2019) was gazetted in October 2019. In order to achieve the outcomes envisaged in the National Development Plan, the Integrated Resource Plan provides a path to meet electricity needs over a 20-year planning horizon to 2030 and will be used to roll out electricity infrastructure development in line with Ministerial Determinations. The plan aims to balance a number of objectives, namely, to ensure security of supply; to minimize cost of electricity; to minimize negative environmental impact (emissions), and to minimize water usage.

The Integrated Resources Plan (2019) notes that there is a requirement to pursue a diversified energy mix with respect to electricity production which reduces the country's reliance on a few primary energy sources. Natural Gas is listed as one of the alternative sources which can be used in a flexible manner to complement renewable energy sources. It is further noted that there is currently a reliance for the importation of gas and that the use of local and regional gas resources will allow for scaling up within manageable risk levels. It is further noted that the "exploration to assess the magnitude of local recoverable shale and coastal gas are being pursued and must be accelerated". In this regard, the proposed project could support this requirement through the on-going exploration to determine the nature and extent of potentially viable offshore resources which could include gas finds.

5.1.7 South African Economic Reconstruction and Recovery Plan (2020)

The South African Economic Reconstruction and Recovery Plan's interventions are in pursuit of the National Development Plan goals of reducing unemployment, poverty and inequality. This document sets out a reconstruction and recovery plan for the South African economy that is aimed at stimulating equitable and inclusive growth. For the past decade, the South African economy has experienced stagnation which has put a strain on the effort to tackle the historical structural inequalities, unemployment and poverty. There is consensus that there needs to be substantial structural change in the economy that would unlock growth and allow for development. Government's conviction is that South Africa has to massively mobilise all its resources and efforts in economic activities to put the economy in a sustainable recovery trajectory. The Covid-19 pandemic deepened the economic crisis in South Africa with many people losing their jobs. As a result, inequality is expected to widen and poverty to deepen.

One of the priority intervention areas is Energy Security, which is critical for the maintenance of a stable economy and is also important in ensuring growth. Specific interventions in the energy sector include creating and securing additional supply, including gas, and finalising the Petroleum Resources Development Bill and related fiscal measures to enable Upstream Sector Investments.

The proposed project could support meeting this priority intervention in Energy Security, through the ongoing exploration to determine the nature and extent of potentially viable offshore resources, which could include gas finds.

5.1.8 National Climate Change Response White Paper (2014)

The National Climate Change Response Paper presents the South African Government's vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society. South Africa's response to climate change has two objectives:

- Effectively manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity.
- Make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.

The Paper acknowledges that South Africa has relatively high emissions for an emerging economy. The energy intensity of the South African economy, largely due to the significance of mining and minerals processing in the economy and the coal-intensive energy system, means that South Africa is a significant emitter of GHGs. The majority of South Africa's energy emissions arise from electricity generation.

The Paper sets out South Africa's overall response strategy though strategic priorities, leading to a series of adaption, mitigation, response measures and priority flagship programmes. Policy decisions on new infrastructure investments must consider climate change impacts to avoid the lock-in of emissions intensive technologies into the future. In the medium-term, the Paper indicates that a mitigation option with the biggest potential includes a shift to lower-carbon electricity generation options. The Renewable Energy Flagship Programme is identified as possible driver for the deployment of renewable energy technologies. Renewable energy and not fossil fuel /gas is ultimately recommended for climate change mitigation.

5.1.9 Paris Agreement - United Nations Framework Convention on Climate Change (2015)

The Paris Agreement is a comprehensive framework that aims to guide international efforts to limit GHG emissions and to meet challenges posed by climate change. The Paris Agreement was adopted on 12 December 2015 at the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC CoP21). The agreement was signed by South Africa on 22 April 2016.

The Paris Agreement aims to limit the global temperature increase to below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. Parties aim to reach global peaking of GHG emissions as soon as possible, recognising that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of this century. Each individual country is responsible for determining their contribution (referred to as the "nationally determined contribution") in reaching this goal. The Agreement requires that these contributions should be "ambitious" and "represent a progression over time". The contributions should be reported every five years and are to be registered by the UNFCCC Secretariat. As a signatory to the Agreement, South Africa will be required to adopt the agreement within its own legal systems, through ratification, acceptance, approval or accession.

"*As a signatory to the Paris Agreement, South Africa is required to investigate alternatives to existing industries which have high carbon-emissions. A shift away from coal-based energy production within the energy sector and increased reliance on alternative energy sources is therefore anticipated. The increased use of natural gas can, in the short term, serve as bridge on the path to the carbon-neutral goal of the Paris Agreement*" (Source: http://www.energylawexchange.com/the-paris-agreement-on-climate-change-implications-for-africa/).

5.2 NEED AND DESIRABILITY SUMMARY

South Africa, like the rest of the world, is vulnerable to climate change, which will have an impact on water resources and food production, and increase the vulnerability of impoverished communities, amongst others. There is thus global concern of the need to reduce carbon emissions and achieve carbon neutrality by 2050. South Africa, as one of the top 20 global emitters, with a high dependency on fossil fuels, will need to make substantial emission cuts. However, the rapid transition to carbon neutrality presents a potential risk to economic growth and sustainable development if not managed properly. Thus, South Africa needs to balance the need to reduce emissions with the need to grow its economy and create jobs.

There is a drive from national and provincial Government to stimulate development and grow the economy of South Africa with a strong focus on job creation in all sectors, whilst protecting the environment. The COVID-19 pandemic has deepened the economic crisis in South Africa and, as a result, inequality is expected to widen and poverty to deepen. To facilitate this economic growth, there is a critical need to ensure that there is sufficient capacity in the country's energy supply by diversifying the primary energy sources within South Africa. In this regard, South Africa needs to balance the three core dimensions of what has been defined as the "energy trilemma": (1) affordability and accessibility, (2) energy security and (3) environmental sustainability. In weighing up these core dimensions, South African Government policy currently supports exploration for indigenous hydrocarbon resources and currently promotes the use of natural gas as part of the energy mix up to 2030 (per the IRP, 2019).

Although the oil and gas sector is not fully aligned with other National plans and policies, which identify the need to reduce the reliance on fossil fuels and shift to lower-carbon electricity generation options in order for South Africa to reduce its GHG emissions and meet commitments in this regard, natural gas is included in the energy mix of the country to serve as a transition or bridge on the path to a carbon-neutral goal (as per the Paris Agreement) and provide the flexibility required to complement renewable energy sources. In addition to the use of natural gas for electricity generation, the many other uses (e.g. transportation fuels, asphalt, and feedstocks for making the chemicals, polyurethane, solvents, plastics and other synthetic materials) will also need to see adaptation and mitigation during this transition period.

It is acknowledged that the proposed exploration activities would not result in the production of oil and gas, but rather the generation of information on possible indigenous resources in the area of interest off the Southeast Coast. By gaining a better understanding of the extent, nature and economic feasibility of extracting these potential resources, the viability of developing indigenous gas resources would be better understood.

The proposed exploration has no direct influence on South Africa's reliance on hydrocarbons and whether consumers use more or less oil or gas, nor on which types of fossil fuels contribute to the countries' energy mix. The proposed project will not necessarily change how fossil fuels are used and has no direct influence on GHG emissions that would arise from the consumption of fossil fuels. These aspects are influenced by South Africa's energy and climate change related policy, the financial costs of the various energy sources and consumer choices in this regard.

The proposed project will potentially allow South Africa to optimise its own indigenous resources to provide the hydrocarbon needs, rather than having to import, as at present. It won't necessarily change how fossil fuels are used in the short- to medium-term in the transition to the goal of carbon neutrality by 2050. These National strategic policy issues fall beyond the scope of this EMP.