

PROPOSED SPECULATIVE SEISMIC SURVEY IN THE ALGOA, GAMTOOS AND OUTENIQUA BASINS OFF THE SOUTHEAST COAST, SOUTH AFRICA

1. INTRODUCTION

1.1 PROJECT BACKGROUND

On 4 May 2021, the Petroleum Agency SA (PASA) accepted a Reconnaissance Permit Application submitted by CGG Services SAS (CGG) in terms of Section 74 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002; MPRDA), as amended. The application provides for the undertaking of a multi-client speculative three-dimensional (3D) seismic survey in the Algoa, Gamtoos and Outeniqua Basins off the Southeast Coast of South Africa (see Figure 1-1).

The Reconnaissance Permit Application area is approximately 19 064 km² in extent. CGG has identified a reduced area of interest within the application area of approximately 15 428 km² where a 3D seismic survey of between 1 000 and 3 500 km² is proposed. The area of interest is located roughly between Gqeberha (previously Port Elizabeth) and a point approximately 120 km southeast of Plettenberg Bay, ranging between 30 km and 120 km from the coast in water depths between 150 m and 4 000 m. Survey commencement would ultimately depend on permit award and the availability of a survey vessel. The earliest anticipated commencement date is January 2022, subject to obtaining the Reconnaissance Permit. It is currently anticipated that the survey would take up to five months to complete.

At the time the Reconnaissance Permit Application was submitted to PASA, there was no requirement in the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) to apply for an Environmental Authorisation when applying for a Reconnaissance Permit, and as such PASA requested that CGG *'develop a plan for managing potential environmental impacts that may result from the proposed operations and notify and consult with affected parties'* and submit it to them for consideration by the Minister of Mineral Resources and Energy. For this application, the plan is referred to as an "Environmental Management Plan (EMP)". Although the Department of Forestry, Fisheries and the Environment (DFFE) subsequently published amendments to the EIA Regulations 2014, which now requires Environmental Authorisation for Reconnaissance Permit Applications, the transitional arrangements apply. Thus, this Reconnaissance Permit Application will be dispensed with in terms of the previous Regulations that were in place at the time of application submission (refer to Section 2.2.3) for further detail in this regard).

CGG has appointed SLR Consulting (South Africa) (Pty) Ltd (SLR) to compile this EMP and undertake the required public participation process for the proposed speculative seismic survey.

This draft EMP has been compiled and distributed for review and comment as part of the EMP process. Interested and Affected Parties (I&AP) are asked to comment on this draft report (see Section 1.3). After completion of the comment period, the document will be updated to a final report, giving due consideration to the comments received. The final EMP will then be submitted to the delegated authority (namely PASA) for consideration and review. PASA will then make a recommendation on the acceptance or rejection of the report to the Department of Mineral Resources and Energy (DMRE), who will make the final decision on its acceptance and the granting of the Reconnaissance Permit.

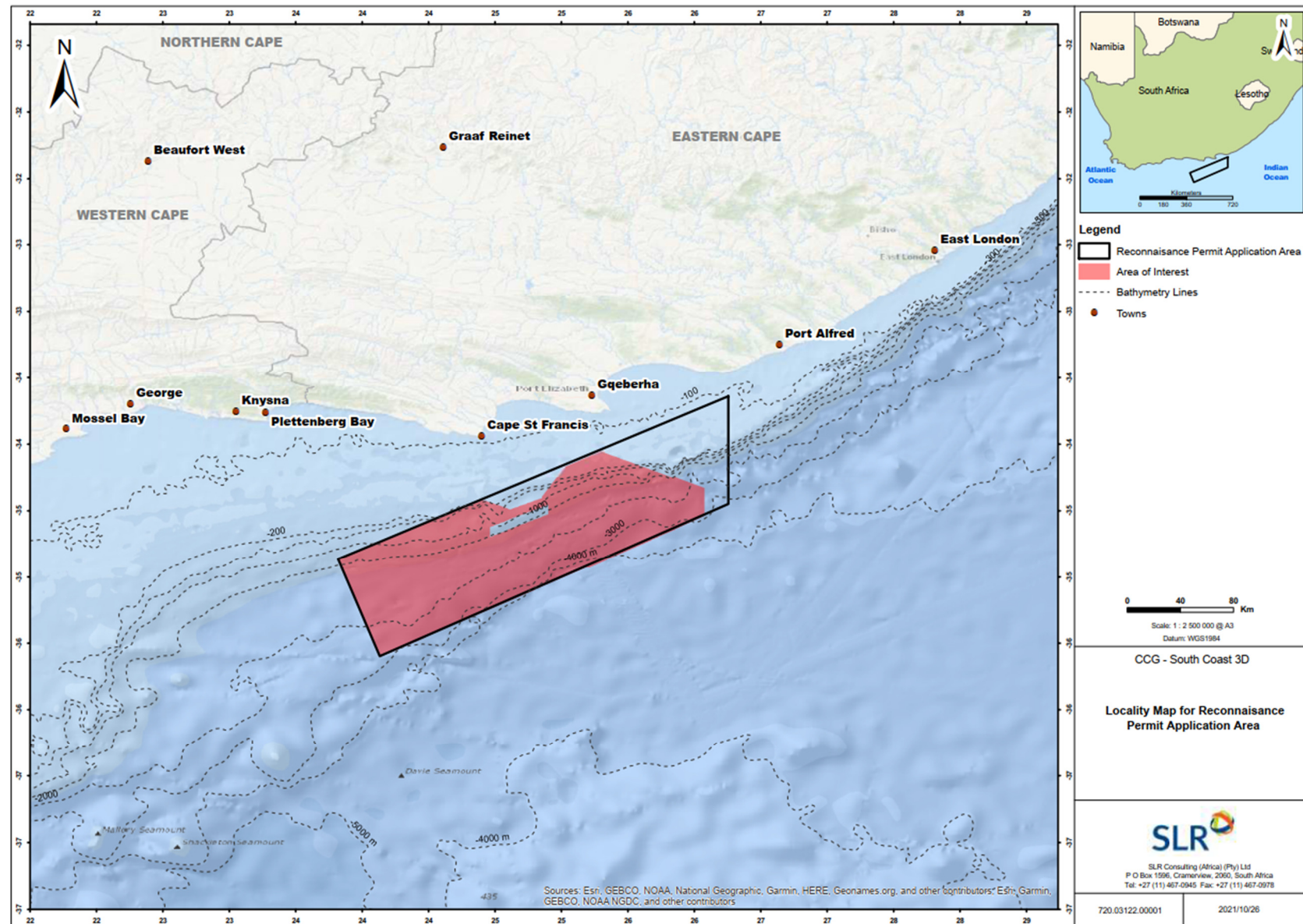


Figure 1-1: Location of the Reconnaissance Permit area and Area of Interest for seismic acquisition off the Southeast Coast

1.2 STRUCTURE OF THIS REPORT

This EMP consists of eleven chapters and seven appendices as outlined below.

Section	Contents
Executive Summary	Provides an overview of the main findings of the EMP.
Chapter 1	Introduction Provides a brief description of the project background, summarises the legislative authorisation requirements, describes the structure of the report and outlines the opportunity for comment.
Chapter 2	Administrative and Legal Framework Outlines the key administrative authorities and legislative framework applicable to the proposed project and associated EMP process.
Chapter 3	EMP Approach and Process Presents the Project Team, assumptions, and outlines the approach to the EMP process.
Chapter 4	Public Participation Process Presents the public participation process tasks to be undertaken as part of the EMP process.
Chapter 5	Need and Desirability Summarises the national and policy framework relevant to the need and desirability for the proposed exploration activities.
Chapter 6	Project Description Provides general project information and presents a description of the proposed seismic survey activities.
Chapter 7	Description of the Affected Environment Describes the existing physical, biological and socio-economic environment that could potentially be affected by the proposed seismic survey.
Chapter 8	Impact Assessment Describes and assesses the potential impacts related to the proposed seismic survey on the affected environment. It also presents mitigation/management or optimisation measures that could be used to reduce the significance of any negative impacts or enhance any benefits, respectively.
Chapter 9	Action Plan, Procedures and Environmental Specifications Provides the detail of the action plan, procedures and environmental specifications developed for the implementing of the proposed project.
Chapter 10	Conclusions and Recommendations Provides conclusions to the EMP and summarises the mitigation and monitoring measures that would be implemented for the proposed project.
Chapter 11	References Provides a list of the references used in compiling this report.
Appendices	<p>Appendix 1: EAP Undertaking</p> <p>Appendix 2: Curricula Vitae (including registrations) of the Project Team</p> <p>Appendix 3: Public Participation Process:</p> <p>Appendix 3.1: I&AP database</p> <p>Appendix 3.2: Advertisements</p> <p>Appendix 4: Sound Transmission Loss Modelling Study</p> <p>Appendix 5: Biodiversity and Ecosystem Services Impact Assessment</p> <p>Appendix 6: Commercial Fisheries Impact Assessment</p> <p>Appendix 7: Method of Assessing Impact Significance</p>

1.3 OPPORTUNITY TO COMMENT

This draft EMP has been distributed for a 30-day review and comment period from **29 October to 29 November 2021** in order to provide I&APs with an opportunity to comment on any aspect of the proposed project and the findings of the EMP. Copies of the full report are available on the SLR website (<https://slrconsulting.com/public-documents/cgg-southeast-coast>) and on a data free website (<https://slrpublicdocs.datafree.co/public-documents/cgg-southeast-coast>). The Executive Summary (available in English) is also available on the website and can be sent to stakeholders directly, via email or WhatsApp, on request. Any person who has trouble accessing the full report or Executive Summary is welcome to contact SLR for assistance. Hard copies of the draft report have also been made available for review at the following locations for the duration of the comment period:

Location	Name of facility	Physical address
St Francis Bay	St Francis Community Library	3 Assissi Drive, St Francis Bay
Jeffreys Bay	Jeffreys Bay Public Library	53 Diaz Road
Gqeberha	Walmer Library	Main Road, Walmer

Any comments should be sent to SLR using the contact details shown below. Comments may also be sent by sending a written message or voice message (including leaving your contact information) by WhatsApp or SMS to the mobile number provided below. For comments to be included in the final EMP, comments should reach SLR by **no later than 29 November 2021**.

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2. ADMINISTRATIVE AND LEGAL FRAMEWORK

This chapter outlines the South African institutional and administrative structures, key legislative requirements and other relevant local legislation and international conventions applicable to the proposed exploration activities and EMP process.

2.1 SOUTH AFRICAN INSTITUTIONAL AND ADMINISTRATIVE FRAMEWORK

2.1.1 Department of Mineral Resources and Energy (DMRE)

DMRE is the public trustee of South Africa's mineral and petroleum resources. According to the MPRDA, as amended, read with the National Environmental Management Act (No. 107 of 1998: NEMA), as amended, the Minister (or designated authority) is responsible for, *inter alia*:

- Approving or refusing an EMP prepared as part of exploration or production right applications;
- Granting or refusing, *inter alia*, any reconnaissance permit, exploration right and production right; and
- Prescribing and levying any fee, in consultation with the Minister of Finance, payable in terms of this Act.

The Minister is required to take into account environmental policy, norms and standards while promoting economic and social development in order to ensure that the development of South Africa's mineral and petroleum resources is undertaken in a sustainable manner.

2.1.2 Petroleum Agency South Africa (PASA)

In terms of Section 70 of the MPRDA, the Minister, in June 2004, designated various duties pertaining to petroleum exploration and production to 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.

PASA is responsible for promoting the exploration of oil and gas resources and the optimal development thereof on behalf of the South African government. As such, PASA deals with the regulation and monitoring of exploration and production activities and endeavours to make sure that all such activities have long-term economic benefit for South Africa. In addition, PASA is the custodian of the national exploration and production database for petroleum.

PASA is thus tasked with reviewing the current application and EMP and making a recommendation to the Minister accordingly.

2.1.3 Department of Forestry, Fisheries and the Environment (DFFE)

DFFE is the custodian of environmental matters and is tasked with ensuring protection of the environment and conservation of natural resources in the context of sustainable development. DFFE is responsible for the administration of applications for and the issuing of environmental authorisations in terms of NEMA and the EIA Regulations 2014, excluding applications related to mining and petroleum for which DMRE is the competent authority. DFFE remains a commenting authority on MPRDA applications.

2.1.4 South African Maritime Safety Authority (SAMSA)

SAMSA was established in terms of the South African Maritime Safety Authority Act, 1998 (No. 5 of 1998) and reports to the Minister of Transport. The Act specifies that SAMSA's objectives are to ensure safety of life and property at sea, prevent and combat pollution of the marine environment by ships and promote the Republic's maritime interests. To this end, SAMSA provides the following (www.samsa.org.za):

- Safety and environment protection standards for responsible maritime transport operations;
- Monitoring and enforcing compliance with safety and environment protection standards;
- The capability to respond to marine pollution incidents and other maritime emergencies; and
- The capability to detect, locate and rescue people in maritime distress situations.

SAMSA administers several pieces of legislation relating to, *inter alia*, marine pollution, marine traffic and the transport of goods by sea and issues licences or permits related to these aspects.

2.1.5 Transnet National Ports Authority (TNPA)

TNPA is responsible for managing and controlling South Africa's commercial ports (Saldanha, Cape Town, Mossel Bay, Gqeberha, Ngqura, East London, Durban and Richards Bay) and is accountable to the Minister of Transport. TNPA's mandate is informed by the National Ports Act, 2005 (No. 12 of 2005) and its purpose is to "*own, manage, control and administer ports to ensure their efficient and economic functioning*".

No person other than TNPA may provide a port service or operate a port facility unless an agreement has been entered into with TNPA or in terms of a licence issued by TNPA.

2.2 SOUTH AFRICAN LEGISLATION

2.2.1 Introduction

In terms of Section 24 of the Constitution of South Africa, 1996 (No. 108 of 1996) "*everyone has the right:*

- (a) *to an environment that is not harmful to their health or well-being; and*
- (b) *to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that;*
 - (i) *Prevent pollution and ecological degradation;*
 - (ii) *Promote conservation; and*
 - (iii) *Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*".

The MPRDA gives effect to Section 24 of the Constitution by ensuring that South Africa's mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development.

NEMA provides for the incorporation of environmental considerations in decision-making. It applies alongside the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution, together with the basic needs of categories of persons disadvantaged by unfair discrimination. Although the current application is undertaken under the MPRDA, the principles of NEMA were still considered in the compilation of this EMP.

The legislation listed below summarises the key pieces of legislation in terms of which authorisation is required in order for CGG to undertake the proposed exploration activities. These acts and their related regulations govern the legal requirements, the application process to be followed and stipulate where exploration activities may or may not occur.

2.2.2 Mineral and Petroleum Resources Development Act (MPRDA), 2002

In terms of the MPRDA, a Reconnaissance Permit must be obtained prior to the commencement of any reconnaissance activities. A requirement for obtaining a Reconnaissance Permit is that an applicant must submit an application in terms of Section 74(1) of the MPRDA to the designated agency, and they must accept the application within 14 days if, *inter alia*, no other person holds a Technical Co-operation Permit, Exploration Right or Production Right for petroleum over any part of the proposed permit area. If the application for a Reconnaissance Permit is accepted, the designated agency must request that the applicant comply with Chapter 5 of National Environmental Management Act, 1998 (No. 107 of 1998), as amended (NEMA) with regards to consultation and reporting - refer to Section 2.2.3 below.

2.2.3 National Environmental Management Act (NEMA), 1998

Chapter 2 of NEMA sets out a range of environmental and social principles that are to be applied by all organs of state when taking decisions that significantly affect the environment. Included amongst the key principles is that all development must be socially, economically and environmentally sustainable. It requires that environmental management must place people and their needs at the forefront of its concern, and must serve their physical, psychological, developmental, cultural and social interests equitably. NEMA also provides for the participation of I&APs and stipulates that decisions must take into account the interests, needs and values of all of them.

As noted in Section 1.1, at the time the Reconnaissance Permit Application was submitted to PASA in 2020, there was no legislated process in NEMA or the EIA Regulations 2014 (as amended) prescribing the environmental approval procedure to be followed in order to obtain a Reconnaissance Permit. Thus, the procedure followed in this EMP process is based on PASA's acceptance of the Reconnaissance Permit application and as previously noted it was requested that CGG '*develop a plan for managing potential environmental impacts that may result from the proposed operations and notify and consult with affected parties*'.

Subsequent to PASA's acceptance of the Reconnaissance Permit Application, DFFE published amendments to the EIA Regulations 2014 in GN No. 517 (2021), which now includes *any activities (excluding any desktop study and any aerial survey) requiring a reconnaissance permit in terms of Section 74 of the MPRDA* as a listed activity (Activity 21B) in Listing Notice 1. Thus, an application for a Reconnaissance Permit now also requires an application for Environmental Authorisation and the undertaking of a Basic Assessment. However, GN No. 517 makes provision for transitional arrangements in order to accommodate applications submitted in terms of the previous Regulations and which are pending when the amendments took effect. Such applications must be dispensed with in terms of the previous Regulations that were in place at the time of application submission. Nevertheless, this EMP fulfils the requirements of a Basic Assessment Report, as specified in Appendix 1 of the EIA Regulations 2014 (as amended).

In line with the principles of sustainable development in NEMA, the applicant is also responsible for acting with due care so that damage to others and the environment through its actions is avoided.

Various guideline documents for undertaking NEMA regulatory processes have been published by DFFE. Although the EMP process as required by PASA is not a NEMA regulated process, the guidelines consulted during the current EMP process are listed in Table 2-1.

Table 2-1: Guidelines relevant to the EMP process

Guideline	Governing body	Applicability
Specialist Studies, Integrated Environmental Management, Information Series 4 (2002)	DFFE	This guideline was consulted to ensure adequate development of terms of reference for specialist studies.
Impact significance, Integrated Environmental Management, Information Series 5 (2002)	DFFE	This guideline was consulted to inform the assessment of significance of impacts of the proposed project.
Cumulative Effects Assessment, Integrated Environmental Management, Information Series 7 (2004)	DFFE	This guideline was consulted to inform the consideration of potential cumulative effects of the proposed project.
Environmental Management Plans, Integrated Environmental Management, Information Series 12 (2004)	DFFE	This guideline was consulted to ensure that the EMP and its related Action Plan and Procedures are adequately compiled.
Environmental Impact Reporting, Integrated Environmental Management, Information Series 15 (2004)	DFFE	This guideline was consulted to inform the approach to impact reporting.
Public Participation guideline in terms of NEMA (2017)	DFFE	The purpose of this guideline is to ensure that an adequate public participation process is undertaken during the EMP process.

2.2.4 National Environmental Management: Air Quality Act, 2004

The National Environmental Management: Air Quality Act, 2004 (No. 39 of 2004), as amended (NEM: AQA), regulates all aspects of air quality, including prevention of pollution, providing for national norms and standards. It includes a requirement for an Atmospheric Emissions Licence (AEL) for listed activities which result in atmospheric emissions and have or may have a significant detrimental effect on the environment.

Activities that require an AEL are listed in GN No. 893 (22 November 2013), published in terms of Section 21(1)(b) of the NEM: AQA. In terms of Section 22 of NEM: AQA no person may conduct a listed activity without an AEL. The incineration of waste is a listed activity (Category 8.1 – Thermal treatment of Hazardous and General Waste) and requires an AEL for all installations treating 10 kg or more of waste per day.

In terms of Section 36(5)(e) of the Act, the Minister of Mineral Resources must perform the functions of the licensing authority where the listed activity relates to exploration activities, as contemplated in the MPRDA. DFFE: Air Quality Management Services has previously confirmed that this category would apply to an offshore installation. It, however, remains unclear in the legislation whether vessels with an incinerator onboard are considered to be 'installations'. An application for an AEL would need to be made should the survey vessel be confirmed to be an offshore installation.

On-board incineration of waste is permitted in terms of the International Convention for the Prevention of Pollution from Ships, 1973/1978 (MARPOL), to which South Africa is a signatory. Apart from the possible

requirement for an AEL, CGG would thus also need to comply with the relevant MARPOL specifications for incineration at sea.

NEMA: AQA also provides for the monitoring and reporting of greenhouse gas emissions. The National Greenhouse Gas Emission Reporting Regulations (GN No. 275) was published in terms of Section 53 (a), (aA), (o) and (p) of NEM:AQA on 3 April 2017. The purpose of these Regulations is to implement a single national reporting system for the transparent reporting of greenhouse gas emissions. For oil and gas exploration activities no specific thresholds have been set, which by default means that the Regulations require that carbon dioxide (CO₂) and methane (CH₄) levels be reported on annually via the South African Greenhouse Gas Emissions Reporting System (SAGERS). CGG would need to meet this requirement for seismic, support vessel and helicopter operations.

2.2.5 National Environmental Management: Waste Act, 2008

The National Environmental Management: Waste Act, 2008 (No. 59 of 2008), as amended (NEM: WA), regulates all aspects of waste management and has an emphasis on waste avoidance and minimisation. NEM: WA creates a system for listing and licensing waste management activities. Listed waste management activities above certain thresholds are subject to a process of impact assessment and licensing. Activities listed in Category A require a Basic Assessment, while activities listed in Category B require a Scoping and EIA process.

The DFFE (previously the Department of Environmental Affairs) has indicated that NEM: WA is not applicable to offshore activities. Thus, a Waste Management Licence would not be required for offshore waste management activities. These aspects would be managed in terms of and would need to comply with the requirements of MARPOL 73/78.

The management and disposal of waste arising from exploration activities at onshore locations would take place at facilities with the appropriate licensing, where required.

2.2.6 National Environmental Management: Protected Areas Act, 2003

The National Environmental Management: Protected Areas Act, 2003 (No. 57 of 2003), as amended (NEM: PAA), provides for the declaration and management of protected areas, and the promotion of sustainable utilisation of protected areas for the benefit of people in a manner that would preserve the ecological character of such areas.

A number of new Marine Protected Areas (MPA) were proclaimed in terms of NEM: PAA for the South African offshore in May 2019, one of which overlaps with the proposed survey area (see Section 7.5.2). For oil and gas exploration activities, although vessels are permitted to sail through these areas, no firing of airguns or well drilling is permitted in any proclaimed MPAs. However, this does not exclude vessels (including seismic survey vessels) sailing through these areas. The proposed seismic activities must thus exclude any data acquisition in MPAs.

2.2.7 Other South African Laws and Policies Relevant to Oil and Gas Exploration

Other South African legislation that CGG may need to comply with, should the EMP be approved for the undertaking of a seismic survey in the Algoa, Gamtoos and Outeniqua Basins, are summarised in Table 2-2.

Table 2-2: Other applicable South African legislation

No.	Title	Description
1	Carriage of Goods by Sea Act, 1986 (No. 1 of 1986) (COGSA)	This Act provides for the carriage of goods by sea and applies where: (a) the port of shipment is a port in South Africa; (2) the bill of lading is issued in a state which applies the Hague-Visby Rules; (3) the carriage is from a port in a contracting state; and (4) the contract contained in or evidenced by the bill of lading provides that the South African COGSA applies.
2	Hazardous Substances Act, 1983 and Regulations (No. 85 of 1983)	This Act provides for the control of substances which may cause injury or ill-health to or death of human. No person may, without a licence: (1) sell any Group I Hazardous Substance; (2) use, operate or apply any Group III Hazardous Substance (listed electronic products); and (3) install or keep any Group III Hazardous Substance. Authorisation is required to be in possession of, use or dispose of any Group IV Hazardous Substance (which includes radioactive material).
3	Human Rights Commission Act of 2013 (No. 14 of 2013)	This Act establishes a legal commission to monitor - pro-actively and by way of complaints brought before it - violations of human rights and redress for such violations.
4	Marine Living Resources Act, 1998 (No. 18 of 1998)	This Act provides for the conservation of marine ecosystems, the long-term sustainable utilisation of marine living resources and the orderly access to exploitation, utilisation and protection of certain marine living resources.
5	Marine Pollution (Control and Civil Liability) Act, 1981 (No. 6 of 1981)	The purpose of this Act is to provide protection of the marine environment from pollution by oil and other harmful substances, by giving power to SAMSA to take steps to prevent harmful substances being discharged from vessels. It is the responsibility of CGG to disclose to SAMSA before the commencement of proposed activities the amounts and types of chemicals that would be used and disposed of during operations.
6	Marine Pollution (Prevention of Pollution from Ships) Act, 1986 (No. 2 of 1986)	This Act regulates pollution from ships, tankers and offshore installations, and for that purpose gives effect to MARPOL 73/78. In terms of the Act, it is an offence to discharge any oil from a ship, tanker or offshore installation within 12 miles (19 km) off the South African coast. The discharge of oily water or oil and any other substance which contains more than a hundred parts per million of oil is prohibited between 19 – 80 km offshore.
7	Marine Pollution (Intervention) Act, 1987 (No. 65 of 1987)	This Act gives effect to the international convention relating to the Intervention of the High Seas in cases of oil pollution casualties, and to the Protocol relating to Intervention of the High Seas in cases of Marine Pollution by substances other than Oil in South African Waters.
7	Marine Traffic Act, 1981 (No. 2 of 1981)	This Act regulates marine traffic in South Africa's territorial waters. It regulates the entry and dropping of anchor within 500 m safety zone of installations.
9	Maritime Safety Authority Act, 1998 (No. 5 of 1998)	This Act provides for the establishment and functions of SAMSA. The objectives of the Act are to, <i>inter alia</i> : (1) ensure safety of life and property at sea; (2) prevent and combat pollution of the marine environment by ship; and (3) promote South Africa's maritime interests.
10	Maritime Safety Authority Levies Act, 1998 (No. 6 of 1998)	This Act provides for the imposition of levies by SAMSA. SAMSA is permitted to raise and collect a levy on all vessels calling at South African ports and operating in South African waters.
11	Maritime Zones Act 1994 (No. 15 of 1994)	The Act defines the maritime zones, including territorial waters, contiguous zone, exclusive economic zone and continental shelf.
12	Merchant Shipping Act, 1951 (No. 57 of 1951)	This Act provides for the control of merchant shipping and matters incidental thereto.
13	Mine Health and Safety Act, 1996 (No. 29 of 1996)	This Act provides for health and safety requirements for mining operations and includes hazard and risk assessments, monitoring and awareness training.
14	National Environmental Management: Biodiversity Act, 2004 (No. 10 of 2004)	This Act regulates the carrying out of restricted activities that may harm listed threatened or protected species or activities that encourage the spread of alien or invasive species subject to a permit.

No.	Title	Description
15	National Environmental Management: Integrated Coastal Management Act, 2008 (No. 24 of 2008)	This Act supports the authorisation requirements of NEMA but specifies additional criteria for regulating activities or developments (Section 63) and provides for pollution control within the coastal zone (Sections 69 to 73), where the coastal zone includes the Exclusive Economic Zone defined in the Maritime Zone Act (refer to line 11 above).
16	National Heritage Resources Act, 1999 (No. 25 of 1999) (NHRA)	This Act provides for the protection of South Africa's natural heritage, including wrecks or associated debris or artefacts that may be found or disturbed on the seabed. According to Section 35 of the NHRA, any person who discovers archaeological objects or material (including wrecks) in the course of a development must immediately report the find to the South African Heritage Resources Agency (SAHRA). No person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological site. In the event that a shipwreck is discovered during exploration activities SAHRA would need to be notified.
17	National Ports Act, 2005 (No. 12 of 2005)	This Act regulates and controls navigation within port limits and the approaches to ports, cargo handling, and the pollution and the protection of the environment within the port limits. The Act specifies a requirement for an agreement with or a license from the National Ports Authority to operate a port facility or service.
18	National Water Act, 1998 (No. 36 of 1998)	This Act provides the legal framework for the effective and sustainable management of water resources in South Africa. It serves to protect, use, develop, conserve, manage and control water resources as a whole, promoting the integrated management of water resources with the participation of all stakeholders.
19	Occupational Health and Safety Act, 1993 (No. 85 of 1993) and Major Hazard Installation Regulations	This Act provides for the health and safety of persons at work and the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work. Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.
20	Sea Birds and Seals Protection Act, 1973 (No. 46 of 1973)	This Act provides for the control over certain islands and the protection of seabirds and seals. It is an offence to wilfully disturb seabirds and seals on the coast or on offshore islands, unless in possession of a permit.
21	Ship Registration Act, 1998 (No. 58 of 1998)	This Act provides for the registration of ships in South Africa.
22	Wreck and Salvage Act, 1995 (No. 94 of 1995)	This Act regulates the law of salvage in South Africa and provides for the application in South Africa of the International Convention of Salvage, 1989.
23	Marine Spatial Planning Act, 2018 (No. 16 of 2018)	This Act provides a framework for marine spatial planning in South Africa that provides for the development of marine spatial plans and the institutional arrangements for the implementation of such plans. It also provides for the governance of the use of the ocean by multiple sectors and matters connected therewith.

2.3 INTERNATIONAL REGULATIONS, CONVENTIONS AND BEST PRACTICE

Relevant international conventions and treaties which have been ratified by the South African Government and which have become law through promulgation of national legislation are listed in Table 2-3.

Table 2-3: Ratified international conventions and treaties

No.	Title	Description
International Marine Pollution Conventions		
1	Convention of the International Maritime Organisation (IMO), 1948	This Convention deals with the establishment of the IMO. The IMO is a specialist United Nations agency dealing with maritime issues, including development of all the marine pollution control conventions.

No.	Title	Description
2	International Convention for the Prevention of Pollution from Ships, 1973/1978 (MARPOL)	<p>MARPOL 73/78 was developed by the International Maritime Organization with an objective to minimise pollution of the oceans and seas, including dumping, oil and air pollution. MARPOL is divided into Annexes according to various categories of pollutants, each of which deals with the regulation of a particular group of ship emissions.</p> <ul style="list-style-type: none"> • Annex I: Prevention of pollution by oil and oily water • Annex II: Control of pollution by noxious liquid substances in bulk • Annex III: Prevention of pollution by harmful substances carried by sea in packaged form • Annex IV: Pollution by sewage from ships • Annex V: Pollution by garbage from ships • Annex VI: Prevention of air pollution from ships <p>All ships flagged under countries that are signatories to MARPOL are subject to its requirements, regardless of where they sail and member nations are responsible for vessels registered on their national ship registry.</p>
3	International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC Convention)	OPRC is an international maritime convention establishing measures for dealing with marine oil pollution incidents nationally and in co-operation with other countries.
4	United Nations Convention on Law of the Sea, 1982 (UNCLOS)	UNCLOS defines the rights and responsibilities of nations with respect to their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources.
5	Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention) and the 1996 Protocol (the Protocol)	The London Convention is an agreement to control pollution of the sea from dumping and to encourage regional agreements supplementary to the Convention. It covers the deliberate disposal at sea of wastes or other matter from vessels, aircraft and platforms. It does not cover discharges from land-based sources, such as pipes and outfalls, wastes generated incidental to normal operation of vessels, or placement of materials for purposes other than mere disposal, providing such disposal is not contrary to aims of the Convention.
6	International Convention relating to Intervention on the High Seas in case of Oil Pollution Casualties (1969) and Protocol on the Intervention on the High Seas in Cases of Marine Pollution by substances other than oil, 1973	This Convention is an international maritime convention affirming the right of a coastal State to "take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty".
7	International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (in force from 2017) (BWM)	This Convention aims to prevent the spread of harmful aquatic organisms from one region to another, by establishing standards and procedures for the management and control of ships' ballast water and sediments.
8	Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, 1989	This Convention is an international treaty that was designed to reduce the movements of hazardous waste between nations, and specifically to prevent transfer of hazardous waste from developed to less developed countries. It does not, however, address the movement of radioactive waste.
9	International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001	The Convention prohibits the use of harmful compounds in anti-fouling paints used on ships and rigs and establishes a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems.
Air and Atmosphere		
10	Kyoto Protocol on the Framework Convention on Climate Change, 1997	This Protocol was the key instrument on which the 1992 United Nations Framework Convention on Climate Change is based. It is the first legally binding global agreement setting out specific obligations for the reduction of the amount of GHG.

No.	Title	Description
11	Montreal Protocol on Substances that Deplete the Ozone Layer, 1987	This Protocol lays down a timetable for the reduction of controlled substances that deplete the ozone layer and have adverse effects on health and the environment.
12	Vienna Convention for the Protection of the Ozone Layer, 1985	The Convention is the first global agreement that recognised that the ozone was a serious enough problem to warrant international regulation.
13	United Nations Framework Convention on Climate Change, 1992	The objective of the Convention is to "stabilise GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".
14	Paris Agreement (United Nations Framework Convention on Climate Change - UNFCCC), 2016	South Africa signed the Paris Agreement on 22 April 2016. This Agreement aims to strengthen the global response to the threat of climate change by limiting the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase even further to 1.5°C. 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 GHG in the second half of this century.
Flora, Fauna and Protected Areas		
15	Revised African Convention for the Conservation of Nature and Natural Resources (2017)	The objectives of this Convention are to enhance environmental protection, to foster the conservation and sustainable use of natural resources, and to harmonise and coordinate policies in these fields.
16	United Nations Convention on Biological Diversity, 1992	This Convention has three main goals: (1) conservation of biological diversity (or biodiversity); (2) sustainable use of its components; and (3) fair and equitable sharing of benefits arising from genetic resources. Its objective is to develop national strategies for the conservation and sustainable use of biological diversity.
17	Convention on the Conservation of Migratory Species of Wild Animals, 1983 (Bonn Convention)	This Convention aims to conserve terrestrial, marine and avian migratory species throughout their range.
18	Memorandum of Understanding (MoU) on the Conservation of Migratory Sharks, 2010	The MOU was founded under the auspices of the Bonn Convention and serves as an international instrument for the conservation of migratory shark species, including species occurring off the Southeast Coast of South Africa.
19	The MoU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia, 2001	The MoU is an intergovernmental agreement that aims to protect, conserve, replenish and recover sea turtles and their habitats in the Indian Ocean and South-East Asian region.
20	Agreement on the Conservation of Albatrosses and Petrels, 2004 (ACAP)	The Agreement protects all the world's albatross species, seven southern hemisphere petrel and two shearwater species. A number of these occur off the Southeast Coast of South Africa.
21	International Convention for the Conservation of Atlantic Tunas (ICCAT)	This Convention provides for the management and conservation of tuna and tuna-like species in the Atlantic Ocean and adjacent seas.
22	Convention on International Trade of Wild Fauna and Flora Endangered Species, 1973 (CITES)	CITES is a multilateral treaty to protect endangered plants and animals.
23	Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1975)	This is an international treaty for the conservation and sustainable use of wetlands. The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". South Africa has 27 Ramsar sites.

No.	Title	Description
Archaeology and Cultural Heritage		
24	Convention concerning the Protection of the World Cultural and Natural Heritage (Paris, 1972)	This Convention provides for the identification, protection and conservation of the cultural and natural heritage for future generations.
25	United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention on the Protection of the Underwater Cultural Heritage, 2001	This Convention is intended to protect all traces of human existence having a cultural, historical or archaeological character, which have been under water for over 100 years. This extends to the protection of shipwrecks, sunken cities, prehistoric art work, treasures that may be looted, sacrificial and burial sites, and old ports that cover the oceans' floors.
Marine Safety		
26	Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS)	This Convention sets an international standard for shipping and navigation. It deals with safety at sea issues and prescribes international standards for shipping, particularly to reduce the risk of collisions at sea. The rules for the prevention of collisions at sea apply to all vessels using the high seas.
27	International Convention for the Safety of Life at Sea, 1974 (SOLAS) with its protocol of 1978	This Convention is an international maritime treaty which requires signatory flag states to ensure that ships flagged by them comply with minimum safety standards in construction, equipment and operation.
28	The International Convention on Load Lines, 1966 and its protocol of 1988	This Protocol was adopted to harmonise the survey and certification requirement of the 1966 Convention with those contained in SOLAS and MARPOL 73/78. All assigned load lines must be marked amidships on each side of the ships engaged in international voyages.
Fishing		
2829	Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, 1993	This Agreement promotes compliance with international conservation and management measures by fishing vessels on the high seas.
30	Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean, 2001	This Convention provides for the long-term conservation and sustainable use of the fishery resources in the South East Atlantic Ocean.
Human Rights and Labour		
31	International Labour Organisation Conventions	<p>C029 - Forced Labour Convention, 1930 (No. 29) -05 Mar 1997</p> <p>C087 - Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)</p> <p>C098 - Right to Organise and Collective Bargaining Convention, 1949 (No. 98)</p> <p>C100 - Equal Remuneration Convention, 1951 (No. 100)</p> <p>C105 - Abolition of Forced Labour Convention, 1957 (No. 105)</p> <p>C111 - Discrimination (Employment and Occupation) Convention, 1958 (No. 111)</p> <p>C138 - Minimum Age Convention, 1973 (No. 138)</p> <p>C182 - Worst Forms of Child Labour Convention, 1999 (No. 182)</p> <p>C081 - Labour Inspection Convention, 1947 (No. 81)</p> <p>C144 - Tripartite Consultation (International Labour Standards) Convention, 1976 (No. 144)</p> <p>C002 - Unemployment Convention, 1919 (No. 2)</p> <p>C004 - Night Work (Women) Convention, 1919 (No. 4)</p> <p>C019 - Equality of Treatment (Accident Compensation) Convention, 1925 (No. 19)</p> <p>C026 - Minimum Wage-Fixing Machinery Convention, 1928 (No. 26)</p> <p>C027 - Marking of Weight (Packages Transported by Vessels) Convention, 1929 (No. 27)</p> <p>C041 - Night Work (Women) Convention (Revised), 1934 (No. 41)</p>

No.	Title	Description
		<p>C042 - Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934 (No. 42)</p> <p>C045 - Underground Work (Women) Convention, 1935 (No. 45)</p> <p>C063 - Convention concerning Statistics of Wages and Hours of Work, 1938 (No. 63)</p> <p>C080 - Final Articles Revision Convention, 1946 (No. 80)</p> <p>C089 - Night Work (Women) Convention (Revised), 1948 (No. 89)</p> <p>C116 - Final Articles Revision Convention, 1961 (No. 116)</p> <p>C155 - Occupational Safety and Health Convention, 1981 (No. 155)</p> <p>C176 - Safety and Health in Mines Convention, 1995 (No. 176)</p> <p>MLC 2006 - Maritime Labour Convention, 2006 (MLC 2006)</p> <p>C188 - Work in Fishing Convention, 2007 (No. 188)</p> <p>C189 - Domestic Workers Convention, 2011 (No. 189)</p>

2.4 CGG ENVIRONMENTAL POLICY STATEMENT

Care+Protect



Environmental & Climate Policy

The health of the environment and climate is critical to the well-being of people and communities globally. In order to best protect the environment, climate and the communities where we globally operate:

- We always act responsibly and abide by all applicable environmental laws;
- We continue to advance our data collection capabilities to best measure, monitor and continuously reduce our impact;
- We commit to improving our power usage efficiency, increasing the low-carbon content of our energy supply, and reducing our Green House Gas (GHG) emissions;
- We continue to advance our technology and services to enable our Clients to best reduce the impact of their activity;
- We encourage and support our businesses, all employees and locations globally to find and take specific actions that support the health of the environment, climate and the communities where we operate.

Paris, January 2020

A handwritten signature in black ink, appearing to read "SZ" followed by a flourish.

Sophie ZURQUIYAH
Chief Executive Officer

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