



2024/25

ANNUAL PERFORMANCE PLAN

Deformed pillow structures in komatiitic basalts of the Sifula Greenstone Belt in the Buffalo River Gorge, central KwaZulu-Natal.



mineral resources
& energy

Department:
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA



Council for Geoscience

ANNUAL PERFORMANCE PLAN

COUNCIL FOR GEOSCIENCE

2024/25

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Cover Image: Deformed pillow structures in komatiitic basalts of the Sifula Greenstone Belt in the Buffalo River Gorge, central KwaZulu-Natal.

Photo credit: Dr Nigel Hicks

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LIST OF ABBREVIATIONS

4IR	Fourth Industrial Revolution
APP	Annual Performance Plan
BBBEE	Broad-Based Black Economic Empowerment
CCUS	Carbon Capture Utilisation and Storage
CGS	Council for Geoscience
Covid-19	Coronavirus disease 2019
COGTA	Department of Cooperative Governance and Traditional Affairs
DALRRD	Department of Agriculture, Land Reform and Rural Development
DFFE	Department of Forestry, Fisheries and Environment
DDM	District Development Model
DHET	Department of Higher Education and Training
DHS	Department of Human Settlements
DIRCO	Department of International Relations and Cooperation
DMRE	Department of Mineral Resources and Energy
DPME	Department of Planning, Monitoring and Evaluation
DPWI	Department of Public Works and Infrastructure
DSI	Department of Science and Innovation
DTIC	Department of Trade, Industry and Competition
DWS	Department of Water and Sanitation
EME	Exempted Micro Enterprise
ERRP	Economic Reconstruction and Recovery Plan
ESG	Environmental, Social and Governance
EXCO	Executive Committee
GDP	Gross Domestic Product
GTP	Geoscience Technical Programme
ICT	Information and Communications Technology
IMMP	Integrated and Multidisciplinary Geoscience Mapping Programme
IRP	Integrated Resource Plan
IYPT	International Year of the Periodic Table of Chemical Elements
MPRDA	Mineral and Petroleum Resources Development Act
MTEF	Medium Term Expenditure Framework
MTSF	Medium Term Strategic Framework
NDP	National Development Plan
NGO	Non-Governmental Organisations
OAGS	Organisation of African Geological Surveys
OECD	Organisation for Economic Cooperation and Development
PESTEL	Political, Economic, Social, Technological, Legal, and Environment
PFMA	Public Finance Management Act
PGM	Platinum Group Metal
PPPFA	Preferential Procurement Policy Framework Act
QSE	Qualifying Small Enterprise
REE	Rare Earth Element
SA	South Africa
SADC	Southern African Development Community

SANDF South African National Defence Force
SDG Sustainable Development Goal
UN United Nations

BOARD CHAIRPERSON'S STATEMENT

The Council for Geoscience's (CGS's) Annual Performance Plan (APP) provides a roadmap for the implementation of the **Integrated and Multidisciplinary Geoscience Mapping Programme** (IMMP) through the Geoscience Technical Programme (GTP) for the Medium-Term Expenditure Framework (MTEF) period (2024/25 – 2026/27). The GTP has adopted an integrated and multidisciplinary approach to optimise delivery of the geoscience mandate.

The APP outlines the strategic programmes, which state the intended outcomes and outputs of the CGS for the MTEF period (2024/25 – 2026/27); the associated key risks and mitigation plans; financial and human resources allocations and the materiality framework, which indicates material threshold values for transactions and processes to be initiated if thresholds are exceeded. The APP further includes the output indicators and targets.



Mr Kelepile Dintwe

Chairperson of the Board: Council for Geoscience

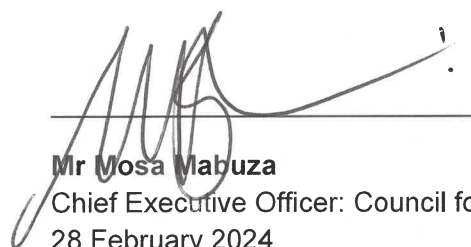
28 February 2024

CHIEF EXECUTIVE OFFICER'S STATEMENT

The CGS presents this plan to affirm the refocus of the functions of the organisation to its legislatively prescribed mandate. This refocus of the CGS strategy was primarily determined to provide a framework that seeks to optimise the delivery of the CGS programme (i.e., the IMMP at a higher resolution, e.g., a scale of 1:50 000) which is sufficiently aligned with the intent of “science applications responding to current and future societal challenges” as well as national imperatives.

This document presents the APP of the CGS for the MTEF period 2024/25 – 2026/27, which operationalises the five-year Strategic Plan of the CGS. The APP of the CGS outlines the outputs and related deliverables for the MTEF period 2024/25 – 2026/27, which are aligned with the outcomes reflected in the CGS Strategic Plan 2020 – 2025. The APP further provides an indication of financial and human resources allocations, as well as the output indicators and targets.

We are delighted to present the APP of the CGS for FY2024/25 in support of accelerating the delivery of our mandate, as inscribed in the Geoscience Act, Act No. 100 of 1993 and the Geoscience Amendment Act, Act No. 16 of 2010. This APP is closely aligned to the CGS strategy integrating all critical aspects of the geosciences.

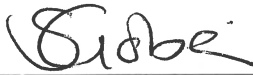


Mr Mosa Mabuza
Chief Executive Officer: Council for Geoscience
28 February 2024

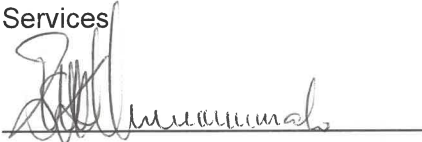
OFFICIAL SIGN-OFF

It is hereby certified that this Annual Performance Plan:

- Was developed by the Management of the CGS under the guidance of the Board.
- Considers all the relevant policies, legislation, and other mandates for which the CGS is responsible.
- Accurately reflects the outcomes and outputs which the CGS will endeavour to achieve over the financial period 2024/25.



Ms Sipelele Gobeni
Executive Manager: Geoscientific Services



Mr Willem Meintjes
Executive Manager: Integrated Geoscience Development



Dr Thuli Khumalo
Executive Manager: Office of the CEO



Ms Zodwa Mbatha
Executive Manager: Corporate Services



Mr Thabo Molikoe
Chief Financial Officer (Acting)



Dr Valerie Nxumalo
Manager: Strategic Management



Mr Mosa Mabuza
Chief Executive Officer

Mr Kelepile Dintwe
Chairperson of the Board

Mr Samson Gwede Mantashe
Executive Authority

PART A: OUR MANDATE

1. Updates of the relevant legislation and policy mandates

1.1 Constitutional Mandate

The **South African Constitution** is the Supreme Law that underpins the democratic dispensation within the Republic of South Africa.

The CGS is listed as a **Schedule 3A Public Entity** and is established in terms of the **Geoscience Act No. 100 of 1993, as amended**. This Act enunciates the Constitution in defining the mandate of the CGS. Accordingly, Chapter 10 of the South African Constitution titled Public Administration makes reference to basic values and principles governing public administration requiring that public administration be governed by the democratic values and principles enshrined in the Constitution, including the following principles:

- a) A high standard of professional ethics must be promoted and maintained.
- b) Efficient, economic and effective use of resources must be promoted.
- c) Public administration must be development-oriented.
- d) Services must be provided impartially, fairly, equitably and without bias.
- e) People's needs must be responded to, and the public must be encouraged to participate in policy-making.
- f) Public administration must be accountable.
- g) Transparency must be fostered by providing the public with timely, accessible and accurate information.
- h) Good human-resource management and career-development practices, to maximise human potential, must be cultivated.
- i) Public administration must be broadly representative of the South African people, with employment and personnel management practices based on ability, objectivity, fairness and the need to redress the imbalances of the past to achieve broad representation.

1.2 Legislative and Policy mandates

Legislative Mandate: The Geoscience Act (Act No. 100 of 1993) and the subsequent Geoscience Amendment Act (Act No. 16 of 2010) establish the CGS, which is listed as a Schedule 3A Public Entity in terms of the Public Finance Management Act (PFMA) (Act No. 1 of 1999). The mandate of the CGS includes, albeit not limited to:

- i) The **systematic onshore and offshore** geoscientific mapping of South Africa.
- ii) **Undertake geoscientific research** and related technological development.
- iii) The **collection and curation** of all geoscience data and act as a national geoscience repository.
- iv) The **compilation and development of comprehensive and integrated geoscience knowledge** and information, such as geology, geophysics, geochemistry, engineering geology, economic geology, geochronology, palaeontology, geohydrological aquifer systems, geotechnical investigations, marine geology, geomagnetism, seismology, geohazards, environmental geology and other related disciplines.

- v) **Bring to the notice of the Minister any information in relation to the prospecting for and mining of mineral resources**, which is likely to be of use or benefit to the Republic.
- vi) Promote the search for and the exploitation of any minerals in the Republic.
- vii) Study (i) the **distribution and nature of mineral resources** and (ii) geoenvironmental aspects of past, current and future mineral exploitation.
- viii) Study the use of the surface and the **subsurface of the land and the seabed**, and from a geoscientific viewpoint advise government institutions and the general public on the judicious and safe use thereof with a view to facilitate sustainable development.
- ix) Develop and maintain the **national geoscientific library**, the national geoscientific information centre, the **national borehole core depository**, the **national geophysical and geochemical test sites**, the **national geoscience museum**, the national seismological network and the national geoscience analytical facility.
- x) Conduct investigations and render prescribed specialised services to public and private institutions.
- xi) Undertake –
 - a) research of its own accord;
 - b) research on **behalf of the State** or **any other government institution**, or on behalf of **any person or institution**, or support such research financially; or
 - c) **any reconnaissance operation, prospecting** and other related activities with a view to **attracting investment to the mineral resource sector**; and
 - d) do anything that is necessary for or conducive to the achievement of the said objects.
- xii) Render geoscience knowledge services and **advice to the State**.

1.2.1 Key policy developments and legislative changes

There have been no key policy amendments to the Geoscience Amendment Act (Act No. 16 of 2010) since it took effect on the 1st of July 2012. The Geoscience Act Regulations 2022, which elaborate the modalities of implementation of the empowering provisions in the Act were published as law in March 2022 after extensive consultations and engagements with various stakeholders. The Regulations intend to, among others, streamline the efficacy of the CGS's custodianship of the geoscience data, information and knowledge in terms of the founding legislation. In addition, a provision enabling the CGS to undertake exploration is being expanded to establish sustainable modalities for the organisation to do so while balancing implementation with its broader mandate.

The Policy Mandate: The Minerals and Mining Policy for South Africa (1998) affirms the CGS as a science council that supports research and development underpinning the sustainable development of the mining industry. This further enunciates the Constitutional mandate, as elaborated in the founding prescripts of the CGS.

This APP is aligned to the CGS's Strategic Plan 2020 – 2025, which primarily gives effect to the Policy Mandate.

2. Updates to Institutional policies and strategies governing the five-year planning period

In addition to the legislative mandate, the CGS APP, which is aligned to the Strategic Plan 2020 -2025 also implements other national policies and frameworks including, but not limited to, the following:

2.1 National Development Plan (NDP) 2030

In realising the urgent need to address the national imperatives, the CGS ensures that its business model and all its activities address the following strategic national outcomes as per the NDP 2030.

- **Decent employment through inclusive economic growth:** Delivering spatial geoscience information and services that attract local and international investment to develop mineral and upstream petroleum resources.
- **A skilled and capable workforce to support an inclusive growth path:** Build capacity in respect of geoscientific, administrative and managerial/leadership skills while also developing innovative outputs, systems and services.
- **An efficient, competitive and responsive economic infrastructure network:** Geoscience information and services input to infrastructure development in support of South Africa's economic development of mineral and upstream petroleum resources.
- **Vibrant, equitable and sustainable rural communities with food security for all:** The provision of geoscientific information that enables agricultural development and groundwater exploration, amongst others.
- **Environmental assets and natural resources which are well protected and continually enhanced:** Conducting research regarding, inter alia, Acid Mine Drainage and Carbon Capture and Storage technologies and establishing environmental baselines for possible future shale gas development.
- **An efficient, effective and development-oriented public service and an empowered fair and inclusive citizenship:** Strengthening the CGS to optimise delivery of the mandate and effect the transformative programme of Government.

2.2 Government's Medium Term Strategic Framework (MTSF) 2019-2024

The MTSF reflects the Government-wide set of delivery commitments made in an administrative cycle of five years. This framework delineates strategic areas of focus for Government entities to dedicate resources and effort in order to plan, implement and fulfil the afore-mentioned commitments, all of which contribute to the overarching National Visions popularly known as the NDP. In this regard, the CGS develops its strategy as guided by the MTSF and supported by an APP, which incorporates relevant **actions, indicators and targets** that seek to incrementally support the national developmental imperatives. The CGS strategy gives effect to six of the seven MTSF priorities, which include:

- A capable, ethical and developmental state
- Economic transformation and job creation

- Education, skills and health
- Spatial integration, human settlements and local government
- Social cohesion and safe communities
- A better Africa and World

The CGS's APP also addresses the **cross-cutting focus areas** of **women, youth** and **persons with disabilities**.

2.3 Government's Revised MTSF 2019-2024

The implementation of the MTSF 2019-2024 (see section 2.2 above) was largely disrupted by the outbreak of the Covid-19 pandemic and the declaration of a National State of Disaster on the 15 March 2020. This necessitated the Government to reprioritise its plans and budgets in response to the pandemic, which has had a devastating impact on the health, social and economic aspects of the lives of South Africans. The MTSF 2019-2024 was therefore revised to include critical interventions that are part of government relief and recovery efforts.

The Revised MTSF 2019-2024 continues to reflect government's plan of action over the remaining term of the sixth administration. The Revised MTSF 2019-2024 also prioritises Government commitments to prevail over the coronavirus pandemic and to work towards economic recovery. These commitments were outlined in the 2021 State of the Nation Address and include the following focus areas:

- 1) To defeat the coronavirus pandemic
- 2) To accelerate South Africa's economic recovery [e.g. through the implementation of Economic Reconstruction and Recovery Plan (ERRP)]
- 3) To implement economic reforms to create sustainable jobs and drive inclusive growth; and
- 4) To fight corruption and strengthen the capacity of the State.

2.4 The South African Economic Reconstruction and Recovery Plan

The ERRP of 2020 aims to build a new economy and unleash South Africa's true potential. The overarching goal of the plan is to create sustainable, resilient and inclusive economy. The ERRP focuses on the following priority areas:

- Energy security.
- Industrial base to create jobs.
- Mass public employment programme.
- Infrastructure development.
- Macro-economic interventions.
- Green economy.
- Food security.
- Reviving the tourism sector.

The CGS APP is developed to support the priority areas listed in the ERRP.

2.5 The Exploration Strategy for the Mining Industry of South Africa and South Africa's Exploration Implementation Plan

The Exploration Strategy for the Mining Industry of South Africa and its Implementation Plan 2022 were published in April 2022 by the Minister of Mineral Resources and Energy. These policy documents seek to attract investment in the mineral exploration sector and aim to secure a 5% share of global exploration expenditure in the next five years. The Exploration Implementation Plan recognises that to catalyse the industry, a conducive and enabling environment is required wherein synergies exist amongst the exploration activities, regulatory policies, systems and processes, financial/fiscal instruments, research, and development as well as exploration investment. To this end the plan identifies existing barriers to exploration investment and proposes apposite interventions sought to enable this industry to perform at the apex of its potential, allocated resources, and timeframes. These interventions constitute quintessential ingredients to the economic recovery programme. The Exploration Strategy has identified focus areas to aid in the change of the trajectory of the Country's exploration sector and these critical areas include;

- The CGS to increase geoscience mapping at higher resolutions, e.g., a scale of 1:50 000 mapping footprint from 9% to 14% in the next five years. This means that the strategy targets 1% extra 1:50 000 mapping coverage each year for a duration of five years. This exercise will improve the country's geoscience data and information and encourage investment in the exploration space. In the past 3 to 5 years, the country has moved from 5% to 9% coverage in the public funded mapping sphere.
- Through the strategy, the exploration sector commits to increasing the number of exploration drilling projects in the country. The sector aims to implement at least 25% of active prospecting rights with the remaining period of 3 years or more in the next five years. Accordingly, this step seeks to re-introduce the 'use it or lose it' principle to fast-track use of licenses at the same time encouraging investment in the sector.
- Collaborative research between relevant research institutions in the field of exploration geoscience.
- Improved availability of geoscience data, information and innovative technology.
- Increased Exploration investment.
- Accelerated exploration activities.

2.6 Department of Mineral Resources and Energy (DMRE) Strategic Priorities and Outcome-Oriented Goals

Further to the NDP 2030 and MTSF 2019-2024, the objectives of the CGS have been formulated to also support the objectives of the DMRE, whose core focus revolves around regulation, transformation and promotion of the minerals and energy sectors as well as provision of sustainable and affordable energy for growth and development to all South Africans. Other objectives of the DMRE to which the CGS aligns and supports include, but not limited to contributing to:

- A just transition to a low carbon economy
- Unlock South Africa's high potential mineral and energy resources

- Diversify supply of mineral resources in support of both mining and energy sectors
- Increased investment in mineral and petroleum sector, onshore and offshore
- Increase in South Africa's share of the global minerals and energy market
- Increase in South Africa's share of the Global exploration budget
- Diversify energy sources through implementing Integrated Resource Plan (IRP) 2019
- Increased infrastructure investment by both public and private sectors
- Inclusive, equitable and competitive exploration
- Ensure sufficient and relevant skills in the mining and energy sector

In furtherance of sustainable mining, the CGS also undertakes environmental studies that seek to attain appropriate stewardship in the sector, in accordance with the Constitutional prerogatives. In this regard, studies on Acid Mine Drainage, strategic mine water management programmes and integrated research into legacy mines are undertaken to support the DMRE.

The contribution towards upliftment of rural communities remains one of the focal points of Government and geoscientific interventions have been developed to positively impact the intended development of those communities.

2.7 Department of Science and Innovation (DSI) Strategic Priorities and Outcome-Oriented Goals

The strategic priorities and outcome-oriented goals of the DSI mainly focuses on research and a technology development environment that supports attainment of the national socio-economic development imperatives. Accordingly, the afore-stated goals are underpinned by a deliberate investment in the generation of knowledge and human capital development through direct investment as well as partnerships. The CGS, as a science council, is one of the key entities that, through its functions, collaborates with and supports the work of the DSI and the 2019 White Paper on Science, Technology and Innovation.

In this regard, the applications of *Fourth Industrial Revolution (4IR)* and *Artificial Intelligence* are finding expression in the geosciences in furtherance of improving service delivery and significantly enhancing the response to addressing societal challenges. The CGS welcomes the establishment of the 4IR as chaired by the President of the Republic of South Africa.

3. Updates to relevant court rulings

The CGS has no court rulings that have a significant or ongoing impact on its operations or service delivery obligations.

PART B: OUR STRATEGIC FOCUS

4. Updated situational analysis

4.1 External Environmental Analysis

4.1.1 *Micro Socio-Economic Trends – South Africa*

¹Over the past twenty-one years, South Africa has accomplished enormous social progress by bringing to millions of citizens access to key public services, notably education, health, housing, and electricity. ²Between 2002 and 2022, the proportion of households with access to an improved source of water increased by about four percentage points (growing from 84.4% to 88.5%). The number of households linked to the supply of electricity from the mains rose from 76.7% in 2002 to 89.6% in 2022, and these were accompanied by a decrease in the use of wood (20.0% to 7.7%) and paraffin (16.1% to 2.8%) over the same period.

In 2020, the South African economic growth rate plummeted, due to the Covid-19 pandemic. ³Despite the pressures of tighter lockdown restrictions and the civil disorder of July 2021 the real GDP picked up as predicted reaching 4.9% in 2021, this growth was attributed to an increase in demand for goods and services. ⁴South African gross domestic product (GDP) declined by 1.3% in the fourth quarter of 2022, the decline in growth was primarily driven by finance, trade, mining, agriculture, manufacturing, and general government services. After contracting by a revised 1.1% in the fourth quarter of 2022, real GDP edged higher in the first quarter of 2023, expanding by an estimated 0.4% indicating a modest positive economic growth⁵. This growth trend continued into the second quarter of 2023, with the GDP expanding further by 0.6%. Six industries on the supply side of the economy grew in the second quarter, with manufacturing and finance driving much of the upward momentum. On the demand side, the country benefitted from a sharp rise in investments in machinery and equipment, which included products related to renewable energy⁶.

¹ OECD Economic Surveys — South Africa

² <https://www.statssa.gov.za/publications/P0318/P03182022.pdf>

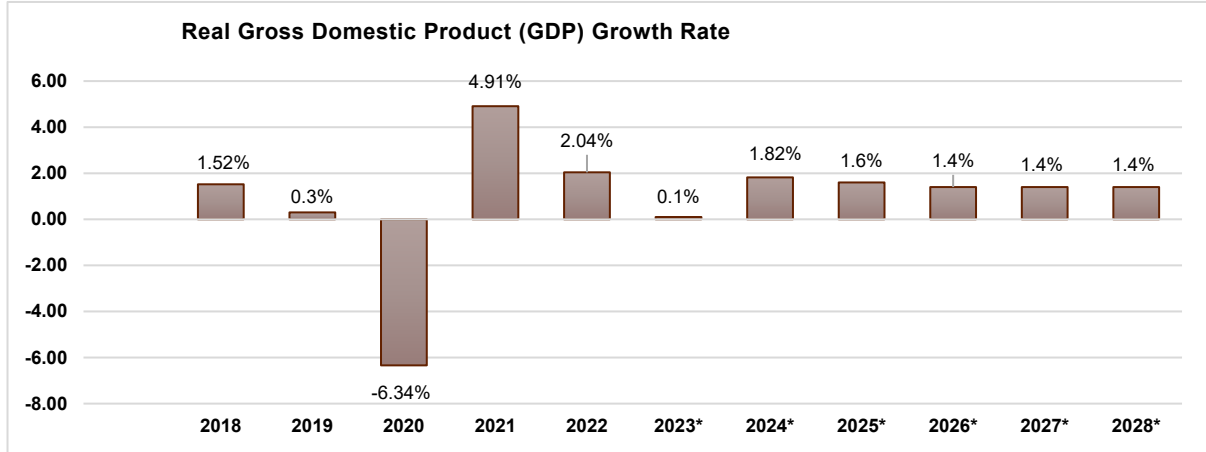
³ <https://www.statssa.gov.za/?p=15214>

⁴ <https://www.statssa.gov.za/?p=16162>

⁵ <https://www.statssa.gov.za/?p=16379>

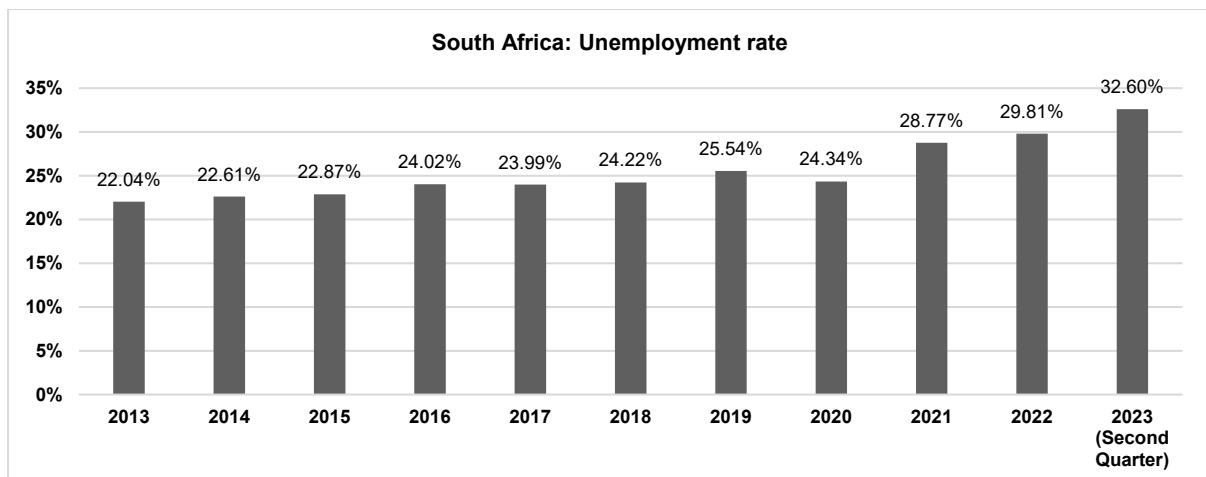
⁶ <https://www.statssa.gov.za/?p=16611#:~:text=Six%20industries%20on%20the%20supply,products%20related%20to%20renewable%20energy.>

⁷The growth of the real gross domestic product in South Africa was forecast to increase between 2023 and 2028 by in total 1.3 percentage points. This overall increase does not happen continuously, notably not in 2025 and 2026. The growth is estimated to amount to 1.82 % in 2024 and 1.6% for 2025. While the growth was forecast to increase significant in the next years, the increase will slow down in the future as the estimated percentage for 2026 is 1.4% (Figure 1).



⁸Figure 1: South Africa's real GDP growth rate from 2018 to 2028 (*projected growth rate)

⁹Despite a slight decrease in the unemployment rate from 32.9% in the first quarter of 2023 to 32.6% in the second quarter, marking the lowest unemployment rate recorded since the first quarter of 2021, and is among the highest in the world. Young people face significantly higher rates of underemployment compared to older individuals. In the first quarter of 2023, the underemployment rate stood at 6.3% for those aged 15-24 and 5.2% for those aged 24-34, both exceeding the national rate of 4.9%. The lowest underemployment rates were observed among the age groups of 35-44 years and 55-64 years, both registering at 4.6%. The country has a long way to go to reduce the official unemployment rate to levels last seen before the 2008-2009 global financial crisis.



¹⁰Figure 2 : South Africa: Unemployment rate from 2013 to 2023 (Second quarter)

⁷ <https://www.statista.com/statistics/370514/gross-domestic-product-gdp-growth-rate-in-south-africa/>

⁸ <https://www.statista.com/statistics/370514/gross-domestic-product-gdp-growth-rate-in-south-africa/>

⁹ <https://www.statssa.gov.za/?p=16312>

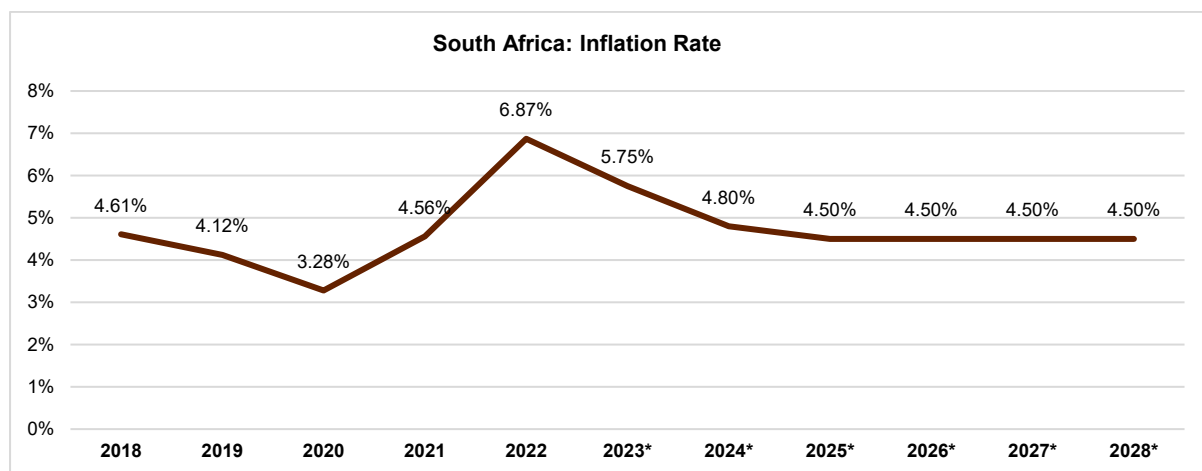
¹⁰ <https://www.statista.com/statistics/370516/unemployment-rate-in-south-africa/>

¹¹The Covid-19 pandemic has exacerbated the challenges facing South Africa's already fragile economy. Over the past decade, the country's economic performance has been subpar, with GDP per capita in 2019 lower than it was in 2008. High unemployment, particularly among youth, remains a persistent issue, with rates exceeding 50%. At the same time, there is increasing pressure to address funding gaps in critical areas like healthcare, infrastructure, and higher education.

¹¹To address these challenges and put the country's public finances on a more sustainable trajectory, several actions are needed. First, there must be a focus on improving the efficiency of government spending. Simultaneously, efforts should be made to increase government tax revenues. A well-balanced approach to revenue and expenditure can help restore confidence in the economy.

¹¹In the longer term, it is crucial to revitalize productivity growth as a means of improving living standards. This entails investing in various areas such as transportation infrastructure (including roads, ports, and railways), ensuring stable electricity generation, enhancing the quality and accessibility of telecommunications networks, expanding access to higher education, and creating a more favourable business environment.

In summary, South Africa faces multifaceted economic challenges exacerbated by the Covid-19 crisis. Addressing these challenges requires a combination of measures, including fiscal responsibility, tax reform, and long-term investments in infrastructure and education to boost productivity and ultimately improve the standard of living for its citizens.



¹²Figure 3: South Africa: Inflation Rate from 2018 to 2028 (*projected inflation rate)

South Africa continues to implement several interventions to improve investor confidence, which are critical to reverse weak investment and employment growth. These are also part of the South African Economic Reconstruction and Recovery Plan and include aggressive infrastructure investment, energy security, green economy interventions, support for tourism recovery and growth; employment orientated strategic localization, reindustrialization and export promotion and strengthening food security, amongst others.

¹¹ https://www.oecd-ilibrary.org/economics/oecd-economic-surveys-south-africa_2218614x

¹² <https://www.statista.com/statistics/370515/inflation-rate-in-south-africa/>

4.1.2 Mining Industry Overview

The year 2022 is touted a new mining era in need of new pathways for a re-invented, re-designed and re-imagined era of global mining and mineral industry¹³. The shift in era is largely attributed to a shift in an evolving commodity landscape and increased demand for critical minerals. For South Africa's metals and mining industry and due to its notable mineral reserves, there is considerable optimism regarding its potential to play a pivotal role in the international supply chain for critical minerals¹⁴. This sentiment is underscored by South Africa's mineral production reaching an unprecedented high of R1.2 trillion in 2022¹⁵. The main catalyst for fiscal growth is mineral exports with a 2.6% increase from 2021, to a fiscal value of R877.6 billion (bn)¹⁵.

Whereas the contribution of mining towards GDP experienced a nominal decline to 7.53% in 2022 (down 0.3% from 2021), South Africa's mining and quarrying contribution edged higher during the first quarter of the year 2023. During Q1 of 2023, South Africa's GDP expanded by 0.4% recording a growth rate of 0.9% in the mining and quarrying industry¹⁶. This growth was particularly evident in the production of coal, platinum group metals (PGMs), gold, nickel, and copper. The 2022 financial performance of the Top 40 mining companies is equally matched to the 2021 total group revenue of US\$ 711 billion¹³. This is largely attributed to the increased and in some instances, doubling effect in coal prices amid the global energy crisis. Such results were last seen in 2010. This resulted in a 5% increase in total coal revenue to 28% in 2022. While copper production saw an upswing, a drop in prices offset its revenue. Projections for 2023 suggest that commodities like copper and other critical minerals will significantly influence revenue streams.

The total market capitalisation for the top 40 mining companies increased to US\$ 1.2 trillion (trillion) in 2022¹³. Amongst the list of the largest mining players is Anglo America Platinum, Kumba Iron Ore, Impala Platinum, Gold Fields, and Sibanye Still-Water with a combined market capitalisation of R 952 billion, with most reporting on diversified commodity portfolios.

However, on the Investment Attractiveness Index—considering both policy and mineral potential—South Africa ranks in the bottom ten¹⁷. The CGS seeks to improve the sentiments expressed through the adoption of the CGS IMMP. The programme endeavours to enhance the knowledge and understanding of the geosciences in the country through detailed geological mapping of South Africa at greater resolution, e.g., a scale of 1:50 000 scale. To date, 12% of South Africa's landscapes is mapped at higher resolution and this will ultimately benefit mineral exploration activities in the country. Also, the lack of access to funding or financing instruments constitutes one of the critical inhibitors to exploration¹⁸. Consequently, the establishment of private equity by the State's investment in geosciences cannot be overstated. Through the establishment of the Junior Exploration Fund, as inscribed in the Exploration Implementation Plan (2022), the fund will assist qualifying enterprises in the early

¹³ <https://www.pwc.co.za/en/publications/sa-mine.html>

¹⁴ <https://www.spglobal.com/marketintelligence/en/mi/research-analysis/subsaharan-africa-role-in-global-supply-chain-critical-minerals.html>

¹⁵ <https://www.mineralscouncil.org.za/special-features/1345-facts-figures-pocketbook-2022>

¹⁶ <https://www.statssa.gov.za/?p=16379>

¹⁷ <https://www.fraserinstitute.org/studies/annual-survey-of-mining-companies-2022>

¹⁸ <https://www.energy.gov.za/files/policies/South-Africas-Exploration-Implementation-Plan.pdf>

stages of exploration and mining, in establishing the extents and economic value of the prospects. This will further assist to augment South Africa's exploration budget.

4.1.3 Recovery of Minerals Exploration and Mining Post Covid-19 pandemic

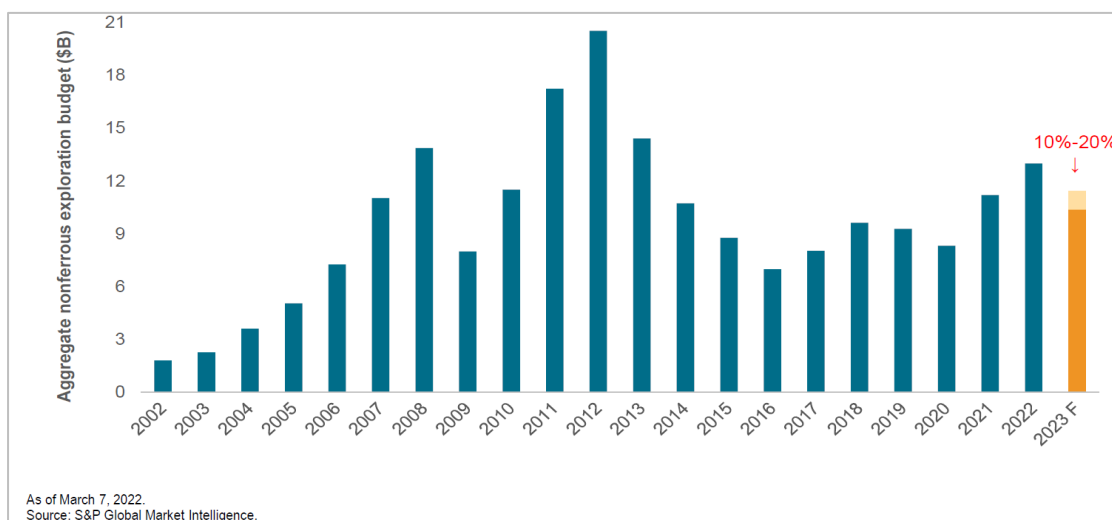
Over the last three years, which were marked by the Covid-19 pandemic, the mining and exploration industry demonstrated remarkable resilience. As we navigate 2023, the global recovery from the pandemic's impacts continues to gain momentum. This positive trajectory post-pandemic is evident in the significant growth of the global exploration budget, which saw a marked increase to US\$ 13.01 billion in 2022 from the previous exploration budget of US\$ 11.2 billion— a growth of approximately 16% year-on-year (Figure 4)¹⁹. Consequently, this saw the resurgence of the junior exploration and mining sector and an uptake in the number of new entrants in the industry as market conditions have become more favourable. The junior sector grew by 12% with 2189 exploration companies reported.

A revised estimated budget grew to US\$13.7 billion following the inclusion of smaller companies with limited visibility and spending below US\$ 100 000¹⁹. The increase in budget is attributed to energy transition aspirations, stronger metal prices and favourable exploration financing conditions. In 2022, gold dominated exploration spending globally, with a significantly higher percentage growth in budgets for critical minerals such as copper, lithium and cobalt amounting to US\$ 893 million²⁰.

It is worth noting that the second quarter of 2022 was marked by geopolitical tensions, particularly the conflict between Russia and Ukraine¹⁹. This war's ripple effects led to heightened metal prices, exacerbating inflationary pressures in several global economies, including South Africa. Consequently, this geopolitical backdrop is expected to dampen the economic outlook and demand projections, leading to conservative exploration budgets for 2023, with predictions of a decline between 10% to 20%.

¹⁹ <https://www.spglobal.com/marketintelligence/en/news-insights/research/early-2022-optimism-pushes-exploration-budgets-up-16-yoy>

²⁰ <https://www.pwc.com/gx/en/issues/tla/content/PwC-Mine-Report-2023.pdf>



¹⁹Figure 4: Global Aggregate Nonferrous Exploration Budget Forecast with coverage spanning over the past 10 years (2002-2022). The graph also forecasts budgets for the year 2023, with an expected fall of between 10-20%.

In 2022, the global exploration for gold accounted for the largest budget increase, on the basis of monetary value. The gold budgets recorded a US\$ 722 million increase to almost US\$7 billion¹⁹. Although gold prices remained steady, as significant reduction in the number of gold companies has negatively impacted gold revenue²⁰.

The focus on energy transition commodities and escalating prices for the green metals has sparked interest commodities such as lithium, copper, nickel. The exceptional market gains have encouraged exploration in the green metals sector driving the budgets for copper, lithium and nickel to a combined total of US\$ 893 million²⁰.

An additional trend in digital transformation has also been realised post the Covid-19 pandemic. Most of the major mining companies are fast tracking the adoption of new technological capabilities for remote and automated work. In 2022 automation, digitisation and artificial intelligence now feature as fundamental in realising optimal productivity in many mining operations²⁰.

The State investment in geosciences plays a pivotal and crucial role in improving South Africa's attractiveness as a prime exploration jurisdiction. The CGS has realigned its strategies, focusing on projects under the GTP that promise immediate contributions to economic recovery and reconstruction. Whereas South Africa had committed to attaining a 5% share in global exploration expenditure after a period of 3 to 5 years, the country only achieved **0.8% of global exploration expenditure in 2022**.

However, when considering the actual exploration expenditures, the overall impressions is encouraging as the country's exploration budget for the year 2021 was US\$ 86 million, while that of 2022 rose to US\$ 104 million²¹, representing approximately US\$ 20 million increase. In line with this, the CGS aims to explore the potential of green metal prospects and the promising "minerals of the future" such as, *inter alia*, lithium, manganese, cobalt, vanadium

²¹ <https://www.dailymaverick.co.za/article/2023-03-02-global-mining-budgets-rose-in-2022-but-sa-has-dropped-off-the-radar/>

and REE, which are projected to be instrumental in the renewable energy sector including, but not limited, clean coal and its related technologies, geothermal energy.

4.1.4 PESTEL Analysis

The external environment consists of variables/forces that are outside the sphere of influence of the CGS and therefore are not typically within the control of the organisation. These variables shape the context within which the organisation exists and present it with threats and opportunities that have the potential to either retard or stimulate strategic success. The variables include, albeit not limited to diverse factors such as rapid technological change, evolution of policies, the socio-economic climate and energy. The following factors were assessed by means of the Political, Economic, Social, Technological, Legal, and Environment (PESTEL) analysis:

- Political:** The CGS reports to and supports the Ministry of Mineral Resource and Energy (DMRE) in executing its mandate and priorities. The CGS takes direction from the strategic goals of the DMRE in developing its own strategies. As a science council, the CGS also reports on scientific research and innovation to the Department of Science and Innovation (DSI). Other Government policies and priorities such as transformation are central to the normalisation of the longstanding irregularities of society, in keeping with the democratic values of the country. To this end, the CGS subscribes to the transformation agenda in respect of, inter alia, broad-based black economic empowerment, employment equity and economic growth. The timeframe for implementation of the geoscience programmes is often inconsistent with the tenure of the shareholder executive and by extension introduces some vagaries in the priority areas of the incumbent executive.
- Economic:** The Covid-19 pandemic in 2020 led to massive disruptions in the world economy, through restrictive public health measures, massive government spending to support individuals and businesses, and severe impacts to supply chains. In 2022 as the economy was rebounding from the pandemic the Russia-Ukraine conflict brought about more disruptions and created uncertainty in the broader global economy that could persist for some time²². This has hindered global growth and aggravated inflation, putting even more strain on the weakened government fiscal²³.
The CGS appreciates this possible constraint but mitigates it in presenting a strategy that seeks to provide requisite quality data with profound impact on long term national developmental and investment decisions. Further, the slow recovery has the potential to limit Government's ability to fund the delivery of the CGS mandate due to other pressing and competing socio-economic priorities.

The growing demand for geoscientific information in Africa, the Middle East and other jurisdictions presents an avenue for the CGS to collaborate with other protagonists in its various fields of expertise and supplement the Government grant.

²² <https://www.spglobal.com/marketintelligence/en/news-insights/blog/world-exploration-trends-2022>

²³ <https://www.pwc.com/gx/en/issues/tla/content/PwC-Mine-Report-2023.pdf>

Exploration for mineral commodities: Given the rising global urgency to secure baseloads in energy demand, amid ongoing geopolitical conflict, a shortage 'green' minerals supply, the world is in the midst of a global energy crisis^{24;25}. As a result, this sparks a greater need for exploration in meeting the global demand for green metals. The jurisdictions with significant investments in geoscientific programs, such as Canada and Australia, secure a dominant portion of the annual exploration budget. Conversely, South Africa's allocation of this budget is still below 1% of the global exploration expenditure, even though, in actual values there is an increase of about US\$ 20 million in 2022 compared to US\$86 million in 2021²⁶. The President of the Republic has emphasized the mining industry's role as a pivotal sector, highlighting its potential in rejuvenating the economy²⁷. In response, the Minister of Mineral Resources and Energy has outlined strategies to augment South Africa's budget share to 5% within the next three to five years²⁸. This plan includes the State's intentional investment in geoscientific knowledge. With the envisaged Junior Mining and Exploration Fund, South Africa is at the brink of accelerated exploration activities, which will cause a colossal shift in exploration and mining in South Africa, with the eventual realisation of the planned 5% share in global exploration expenditure.

- **Social/Cultural:** The CGS, as a science council, takes cognizance of its social and cultural environment and ensures that it responds accordingly. The increased participation and advocacy of society on issues relating to, amongst others, incremental demand for economic growth and jobs, infrastructure development, mineral resources development, energy security as well as the preservation of the natural environment and cultural heritage influence the approach of the CGS. As a socially responsible organisation, the CGS recognises the increased importance of Environmental, Social and Governance (ESG) principles and the potential impact on both the profile and the value of services provided by the CGS to society.
- **Energy Security:** Energy security is vital in every society because it is largely the basis for social and economic development, health, food security and poverty alleviation. South Africa's increased demand for cost competitive security of energy has never been more pronounced. In this regard, an energy basket comprising traditional as well as new sources of energy is needed. This requirement results in unprecedented growth in the demand for minerals that are deemed critical toward supporting energy development, such as battery minerals. Moreover, South Africa adopted a low-carbon economic growth trajectory that requires urgent attention to sustainable and cost-effective sources of energy. Such energy sources potential as geothermal energy, battery minerals, uranium/thorium, REE, coal, etc. are a subject of the programme of the CGS, all of which are located within the context of the climate change paradigm. Finally, the country is also advancing technologies such as Carbon

²⁴ <https://www.pwc.com/gx/en/issues/tla/content/PwC-Mine-Report-2023.pdf>

²⁵ <https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf>

²⁶ The calculations are based on the following articles/reports: <https://www.dailymaverick.co.za/article/2023-03-21-mantashes-missed-mining-target-sa-still-accounts-for-less-than-1-of-global-exploration-spend/> & <https://www.dailymaverick.co.za/article/2023-03-21-mantashes-missed-mining-target-sa-still-accounts-for-less-than-1-of-global-exploration-spend/>

²⁷ President Ramaphosa's address at the African Mining Indaba 2023:

https://twitter.com/ewnreporter/status/1622862476042723329?ref_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwterm%5E1622862476042723329%7Ctwgr%5E8a099c262715ceb3a40a7c3892b1e4ffbc343b5d%7Ctwcon%5Es1_&ref_url=https%3A%2F%2Fewn.co.za%2F2023%2F02%2F07%2Fmining-crucial-for-job-creation-economic-growth-says-ramaphosa

²⁸ https://www.gov.za/sites/default/files/gcis_document/202204/46246gon2027.pdf

Capture, Utilisation and Storage, which aims to directly contribute toward the country's Just Transition.

- In December 2017, the General Assembly of the United Nations (UN) proclaimed 2019 as the **International Year of the Periodic Table of Chemical Elements** (IYPT2019). The UN recognised the importance of raising global awareness of how chemical elements in the periodic table can promote sustainable development and how their application can provide solutions to global challenges in energy, education, agriculture and health sectors²⁹. Clean energy technologies such as wind, solar and batteries require large amounts of minerals and metals (e.g., cobalt, nickel, manganese, lithium, copper and rare-earth metals also known as REEs)³⁰, therefore the CGS programmes will focus on the search for such **critical minerals**.
- **Food Security:** The NDP Vision 2030, SDGs 2030 and Agenda 2063 identify food security as key in addressing both poverty and inequality and make reference to a number of requisite steps to improve food security by including sustainable agriculture, expansion of the use of irrigation, security of land tenure, especially for women, and the promotion of nutrition education. Food security, is however, threatened by various factors such as globalisation, urbanisation, international trade regimes, climate change, and the poor storage and distribution of food.

The strategy of the CGS further focuses on geoscience programmes that will contribute towards land use, groundwater, and the environment, all of which are contributory to the national food security programme.

- **Technological:** Technological advancement enables the CGS to respond to the expectations and requirements of its stakeholders to ensure innovative and efficient geoscience service delivery. The utilisation of emerging innovative mapping technologies for the gathering and interpretation of geoscience data improves the effectiveness and efficiency of the CGS in delivering on its mandate. The rapid development of technology provides the CGS with major opportunities in the areas of research, innovation, skills development and service delivery.

Investment in scientific research and technological development is a catalytic imperative for innovation. This will enable the organisation to be responsive, competitive, and relevant. This particularly includes new advances in mechanisms and technologies linked to processes and benefiting large volumes of geoscience data and information.

The dawn of the Fourth and Fifth Industrial Revolution presents opportunities for application in the geosciences to enhance data collection accuracy and improve the speed and quality of data interpretation. The introduction of artificial intelligence and machine learning in geoscience presents opportunities for the CGS to, not only be current, but substantially improve the quality of geoscience outputs in real time.

²⁹ <https://iupac.org/united-nations-proclaims-international-year-periodic-table-chemical-elements/>

³⁰ <https://www.carbonbrief.org/explainer-these-six-metals-are-key-to-a-low-carbon-future>

³¹The President of South Africa established a Presidential Commission on the Fourth Industrial Revolution (4IR) to identify and recommend policies, strategies and plans that are needed to position South Africa as one of the leading countries in the evolution and development of the 4IR. The President indicated that Government would prioritise interventions to take advantage of rapid technological changes. The main focus will be the development of an integrated national strategy and plan to respond to the 4IR to include detailed interventions to be carried out in achieving competitiveness of the key economic sectors, including agriculture, finance, mining, manufacturing, ICT (Information and Communications Technology) and electronics, and business with science, technology and innovation as a cross-cutting enabler. The CGS has responded by prioritising Geoscience Innovation throughout its annual programme. This includes the development of technologies to process collected geoscience data more rapidly and efficiently.

- **Environmental:** Natural environmental and man-made hazards create a need for geological information and solutions to mitigate these hazards, e.g., infrastructure development on ground that is prone to landslides, sinkhole formation, tsunamis, earthquakes, acid mine drainage, groundwater pollution, air pollution and global warming. The natural environmental challenges dictate the programmes and mitigating strategies that the CGS should address.

Changes in climatic conditions, i.e., when conducting fieldwork, will mostly affect the CGS operationally in terms of the effective and timely delivery of projects and services.

- **Climate change:** Climate change is referred to as a change in average weather conditions or in the time variation of weather within the context of longer-term average conditions and it is caused by various factors such as biotic processes, variations in solar radiation received by Earth, plate tectonics and volcanic eruptions. Greenhouse gas emissions from human activities are also believed to accelerate the rate of climate change. The members of the global nations have formed a coalition of the willing and are in agreement to work towards limiting global temperature rise to well below 2 degrees Celsius. In 2021 world leaders participating at the UN Climate Change Conference of the Parties (COP26), in Glasgow, committed to accelerated climate change action. South Africa secured a multi-billion deal at COP26 aimed to reduce the country's reliance on coal and curb its high-carbon emissions. The funding will be allocated to renewable energy investments, the development of new sectors such as green hydrogen and electric vehicles, and other activities ³².
- **Rapidly growing cities and ongoing effects of climate change** are making more people vulnerable to rising sea levels. Two-thirds of the global population is expected to live in cities by 2050 and already an estimated 800 million people live in more than 570 coastal cities vulnerable to a sea-level rise of 0.5 metres by 2050. In a vicious circle, urbanisation not only concentrates people and property in areas of potential damage and disruption, it also exacerbates those risks — for example by destroying natural sources of resilience such as coastal mangroves and increasing the strain on

³¹ No. 42078 Government Gazette, 4 December 2018

³² <https://www.pwc.co.za/en/press-room/cop26-south-africa-2021.html>

groundwater reserves. Intensifying impact will render an increasing amount of land uninhabitable.

The CGS is implementing the **Carbon Capture Utilisation and Storage (CCUS)** project, which aims to curb the emissions of CO₂ and therefore reduce the nation's carbon footprint. Most importantly, the CGS is assessing the utilisation options where CO₂ and its outputs could be used for, among other, enhancement of geothermal energy generation, development of construction materials, enhanced coal-bed methane. This approach not only is consistent with the stated intentions of the NDP2030, but also the IRP 2019.

The CGS will continue investigating interventions to reduce the quantities of greenhouse emissions such as possible storage options for carbon dioxide and identifying alternative sources of energy.

- **Legislative:** The CGS is a creature of statutes and any changes to the legislative framework (see Section 1.2) will have a direct impact on the strategy and operations of the organisation. In developing the five-year strategy of the CGS, these factors have been considered to enable the organisation to take full advantage of opportunities to adjust and navigate within the legislative framework to contribute to the creation of a prosperous society for all within South Africa. Section 4.1.5 below summarises the major strengths and weaknesses of the CGS as well as the major threats and opportunities facing the organisation

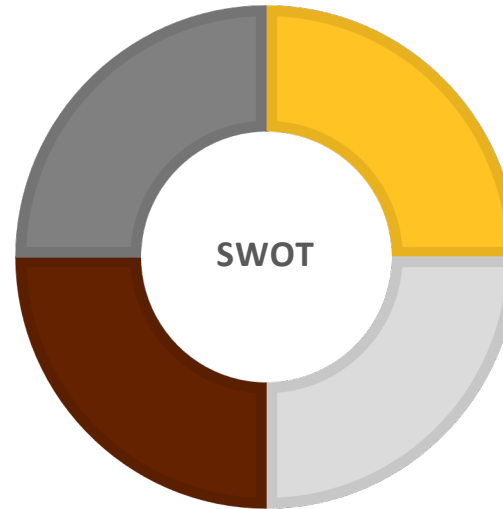
4.1.5 CGS SWOT Analysis

STRENGTHS

- Support from Government grant funding through line Departments (i.e. DMRE).
- A sound historical heritage, investible geoscience data and information accumulated over a 111-year period as major strategic asset that can be leveraged to develop the economy of South Africa.
- Scientific research experience and strong knowledge base (generator of knowledge).
- Good understanding of the South African natural resources and environmental landscape.
- Empowering legislative mandate.
- Developer and incubator of pipeline of geoscience expertise through the bursary and internship programmes – contribution to human capital development and expansion of knowledge enterprise.
- Capacity to strengthen commercial/collaborative and Intellectual Property revenue generation.
- A strategic partner for the mining industry by making and participating in exploration activities.

OPPORTUNITIES

- Collaboration opportunities with various Government departments, science councils, and international entities in geoscientific research as well as universities to facilitate regional integration and leverage on resources including human capital building, etc.
- Innovative utilisation of geoscientific information in various emerging fields such as medical geology, geomaterials, artificial intelligence and machine learning.
- Transformation, growth and development of world-class scientists.
- Implement geoscience programmes to give effect to the National Developmental priorities.
- Participating in programmes to support the just energy transition to a low carbon economy.
- Enhancing the advisory position of the CGS through Policy/legislation interventions.
- Providing thought leadership on CCUS



WEAKNESSES

- A limited capacity of highly qualified, experienced and skilled scientists.
- Inadequate access to external exploration data.
- Limited utilisation of vast historical geological information.
- Semi-digital and disparate internal systems – delayed technical advancements.
- A very low coverage of high-quality, integrated, multidisciplinary maps in South Africa for mineral exploration and infrastructure development

THREATS

- Disruptive events in the dynamic global geopolitical landscape.
- Increased criminality that leads to slow implementation of projects and increased operational costs.
- Slow economic growth that threatens sustainable revenue generation.
- Funding of geoscience programmes across multiple state entities can lead to duplicative and uncoordinated work being performed).
- Inadequate integration and coordination across Government entities.
- Challenges of access to land to implement the geoscience programmes.
- Breaches to data and information security.
- Paucity of energy supply.

4.1.6 Stakeholder Analysis

An effective stakeholder engagement strategy is a key requirement for the CGS: (1) to fulfil its legislative mandate and (2) to leverage optimal delivery through collaborative relationships that enhance and nurture the development of the geosciences.

The CGS is accountable to and must align with a multifarious network of internal and external stakeholders. The various functions within the organisation, both core and support, are interdependent and must be aligned internally and across stakeholder groupings in order for the CGS to operate effectively in the execution of its mandate. Primary stakeholders include but are not limited to Parliament of the Republic of South Africa, the DMRE, the National Treasury, the DSI, the Board, the employees, organised labour, service providers, communities, and the broader South African public. The secondary stakeholders critical for the CGS include, amongst others, international geological survey organisations, geoscience organisations, institutions of higher learning, mining companies, media, and Non-Governmental Organisations. The CGS is a state-owned entity and, by extension, an instrument of Government that has been established to execute aspects of national foreign policy through bilateral agreements with other countries. Table 1 summarises the various stakeholder groupings of the CGS. In this regard, the Geoscience Diplomacy Programme of the CGS has been developed and implemented to coordinate strategic partnerships with stakeholders outside South Africa.

Table 1: Stakeholder Analysis

EXTERNAL AND INTERNAL STAKEHOLDERS					
Stakeholder List	Characteristics/ Attributes	Influence	Interest	Action Point to deliver on	*Linkages with other stakeholders (Direct / Indirect)
CGS Board	Social, Strategic and Political Partners	H	H	Keep Satisfied, Manage Closely and Keep Informed	Direct
Parliament of South Africa		H	H	Keep Satisfied and Informed	Direct
DMRE		H	H	Keep Satisfied, Manage Closely and Keep Informed	Direct
Government and related Departments (e.g. DSI, National Treasury, Presidency, DPME, DWS, DFFE, DALRRD, DHS, DTIC, Tourism Department, DPWI, DIRCO, Economic Development Department, DHET, SANDF, COGTA)		H	H	Collaborate, Keep Satisfied	Direct
Provincial Departments		H	L	Manage Closely	Direct
Municipalities		H	H	Collaborate, Keep Satisfied, Manage Closely	Direct
Traditional Councils		H	L	Keep Satisfied and Informed, Manage Closely	Direct
Communities (Direct projects)		H	L	Keep Satisfied and Informed, Manage Closely	Direct
Farmers and landowners		H	H	Keep Satisfied and Informed	Direct

EXTERNAL AND INTERNAL STAKEHOLDERS					
Stakeholder List	Characteristics/ Attributes	Influence	Interest	Action Point to deliver on	*Linkages with other stakeholders (Direct / Indirect)
General Public	Public and Private Institutions	H	L	Keep Informed	Indirect
Media		H	H	Manage Closely and Keep Informed	Direct
NGOs and Chapter 9 Institutions		H	L	Manage Closely	Direct
Nature Conservation Institutes		H	L	Collaborate, Keep Informed and Manage Closely	Indirect
Business Forums		H	L	Keep Informed and Manage Closely	Indirect
Regional Integration Partners, e.g. the African Union and the Organisation of African Geological Surveys (OAGS)		L	L	Keep Informed	Indirect
CGS Employees and Organised Labour		H	H	Keep Satisfied and Informed	Direct
Geological Surveys		L	H	Manage Closely	Direct
African Union and Regional Structures, such as SADC		L	H	Keep Informed	Indirect
Industry		H	H	Keep Informed and Collaborate	Direct
Spatial Planning and Development Companies, Science Councils, Minerals Council South Africa (former Chamber of Mines), etc.	H	L	Keep Satisfied	Direct	
Development Bank	Financial Resources Structures	L	H	Manage Closely	Direct
Insurance Companies		L	H	Manage Closely	Direct
Funders (e.g., World Bank)		L	H	Keep Satisfied and Informed	Indirect
Universities	Professional Institutions	L	H	Manage Closely	Direct
Research Institutions		L	H	Manage Closely	Direct
Geological Society of South Africa and similar Institutions		L	H	Manage Closely	Direct

Various opportunities exist to strengthen stakeholder relations and to establish opportunities for networking, learning, alignment and integration. An initiative that the CGS could explore to strengthen stakeholder relations is the consideration of bi-annual stakeholder interventions — national, continental, or international. These interventions would provide marketing platforms for the CGS to create visibility and awareness of the CGS, to disseminate information, and to showcase the current and planned work of the CGS.

The Intergovernmental Relations Framework Act (Act No. 13 of 2005) prescribes to principles for the national government, provincial and local governments, and all organs of state to facilitate coordination in the implementation of policy and legislation, including, but not limited to the effective provision of services, monitoring the implementation of policies and legislation, and the realisation of national priorities. The Act makes provision for the establishment of intergovernmental structures for coordinating actions across government departments when implementing policies or legislation, for the execution of statutory functions (considering the circumstances, material interests and budgets of other government departments) and to consult, cooperate and share information to achieve the objectives of the Act. The Act gives credence to the District Development Model, which aims to ameliorate the coherence and

impact of government service delivery with a focus on 44 District Municipalities and 8 Metros around the Country.

An opportunity presents itself for the CGS to explore the potential for establishing an intergovernmental forum comprising key stakeholders (e.g., DMRE, DSI, DFFE, etc.). This forum would have the authority to establish rules and principles for the endorsement of cross-government departmental projects and programmes, and the approval of the transfer or allocation of resources (financial or otherwise) across departments in the execution of the integrated and multidisciplinary geoscience mapping programmes. The identified projects/programmes would support the achievement of national objectives, considering the collective mandates and functions of various Government departments. This would allow the CGS to access and/or share resources with other Government departments for projects and programmes that have to be funded and executed in national interest, enabling the optimal use of grant funding and other resources across departments, without additional demands on the fiscus.

The CGS has maintained satisfactory levels of stakeholder engagement, which can be attributed to the implementation of the Integrated Communication and Stakeholder Management Strategy. As evidenced in its annual stakeholder satisfaction surveys, the CGS has in the last financial year achieved a satisfaction level of 79.4% which suggests that its stakeholders are satisfied with its products and services.

4.2 Internal Environment Analysis

4.2.1 Overview of the CGS

The strategically re-oriented Integrated and Multidisciplinary Geoscience Mapping Programme (IMMP) was adopted by the CGS Board in June 2017. The IMMP is developed to encourage the sustainability of the organisation in a changing state of ideologies, economy, and technological landscape. It is intended to maintain an impactful delivery of the core mandate of the CGS and provides innovative and responsive geoscience solutions to support the National Development Plan 2030 and other government plans that address such national development imperatives as economic growth, poverty, inequality, job creation, education, food security, optimal land use, environmental stewardship, clean water, affordable and clean energy, and safer communities, among others.

The IMMP strategy aims to map the land surface (both onshore and offshore) of South Africa at a greater level of detail (e.g. 1: 50 000 scale), not only geologically, but also geophysically, geochemically and geotechnically to produce a new generation of more detailed maps to serve as a base to advise the State and various stakeholders, including the public. Marine geoscience mapping (offshore mapping) also features prominently, in line with the objectives of marine Operation Phakisa. The IMMP priorities contributes to the ERRP as well as the Exploration Strategy and include but not limited to:

- Digitally migrate all geoscience data (Contributions to the digital economy)
- Facilitate growth of the exploration activities in South Africa to secure a minimum of 5% of the global exploration budget (Building South Africa's Minerals Resource Wealth)

- Catalysing the blue economy development, in line with the Oceans Operation Phakisa (through management of South Africa's Marine Jurisdictions)
- Securing future Energy resources (implementation of the IRP 2019)
- Contribute to improved carbon capture technologies (for the reduction of greenhouse gas emissions and transition to a low carbon growth trajectory)
- Geoscience research that contributes to food security, infrastructure development, water and environment (Ensuring Community Safety, Land and Infrastructure Development and Securing South Africa's Water Resources).
- Improve African collaborations (contributions to African Continental Free Trade priority)
- Grow scientific skills (embracing the cross-cutting areas: **women, youth and people with disabilities**) to execute the IMMP.
- Embrace applications of the 4IR and artificial intelligence in geosciences (leading geoscience innovation)

The GTP represents the technical programme model of the CGS that covers integrated projects taking into cognizance the interconnectivity of various geoscientific disciplines for an impactful contribution to the broad government mandated programmes. The CGS GTP is subdivided into five core themes, which include the following:

Theme 1: Geoscience for Minerals and Energy

The South African Government announced its bold plan to capture a minimum of 5% share of the global exploration budget of approximately US\$10 billion per annum in the next three to five years. The CGS is privileged to be at the leading edge of rejuvenating and reimagining the country's exploration landscape, consistent with the quality of the geology that suggests that the country remains a proverbial exploration frontier. Accordingly, the CGS provides necessary geoscientific/technical support in several DMRE-led initiatives such as South Africa's ERRP, the geo-environmental baseline studies for shale gas development in the Karoo region, the Mine and Environmental Water Management Programme as well as the Exploration Strategy.

The CGS's contribution to the country's energy security and just energy transition is founded on the numerous projects that constitute its GTP. For example, the CGS is investigating the geothermal research potential of South Africa, the early positive results of which will augment the country's sustainable renewable energy programme in the medium to long term as well as continued focus in characterisation of mineralising systems for 'battery minerals' and 'minerals of the future'. The CGS is also an implementing agency for the CCUS project, which tests carbon capture and utilisation in South Africa as a critical input in reaffirming the country's commitment to clean energy and climate change mitigation.

Progress on the implementation of this aspect of the CGS GTP, albeit at an early stage, gives sufficient confidence that much-needed inclusive economic growth and the energy security needs of the country will be re-catalysed and achieved.

Theme 2: Geoscience for Health, Groundwater and Environment

Mineral exploration and exploitation activities are shifting their focus towards an increased emphasis on environmental stewardship. Striking a balance between mining development and environmental conservation has become one of the primary research focus areas of the CGS. In this regard, the notion of coexistence of these two seemingly conflicting phenomena is a subject of research that seeks to reconcile their coexistence balanced by scientific research. Furthermore, understanding water resources, particularly in view of the fact that South Africa is a water-scarce country, is a priority research area under this theme. Data and information generated from this theme are intended to improve the understanding of the local and regional aquifer systems to guide the sustainable use of ground- and surface-water resources.

Theme 3: Geoscience for infrastructure and land use

The CGS is legislatively mandated to provide professional and technical advice on infrastructure development, especially in dolomitic terrains. This mandate was expanded with the Geoscience Amendment Act (No. 16 of 2010) to encompass assessments and reviews of all infrastructure development in areas deemed susceptible to geohazards broadly. The CGS continued engagements with the National Department of Cooperative Governance and Traditional Affairs and a handful of district municipalities to explore practical ways to apply geoscience to inform spatial land use and optimal infrastructure development in the context of the district development model (DDM). The CGS continues to carry out its mandate of maintaining the national seismic network, which continuously detects natural and mining-induced earthquakes in South Africa.

Theme 4: Geoscience for innovation

The CGS is steadily strengthening its scientific innovation capacity in various fields and applications in geosciences. Drone technology has been adopted to advance the mandate of the CGS and to provide a novel way of capturing geoscience data to gain a perspective of the Earth to augment ground-based instruments. At the advent of the Fourth Industrial Revolution, the CGS has embarked on research into the use of artificial intelligence in geoscience through the creation of applications to address, among others, complex regional mineralising system and groundwater potential mapping challenges.

Theme 5: Geoscience for Diplomacy

The CGS recognises and implements its role as a geoscientific instrument for the foreign policy predisposition of the Republic of South Africa. The CGS has assumed the role of permanent Secretariat of the OAGS, which promotes close relations among African member states in the context of geoscience research. The OAGS represents the interests of African geological surveys and collaborates closely with, among others, the European Geological Surveys to implement the PanAfGEO (Pan-African Support to the EuroGeoSurveys– Organisation of African Geological Surveys Partnership) programme on capacity building across the African continent.

During financial year 2022/23, high-resolution geoscience mapping programmes in Eswatini, Namibia and Malawi continued. This included the production of various integrated geoscience datasets in support of the respective minerals and energy developmental imperatives. Moreover, this programme also provided technical support to various diplomatic missions undertaken to South Sudan, Ivory Coast, and Niger, focussing on finding additional areas of mutual benefit and applying the CGS's innovative techniques to accelerate geoscience development in these areas.

Geoscience mapping coverage: Geoscience mapping at various scales is a core discipline at the CGS. The GTP of the CGS continues to focus on accelerated economic recovery projects that include the on-going detailed geoscience mapping at a higher resolution, e.g., a scale of 1:50 000 and key projects focusing on the critical minerals of the future including base and precious metals (for example, nickel, cobalt, chromium, and gold), rare-earth elements and coal. The onshore map coverage has increased to **12%** from below 5% since implementation of the IMMP. The **onshore mapping programme** presents opportunities for discovery of tier-1 mineral deposits needed to support the demand of critical minerals needed to support local and global economic growth. The CGS published the one-of-a-kind Orange River Pegmatite Prospectivity Map in the Northern Cape Province. Pegmatites in this region are known to be the source of lithium and rare earths, which are critical for just transition to a low carbon economy.

The importance of the marine environment is recognised as part of the Oceans Phakisa Blue Economy. The marine mapping programme is critical to development of the marine economy and the CGS has accordingly prioritized the multi-disciplinary geoscience mapping of the Economic Exclusion Zone in the short term. This work aims to gain a clear understanding of marine geoscientific processes on the continental shelf (in selected deep seabed strategic areas) as they relate to energy, mineral, climate change initiatives and matters related to ocean governance. The CGS officially launched its survey boat known as the R/V (Research Vessel) Nkosi in financial year 2021/22. The boat was acquired to augment the CGS's **marine geoscience (offshore mapping) programme** which aims to map the South African continental shelf (offshore) in the highest resolution based on modern technology, at various depth scales. The offshore geoscientific mapping progressed with the publication of one offshore map (318CD Cape Town hydro-acoustic facies map), bringing the total coverage to **0.11%** of the planned total of 1 828 maps. For the successful implementation of the offshore mapping programme, the CGS aims to continue engaging with various key external stakeholders for the utilisation of other vessels (especially for continental shelf and deep-marine environments) to support accelerated data collection activities.

4.2.2 Business of the CGS

In the implementation of its mandate, collaborations between the CGS and various key stakeholders include, without being limited to:

- Strategic projects of other Government departments/institutions and public entities.
- Private sector projects.

As dictated by legislation, the CGS continued to implement mandatory projects and functions specified in the Geoscience Act (No. 100 of 1993 as amended). These include, among others, the following:

- The national seismic network, also linked to global networks, which monitors seismic activity locally;
- Monitoring of global infrasound activity as part of its collaboration with the Comprehensive Nuclear Test Ban Treaty Organisation;
- The curation of the National Borehole Core Depository, equipped with hyperspectral scanning capability and housing approximately 850 km of borehole core and other valuable geological materials;
- The curation of the National Geoscience Museum, which provides information and preserves rare, scientifically valuable and geological heritage samples;
- The National Geoscientific Library and Bookshop, which provide geological publications and maps to the public.
- The National Geoscience Analytical Facility, which is available to analyse, among others, geological samples, water samples and industrial raw materials.

4.2.3 CGS Organisational Environment

The CGS organisational structure (Figure 5) has been configured to improve efficiency and service delivery as per the adopted strategy. The organisational structure is intended to achieve its institutional outcome of enhanced applications of geoscience products, which span the five thematic strategic focus areas (see previous section 4.2.1).

In respect of ICT, the CGS is continuously implementing a cost-effective and efficient data centre and infrastructure, which is a crucial element of the CGS's digital transformation.

Compliance with governance protocols and regulations and other prescripts is crucial for the CGS to contribute to the achievement of Priority 1 of the MTSF, namely 'a capable, ethical and developmental state'. To achieve an acceptable level of compliance, the CGS aims to improve and further develop compliance management maturity by putting the necessary policies and procedures in place to achieve the target of a fully compliant organisation by 2025. The CGS operates in a complex, diverse and extensive environment and regulatory universe, and has to comply with numerous prescripts. Compliance will be achieved in a structured and systematic manner integrated into operations. In terms of the status of compliance with the Broad-Based Black Economic Empowerment (BBBEE) Act 53 of 2003, as amended, the CGS is compliant with the BBBEE Act regulations and submits its status annually to the BBBEE commission.

Competitive advantage of any organisation resides in the competence of the workforce. To attract, retain, engage and develop the right talent in the right positions, the CGS in **2022/23** developed a **talent management framework**, which is currently being considered for approval and implementation. This framework aims to build, nurture and sustain a capable workforce by the end of the MTSF period. The talent management framework will respond to the short-, medium- and long-term exigencies of the business informed by workforce planning which takes into consideration the MTSF priorities in relation to women, youth and people with

disabilities. The CGS has made significant strides in terms of the representation of females, youth and people living with disabilities.

Notably, female staff representation in both Management and Executive Management levels was at 50% in the first quarter of the financial year 2023/24. Female representation in the scientific cohort has increased from 42.71% reported in the last quarter of 2022/23 to 46.49% by the end of the first quarter of 2023/24. The representation of people living with disabilities is at 1.89% (reported in the first quarter of 2023/24). Youth (defined as those who are 18 to & including 35 years) represent 30% in the quarter under review against 22% as at March 2023. Previously we were only reporting permanent staff, the new definition of staff includes the Interns and Contractors hence the increase of the workforce.

4.2.4 CGS Governance

4.2.4.1 The Board

The CGS Board which is the Accounting Authority appointed by the Minister of Mineral Resources and Energy approves the strategies, goals, operating policies and priorities of the organisation and monitors compliance with the policies and achievements with respect to scientific, administrative and financial objectives. The Board Members bring independent counsel on strategic decisions. Moreover, Board Members are fully conversant with their fiduciary duties, as outlined in section 50 of the PFMA (Act No. 1 of 1999). Four Board Committees underpin the Board:

1) Finance Committee

The Finance Committee of the CGS is mandated to consider and recommend for the Board's approval the following matters:

- Significant financial activities;
- Liquidity and financial condition of the CGS;
- Write-off of bad debts;
- Material variances in the approved annual and/or revised budgets in accordance with the Materiality and Significance Framework Plan;
- Proposed capital and operating budget for capital expenditures;
- Financial statements for the annual report;
- All policies that have financial implications, and
- Corporate performance information management against the approved budget.

2) Technical Committee

The Technical Committee of the CGS is mandated to consider and recommend for the Board's approval the annual report, evaluate the scientific and technical output and oversee the implementation of the ICT strategy as well as the End-term evaluations.

3) Personnel, Remuneration and Transformation Committee

The Personnel, Remuneration and Transformation Committee is mandated to consider and recommend for the Board's approval the human resources strategies and policies of the CGS. It also considers and recommends for the Board's approval the organisational remuneration model, remuneration for executive management and annual salary increases, and evaluates and makes recommendations on the payment of performance bonuses. The committee also considers organisational performance reports on labour-related matters, employment equity, and employee training and development matters.

4) Audit and Risk Committee

The Audit and Risk Committee was established in terms of Section 77 of the PFMA and National Treasury Regulation 27. The Audit and Risk Committee discharges its responsibilities in terms of the Audit and Risk Committee Charter, which sets out its committee composition, roles and responsibilities. The Audit and Risk Committee continually monitors the quality and reliability of CGS financial information used by the Board, financial statements issued by the CGS and various functions in the organisation. The Audit and Risk Committee ensures that

emerging risks are timeously identified and that appropriate and effective control measures are put in place to mitigate these risks.

4.2.4.2 The Management

Managers are responsible for the following functions in the organisation:

- Development of the strategic plans and annual performance plans of the CGS for approval by the Accounting Authority;
- Implementation of annual performance plans;
- Management of legal, regulatory, ethical and other compliances;
- Management of CGS operations and service delivery;
- Management of corporate administration;
- Management of corporate performance;
- Management of finances;
- Management of personnel;
- Management of transformation;
- Promotion of the CGS.

In terms of the Code of Ethics and Conduct, all persons serving on behalf of the CGS are required to uphold the highest standard of business ethics and integrity. Furthermore, all staff, contractors, consultants and others acting on behalf of the organisation are required to accurately and honestly represent the organisation and to refrain from engaging in any activity or scheme intended to defraud anyone of money, property or services. The reputation and integrity of the CGS are central to its ability to operate as an effective state-owned organisation.

4.2.5 CGS Organisational Structure

Figure 5 depicts the organisational structure of the CGS that was developed and configured to support the efficient, effective, robust functioning of the organisation as well as service delivery.

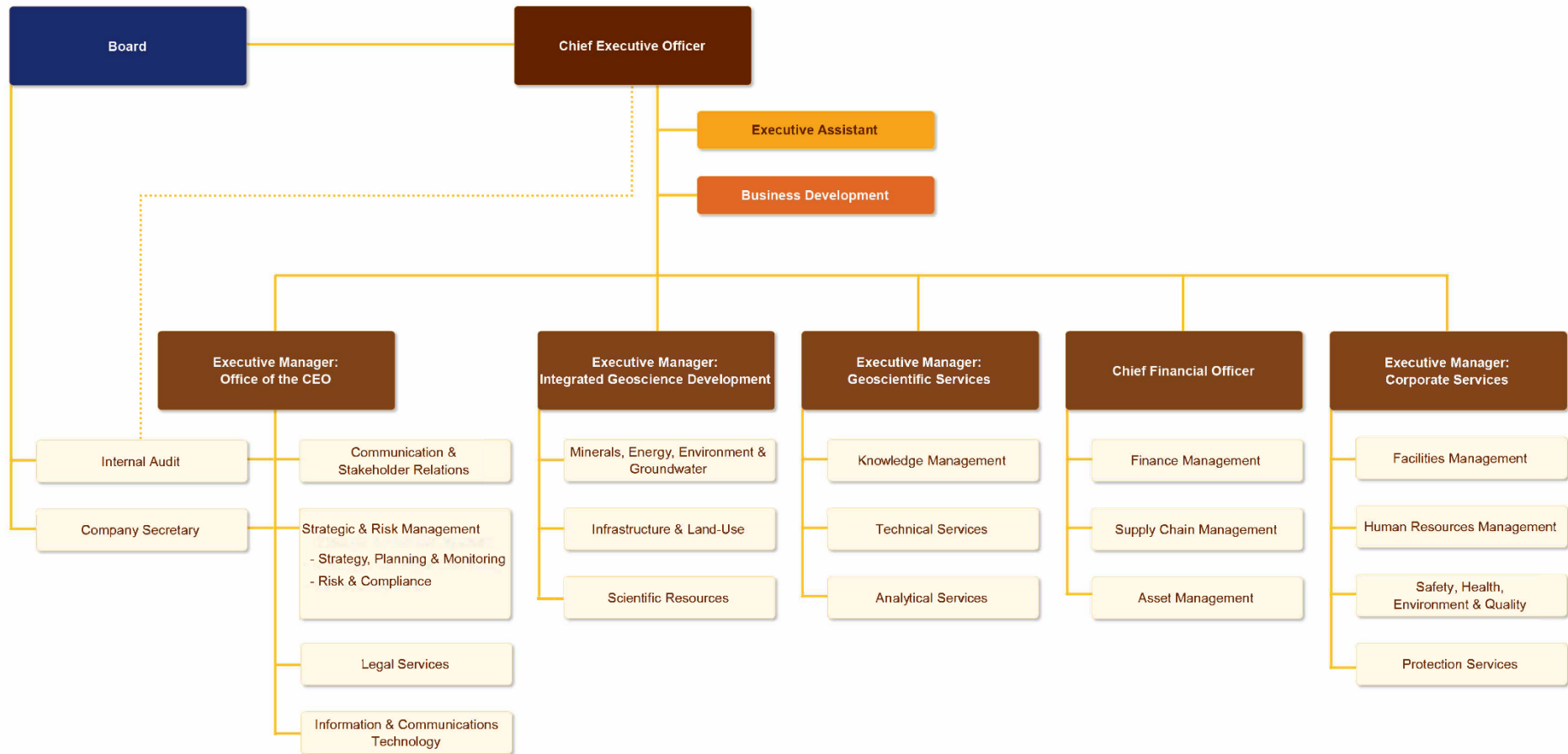


Figure 5: CGS's Organisational Structure.

PART C: MEASURING OUR PERFORMANCE

5. CGS Programmes

5.1 Programme 1: Financial Sustainability

Purpose: To ensure effective and efficient delivery of financial management services, to secure funding from the exploitation of collaborative activities and partnerships as well as to generate grant funding.

Goal: CGS financial growth through integrated geoscience services delivery, partnerships and innovation.

Table 2: Programme 1 outcomes, outputs, performance indicators and targets for the MTEF period 2024/25 - 2026/27

Outcome	Outputs	Output indicators	Audited performance			Estimated performance	MTEF period		
			2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
1) Effective and efficient financial resources management	Audited financial reports	1. Percentage of overhead costs to total costs	63.00%	54.90%	60.65%	66%	66%	66%	63%
	Audited financial reports	2. Percentage of personnel costs to total costs	64.03%	57.18%	52.41%	70%	70%	70%	54%
	Audited financial reports	3. Revenue from collaborative activities/partnerships	R23.2m	R107.9m	R133.6m	R130.2m	R142.4m	R153.8m	R166.1m
	Audited financial reports	4. Grant revenue	R486.2m	R464.3m	R420.3m	R559.4m	R613.6m	R640.6m	R670.4m

Table 3: Programme 1 annual and quarterly targets for FY2024/25

Output indicators	Annual targets	Q1	Q2	Q3	Q4
1. Percentage of overhead costs to total costs	66%*	66%	66%	66%	66%
2. Percentage of personnel costs to total costs	70%*	70%	70%	70%	70%
3. Revenue from collaborative activities/partnerships	R142.4m*	R38.2m	R80.5m	R108.9m	R142.4m
4. Grant revenue	R613.6m*	R228.6m	R516.4m	R565.0m	R613.6m

* Tracking and monitoring will be done on quarterly basis.

5.2 Programme 2: Organisational Effectiveness and Efficiency

Purpose: To develop and implement effective and compliant policies, procedures and business processes in support of the CGS integrated service- delivery model, adhere to best practice to achieve sustainable governance as well as to provide and operate flexible, expandable and secure ICT solutions.

Goal: A geoscience institution that is capable, effective, efficient, compliant, and responsive, through an integrated service-delivery model

Table 4: Programme 2 outcomes, outputs, performance indicators and targets for the MTEF period 2024/25 - 2026/27.

Outcome	Outputs	Output indicators	Audited performance			Estimated performance	MTEF period		
			2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
1) Effective and efficient financial resources management 2) Compliance with governance protocols/regulations	Audited annual report	5. Number of audit qualifications	0	0	0	0	0	0	0
	Audited annual report	6. Percentage of total Procurement spend on goods and services from Small, Medium and Micro Enterprises (QSE and EME's) in terms of PPPFA of 2017	40.75%	42.48%	49%	40%	45%	45%	45%
	Availability report	7. Availability of key enterprise services	100%	99.89%	99.62%	99%	99%	99%	99%

Table 5: Programme 2 annual and quarterly targets for FY2024/25.

Output indicators	Annual targets	Q1	Q2	Q3	Q4
5. Number of audit qualifications	0	-	-	-	0
6. Percentage of total Procurement spend on goods and services from Small, Medium and Micro Enterprises (QSE and EME's) in terms of PPPFA of 2017	45%*	45%	45%	45%	45%
7. Availability of key enterprise services	99%*	99%	99%	99%	99%

* Tracking and monitoring will be done on quarterly basis, – no quarterly breakdown of the annual target.

5.3 Programme 3: An Empowered, Transformed, Motivated and Capacitated Workforce

Purpose: To attract and retain highly skilled scientific personnel in the geoscience industry, To build capacity in respect of geoscientific, administrative and managerial/leadership skills while also developing innovative products, systems and services, To promote and invest in human resources transformation and diversity.

Goal: An employer of choice, attracting, recruiting and retaining highly skilled personnel in the Geoscience industry through improved human capital and institutional knowledge management strategies.

Table 6: Programme 3 outcomes, outputs, performance indicators and targets for the MTEF period 2024/25 - 2026/27

Outcome	Outputs	Output indicators	Audited performance			Estimated performance 2023/24	MTEF period		
			2020/21	2021/22	2022/23		2024/25	2025/26	2026/27
3) Capable human capital	Human Resources Reports	8. Percentage of scientific staff with Masters or Doctoral degrees	40.47%	41.22%	48.51%	42%	53%	54%	56%
	Human Resources Reports	9. Percentage of training expenditure to leviabale amount of payroll	1.20%	2.33%	1.93%	1%	1%	1%	1%
	Human Resources Reports	10. Staff turnover rate	5.48%	4.99%	7.89%	10%	10%	10%	10%
	Human Resources Reports	11. Percentage of staff living with disability	2.25%	1.86%	1.84%	1.8%	1.9%	2%	2%
	Human Resources Reports	12. EE Stats, Scientific cohort (Female representation)	39%	39%	42.57%	43%	47%	48%	49%
	Human Resources Reports	13. EE-Stats, Managers (Female representation)	New Measure	New Measure	New Measure	50%	50%	50%	50%
	Human Resources Reports	14. EE Stats, Executive Managers (Female representation)	20%	20%	50%	50%	50%	50%	50%

Note: Executive managers in the audited performance for 2020/21 and 2021/22 were indicated as EXCO- Executive Committee members, and in 2022/23 were indicated as Top Management

Table 7: Programme 3 annual and quarterly targets for FY2024/25.

Output indicators	Annual targets	Q1	Q2	Q3	Q4
8. Percentage of scientific staff with Masters or Doctoral degrees	53%*	53%	53%	53%	53%
9. Percentage of training expenditure to leviabale amount of payroll	1%*	1%	1%	1%	1%
10. Staff turnover rate	10%*	10%	10%	10%	10%
11. Percentage of staff living with disability	1.9%*	1.9%	1.9%	1.9%	1.9%
12. EE Stats, Scientific cohort (Female representation)	47%*	47%	47%	47%	47%
13. EE-Stats, Managers (Female representation)	50%*	50%	50%	50%	50%
14. EE Stats, Executive Managers (Female representation)	50%*	50%	50%	50%	50%

* Tracking and monitoring will be done on quarterly basis.

5.4 Programme 4: Delivery of the Mandate

Purpose: Execute the integrated and multidisciplinary geoscience mapping programme.

Goal: An enabling environment in support of national imperatives and enhancing living conditions and creating a safe environment.

Table 8: Programme 4 outcomes, outputs, performance indicators and targets for the MTEF period 2024/25 - 2026/27

Outcome	Outputs	Output indicators	Audited performance			Estimated performance	MTEF period		
			2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
4) Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure	Onshore geoscience maps	15. Onshore geoscience map coverage	9.03%	10.7%	12%	16%	18%	20%	22%
	Offshore geoscience maps	16. Offshore geoscience map coverage	0.05%	0.05%	0.11%	0.3%	0.45%	0.50%	0.60%
	Value-added geoscience outputs such as integrated reports, 3D models, innovative solutions, mineral systems and emplacement models.	17. Applied geoscience outputs for minerals and energy	7	4	7	9	9	9	9
5) Enhanced geoscience diplomacy	Value-added geoscience outputs such as integrated reports and 3D models, innovative solutions.	18. Applied geoscience outputs for infrastructure, land use, health, groundwater and the environment	10	7	6	11	9	7	8

Table 9: Programme 4 annual and quarterly targets for FY2024/25.

Output indicators	Annual targets	Q1	Q2	Q3	Q4
15. Onshore geoscience map coverage	18%*	16.31%	16.78%	17.51%	18.00%
16. Offshore geoscience map coverage	0.45%*	0.32%	0.35%	0.40%	0.45%
17. Applied geoscience outputs for minerals and energy	9*	3	5	7	9
18. Applied geoscience outputs for infrastructure, land use, health, groundwater and the environment	9*	1	2	5	9

* Tracking and monitoring will be done on quarterly basis.

5.5 Programme 5: Advisory, Stakeholder

Purpose: To improve stakeholder relations through collaborations with strategically aligned institutions, the private sector and the general public.

Goal: An enabling environment in support of national imperatives and enhancing living conditions and creating a safe environment.

Table 10: Programme 5 outcomes, outputs, performance indicators and targets for the MTEF period 2024/25 - 2026/27.

Outcome	Outputs	Output indicators	Audited performance			Estimated performance	MTEF period		
			2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
6) Improved awareness of the CGS brand, services and products	Media articles	19. Number of articles published on media platforms	25	24	48	32	24	24	24
	Stakeholder survey report	20. Stakeholder satisfaction level	88.48%	66.4%	79.4%	70%	70%	70%	70%
7) Improved geoscientific domain through effective knowledge management	Peer-reviewed articles published in scientific journals, book chapters and edited volumes.	21. Number of peer-reviewed articles published	33	30	40	34	35	40	40
	Examples: memoirs, bulletins, books and atlases.	22. Number of CGS publications	10	8	12	10	9	9	10
	Examples: abstracts, extended abstracts and conference papers and keynotes, etc.	23. Number of papers published in a conference proceedings	66	32	126	40	35	35	40

Table 11: Programme 5 annual and quarterly targets for FY2024/25.

Output indicators	Annual targets	Q1	Q2	Q3	Q4
19. Number of articles published on media platforms	24*	6	12	18	24
20. Stakeholder satisfaction level	70%	-	-	-	70%
21. Number of peer-reviewed articles published	35*	3	10	25	35
22. Number of CGS publications	9*	1	3	6	9
23. Number of papers published in a conference proceedings	35*	5	25	30	35

* Tracking and monitoring will be done on quarterly basis, – no quarterly breakdown of the annual target.

6. Explanation of planned performance over the medium-term period

The CGS strategy (the IMMP) has been adopted to encourage sustainability of the organisation in a changing state of polity, the economy, society, as well as the scientific and technological landscape. Therefore, the strategic outcomes of the CGS are illustrated below (Figure 6), are intended to shift the strategic orientation of the CGS to maintain an impactful delivery of the core mandate that will result in the improvement in the economy and the lives of South Africans. The balanced scorecard methodology has been embraced to provide an account of the overall performance of the organisation. The balanced scorecard essentially measures the performance of the organisation at corporate business unit and individual level. There are five strategic programmes that cover the customer, internal business process, learning and growth and financial perspectives. These strategic programmes are aligned to the seven strategic outcomes of the CGS, the NDP 2030 as well as the MTSF 2019-2024 priorities and addresses the cross-cutting areas for women, youth, and people with disabilities.



Figure 6: The alignment of CGS Strategic Programmes and Outcomes to the priorities of the MTSF 2019-2024 as well as the balanced scorecard.

The CGS plans of achieving its impact “**A prosperous and transformed society enabled by geoscience solutions**” is anchored on seven institutional outcomes [i.e. 1) Effective and efficient financial resources management, 2) Compliance with governance protocols/regulations, 3) Capable human capital, 4) Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure, 5) Improved awareness of the CGS brand, services and products, 6) Improved geoscientific domain through effective knowledge management as well as 7) Enhanced geoscience diplomacy] that will be pursued over the five-year period. The institutional outcomes have also been mapped with related outputs and are all outlined in Table 2, 4, 6, 8 and 10 of this document. Outputs listed in each programme (refer to section 5) will contribute in achieving the intended outcomes and impact outlined in the Strategic Plan 2020 -2025 of the CGS.

7. Programme Resource Considerations

7.1 Overview of 2024/25 Budget and MTEF Estimates

The financial resource requirements over the five-year period are summarised below. These projections consider the scope of work of the CGS, supply chain management function in support of project execution, as well as the optimisation of underutilised movable and immovable assets.

Table 12: Income Statement

INCOME (RAND)	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
	x 1 000	x 1 000	x 1 000	x 1 000	x 1 000	x 1 000
Government grant	559 458	613 649	640 647	670 367	700 399	731 777
Deferred Income: Government Grant	36 594					
Deferred Income: World Bank	95 708					
Deferred Income: DMRE Contracts	32 479					
Sales and contracts	130 188	142 441	153 790	166 145	179 599	194 257
Sundry income	4 714	4 950	5 197	5 457	5 731	6 017
TOTAL INCOME (RAND)	859 141	761 040	799 634	841 969	885 729	932 051
EXPENDITURE (RAND)	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
	x 1 000	x 1 000	x 1 000	x 1 000	x 1 000	x 1 000
Personnel costs	378 065	408 065	436 630	467 194	499 897	534 890
Bursaries	5 423	5 965	6 561	7 217	7 939	8 733
Commercial project costs	116 269	64 098	69 206	74 765	80 820	87 416
Overheads and operating costs	315 256	212 912	213 947	215 985	216 578	216 654
SUBTOTAL	815 013	691 040	726 344	765 161	805 234	847 693
Surplus before Capital Expenditure	44 128	70 000	73 290	76 808	80 495	84 358
Application of Surpluses:						
Capital expenditure						

Vehicles and Aircrafts	5 000	30 000	31 410	32 918	34 498	36 154
Equipment	22 000	40 000	41 880	43 890	45 997	48 204
Deferred: Digital information System; buildings; equipment's and facilities	17 128	-	-	-	-	-
SUBTOTAL	44 128	70 000	73 290	76 808	80 495	84 358
TOTAL EXPENDITURE (RAND)	859 141	761 040	799 634	841 969	885 729	932 051
Surplus (Loss)	-	-	-	-	-	-

The CGS has two sources of funding, namely the Government grant and collaborative/contract revenue. These revenues determine the scope of the GTP of the CGS.

As part of Cabinet budget adjustments in the 2024 MTEF, an amount of R195 million (R61.9m in 2024/25; R65.2m in R2025/26 and R67.8m in 2026/27) has been reduced over the medium term. The budget reductions will have an adverse impact on the delivery of the geoscience mapping programme particularly is support of the exploration strategy. This means that South Africa's strategic focus attract at least 5% of the global exploration expenditure will be significantly delayed based on available precompetitive geological information, with subsequent delay in new mineral discoveries. The budget reductions will delay the acceleration of exploration activities in the country and the expansion of the blue economy development, especially by means of offshore geoscience map coverage and assessment of the offshore regions for various applications. Accordingly, the exploration boom arising from the global demand for "critical mineral" would not be fully leveraged. Further, the marine mapping plans that seek to unravel the blue economy will be held in abeyance and delay the potential determination of the inherent economic prospects.

Due to the lack of certainty in the contract revenue stream, the CGS implements its programmes for each year with caution to avoid over-expenditure or losses. The allocations in respect of the Geological mapping for the exploration of mining and exploration will continue over the medium term with R614.3m (R154.5m in 2023/24; R146.6m in FY2024/25; R153.1m in FY2025/26 and R160.2m in FY2026/27). These allocations were however reduced with R46.6m over the medium term as part of the Cabinet budget reductions.

7.1.1 Revenue from Government Grant

The Government grant consists of the baseline grant funding for the MTEF period. In the 2022 MTEF an additional baseline allocation of R500m (R0m in FY2022/23; R200m in FY2023/24 and R300m in FY2024/25) to R1.141b was made for the geoscience activities which includes the onshore and offshore map coverage in support of the National Exploration Strategy. These allocations were however reduced by R86.6m over the medium term to R1.054b (R200m in FY2023/24; R272.5m in FY2024/25; R284.5m in FY2025/26 and R297.7m in FY2026/27, respectively). The downward adjustment will have a bearing on the implementation of onshore and offshore mapping projects which contribute towards the South African ERRP. Furthermore, technical adjustments were implemented on the MTEF projects where funding for the Rehabilitation of derelict and ownerless mines and the Water Ingress Solutions was moved to commercial revenue to align to the DMRE's budget classifications in compliance with the National Treasury budget classification circular. The Government grant allocations

are R596.0m, R613.6m, R640.6m, R670.4m, R700.4m, R731.7m for the financial years 2023/24, 2024/25, 2025/26, 2026/27, 2027/28 and 2028/29 respectively.

Table 13: Analysis of Government Grant Allocation.

REVENUE ANALYSIS FOR FY2023/24 TO FY2028/29						
Item	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
	x 1 000	x 1 000	x 1 000	x 1 000	x 1 000	x 1 000
Government grant	596 052	613 649	640 647	670 367	700 399	731 777
Baseline allocation	204 991	194 547	203 106	212 529	222 050	231 998
Deferred Income	36 594	-	-	-	-	-
Geological mapping for exploration of mining	154 467	146 612	153 063	160 163	167 338	174 835
Geoscience Activities including onshore and offshore activities	200 000	272 490	284 478	297 675	311 011	324 944
Commercial Revenue	130 188	142 441	153 790	166 145	179 599	194 258
Deferred: Commercial Revenue	128 187	-	-	-	-	-
Sundry income	4 714	4 951	5 197	5 457	5 730	6 017
TOTAL REVENUE (RAND)	859 141	761 040	799 634	841 969	885 729	932 051

Note: FY: Financial year

7.1.2 Revenue from Contract/Collaborative Activities

Revenue from collaborative activities is budgeted at R130.2m for FY2023/24. This revenue stream is expected to increase at an average rate of 7.8% over the next five financial years. There is a concerted effort that is directed at growing this revenue stream to augment the grant allocations and achieve financial sustainability.

7.1.3 Personnel Costs

The personnel costs budget includes salaries for existing and additional critical positions, fringe benefits, such as death and disability insurance, post-retirement medical aid insurance as well as recruitment-related costs. Annual salary increases are negotiated at the bargaining forum and are approved by the CGS Board. Personnel costs are budgeted at R378.1m for FY2023/24 and 7.4% increment for the FY2024/25, subsequently a 7% increase year on year has been added over the remaining financial years. The personnel costs will increase over the MTEF to cater for the increased capacity for the quantum of work related to additional allocation of resources made in the 2022 MTEF for the geoscience activities including onshore and offshore map coverage in support of the National Exploration Strategy. A benchmarking exercise was conducted and depicted a picture that CGS salary scales are low compared with those of industry. Both financial and non-financial strategies are implemented to sustain human capital requirements. An all-inclusive average personnel costs increases at 7%.

7.1.4 Bursaries

The bursary budget is essential for developing capacity and to expedite the training of individuals. The commercial environment in which the CGS competes for international and national tenders is extremely competitive and the only way for the CGS to be able to win tenders is by upgrading the skills of its staff members. The bursary scheme has an added advantage as it also serves as a feeder pipeline for the transformation of the staff complement. In this regard, an amount of R5.4m has been budgeted for FY2023/24, with a 10% year on year increase.

7.1.5 Cost of Contract/Collaborative Projects

The CGS invests in the commercial environment to generate the budgeted revenues. These investments are in the form of direct materials and services required to deliver the agreed commercial outputs. Commercial project expenditure is budgeted at 45% of the projected revenue for each year. The budget for the FY2023/24 includes the deferred income from World Bank Carbon Capture Utilisation and Storage project. The expenditure increases over the medium term due to the increase in the budgeted Contract/Collaborative revenue which will now include the two DMRE MTEF projects, the Rehabilitation of derelict and ownerless mines and the Water Ingress Solutions.

7.1.6 Overheads and Operating Costs

This budget is for the scientific programme, i.e., GTP expenditure, the operating costs of the mandatory functions such as the geoscience library, core library, laboratory, maintenance of buildings and infrastructure and administration requirements for Finance, Supply Chain, Corporate Services, and Integrated Communication Technology. The budget increases proportionately to the budgeted revenue. Overheads and operating costs are budgeted at R315.2m for FY2023/24 and will reduce by 32.45% in the 2024/25 FY as an amount of R195 million (R61.9m in FY2024/25; R65.2m in FY2025/26 and R67.8m in FY2026/27) has been reduced over the medium term as part of Cabinet budget adjustments made in the 2024 MTEF.

7.1.7 Scientific and Technical Equipment

The rapidly aging research infrastructure of the CGS is of great concern to the organisation. Over the past few years, attention has been given to the replacement of some equipment. There is a need to increase investment in capital infrastructure to sustain the quality levels of service delivery and skills development.

An amount of R27.0m has been budgeted for the replacement of vehicles, equipment, and aircraft repairs for FY2023/24. The budget will increase to R70.0m in 2024/25 to accommodate the quantum of work related to additional allocation of resources made in the 2022 MTEF for the geoscience activities including onshore and offshore map coverage in support of the

National Exploration Strategy. A capital renewal plan is developed annually to address the infrastructure requirements.

7.2 Link between the Budget and Strategic Programmes

Table 14: Link between Budget and Strategic Programmes.

CGS Strategic Programmes	2023/24 x 1 000	2024/25 x 1 000	2025/26 x 1 000	2026/27 x 1 000	2027/28 x 1 000	2028/29 x 1 000
Programme 1: Financial Sustainability	59 138	58 251	61 417	64 714	68 364	72 206
Programme 2: Organisational effectiveness and efficiency	92 856	91 464	96 434	101 609	107 342	113 374
Programme 3: An empowered, transformed, motivated and capacitated workforce	13 242	13 044	13 753	14 490	15 308	16 168
Programme 4: Delivery of Mandate	679 688	584 276	613 264	645 597	678 278	712 942
Programme 5: Advisory, stakeholder engagement and knowledge management	14 218	14 005	14 766	15 559	16 437	17 361
Total Budget	859 141	761 040	799 634	841 969	885 729	932 051

7.3 Materiality framework

Table 15: Materiality Framework

Nature of Business	Circumstances giving rise to Need for Disclosure in Terms of Materiality and Significance	Material Threshold Value for Disclosure and Reporting Purposes	Process to be initiated if Threshold is reached
<p>Geophysics and Research</p> <p>Generally, research-related entities may set a materiality figure higher than for non-research-related entities, as research-related losses can be expected to be higher and more difficult to anticipate and manage within the normal accounting practices, Geoscience Act and operating procedures.</p>	<p>Equipment and Technology</p> <p>Laboratories and Geophysics are the two main areas giving rise to the need for disclosure in terms of materiality and significance</p> <p>Laboratories</p> <p>Geophysics</p> <p><i>Consideration in terms of expenditure was given as follows: (as included within the budgeting process)</i></p>	<p>Calculating the property and equipment threshold value at 2% of the value as indicated in the annual financial statements (R359, 579, 000)</p> <p>R7 191 580</p> <p>R 7 191 580</p> <p>The usual accounting practices and the Geoscience Act will generally cover replacement or loss of equipment in the normal operational process and should not require disclosure</p>	<p>Management to submit a report with all relevant details and values concerned to the Executive for comment and disclosure to Treasury where required</p> <p><i>Process:</i></p> <ul style="list-style-type: none"> • Information to be provided regarding event; • Investigate where required: Internal Audit and Finance; • Determine whether loss is due to

Nature of Business	Circumstances giving rise to Need for Disclosure in Terms of Materiality and Significance	Material Threshold Value for Disclosure and Reporting Purposes	Process to be initiated if Threshold is reached
<p>Disclosure in this area is unlikely to materialise</p>	<ul style="list-style-type: none"> <i>Irregular Expenditure consisting of spending outside of approved budget</i> <i>Fruitless and Wasteful Expenditure. Equipment not suited or necessary for purpose</i> 		<p><i>contravention of the Act or disregard of Geoscience Act;</i></p> <ul style="list-style-type: none"> <i>Determine whether due to lack of due care and diligence, gross negligence or criminal activity, and</i> <i>Responsibility</i> <p>The Executive must direct a request for ruling or approval from Treasury or the relevant Executive Authority</p>
<p>The business needs to ensure that all financial transactions fall within the approved budget and are conducted within the normal accounting practices and Geoscience Act</p>	<p>Financial</p> <p>Operations and Capex are considered as the main areas giving rise to the need for disclosure in terms of materiality and significance:</p> <p>Operating Expenditure</p> <p><i>(Existing Budgeted Projects)</i> <i>Any irregular spending outside of approved budget</i></p> <p>New Projects</p> <p><i>Unforeseen additional expenditure due to poor project planning or early termination or cancellation of projects</i></p> <p>Capex: -</p> <p>Total Assets</p>	<p>R3 152 560</p> <p>Operating threshold value calculated at 1% of budget value (R315, 256,000)</p> <p>Expressed as 2% of the Project Value</p> <p>This threshold will vary according to the project value. E.g. R40m equates to R800,000 and R10m equates to R200,000</p> <p>R12 255 340</p> <p>Total asset threshold value calculated at 2% of the value as indicated in the annual financial statements (R612,767,000)</p>	<p>Management to submit a report with all relevant details and values concerned to the Executive for comment and disclosure to Treasury where required</p> <p><i>Process:</i></p> <ul style="list-style-type: none"> <i>Information to be provided regarding event;</i> <i>Investigate where required: Internal Audit and Finance;</i> <i>Determine whether loss is due to contravention of the Act or disregard of Geoscience Act;</i> <i>Determine whether due to lack of due care and diligence, gross negligence or criminal activity; and</i> <i>Responsibility</i> <p>The Executive must direct a request for ruling or approval from Treasury or the relevant Executive Authority</p>

Nature of Business	Circumstances giving rise to Need for Disclosure in Terms of Materiality and Significance	Material Threshold Value for Disclosure and Reporting Purposes	Process to be initiated if Threshold is reached
<p>In terms of the PFMA Section 54, information will be submitted by the accounting authorities in respect of any significant change in the nature or extent of its interest in a significant business activity; and A significant change in the nature or extent of its interest in a significant partnership, trust, unincorporated joint venture or similar arrangement</p>	<p>Where the business has joint ventures or similar arrangements, these are strictly governed by the Geoscience Act in addition to the PFMA</p> <p>Concluding any transaction in terms of Section 54 without approval from the Executive Authority</p>	<p>Should such an event materialise it would need to be investigated and only then would the potential loss be determined</p> <p>No threshold can be anticipated</p> <p>Any transgression is to be investigated and reported once all relevant details have been compiled</p>	<p>Management to submit a report with all relevant details and values concerned to the Executive for comment and disclosure to Treasury where required</p> <p><i>Process:</i></p> <ul style="list-style-type: none"> • <i>Information to be provided regarding event;</i> • <i>Investigate where required: Internal Audit and Finance;</i> • <i>Determine whether loss is due to contravention of the Act or disregard of Geoscience Act;</i> • <i>Determine whether due to lack of due care and diligence, gross negligence or criminal activity, and</i> • <i>Responsibility</i> <p>The Executive must direct a request for ruling or approval from Treasury or the relevant Executive Authority</p>

8. Updated Key Risks and Mitigation from the Strategic Plan

Table 16: CGS key risks and their mitigation plans

Outcomes	Key risks	Risk mitigations
1. Effective and efficient financial resources management	1. Inadequate funding to implement the mandate	<ul style="list-style-type: none"> • Intensification of business development initiatives to build a sustainable pipeline for funding. • Implementation of the framework to de-risk and catalyse exploration activities in South Africa. • Expand and strengthen the geoscience diplomacy programme. • Enhance financial management efficiencies and stewardship.
2. Compliance with governance protocols/regulations	2. Non-Compliance with legal, regulatory and other requirements	<ul style="list-style-type: none"> • Improve the compliance checklist, monitoring process and reporting on key legislation. • Increase awareness of policies and regulatory requirements at quarterly staff meetings and induction sessions. • Improve monitoring of compliance with key legislation
	3. Corruption, fraud and theft risk	<ul style="list-style-type: none"> • Strengthening of fraud risk controls. • Increase fraud risk awareness. • Conduct fraud risk assessments as part of the operational risk assessment process.
3. Capable human capital	4. Inadequate skills to deliver on the CGS mandate.	<ul style="list-style-type: none"> • Develop and implement a Talent Management framework to build, nurture and sustain a capital workforce.
4. Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure.	5. Non-delivery of the mandate.	<ul style="list-style-type: none"> • Alignment of the GTP to the government priorities and fully implement the integrated approach. • Improve the operationalisation of MOUs.
	6. Unreliable energy supply	<ul style="list-style-type: none"> • Development and Implementation of Energy Strategy for alternative, sustainable energy supply at CGS.
5. Improved geoscientific domain through effective knowledge management	7. Inadequate ICT support and security services	<ul style="list-style-type: none"> • Integrate ICT systems. • Provision of adequate ICT infrastructure and systems to enable data collection. • Implement guidelines for the Data and Information policy.
6. Improved awareness of the CGS brand, services and products	8. Ineffective brand communication	<ul style="list-style-type: none"> • Full implementation of communication and stakeholder relations strategy. • Stakeholder mapping to identify relevant parties. • Purposeful, intentional and focused key communication messages. • Centralisation of brand communication messaging. • Establishment of a healthy pipeline of approved scientific publications.
	9. Inadequate stakeholder awareness	<ul style="list-style-type: none"> • Continuous implementation of communication and stakeholder relations plan. • Focused, coordinated and a planned stakeholder engagement programme.
7. Enhanced geoscience diplomacy	10. A changing geo-political landscape that may hinder ability to establish collaborative international partnerships.	<ul style="list-style-type: none"> • Intensification of monitoring and evaluating the geo-political landscape to identify appropriate collaborative opportunities.

9. Public Entities

Name of public entity	Mandate	Outcomes	Current annual budget (R thousands)
Not Applicable			

10. Infrastructure Projects

No.	Project name	Program me	Description	Outputs	Start date	Comple tion date	Total estimated cost	Current year expendit ure
Not Applicable								

11. Public-Private Partnerships (PPPs)

PPP name	Purpose	Outputs	Current value of agreement	End-date of agreement
Not Applicable				

PART D: TECHNICAL INDICATOR DESCRIPTIONS (TIDS)

1. Indicator Title	Percentage of Overhead Costs to Total Costs
Definition	All non-project related costs (e.g., Rates and Levies, Repair & Maintenance, Consumable & General Expenses, etc) expressed as a percentage of total costs (e.g., Personnel Expenditure excluding Manpower Cost, Operating Expenditure)
Source of data	Finance Management – This information is obtained from the financial system
Method of calculation or assessment	Overhead costs/Total costs X 100
Means of verification	Financial Reports (Management Accounts)
Assumptions	Expenditure budgets and financial reporting
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	A performance equal to or below the set threshold.
Indicator responsibility	Chief Financial Officer
2. Indicator Title	Percentage of Personnel Costs to Total Costs
Definition	All staff related costs (e.g., salaries, fringe benefits such as death and disability insurance, post-retirement medical aid insurance as well as recruitment-related costs) expressed as a percentage of total costs (e.g., Personnel Expenditure excluding Manpower Cost, Operating Expenditure)
Source of data	Finance Management – This information is obtained from the financial system
Method of calculation or assessment	Staff costs/Total costs X 100
Means of verification	Financial Reports (Management Accounts)
Assumptions	Expenditure budgets and financial reporting
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	A performance equal to or below the set threshold.
Indicator responsibility	Chief Financial Officer
3. Indicator Title	Revenue from Collaborative Activities/Partnerships
Definition	Revenue earned from commercial/collaborative activities or partnerships
Source of data	Finance Management – This information is obtained from the financial system
Method of calculation or assessment	Commercial revenue generated
Means of verification	Financial Reports (Management Accounts)
Assumptions	Continued commercial/collaborative revenue generation
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Quarterly
Desired performance	Attain or exceed the set target
Indicator responsibility	Chief Financial Officer
4. Indicator Title	Grant Revenue
Definition	Value of government grant transfers recognised
Source of data	Finance Management – This information is obtained from the financial system
Method of calculation or assessment	The sum of baseline and conditional grant recognised/utilised

Means of verification	Financial Reports (Management Accounts)
Assumptions	Grant revenue allocated
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Quarterly
Desired performance	To achieve the set target
Indicator responsibility	Chief Financial Officer
5. Indicator Title	Number of Audit Qualifications
Definition	Total number of audit qualifications as reported on in the Auditor-General's audit report
Source of data	Annual Report as per the Auditor General's audit report
Method of calculation or assessment	Number of qualifications
Means of verification	Audit Report
Assumptions	Annual external audit
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually
Desired performance	Zero audit qualifications
Indicator responsibility	Chief Financial Officer
6. Indicator Title	Percentage of total Procurement spend on goods and services from Small, Medium and Micro Enterprises (QSE and EME's) in terms of PPPFA of 2017
Definition	Procuring from Black Exempt Micro Enterprises (EME's) and Qualifying Small Enterprises (QSE's). Percentage procurement expenditure on goods and services from Small Micro and Medium Enterprises (SMME's) of the total local procurement expenditure
Source of data	Supply Chain Management and Enterprise Development Management
Method of calculation or assessment	Total cost of goods and services procured from Exempt Micro Enterprises (EME's) and Qualifying Small Enterprises (QSE's) divided by the total local procurement expenditure expressed as a percentage
Means of verification	Creditors payment Report
Assumptions	Budget available to spend
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Empower and Support SMME procurement to play a meaningful role in the mainstream economy of South Africa and make inroads into untransformed sectors
Indicator responsibility	Chief Financial Officer
7. Indicator Title	Availability of Key Enterprise Services
Short definition	Availability of key enterprise services including MS Exchange (email), Finance and HR systems, databases and applications
Source / collection of data	Information and Communications Technology. Infrastructure management dashboard
Method of calculation or assessment	Percentage uptime of key enterprise services
Means of verification	ICT Report
Assumptions	ICT infrastructure in place
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)

Desired performance	Availability of ICT services (%)
Indicator responsibility	Executive Manager: Office of the CEO
8. Indicator Title	Percentage of Scientific Staff with Masters or Doctoral Degrees
Short definition	Percentage of scientific staff that have Masters or Doctoral degrees in relation to the total number of scientific staff. Scientific staff means staff (including Executives and Managers) who hold a minimum qualification of B-Tech / BSc in Geoscience and Engineering in Scientific programmes or related science field. Staff means permanent, fixed-term contractor and interns.
Source / collection of data	This information is obtained from personnel records
Method of calculation or assessment	Total number of scientific staff with Masters or Doctoral degrees/Total number of scientific staff X 100. (Masters includes MSc and MTech whilst Doctoral includes PhD and DTech)
Means of verification	HR report
Assumptions	Completion of studies Interest to study
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	A performance greater than the target is desirable
Indicator responsibility	Executive Manager: Corporate Services
9. Indicator Title	Percentage of Training Expenditure to Leivable Amount of Payroll
Short definition	Total training expenditure of staff and non-staff on leivable amount of payroll expressed as a percentage. Staff means permanent, fixed-term contractor and interns.
Source / collection of data	Accounting system
Method of calculation or assessment	Percentage of training expenditure to leivable amount of payroll
Means of verification	HR report
Assumptions	There is continuous training requirements
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Effective utilisation of allocated expenditure on training and development
Indicator responsibility	Executive Manager: Corporate Services
10. Indicator Title	Staff Turnover Rate
Short definition	Percentage of employees who have left the organisation
Source / collection of data	Payroll system
Method of calculation or assessment	Number of staff who have left the organisation during the reporting period divided by the total number of staff at beginning of the reporting period multiplied by 100 yielding a percentage. Staff means permanent, fixed-term contractor and interns
Means of verification	HR report
Assumptions	Staff retention measures are effective
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve turnover lower than target
Indicator responsibility	Executive Manager: Corporate Services
11. Indicator Title	Percentage of Staff Living with Disability
Short definition	Staff living with disabilities as reported. Staff means permanent, fixed-term contractor and interns
Source / collection of data	Disclosure forms – personnel records
Method of calculation or assessment	(Number of staff living with disability ÷ total number staff) X 100.
Means of verification	HR report

Assumptions	Measures to attract and retain targeted groups are effective Existing staff willingness to disclose
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: Applicable as per the CGS employment equity
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve or exceed the targeted percentage of employees living with disabilities
Indicator responsibility	Executive Manager: Corporate Services
12. Indicator Title	EE Stats, Scientific cohort (Female representation)
Short definition	The percentage of female scientific staff at the CGS. Scientific staff means staff (including Executives and Managers) who hold a minimum qualification of B-Tech / BSc in Geoscience and Engineering in Scientific programmes or related science field. Staff means permanent, fixed-term contractor and interns
Source / collection of data	Payroll system
Method of calculation or assessment	$(\text{Number of female scientific staff} \div \text{total scientific staff}) \times 100$
Means of verification	HR report
Assumptions	Measures to attract and retain targeted groups are effective
Disaggregation of beneficiaries (where applicable)	Target for women: Applicable as per the CGS employment equity plan Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve the targeted percentage of employment equity
Indicator responsibility	Executive Manager: Corporate Services
13. Indicator Title	EE-Stats, Managers (Female representation)
Short definition	The percentage of female Business Unit Managers at the CGS.
Source / collection of data	Payroll system
Method of calculation or assessment	$(\text{Number of female Managers} \div \text{total number of Managers}) \times 100$
Means of verification	HR report
Assumptions	CGS supportive of transformative agenda of the government
Disaggregation of beneficiaries (where applicable)	Target for women: Applicable as per the CGS employment equity plan Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve the targeted percentage of employment equity
Indicator responsibility	Executive Manager: Corporate Services
14. Indicator Title	EE Stats, Executive Managers (Female representation)
Short definition	The percentage of female Executive Managers at the CGS.
Source / collection of data	Payroll system
Method of calculation or assessment	$(\text{Number of female Executive Managers} \div \text{total number of Executive Managers}) \times 100$
Means of verification	HR report
Assumptions	CGS supportive of transformative agenda of the government
Disaggregation of beneficiaries (where applicable)	Target for women: Applicable as per the CGS employment equity plan Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve the targeted percentage of employment equity
Indicator responsibility	Executive Manager: Corporate Services

15. Indicator Title	Onshore geoscience map coverage
Short definition	Coverage of onshore geological maps expressed as a percentage
Source / collection of data	Integrated Geoscience Development and Geoscientific Services (Geoscience Technical Programme)
Method of calculation or assessment	Count the number of onshore geological maps (i.e., fundamental geological maps) produced within the reporting period added to geological maps produced in preceding years divided by the total number of map tiles (same scale) covering South Africa's onshore territory X100
Means of verification	Assessment of the geological maps submitted
Assumptions	Availability of financial and human resources Seamless access to land Favourable health, safety and environmental conditions
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve targeted number of onshore geological maps
Indicator responsibility	Executive Manager: Integrated Geoscience Development
16. Indicator Title	Offshore geoscience map coverage
Short definition	Coverage of offshore geoscience maps, at requisite scales appropriately linked to the geological domain, expressed a percentage
Source / collection of data	Integrated Geoscience Development and Geoscientific Services (Geoscience Technical Programme)
Method of calculation or assessment	Count the number of offshore geoscience maps (such as geology and geophysics) produced at requisite scales appropriately linked to the geological domain within the reporting period added to geoscience maps produced in preceding years divided by the total number of map tiles covering South Africa's offshore territory X 100
Means of verification	Assessment of the geoscience maps submitted, at requisite scales appropriately linked to the geological domain
Assumptions	Availability of financial and human resources Favourable health, safety and environmental conditions Continuity of strategic partnerships for the offshore programme
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve targeted number of offshore geoscience maps
Indicator responsibility	Executive Manager: Integrated Geoscience Development
17. Indicator Title	Applied geoscience outputs for minerals and energy
Short definition	Applied geoscience outputs are value-added outputs that have scientific, economic and social benefit (i.e., non-geological maps, databases, reports, models, software, methodologies, frameworks, etc.), and are deliverables, which are responsive to mineral and energy development.
Source / collection of data	Geoscience Technical Programme
Method of calculation or assessment	Count the number of applied geoscience outputs that add value and support minerals and energy development approved by the CEO (such as integrated reports, non-geological maps, databases, models, software, methodologies, frameworks, 3D models, innovative solutions, mineral systems or emplacement models)
Means of verification	Assessment of the outputs that add value and support mineral and energy development
Assumptions	Availability of financial and human resources Seamless access to land Favourable health, safety and environmental conditions Continuity of strategic partnerships for the offshore programme
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve targeted number of geoscience outputs

Indicator responsibility	Executive Manager: Integrated Geoscience Development
18. Indicator Title	Applied geoscience outputs for infrastructure, land use, health, groundwater and the environment
Short definition	Applied geoscience outputs are value-added outputs that have scientific, economic and social benefit (i.e., non-geological maps, databases, reports, models, software, methodologies, frameworks, etc.) and are deliverables, which are responsive to infrastructure, land use, health, groundwater and the environmental prudence.
Source / collection of data	Geoscience Technical Programme
Method of calculation or assessment	Count the number of value-added applied geoscience outputs not related to mineral and energy approved by the CEO (such as integrated reports, non-geological maps, databases, models, software, methodologies, frameworks, 3D models and innovative solutions)
Means of verification	Assessment of the outputs that add value and support infrastructure, land use, health, groundwater and the environmental stewardship
Assumptions	Availability of financial and human resources Seamless access to land Favourable health, safety and environmental conditions Continuity of strategic partnerships for the offshore programme
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	Achieve targeted number of geoscience outputs
Indicator responsibility	Executive Manager: Integrated Geoscience Development

19. Indicator Title	Number of Articles Published on Media Platforms
Short definition	Number of articles with scientific or organisational content (written or contributed by the CGS) published in mainstream media and/or industry publications (such as mining engineering, popular science magazines, newspapers, social media and newsletters)
Source / collection of data	Communication and Stakeholder Relations
Method of calculation or assessment	Count number of media articles
Means of verification	Articles published on media platforms
Assumptions	Availability of financial resources Communication and stakeholder management strategy in place
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	To achieve or exceed target
Indicator responsibility	Executive Manager: Office of the CEO
20. Indicator Title	Stakeholder Satisfaction Level
Short definition	This is the level of satisfaction of stakeholders in active engagement with the CGS
Source / collection of data	Stakeholder survey
Method of calculation or assessment	Percentage of stakeholders satisfied with services and products from CGS
Means of verification	Stakeholder survey report
Assumptions	Willingness of stakeholders to participate in the survey
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Non-Cumulative
Reporting cycle	Annually
Desired performance	Achieved set level of stakeholder satisfaction
Indicator responsibility	Executive Manager: Office of the CEO
21. Indicator Title	Number of Peer-Reviewed Articles Published
Short definition	Peer-reviewed articles published in scientific journals, book chapters and edited volumes
Source / collection of data	Integrated Geoscience Development and Geoscientific Services
Method of calculation or assessment	Count the number of peer-reviewed publications
Means of verification	Assessment of the peer-review articles
Assumptions	Continuity of the Geoscience Technical Programme Sustainable strategic and technical collaborations Efficiencies in publication time lines
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	A performance better than the target is desirable
Indicator responsibility	Executive Managers: Integrated Geoscience Development and Geoscientific Services
22. Indicator Title	Number of CGS Publications
Short definition	The publications of CGS information in deliverables/products such as bulletins, memoirs, books and atlases.
Source / collection of data	Integrated Geoscience Development and Geoscientific Services
Method of calculation or assessment	Count the number of CGS publications.
Means of verification	Assessment of the internal publications submitted
Assumptions	Availability of financial resources Sustainable strategic and technical collaborations

Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	A performance better than the target is desirable
Indicator responsibility	Executive Managers: Geoscientific Services
23. Indicator Title	Number of papers published in a conference proceedings
Short definition	Total number of papers (such as abstracts, extended abstracts and conference papers and keynotes, etc.) published in conference proceedings
Source / collection of data	Integrated Geoscience Development and Geoscientific Services
Method of calculation or assessment	Count the number of papers published in a conference proceedings
Means of verification	Assessment of the papers published in a conference proceedings
Assumptions	Availability of financial resources Sustainable strategic and technical collaborations Favourable health, safety and environmental conditions
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Calculation type	Cumulative
Reporting cycle	Annually (tracking and monitoring is done on the quarterly basis)
Desired performance	A performance better than the target is desirable
Indicator responsibility	Executive Managers: Integrated Geoscience Development and Geoscientific Services

Annexures to the Annual Performance Plan

Annexure A: Amendments to the Strategic Plan 2020-2025

The following outcome indicator definitions and methods of calculations were amended for the financial year 2024/25. The reasons for the amendments are as follows:

1. Amendments to the definition of the Onshore geoscience map coverage

The production of fundamental onshore geological maps forms the key basis for the development of associated applied outputs, such as hydrogeological, geotechnical, geohazard maps etc. Therefore, the definition for the onshore geoscience map coverage was revised (revisions are indicated in red below) to only count onshore geological maps.

4. Outcome Indicator Title	Increased onshore geoscience map coverage
Short definition	Incremental coverage on onshore geological maps, (expressed as a percentage)
Source / collection of data	Geoscience Technical Programme
Method of calculation or assessment	Count the number of onshore geological maps (i.e., fundamental geological maps) produced within the reporting period added to geological maps produced in preceding years divided by the total number of map tiles (same scale) covering South Africa's onshore territory X100
Assumptions	Availability of financial and human resources Seamless access to land Favourable health, safety and environmental conditions
Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Desired performance	Achieve targeted map coverage
Indicator responsibility	Executive Manager: Integrated Geoscience Development

2. Amendments to the definition of the Offshore geoscience map coverage

The collection of geological data and information at a scale of 1:50 000 is a highly efficient and effective approach, typically made possible by building upon existing geological datasets at lower scales, such as 1:250 000. However, in cases where no geological data exists at these lower scales, the process of gathering 1:50 000 scale data becomes considerably challenging. This challenge is particularly evident in South Africa's offshore regions, where geological data is currently extremely limited or non-existent at any scale. To address this data gap and ensure comprehensive geological mapping in these areas, it is recommended to explore and employ alternative scales for offshore geological data collection beyond the conventional 1:50 000 scale. It is for this reasons that the definition of the offshore map coverage is amended (revisions are indicated in red below) to address these challenges.

5. Outcome Indicator Title	Increased offshore geoscience map coverage
Short definition	Incremental coverage on offshore geoscience maps, (expressed as a percentage)
Source / collection of data	Geoscience Technical Programme
Method of calculation or assessment	Count the number of offshore geoscience maps (such as geology and geophysics) produced at requisite scales appropriately linked to the geological domain within the reporting period added to geoscience maps produced in preceding years divided by the total number of map tiles covering South Africa's offshore territory X 100
Assumptions	Availability of financial and human resources Favourable health, safety and environmental conditions Continuity of strategic partnerships for the offshore programme

Disaggregation of beneficiaries (where applicable)	Target for women: N/A Target for youth: N/A Target for people with disabilities: N/A
Spatial transformation (where applicable)	N/A
Desired performance	Achieve targeted map coverage
Indicator responsibility	Executive Manager: Integrated Geoscience Development

3. Amendments to the five-year target of the Outcome Indicator 5. Increased Offshore geoscience map coverage

On 12 February 2024, the CGS received the 2024 MTEF period financial allocation letter from the DMRE, indicating significant budget reductions totalling R195,016m. The largest proportion of the reductions are for geological mapping for exploration and mining, and geoscience activities including onshore and offshore map coverage. As such, 2024/25 APP targets for the respective output indicators from Programmes 4 and 5 as well as outcome indicator 5 on the Strategic Plan 2020-2025 are directly impacted by these reductions, requiring downward adjustment in line with the allocations received. Furthermore, it is envisaged that this will impact on the strategic outcome of attracting 5% of the global exploration expenditure, especially in light of the current global exploration-boom in search for so-called ‘critical minerals’. Revisions to the targets on Outcome Indicator 5. “Increased Offshore geoscience map coverage” are indicated in red below.

Outcomes	Outcome indicators	Baseline	Five-year target
MTSF Priorities	Priority 2: Economic transformation and job creation Priority 5: Spatial integration, human settlements and local government Priority 6: Social cohesion and safe communities		
4. Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure	4. Increased onshore geoscience map coverage	New indicator	16%
	5. Increased offshore geoscience map coverage	New indicator	0.45%
	6. Implementation of the Geoscience Technical Programme (GTP) for minerals, energy, groundwater, infrastructure, land use, innovation and the environment	New indicator	Applications of geoscience knowledge towards societal development