



Council for Geoscience

# HIGHLIGHTS OF THE ANNUAL REPORT 2022/23

## ABOUT THE COUNCIL FOR GEOSCIENCE

The Council for Geoscience (CGS) is the legal successor of the Geological Survey of South Africa, which was formed in 1912 by the amalgamation of the former colonial-based surveys, the oldest of which – the Geological Commission of the Cape of Good Hope – was founded in 1895. The Geoscience Act, No. 100 of 1993, as amended, established the CGS in its present form. The CGS is listed as a Schedule 3A Public Entity in terms of the Public Finance Management Act (PFMA) (Act No. 1 of 1999).

## CELEBRATING 110 YEARS OF GEOSCIENCE EXCELLENCE, CGS GEOSCIENCE SUMMIT 2022

The CGS celebrated its 110<sup>th</sup> anniversary since its establishment in 1912, making 2022/23 an extremely important milestone for both the CGS and South Africa. In October 2022, as part of this commemoration, the CGS held a Geoscience Summit under the theme 'Pioneering Geoscience Excellence' in Durban, KwaZulu-Natal Province. The Summit highlighted the colossal contribution of the geosciences to human development. In this regard, the CGS recognised scientists and others who had contributed to geoscience development as well as those who continue to play a major role in the advancement of this field globally. The CGS Geoscience Summit and CGS's work attracted much interest from

various media houses. During 2022/23, **48** media articles were produced, while the CGS brand was profiled on several channels, including exhibitions, billboards, social media, podcasts, radio and television. In addition, the level of stakeholder satisfaction saw an improved rating of **79.4%**—up from 66.4% recorded in 2021/22.

Celebrating  
**110 years**

of existence and geoscience excellence



mineral resources  
& energy

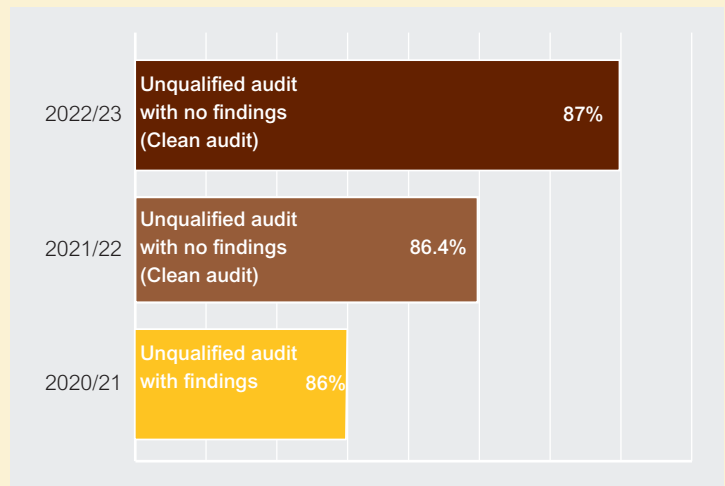
Department:  
Mineral Resources and Energy  
REPUBLIC OF SOUTH AFRICA

# SUMMARY OF KEY ACHIEVEMENTS FOR THE FY2022/23

## Audit Outcome and Organisational Performance for FY2022/23

The CGS secured two successive clean (unqualified audit outcome with no material findings) financial audits during the Medium-Term Strategic Framework (MTSF) cycle 2019–2024. Effectiveness of internal controls is continually being strengthened to attain clean audits. Moreover, through the effective implementation of the strategic programmes, an overall performance of **87%** was realised by the organisation.

Organisational Performance and Audit outcomes for the MTSF 2019–2024



## CGS's Contributions to the Economic Recovery and Reconstruction Plan (ERRP) as well as the Exploration Strategy for the Mining Industry of South Africa and its Implementation Plan 2022

The CGS continued to implement its approved strategy, the Integrated and Multidisciplinary Geoscience Mapping Programme (IMMP), which aims to contribute towards South Africa's Economic Reconstruction and Recovery Plan (ERRP) by securing a minimum of 5% share of the global exploration expenditure through the application of geoscience information and knowledge. In the execution of its Geoscience Technical Programme (GTP), the CGS intends to unlock South Africa's mineral and energy resource potential and contribute to achieving a national just transition to a low-carbon economy. The GTP during the year under review focused on the production of 1:50 000-scale on- and offshore geoscience maps to generate critical geoscience knowledge. The onshore geoscience map coverage increased from below 5% before the commencement of the IMMP, to **12%**. To date, **230** out of **1 916** 1:50 000-scale maps have been published, of which **25** new 1:50 000-scale onshore geoscience maps were produced in 2022/23.



The offshore mapping coverage of the country increased from 0.05% reported in previous years to **0.11%**. This improvement was largely made possible by the publication of the 3318CD Cape Town offshore map in the Table Bay region. The high-resolution data produced include multibeam bathymetry, surficial texture, and hydroacoustic facies maps. These products provide information on the seafloor along South Africa's near-shore environment and will assist in offshore development, including port expansion and the development of near-shore infrastructure. Through the integration of various geoscience datasets, value-added geoscience outputs contributing to minerals, energy, groundwater, infrastructure development and land use, were produced.

Following earlier work done on the CGS's carbon capture, utilisation and storage (CCUS) project, the organisation turned its focus to finding suitable sites in South Africa, based on existing borehole data. This evaluation, for the first time, found that South Africa has exponentially more CCUS potential than had previously been thought. Specifically, there is significant potential underlying Mpumalanga and Gauteng Provinces. This is an important discovery as it will fundamentally change South Africa's energy future. Furthermore, the implementation of the utilisation component of CCUS implies that several innovative solutions can support this work. During 2022/23, research focused on finalising the geological characterisation of a proposed injection site in the Govan Mbeki Municipality, Mpumalanga Province. Work included finalising geological mapping, reservoir characterisation, structural investigations, and hydro-environmental baseline studies. Additionally, **two integrated reports on the petrography of the reservoir and cap rocks of the proposed injection zone were produced**. The findings suggest that the proposed reservoir can support the injection of anthropogenic carbon dioxide.



In 2022/23, the CGS finally closed out the project on the geo-environmental baseline assessment conducted as part of the Karoo Deep Drilling Programme. Through the integration of all datasets, a value-added report on natural gas in the Karoo region was published and submitted to the Minister of Mineral Resources and Energy for Cabinet consideration. The study has revealed encouraging prospects of shale gas potential in the area. As such, **the study recommends the lifting of the moratorium on shale gas to allow further exploration to ascertain the economic viability of the shale gas in the area**. This will take place on the back of a strong science-based regulatory framework supported by the technical findings of the geo-environmental baseline assessment.



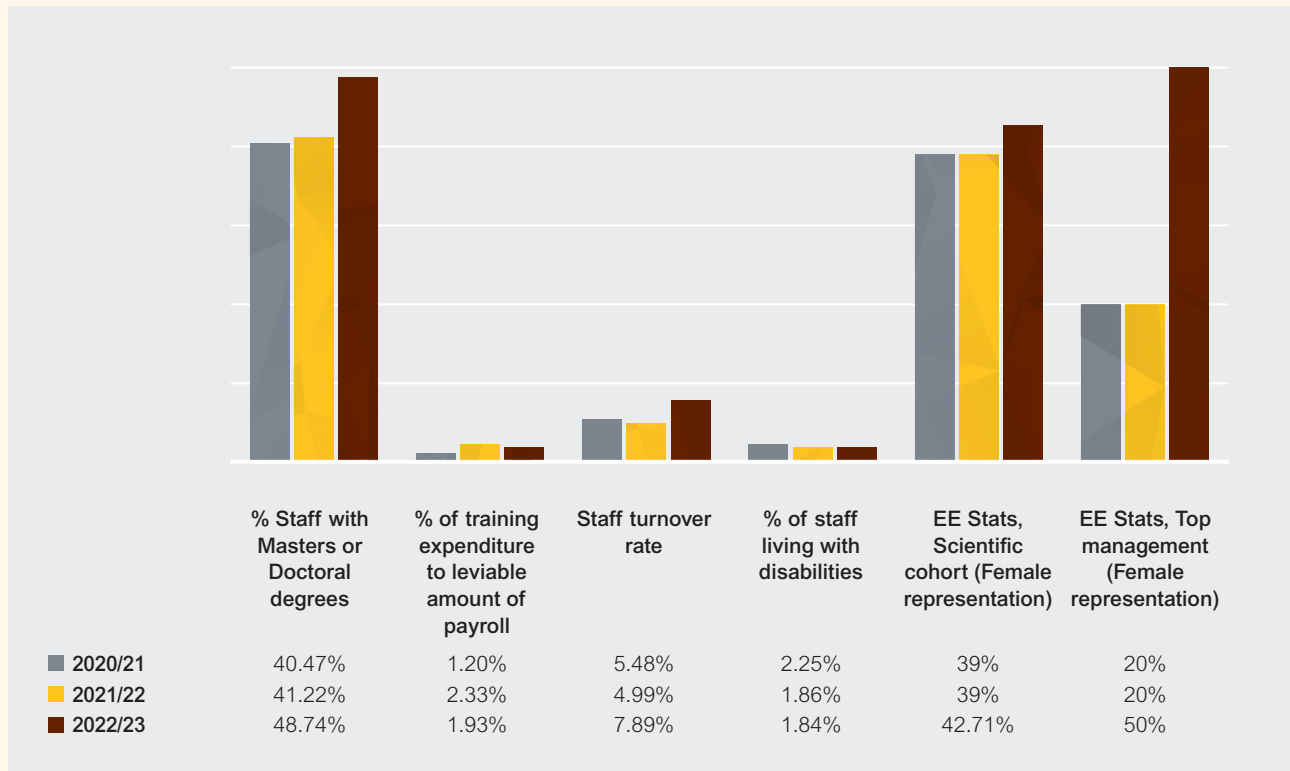
The critical role of the CGS as a **national custodian of all geoscience data and information** requires a seamless and accessible geoscience information and knowledge management system, which allows effective decision-making on, among others, the sustainable management of natural resources and the mitigation of the impacts of geohazards. The geoscience data and information portal, launched in 2021/22, continues to provide geoscience data and information records published by the CGS in the form of maps, documents and databases. This information is made available to stakeholders and clients worldwide. Over **22 000** downloads were recorded in the year under review, with requests ranging from published geological maps to bulletins, map explanations and geological shape files.

In pursuit of catalysing junior mining and the emergence of new mines in South Africa, the DMRE initiated a partnership with the Industrial Development Corporation to create a R500 million exploration fund. The fund will be supported by the provision of geological information to de-risk exploration activities and to increase the prospect of success. The initial phase of the implementation of this fund is deliberately being kept small to prove the value of geological information in accelerating the exploration value chain trajectory to the pre-feasibility stage. The CGS Board also approved a **Framework for the Provision of Geoscience Services for reconnaissance operations, prospecting research and other related activities in the mineral sector**, in line with the Geoscience Act (No. 100 of 1993), as amended. This framework seeks **to encourage greater investment in exploration in South Africa and supports the country's exploration strategy and implementation plan**.

## 2022/23 Academic Achievements

The CGS congratulates all staff members who obtained new qualifications since the finalisation of the last annual report. In particular, colleagues upon whom Doctoral degrees in the geosciences were conferred: **Dr Robert Netshitungwana**, a Chief Scientist in Minerals and Energy; **Dr Rudzani Lusunzi**, a Junior Scientist in Minerals and Energy; and **Dr Thifhelimbilo Faith Malubisana**, a Scientist in Infrastructure and Land Use. These illustrious achievements by our employees truly reflect the fruit borne by their assiduous efforts and our investment in our youth in building the legacy of a capable State for future generations.

## Summary of the human resources target achievements during the MTSF 2019–2024: Towards Building a Capable Human Capital



## Geoscience research outputs: For an improved geoscientific domain through effective knowledge management

### Publication outputs for the MTSF 2019-2024

