

**The World Bank**

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa  
(P149521)

REPORT NO.: RES43862

RESTRUCTURING PAPER  
ON A  
PROPOSED PROJECT RESTRUCTURING  
OF  
TECHNICAL ASSISTANCE PROJECT FOR THE DEVELOPMENT OF CARBON CAPTURE AND STORAGE IN THE REPUBLIC OF  
SOUTH AFRICA  
APPROVED ON MARCH 21, 2017  
TO  
THE REPUBLIC OF SOUTH AFRICA

Energy and Extractives Global Practice

Eastern and Southern Africa Region

Regional Vice President:	Hafez M. H. Ghanem
Country Director:	Marie Francoise Marie-Nelly
Regional Director:	Riccardo Puliti
Practice Manager/Manager:	Julia M. Fraser
Task Team Leader(s):	Joseph Mwelwa Kapika, Franz Gerner



**ABBREVIATIONS AND ACRONYMS**

CCPP	Carbon Dioxide Capture Pilot Project
CCS	Carbon Capture and Storage
CCS TF	World Bank Multi-Donor Carbon Capture and Storage Capacity Building Trust Fund
CGS	Council for Geoscience
CO <sub>2</sub>	Carbon Dioxide
DA	Designated Account
DMRE	Department of Mineral Resources and Energy
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FEED	Front-End Engineering Design
FMS	Financial Management Specialist
GHG	Greenhouse Gas
GoSA	Government of South Africa
ICB	International Competitive Bidding
IEA	International Energy Agency
ISDS	Integrated Safeguards Data Sheet
IFR	Interim Financial Report
NCB	National Competitive Bidding
NDP	National Development Plan
NPP	National Procurement Procedures
PAC	PCSP International Advisory Committee
PCSP	Pilot Carbon Dioxide Storage Project
PDO	Project Development Objective
PSSC	PCSP Storage Subcommittee
PTA	Programmatic Technical Assistance for Capacity Building for Carbon Capture and Storage in the Republic of South Africa
PTAS	Project Technical Advisory Services
QCBS	Quality- and Cost-Based Selection
RAMP	Risk Assessment and Management Plan
REOI	Requests for Expressions of Interest
RFP	Request for Proposal
SACCCS	South African Centre for Carbon Capture and Storage
SANEDI	South African National Energy Development Institute
SBD	Standard Bidding Document
TAP	Technical Assistance Project for the Development of Carbon Capture and Storage in South Africa
ToR	Terms of Reference



# The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

## BASIC DATA

### Product Information

Project ID P149521	Financing Instrument Investment Project Financing
Original EA Category Full Assessment (A)	Current EA Category Full Assessment (A)
Approval Date 22-Mar-2017	Current Closing Date 30-Dec-2021

### Organizations

Borrower National Treasury	Responsible Agency Department of Mineral Resources and Energy (DMRE), Council for Geoscience (CGS)
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### Project Development Objective (PDO)

Original PDO

The Project Development Objective (PDO) is to assess the feasibility of, and build expert capacity for, carbon capture and storage in South Africa.

### Summary Status of Financing (US\$, Millions)

Ln/Cr/Tf	Approval	Signing	Effectiveness	Closing	Net		
					Commitment	Disbursed	Undisbursed
TF-A3137	22-Mar-2017	09-Feb-2018	10-Nov-2018	30-Dec-2021	23.00	0	23.00

### Policy Waiver(s)

Does this restructuring trigger the need for any policy waiver(s)?

No



## I. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

### A. SUMMARY

1. The development of Carbon Capture and Storage (CCS) technology remains a priority for the Government of South Africa (GoSA) for the abatement of Carbon Dioxide (CO<sub>2</sub>) emissions in the country, most of which emanate from the power sector which is dominated by coal-fired power stations. The *World Bank Group Climate Change Action Plan (2021-2025)* recognizes that CCS may be an important lever for decarbonization, and the technology is included in the pathways detailed in the *Global Warming of 1.5°C*<sup>1</sup> special report by the Intergovernmental Panel on Climate Change (IPCC) and is also part of *Net Zero by 2050 – A Roadmap for the Global Energy Sector*<sup>2</sup> by the International Energy Agency (IEA).

2. This Restructuring Paper proposes to restructure the Technical Assistance Project for the Development of Carbon Capture and Storage in the Republic of South Africa (the Project) by: (i) Extending the closing date of the Project by 18-months from December 30, 2021 to June 30, 2023; (ii) Transferring implementing agency responsibility from the South African National Energy Development Institute (SANEDI) to the Council for Geoscience (CGS); (iii) Changing the site of the Pilot Carbon Dioxide (CO<sub>2</sub>) Storage Project (PCSP) from the uMkhanyakude Municipality in the Kwa Zulu Natal Province to the Govan Mbeki Municipality in the Mpumalanga Province; (iv) Streamlining the governance and implementation arrangements for the project by providing clear delineation between decision-making and day-to-day project management; and (v) incorporating capacity building as part of the activities to be financed under Component 1 of the Project.

3. The environmental and social performance of the Project is rated as Moderately Satisfactory due to the delay in project implementation and preparation of follow-on site specific safeguards instruments. Safeguards instruments which have been prepared to date, include the preliminary Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) for the original PCSP site which was located in the uMkhanyakude Municipality in the Kwa Zulu Natal Province, and the preliminary ESIA with ESMP for the Carbon Dioxide Capture Pilot Project (CCPP, Component 2) which was prepared by Eskom. Both the preliminary ESIA with ESMPs were cleared and disclosed by the Bank in 2016. As part of this restructuring, a new PCSP site has been proposed and this therefore requires preparation of a new site specific ESIA and ESMP for Component 1 of the project. For Component 2 (CCPP – Front-End Engineering Design), the associated environmental and social impacts have been assessed as part of the preliminary ESIA study that was prepared by plant owner Eskom and cleared and disclosed by the Bank in March 2016. This indicated no materially significant impacts associated with the proposed CCCP due to it being located within the larger Kusile Power Station footprint.

### B. BACKGROUND

4. The Project was approved by the Board of Executive Directors of the World Bank on March 22, 2017 and declared effective on November 10, 2018, with a closing date of December 30, 2021. The Project is co-financed with the GoSA for a total amount of US\$38 million (Table 1). Project financing from the World Bank Carbon Capture and Storage Trust Fund (CCS TF) is in the amount of US\$23 million and counterpart funding from GoSA is for the equivalent of US\$15 million.

<sup>1</sup> IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

<sup>2</sup> IEA, 2021: Net Zero by 2050 – A Roadmap for the Global Energy Sector.



Table 1: Project Costs and Financing

Project Components	Cost (US\$, millions)	WB CCS TF Financing (US\$, millions)	GoSA Financing (US\$, millions)
Component 1. Pilot CO <sub>2</sub> Storage Project	36.50	21.50	15.00
Component 2. CO <sub>2</sub> Capture Pilot Project Front-End Engineering Design	1.50	1.50	0.00
<b>Total</b>	<b>38.00</b>	<b>23.00</b>	<b>15.00</b>

5. The Project Development Objective (PDO) is **to assess the feasibility of, and build expert capacity for, carbon capture and storage in South Africa**. To achieve the PDO, the project supports the financing of the following two components:

a. *Component 1: Pilot Carbon Dioxide (CO<sub>2</sub>) Storage Project* (US\$36.50 million) for the investigation and characterization of a suitable CO<sub>2</sub> storage site and the subsequent injection, storage and monitoring of CO<sub>2</sub> at the identified site. It is planned for between 10,000 to 50,000 metric tons of CO<sub>2</sub> to be injected at a depth of at least 800m. At project appraisal, the location considered for storage investigation was within the Zululand geological basin at a site located in the uMkhanyakude District Municipality of the Kwa-Zulu Natal Province, with a theoretical storage capacity of 500 million metric tons of CO<sub>2</sub>.

b. *Component 2: CO<sub>2</sub> Capture Pilot Project Front-End Engineering Design (FEED)* (US\$1.5 million) for the preparation of a FEED study for a capture pilot plant at the Kusile Power Station. It is intended for the CCPP to become a learning facility on CO<sub>2</sub> capture for industry and academia, and a capacity building hub on CO<sub>2</sub> capture technologies for South Africa and the region.

6. The project is aligned with South Africa’s climate change targets, and the country’s Integrated Resource Plan (IRP). South Africa has the largest power sector in Africa. Out of approximately 56,000 MW of installed capacity, coal power generation represents the most important source with 74% of the installed capacity, followed by renewables (15%), oil (7%) and nuclear (3%). Due to the large penetration of coal generation, the power sector is a key contributor to Greenhouse Gas (GHG) emissions with 48% of the total CO<sub>2</sub> emissions. While South Africa is increasingly producing power from renewables, these still only make up 6% of the total electricity production.

### C. PROJECT STATUS

7. Project performance is rated Unsatisfactory (U) for both progress towards achievement of the PDO and overall Implementation Progress (IP). The project has continued to show a lack of implementation progress and no disbursement of the grant has been made since effectiveness.

8. Project implementation has been delayed by the lengthy period that it took to achieve effectiveness of the Project from the date of approval by the IBRD Board of Executive Directors, sub-optimal governance arrangements that delayed



decisions at key milestones, and the protracted process for obtaining consent from stakeholders at the originally designated site for the PCSP. As a result, none of the project activities can be concluded before the current project closing date of December 30, 2021. Despite the significant lack of progress, GoSA has reaffirmed that the Project remains a priority. To accelerate implementation and ensure that the PDO can be realized, GoSA has requested that the Project be restructured.

9. The project is in compliance with all legal covenants.
10. There are no outstanding or unqualified audit reports, or Interim Financial Reports (IFRs) for the grant.

### **C. RATIONALE FOR RESTRUCTURING**

11. The proposed restructuring is necessary to re-start and accelerate implementation and achieve the PDO. CGS, the proposed new implementing agency, possesses expansive technical geoscientific capabilities to implement the Project. Geoscience is prominent in Component 1 of the Project, which accounts for the largest proportion of planned activities and over 90% of the estimated costs of the Project. CGS has also been a key contributor to the development of carbon capture and storage in South Africa, having led an 18-month investigation of South Africa's geological CO<sub>2</sub> storage potential and compiled and published the Carbon Dioxide Storage Atlas for South Africa, and defined the scope for the seismic reflection survey and well drilling for the uMkhanyakude site for the PCSP.

12. As part of the project restructuring, it is proposed to shift the site for the PCSP from the uMkhanyakude Municipality in Kwa Zulu Natal Province to the Govan Mbeki Municipality in the Mpumalanga Province. This will place the PCSP in closer proximity to carbon dioxide emissions, and reduce CO<sub>2</sub> transportation requirements, since Mpumalanga Province is where most of Eskom's coal generation fleet is located, as well as the Secunda petrochemical complex, one of the largest single point CO<sub>2</sub> emission sources in the world. Furthermore, additional investigations and monitoring that have occurred since the Atlas on Geological Storage of Carbon Dioxide in South Africa was completed in 2010, and upon which the original siting was made, have shown increased observations of seismicity in the Kwazulu Natal Province and the potential reactivation of regional faults traversing the province.

13. For day-to-day implementation, a project implementation unit (PIU) at the new implementing agency has been established, which has already progressed some initial activities including acquisition, verification, and auditing of geological data. Emanating from the revised Procurement Plan as contained in the Project Procurement Strategy for Development (PPSD) (Annex I), specifications for key activities aimed at fast-tracking implementation have also been developed some of which are under advance procurement. As part of this restructuring and consistent with the PDO, capacity building on Capture and Storage (CCS) is being incorporated into Component 1 of the Project. The capacity building activities will complement work done under the Bank - executed Programmatic Technical Assistance for Capacity Building for Carbon Capture and Storage in the Republic of South Africa that has provided a comprehensive and aligned package of support on CCS. Eskom has also reconfirmed its commitment to the Project and for the Kusile Power Station to be used for Component 2 (Annex II).

14. Since none of the project activities can be concluded before the closing date of December 30, 2021 given the delays that the Project has experienced, an 18-month extension of the project's closing date, from December 30, 2021 to June 30, 2023 is proposed. This also aligns with the current closing date of the CCS TF and will enable progress towards achieving the PDO.



## II. DESCRIPTION OF PROPOSED CHANGES

15. Based on the request of GoSA, the proposed key changes under this restructuring are: (i) Extending the closing date of the Project by 18-months from December 30, 2021 to June 30, 2023; (ii) Transferring implementing agency responsibility from SANEDI to CGS; (iii) Changing the site of the PCSP from the uMkhanyakude Municipality in the Kwa Zulu Natal Province to the Govan Mbeki Municipality in the Mpumalanga Province; (iv) Streamlining the governance and implementation arrangements for the project by providing clear delineation between decision-making and day-to-day project management; and (v) incorporating capacity building under Component 1 of the Project.

### Implementing Agency and Institutional Arrangements

16. It is proposed to change project implementing agency responsibility from SANEDI to CGS.<sup>3</sup> The CGS is mandated to promote research and the extension of knowledge in the field of geoscience as well as the provision of specialized geoscientific services and based on its mandate has the technical capabilities and required resources to implement the project. The financial management and procurement capabilities of CGS have also been appraised.

17. GoSA has designated a Deputy Director General (DDG) staff within the Department of Mineral Resources and Energy (DMRE) to be the government's Project focal point. The DDG will provide guidance and input on aspects of project implementation that relate to government policy, legislation, and regulation. This will include coordination of CCS related policy development across government departments and facilitating the provision of regulatory permits and other clearances as necessary.

18. With DMRE assuming a more explicit role in project implementation, it has been agreed to dispense with the two steering committees (Pilot CO<sub>2</sub> Storage Project Steering Committee and the South African Center for Carbon Capture and Storage Steering Committee) established at appraisal since the arrangement had proved to be sub-optimal and had delayed decision-making at key milestones. The proposed implementation arrangements are detailed in Annex III.

### Pilot CO<sub>2</sub> Storage Project (PCSP) Site

19. As part of the restructuring, two potential sites at Volksrust and Govan Mbeki respectively, in the coalfields of the Mpumalanga Province were considered for the PCSP. Both sites are located at the confluence of significantly large geological basins including the Witwatersrand, the Transvaal and the Karoo. The two sites are also in a region that is seismically stable, an important factor for ensuring safe storage of the CO<sub>2</sub> once injected. Based on a review of available data and preliminary geological investigations conducted between July and December 2020, the Govan Mbeki site has been selected. The CO<sub>2</sub> storage medium being targeted is a deep saline aquifer, at a depth of greater than 800 m in the Ventersdorp geological formation where indications are that CO<sub>2</sub> could be safely injected and stored.

20. To provide independent technical advice on the Govan Mbeki site, the World Bank team retained two international experts. Based on the information provided, the experts in their assessment found that the site appeared to be suitable for implementing the pilot CO<sub>2</sub> storage facility. Its proximity to the petrochemical facility at Secunda also presents the potential for high concentration CO<sub>2</sub> to be more easily available, thus potentially reducing the cost and

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<sup>3</sup> CGS is one of the ten national science councils in South Africa and is successor of the Geological Survey of South Africa that was formed in 1912. The other nine science councils are: Council for Scientific and Industrial Research (CSIR), Agricultural Research Council (SRC), Human Sciences Research Council (HSRC), South African Medical Research Council (MRC), National Research Foundation (NRF), National Health Laboratory Service (NHLS), South African Council for National Scientific Professions (SACNASP), Mine Health and Safety Council and Coaltech Research Association.



complexity of the project. The assessment also observed that some of the potential risks with the selected formation could be ameliorated by also characterizing the Witwatersrand formation, which could serve as a contingency if the latter proved unviable.

21. Given the experience with the previous site, the necessity for an appropriate public communication and citizen engagement strategy that will be implemented throughout project implement is recognized. To this effect, several consultations have already taken place with various stakeholders and a letter of support for the Project obtained from the Govan Mbeki Municipality (Annex IV).

## **Components Description**

22. The description of Component 1 of the Project will be amended to include capacity building on CCS as follows:

### ***Pilot Carbon Dioxide (CO<sub>2</sub>) Storage Project***

1. *Carrying out of: (a) geological investigation and characterization of a suitable CO<sub>2</sub> storage site; (b) schematic and detailed engineering design of PCSP facilities; (c) procurement and construction of PCSP facilities; (d) subsequent injection, storage and monitoring of CO<sub>2</sub> in the identified storage site, in accordance with an Operational Plan for the PCSP; and (e) activities to build expert capacity in carbon capture and storage.*

## **Environmental and Social Safeguards**

23. The project is classified as a Category A as per the Bank's Safeguards Operational Policies due to the potentially significant irreversible and sensitive environmental and social impacts. Since the location of the injection well has changed from the original location in Kwa-Zulu Natal to Mpumalanga, the project will have to prepare a new site specific ESIA, to identify potential environmental and social impacts and mitigation measures including preparation of an ESMP and any other relevant plans to define appropriate mitigation measures, institutional arrangements and the budget for implementation and monitoring. The project implementation team that has been assembled by CGS includes environmental and social specialists that have prepared Terms of Reference (ToR) for the ESIA study and who will be responsible for its implementation and monitoring of activities, including undertaking a robust stakeholder engagement and consultations. The ESIA is expected to take approximately 12 months and procurement is planned to be launched by July 31, 2021. As part of the proposed restructuring the Integrated Safeguards Data Sheet (ISDS) has been updated to reflect the changes both in the project description which includes the location of the PCSP, and the implementing agency.

## **Procurement**

24. The project is currently under the World Bank's 'Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011, revised July 1, 2014 and 'Guidelines: Selection and Employment of Consultants Under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011, revised July 1, 2014. The change in procurement to adopt the World Bank Procurement Regulations from 2016<sup>4</sup> would allow the Recipient to take advantage of the key features of the Regulations including use of National Procurement Procedures (NPP) and use of Sustainable Procurement to build capacity of Small and Medium-sized Enterprises (SMEs). When using NPP, procurement documentation would need to cater for compliance to the Bank's Anti-Corruption Guidelines, right to sanctions and inspection and audit rights. A PPSD has been prepared for the project

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<sup>4</sup> Procurement Regulations for IPF Borrowers (dated July 2016), revised November 2017 and August 2018.



to provide an assessment of the market, the project needs and the best procurement approach and selection method to achieve the Project Development Objective.

**Financial Management and Disbursement Arrangements**

25. A financial management assessment has been carried out to determine whether CGS as Project implementing agency has acceptable financial management arrangements which will ensure: (1) that the project funds are used only for the intended purposes in an efficient and economical way; (2) the preparation of accurate, reliable and timely periodic financial reports; and (3) safeguard of the assets. The overall conclusion of the financial management assessment is that the project’s financial management has an **overall risk-rating of “Low”** and the financial management arrangements satisfy the Bank’s minimum requirements. The proposed financial management and disbursement arrangements are described in Annex V.

**Legal Covenants**

26. The legal covenant on Schedule 2, Section I, B, 1 (a) and (b) of the Grant Agreement, relating to the Action Plan and Reporting through Closure of PCSP and Decommissioning, will be amended to align the dates with the revised closing date.

**Results Framework**

23. The Results Framework will be revised to: (i) extend the target end date of the Project’s results indicators in line with the revised closing date; and (ii) update existing indicators in conformity with the new implementing agency, new PCSP site and the overall revised implementation schedule.

**III. SUMMARY OF CHANGES**

	Changed	Not Changed
Implementing Agency	✓	
Results Framework	✓	
Loan Closing Date(s)	✓	
Disbursements Arrangements	✓	
Disbursement Estimates	✓	
Legal Covenants	✓	
Institutional Arrangements	✓	
Financial Management	✓	
Procurement	✓	
Implementation Schedule	✓	



## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

Other Change(s)	✓	
DDO Status		✓
Project's Development Objectives		✓
PBCs		✓
Components and Cost		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Overall Risk Rating		✓
Safeguard Policies Triggered		✓
EA category		✓
APA Reliance		✓
Economic and Financial Analysis		✓
Technical Analysis		✓
Social Analysis		✓
Environmental Analysis		✓

#### IV. DETAILED CHANGE(S)

##### IMPLEMENTING AGENCY

Implementing Agency Name	Type	Action
South African National Energy Development Institute (SANEDI)	Implementing Agency	Marked for Deletion
Department of Mineral Resources and Energy (DMRE)	Implementing Agency	No Change
Council for Geoscience (CGS)	Implementing Agency	New



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## LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Revised Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
TF-A3137	Effective	30-Dec-2021		30-Jun-2023	30-Oct-2023

## DISBURSEMENT ESTIMATES

Change in Disbursement Estimates

Yes

Year	Current	Proposed
2017	0.00	0.00
2018	0.00	0.00
2019	0.00	0.00
2020	0.00	0.00
2021	0.00	0.00
2022	0.00	8,000,000.00
2023	0.00	9,000,000.00
2024	0.00	6,000,000.00

## LEGAL COVENANTS

Loan/Credit/TF	Description	Status	Action
TF-A3137	Finance Agreement :Establishment of Steering Committees   Description :Schedule 2, Section I, B, 1 (a) of the Grant Agreement: The Recipient shall, not later than thirty (30) days after the Effective Date establish the PCSP Steering Committee and the CCPP FEED Steering Committee (Steering Committees), respectively, and, thereafter maintain said Steering Committees with a composition, mandate and resources satisfactory to the World Bank.   Due Date :21-Aug-2017	Complied with	No Change



TF-A3137	<p>Finance Agreement :Action Plan and Reporting through Closure of PCSP and Decommissioning   Description :Schedule 2, Section I, F, 4 (a) of the Grant Agreement: (a) not later than June 30, 2021, or such later date as the World Bank may establish following consultations with the Recipient and the Project Implementing Entity, cause the Project Implementing Entity to prepare and adopt an action plan, approved by the Recipient and satisfactory to the World Bank, for monitoring the implementation of the closure of the PCSP during Stage 7, and decommissioning the infrastructure associated with the CO2 injection.</p> <p>(b) thereafter, (i) continue for a period of seven (7) years after December 31, 2021, or such later date as the World Bank may establish following consultation with the Recipient and the Project Implementing Entity, annually to furnish the World Bank with such progress reports as the Project Implementing Entity may prepare in respect of Stage 7 for the benefit of and as approved by the Recipient, and (ii) afford the World Bank a reasonable opportunity to exchange views with the Recipient and the Project Implementing Entity on such progress reports.   Due Date :30-Jun-2021</p>	Not yet due	Revised
Proposed	<p>GA: Sch. 2, Section I, F, 4 (a): (a) not later than December 30, 2022, or such later date as the World Bank may establish following consultations with the Recipient and the Project Implementing Entity, cause the Project Implementing Entity to prepare and adopt an action plan, approved by the Recipient and satisfactory to the World Bank...</p>	NYD	
TF-A3137	<p>Finance Agreement :Progress Reporting until PCSP Closure&amp;Decom; GA Schedule 2, Section I, F, 4 (b)   Description :Progress Reporting through Closure of PCSP and Decommissioning.</p> <p>Schedule 2, Section I, F, 4 (b) of the Grant Agreement: (b) Thereafter, (i) continue for a period of seven (7) years after December 31, 2021, or such later date as the World Bank may establish following consultation with the Recipient and the Project Implementing Entity, annually to furnish the World Bank with such progress reports as the Project Implementing Entity may prepare</p>	Not yet due	Revised



## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

	in respect of Stage 7 for the benefit of and as approved by the Recipient, and (ii) afford the World Bank a reasonable opportunity to exchange views with the Recipient and the Project Implementing Entity on such progress reports.   Frequency :Yearly	
Proposed	GA: Sch. 2, Section I, F, 4 (b): (b) Thereafter, (i) continue for a period of seven (7) years after June 30, 2023, or such later date as the World Bank may establish following consultation with the Recipient and the Project Implementing Entity, annually to furnish the World Bank with such progress reports as the Project Implementing Entity may prepare in respect of Stage 7 ...	NYD



**Results framework**

**COUNTRY: South Africa**

**Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa**

**Project Development Objectives(s)**

The Project Development Objective (PDO) is to assess the feasibility of, and build expert capacity for, carbon capture and storage in South Africa.

**Project Development Objective Indicators by Objectives/ Outcomes**

Indicator Name	PBC	Baseline	Intermediate Targets	End Target
			1	
<b>Completion of the assessment of the feasibility of CO2 storage in the Govan Mbeki area in SA (Action: This Objective has been Revised)</b>				
Completion of the assessment of the feasibility of CO2 storage in the Govan Mbeki Local Municipality in South Africa (Yes/No)		No	Yes	Yes
<i>Action: This indicator has been Revised</i>				
<b>Cumulative South African professionals trained and hired/contracted to work on the PCSP</b>				
Cumulative South African professionals trained and hired/contracted to work on the PCSP (Number)		10.00	20.00	30.00
<i>Action: This indicator has been Revised</i>				
Of which women (Number)		5.00	10.00	15.00
<i>Action: This indicator is New</i>				
<b>Completion and approval of the CCPP FEED (Yes/No)</b>				
Completion and approval of the CCPP FEED (Yes/No) (Yes/No)		No	Yes	Yes
<i>Action: This indicator has been Revised</i>				



**Intermediate Results Indicators by Components**

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<b>Cumulative PCSP seismic surveys completed (Action: This Component has been Marked for Deletion)</b>							
Cumulative PCSP seismic surveys completed (Amount(USD))		0.00	0.00	1.00	2.00	2.00	2.00
<i>Action: This indicator has been Marked for Deletion</i>							
<b>Cumulative PCSP wells logged (Action: This Component has been Revised)</b>							
Cumulative PCSP boreholes logged (Number)		0.00	10.00				15.00
<i>Action: This indicator has been Revised</i>							
<b>PCSP site confirmed</b>							
PCSP site confirmed (Yes/No)		No	Yes				Yes
<i>Action: This indicator has been Revised</i>							
<b>Cumulative annual public engagement summaries disclosed</b>							
Cumulative annual public engagement summaries disclosed (Number)		0.00	10.00				20.00
<i>Action: This indicator has been Revised</i>							
<b>Cumulative CCPP FEED progress reports completed</b>							



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Cumulative CCPP FEED progress reports completed (Number)		0.00	4.00				8.00
<b>Action: This indicator has been Revised</b>							
<b>Cumulative PSCP geological profiles constructed (Action: This Component is New)</b>							
Cumulative PSCP geological profiles constructed (Number)		0.00	3.00				5.00
<b>Action: This indicator is New</b>							

## Annex I: Project Procurement Strategy for Development

### PROJECT PROCUREMENT STRATEGY FOR DEVELOPMENT (PPSD) FOR TECHNICAL ASSISTANCE PROJECT FOR THE DEVELOPMENT OF CARBON CAPTURE AND STORAGE IN SOUTH AFRICA

#### 1. Project Overview

##### Project Description

The proposed TAP will include the implementation of two independent components: (1) the preparation and implementation of the PCSP; and (2) the preparation of the CCPP FEED. The PCSP constitutes the majority of the project activities and costs because the priority is to demonstrate that CO<sub>2</sub> can be stored in the South African geological formations. **Component 1: Pilot CO<sub>2</sub> Storage Project (US\$21.5 million CCS TF, US\$15.0 million GoSA)**. for the investigation and characterization of a suitable CO<sub>2</sub> storage site and the subsequent injection, storage and monitoring of CO<sub>2</sub> at the identified site. It is planned for between 10,000 to 50,000 metric tons of CO<sub>2</sub> to be injected at a depth of at least 800m. At project appraisal, the location considered for storage investigation was within the Zululand geological basin at a site located in the uMkhanyakude District Municipality of the Kwa-Zulu Natal Province, with a theoretical storage capacity of 500 million metric tons of CO<sub>2</sub>. **Component 2: CO<sub>2</sub> Capture Pilot Project (CCPP) Front-End Engineering Design (FEED) (US\$1.5million)**; for the preparation of a FEED study for a capture pilot plant at the Kusile Power Station. It is intended for the CCPP to become a learning facility on CO<sub>2</sub> capture for industry and academia, and a capacity building hub on CO<sub>2</sub> capture technologies for South Africa and the region.

<b>Country:</b>	South Africa
<b>Full Project Name:</b>	Technical Assistance Project for the Development of Carbon Capture and Storage in South Africa
<b>Total Finance (\$):</b>	23 Million
<b>CCS Trust Fund Grant No:</b>	TF0A3137

Project Development Objectives (PDO): To assess the feasibility of, and build expert capacity, carbon capture, utilization and storage in South Africa. The PDO indicators are:

- Completion of the assessment of the feasibility of CO<sub>2</sub> storage in South Africa (Yes/No)
- Cumulative South African professionals trained and hired/contracted to work on the PCSP (Number/Number of Women)
- Completion and approval of the CCPP FEED (Yes/No)

##### High Level Statement of requirement:

The main requirements of the project that will be delivered by suppliers, contractors or consultants are as follows:

- Goods – include equipment procured for various data collection activities in support of the CCUS project;
- Works – include services and associated infrastructure procured in support of the development and characterization of the proposed CCUS pilot plant;

- Non-Consulting Services – include services procured in support of site characterization and the development of the CCUS pilot plant;
- Consulting Services – include services procured toward providing technical and FEED support toward the development of the proposed CCUS pilot plant.

*Table 1 – Identified procurement risks and proposed mitigations*

Summary of Contract Categories

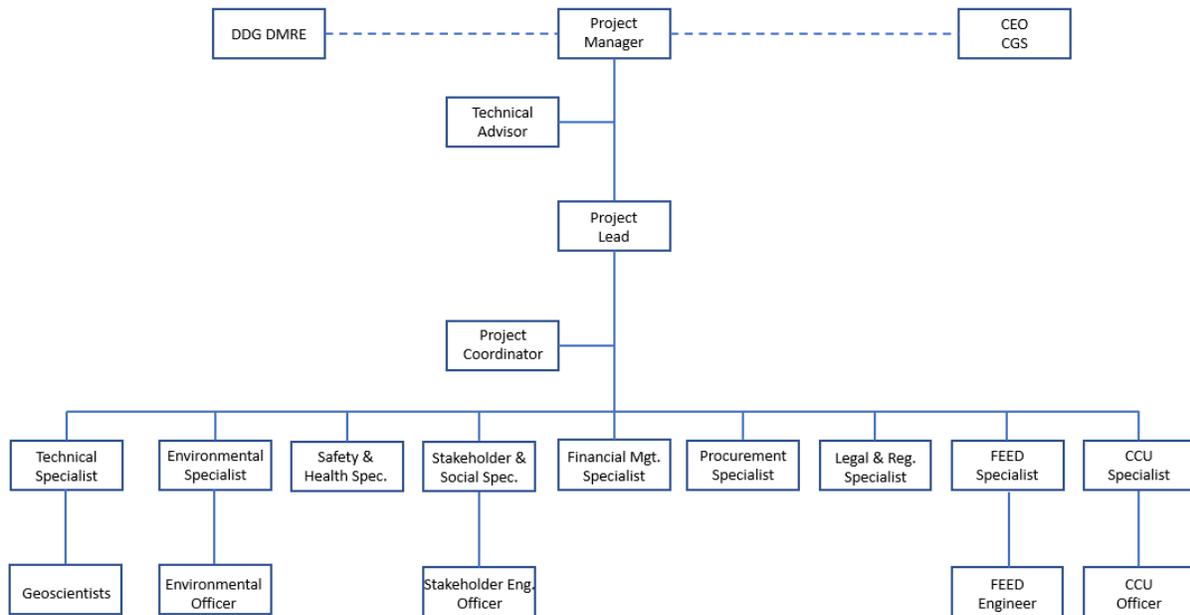
Category	Description	Aggregate Estimated Cost (USD)	Duration of each package	Comments
Goods	Equipment procured for various data collection activities in support of the CCUS project	1 000 000	Between 1 - 24 months	Approximately 9 contract packages estimated between USD1K - USD5M
Works	Services and associated infrastructure procured in support of the development and characterisation of the proposed CCUS pilot plant	9 000 000	Between 1 - 24 months	Approximately 4 contract packages estimated between USD1K - USD5M
Non-consulting services	Non-consulting services procured in support of site characterisation and the development the CCUS pilot plant	7 000 000	Between 1 - 24 months	Approximately 4 contract packages estimated between USD1K - USD5M
Consulting services	Consulting services procured toward providing technical and FEED support toward the development of the proposed CCUS pilot plant	6 000 000	Between 1 - 24 months	Approximately 6 contract packages estimated between USD1K - USD5M

**OPERATIONAL CONTEXT:** The implementing agency responsibility will be transferred from the South African National Energy Development Institute (SANEDI) to the Council for Geoscience (CGS); The site of the Pilot Carbon Dioxide (CO<sub>2</sub>) Storage Project (PCSP) will change from the uMkhanyakude Municipality in the Kwa Zulu Natal Province to the Govan Mbeki Municipality in the Mpumalanga Province; and the governance and implementation arrangements for the project will be streamlined by providing clear delineation between decision-making and day-to-day project management.

CGS is one of the ten national science councils in South Africa<sup>5</sup> and is successor of the Geological Survey of South Africa that was formed in 1912. The CGS is mandated to promote research and the extension of knowledge in the field of geoscience as well as the provision of specialized geoscientific services. CGS provides the following professional services: (i) Geophysical airborne and ground surveys; (ii) Geophysical data acquisition, processing and interpretation; (iii) Engineering geosciences; (iv) Mineral resources development; (v) Water geosciences/hydrological services; (vi) Environmental management and rehabilitation; (vii) Marine geology including port surveys; (viii) Spatial data and GIS services; and (ix) Regional geological surveys and map compilations including core drilling. Based on its mandate, CGS has the technical capabilities and required resources to implement the project.

The Deputy Director General (DDG) staff within the Ministry of Energy will have overall responsibility for the implementation and delivery of the Project. The DDG will also provide guidance and input on aspects of project implementation that relate to GoSA policy and legislation. CGS will have project implementation responsibility and the Board of CGS will have overall responsibility for the Project. For the day-to-day implementation of the Project, CGS has established a Project Implementation Unit (PIU) (Figure 2) that will report to the CGS Board through the Chief Executive Officer (CEO).

**Figure 2. Project Implementation Structure**



<sup>5</sup> The other nine science councils are: Council for Scientific and Industrial Research (CSIR), Agricultural Research Council (SRC), Human Sciences Research Council (HSRC), South African Medical Research Council (MRC), National Research Foundation (NRF), National Health Laboratory Service (NHLS), South African Council for National Scientific Professions (SACNASP), Mine Health and Safety Council and Coaltech Research Association.

The CGS has developed a Procurement Policy which will be used for procurement for operational activities. Public procurement in South Africa has been recognised as a key enabler of social and economic transformation. The main legal instruments governing public procurement in South Africa include : Section 217 of the South African Constitution ; the Public Finance Management Act-51 (1) (a) ; Preferential Procurement Policy Framework Act- 2(1) (d) and ; Broad Based Black Economic Empowerment Act No. 46 of 2013. In addition to these instruments, over the years the government has launched various schemes to support local economic development such as:

- Accelerated Shared Growth Initiative (ASGI-SA).
- National Industrial Policy Framework (NIPF)
- Industrial Policy Action Plan (IPAP).
- Competitive Supplier Development Programme (CSDP).
- National Industrial Participation Programme (NIPP).
- New Growth Path (NGP).
- National Development Plan (NDP).

As emphasized in South Africa’s National Development Plan (NDP, p. 139), the Black Economic Empowerment agenda largely focuses on broadening ownership, enhancement of economic opportunities to previously disadvantaged groups and control of capital accumulation within capital intensive sectors; it aims to re-balance gender and racial ownership structures as well as the top echelons of the business community. The B-BBEE Act (sec. 1(c)(e) itself expressly states that the Broad-Based Black Economic Empowerment strategies include “preferential procurement from enterprises owned or managed by black individuals”.

Moreover, the NDP refers to preferential procurement legislation as one of the main tools for accomplishing Black Economic Empowerment objectives. Other aims of the preferential procurement program are targeted at job creation and increasing the skill level of the workforce, with a view to redressing the ongoing effects of apartheid-era discrimination and exclusion. As noted in *Overcoming Poverty and Inequality in South Africa* (World Bank, March 2018, p. xiv), “racial and gender disparities are still predominant in South Africa’s labor market, an enduring legacy of apartheid. Race still affects the ability to find a job, as well as the wages received once employed.”

Instruments such as the CPF and the Systematic Country Diagnosis (SCD), prepared by the Bank and in defining the objectives of the Bank’s operations in South Africa, repeatedly refer to the priority need for inclusive job creation and economic development. In line with those documents, the preferential procurement policy in South Africa requires taking specific steps to actualize inclusion, with a view concretely to remedy the inequities left by the apartheid system in terms of allocation of public services, land, wealth, opportunity and development in the society. These sustainability requirements, mandated by and pursuant to the Constitution and related legislation, are intended to implement the inclusion that the CPF and the NDP promote, again, with the overarching purpose of addressing the exclusion, inequality and poverty that are the ongoing legacy of apartheid. As noted in the NDP (p. 472), “Preferential

procurement, as well as BEE [Black Economic Empowerment] charters, the codes and the BEE scorecard, drive the empowerment of the historically disadvantaged.”

Acceptance by the Bank of sustainable procurement requirements is important for building its relationship and trust in South Africa. The CLR (p. 52) notes that the Bank is not yet a reference partner for South Africa, which has made limited use of WB products despite sustained efforts by the Bank. Changing that ‘will require nurturing of gain made in the partnership with the Government of SA and focusing on building trust as a key dimension in the design of development programs well aligned with country priorities’. Furthermore, the CLR underscores the importance of alignment with the Government’s NDP, which refers repeatedly to the role of public procurement in overcoming the poverty and inequality that is the ongoing legacy of apartheid and racial discrimination.

Acceptance of those requirements can be seen as generally consistent with the Bank’s core procurement principles, as illustrated below:

- i. Value for money: “functionality” evaluation criteria are assessed on a pass/fail basis; part of the “value for money” paradigm of a procurement expenditure includes how it contributes to addressing the effects of apartheid;
- ii. Economy: predominant weight in the evaluation and comparison of bids is given to price (either 80% or 90%, depending upon the value of the procurement);
- iii. Integrity: misrepresentation to get B-BBEE preferential procurement benefits is a criminal offence;
- iv. Fitness for purpose: as one of the Constitutionally mandated objectives of public procurement in South Africa is to address the effects of apartheid, the preferential procurement policy and practices can be seen as fit for purpose;
- v. Transparency: elaboration of detailed, quantified scoring and weighting matrix for the award of B-BBEE benefits in public procurement; disclosure of B-BBEE requirements and weighting of price and preference scores in solicitation documents.
- vi. Fairness: B-BBEE provisions do not exclude participation by foreign bidders; bidders that do not have B-BBEE status points are not disqualified (but earn no B-BBEE points in the evaluation of bids). The WB SP Guidance (p. 18, Table IV) states that the specifications for a procurement should not include discrimination on the basis of country, state or local companies.

### **Summary of Recipient Institution**

The project will be implemented by CGS, being a state-owned entity, follow the applicable national procurement policies that meet the World Bank Group core procurement policy objectives of value for money, economy, efficiency, effectiveness, integrity, transparency and fairness and accountability.

CGS will request a waiver from the Office of the Chief Procurement Officer at NT to enable the project to adhere to the World Bank Procurement Regulations as stipulated in the Financing Agreement.

The CGS has been assessed using the World Bank's Procurement Risk Assessment Management System (PRAMS) to determine the project risks; risk mitigation measures, responsibilities, timing and monitoring process and procurement performance monitoring during implementation. The four elements assessed, and the preliminary results are as follows:

- (a) **Procurement Regulatory Framework and Management Capability** - CGS has a Procurement Policy in place and an active website that publicizes procurement opportunities. CGS produces annual work plans and procurement plans. A Procurement Officer will be assigned to manage procurement activities. CGS is deemed capable of executing the procurement activities under the proposed project, which may comprise works contracts, non-consulting services and consulting services. This capacity will be re-assessed when activities packages will have been finalized and procurement implementation arrangements concluded. Based on the preliminary risk assessment, the capacity of Procurement Officer may need reinforcement depending on activities to be financed.
- (b) **Integrity and Oversight** - CGS has adequately segregated the various procurement duties and is subject to an external audit. A review of management letters will also be carried out to determine if additional measures need to be put in place. Based on the preliminary risk assessment, oversight measures may need reinforcing depending on implementation arrangements.
- (c) **Procurement Process and Market Readiness** - CGS has put in place acceptable documentation to guide the procurement process. Under the project, procurement plans, opportunities, evaluation outcomes and award of contracts will be published on their website. Considering the types of activities planned, there is availability of vendors in South Africa, in the Region and international for the type of consultancy services required, civil works and non-consultancy services.
- (d) **Procurement Complexity** - Initial indications show that procurements will comprise a selection of consultant firms, procurement of civil works and non-consulting services. CGS has shown the capability to manage such procurements and the capability to have acceptable procurements templates in place.

**The Project Procurement Risk Rating at Appraisal is Substantial.**

*Table 2 – Identified Procurement Risks and Proposed Mitigations*

Item	Risk	Mitigation	By who	Date
1	Scarcity of companies with specialized goods and services	Market research	CGS	Ongoing

**Market Risk:**

South Africa has a highly competitive domestic market which has capability to meet both domestic, regional and international demands. There are over 800,000 domestic firms listed on the Central Supplier Database with capacity and capability to provide these services.

The project will also hire project implementation support personnel. This will include personnel hired to support office and field activities; procurement staff, financial management staff, ground water specialist, communication and knowledge management, project assistant, GIS/M&E, infrastructure, institutional development/governance, environment and social safeguards staff. According to paragraph 7.32 of the Procurement Regulations (2020), these staff will be hired using CGS’s human resource procedures that allow for advertising of positions, shortlisting of qualified candidates, interviews and selection of the best qualified staff. The project will also finance incremental Operating costs such as website maintenance, recruitment costs, and insurance services. Such operating activities will be procured using CGS’s procurement procedures for operational activities that have been found acceptable.

*Table 3 – Supplier Positioning Model*

High	Estimated to Cost /Value = Above R 5 million Rands		High
Risk or Vulnerability	Strategic Critical-Big ticket packages (Services) that must be closely monitored during a procurement process with a comprehensive service level agreement to monitor supplier performance.	Strategic Core= Big ticket packages (Goods) that must be closely monitored with a comprehensive service level agreement to monitor supplier performance.	
	Tactical Acquisition- The Procurement of short-term transactional items procured from medium manufacturing companies.	Tactical Advantage- The Procurement of short-term transactional packages through a quotation procurement process.	
Low	Estimated to Cost / Value = Less then R 5 million Rands		Low

**Conclusion on Market risk to be included in Procurement Strategy**

Market risks are considered **Moderate** for this project.

## Procurement Complexity

The envisioned procurements are not complex, and the contract package values are low. All of the project requirements are readily available on the domestic market.

Packaging for procurement is decided basically on following major criteria:

- a. Packages are decided in such a way that encourages adequate participation.
- b. Similar type of work is included in a package to the extent possible.
- c. Similar items that can be supplied together are group in one package.
- d. Size of Package: The size of package has been decided taking into consideration technical requirement, etc.

*Table 4 – Identified procurement risks and proposed mitigations*

Item	Risk	Mitigation	By who	Date
1	Scarcity of companies with specialized goods and services	Market research	CGS	Ongoing

## CGS Market Analysis

The CGS has identified different sourcing strategies for different the procurement packages, some commodities will be procured through request for quotations and some surveys will be procured as limited bidding to be reviewed by the Bank. Open competitive bidding will also be used as sourcing strategy. Sole suppliers will be explored for some specialized procurement packages.

### 2. Recommended Procurement Strategy for the Project

Based on the project requirements, technical solutions and market base, the procurement strategy has been developed to (i) package requirements appropriately; (ii) have separate packages for consultancy services, non-consultancy services and civil works. Approaches to market for non-consulting services and civil works will include international, national, open, limited and direct. For consultant selection for firms the selection methods may be QCBS/CQS/LCS/DS/IC following international or national approach to the market including shortlisting.

**Table 5 - Procurement Approach for Goods and Non-Consultant services**

<b>Attribute</b>	<b>Selected arrangement</b>	<b>Justification Summary</b>
Specifications	Conformance/ Performance	The non-consulting to be procured are mostly site characterization
Sustainability Requirements	Yes	The market approaches will include participation from the domestic market
Contract Type	Conformance/ Performance	Traditional Contract
Pricing and costing mechanism	Schedule of Rates / Admeasurement	Schedule of Rates
Supplier Relationship	Adversarial	The goods/services shall be delivered on the agreed schedule and comply with the required technical specifications and agreed final price.
Price Adjustments	Fixed Price	Fixed Price
Form of Contract (Terms and Conditions)	Non-Specific, Once off or Fixed term	
Selection Method	Request for Bids (RFB)	The services to be procured through RFB methods are appropriate.
Selection Arrangement	None	
Market Approach	Open International, Limited, Direct	Given the complexity of the non-consulting services to be procured Open international competition is deemed adequate
	Single Stage, Single Envelope	
Pre / Post Qualification	Post Qualification	
Evaluation Selection Method	Lowest Evaluated Method	The minimum requirements for qualification will be inserted in RFB documents taking into account the nature of the non-consulting services to be procured
Evaluation of Costs	Adjusted Bid Price	Lowest Evaluated Cost
Domestic Preference	No	
Rated Criteria	No	

**Table 6 - Procurement Approach for Works**

<b>Attribute</b>	<b>Selected arrangement</b>	<b>Justification Summary</b>
<b>Specifications</b>	Conformance/ Performance	The works are complex in nature. The Works consists mainly exploration drilling
<b>Sustainability Requirements</b>	Yes:	Complex works that will be procured through request for bids from the international and domestic market
<b>Contract Type</b>	Traditional	Traditional Type contract is adequate for the expected civil works.
<b>Pricing and costing mechanism</b>	Lump Sum or Schedule of Rates.	Lump Sum or Schedule of Rates
<b>Supplier Relationship</b>	Adversarial	To ensure that the contractors will execute the works as per specification, within the agreed contract price, in accordance with the required standards and on time.
<b>Price Adjustments</b>	Fixed Price	The contracts expected are to be executed in relatively short time.
<b>Form of Contract (Terms and Conditions)</b>	None Specific, Once off or Fixed term	May need to incorporate Environmental and Social requirements for working in protected areas.
<b>Selection Method</b>	Request for Bids (RFB)	Request for Bids are appropriate for complex works contracts.
<b>Selection Arrangement</b>	None	
<b>Market Approach</b>	Open /Limited National/International, Single Stage, One Envelope	Open National/International competition will be appropriate for the complex nature of the works.
<b>Pre / Post Qualification</b>	Post	
<b>Evaluation Selection Method</b>	Qualifying Criteria	The minimum requirements for qualification will be inserted in RFB documents taking into account the nature of the works to be executed.
<b>Evaluation of Costs</b>	Adjusted Bid Price	
<b>Domestic Preference</b>	No	
<b>Rated Criteria</b>	No	

*Table 7 - Procurement Approach for Consultancy Services*

<b>Attribute</b>	<b>Selected arrangement</b>	<b>Justification Summary</b>
<b>Specifications</b>	Performance	Consultancy Services to be procured will benefit from ability of firms to propose methodology and key staff to meet assignment objectives and qualified and experienced personnel in case of individual consultants.
<b>Sustainability Requirements</b>	Yes	To give firms additional points for using local key staff.
<b>Contract Type</b>	Traditional	
<b>Pricing and costing mechanism</b>	Lump Sum/Time Based	Lump Sum or Time Based will be determined as appropriate based on the nature of each consulting assignment
<b>Supplier Relationship</b>	Collaborative	Project Implementation Agencies and consultants must share interests and objectives. It is therefore expected that consultants and PIAs be in collaborative relationship to ensure the success of implementation
<b>Price Adjustments</b>	Fixed price/ Negotiated	Short term contract with no price adjustment. Contracts of over 18 months duration would include a price adjustment formula
<b>Form of Contract (Terms and Conditions)</b>	Non-Specific, Once off or Fixed term	
<b>Selection Arrangement</b>	None	
<b>Market Approach</b>	Open International, Open National, Multi-stage Two Envelope, Single envelope	Open International, Open National/regional approach will be used for most of consultancy contracts.
<b>Pre / Post Qualification</b>	Post-Qualification	
<b>Evaluation Selection Method</b>	Quality and Cost Based Selection (QCBS), Selection Based on Consultant Selection (CQS) Least Cost Selection Method [LCS] Individual Consultant (IC) Direct Selection (Firms/Individuals)	QCBS will be used for relatively large assignments (over US\$ 300,000) while LCS will be used for smaller contracts. Direct Selection will be used for identified assignments that are justifiable.
<b>Evaluation of Costs</b>	Adjusted proposal Price	
<b>Domestic Preference</b>	No	
<b>Rated Criteria</b>	Most Advantageous Proposal	



*Table 8 - Procurement Plan Thresholds for Prior Review, Procurement Approaches and Methods*

A. Goods, Works and Non-Consulting Services: Moderate Risk Project				
Category	Prior Review (USD millions)	Procurement Approaches and Methods (USD millions)		
		Open International	Open National	Request for Quotation (RfQ)
Works	≥ 10	≥ 20.0	< 20	≤ 0.2
Goods, IT, and non-consulting services	≥ 2	≥ 5.0	< 5.0	≤ 0.1
B. Consulting Services				
Category	Prior Review (USD millions)	Short List of National Consultants (USD million)		
		Consulting Services	Engineering and Construction Supervision	
Consultants (Firms)	≥ 1	≤ 0.3	≤ 0.3	
Individual Consultants (IC)	≥ 0.3	NA.	NA.	



## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

*Table 9 - Goods, Works, Consulting and Non-Consulting Services*

Type	Number	Description of Goods and Services	Estimated cost (USD)	Procurement/Selection method	Review by bank (post/prior)	Expected bid opening date
Goods	1	Equipment for undertaking various mobile gaseous measurements	50 000	Request for quotation	Post	Sep-21
Goods	2	Equipment for undertaking various static gaseous measurements	50 000	Request for quotation	Post	Sep-21
Goods	3	Equipment for undertaking various mobile soil and rock measurements	50 000	Request for quotation	Post	Sep-21
Goods	4	Equipment for undertaking various static soil and rock measurements	75 000	Request for quotation	Post	Sep-21
Goods	5	Equipment for undertaking various mobile ground and surface water measurements	7 500	Request for quotation	Post	Sep-21
Goods	6	Equipment for undertaking various static ground and surface water measurements	7 500	Request for quotation	Post	Sep-21
Goods	7	Equipment for undertaking various seismic and subsurface monitoring	750 000	Open national request for bids	Post	Sep-21
Goods	8	Equipment for various data collection and storage	5 000	Request for quotation	Post	Sep-21
Goods	9	Equipment for various data modelling activities	5 000	Request for quotation	Post	Sep-21
Works	10	Drilling activities for site characterisation and development	5 000 000	Limited bidding due to the existence of preferred services	Prior	Apr-22
Works	11	Drilling support activities for site characterisation and development	1 000 000	Limited bidding due to the existence of preferred services	Post	Apr-22
Works	12	Equipment for various FEED development	1 500 000	Open national request for bids	Post	Sep-22



## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

Type	Number	Description of Goods and Services	Estimated cost (USD)	Procurement/Selection method	Review by bank (post/prior)	Expected bid opening date
Works	13	Support for various FEED development	1 500 000	Open national request for bids	Post	Sep-22
Non-consulting services	14	Airborne site characterisation and surveys	3 500 000	Limited bidding due to the existence of preferred services	Prior	Sep-21
Non-consulting services	15	Ground-based site characterisation and surveys	1 000 000	Open national request for bids	Post	Sep-21
Non-consulting services	16	Air and surface monitoring surveys	1 250 000	Limited bidding due to the existence of preferred services	Post	Sep-21
Non-consulting services	17	Air and surface characterisation surveys	1 250 000	Limited bidding due to the existence of preferred services	Post	Sep-21
Consulting services	18	Environmental and social impact assessments	2 000 000	QCBS	Prior	Sep-21
Consulting services	19	Economic impact assessments	1 000 000	QCBS	Prior	Sep-21
Consulting services	20	FEED consultant support and services	1 000 000	QCBS	Prior	Sep-22
Consulting services	21	Visual media engagements and consultations	1 000 000	QCBS	Prior	Sep-21
Consulting services	22	Print media engagements and consultations	500 000	QCBS	Post	Sep-21
Consulting services	23	Support for media engagements and consultations	500 000	QCBS	Post	Sep-21



**Annex II: Eskom Re-Confirmation of Participation in CAPP**



Mr David Khoza  
Executive Manager: Applied Geoscience  
Council for Geoscience  
Private Bag X112  
PRETORIA  
0001

Dear Mr Khoza

**ESKOM'S PARTICIPATION IN THE WORLD BANK-FUNDED PRE-FEASIBILITY STUDY FOR THE CONSTRUCTION OF A SOUTH AFRICAN CARBON CAPTURE PILOT PLANT**

With reference to your e-mail dated 30 April 2021, in respect of the above matter.

Eskom has reviewed the request from the Council for Geoscience and would like to re-confirm its participation in the pre-feasibility study for the construction of a South African carbon capture pilot plant.

This approval is provided based on our understanding of our role and contribution to the project as outlined in the letter from SANEDI dated 09 October 2018. I can also re-confirm Eskom's acceptance to utilise Kusile Power Station as the reference site for the study.

Eskom will support the study by providing the necessary plant and site data to the project team, within the confines of the agreements we have with the various equipment suppliers and the National Key Points Act No. 102 of 1980.

The work being performed by the Council for Geoscience on carbon capture and sequestration is of national interest and could have a significant impact on the future energy mix of the country. Eskom is pleased to be afforded the opportunity to participate in this project and assist the Council for Geoscience in delivering on its mandate. Eskom remains committed to exploring sustainable means to reduce our environmental footprint.



## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa  
(P149521)

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To facilitate the interaction between our organisations during the execution of this project, Eskom has allocated Mr Naushaad Haripersad (Acting Senior Manager - Plant Performance and Optimisation) from our Research, Testing and Development Department as the primary Eskom liaison. Please contact him directly on 011 629 5650 to co-ordinate our joint efforts required to make this project a success.

Yours sincerely

  
André de Ruyter  
**GROUP CHIEF EXECUTIVE**  
Date: 3/6/21



### **Annex III: Implementation Arrangements**

The Council for Geoscience (CGS) has been determined by the Government of South Africa (GoSA) to be the implementing agency. CGS is responsible for the implementation of Components 1 and 2 of the Technical Assistance Project for the Development of Carbon Capture and Storage in South Africa (Project).

The responsibilities of the main parties to the project are outlined below:

**National Treasury (NT)** is the recipient of the grant from the World Bank Carbon Capture and Storage Trust Fund (CCS TF) to support implementation of the Project. NT has tasked CGS through a Subsidiary Agreement, to implement the Project

The **Department of Minerals and Energy (DMRE)** has been tasked by the recipient to oversee the Project on behalf of GoSA. DMRE is responsible for the policy, legal and regulatory aspects of Carbon Capture and Storage (CCS) in South Africa and has mandated CGS to investigate the technical aspects of the technology and its potential deployment. The Deputy Director General responsible for minerals and petroleum regulation will be the official in DMRE that will oversee the Project.

**Eskom** is the owner and operator of the Kusile coal-fired power plant which is the site for the prefeasibility study for the Carbon Dioxide Capture Pilot Project (CCPP). The Eskom lead for the CCPP activity will be the Senior Manager – Plant Performance and Optimization in the Research, Testing and Development Department.

**CGS** is the implementing agency for the Project. CGS is one of the National Science Councils of South Africa and is the legal successor of the Geological Survey of South Africa, which was formed in 1912 by the amalgamation of 3 former Surveys, the oldest of which - the Geological Commission of the Cape of Good Hope - was founded in 1895. The Geoscience Act, Act 100 of 1993, established the CGS in its present form. The Act was later amended in 2010 to establish the Geoscience Amendment Act (Act No. 16 of 2010).

As a scientific research council, the CGS is mandated to provide for the promotion of research and the extension of knowledge in the field of geoscience as well as the provision of specialized geoscientific services. The Council has a national footprint in the country, with the Head Office located in Silverton, Pretoria and various other Regional Offices located in Polokwane (Limpopo), Cape Town (Western Cape), Pietermaritzburg & Durban (Kwazulu Natal), Port Elizabeth (Eastern Cape) and Upington (Northern Cape). Today, the Council is a modern institution, boasting excellent facilities and expertise, ranking among the best in Africa. The CGS provides the following substantially different professional services:

- Geophysical Airborne and Ground Surveys,
- Geophysical data acquisition, processing and interpretation (Airborne and Ground),
- Engineering Geosciences (including Geotechnical Services),
- Mineral Resources Development including Mining and Minerals Services,
- Water Geoscience/Hydrological Services,
- Environmental Management and Rehabilitation,



## The World Bank

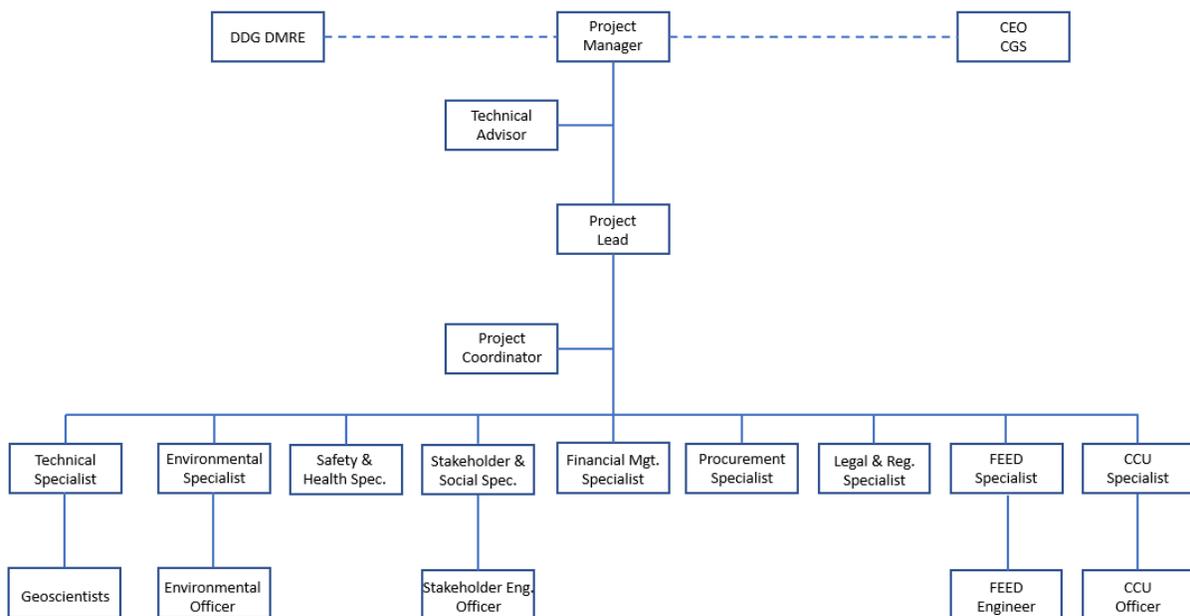
Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

- Marine Geology including Port Surveys,
- Spatial Data and GIS Services; and
- Regional Geological Surveys and Map compilations including Core Drilling Services

As the custodian of South Africa's geoscience data the Council for Geoscience has regional aeromagnetic, radiometric and gravity coverage of the country.

For day-to-day implementation of the Project, CGS has established a Project Implementation Unit (PIU) as depicted in Figure 1.

**Figure 1. Project Implementation Unit**





## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

### Annex IV: Govan Mbeki Municipality Letter of Support

SECUNDA  
P/Bag X1017  
SECUNDA, 2302  
RSA

Tel: +27 (0)17 620-6000  
Fax: +27 (0)17 634-8019  
E-mail: [gbrecords@govanmbeki.gov.za](mailto:gbrecords@govanmbeki.gov.za)  
Website: [www.govanmbeki.gov.za](http://www.govanmbeki.gov.za)



A Model City and Centre of Excellence

Chris Hani Street  
BETHAL, 2310  
TEL: +27 (0)17 624-3000  
FAX: +27 (0)17 647-5232  
LEANDRA OFFICE:  
307 Shaka Maseko Road  
Tel: +27 (0)17 683-0054  
Fax: +27 (0)17 683-0385

**Department of Planning and Development**  
**Tel (017) 620 – 6000 Fax (017) 634 8019**

**Your reference:**

**Our reference** 14/4/2/1  
Enquiries Mr M Fakude  
Tel 017 620 6034

**Mr Mosa Mabuza**  
Chief Executive Officer  
280 Pretoria Street  
Silverton  
Pretoria  
0001

**RE: SUPPORT OF THE DEVELOPMENT OF CARBON CAPTURE, UTILISATION AND STORAGE (CCUS) PILOT SITE IN SECUNDA, MPUMALANGA**

Dear Mr Mabuza,

The above subject bears reference.

I affirm that the Council for Geoscience ("CGS") is implementing the Carbon Capture, Utilisation and Storage (CCUS) research in Secunda, Mpumalanga as part of the "Just Transition" trajectory towards a low carbon economy. This programme is directly located to the Govan Mbeki Local Municipality's Strategic Objective 4 of its Integrated Development Plans (IDPs). In addition, the programme is in the context of the South African Government's commitment to reduce its carbon dioxide emissions and climate change mitigation & adaptation in relation to the Kyoto Protocol and the Paris Convention.

Other Satellite Offices: **Kinross:** 27 Voortrekker Street, Tel: (017) 687 1155. **Trichardt:** 5 Bekker Street, Tel: (017) 638 0600  
**Evander:** 13 Lisbon Street, Tel: (017) 6206300. **Embalenhle:** Stand 3868 Lindile Nkweni Drive, Tel: (017) 685 4212;  
**Lebohang:** 3265x 10 Butana Nkambule Road, Tel: (017) 638 3000; **eMzini:** 1<sup>st</sup> Street, Tel: (017) 647 3741



## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa  
(P149521)

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I further confirm that CGS has held numerous consultative engagements with different stakeholders in Mpumalanga including Govan Mbeki Local Municipality structures in order to solicit support for the development of the CCUS research project in Secunda. To this end, the CGS has identified a State Land site located in the Leandra region that is administered by the Municipality. During the discussions, the CGS requested access to the site to initiate the pilot studies within the Govan Mbeki Local Municipality. The Govan Mbeki Local Municipality confirms its commitment and support to the research efforts regarding the CCUS programme. The proposed area is on state land and will assist the CGS in securing the land for research purposes. This process will be completed by May 2021

In light of the above, both parties, the CGS and Govan Mbeki Municipality, are exploring modalities to formalise an agreement for the delineated land in **Goedehoop 308/2** for the development of the research project amongst other things.

Hope you find the above to be in order

Yours Sincerely,

Mr ME Michele  
Acting Municipal Manager  
Govan Mbeki Local Municipality

22/04/2021  
Date

CC: Mr Mxolisi Fakude  
Land Use, Planning and Local Economic Development  
Email: [mxolisi.f@govanmbeki.gov.za](mailto:mxolisi.f@govanmbeki.gov.za)  
Contact: 073939 2882



## **Annex V: Financial Management and Disbursement Arrangements**

1. The overall responsibility for financial management matters for the project rests with the Project and job-costing accountant (P&JCA) under the guidance of the CFO. The finance division is adequately resourced to ensure sufficient capacity to financially manage the project. The project will use the CGS's policies and procedures to ensure that funds of the project will be utilized for purposes intended. The project will use the CGS's independent internal audit capacity where applicable to provide the necessary assurance as required. The CGS's internal audit function uses a risk based approach and will apply this objectively when required.
2. **Budgeting.** The budget preparation for the project will be done by the P&JCA. An approved budget is uploaded onto SAGE 300 (financial system) which will enable the Council to process revenue (disbursements received) and expenditure incurred against the project. Expenses are approved in accordance with policies and procedures of the CGS before they are processed. The internal control procedures prevent any further expenditure processing if the budgeted amounts are exhausted. Monitoring of the budget and variance reports are produced quarterly and project expenditure reports are produced weekly.
3. **Accounting.** CGS's system, SAGE 300 is able to produce necessary reports required to manage and monitor the financial operations. The system is also flexible to create specific project accounts for recording and reporting on project expenditures. The P&JCA will be responsible for accounting and reporting on the project operations. The system is largely automated only certain input is manual. Access to the system is restricted to authorized personnel only. Separate general ledger accounts or cost centers will be available to manage the recording of transactions specific to the project.
4. **Financial Reporting.** CGS will produce the required reports as per templates provided to manage and to monitor the project on regular basis and when required. Quarterly management accounts (QMA/IFR) will be produced on a quarterly basis. The contents of these reports will consist of financial reports, including statements of : (i) sources and uses of funds, (ii) uses of funds by project components and activities, (iii) Designated accounts Activity Statements, and (iv) statements of contracts subject to/ and not subject to the Bank's prior review. The reports will be submitted to the Bank 45 days after the end of each quarter.
5. **Funds Flow and Disbursement Arrangements.** Funds will flow from the World Bank to the Designated Account (DA) opened and managed by CGS at the commercial bank. Funds in the DA will only be used to finance World Bank-supported eligible activities under the project components. There is adequate assurance that the funds will be ring fenced for the project use. Approval of the operating the Bank account has been obtained from National Treasury (NT). Disbursement of the funds will be completed based on quarterly interim unaudited financial reports (IFRs/QMA). These reports will include the reports and statements stated in paragraph 28 above.
6. An advance will be made to the Designated Account at the effectiveness of the grant and the request of the Recipient. The advance will be meant to cover project expenditures for 6 months as indicated in the initial six-month cash flow forecast. After every subsequent quarter, the project will submit QMAs, which will include a cash flow forecast for the following 6-month period. The cash request at the reporting date will be the amount required for the forecast period as shown in the approved QMA less the balance in the Designated Account at the end of the quarter.



## The World Bank

Technical Assistance Project for the Development Carbon Capture and Storage in the Republic of South Africa (P149521)

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7. Withdrawal applications for disbursement of funds for direct large payments is an option available from the grantor directly. Withdrawal applications for such payments will be accompanied by relevant supporting documents such as copies of the contract, contractors' invoices and appropriate certifications.

8. **Auditing.** The project financial statements will be audited annually in accordance with International Standards on Auditing as promulgated by the International Federation of Accountants (IFAC). The audit report for the project specific activities will be submitted to the Bank within 6 months after the financial year-end 31 March. It will disclose the information on activities financed by the grant. A detailed management letter containing the auditor's assessment of the internal controls, accounting system and compliance with financial covenants in the Grant Agreement, suggestions for improvement, and management response to the letter will be submitted to the Bank together with the audited financial statements. The Audit - Terms of Reference (TORs) will be developed, agreed between the CGS and prospective auditors, and cleared by the Bank prior to signing of the Grant-Agreement, to ensure adequacy of the scope of the audit.