

## REQUEST FOR EXPRESSIONS OF INTEREST



**AFRICAN DEVELOPMENT BANK**  
**Immeuble CCIA, Abidjan, Côte d'Ivoire**  
**African Natural Resources Centre**

**E-mail:** [A.DAGRI-POKOU@AFDB.ORG](mailto:A.DAGRI-POKOU@AFDB.ORG) **Telephone:** +225 0777307733

**Department:** AFRICAN NATURAL RESOURCES MANAGEMENT AND INVESTMENT CENTRE

**Position:** Individual Consultant

**Location:** Home based work

**Duration:** 80 Man days delivered in Five (5) Months

**Start date:** March 1, 2023

**Submission Deadline:** 10<sup>th</sup> Febraury, 2023

**Applications to be submitted to:**

EVE DONATIENNE DAGRI-POKOU ([A.DAGRI-POKOU@AFDB.ORG](mailto:A.DAGRI-POKOU@AFDB.ORG)) With a copy to:  
ERIC BALOGU [J.AHADJIE@AFDB.ORG](mailto:J.AHADJIE@AFDB.ORG); [E.BALOGU@AFDB.ORG](mailto:E.BALOGU@AFDB.ORG)

Any questions and requests for clarifications may be sent to:  
EVE DONATIENNE DAGRI-POKOU.

**E-mail:** [A.DAGRI-POKOU@AFDB.ORG](mailto:A.DAGRI-POKOU@AFDB.ORG); [J.AHADJIE@AFDB.ORG](mailto:J.AHADJIE@AFDB.ORG)

## TERMS OF REFERENCE

### CONSULTANCY SERVICES FOR DEVELOPMENT OF AN AFRICAN GREEN MINERALS STRATEGY

#### 1. Introduction

The African Development Bank established the African Natural Resources Management and Investment Centre (ANRC) to support Regional Member Countries (RMCs) to maximize development outcomes from their natural resources. The scope of the Centre combines renewable (water, forestry, land and fisheries) and non-renewable resources (oil, gas and minerals). The ANRC's desired outcomes are better stewardship of African natural resources through good governance, containment of adverse social and environmental impacts, enhancement of linkages with domestic economies and equitable resources access. To achieve this, the Centre advises the Bank's RMCs on selected aspects of natural resource management, to enable them maximise the social and economic value obtainable from the exploitation of natural resources.

#### 2. Context

Climate change induced by carbon emissions from the use of fossil fuels has been recognized as a major threat to the earth and livelihoods, and consequently low carbon energy technologies which use minerals classified as critical or strategic are on the rise as alternatives. Over the past decade, the world has witnessed a series of agreements under the United Nations Framework Convention on Climate Change (UNFCCC) on how to reduce greenhouse gases (GHG) and their impact on climate change. The recent 2019 United Nations (UN) Climate Action Summit advocated for further climate action to reduce GHG emissions to prevent the mean global temperature from rising by more than 1.5°C above pre-industrial levels. Achieving this goal calls for a global resolve to embark on development patterns that would significantly be less GHG intensive. By inference, a carbon-constrained future would be characterized by a decline in non-renewable resource development and use. In the current technological development, the alternatives to drive this future are energy storage facilities for energy harnessed from renewable (wind and solar) sources, and electric vehicles (EV) substituting fossil fuel powered Internal Combustion Engines (ICE).

Minerals and metals that are expected to see heightened demand during the energy transition include cobalt, copper, lithium, manganese, graphite, nickel, aluminium, steel, zinc, phosphate and rare earth elements. These minerals are also often referred to as the green minerals. It is estimated that in the most significant scenario of electric storage batteries use, the demand for aluminium, cobalt, iron, lithium, manganese, and nickel will increase significantly to prevent the mean global temperature from rising by more than 1.5°C. Thus, the demand for these minerals is growing strongly and supply is becoming a strategic issue for many countries and continents. This requires innovation to significantly improve the security of supply chains for minerals and materials and facilitate the deployment of clean energy technologies that are essential in addressing the existential threat of climate change.

Africa hosts significant volumes of these strategic/green minerals. According to the United States Geological Survey (USGS) data on global mineral reserves, Africa hosts: Cobalt (52.4%), Bauxite for aluminium production (24.7%); Graphite (21.2%), Manganese (46%) and Vanadium (16%). Undoubtedly, Africa will be the driving force behind the cobalt value chain. There are also significant lithium deposits in the greenstone belts in Zimbabwe, DRC, Ghana and Mali. Globally, the demand for these minerals for the low-carbon energy transition will boost mining activities in resource-rich African countries.

The need for broader energy storage cannot be overemphasized, however battery demand from electric vehicles is expected to increase more than nine times between 2020 and 2030. Thus, the growth of battery demand both within the continent and elsewhere could represent an opportunity for developing the critical mineral value chains in Africa

based on the abundant mineral resources for renewable energy generation, battery storage technologies and Electric Vehicles. However, having the raw materials is not the only criteria for a successful development of clean energy technologies and battery manufacturing value chains. For example, the DRC is already supplying 70% of the world's cobalt, but the reigns of the value chain still lie in the hands of other countries. Although China mines no cobalt, China currently controls 85% of the production capacity of refined cobalt sulphate, a high economic value product used in the production of batteries. Thus, besides the abundance of minerals, Africa will need critical infrastructure, investment and skills to leverage the required technology to harness opportunities for the low carbon future. In fact, Africa needs a broader strategy for the development of these minerals. Other Continents like the European Union and countries (Canada, Australia, USA) have developed strategies for optimal development of the value chain to cater for their needs.

In addition to the increase in demand caused by the transition to a low-carbon economy, the world is currently in the midst of an upheaval unequalled since 1945. The COVID-19 pandemic has weakened the entire global economy, particularly by breaking supply chains. Thus, several regional economic blocs and nations are putting in place plans for domestic development of renewable technologies and energy storage systems. This is an opportunity to build a greener and more prosperous world and Africa must not miss it.

It is within this context that the AfDB and its Partners seek to recruit an Individual Consultant to assist in developing an African Green Minerals Strategy (AGREMS).

### **3.0 Study Rationale**

In line with the global objective of transition to green growth, some critical minerals will be needed and these minerals are abundant in Africa. It is therefore important to develop strategies based on the continental mining framework (the Africa Mining Vision) and other contemporary frameworks to underpin mineral based industrialisation in Africa.

The Africa Mining Vision (AMV) and the International Study Group (ISG) report on Minerals for Africa's Development have set pathways to an enhanced contribution of the extractive sector to Africa's sustainable development hinged on the aspirational objectives of transparent, optimal and equitable exploitation of mineral resources. Increasingly, stakeholders recognize the validity of the AMV and the ISG report as effective frameworks for designing resilient, competitive and well-linked African mining sector, breaking away from the enclave model prevailing in many mining jurisdictions on the continent. However, despite some accomplishments, more needs to be done to realize the proposed transformational goals. The current COVID-19 pandemic is also having an impact on the global minerals sector with significant implications for the AMV. These developments require analyses to determine strategic tools for implementation for achievement of the AMV set objectives.

At the sectoral level, the current African Commodities Strategy broadly covers agriculture, energy and minerals. The strategy lays out a vision for commodity-led industrialization: to use commodities as a driver for achieving the structural socio-economic transformation of Africa. However, this strategy does not give prominence to the twin transition (climate change & low carbon future and the digital economy). In effect, the opportunities provided by these global trends would not be efficiently harnessed and associated challenges will also not be sufficiently addressed using the existing framework.

This calls for the development of a deliberate strategic framework to guide how Africa positions itself to take advantage of the opportunities provided by the new global trends, whilst addressing the related challenges. There is no doubt that Lithium-ion Batteries (LIBs) are a key solution to the low carbon future due to their advantages over other types of rechargeable batteries. However, the main concern has been whether the current demand for LIBs is for the long haul to ensure the relevance of the LIB metals. Another challenge is the rapidly evolving battery

technology where researchers are finding alternatives for lithium and cobalt. Analysts predict demand is expected to soar but prices are likely to stabilise at some point as more mines are developed to meet that demand. In 100% zero emission vehicles (ZEV), the demand is expected to rise by almost 3,000% for lithium and almost 2,000% for cobalt.

Currently, battery cell and component manufacturing are largely confined to Asia. As new markets for electric vehicles (EVs) grow, manufacturing will also move to these locations. Demand for high-purity battery-grade lithium chemicals is expected to reach 700,000 metric tons by 2025, and 1.6 million metric tons lithium carbonate equivalent (LCE) by 2030. Considering the fact that Africa lies central to the major consumers of LIB, this presents an opportunity for Africa. Unfortunately, based on data tracked by BloombergNEF, there are currently no battery manufacturing plants under development or commissioned in Africa. It will therefore be important for Africa to identify ways of localizing parts of the battery and electric vehicle supply chain.

Aside battery minerals, Rare-earth elements (REE), such as neodymium, dysprosium and praseodymium, are key ingredients of permanent magnets (powerful magnets that do not lose their magnetic fields), used in high-performance wind turbines and electric motors. Global wind power capacity additions are expected at an annual average of 77GW from 2020 to 2029, according to Wood Mackenzie. This represents a growth of 112% in global installed capacity from 2019 to 2029. In terms of REE consumption, this equates to an average increase in global REE consumption of 15,400 metric tonnes per year in wind turbines alone, a clear indication of robust growth in the global REE market. Africa's REE potential is mainly found in Burundi, Malawi and South Africa. However, there are also existing projects in several African countries that have delineated some significant resources. These countries include Tanzania, Zambia, Namibia, Kenya, Madagascar and Mozambique.

As captured earlier, Africa has significant reserves of the identified global green minerals. The missing gap is the absence of a coherent and smart strategy to guide development of the critical mineral value chains to take advantage of the opportunities to manufacture products for green energy generation, battery energy storage systems, EVs among others. A coherent and robust African Green Minerals Strategy and a related Action Plan is therefore needed for implementation to guide Africa's vision of leveraging her green mineral resources for socio-economic development. The Green Minerals Strategy will capitalize on the opportunities offered by the AfCFTA to promote regional markets for mineral resources through supporting development of regional value and supply chains, regional labour market and regional infrastructure.

#### **4.0 Objectives**

The main objective is to develop a coherent strategy for optimizing opportunities presented by the new global issues (climate change, energy transition & low carbon future and the digital economy) using Africa's green minerals as feedstock for green energy technologies. Subsidiary objectives include creating conditions needed to grow this emerging sector by supporting innovation, attracting new investment and promoting marketing opportunities.

#### **Guiding Questions**

The following questions will guide development of the Strategy:

- Definition of green minerals within the context of critical minerals for the energy transition
- What green mineral resources does Africa need to implement the low carbon energy transition and the climate change agenda within the context of AfDBs Climate Change, Green Growth and other continental frameworks?
- What value chains or developmental opportunities are associated with the green minerals identified within the context of the rapidly evolving battery technology landscape?

- What practical ways should be adopted by stakeholders to align production technologies and consumption patterns to promote environmental sustainability and maximise resource use efficiency?
- How can Africa position itself in terms of infrastructure and financing to take advantage of the opportunities presented by the energy transition, the AfCFTA among others?
- Are the industrial, trade, technologies, and capacity factors favorable to enhance growth of this new industry? How can they be improved?

## 5.0 Scope

In accordance with the goal of the AMV, there is the need to mainstream the AMV school of thought on mineral resources' management at national and regional levels. Thus, this should inform the strategy design and action plan. **The strategy should explicitly define what success will look like among others.** Find below key thematic areas for guidance based on the pillars defined in the approach paper among others:

1. Advancing Mineral Development by increasing geological knowledge, conducting feasibility studies to attract investment, establishing infrastructure for an enabling environment and aligning mineral resource management with the African Mining Vision.
  - Contextualize Africa's competitive advantages including green mineral resources
  - Propose ways to improve knowledge of Africa's green minerals through exploration, research & development and innovation;
  - Propose ways of improving multi-user strategic infrastructure that will facilitate access to the critical mineral resources on the continent.
  - Cross-border sharing of geological information to develop a regional picture of the mineral potential. Etc.
2. Developing People and Technological Capability by identifying skills needed to capitalise on opportunities and the building the institutions to generate them.
  - Identify skill gaps along the critical minerals value chains and propose ways to build capacity of Africa's youth at all stages.
  - Put special emphasis on how youth and women can enhance opportunities in the sector.
  - Categorise the skills development approach in terms of short-, medium- and long-term targets.
  - Identify how to create appropriate environment for technology acquisition
3. Building Key Value-Chains to achieve resource-based industrialisation and access wider regional and continental markets through the African Continental Free Trade Area (AfCFTA). The case is made for the establishment of battery and electric vehicles value chains, starting with two and three wheeled vehicles and commuter busses.
  - Analyse issues affecting industrialization in Africa in terms of challenges and opportunities
  - Identify barriers and opportunities at all stages of the green minerals value chain and propose ways to deal with them;
  - Conduct an in-depth Regional (SADC, ECOWAS, ECCAS, EAC, etc.) value Chain mapping and analysis for the African Green Minerals within the context of the AfCFTA;
  - Examine and propose ways of manufacturing battery components in Africa for EVs. This should include access to finance and investment attraction;
  - Propose ways of staying ahead/abreast with the changing battery chemistries that may render some minerals non-strategic.
4. Mineral Stewardship to responsibly guide the environmental, social and governance aspects of green minerals together with material reuse and recycling.
  - Environmental impacts of green minerals extraction: How can a regional approach address the challenges;

- Recycling and the circular economy covering, end of life lithium ion battery management and extracting REEs from magnets.

### 5. Recommendations and Action Plan with Short, Medium and Long Term activities to ensure optimization of the critical minerals value chains.

- Enablers for Strategy Implementation
- Implementation Framework (Action Plan)

### 6. Approach and Research Methodology

- This will largely be a desk-based activity with virtual interviews of key stakeholders. Focused discussions will be held with key institutions within and outside the continent dealing with extractives, especially green minerals<sup>1</sup> for the low carbon future and green technologies.
  - This will consist of (i) a rigorous and concise review and evaluation of secondary data to be acquired by the Consultant on green mineral resources, regional and global context, challenges and opportunities as they relate to the extractive sector (ii) Discussions with staff of Bank and Partner institutions, as appropriate.

A pre-assignment meeting with the consultant is planned to agree on the methodology, format and content of the final draft strategy.

### 7.0 Timelines

The assignment will be conducted for 80-man days within five (5) months.

Activity	Deliverables	Timeline
Preparation of inception report	Report explaining understanding of the TOR and proposed methodology	2 weeks after contract signature
Meeting for validation of the inception report	Brief report on key agreed issues, draft strategy outline	3 weeks after contract signature
Preparation of draft Strategy	First Draft Strategy covering the entire scope of the study	10 weeks after contract signature
Review of the draft report	Observations, comments and recommendations from reviewers	12 weeks after contract signature
Second Draft Strategy	Second draft strategy addressing comments	15 weeks after contract signature
Virtual Review Workshop by key Partners	Observations, comments and recommendations from Partners	17 weeks after contract signature
Draft Final Strategy	Submission of Draft Final Strategy	20 weeks after contract signature

### 8. Deliverables

- Inception report detailing the Consultants understanding of the assignment.
- First Draft of African Green Minerals Strategy
- Second Draft of African Green Minerals Strategy
- Final Draft of Strategy

<sup>1</sup> Mainly cobalt, lithium, graphite, copper aluminium, nickel, iron ore, bauxite, phosphate, manganese, zinc, vanadium and the REEs.

- All reports shall be written in English and submitted in electronic versions (word, excel for data analysed and PDF).

## 9. Consultant Requirement

The consultant must meet the following criteria:

- Minimum of a Master’s degree in Mineral Economics and Policy, Geosciences, Mineral Related Engineering, Strategy or other disciplines related to Natural Resource Management. A PhD is an advantage;
- At least 15 years’ Experience in mining/minerals policy, regulatory and promotion, mining fiscal frameworks, mineral value-chains, regional industrial development, spatial development, mining/beneficiation investment, mineral strategy development;
- A strong publication record on mineral resources management and related disciplines in international peer reviewed journals and other peer reviewed publications;
- In-depth knowledge and experience working on mineral resources development issues, preferably in the African region. Knowledge of Continental and ECOWAS regional & industrial development agenda, African Mining Vision;
- Experience in conducting value chain analysis and designing industrial policies in Africa;
- At least two focused projects/studies in battery minerals (Lithium, Cobalt, Manganese, Nickel, Graphite etc.);
- Demonstrated knowledge of Africa’s regional integration frameworks and the Africa Continental Free Trade Area (AfCFTA) processes;
- Excellent knowledge of continental and national critical mineral strategies;
- Excellent written and oral English or French. Knowledge of the other is an advantage.

## 10. Consultant Selection Criteria

The Consultant will be selected in accordance with the African Development Bank’s Implementation Manual relating to the Procedures for Acquisition of Consulting Services funded by the Administrative or Capital Expenditure Budget of the Bank Group. The consultant shall be evaluated based on the following criteria:

<b>CRITERIA</b>	<b>Marks (%)</b>
General qualifications and adequacy for the proposed assignment	30
Similar experience in the area of expertise of the assignment as described in the Terms of Reference and understanding the terms of reference (Brief Proposal to the TOR is required)	50
Experience with the Bank or other international donors	10
Knowledge of the Region (environment of the Assignment)	5
Language capacity (Excellent technical writing in English, French or both)	5
<b>TOTAL</b>	<b>100</b>

*Only candidates earning 70% and above will be shortlisted.*

Applicants are to submit a cover letter, resume, copies of academic certificates. Appendix 1 gives a template for submission of CVs.

## 11.0 Service Conditions

The African Development Bank conditions for retaining short-term consultants will apply.

**Appendix 1:**

**Please attach an updated Curriculum Vitae on the basis of the template below:**

***MODEL CURRICULUM VITAE (CV)***

Title of the Assignment:

Department:

Surname:

Birth Date:

Address:

Telephone:

First Name:

Nationality:

Country:

E-mail:

<b>Are any of your family members (spouse/partner, father/mother, Brother/sister, Son/daughter, etc. employed in the African Development Bank?</b>			Yes <input type="checkbox"/> No <input type="checkbox"/> If « Yes », the following data must be provided
Name	Relationship	Organisation Unit	Place of Assignment

Language Level	Read	Written	Spoken
English	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent
French	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent
Other (specify)	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent	<input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Excellent

**Key Qualifications:**

Please provide (i) a summary of your experience and training highlighting the most relevant for the proposed assignment, and (ii) the responsibilities which you exercised. Utilise one half-page maximum.

**Education (University Level and above only):**

Name of University - City - Country	Period		Diploma Obtained	Main Topic / Major
	From	To		

**Professional Training:**



Name of Training Institution- City - Country	Type of Training	Period		Certificates or Diploma Obtained
		From	To	

**Employment Record:**

Begin with your most recent employment. For each job since your Master’s Degree achievement, please indicate:

- Name of the Employer
- Type of Activity/Business of the Employer
- Title / Function
- Place of Employment
- Brief Description (three lines maximum) of main accomplishments and responsibilities

**Reference:**

Please indicate the name and address of three persons with no family relationship with yourself, familiar with your character and titles.

I hereby certify that the responses which I provided above are all, to the best of my knowledge, true, complete and accurate. I acknowledge that an inaccurate statement or essential omission in a personal declaration or another document required by the African Development Bank might result in the rejection of my application, termination of my Contract or any other administrative sanction by the Bank. The African Development Bank may verify any statements which I made in this application.

Date: \_\_\_\_\_

*Signature:*