

FEDERAL REPUBLIC OF NIGERIA
MINISTRY OF MINES AND STEEL DEVELOPMENT (MMSD)
MINERAL SECTOR SUPPORT FOR ECONOMIC DIVERSIFICATION
PROJECT (MinDiver)

Terms of reference
for the engagement of a consultant to support the MMSD in
developing and implementing a strategy to revive the tin industry and
also develop the barite industry in Nigeria

1 INTRODUCTION

- a. The Federal Government of Nigeria has obtained a credit from the International Development Association (IDA) to fund the Mineral Sector Support for Economic Diversification (MinDiver) Project. The project has the following development objectives:
- b. To improve the attractiveness of the Nigerian Mining sector, as a driver for economic diversification, for long-term private sector investment in the exploration and production of minerals.
- c. To create a globally competitive sector capable of contributing to wealth creation, providing jobs and advancing our social and human security.

2 BACKGROUND

The Federal Government of Nigeria has embarked on an economic diversification campaign with the aim of leveraging on the Nation's vast natural resources to diversify the economy from the oil and gas sector to achieve economic emancipation.

The sector's growth and contributions to GDP have remained less than ideal, accounting for only about 0.33% in 2015. To address this, the Ministry of Mines and Steel Development (MMSD) recently developed a roadmap for mining growth and development with objectives to deepen sector reforms, attract new investors and collaborate with a wide network of partners and stakeholders to rejuvenate the sector and build a prosperous economy propelled by inflows from the solid minerals sector. The overall objective of the MinDiver Project is to link with the Roadmap and enhance the mining sector's contribution to the economy by strengthening key government institutions, improving information infrastructure and knowledge, and fostering domestic investment in the sector. The Project consists of the following parts:

Part A. Establishing a Strong Foundation for Mining Sector Development

1. Carrying out of a program of activities designed to strengthen the MMSD's capacity for governance and administration of the mining sector;
2. Carrying out of a program of activities designed to strengthen the Nigerian Geological Survey Agency as well as geological knowledge and information infrastructure for the mining sector,
3. Implementing a program of activities designed to strengthen the Recipient's capacity for management of environmental, health and social impacts in the sector

Part B. Facilitating Downstream Sector Development and Enhancing Competitiveness

1. Strengthening administration of the artisanal and small-scale mining sub-sector,
2. Implementing a program of activities designed to leverage the mineral sector for regional development
3. Implementing a program of activities designed to enhance value addition to mineral products (including upstream development of industrial minerals and dimension stones domain) in the mining sector,
4. Implementing a program of activities designed to advance proof-of-concept investments and to attract private sector investments

Part C. Project Management and Coordination

1. Strengthening the capacity of the MMSD for implementation, supervision and management of the Project through the provision of goods, consulting services, non-consulting services, operating costs and training for the purpose.
2. Supporting quality control of Project activities and outputs as well as monitoring and evaluation of Project outputs and results.

The key results of the project will include:

- i. Increased availability of precompetitive geo-science data enhancing mineral transactions;
- ii. Institutional information systems integrated with multi-sector planning tools;
- iii. Incentives created for Artisanal and Small-Scale Mining (ASM) formalization;
- iv. Improved environmental and social compliance by mining industry operators

3 CONTEXT

Currently, the government's new strategic outlook outlined in the roadmap is to grow the contribution of mining to the economy of Nigeria from 0.33% in 2015 to 3% in 2025 equivalent to circa \$27bn. This growth is to be achieved through attracting more private investors into the market while ensuring that the extraction of Nigeria's finite

mineral resources maximizes value and developmental impact for Nigeria's people. This growth is targeted to result in significant benefits to Nigeria and Nigerians in the following ways: (i) direct employment indirect employment, induced employment; (ii) increased revenues to the government through taxes and exports; (iii) growth of domestic mining market (e.g. mining, processing, sales); (iv) growth of mining support sectors (e.g. Power, transportation); (v) growth of non-mining sectors.

3.1 Tin Mining in Nigeria

Tin mining on the Jos Plateau began in 1904 following the discovery of rich alluvial cassiterite deposits in the region. Tin mineralisation in Nigeria are of two types, namely (a) alluvial and eluvial placers; and (b) pegmatites containing cassiterite and coltan, particularly in the southwest of the country. There are also known hard rock tin deposit in Nigeria of economic significance, in which tin is associated with zinc in the Ririawi ring complex, where the high-level, unusually vertical zone of tin-zinc-bearing greisen is well defined. The tin mining operations also produce minor amounts of by-product columbite (60-64.5% niobium oxide), monazite (55-60% rare earths + thorium) and zircon.

Mining operations of the tin deposits in the region were carried out by foreign companies, which were mostly British owned. The production of tin in Jos Plateau in the colonial era started with about 1.5 metric tonnes in 1914 and then began to increase until peak production of 17,740 metric tonnes was reached in 1943 (when Nigeria became the 6th world producer). Tin mining was a significant driver of industrialisation and economic development in Nigeria as it was mined and processed on a large scale. It led to the establishment of the first privately owned power plant in Nigeria as well as the Makeri Smelting Company, all in Jos. However, production declined following the exit of the foreign investors from the sector in response to the factors that led to the Nigerian tin and mining industry decline. Primarily these included the commercial discovery of oil in Nigeria, the behaviour of the global market for tin, as well as the government's nationalisation policy.

Following the promulgation of the indigenisation decree, five¹ British mining companies that had operated in Nigeria for decades consolidated their operations, including assets and liabilities, into a single entity, Consolidated Tin Mines (CTM), in

(i) ¹ Amalgamated Tin Mines of Nigeria, Ltd; (ii) Bisichi-Jantar Nigeria Ltd; (iii) Gold and Base Metal Mines of Nigeria, Ltd; (iv) Ex-lands Nigeria, Ltd; and (v) Kaduna Prospectors of Nigeria, Ltd.

1988. Its functions include prospecting, mining, and processing of tin ore, columbite, and associated minerals. CTM is said to have had 600 mining leases at one time although a substantial number have been cancelled and/or reissued. These are located within a 50km radius of the Bukuru head office and mineral dressing facilities throughout the tin-prospective district from the Benue River on the southern border of Nassarawa State, to the northern states of Bauchi, Kaduna, and Kano. CTM inherited a large and comprehensive exploration database from its precursor companies that led to the definition of Banka-drill defined “reserves” of some 30,000 tonnes of cassiterite.

The company is very under-capitalised, so it is virtually moribund. It has a wholly owned subsidiary called Minesfield Engineering, Ltd. to repair and fabricate spares for the mining industry and other organizations. It also has a mineral dressing “tin shed”, for dressing and cleaning up the alluvial tin concentrates derived from mining operations and a mineral processing facility that enables CTM to produce cassiterite concentrates (tin oxide, SnO₂) assaying 72.5% to 74% tin metal (cf., pure cassiterite: 74% metallic tin). NMC also holds a 15% shareholding in Makeri, which operated some small-scale tin and lead smelters in Jos.

Tin mining has witnessed a recent resurgence in Nigeria, which has been linked to significant depreciation of the Nigerian Naira relative to the US dollar. Exports have been on the rise since 2016 and possibly leading Nigeria to becoming the largest tin producing country in Africa if production is sustained. Apart from CTM, there are several other privately-owned tin mines that are operational in Nigeria as well as a large number of informal operators and few small-scale mining operators mostly in Plateau and Nassarawa States.

A key ambition of the government is for Nigeria to recover lost ground from over 3 decades of commercial inactivity in its mining industry. It has identified tin as the commodity that can provide maximum value and developmental impact for Nigeria and help to accelerate its return to the global mining market. Despite the proliferation of artisanal miners in tin mining, the deposits are still rich and vast. This has attracted investments from a few private companies who are currently involved in exploration and production. In reviving the industry, the emphasis will be to build a strong ecosystem of small, medium, and large-scale private sector operators across the entire tin industry value chain. Equally, more emphasis will be given to capture lateral economic linkages from the industry to meet domestic manufacturing and industrial needs for production input. All these will be achieved through a cluster approach that

will integrate geology-mining-mineral processing-smelter and downstream manufacturing industries and export activities together.

3.2 Barite Industry in Nigeria

One of the key ambitions of the Nigerian government is to boost the local economy through the utilisation of domestic minerals. The MMSD Roadmap for Industrial Minerals developed in 2018 identified three flagship initiatives to achieve transformative results in the industrial minerals sector and to further deepen the linkages with the three strategic pathways that steer the sector development. Barite is among the minerals identified as the commodity that can provide value and developmental impact for Nigeria and help to accelerate utilisation of domestic minerals. The commodity is used extensively in Nigeria as a weighting agent for drilling fluids in the Oil and Gas exploration to suppress high pressures and prevent blowouts. It is also used in other wide variety of applications including plastics, clutch pads, radiation shielding, manufacture of paper and rubber, etc. Whilst barite accounts for only 3.6% of Nigeria's mineral imports in value, it is used domestically, but only covers 30% of the country needs. Baryte is classified as a priority mineral in the Nigeria Mining Growth Roadmap. Priority minerals are considered critical for Nigeria's domestic industrialisation and infrastructure requirements. The use of barite in the oil and gas industry justifies this classification.

The main source of barite mineralisation in Nigeria lies across eight states in the north and south-east of the country: Nasarawa, Plateau, Taraba, Adamawa, Benue, Cross River, Ebonyi and Gombe. Mineralisation is associated with the Benue Trough, a Cretaceous sedimentary basin, formed in an elongated rift approximately 1,000km long and 50-150km wide. Discordant, vein type of occurrence is the most common barite occurrence, and the veins occur in swarms ranging in width from 20cm to 6m. There are thought to be more than 200 barite sites that have been or are being worked in the Benue Trough, and barite quality varies widely

The MMSD has engaged an Individual Consultant to assist MMSD in the formulation of a strategy for the development of Barite Industry in Nigeria and has:

- i. Prepared baseline data and designed a simple model in conformity with standards for the sustainable barite development;
- ii. Developed frameworks that will promote optimal production and patronage of locally produced barite;

- iii. Identified some indigenous barite mining and milling companies that can be nurtured along the path of management and growth to produce the quantity and quality barite needed in the Oil and Gas sector.

This assignment will build on the work conducted by the Individual Consultant and the resulting strategy as set out, for implementation.

4 OBJECTIVES

The primary objective of this proof-of-concept advisory work is to advise and assist the Ministry of Mines and Steel Development (MMSD) to:

- 4.1 Prepare and implement a detailed strategy to revive the tin industry in Nigeria to have a competitive and sustainable supply chain and market for tin through a strong focus on the following:
 - a. Upstream and downstream integration.
 - b. Clusters of geology-mining-mineral processing-smelter and downstream manufacturing industries.
- 4.2 Develop the Barite industry in Nigeria through a strong focus on the following:
 - a. Upstream and downstream development of the selected indigenous Nigerian barite mining and milling companies;
 - b. Examine the selected indigenous barite mining and milling companies that can be nurtured;
 - c. Assist in implementing a programme that should consider a range of support mechanisms to the selected companies, including on-site business advice, professional services assistance, and connections with strategic partners and mentoring to produce successful and financially viable firms that can survive on their own and adequately supply quality barite to the Oil and Gas Industry;
 - d. Assist the selected indigenous Barite mining and milling company to develop sound environmental and social management system including community development plan.

5 SCOPE OF WORK

It is against this background that the MMSD is engaging the services of a Consultant to assist in realizing its objective for this work. The adviser will conduct primary and secondary research to implement this work.

The adviser will undertake this work by working closely with the consultant undertaking the ASM development task and any other relevant consultancies where

necessary. The adviser is expected to consult widely with key stakeholders and assist in the organization of a Stakeholder's workshop to include the operators and stakeholders in the tin and barite industry value chain. This should also include all concerned Government regulatory agencies and representatives from academia, mining associations, finance and banking, civil society organizations and standards entities etc.

The adviser is expected to carry out the following tasks in collaboration with the MMSD and the relevant departments and agencies:

5.1 Tin Industry

The Adviser/Consultant will undertake this work by working closely with the MMSD,. Close liaison and involvement with the selected tin mining and smelting companies, end-users, and other stakeholders in the value-chain. The adviser will also collaborate where necessary with other MinDiver consultants working on investment promotion, Proof of Concept investment Programs and Environmental and Social Safeguards.

5.1.1 Situation Analysis

The consultant will undertake a detailed assessment of the situation in relation to the global tin industry market, to examine the past to present situation of the domestic tin industry and to identify gaps as well as intervention needs. The focus will be to identify the prospects for reinvigorating tin and associated metals (e.g. coltan) mining in Nigeria and how these prospects can be realized. This will include the following activities:

1. Global tin industry and market:

- a. Review and assess the global tin industry and market in terms of global tin demand and supply, global tin price performance, investment risks; recognized global destinations for tin exploration, mining, processing, smelting, and metals production; world's leading producers and the factors that make their tin industries thrive;
- b. Review some active tin mining and tin metal production destinations as well as those that are now being revived to take advantage of the gradual recovery in tin process and the relative lack of an alternative or of new sources of tin coming on stream in the next few years. Examples of countries trying to revive their industries include the Malaysian tin industry, and the recent revival of tin metal production in Europe by the European Union, including in Cornwall, England. From this review, identify best practices and the lessons that Nigeria can learn from their experiences;

- c. Review and highlight the global legislations, regulations, and standards that have been developed to help stem the trade in conflict minerals and promote the responsible sourcing of minerals through supply chain due diligence. This will also include the role of the OECD and the International Tin Association;

2. Policy and Strategies

- a. The consultant will review all laws and regulations relating to the production (mining & processing) and marketing of Tin in Nigeria. The relevant charters will be reviewed towards recommending policies and strategies that will accelerate the revitalization of the Tin industry in Nigeria.
- b. Examine and map implementing agencies, local and regional development authorities, private players and multi-national investors (e.g. IFC) for the articulation of strategy, their roles and responsibilities, how tasks are coordinated

3. Geology

- a. Review various reports of tin deposition in Nigeria to understand the defined and undefined exploration and development potential of tin in Nigeria as well as deposits with economic significance. The adviser should also pay special attention to the Nigerian Mining Corporation (NMC), Consolidated Tin Mines (CTM) and the Ririwai tin fields to understand the depth of tin potential in Nigeria. Field work is essential for this task;

4. Nigerian Tin Industry and Market

- a. Review and assess the history and current situation of the Nigerian tin industry. This will include the current industry structure and organization. This will also include an assessment of the activities of artisanal and small-scale miners and the export routes and destination of tin produced from Nigeria.
- b. Undertake a visit to all active and some dormant tin mine sites. Identify the tin miners and other potential stakeholders and conduct a techno-economic survey of the tin producing/processing companies in Nigeria and categorized them in terms of their status, technological processes, installed capacity, capacity utilizations;
- c. Review the MMSD Roadmap for the Growth and Development of the Nigerian Mining Industry, 2016, to understand the fit between the government's diversification plans for the mining industry with the ministry's strategic direction for reviving the tin industry. The adviser will identify gaps and unexploited opportunities for tin production, processing and market to support economic and rural development;

- d. Review the operational and business performance of the existing formal/informal operators in the tin industry and identify the challenges that they face in operating in the industry and their strengths and weaknesses particularly in terms of scaling up their operations and attracting finance;
- e. Assess the legal and regulatory impediments to reopening CTM and Ririwai mines;

5.1.2 Strategy Preparation

Based on the data collected and analyzed, the Consultant will propose appropriate strategic options and an action plan for reinvigorating the tin industry in Nigeria. The strategy should include action plans with short, medium, and long-term timelines necessary for reinvigorating the Nigerian tin industry along with cost estimates where possible. Critical aspects of the strategy should include the following:

1. Assist MMSD to address barriers to establishing tin value chains and in particular enhance Nigeria's collaboration with the International Tin Association (ITA) to achieve an innovative, competitive, and sustainable supply chain and market for tin.
2. Assess whether existing tin operators lack the business plans, financial data and governance structure to access capital.
3. Identify potential tin mining companies with base level proven/probable reserves including previously identified PoC sites that can be nurtured along the path of management and growth.
4. Recommend strategies to improve their attractiveness and ability to attract funding and access finance and scale up their production, processing and beneficiation operations.
5. Develop the necessary frameworks and present an in-depth analysis that will promote optimal production, processing and quality tin that will meet export market and recommend appropriate policies to address the challenges that may hinder the sustainable growth and development;
6. Investigate the deeper deposits and update geological data on tin to attract serious and credible investors into tin exploration and mining with the aim to increase tin exploration and production in Nigeria. This should include identifying the potentials for reopening old mines, particularly CTM and Ririwai, and finding new mines, particularly close to existing or historic mines. This should be in the context of developing economically viable world class mines. The strategy should include strategies for resolving the impediments to reviving both CTM and Ririwai;

7. Recommendation for Upstream and downstream tin industry integration strategy; potentially through developing clusters of tin geology-mining-mineral processing-smelter and downstream manufacturing industries;
8. Responsible supply chain for tin: in reinvigorating the tin industry in Nigeria, the adviser should provide a roadmap for collaboration with the Organisation for Economic Co-operation and Development (OECD) in view of its due diligence guidelines for responsible supply.
9. Building on the mapping of implementing agencies prepare a structure through which MMSD could show leadership and facilitate.

5.1.3 Strategy Implementation

This phase of the work program relates to supporting the MMSD in implementing the strategy. The Consultant will prepare a strategy schedule that will include the following

- I. Preparation of globally competitive policies to fast-track private sector investment in Tin value chain.
- II. Assist the MMSD to determinate target Tin Resources through collation of available exploration results by former Tin Mining Operators (CTM), the Nigeria Mining Corporation (NMC) the Nigerian Geological Survey of Nigeria Agency (NGSA), current operators, Universities etc
- III. Assist the MMSD to demarcate and prepare necessary bidding packages and work flows on high prospectively assets. To be offered to investment public
- IV. Assist Ministry of Mines and Steel Development on how to implement the chosen strategy. The document should define activities and the corresponding timelines, resources, budget and responsibilities, including input-output linkages and the analysis of potential synergies between actions;
- V. Assist the MMSD to design strategies in the management of ASM Tin production operations with emphasis on extension services and marketing of Tin.
- VI. Assist the MMSD to design schemes to enhance financing of Tin investments. The consultant will work with Solid Mineral Development Fund in addressing access to finance for Mining cooperatives, small to large scale Mining operators and processors. The role of multi-lateral financial Agencies, national development institutions eg NEXIM, Bank of Industry etc. should be clearly defined
- VII. The consultant will recommend training programs for ASM miners on basic record keeping, development of business plans for loan applications, and the training of Banks on loan application assessment and monitoring, operators

on modern technologies on cleaner and safer mining, monitoring of environmental degradation and climate change.

VIII. From data collected and analyzed select about ten ASM operations as pilot project to showcase best practices in sustainable development of Tin. The consultant will assist the MMSD to implement the strategies to improve their attractiveness and ability to attract funding and access finance and scale up their production, processing and beneficiation operations by;

- Assisting existing operators to prepare development plans matched to their tin resource potential, market prices and technologies, and domestic market demand.
- Assisting existing operators to operate social/ environmental impact and management plans.
- Assisting existing operators on how to access capital matched to development plans.
- Providing assistance in the development of a governance structure

5.1.4 Any other Tasks

The adviser will also undertake any other task required to fulfil MMSD's objectives

5.2 Barite Industry

The Adviser/Consultant will undertake this work by working closely with the MMSD, Technical Committee led by the Departments of Mines Inspectorate and the Metallurgical Inspectorate & Raw Material Development. Close liaison and involvement with the selected Barite mining and processing companies, Nigerian Content Development and Monitoring Board (NCDMB), International Oil Companies (IOCs), Association of Miners and Processors of Barite (AMAPOB), Drilling fluid service companies, and other end-users, and other stakeholders, etc, in the barite value-chain. The adviser will also collaborate where necessary with other MinDiver consultants working on investment promotion, Proof of Concept investment Programs and Environmental and Social Safeguards.

5.2.1 Due Diligence Audit and Situation Analysis

The Adviser is to undertake a comprehensive due diligence audit of the selected barite mining & milling companies (Appendix I; A & B), identified by the Individual Consultant engaged to develop a strategy for the development of barite production,

provide a review and assessment of the issues and options and advise the MinDiver Project Implementation Unit (PIU) on the appropriate transformation strategy and implementation plans for the assets.

The activity will involve the following:

1. Review and comment on the selection criteria used to pre-identify candidate mine sites;
2. Visit and review the project sites previously selected by the Individual Consultant to identify Technical Assistance needs and potential environmental and social complexities;
3. Examine and map implementing agencies for the strategy, their roles and responsibilities, how tasks are coordinated and prepare a structure through which MMSD could lead or facilitate;
4. Convene a workshop to outline for MMSD, the approach to be taken, core considerations in the selection and evaluation of mine sites for potential support and to agree a mechanism for reporting and consultation with MMSD and Industrial partners;
5. Conduct technical market review to provide a market sounding based on barite consumer feedback regarding demand with particular reference to tonnage, quality, quantity, standards, terms and conditions of sale and price.
6. Further refine or expand the list previously recommended by the Individual Consultant desk-top findings, following improved understanding of technical considerations;
7. Meet with and visit the finalised candidate Barite operations to assess their site and undertake analytical work to identify their needs;
8. Provide technical assistance in the design and implementation of support measures to the identified selected Barite companies and
9. Examine the characteristics and relevant features of the different mining and processing operations and report on matters such as capacity of Management team, highlight risks and shortfalls, Quality of Asset-base; financial position and infrastructure, etc;
10. Review the available technology for exploiting them efficiently and effectively;

11. Analyse and assess the selected project's ability to be developed in a technically sound, viable and environmentally/socially sustainable manner; and other key considerations that may impact investment;
12. Analyse and review the short, medium- and long-term production of the mineral;
13. Evaluate the technical reports, commercial and market conditions in which the company operates and determine the potential risk such as: uncertainty in the scale of production; economic viability of production; nature of reserves, commercially exploitable or not; increase in costs due to logistics, utilities etc.; funding risk; environmental and social risks; commercial factors; competition forces and government risks;
14. Analyze the mine/project development plans, proposed capital expenditures and project economics;
15. Analyze and assess any available management plans, environmental systems and controls, community development or safety and environmental plans;
16. Explore options for financing and hold discussions with IFC, private sector development banks, bilateral donor agencies and for example, various US Trade and Development programs. Thereafter examine viability of options for financing on concessional basis or joint ventures with international barite producers;
17. The Adviser will prepare a Due Diligence audit report on his findings stating the critical issues for resolution and proposals on resolving them.

5.2.2 Business Plan Development

1. Advise MMSD on recommended arrangements for entering into commercial relationship/arrangements with selected operator/s (e.g MOU, contract, and any other instruments);
2. Advise MMSD on necessary measures required to assist the selected project proponent/s in preparing a workable Business Plan, outlining the intentions for project development, and identifying elements requiring financial and technical support;
3. Assist the project proponents in producing Business Plans, outlining their intentions for project and site development, and highlighting aspects requiring financial support including support in the development of the community development plan.

5.2.3 Strategy Implementation

The next phase of the work program relates to supporting/advising the MMSD to drive the implementation of chosen strategies at target sites. To this end, the consultant will;

1. Translate the strategy into action plans with short-, medium- and long-term timelines;
2. Prepare a time-bound Action Plan clearly showing indicators and thresholds for measurement of success and decision points for continuation, adjustment or termination for each target site/mine operation;
3. Develop clear and practical steps for implementing the action plans with possible cost estimates and activities that need to be done;
4. Advise MMSD on environmental and social safeguarding requirements and studies/reporting necessary to ensure compliance in particular with World Bank Environmental and Social safeguard Policies and Performance Standards for Private Sector Projects;
5. Advise the MMSD on steps to be taken for implementation of the strategy for barite development.

5.2.4 Any Other Tasks

The Adviser will also undertake any other task required to fulfil MMSD's objectives

6 Qualification and experience of firm.

The adviser's team shall include a multi-disciplinary team with individuals that have extensive experience in exploration and production of tin, and other base metals as well as rare metals, industrial minerals, and the artisanal and small-scale mining sector. The team should demonstrate considerable experience in developing policies and strategies around the tin and industrial minerals sector especially in developing countries. A strong knowledge of the Nigeria tin industry and its trade routes will be an added advantage. Fluency in spoken and written English is essential.

MMSD expects that the consortium team members should collectively have the following:

1. Vast knowledge and experience in the tin industry with expertise in the broad range of tin industry issues including market insights and analysis, technology, sustainability, and regulatory affairs
2. Operational experience in mining tin and other base metals, specifically underground or open pit mines;

3. Knowledge of and experience in barite production, processing and market requirements is required;
4. Review and planning of exploration programmes;
5. Mineral processing, marketing, and sales experience;
6. Vast knowledge and experience of the artisanal and small-scale mining sector particularly with tin, tungsten, and tantalum commodities;
7. Demonstrable knowledge and understanding of mining value chain development.
8. Demonstrable track record, skills, and experience of undertaking due diligence studies on geological and or mining facilities;
9. Experience of working in tin producing jurisdictions is an added advantage;
10. Working in Nigeria and with World Bank assisted projects or similar Multilateral Institution environment organizations is an added advantage.

Requirements of the Project Manager

1. **The Day-to-Day Project Manager (1No)** should have at least a university degree in geology or other geosciences and relevant professional qualifications;
2. The manager is expected to demonstrate considerable experience of at least 15 (fifteen) years' experience in the mineral industry especially in the development of the tin value chain and market, best practices and trends, market development and pricing, etc.
3. Knowledge of and experience of tin's value chain – exploration, mining, processing and smelting operation & production;
4. Developing strategies particularly to reinvigorate the mining industry and different mineral commodity particularly tin, tungsten, tantalum will be an added advantage;
5. Analyzing and forecasting tin commodity market fundamentals and undertaking scenario planning integrating geological, economic, market, socio-political factors in relation to downstream tin sector development;
6. Knowledge of and experience in barite industry value chain development– exploration, mining, processing, production, and customer specifications/requirements is required.
7. Experience of working as a consultant on World Bank assisted projects or similar Multilateral Institution environment such as AfDB or similar organizations is an added advantage;
8. Good interpersonal skills will be essential, including the ability to work with the staff of MMSD and other stakeholders involved in steering the reform program;
9. A demonstrable track record of successful project management, teamwork, and project delivery in relation to the assignment is essential;

10. This senior position will involve responsibility for the day-to-day management in carrying out the terms of reference and in the conduct of joint planning with the MMSD and other stakeholders.

Key Staff

1. The key staff should at least have a university degree in related areas of specialisation with not less than ten [10] years of professional working experience in their respective fields, some of which should include relevant experience in the mining and metals sector. They should also have a requisite professional certification and must be familiar with international reporting standards. They should collectively demonstrate an even spread of expertise in the required areas that will arise in executing the tasks outlined herein. Key staff should also include several Nigerian individuals who have extensive experience in the relevant issues as they relate particularly to Nigeria.
2. They should include the following:
 - a. **Geologist (1 No.)** with relevant educational qualifications in geology with professional experience in mineral exploration and exploration management programmes. The adviser should have experience in project management, strategic planning and have a good understanding of different mineral valuation techniques needed at various stages of the mining cycle. He/She should have a track record in identification and initial evaluation of mining exploration opportunities. Experience with ASM operators working on tin, tungsten, tantalum, and barites is an added advantage;
 - b. **Mining Engineer (1 No.)** with relevant educational qualifications in mining engineering with a track record in mine planning, budgeting, and estimation for starting new mines, expanding, or extending the life of existing mines through to mine closure. This should include a track record of taking projects from feasibility, mine planning to mine design, development, and implementation as well as technical audits, mining methods selection, development and implementation of optimal mining strategies, financial evaluations, risk analysis, project reviews, due diligence, etc, with commodity experience like tin, tungsten, tantalum, etc.
 - c. **Minerals Processing Engineering adviser- (1No)** with educational qualifications in mineral processing, metallurgical engineering and industrial chemistry, and other relevant qualifications. He/She should have experience that covers metallurgical process technologies for a range of base metals, including tin and industrial minerals;

- d. **Financial/Commercial Specialist- (1 No.)** with educational qualification in finance, accounting, statistics and relevant professional qualification with experience in corporate finance and development working in the mining sector. The Specialist should have experience in providing financial and evaluation services and in drafting and reviewing business plans, and assessing investment opportunities, commercial negotiations and fund raising.
- e. **Environmental Specialist - (1 No.)** with at least a degree in Environmental sciences or related field, from a recognized University with a minimum of 10 years practical post-qualification experience in environmental impact analysis, planning, mitigation, and management. He/she will have demonstrated expertise in the design and implementation of environmental and social management plans, environmental and social impact assessments, and environmental management. She/he will have demonstrated skills in working effectively with public sector clients and in implementing effective consultation and participation at project and community levels in rural and urban settings, especially in Nigeria. Experience of working with artisanal miners, host mining communities and familiarity with World Bank safeguards standards and best practice is an added advantage.
- f. **Legal and advisory adviser: (1 No.)** with educational qualifications in law or a similar field. The adviser should have experience in undertaking legal research in the mining industry and drafting commercial contracts. Experience of the Nigerian mineral legal and regulatory framework is an added advantage.

7 REMUNERATION AND PAYMENT TERMS

Remuneration of the consultant is commensurate with those offered by international bodies for similar assignments. The assignment will be based in Abuja. However, the consultant will also be reimbursed for operational expenses such as travel, accommodation, and telephone incurred while carrying out this assignment and in line with World Bank guidelines and procedures. Before reimbursement can be made, the consultant firm will need to submit a statement of expenses supported by valid documentation.

The successful consultant would be paid a lump sum amount in accordance with an agreed schedule of deliverables, on the agreed rate of professional fee and reimbursable expenses, subject to satisfactory performance and timely receipt of deliverables.

8 DURATION OF SERVICE

The work should take place within a period of ten (10) months.

9 OUTPUT

The consultant will produce the following reports:

- a. An **Inception Report** to outline the work plan of the consultant, define its tasks and the planned implementation periods and schedules, identify target submission dates on each task. Attention should be given towards the planned coordination within other teams and preparation of a detailed schedule. The initial results of literature review are included in the Inception Report. The inception report be submitted within one month of the commencement of the assignment and once approved and issued in its final form, will serve as the consultancy's baseline for the management and monitoring of the tasks;
- b. **Quarterly progress reports** of the activities carried out within the preceding quarterly period. The adviser's Project Manager will prepare consolidated Progress Reports of the information contained monthly reports together with a summary of adviser's activities and conclusions on all pertinent issues concerning the assignment. In addition, the Quarterly Progress Reports will outline recommendations, for amendment or solutions to issues and matters raised or found during the study and any other information considered necessary in respect of service delivery. These reports shall be submitted at the end of the first week of the succeeding quarter;
- c. **Technical Reports** on the scope of work. Such reports are to be submitted in line with the schedule set out in the approved Inception Report.
- d. **A Draft Final Report**, within the first week of the penultimate month of the assignment.
- e. **Final Report** bound in three (3) copies and an electronic copy in CD, within the last week of the assignment.

Table 1: List of all required deliverables

No	Deliverables	Timeline	Payment Milestones (based on submission of below named reports)
1	Inception report	Within one month of the commencement of the assignment	Inception report submission

2	Quarterly progress reports	At the end of the first week of the succeeding quarter	
3	Technical reports from the scope of work	for the schedule of the technical reports	
4	Draft Final Report	Within the first week of the penultimate month of the assignment.	
5	Final Report	Within the last week of the assignment.	Final report submission

S/NO.	Phases	Deliverables	Payment Milestones
Tin Industry			
1.	Situation Analysis	Situation Analysis with the following sub-reports: <ul style="list-style-type: none"> • Global tin industry and market; • Policy and Strategies; • Geology; • Nigerian tin industry and market capacities 	Draft situation analysis report Final situation analysis report
2.	Strategy Preparation	Strategic Options	Draft strategy report Final strategy report
3.	Strategy Implementation	Implementation documents	Draft implementation report

			Final implementation report
Barite Industry			
1.	Due Diligence Audit and Situation Analysis	Reports of Due Diligence Audit and Situation Analysis of recommended Barite mining and milling companies	Draft & final reports of Due Diligence Audit and Situation Analysis of recommended Barite mining and milling companies.
2.	Business plan development	Reports of Business plan development	Draft Business plan development report Final Business plan development report
3.	Strategy Implementation	Implementation documents	Draft implementation report Final implementation report

- f. A PowerPoint presentation to key stakeholders at the workshop for endorsement;
- g. **Final Report** bound in three (3) copies and an electronic copy in CD, within the last week of the assignment.

Note:

All Reports Shall Be in English and Presented in Hard and Soft Copies. All reports will be reviewed by the Project Coordinator.

THE CONSULTANT WILL SIGN A CONFIDENTIALITY and NO-DISCLOSURE AGREEMENT WITH THE PIU (Project Coordinator

overseen by the World Bank). Noncompliance will subject to legal penalties not inferior to the Full Cost of the Contract.

NO FINAL PAYMENT WILL BE MADE UNTIL QA/QC HAS BEEN PASSED

10.0 SELECTION METHOD

The consultant will be selected through the QCBS selection method.

APPENDIX 1: LIST OF RECOMMENDED BARITE MINING AND MILLING COMPANIES

A. RECOMMENDED BARITE MINING COMPANIES.

<i>S/NO.</i>	<i>COMPANY</i>	<i>CAPACITY, T/A</i>	<i>ADDRESS</i>	<i>MINING METHOD</i>	<i>CU</i>	<i>REMARKS/Li cence type</i>
1.	Rimco Mining Company Ltd.	Not stated	Yala/kehana LGA, Cross River/ Nasarawa	Semi-mechanised	30	SSML
2.	Polyguard Investment Nig. Ltd	Not stated	Guma/kehana LGA, Benue/Nasara w	Semi-mechanised	27	SSML
3.	Maradun Construction Ltd	Not stated	Maradun LGA, Zamfara	Artisan	15	SSML
4.	Hernbro Nig. Ltd	Not stated	Obubra LGA, Cross River	Artisan	15	SSML
5.	Breitz Investment Ltd	Not stated	Logo LGA, Benue	-	45	SSML
6.	Okofia Upstream Energy Ltd	Not stated	Benue/Cross River	Semi-mechanised	22	SSML
7.	Kaynuwa Earth Resources Ltd	Not stated	Karim-Lamido, Taraba		15	SSML
8.	Oxbow	Not stated	Ushongo/Yala LGA, Benue/Cross River	Semi-mechanised	4	SSML

B. RECOMMENDED BARITE MILLING COMPANIES.

S/NO.	COMPANY	CAPACITY, T/D	ADDRESS	STATUS	REMARKS
1.	Delta Prospectors Ltd	90	Km 7, Jos Road, Lafia, Nasarawa State	Active	Operating at low capacity
2.	Eugard Nigeria Ltd.	48	1 Ladi Club Road Barkin Ladi Plateau State	Active	Operating at low capacity
3.	Finestone Nig. Ltd	80	Finestone Factory, Winners Chapel Road, Calabar, Cross River.	Dormant	low patronage
4.	Nishan Nig. Ltd	360	25 Reclamation Road, Port Harcourt, Rivers State	Active	Operating at low capacity
5.	Qualchem Global Concept Ltd	60	East-West Road, Uniport Road, Rumuokoro, Opp Zenith Bank, Port Harcourt, Rivers State.	Dormant	low patronage
6.	Mansid Nig. Ltd	90	225 East/West Road, Uniport Road, Opp. Jephthah Secondary School, Ozuoba, Port Harcourt, Rivers State	Not working	low patronage
7.	Rockfield Industries Limited	60	Tar-Ukpe Market, Yandev Gboko, Benue State	Dormant	low patronage
8.	Oxbow Concept and Resources Limited	80	Oxbow Yard Km 4 East West Road, Port Harcourt, Rivers State.	Not working	low patronage

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