FEASIBILITY STUDY

FOR

SKYDISCOVERY MINING COMPANY LIMITED

ON

ESTABLISHING A MINERAL PROCESSING PROJECT

PREPARED BY

SKYDISCOVERY MINING COMPANY LIMITED

Dodoma

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1.0 INTRODUCTION

1.1 About Mining

The Tanzania Government is focusing on long – term industrial plan that will strengthen the Country's Nickel and Copper Industries.

The private sector has also been paying a vital role in the development of this basic industry. The National demand was established to be Mineral than 400,000 tons per annum .Indications that the demand is increasing fast and is now closed to 700,000 tons per annum. One of the basic necessities for the establishment of this basic industry is the availability of an adequate local and foreign market for its output. **SKYDISCOVERY MINING COMPANY LIMITED** has realized the potential this country has in terms of construction and decide to establish a MINERAL PROCESSING plant at Kwahemu Village, Haneti Ward, Chamwino District in Dodoma Region.

1.2 Objective of Study

The purpose of this feasibility study is to work out the technical and commercial details and financial viability for the establishment of Mineral plant for manufacturing and processing.

1.3 Project Promoters

The proposed MINERAL facility is being promoted by a foreign registered company namely **SKYDISCOVERY MINING COMPANY LIMITED** at Kwahemu Village, Haneti Ward, Chamwino District in Dodoma Region.

Name of Director	Share	Nationality
Dai Yongchun	90	China
Sheng Lihua	10	China

2.0 EXECUTIVE SUMMARY

2.1 Introduction

This study examines the possibility for the establishing a Minerals processing facility that led to production of Copper and Nickel for production of other materials. The project has three phases. For phase 1, the capital investment projection is around 2,000,000 USD. The annual processing capacity 100,000 Tons of ores.

2.2 Market and Marketing Aspect

The market survey carried out revels that he demand for Minerals products raising rapidly.

The survey concludes that the proposed production of about 100,000 tons of Copper and Nickel materials per year.

2.3 Project capacity

The proposed project will be able to produce between 80,000 - 100,000 tons per year and will be using modern machines which will be imported from China. Project promoters have already identify the suppliers of the machines and plants to implement the project within a expected time.

2.4 Production Inputs

The most critical inputs in to the plant are electric power in the magnitude of 2000 KVA will be required and this amount will be required and this amount will be supplied by Tanzania Electric

Supply Company Limited (TANESCO).

A considerable amount of water will be required for cooling .However, it will be recycles. Other production inputs include fuel oil, alloying elements and Mineral powder.

2.5 Location

The plant will be located at Kwahemu Village, Haneti Ward, Chamwino District in Dodoma Region, Tanzania.

2.6 Manpower Requirements

Around 70 Tanzanian local workers now, however, the majority of them are temporary workers , and few are permanent staff and now the company is in the process of building a compound. There is a construction workers temporarily working for the company to bulid the premises. plant Management will comprise 3 people out of a total workforce of 70 people. There will be 15 operators, 10 expatriates and the rest in direct workforce. The plant will operate on a 3 shift per daily basis. The plant will be organized into three departments, namely production, , finance and Administration and technical services (repair , maintenance and quality control Units).

Technology

Machinery will be ordered from China after funds are committed. These will be fabricated shipped for activities related to machinery at site. Training machinery installation and commissioning will be undertaken within a short time of project implementation. Activities related to civil works and machinery will take place simultaneously.

2.7 Project Finance

2.7.1 Capital Investment Requirements

DESCRIPTION	TOTAL
Land and Building	400,000
Plant & Machinery	800,000
Furniture & Fitting	50,000
Vehicle	200,000
Pre- Operational Expenses	50,000
Working Capital	500,000
TOTAL INVESTMENT	**2,000,000**

2.7.2 Financing Scheme

i) Fixed Assets and Pre- Operational Costs

	US$
Equity	2,000,000
Total	2,000,000

3.0 MARKET AND MARKETING

3.1 Product

The product which this Minerals is going to produce for sale is various construction companies and building materials producers.

3.2 Demand

Demand for the proposed product has been derived on the basis of the end use method. The products are used in various ways from buildings and other civil work constructions, in manufacturing of security grills and fences and as raw materials for manufacture of industrial products and machinery parts to industries.

Given the current improvements in the national economy, it is expected that the average capacity utilization of the past 5 years to at least 70%. It is also expected that the average growth rate of usage of Minerals raw materials will equal to the growth rate of GDP for the industrial sector, currently at 3.4 %.

3.3 Supply

There exist numerous factors which supply of Minerals products is so huge. The quantity has been declining over the years. The declining trend is as

a result of increasing number of construction companies being opened in Tanzania.

4.0 PRODUCTION PROCESS AND TECHNOLOGY

4.1 Production Processes for Copper and Nickel

The method of removal of stones from their natural bed by using different operations is called MINERAL PROCESSING called as:

- a) Digging – This method is used when the ore consists of small & soft pieces of stones.
- b) Heating – This method is used when the natural rock bed is horizontal and small in thickness.
- c) Wedging –This method is used when the hard rock consists of natural fissure. When natural fissures are absent then artificial fissures are prepared by drilling holes.
- d) Blasting – It is the process of removal of stones with the help of controlled explosives is filled in the holes of the stones. Line of least resistance plays very important role in the blasting process.

Following steps are used in the blasting process;

- 1) Drilling holes – Blast holes are drilled by using drilling machines.
- 2) Charging – Explosive powders are fed into the cleaned & dried blast holes.
- 3) Tamping – The remaining portion of the blast holes are filled by clay, ash, fuse & wirings.
- 4) Firing –The fuses of blasting holes are fired by using electrical power supply or match sticks.

4.2 Power Utilization

In the operation of electrical facilities, the most favorable installation for power costs is attained at preferably high utilization with preferably low power peak. This is achieved in modern medium- frequency melting by provision of constant power supply in the converters and through selective switching of power feed units.

4.3 Environment Protection

During the process there will the emission of dust and gaseous. Furnes especially are toxic and of complex composition. In the recommended technology i.e induction furnace, the amount of hazardous gases emitted will be very small especially because only cleaned raw materials will be used.

5.0 Utility Services

a) Water and Electricity

The site has already been supplied with water. A 3 inch diameter pipeline connects the plot to the main pipeline.The plant water requirement is basically for cooling purposes and water will be recycled. About 20,000 litres of water will be required per day. The site will tap its power from substation nearby. A number of machines will be premedical operated .

compressor station which will generate the compressed air requirements. Power is consumed in very large quantities and it is among the biggest cost element. The demand for this plan is estimated at around 2000KVA

7.0 MANPOWER AND ORGANISATION

The proposed copper and Nickel plant will have three Independent departments, namely administration and finance production and technical staff.

Organisation

The top people in the day- to day running of the company will

be General Manager .Under the General Manager's office will e three department, namely finance/ administration production and technical services. Each department will be under a Manager and will comprise a number of sections each headed by section head such as Finance/ Personnel Department Production Department.

Each section will be manned by a number of personnel with varying education levels and work experiences. The management team will comprise the General Manager, Chief Accountant and the four expatriates who will head the different production and service department.

He will also be responsible for repair and maintenance for company assets and research and development activities.

The technical department will comprise three sections, namely:

a) The repair and maintenance section which would be responsible for all repair works. An expatriate will be employed to train the local technician in the machinery repair works.
b) Laboratory section which will be responsible for quality control of both the raw materials and finished goods.
c) Research and development section.

7.1 Production Department

The production department will comprise two sections, namely steel mill and rolling mill.

Finance and Administration Department

An Administration and Finance Manager will head the department. He will be responsible for the administration of the company as well as overseeing the financial aspect of the company

7.2 Manpower Requirement

The manpower requirement for running the proposed Manufacturing of Minerals processing is 70 people .The administration staff will work on one shift per Day.

8.0 INVESTMENT AND FINANCING

8.1 Assumptions

The financial projections to determine the viability of the Copper and Nickel Project is based on the following key assumptions:

- The project will operate at 50% capacity in year 1 , 60% in year 2, 70% in year 4 and thereafter
- Plant will operate on three shifts per day for 250 days per year.

8.2 Summary of Capital Costs

The total initial investment required for undertaking the project is estimated at US$ 2,85 million. Spread over a year as shown. The breakdown of the capital investments is presented in table below:

DESCRIPTION	**Total**
Land and Building	400,000
Plant & Machinery	800,000
Furniture & Fitting	50,000
Vehicle	200,000
Pre- Operational Expenses	50,000
Working Capital	500,000
TOTAL INVESTMENT	**2,000,000**

8.3 Initial Working Capital

Initial Working capital requirements for the proposed project works Out at about US$ 0.1 Million

8.4 COST OF OPERATION

The anticipated costs for operating the project are detailed in the following Sections the capacity utilization has been assumed to grow at a rate of 50% in year 1, 60% in year 2, 70% in year 3 while stabilized production is envisaged From the fourth year at 80% of rated capacity. 80% will be the sustainable Production level.

9.0 FINANCIAL ANALYSIS

9.1 Income and Expenditure

9.1.1 Income

The proposed Nickel and copper project expects to earn its income through the sale of reinforcement copper and steel products mainly at sustainable level of production, the total sales are expected to stand at US$ 3.5 million from the Fourth year of production onwards by selling a total of 100,000t of final products.

11.0 Conclusion

The investment and development of these products processing undertaking is in line with the Government objective of encouraging proper development of Industries in the Tanzania. It will have a positive impact on the development of the Dodoma Region as, it would Generate a number of benefits.

This document has provided a full analysis on the financial , Techno- economic viability and have established that the proposed project is technically sound financially viable , and economically/ socially beneficial.

SKYDISCOVERY MINING COMPANY LIMITED
INVESTMENT COST STRUCTURE

DESCRIPTION	TOTAL
Land and Building	400,000
Plant & Machinery	800,000
Furniture & Fitting	50,000
Vehicle	200,000
Pre- Operational Expenses	40,000
Working Capital	500,000
TOTAL INVESTMENT	**2,000,000**

SKYDISCOVERY IMPLEMENTATION SCHEDULE

It is expected that the Project will be take 36 months to implement as shown below: -

S/N	ACTIVITY	PERIOD
1.	Processing TIC Certificate of Incentive	July 2025
2.	Funds Mobilization	November – Marchr 2026
3.	Ordering of Vehicles and Machines	April – December 2026
4.	Trial Operations	August 2026
5.	Project Operations	January 2027 - Dec 2028

SKYDISCOVERY MINING COMPANY LIMITED

PROJECT FINANCING

US$

DESCRIPTION	**FMINERALIGN**	**TOTAL**
Equity	2,000,000	2,000,000
TOTAL INVESTMENT	**2,000,000**	**2,000,000**

SKYDISCOVERY MINING COMPANY LTD FIXED ASSETS SCHEDULE

NAME OF ASSETS			**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
Land and Buildings			400,000	500,000	500,000	550,500	600,000
Plant & Machines			800,000	700,000	600,000	500,000	400,000
Motor Vehicle			200,000	150,000	100,000	50,000	25,000
Furniture & Fixtures			50,000	30,000	30,000	30,000	10,000
Total			**1,450,000**	**1,380,000**	**1,230,000**	**1,130,000**	**1,035,000**
Depreciation			**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
Land and Buildings			6,500	6,500	6,500	6,500	6,500
Plant & Machines			116,000	116,000	116,000	116,000	116,000
Motor Vehicles			15,000	15,000	15,000	15,000	15,000
Furniture &Fixtures			16,250	16,250	16,250	16,250	16,250
ANNUAL DEPRECIATION			**153,750**	**153,750**	**153,750**	**153,750**	**153,750**
CLOSING FIXED ASSETS			**706,250**	**552,500**	**341,250**	**198,750**	**56,250**

OTHER OPERATIONG COST

Other Operations Cost			**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
Motor Vehicle running expens			17,000	17,400	17,800	18,200	18,600
Salaries and Wages			36,000	39,600	43,560	47,916	52,708
Adminitrative Overhead Costs			12,000	13,200	14,520	15,972	17,569
Utility Costs			15,000	16,500	18,150	19,965	21,962
Interest on Loan			16,000	17,600	19,360	21,296	23,426
Communication Exepnses			4,000	4,400	4,840	5,324	5,856
Total Costs			**100,000**	**108,700**	**118,230**	**128,673**	**140,120**

SKYDISCOVERY MINING COMPANY LTD PROJECT BALANCE SHEET

		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Fixed Assets		860,000	706,250	495,000	352,500	210,000
Long term Assets						
Depreciation		153,750	153,750	153,750	153,750	153,750
Total long termassets		**706,250**	**552,500**	**341,250**	**198,750**	**56,250**
Current Assets						
Cash		406,100	684,700	979,050	1,292,735	1,625,723
Account Receivable		105,000	110,250	216,535	421,763	527,628
Inventory		214,710	376,383	438,469	402,292	467,493
Total Current Assets		**140,000**	**140,000**	**140,000**	**140,000**	**140,000**
Total Assets		**846,250**	**692,500**	**481,250**	**338,750**	**196,250**
Curent Liabilities						
Accounts Payable		84,000	88,200	92,610	97,241	102,103
Other Current Liablit		70,000	73,500	77,175	81,034	85,085
Subtotal Current Liabi		**154,000**	**1,616,700**	**169,785**	**178,274**	**187,188**
Long term Liabilties						
Long term Liabilitie		1,820,000	1,820,000	1,820,000	1,820,000	1,820.00
Total Liabiities		**706,250**	**552,500**	**341,250**	**198,750**	**56,250**
Net Assets		**820,810**	**877,633**	**951,268**	**1,044,516**	**1,157,656**
Captil and Reserves						
Owners Contribution		780,000	780,000	780,000	780,000	780,000
Retained Earning		**40,810**	**97,633**	**171,268**	**264,516**	**377,656**
Total Capital		**846,250**	**692,500**	**481,250**	**338,750**	**196,250**

SKYDISCOVRY MINING COMPANY LIMITED PROJECTED INCOME STATEMENT

			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR5
Sales Revenue			330,000	396,000	475,200	570,240	684,288
Cost of Sales			66,000	66,000	66,000	66,000	66,000
Gross Profit			**264,000**	**330,000**	**409,200**	**504,240**	**618,288**
Operating Expenses							
Administrative Overhead							
Costs			105,000	106,050	107,111	108,182	109,263
Motor Vehicle running			5000	5,050	5,101	5,152	5,203
Expenses			8,000	8,080	8,161	8,242	8,325
Salaries and Wages			78,000	78,780	79,568	80,363	81,167
Depreciation			81,000	81,810	82,628	83,454	84,289
Marketing Costs			6,500	6,565	6,631	6,697	6,764
Utility Costs			10,500	10,605	10,711	10,818	10,926
Insurance			10,000	10,100	10,201	10,303	10,406
Interest on Loan			12,200	12,322	12,445	12,570	12,695
Communication			1,750	1,768	1,785	1,803	1,821
Total Expenses			**207,950**	**210,030**	**212,130**	**214,251**	**216,394**
Profit befMINERAL Tax			**56,050**	**119,971**	**197,070**	**289,989**	**401,894**
Tax (30%)			16,815	35,991	59,121	86,997	120,568
Profit After Tax			**39,235**	**83,979**	**137,949**	**202,992**	**281,326**