TACOM IMPORT & EXPORT LIMITED BUSINESS PLAN FOR THE PROPOSED PROJECT FOR COPPER PROCESSING AT MPWAPWA, DODOMA REGION

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1.1 INTRODUCTION

1.1.1 Background Information

This report represents an objective analysis of the overall viability of engaging in gold mining and processing using crushed gold ore and tailings as the basic raw materials; and provision of technical support services to small scale miners in Mpwapwa. Dodoma Region. The project is being promoted by Messrs. TACOM IMPORT & EXPORT LIMITED, a newly incorporated company under Certificate No:1 7 2 2 0 2 1 6 0 dated the 14th day of February 2024 formed and one of the objective was of establishing copper processing activities in the country.

To facilitate implementation of the proposed project, has entered into a joint venture partnership with a local partner, Mr Greyson Mathew Kipanga to establish a copper processing project in Mpwapwa. Dodoma Region.

1.1.2 The Project Concept

The proposed project entails design, finance, development, construction and engagement in direct copper ore processing activities to obtain copper material to be crushed and processed to produce Copper processing plant, applying modern technology in the copper extraction technique. Maximum processing capacity of the plant is estimated at 13,440 metric tons per annum in three (3) eight (8)-hour shifts. .

1.1.3 Objectives of the Study

The objectives of this study are three fold. The first is to work out and determine technical, commercial and financial viability and operational feasibility of the project of the proposed medium gold mining and processing project. The second to facilitate the promoters secure funds in form of long term facility at the tune of US$ 371,450- from a local development/commercial bank in order to facilitate

development of the mining and processing facilities; as well as financing initial capital requirements. The third objective is to facilitate the application for Tanzania Investment and Special Economic Zones Authority (TISEZA) Certificate of Incentives to access fiscal and non fiscal incentives as statutorily provided for under Tanzania Investment and Special Economic Zones Authority Act (2025) for the proposed project.

1.1.4 Scope of Assignment

The scope of the assignment includes standard requirements of a techno- economic feasibility study to facilitate appropriate investment decision. Hence such a study carried out professionally for this study must include, among others:

- Review of location and proposed site;
- Construction costs: mining and processing sites, buildings, structures and civil works;
- Capital and deemed capital requirements, including machinery, tools, equipment
- Copper processing requirements (main raw material, processing chemicals, processing costs etc.)
- Labour requirement and costs
- Maintenance requirements and provisions made in the major capital items;
- Financial and economic analysis
- Developmental Values/Economic Benefits
- Risk Analysis
- Review of Environmental Aspects;
- Project management and implementation schedule.

Most of the data has been complied by the promoters' own research and study and therefore is first-hand information. On the other hand, Environmental Management Plan and all environmental aspects referred to under this study were provided at our request Consultants from their experience on similar Environmental Impact Assessment (EIA) carried out elsewhere..

The financials have also been carried out on the basis of market and cost information provided by the promoters of the project.

1.2 LAYOUT OF THE STUDY.

This report presents the Techno – economic and financial feasibility for setting up/operating a medium scale gold mining and processing project with operations based in Mpwapwa District. Dodoma Region.

The report is organised in 12 chapters. The Executive Summary is dealt with in this Chapter 1, followed by the mining Business Environment in Tanzania in Chapter 2. Chapter 3 deals with the project details (project concept, location and infrastructure, ownership, investment costs and financing plan). Chapter 4 provides technical aspects of the project (copper production process, logistics and supply of raw materials and inputs, raw materials requirement and availability, production costs and revenue estimates, environmental aspects and project implementation schedule).

Chapter 5 highlights the relevant Policy and Legal Framework for the plant operations and Chapter 6 deals with relevant standards for industrial operations while Chapter 7 outlines the Environmental Management Plan (environmental protection commitments, control strategies and performance etc.).

A brief account on the manpower requirements and organization structure is as dealt with in chapter 8. Chapter 9 deals with project Financial Analysis (estimated capital cost and basic operating assumptions, and analysis of financial results). Chapter 10 covers Threats to Profitability and Running of the Project (risk analysis looked from the strengths and weaknesses of the project environment). Chapter 11 deliberates on the Development Values/Economic Benefits (social and local economic benefits emanating from the project). The report ends with conclusion and recommendations in Chapter 12.

1.3 PROJECT SPONSORS

The proposed gold mining and processing project is being promoted by M/s TACOM IMPORT & EXPORT LIMITED, a private company incorporated in the United Republic of Tanzania for the sole purpose of implementing the envisaged gold mining and processing project in Tanzania. The shareholders of M/s TACOM IMPORT & EXPORT LIMITED are as shown in Table 1 below:

Name	Nationality	No. of Shares	% Shareholding
1. Greyson Mathew KAPANGA P.O. BOX 100114, DAR ES SALAAM	Tanzanian	1,000	10%
2. YUNG KUAN LIU P.OBOX 100114, DAR ES SALAAM	Chinese	5,000	50%
3. YING FU LIU P.O. BOX 100114 DAR ES SALAAM	Chinese	4,000	40%

1.4 LOCATION AND INFRASTRUCTURE

The project is located in Mpwapwa District. Dodoma Region and the site is directly accessed. The plant obtains its water from its own borehole. The main source of energy for the plant facility is electricity generated from TANESCO. The facility however is not connected to sewage system, the site use its own septic tanks as temporary storage system which, when full will be taken to municipal council waste stabilization ponds for final disposal.

1.5 PRODUCTION PROCESS (TECHNOLOGY)

TACOM IMPORT & EXPORT LIMITED plans to employ state-of-the-art copper processing facilities. The proposed processing technology to be used under this project is an extraction technique for recovery of copper. The technology behind this plant is superior to current leaching plants in Tanzania. The company will import its processing technology from China.

1.6 PLANT CAPACITY UTILISATION AND COPPER PRODUCTION

The company envisages development and installation of Copper processing and recovery plant with an installed processing capacity of 280 metric tons of copper ore per week worked in 24 hours with 8-hours shifts per day. Plant Capacity Utilization is estimated at 65% in the first year, raising to 70% in the second year before stabilizing at 75% from year three onwards. Under these assumptions, copper ore mining and processing will be at 8,640 tons per annum in year one, 9,360 tons in year two, and 10,080 tons per annum from year three onwards.

1.7 RAW MATERIALS REQUIREMENT AND AVAILABILITY

The basis of revenue computations are on estimated copper recovery.

Total revenue per annum is therefore estimated at a maximum of US$ 1,881,600- when the plant is operating at 100% capacity utilization. Actual capacity utilization is assumed at 65% during the first year, 70% during the second, before it stabilises at 75% from the third year onwards. Actual production is therefore estimated at

Processing chemicals required for the process are sodium cyanide, lime, silver nitrate, carbons, potassium iodide, POP, chloride exide and hydrochloric acid.

1.8 PRODUCTION COSTS AND REVENUE ESTIMATES

Direct Costs

The major costs under this project are:

- **Raw Materials (Copper Ore):** Copper ore mining is estimated to cost US$ 307 per metric ton.

- **Copper Ore Crushing Costs**: this involves the cost of running the crusher. The crusher is estimated to consume 30 litres of fuel and oils per three-shift day, 6 days a week.

- **Processing Costs**: the cost of running the processing plants are simply application of chemicals in tanks..

- **Repair and Maintenance**: It is projected to cost 5% of the cost of all major assets per annum.

- **Labour Cost**: The project plans to recruit and employ regular employees (26) including crusher operators, processing plant operators, Plant Technicians and Security Guards on permanent and pensionable terms. It will also employ about 18 General Workers. Labour cost is estimated at 9.6% of gross sales revenue.

- **Fuels & Oils:** Will be required in running power generators, mining equipment and motor vehicles. It is estimated that 18,000 litres will be required per annum which is computed at US$ 18,000- per year.

Revenue Estimates

Copper processing is projected at 8,640 tons per annum in the first year, 9,360 tons in the second and 10,080 tons from year three onwards. Copper production. This translates to a revenue of US$ 1,209,600- in year one, US$ 1,310,400 in year two, and US$ 1,411,200- from year three onwards.

1.9 ESTIMATED INVESTMENT COSTS AND PROPOSED FINANCING

The project is estimated to cost US$ 1,017,000 as given in Annex II & V and summarized here below:

S/N	Item	US$
1.	Land & Buildings	235,000
2.	Plant Machinery and Equipment	494,000
3.	Utility Motor Vehicles	115,000
4.	Furniture, Fittings and Office Equipment	15,000
5.	Pre-operational Expenditures	38,000
6.	Contingencies	20,000
7.	Working Capital	100,000
	GRAND TOTAL	1,017,000

1.10 ORGANISATION AND MANAGEMENT

The project will be managed through the Board of Directors. The day to day management of the company will be vested in the management team to be headed by a Managing Director. The Managing Director will be directly assisted by two line managers who will further be

assisted by four Senior Supervisors responsible for the plant, workshop, purchasing and administration. These will in turn be assisted by qualified and experienced personnel.

On implementation of the proposed project, the company plans to employment up to 44 people in the next three years.

1.11 PROJECT IMPLEMENTATION

TACOM IMPORT & EXPORT LIMITED plans to import processing equipment and expand its processing capacity to meet the project goals. The company plans to bring in the plants soon after being granted TISEZA accreditation. Assuming that all things run according to plan, the company should start mining operations by first of July 2019 at the latest.

1.12 FINANCIAL PROJECTIONS AND EVALUATIONS

Annex VI of the attached Financial Projections forms analyses the Total Production Costs, Annex XII analyses Income Statement Projections while Annex XIII deals with Break-even Analysis as summarised hereto below. The analysis is well elaborated in the attached projections and summarised as follows:

- Internal Rate of Return on investment 22.20%
- Internal Rate of Return on equity 24.29%
- The Normal Payback Period is 4.94 years at zero discount rate and 6.00 years when discounted at the assumed discount rate of 8%.

- Breakeven Point ranges between 65.95% and 2.95%

1.13 ENVIRONMENTAL CONSIDERATIONS

M/s TACOM Import & Export Ltd operations will have a minimal impact on the environment of the area. Processing water and chemicals wastes from processing operations can pose a threat to the environment and health of nearby communities. Not only can this waste be harmful if it leaches into ground water, but it can also mean losing minerals still contained in the residue. To prevent this, the project operations will use storage methods to contain the toxic elements. Storage ponds will be constructed at the project site to store slurry, the by-product of Copper processing.

1.14 PROJECT DEVELOPMENT VALUES/BENEFITS

Implementation of this project will lead to realisation of the following development values/ social and economic benefits.

- Direct job creation in the region of 44 in the proposed processing and refinery sites. A high proportion of the investment will be spread widely to remote communities that are in desperate need of jobs and investment.
- The operations will significantly add value to current artisanal miners by replacing artisanal mining techniques to modern techniques as part of technical support by the company.
- The village in which the mining operations will be taking place will also see a number of benefits besides the creation of jobs in the form of social services from the company's Corporate Social Responsibility. When boreholes are sunk on site to allow extraction of water for the process, boreholes will also be provided for the village, increasing their access to fresh water.
- The project involves transfer of technology to Tanzania.

Tanzanians will be trained on the job on how to extract gold using modern Copper processing techniques.

1.15 CONCLUSION AND RECOMMENDATIONS

The project is:

- technically feasible

- financially viable
- economically viable
- socially desirable
- environmentally sound, sustainable and manageable

In view of the global growing demand for copper and the benefits associated with this project as indicated in this report, the project is therefore strongly recommended for financing and subsequently implemented without unnecessary delays.

2.0 BUSINESS ENVIRONMENT AND BACKGROUND

Tanzania has a unique geological environment that hosts a variety of economic minerals. The most famous deposit is the Lake Victoria Greenstone belt in the central and north-central part of the country. Gold discovery and exploitation by German colonialists started towards the end of the 19th century and lasted until the First World War. During the British colonial era (1918-1961) mineral production and revenue were mainly from gold, diamonds, lead, mica, salt and tin. Gold was at a peak level in 1940 when it contributed to about 90% of the value of the mineral production. Following independence in 1961, many industrial sectors including the mining industry, were nationalised by the government.

In 1986 Tanzania agreed to a structural adjustment programme designed by the World Bank. Internal and external trade was liberalised, and the government opened up for foreign investment in the country. The liberalisation of mining,

accompanied by the legalisation of the buying and selling of gold and gemstones through banks and designated dealers, had immediate effects.

Now Tanzania has become one of the fastest-emerging gold producers in Africa, and is the continent's third-largest gold-producing country after South Africa and Ghana. A number of large international mining companies (Barrick Gold Corporation, AngloGold, Ashanti Mining, Resolute Limited) are now involved in operations in the country.

3.0 THE PROJECT

3.1 The Project Concept

3.1.1 The Business Activities

The proposed project entails design, finance, development, construction, establish and operate a modern Copper processing plant using copper tailings as the raw material by applying state of the art copper extraction technique. Maximum processing capacity of the plant is estimated at 280 metric tons per week in three (3) eight (8)-hour day-shifts. Recovery rate has been conservatively estimated at four (4) gram per ton.

Other major capital expenditure will involve procurement of dump trucks for transportation of the raw materials, laboratory equipment for metal testing, environmental protection plant, workshop tools and equipment, power generators; purchase of utility motor vehicles, furniture and fittings, and fencing of the project sites.

3.1.2 Responsibilities of a PML Lessor

The project involves a joint venture agreement with a local investor who undertakes to provide the mining and processing site in the form of Primary Mining Licence The local partner will further be responsible for the management of this PML.

3.1.3 Responsibilities of a foreign TACOM Import & Export Limited

M/s TACOM Import 7 Export shall be solely responsible for the designing, financing and implementation and development of the Copper processing camp, importation ore processing equipment, technology and skilled personnel, machines and plant processing equipment, as well as engineering works for construction and installation of the cyanidation Copper processing plant and establishing a laboratory for metal testing. Other major capital expenditure will involve procurement of workshop tools and equipment, power generators; purchase of utility motor vehicles, furniture and fittings, and fencing of the project sites.

3.1.4 Processing Licence

The company intends to obtain a Copper processing licence from the Central Zone Mineral Office in Dodoma which will allow them to process copper and eventually semi-refine the product.

3.1.5 Project Implementation Activities

Implementation of the proposed project will involve the following

major activities:

- Site preparation and development including sinking of a borehole, construction water reserve dam and tailings slurry storage ponds;

- Development of civil works, structures and buildings, including construction of residential camps and facilities for key staff, office building, staff canteen and facilities for workers, and storage facilities for materials and equipment;
- Importation and installation of Copper processing plants, including ball mill plant, laboratory for metal testing etc.;
- Establishing a workshop and acquisition of workshop machines, tools and equipment;
- Acquisition and installation of ancillary infrastructure including heavy duty power generators, installation of security system etc.;
- Procurement and installation of environmental protection plant equipment
- Procurement of heavy duty trucks fleet for transportation of gold tailings from the small scale mining centres to the processing. Other utility vehicles will include pickups, 4-WD station wagon and motorcycles to facilitate movement.
- Purchase of furniture and office equipment;
- Fencing of the site compound and storage yard.

3.2 Location and Infrastructure

As stated elsewhere, the project is located in Mpwapwa District. Dodoma Region. The plant will obtain its water requirements from its own borehole. The facility will have water storage tank (underground reservoir) with a holding capacity of 150,000 litres of water and one underground concrete tank with 20,000 litres capacity. The average water consumption for both production process and domestic use in the plant is approximately 80 cubic metres per month.

The main source of energy for the plant facility is electricity generated from own power generators. Likewise, the facility is not connected to sewage system, the site use its own septic tanks as temporary storage

system which, when full will be taken to municipal council waste stabilization ponds for final disposal.

3.3 Ownership

The project is promoted by TACOM IMPORT & EXPORT LIMITED, a locally registered private company incorporated in the United Republic of Tanzania for the sole purpose of engaging in Copper processing and refinery in Tanzania. The company is registered with authorized capital of 10,000.

THE SHAREHOLDERS

	Nationality	No. of Shares	% Shareholding
1. Greyson Mathew KAPANGA P.O. BOX 100114, DAR ES SALAAM	Tanzanian	1,000	10%
2. YUNG KUAN LIU P.OBOX 100114, DAR ES SALAAM	Chinese	5,000	50%
3. YING FU LIU P.O. BOX 100114 DAR ES SALAAM	Chinese	4,000	40%

The directors and shareholders of the company are experienced business people in mining and mineral processing.

3.4 Estimated Investment Cost and Financing Plan

The project is estimated to cost US$ 1,017,000 as given in Annex II & V and summarised here below:

S/N	Capital Item	US$
1.	Land & Buildings	
	Site Preparation and Development	15,000
	Construction of Mining Camp and Processing Buildings, Storage Facilities, and Workshop Building	60,000

	Construction of Office Buildings	35,000
	Construction of Staff Quarters, Security Shed and Generator House	70,000
	Development of Infrastructure (boreholes, underground reservoir, overhead tanks, waste water disposal/septic tanks etc) and Civil Works Structures	55,000
	Sub total	*235,000*
2	Plant Machinery and Equipment	
	Back Hoe and other Mining Equipment	124,000
	Copper Ore Crushers	92,000
	Copper Extraction Plant	95,000

	Power Generators (7.5 kW)	80,000
	Air Compressors	27,000
	Workshop Machines, Tools and Equipment	25,000
	Laboratory Kits for Metals Testing	15,000
	Environmental Protection	26,000
	Security System	10,000
	Sub total	*494,000*
3.	Utility Motor Vehicles (dump trucks, pickups, station wagons etc.)	115,000
4.	Furniture, Fittings and Office Equipment	15,000
5.	Pre-operational Expenditures	38,000
	Contingencies	20,000
6.	Add: Initial Working Capital	100,000
	GRAND TOTAL	**1,017,000**

3.4.1 Logistics and Crushed Ore supply

The first stage in the process of creating the copper will be the sourcing of the copper ore to be processed. Scouting will be carried out and samples taken from piles in various areas around the different mining site. These samples will be analysed to measure their leach amenability and their effective value to the company. Once this has been done, the trucks will be organised to collect the gold ore and take them to the processing plant site. Copper tailings acquired then be crushed by company crushers at the processing site. During the start up phase, only a few trucks will be required to fill the small number of tanks available. Once the plant is operating at full capacity, two 25 Tipper Trucks should be sufficient for supplying the plant with the required amount of copper tailings.

One important factor will be to build up and maintain an on-site copper ore stock pile. This will ensure a steady and reliable flow of crushed ore to the plant. There will always be occasions when roads are made impassable by bad weather, or

when trucks are being serviced or repaired. It would be wise to maintain a pile of at least 500T of copper ore at the processing site. During the wet seasons it may be reasonable to increase this stock pile to 1000T.

3.5 Environmental

Aspects Emission

Controls

TACOM IMPORT & EXPORT LIMITED operations will have a minimal impact on the environment of the area. Waste water generated including grey and black water (kitchen and toilets respectively) are temporarily stored in septic tanks on-site of which, when full, will be collected by septic emptier to municipal waste water stabilization pond for final disposal. Waste waters generated from the different stages of processes are collected within a separate reservoir outside the facility fence. The amount of waste water generated at TACOM IMPORT & EXPORT LIMITED is approximately 80 cubic metres per month from washrooms, kitchen and processing. The company has installed a number of septic tanks used for temporary storage of the effluents section wise before being taken to municipal waste water stabilization ponds when are full.

Wastes and by-products

As for waste and by products, the main types of wastes are solid waste and liquid waste. Solid wastes that are currently generated during production include pieces of paper resulting from office use, plastic drums from chemicals

used, and used tailings. Yard wastes are handled through existing waste collection point within the facility of which are burnt, while empty plastic drums are kept for destruction within the designated area.

3.6 Implementation Schedule

TACOM IMPORT & EXPORT LIMITED plans to import equipment and develop processing capacity to meet the project goals. The company plans to bring in the plants soon after being granted TISEZA accreditation.

5.0 RELEVANT POLICY AND LEGAL FRAMEWORK FOR PLANT OPERATIONS

5.1 Overview

This chapter concerned with the way the plant is required to comply with policy and legal Framework within the country and therefore to enforce the compliance of M/s TACOM IMPORT & EXPORT LTD plant to the policy and legal frame work.

5.2 Policy frame work

Tanzania Environmental policy applicable to the established and operated plant include:-

5.2.1 National Environmental Policy (1997)

The national Environmental policy addresses the broad spectrum of environmental concern. The policy requires that industrial development be done in a way that it does not compromise the environmental integrity. It stipulated that the chosen technologies should be environmentally friendly, socially acceptable and economically viable. The policy states that in order to protect the environment and to ensure sustainable development, the following objectives shall be pursued;

I. Environmental audits / inventory shall be carried out for the existing industries for pollution control and waste minimization;

II. Industries should be planned in manner that minimized adverse effect on the environmental at all stages (i.e location, effluent discharge, waste disposal, use and disposal of products);

III. Industrial emissions shall be controlled;

IV. Workers health shall be adequately protected from environmental health hazards.

The policy underscores the importance of conserving environment, protecting public health and promotion of national industrial base.

During the operation TACOM IMPORT & EXPORT LTD plant shall observe the requirements of this policy's objective.

5.2.2 National Health policy (1990)

The health policy aimed improving health status of all people wherever they are, by reducing morbidity and mortality and raising life Expectancy. Good health,
i.e physical mental social wellbeing, is a major resource of economic development. TACOM IMPORT & EXPORT LTD plant shall observe this legal requirement by ensuring all their workers are in healthy ensured.

5.2.3 National Water policy(2002)

The planning, sitting designing, construction strategy and operations of the project are also in consistence with the national water policy (2002), which provides for a comprehensive sustainable and equitable exploitation and use of water resources for sustainable development. The policy seeks to ensure more efficient utilization of existing water resources and improved monitoring to control water quality and arrest contamination from industrial sewerage and excessive use of chemicals. These objectives requite an integrated and holistic planning and management approach in areas of water use and disposal of effluents.

During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of this policy's objectives.

5.2.4 National Human Settlement Development Policy (2000)

The planning of the proposed project is in harmony with this policy. Among others, one of the objectives of National Human Settlement Development policy (2000) is to protect human settlement, the environment and its embedded ecosystem from environmental pollution, environmental degradation and destruction or loss of biodiversity in order to attain sustainable development. During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of this policy's objectives.

5.2.5 The National Land Policy of 1995

The National land policy advocates the protection of land resources from degradation for sustainable development. Among other things the policy requires that the project development should take due consideration the land capacity, ensure proper management of the land to prevent erosion, contamination and other forms of degradation. Important sections of policy relevant to the developer are 2.4 (on use Of land to promote social economic

development), section 2,.8 (on protection of land resources) and section4 (on land tenure).

During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of this policy's objectives.

5.3 Legal Framework

Tanzania Environmental Regulations applicable to the established and operated plant include;

5.3.1 Environment Management Act (Cap 191 of 2004)

The Act provides a legal and institutional framework for the sustainable management of the environment. It outlines the principles for management, impact and risk assessments, the prevention and control of pollution, waste management, environmental quality standards, public participation compliance and enforcement. It provides the basis for the implementation of international instruments on the environment and the National Environment policy. All project actives must be planned in order to comply with the provisions of part VI (EIA) – review process of environment impact statement) studies, part x (environmental audit). During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of the Act.

5.3.2 Land use planning Act (no; 6 of 2007)

The national land use commission (NLUPC) was established as the principal advisory organ of the government on all matters related to land use. Among other functions, it recommends measures to ensure that Government policies, including those for development and conservation of land are in harmony. It also takes adequate account of their effects on land use and seeks the advancement of scientific knowledge of changes in land use. It encourages development of technology to prevent, or minimize adverse effects that endanger man's health and his/ her welfare; it also specifies standards, norms and criteria for beneficial uses and maintenance of the quality of land.

During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of the Act

5.3.3 Land Act (no. 4 of 1999)

According to this Act all land in Tanzania continues to be public property and remain vested in the president's as custodian for citizens of Tanzania. The proponent of the established plant acquired the land for the project site based on

this legal provision. Hence, during the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of the Act.

5.3.4 Occupational Health and safety Act (no. 5 of 2003)

This Act makes provisions for safety; health and welfare of person at work in factories and all other places of work. Also provides for protection of persons other than persons at work against hazards to health and safety arising out of or in connection with activities of persons at work. Relevant section of the ordinance to the project activities include part IV section 43(1) – safe means of access and safe working place, prevention of fire; and part V on health and welfare provisions which include provision of supply of clean and safe water to workers, sanitary convenience, washing facilities and first aid facility. Section 50 deals with fire protection issue. During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirement of the Act.

5.3.5 Workmen's compensation Act (no. 20 of 2008)

This arrangement is provides for under section 19 (1) of Act 20 of 2008. In respect of the "FUND" this shall depend on such approved rates based on the total wage bill, to be contributed by employers. Compensation shall only be paid to diseased dependants or injured workmen whose employers have been registered as "contributing employee' to the Fund. This arrangement reads as follows:

Where an employee has an accident resulting in the employee's disabling or death the employee or dependants of the employee shall, subject to the provisions in this Act, be entitled to the compensation provided under this Act. During the operation of TACOM IMPORT & EXPORT LTD plant

5.3.6 Employment and labour Relation Act (no. 6 of 2004)

This Act guarantees labour right and establishes basic employment standards. The Act provides broad protection against discrimination.

Specifically, the Act mandates that employers "promote equal opportunity in employment and strive to eliminate discrimination in any employment policy or practice". It prohibits direct or indirect discrimination by employers, trade unions and employers' association on a number of grounds, including gender, pregnancy, marital status or family responsibility, disability, HIV/ AIDS and age. Harassment of an employee on any of these grounds is equally prohibited. The Act also requires employers to take "positive steps" to guarantee women and men the right to safe

and healthy environment. During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of the Act.

5.3.7 The water resource management Act no 11 of 2009

PART (VI) deals with protection of water resources under the section 39 of prevention of pollution states that; "an owner or occupier of land which any activity or process is or was performed or under taken, or any other situation exists which causes has occurred or is likely to cause pollution of a water source, shall take all reasonable measure to prevent any such pollution from occurring, containing or recurring. During the operation of TACOM IMPORT & EXPORT LTD plant shall observe the requirements of the Act.

5.3.8 The Standard Act no 2 of 2009

Tanzania Bureau of standards (TBS) is Tanzania's sole standard body established by parliament Act No. 3 of 1975 and subsequently amended by Act no. 1 of 1977. TBS is a parastatal organization under the ministry industry, Trade and marketing. The standard Act. 3 of 1975 was further repealed by Act no 2 of 2009 According to the enabling Act the broad mission of TBS is to promote standardization and quality assurance in industry and commerce. The specific tasks enumerated in the Act are geared towards fulfilling the stated mission.
During the operation of TACOM IMPORT & EXPORT LTD plant shall observe requirements of the Act.

5.3.9 The industrial and consumer chemicals (management and control) Act, 2003

The objective of this act is to ensure management and control of the production, importation, transportation, exportation, storage, dealing, and disposal of chemicals and for matters connected therewith. The act promote good manufacturing practices, require risk assessment and risk management and emergency response plan. It gives definition of toxic chemicals and their dosage and registers and certifies chemicals before

use. Section 11 requires chemical registration to the chief Government chemist in the prescribed manner and form, as set out in the second schedule to this Act. TACOM IMPORT & EXPORT LTD plant shall observe this legal requirement.

6.0 REQUIRED STANDARDS FOR INDUSTIAL OPERATION

6.1 Overview

This chapter explains on how the plants shall practice their activities in such a way that not causing pollution to the environment from emissions, discharges and sounds produced during the operation in relation to the adoption of relevant standards.

6.2 The relevant standard

Different standards are being used depending upon different parameters of concerns. These include the waste water standards discharge, permissible noise levels and air pollution standards.

6.2.1 Noise levels standards

The permissible noise level standards for the workers from plant are categories into different limits according to during to duration (daily) hours). According to **Tanzania Bureau of standards (TBS)** the recommended value for 8 hours for the workers in a plant is 85DBA.

6.2.2 Indoor Air Quality Standards

Indoor pollution sources that release gases or particles into the air are the primary cause of indoor air quality problems in factories. Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from indoor pollutant levels and by not carrying indoor air pollutants out of the factories. High temperature and humidity levels can also increase concentrations of some pollutants. The source of indoor air pollution in any plant include combustion source such as oil and gas. These range in size from 0.3 to 100 microns, and are small enough to be inhaled, but too large to be easily exhaled. Smoke from biomass combustion produces a large number of health damaging air pollutant such as reparable particulate matter carbon monoxide (CO), nitrogen oxides formaldehyde, benzene, poly-cyclic aromatic hydrocarbons and many other toxic organic compounds.

6.3 Adoption of standard

For Ensuring not causing the pollution to the environment from its emissions, discharges and sounds produced during the plant operations relevant standards are practiced in such a way that;

- The workers shall be provided with the nose mask at the machines/ working places were dust are being emitted so as to protect workers from the health effects due to dust emission , also there shall be enforcement of the workers to wear the nose mask.
- Noises generated during operation machinery equipment which produces reasonable sound during operation.
- There shall be proper emergency prevention and preparedness, no smoking sign for fire prevention shall be provided; the workers shall be trained in risk of fire hazards and within the plant shall be reasonable number of fire extinguishers.
- Solid waste generation, management and disposal shall be well managed within the plant and stored in the required storage facilities ready for collection to the final disposal.

ANNEX IV

WORKING CAPITAL REQUIREMENTS (IN US$)

	20	21	22	23	24	25	26	27	28	29
Total inventory	95,577.00	106,111.96	114,028.89	115,974.10	115,974.10	115,974.10	115,974.10	115,974.10	115,974.10	115,974.10
Supplies	39,528.00	42,993.58	46,300.75	46,300.75	46,300.75	46,300.75	46,300.75	46,300.75	46,300.75	46,300.75
Utilities	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500
Energy	450.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00
Spare parts consumed	519.00	865.00	1,038.00	1,730.00	1,730.00	1,730.00	1,730.00	1,730.00	1,730.00	1,730.00
Work in progress	21,250.35	23,625.25	25,482.50	26,007.10	26,007.10	26,007.10	26,007.10	26,007.10	26,007.10	26,007.10
Finished product	33,329.65	36,628.13	39,207.64	39,936.25	39,936.25	39,936.25	39,936.25	39,936.25	39,936.25	39,936.25
Accounts receivable	58,093.82	62,585.25	66,918.83	68,142.90	68,142.90	68,142.90	68,142.90	68,142.90	68,142.90	68,142.90
Cash-in-hand	9,098.64	9,811.41	10,443.90	10,690.46	10,690.46	10,690.46	10,690.46	10,690.46	10,690.46	10,690.46
CURRENT ASSETS	162,769.46	178,508.62	191,391.63	194,807.46	194,807.46	194,807.46	194,807.46	194,807.46	194,807.46	194,807.46
Accounts payable	89,824.00	89,812.63	95,888.35	97,404.67	97,347.00	97,347.00	97,347.00	97,347.00	97,347.00	97,347.00
CURRENT LIABILITIES	89,824.00	89,812.63	95,888.35	97,404.67	97,347.00	97,347.00	97,347.00	97,347.00	97,347.00	97,347.00
TOTAL NET WORKING CAPITAL REQUIREMENTS	**72,945.46**	**88,695.99**	**95,503.28**	**97,402.79**	**97,460.46**	**97,460.46**	**97,460.46**	**97,460.46**	**97,460.46**	**97,460.46**
INCREASE IN NET WORKING CAPITAL	72,945.46	15,750.53	6,807.29	1,899.51	57.67	0.00	0.00	0.00	0	0

								ANNEX V
	TOTAL INVESTMENT COSTS		**(IN US$)**					
	Total constructio	Total production	YR 1	YR2	YR3	YR4	YR5	YR6
Total fixed investment costs	979,000.00	0	979,000.00	0	0	0	0	0
Total pre-production expenditures	38,000.00	0	38,000.00	0	0	0	0	0
Increase in net working capital	0	97,460.46	72,945	15,750.53	6,807.29	1,899.51	57.67	0.00
TOTAL INVESTMENT COSTS	1,017,000.00	97,460.46	1,089,945.46	15,750.53	6,807.29	1,899.51	57.67	0.00

ANNEX VI

TOTAL PRODUCTION COSTS (IN US$)

	Production 20	Production 21	Production 22	Production 23	Production 24	Production 25	Production 26	Production 27	Production 28	Production 29
Supplies	237,168.00	515,923.00	555,609.00	555,609.00	555,609.00	555,609.00	555,609.00	555,609.00	555,609.00	555,609.00
Copper Ore and Tailings	159,840.00	346,320.00	372,960.00	372,960.00	372,960.00	372,960.00	372,960.00	372,960.00	372,960.00	372,960.00
Processing Chemicals	72,576.00	157,248.00	169,344.00	169,344.00	169,344.00	169,344.00	169,344.00	169,344.00	169,344.00	169,344.00
Diesel & Oils for running Crushers	4,752.00	12,355.00	13,305.00	13,305.00	13,305.00	13,305.00	13,305.00	13,305.00	13,305.00	13,305.00
Water Supply & Treatment	3,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
Fuel Expenses & Generators Running Costs	2,700.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00
Spare parts consumed	3,114.00	10,380.00	12,456.00	20,760.00	20,760.00	20,760.00	20,760.00	20,760.00	20,760.00	20,760.00
Repairs and Maintenance (Plant Machinery & E	4,755.00	15,850.00	19,020.00	31,700.00	31,700.00	31,700.00	31,700.00	31,700.00	31,700.00	31,700.00
Royalties	30,240.00	65,520.00	70,560.00	70,560.00	70,560.00	70,560.00	70,560.00	70,560.00	70,560.00	70,560.00
Labour	48,383.50	104,832.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00
Skilled labour	29,030.00	62,899.00	67,738.00	67,738.00	67,738.00	67,738.00	67,738.00	67,738.00	67,738.00	67,738.00
Unskilled labour	19,353.50	41,933.00	45,158.00	45,158.00	45,158.00	45,158.00	45,158.00	45,158.00	45,158.00	45,158.00
Labour overhead costs (taxes etc.)	9,676.50	21,445.00	22,579.00	22,579.00	22,579.00	22,579.00	22,579.00	22,579.00	22,579.00	22,579.00
Mine overhead costs	85,970.00	187,060.00	202,180.00	202,180.00	202,180.00	202,180.00	202,180.00	202,180.00	202,180.00	202,180.00
Materials and services	27,336.00	61,728.00	68,784.00	68,784.00	68,784.00	68,784.00	68,784.00	68,784.00	68,784.00	68,784.00
Rents, leasing costs	3,250.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00
Insurance	7,000.00	14,000.00	14,000.00	14,000.00	14,000.00	14,000.00	14,000.00	14,000.00	14,000.00	14,000.00
Gold Elution Charges	48,384.00	104,832.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00	112,896.00
FACTORY COSTS	425,007.00	945,010.00	1,019,380.00	1,040,284.00	1,040,284.00	1,040,284.00	1,040,284.00	1,040,284.00	1,040,284.00	1,040,284.00
Administrative costs	54,940.00	109,880.00	109,880.00	109,880.00	109,880.00	109,880.00	109,880.00	109,880.00	109,880.00	109,880.00
Salaries, wages	17,500.00	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00
Social costs etc. (on salaries)	12,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00	24,000.00
Materials and services	18,000.00	36,000.00	36,000.00	36,000.00	36,000.00	36,000.00	36,000.00	36,000.00	36,000.00	36,000.00
Rents, leasing costs	2,250.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00
Insurance	5,190.00	10,380.00	10,380.00	10,380.00	10,380.00	10,380.00	10,380.00	10,380.00	10,380.00	10,380.00
OPERATING COSTS	479,947.00	1,054,890.00	1,129,180.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00
Depreciation	40,750.63	81,501.25	81,501.25	81,501.25	81,501.25	64,401.25	47,301.25	46,238.75	26,623.13	7,220.00
Financial costs (Interest)	29,716.00	29,716.00	20,562.48	10,676.67	0	0	0	0	0	0
TOTAL PRODUCTION COSTS	550,413.63	1,166,107.25	1,231,243.73	1,242,341.92	1,231,665.25	1,214,565.25	1,197,465.25	1,196,402.75	1,176,787.13	1,157,384.00

Direct marketing costs	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00
COSTS OF PRODUCTS	568,413.63	1,184,107.25	1,249,243.73	1,260,341.92	1,249,665.25	1,232,565.25	1,215,465.25	1,214,402.75	1,194,787.13	1,175,384.00

ANNEX IX

CASH FLOW FOR FINANCIAL PLANNING (IN US$)

	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10	Scrap
TOTAL CASH INFLOW	1,611,624.00	1,310,400.00	1,417,275.72	1,412,716.32	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	553,267.46
Inflow funds	1,006,824.00	0.00	6,075.72	1,516.32	0.00	0	0	0	0	0	0
Total equity capital	545,550.00	0	0	0	0	0	0	0	0	0	0
Total long-term loans	371,450	0	0	0	0	0	0	0	0	0	0
Total short-term finance	89,824.00	0.00	6,075.72	1,516.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inflow operation (Sales Revenue)	604,800.00	1,310,400.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	0.00
TOTAL CASH OUTFLOW	1,607,432.46	1,232,775.58	1,326,761.55	1,353,195.12	1,211,520.69	1,235,674.65	1,244,994.15	1,245,573.21	1,280,114.02	1,290,688.72	97,347.00
Increase in fixed assets	917,000.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed investments	879,000.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0
Pre-production expenditures (net of inte	38,000.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0
Increase in current assets	162,769.46	15,739.16	12,883.00	3,415.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating costs	479,947.00	1,054,890.00	1,129,180.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00	1,150,164.00	0.00
Marketing costs	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	0.00
Income (corporate) tax	0.00	0.00	22,563.49	20,631.32	23,834.33	37,161.83	42,291.83	42,610.58	61,623.86	67,444.80	0.00
Financial costs	29,716.00	29,716.00	20,562.48	10,676.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan repayment	0	114,430.42	123,572.57	133,458.38	57.666667	0	0	0	0	0	97,347.00
Dividends	0	0	0	16,848.91	19,464.70	30,348.82	34,538.32	34,798.64	50,326.15	55,079.92	0
SURPLUS (DEFICIT)	4,191.54	77,624.42	90,514.17	59,521.20	199,679.31	175,525.35	166,205.85	165,626.79	131,085.98	120,511.28	455,920.46
CUMULATIVE CASH BALANC	4,191.54	81,815.96	172,330.13	231,851.33	431,530.64	607,055.99	773,261.84	938,888.63	1,069,974.61	1,190,485.89	1,646,406.35
Net flow of funds	977,108.00	-144,146.42	-138,059.33	-159,467.64	-19,522.37	-30,348.82	-34,538.32	-34,798.64	-50,326.15	-55,079.92	-97,347.00

ANNEX X

DISCOUNTED CASH FLOW - (IN US$)

TOTAL CAPITAL INVESTED

		Construction 20	Production YR1	Production YR2	Production YR3	Production YR4	Production YR5	Production YR6	Production YR7	Production YR8	Production YR9	Production YR10	Scrap
TOTAL CASH INFLOW		604,800.00	1,310,400.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	453,312.46	0
Inflow operation		604,800.00	1,310,400.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	0.00	0
TOTAL CASH OUTFLOW		1,487,892.46	1,088,640.33	1,176,350.78	1,190,294.84	1,192,855.99	1,205,325.83	1,211,435.83	1,210,774.38	1,229,687.86	1,235,608.80	0	0
Increase in fixed assets		917,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Increase in net working capital		72,945.46	15,753.53	6,807.79	1,899.31	37.67	0.00	0.00	0.00	0.00	0.00	0.00	0
Operating costs		479,947.00	1,064,886.80	1,157,543.00	1,172,395.53	1,175,818.32	1,189,325.83	1,195,435.83	1,194,774.38	1,213,687.86	1,219,608.80	0.00	0
Marketing costs		18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	0.00	0
Income (corporate) tax		0.00	0.00	22,306.49	20,635.32	25,838.33	37,165.83	42,281.83	42,618.58	61,625.86	67,446.80	0.00	0
NET CASH FLOW		-883,092.46	221,759.47	234,649.22	220,950.16	219,144.01	205,874.18	200,764.18	200,425.43	181,412.14	175,591.20	453,312.46	438,867.39
CUMULATIVE NET CASH FLOW		-883,092.46	-661,332.99	-426,683.77	-206,178.61	12,965.40	218,839.57	419,603.75	620,029.17	801,441.31	977,032.51	1,430,344.97	1,869,212.36
Net present value		-849,756.11	197,581.62	193,579.66	168,436.27	154,998.79	134,825.24	121,747.45	112,533.64	94,311.45	84,523.42	219,485.06	203,269.53
Cumulative net present value		-849,756.11	-652,174.50	-458,594.84	-290,158.57	-135,161.78	-336.53	121,410.92	233,944.56	328,256.01	412,779.43	632,264.49	867,886.81
NET PRESENT VALUE	at 8.00%	632,221.49											
INTERNAL RATE OF RETURN	22.20%												
MODIFIED INTERNAL RATE OF RETURN	22.20%												
NORMAL PAYBACK	at 0.00%	4.94 years	23										
DYNAMIC PAYBACK	at 8.00%	6.00 years	24										
NPV RATIO	0.649287												
Net present values discounted to	12-Jul												
Net present values discounted to	12-Jul												

											ANNEX XI
	DISCOUNTED CASH FLOW - EQUITY CAPITAL INVESTE				(IN US$)						
	YR 1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10	Scrap
TOTAL CASH INFLOW	4,191.54	77,624.42	90,514.17	76,370.11	219,144.01	205,874.18	200,744.18	200,425.43	181,412.14	175,591.20	455,920.46
Surplus (deficit)	4,191.54	77,624.42	90,514.17	59,521.20	199,679.31	175,525.35	166,205.85	165,626.79	131,085.98	120,511.28	455,920.46
Dividends	0	0	0	16,848.91	19,464.70	30,348.82	34,538.32	34,798.64	50,326.15	55,079.92	0.00
TOTAL CASH OUTFLOW	545,550.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity capital paid	545,550.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET CASH RETURN	-541,358.46	77,624.42	90,514.17	76,370.11	219,144.01	205,874.18	200,744.18	200,425.43	181,412.14	175,591.20	455,920.46
CUMULATIVE NET CASH RETURN	-541,358.46	-463,734.04	-373,219.87	-296,849.76	-77,705.75	128,168.43	328,912.60	529,338.03	710,750.16	886,341.36	1,342,261.82
Net present value	-534,715.77	74,801.89	85,095.56	70,047.06	196,097.57	179,730.02	170,977.05	166,542.02	147,066.41	138,875.62	360,588.90
Cumulative net present value	-534,715.77	-459,913.88	-374,818.32	-304,771.26	-108,673.69	71,056.32	242,033.37	408,575.39	555,641.80	694,517.42	1,055,106.33
NET PRESENT VALUE	at 2.50%	1,055,106.33									
INTERNAL RATE OF RETURN	24.29%										
MODIFIED INTERNAL RATE OF RE	24.29%										
SHORT NET PRESENT VALUE	at 2.50%	694,517.42	for 10 years								
NORMAL PAYBACK	at 0.00%	5.38 years	24								
DYNAMIC PAYBACK	at 2.50%	5.60 years	24								
NPV RATIO	1.96										
Net present values discounted to	16-Jun										

ANNEX XII

INCOME STATEMENT (IN US$)

	Production YR1	Production YR2	Production YR3	Production YR4	Production YR5	Production YR6	Prudction YR7	Production YR8	Production YR9	Production YR10
Sales revenue	604,800.00	1,310,400.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00
Less variable costs	497,947.00	1,072,890.00	1,147,180.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00
Material	291,318.00	648,031.00	696,849.00	705,153.00	705,153.00	705,153.00	705,153.00	705,153.00	705,153.00	705,153.00
Personnel	87,560.00	185,277.00	194,475.00	194,475.00	194,475.00	194,475.00	194,475.00	194,475.00	194,475.00	194,475.00
Marketing (except personnel)	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00	18,000.00
Other variable costs	101,069.00	221,582.00	237,856.00	250,536.00	250,536.00	250,536.00	250,536.00	250,536.00	250,536.00	250,536.00
VARIABLE MARGIN	106,853.00	237,510.00	264,020.00	243,036.00	243,036.00	243,036.00	243,036.00	243,036.00	243,036.00	243,036.00
in % of sales revenue	17.67	18.13	18.71	17.22	17.22	17.22	17.22	17.22	17.22	17.22
Less fixed costs	40,750.63	81,501.25	81,501.25	81,501.25	81,501.25	64,401.25	47,301.25	46,238.75	26,623.13	7,220.00
Depreciation	40,750.63	81,501.25	81,501.25	81,501.25	81,501.25	64,401.25	47,301.25	46,238.75	26,623.13	7,220.00
OPERATIONAL MARGIN	66,102.38	156,008.75	182,518.75	161,534.75	161,534.75	178,634.75	195,734.75	196,797.25	216,412.88	235,816.00
in % of sales revenue	10.93	11.91	12.93	11.45	11.45	12.66	13.87	13.95	15.34	16.71
Financial costs	29,716.00	29,716.00	20,562.48	10,676.67	0.00	0.00	0.00	0.00	0.00	0.00
GROSS PROFIT FROM OPERATIO	36,386.38	126,292.75	161,956.27	150,858.08	161,534.75	178,634.75	195,734.75	196,797.25	216,412.88	235,816.00
in % of sales revenue	6.016266	9.64	11.48	10.69	11.45	12.66	13.87	13.95	15.34	16.71
Depreciation allowances	41,044.00	82,087.00	82,087.00	82,087.00	82,087.00	54,762.00	54,762.00	54,762.00	11,000.00	11,000.00
GROSS PROFIT	-4,657.63	44,205.75	79,869.27	68,771.08	79,447.75	123,872.75	140,972.75	142,035.25	205,412.88	224,816.00
Investment allowances	129,250.00	129,250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TAXABLE PROFIT	0	0	75,211.65	68,771.08	79,447.75	123,872.75	140,972.75	142,035.25	205,412.88	224,816.00
Income (corporate) tax	0	0	22,563.49	20,631.32	23,834.33	37,161.83	42,291.83	42,610.58	61,623.86	67,444.80
NET PROFIT	-4,657.63	44,205.75	57,305.78	48,139.76	55,613.43	86,710.93	98,680.93	99,424.68	143,789.01	157,371.20
in % of sales revenue	-0.77011	3.373455	4.060784	3.411264	3.940861	6.144482	6.992696	7.045399	10.189131	11.151587
Dividends	0	0	0	16,848.91	19,464.70	30,348.82	34,538.32	34,798.64	50,326.15	55,079.92
RETAINED PROFIT	-4,657.63	44,205.75	57,305.78	31,290.84	36,148.73	56,362.10	64,142.60	64,626.04	93,462.86	102,291.28

RATIOS										
Net profit to equity (%)	-0.853749	8.102969	10.504221	8.824078	10.194011	15.894221	18.088337	18.224668	26.356707	28.846339
Net profit to net worth (%)	-0.8611	7.555271	8.920522	7.145633	7.834604	11.316927	11.884283	11.109222	14.547108	14.428084
Net profit+interest to investment (%)	2.531288	7.350308	7.690667	5.798133	5.482069	8.547492	9.727429	9.800744	14.17394	15.512798

ANNEX XIII

BREAK-EVEN ANALYSIS (IN US$)

	Production 21	Production 22	Production 23	Production 24	Production 25	Production 26	Production 27	Production 28	Production 29	Production 30
Sales revenue	604,800.00	1,310,400.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00	1,411,200.00
Variable costs	497,947.00	1,072,890.00	1,147,180.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00	1,168,164.00
Variable margin	106,853.00	237,510.00	264,020.00	243,036.00	243,036.00	243,036.00	243,036.00	243,036.00	243,036.00	243,036.00
Variable margin ratio (%)	17.667493	18.125	18.7089	17.221939	17.221939	17.221939	17.221939	17.221939	17.221939	17.221939
Including cost of finance										
Fixed costs	40,750.63	81,501.25	81,501.25	81,501.25	81,501.25	64,401.25	47,301.25	46,238.75	26,623.13	7,220.00
Financial costs	29,716.00	29,716.00	20,562.48	10,676.67	0.00	0.00	0.00	0.00	0.00	0.00
Break-even sales value	398,849.02	613,612.41	545,535.68	535,235.44	473,240.85	373,948.90	274,656.94	268,487.48	154,588.43	41,923.27
Break-even ratio (%)	***65.95***	***46.83***	***38.66***	***37.93***	***33.53***	***26.50***	***19.46***	***19.03***	***10.95***	***2.97***
Fixed costs coverage ratio	1.52	2.14	2.59	2.64	2.98	3.77	5.14	5.26	9.13	33.66
Excluding cost of finance										
Fixed costs	40,750.63	81,501.25	81,501.25	81,501.25	81,501.25	64,401.25	47,301.25	46,238.75	26,623.13	7,220.00
Break-even sales value	230,653.12	449,662.07	435,628.23	473,240.85	473,240.85	373,948.90	274,656.94	268,487.48	154,588.43	41,923.27
Break-even ratio (%)	38.14	34.31	30.87	33.53	33.53	26.50	19.46	19.03	10.95	2.97
Fixed costs coverage ratio	2.62	2.91	3.24	2.98	2.98	3.77	5.14	5.26	9.13	33.66
Break-even ratio (%)	38.83	38.66	30.42	30.42	30.12	16.14	16.01	15.75	0.67	0.67
Fixed costs coverage ratio	2.58	2.59	3.29	3.29	3.32	6.20	6.25	6.35	149.99	149.99

										ANNES XIV
	PROJECTED BALANCE SHEET									**(IN US$)**
	YEAR 1	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**YEAR 6**	**YEAR 7**	**YEAR 8**	**YEAR 9**	**YEAR 10**
TOTAL ASSETS	1,006,824.00	936,599.33	871,750.63	771,099.41	807,190.47	863,552.57	927,695.17	992,321.21	1,085,784.07	1,188,075.35
Total current assets	166,961.00	260,324.58	363,721.75	426,658.79	626,338.10	801,863.45	968,069.30	1,133,696.09	1,264,782.07	1,385,293.35
Inventory on materials & supplies	40,997.00	45,858.58	49,338.75	50,030.75	50,030.75	50,030.75	50,030.75	50,030.75	50,030.75	50,030.75
Work in progress	21,250.35	23,625.25	25,482.50	26,007.10	26,007.10	26,007.10	26,007.10	26,007.10	26,007.10	26,007.10
Finished product	33,329.65	36,628.13	39,207.64	39,936.25	39,936.25	39,936.25	39,936.25	39,936.25	39,936.25	39,936.25
Accounts receivable	58,093.82	62,585.25	66,918.83	68,142.90	68,142.90	68,142.90	68,142.90	68,142.90	68,142.90	68,142.90
Cash-in-hand	9,098.64	9,811.41	10,443.90	10,690.46	10,690.46	10,690.46	10,690.46	10,690.46	10,690.46	10,690.46
Cash surplus, finance available	4,191.54	81,815.96	172,330.13	231,851.33	431,530.64	607,055.99	773,261.84	938,888.63	1,069,974.61	1,190,485.89
Total fixed assets, net of depreciatio	835,205.38	671,617.13	508,028.88	344,440.63	180,852.38	61,689.13	-40,374.13	-141,374.88	-178,998.00	-197,218.00
Fixed investments	0.00	879,000.00	879,000.00	879,000.00	879,000.00	879,000.00	879,000.00	879,000.00	879,000.00	879,000.00
Construction in progress	879,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total pre-production expenditures	38,000.00	38,000.00	38,000.00	38,000.00	38,000.00	38,000.00	38,000.00	38,000.00	38,000.00	38,000.00
Less accumulated depreciation	40,750.63	122,251.88	203,753.13	285,254.38	366,755.63	431,156.88	478,458.13	524,696.88	551,320.00	558,540.00
Less depreciation allowance	41,044.00	123,131.00	205,218.00	287,305.00	369,392.00	424,154.00	478,916.00	533,678.00	544,678.00	555,678.00
Loss in current year	4,657.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL LIABILITIES	1,006,824.00	936,599.33	871,750.63	771,099.41	807,190.47	863,552.57	927,695.17	992,321.21	1,085,784.07	1,188,075.35
Total current liabilities (Accounts P	89,824	89,812.63	95,888.35	97,404.67	97,347.00	97,347.00	97,347.00	97,347.00	97,347.00	97,347.00
Total long-term debt	371,450.00	257,030.95	133,458.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total equity capital	545,550.00	545,550.00	545,550.00	545,550.00	545,550.00	545,550.00	545,550.00	545,550.00	545,550.00	545,550.00
Reserves, retained profit brought for	0.00	0.00	39,548.13	96,853.90	128,144.75	164,293.47	220,655.57	284,798.17	349,424.21	442,887.07
Retained profit	0	44,205.75	57,305.78	31,290.84	36,148.73	56,362.10	64,142.60	64,626.04	93,462.86	102,291.28
Net worth	540,892.38	585,098.13	642,403.90	673,694.75	709,843.47	766,205.57	830,348.17	894,974.21	988,437.07	1,090,728.35

RATIOS										
Equity to total liabilities (%)	54.18524	58.247959	62.58097	70.749632	67.586278	63.175077	58.807032	54.977158	50.244797	45.918805
Net worth to total liabilities (%)	53.722634	62.470483	73.691246	87.368079	87.940021	88.727148	89.506575	90.189971	91.034405	91.806328
Long-term debt to net worth	0.686736	0.439295	0.207748	0	0	0	0	0	0	0
Current assets to current liabilities	1.858757	2.89853	3.79318	4.38027	6.434077	8.23716 7	9.94452 1	11.64592 7	12.992512	14.230468