

**FENGHAO TECHNOLOGY COMPANY
LIMITED**

**BUSINESS PLAN FOR
ASSEMBLING OF
MOTORCYCLES**

JULY 2024

1.0. EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Study examines the possibility of establishing a project for Motorcycles remanufacturing (**Assembly line**) in Dar es Salaam. Recognition of market needs and demands will be the hallmark of the anticipated success in the company's manufacturing operations.

An **assembly line** is a manufacturing process (most of the time called a *progressive assembly*) in which parts (usually interchangeable parts) are added as the semi-finished assembly moves from work station to work station where the parts are added in sequence until the final assembly is produced.

By mechanically moving the parts to the assembly work and moving the semi-finished assembly from work station to work station, a finished product can be assembled faster and with less labor than by having workers carry parts to a stationary piece for assembly.

Assembly lines are the common method of assembling complex items such as automobiles and other transportation equipment, household appliances and electronic goods.

Assembly lines are designed for the sequential organization of workers, tools or machines, and parts. The motion of workers is minimized to the extent possible. All parts or assemblies are handled either by conveyors or motorized vehicles such as forklifts, or gravity, with no manual trucking. Heavy lifting is done by machines such as overhead cranes or forklifts. Each worker typically performs one simple operation.

According to Henry Ford:

The principles of assembly are these:

(1) Place the tools and the men in the sequence of the operation so that each component part shall travel the least possible distance while in the process of finishing.

(2) Use work slides or some other form of carrier so that when a workman completes his operation, he drops the part always in the same place—which place must always be the most convenient place to his hand—and if possible have gravity carry the part to the next workman for his own.

(3) Use sliding assembling lines by which the parts to be assembled are delivered at convenient distances.^[1]

Strong Foundations:

A strict code of professionalism, quality and service will place the company at the top of other Motorcycles components remanufacturers, and its reputation will be steadily extended through the obvious satisfaction of customers.

- Strong On Quality:

The company will manufacture Motorcycles components employing processes such as hard chrome electroplating, machining, and Motorcycles testing. Its range of products will be of superb quality. The factory will maintain high quality standards certified to universally recognized criteria.

1.2 MOTORCYCLES REMANUFACTURING

Remanufacturing is a relatively new term used in the fluid power industry. For many years, Motorcycles components would either be repaired or rebuilt.

This would typically involve replacing only worn parts and reassembling the unit. The quality of these types of repairs was marginal at best. Many “repaired” items would fail upon reinstallation, therefore giving the repair industry a bad reputation.

Due to the increased expectation of quality in the early 90’s, the Motorcycles remanufacturing industry evolved. With equipment becoming more affordable and available, several companies made investments to shift from repairing to remanufacturing.

Remanufacturing is a complex process that involves 5 steps. First, each component is completely disassembled. Every part is then thoroughly inspected to determine if it will meet specifications. The parts are then routed through a series of cleaning, machining, hardening and restorative processes to return it to like new condition. Finally, the parts are reassembled along with new seals and bearings and rigorously tested to insure quality before the component is shipped. The Motorcycles remanufacturing industry provides many benefits to it’s’ customers. They include significant cost savings, readily available products and the ability to offer products that have been obsolete by the manufacturer. Also, by recycling previously manufactured items, we

are conserving valuable natural resources. A remanufactured component is an excellent alternative to a new or aftermarket component.

1.3 PROCESS AND TECHNOLOGY

FENGHAO TECHNOLOGY COMPANY LIMITED is related to quality-certified suppliers of remanufactured Motorcycles components all international and local market.

Severely worn or badly damaged Motorcycles components result in lost productivity and machine downtime. The company's experienced engineers and machinists are expected to meet and exceed industry standards in the remanufacturing of various mechanical components

Extensive engineering and design capabilities, coupled with decades of hands-on repair experience, will enable FENGHAO TECHNOLOGY COMPANY LIMITED to restore Motorcycles components to required specifications at an economical cost, making client machinery and employees productive again. Its remanufacturing process will include:

- Disassembly, cleaning, and inspection of all components
- Delivering written inspection report and estimate
- Component repair as per customer specifications
- Assembly and testing components to ensure desired performance

1.4 LOCATION

The plant will be located on industrial site at, Dar es Salaam.

1.5 MANPOWER REQUIREMENTS

The whole project will comprise about 30 permanent employees and several others may be employed on temporary basis. Initially there will be a few technical expatriates who will give training to the local staff. Maximum employment will be given to the local work force. The factory will be organized into three major areas namely:

Production

Marketing

Finance and administration

1.6 IMPLEMENTATION

The project is planned to undergo two phases:

Phase I: Major activities to be involved include registration of the project and approvals by the Tanzania Investment Centre (TIC), and mobilization of funds from sponsors. Other activities include identification of appropriate technology, sourcing of machinery and equipment, construction and renovation of buildings, staff recruitment and training of core personnel.

Phase II: Will involve commencement of manufacturing operations at project site.

1.7 PROJECT ECONOMICS

1.7.1 Capital Investment Requirements

COST STRUCTURE	
PARTICULAR	AMOUNT USD
Land and Buildings	200,000
Machinery & Equipment	460,000
Motorcycles	140,000
Furniture & Fixtures	10,000
Pre exp	40,000
Others	50,000
Working Capital	100,000
TOTAL	1,000,000

3.0 MANUFACTURING SECTOR IN TANZANIA

3.1 INTRODUCTION

A typical assembly plant is divided into three major sections. In the first section, exterior body panels and the interior frame are assembled and welded together. This work is mostly performed by robots, but may also require some manual welding. During this stage, the body is attached to a conveyor system that will move it through the entire assembly process. Throughout the entire process, numerous inspections are performed to

Final assembly of the comprises the third section of the electronic manufacturing process. Although machines assist with loading heavy parts, much of the assembly work is still performed by team assemblers working with power tools.

The smallest sector in terms of employment is motor vehicle body and trailer manufacturing. In 2018, about one-fourth of establishments were engaged in this type of manufacturing. These establishments specialized in manufacturing truck trailers; motor homes; travel trailers; campers; and car, truck, and bus bodies placed on separately purchased chassis.

4.0 PRODUCTION PROCESS AND TECHNOLOGY

4.1 BASIC PROCESS

Despite news of plant closures and unemployed auto workers, motorcycles manufacturing industry continues to be one of the largest employers in the country and a major contributor to our economy. Motorcycles and the parts manufacturing is constantly evolving to improve efficiency and provide products that consumers want in a highly competitive market, which at times may mean outdated plants are forced to close.

It also means companies and workers must adapt more quickly to changes in demand and production practices so that new technologies can be implemented and work can be done on a number of different vehicles at one time. Teamwork and continual retraining are key components to the success of this industry and the ability of the workforce to adapt.

Manufacturers also have a major influence on other industries in the economy as well. It requires vast quantities of materials from, and creates many jobs in, industries that manufacture steel, rubber, plastics, glass, and other basic materials. It also spurs employment for dealers; repair and maintenance shops; and other stores.

4.1.2 Machining

Conventional machining is a collection of material-working processes in which power-driven machine tools such as saws, lathes, milling, machines and drill presses are used with a sharp cutting tool to mechanically cut the material to achieve the desired geometry. Machining is a part of the manufacture of almost all metal products, and it is common for other materials, such as wood and plastic, to be machined. A person who specializes in machining is called a machinist. A room, building, or company where machining is done is called a machine shop. Much of modern day

machining is controlled by computers using computer numerical control (CNC) machining.

The three principal machining processes are classified as turning, drilling and milling. Other operations falling into miscellaneous categories include shaping, planing, boring, broaching and sawing.

- Turning operations are operations that rotate the work piece as the primary method of moving metal against the cutting tool. Lathes are the principal machine tool used in turning.
- Milling operations are operations in which the cutting tool rotates to bring cutting edges to bear against the work piece. Milling machines are the principal machine tool used in milling.
- Drilling operations are operations in which holes are produced or refined by bringing a rotating cutter with cutting edges at the lower extremity into contact with the work piece. Drilling operations are done primarily in drill presses but sometimes on lathes or mills.
- Miscellaneous operations are operations that strictly speaking may not be machining operations in that they may not be swarf producing operations but these operations are performed at a typical machine tool. Burnishing is an example of a miscellaneous operation. Burnishing produces no swarf but can be performed at a lathe, mill, or drill press.

4.1.3 Welding

Welding is the process of joining metals by melting the parts and then using a filler to form a joint. Welding can be done using different energy sources, from a gas flame or electric arc to a laser or ultrasound.

Until the beginning of the 20th century, welding was done via a process known as forge welding, which consists of heating up the pieces to be fixed together and then hammering them until they amalgamate. With the advent of electricity, welding became easier and faster, and it played an important part of the industrialization. There are different welding processes in use in modern times:

- Arc welding is done through the use of an electrical current, and can be performed by using inexpensive equipment.
- Gas Welding is widely used for repair work, especially in anything involving pipes and tubes. Gas welding is common in the jewelry industry, as well as for the welding of plastics and other materials that cannot stand higher temperatures.
- Resistance welding involves the use of additional sheets of metal to encase the pieces to be welded together. It is the most environmentally-friendly of all methods, but it requires costly equipment that cannot be used in all situations.
- Energy beam welding, also known as laser beam welding, is one of the most modern techniques used. Laser welding is fast and accurate, but the high equipment cost makes it prohibitive for many industries.
- Welding cannot be done with all types of metals, as some materials, such as stainless steel, are prone to cracking and distortion when overheated. Alloys are particularly problematic, since it's hard to know the exact chemical composition of the metal. Welding has become highly automatized over the last decade, and the use of welding robots

is now common place in certain industries, such as the automotive manufacturing plants.

4.2 QUALITY CONTROL SYSTEM

Quality will be the nucleus of M/s FENGHAO TECHNOLOGY COMPANY LIMITED and the company will make sure that it is not compromised at any cost. The company expects to incorporate a strict quality management system, which will be responsible for keeping the entire business proceeding under a strict vigil. Its range of products will undergo strict quality check at each level. A variety of measures will be taken to ensure that the finished products meet specifications based on international standards.

5.0 MACHINERY EQUIPMENT AND CIVIL WORKS

5.1 MACHINERY & EQUIPMENT

The company will hence acquire appropriate machinery and equipment including lathe, milling and grinding machines. The technology to be used will be modern to achieve remanufacturing of high quality Motorcycles components. The company is already negotiating with suppliers of required machinery and equipment for supply of the same once all necessary preparations are completed.

5.2 PLANT LOCATION AND CIVIL WORKS

5.2.1 Site and Location

The plant shall be located on industrial site at Dar es Salaam. This location takes into consideration such important factors like availability of reliable power.

5.2.2 Production Building Required

The built up area required for production will be medium sized taking into consideration the kind of operations to be undertaken

5.2.3 Office Building

An office block to accommodate the administrative and clerical staff will also be required.

5.3 UTILITY SERVICES

5.3.1 Water

A three-inch diameter pipeline to the premises from the main pipeline is adequate. To avoid incidences of water shortage a water reservoir of capacity 20,000 liters is recommended to be constructed.

5.3.2 Electricity

The Tanzania Electric Supply Company Ltd. (TANESCO) will continue providing the required amount of electricity from the national grid.

5.0 MANPOWER AND PLANT ORGANIZATION

The proposed project will have three independent departments, namely:

- Production
- Sales and Marketing
- Administration and Finance

6.1 ORGANIZATION

The Board of Directors of M/s FENGHAO TECHNOLOGY COMPANY LIMITED shall manage the project at policy level. The top most people in the day to day running of the company will be the Managing Director. Under the Managing Director's office will be the three Departments mentioned above. Each will be under a Manager and will comprise a number of Sections each headed by a Section Head as follows.

PRODUCTION DEPARTMENT

Sections:

- Operations
- Maintenance

SALES AND MARKETING DEPARTMENT

Sections:

- Research & Promotion
- Sales

ADMINISTRATION AND FINANCE DEPARTMENT

Sections:

- Human Resources & Administration
- Finance & Accounts

Each Department will be manned by a number of personnel with varying education levels and work experiences.

The management team of M/s FENGHAO TECHNOLOGY COMPANY LIMITED will comprise the Managing Director, Production Manager, Finance & Administration Manager and Sales & Marketing Manager.

6.2 RESPONSIBILITIES

Responsibilities will be as follows:

6.2.1 Production Department

The Manager will be responsible for planning and overseeing daily Motorcycles components remanufacturing activities being carried out. He will further be responsible for repair and maintenance of company assets and research and development activities. The Department will comprise Sections, namely:

- The Production Section which would be responsible for overseeing manufacturing operations. An expatriate will be employed to train the local technicians in this aspect of operations.
- Maintenance Section which will manage plant and machinery maintenance

6.2.2 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 aspects of the company. An Accountant will manage the finance function while a Human Resources Section Head will oversee company human resource issues. The following important units will be under the Department.

- The personnel and administration unit which will be responsible for the general administrative matters of the company as well as personnel issues.
- The finance unit, which will be responsible for financial issues. It will also be responsible for the proper maintenance of books of accounts and financial planning.
- The purchasing unit which will be responsible for the purchase of raw materials, spare parts and equipment. This section will also be responsible for the receipt, storage and issue of purchased materials.

6.2.3 Sales and Marketing Department

This Department will be headed by the Sales and Marketing Manager who will be responsible for the development of a sustainable sales and distribution network. This will involve developing distribution network and recruitment and training of qualified and well motivated marketing and sales personnel.

There will be two Section Heads under the Department. One Section will be responsible for Research & Promotion and another will handle Sales function.

6.3 MANPOWER REQUIREMENT

The permanent manpower requirement for running the proposed project is 30. Several other employees may be contracted on temporary basis.

6.4 SOURCE OF MANPOWER

Manpower for proposed project will be employed from local sources, except for a few expatriates who would basically be engaged in the training of local staff. The workers will be given on-the-job training for familiarize them with the proposed machinery and equipment.

After the initial 2 years, depending on the results of the training, local counter parts will replace the expatriates.

7.0 INVESTMENT AND FINANCING

7.1 ASSUMPTIONS

The financial projections to determine the viability of the project by M/s FENGHAO TECHNOLOGY COMPANY LIMITED are based on the following key assumptions:

- Acquisition and Installation of machinery and equipment for Motorcycles components remanufacturing will start immediately. Thereafter production of operations will commence.
- The company market will be local as well as export based on current operations
- Financial calculations are based on current market prices and costs are assumed constant throughout the operating period under view on the assumption that if operation costs change, selling prices will change proportionally to preserve the profit margins.
- The project has adopted the currency exchange rate of United States Dollar 1 = Tanzania Shilling 2320.00 as prevailing during June 2023.

7.2 SUMMARY OF CAPITAL COSTS

On completion of project implementation, the total investment will reach to US\$ 1.9 million as shown in attached schedules.

7.3 BUILDING AND CIVIL WORKS COSTS

The main civil works required involves construction/renovation of factory buildings in which the machinery will be installed .Other civil works will be electrification and water supply, etc.

7.4 PLANT MACHINERY AND EQUIPMENT COSTS

The main plant and machinery for the envisaged project will be for remanufacturing of Motorcycles and other mechanical components including lathe, milling and grinding machines. Other supporting equipment, tools, accessories, etc. will be required as explained earlier

The total investment on machinery and equipment is based on a quotation received from major suppliers for main production machinery

7.5 MOTOR VEHICLES

For company work, the promoters intend to procure various vehicles

7.6 PRE-PRODUCTION CAPITAL EXPENDITURES

These include project development cost for feasibility study and start-up expenses. A budget is considered adequate for this item

7.7 INITIAL WORKING CAPITAL

This is mainly for the procurement of initial stocks of raw materials. Rest of the requirement of the working capital will be raised from commercial banks as and when the need arises. This will fluctuate as per stocks in hand.

7.8 FINANCING PATTERN

The financing of the project will be from shareholder's equity contribution.

The financing of the project will take the following form

	EQUITY(US\$)	LOAN(US\$)
FOREIGN	1,000,000	0
LOCAL	-	-

8.0 COST OF OPERATIONS

The anticipated costs for operating the project are detailed in the following sections and summarized in attached schedules. The summarized costs are based on the fifth year of operation.

8.1 UTILITIES

A total of US\$ 84,113 will be required as water bills and for the purchase of electric power at sustainable production level.

8.2 VEHICLE RUNNING EXPENSES

Vehicle running expenses include fuel, maintenance, lubricants, road licenses, etc. The cost has been estimated at US\$ 270,013

8.3 SALARIES AND WAGES

The number of employees, along with their incomes, is shown in attached schedules. The total annual wage package is estimated at US \$ 234,836 including fringe benefits and related taxes

8.4 MARKETING

The marketing costs are estimated at US\$ 116,385 in the fifth year of operation as per attached schedules

8.5 DEPRECIATION

The following is a depreciation schedule for major assets to be employed in manufacturing operations of the project. The depreciation table is annexed.

9.0 FINANCIAL ANALYSIS

9.1 INCOME AND EXPENDITURE

9.1 Income

The proposed project by M/s FENGHAO TECHNOLOGY COMPANY LIMITED expects to earn its income through revenue generated from sale of remanufactured Motorcycles and other mechanical components.

9.1.1 Expenditure

Some project costs have been discussed in Chapter 9 and are summarized in detail in attached schedule.

9.2 NET INCOME STATEMENT HIGHLIGHTS

The project's annual after tax net income during the fifth year of production is estimated as presented in the Income Statement of the financial statements appendix.

9.3 CASH FLOW HIGHLIGHTS

This is shown in the financial statements. The project has a positive end of the year cash flow from year 1 of operation to the 5th year as shown hereunder.

9.4 BALANCE SHEET

The projected Balance Sheet of the projected is shown in the financial statements under same heading. Net worth of the project will increase in the first year of operation to 5th year.

10.0 ECONOMIC ANALYSIS:

10.1 ASSUMPTIONS AND CONSIDERATIONS

The basic assumptions underlying economic benefits and costs are:

10.1.1 Taxes on capital costs have not been considered.

10.1.2 Conversion factors have been used to determine economic costs and benefits.

10.1.3 Economic life of the project is assumed to be 5 years.

10.2 ECONOMIC BENEFITS OF THE PROJECT

The successful operation of the Project will contribute significant economic benefits to Tanzania. In summary the benefits which will be realized are as follows:-

- This project will boost investment in manufacturing sector which is important for the economy, contributing to research and other skills development. Employment opportunities for at least 30 permanent staff when the project is fully operational.
- The direct income for the workers, combined with other social benefits that the Management of M/s FENGHAO TECHNOLOGY COMPANY LIMITED will provide, will help in overall efforts of alleviation of poverty in the Region.
- Provision of a market for goods and services demanded by expanded tax base to the Treasury and local Government authorities and generation of substantial income to the Government.

11.0 RECOMMENDATIONS

The project is technically feasible, financially and economically viable and environmental friendly. A fast implementation of the project is highly recommended to avoid cost overruns and for the project to be able to realize the benefits outlined above; especially at this juncture when the Government is making effort to boost investment in various sectors in the economy.

In view of the above it is further strongly recommended that the project be approved by Tanzania Investment Centre and be granted the TIC Certificate of Incentives with its associated privileges and benefits as provided for under Tanzania Investment Act, 1997 to facilitate smooth implementation.

ANNEXTURES

INVESTMENT BREAKDOWN

PARTICULAR	AMOUNTS USD
Land and Buildings	200,000
Plant & Machines	460,000
Motorcycles	140,000
Furniture & Fixtures	10,000
Pre Expenses	90,000
Working Capital	100,000
TOTAL	1,000,000

OTHER OPERATING COST

Other Operations Cost			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Motor Vehicle running expens			12,700	13,100	13,500	13,900	14,300
Salaries and Wages			11,500	12,650	13,915	15,307	16,837
Adminitrative Overhead Costs			21,300	23,430	25,773	28,350	31,185
Utility Costs			32,000	35,200	38,720	42,592	46,851
Interest on Loan			10,500	9,450	8,505	7,655	6,889
Communication Exepnses			12,000	13,200	14,520	15,972	17,569
Total Costs			100,000	107,030	114,933	123,775	133,632

FIXED ASSETS SCHEDULE

NAME OF ASSETS			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Land and Buildings			200,000	190,000	180,000	170,000	160,000
Plant & Machines			1,360,000	1,088,000	816,000	544,000	272,000
Motor Vehicle			140,000	132,000	127,000	122,000	117,000
Furniture & Fixtures			10,000	8,750	40,000	35,000	30,000
Total			1,710,000	1,418,750	1,163,000	871,000	579,000
Depreciation			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Land and Buildings			10,000	10,000	10,000	10,000	10,000
Plant & Machines			272,000	272,000	272,000	272,000	272,000
Motorcycles			8,000	5,000	5,000	5,000	5,000
Furniture & Fixtures			1,250	1,250	1,250	1,250	1,250
ANNUAL DEPRECIATION			291,250	288,250	288,250	288,250	288,250
CLOSING FIXED ASSETS			1,418,750	1,130,500	874,750	582,750	290,750

PROJECTED BALANCE SHEET

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Fixed Assets	1,710,000	1,418,750	1,163,000	871,000	579,000
Long term Assets					
Depreciation	291,250	288,250	288,250	288,250	288,250
Total long term assets	1,418,750	1,130,500	874,750	582,750	290,750
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	190,000	190,000	190,000	190,000	190,000
Total Assets	1,608,750	1,320,500	1,064,750	772,750	480,750
Current Liabilities					
Accounts Payable	84,000	88,200	92,610	97,241	102,103
Other Current Liabilities	70,000	73,500	77,175	81,034	85,085
Subtotal Current Liabilities	154,000	1,616,700	169,785	178,274	187,188
Long term Liabilities					
Long term Liabilities	1,820,000	1,820,000	1,820,000	1,820,000	1,820,000
Total Liabilities	1,418,750	1,130,500	874,750	582,750	290,750
Net Assets	820,810	877,633	951,268	1,044,516	1,157,656
Capital and Reserves					
Owners Contribution	780,000	780,000	780,000	780,000	780,000
Retained Earnings	40,810	97,633	171,268	264,516	377,656
Total Capital	1,608,750	1,320,500	1,064,750	772,750	480,750

PROJECTED INCOME STATEMENT

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR5
Sales Revenue	2,755,000	3,306,000	3,967,200	4,760,640	5,712,768
Cost of Sales	551,000	551,000	551,000	551,000	551,000
Gross Profit	2,204,000	2,755,000	3,416,200	4,209,640	5,161,768
Operating Expenses					
Administrative Overhead					
Costs	21,300	21,513	21,728	21,945	22,165
Motor Vehicle running	12,700	12,827	12,955	13,085	13,216
Salaries and Wages	11,500	11,615	11,731	11,848	11,967
Depreciation	291,250	294,163	297,104	300,075	303,076
Utility Costs	32,000	32,320	32,643	32,970	33,299
Insurance	47,500	47,975	48,455	48,939	49,429
Interest on Loan	10,500	10,605	10,711	10,818	10,926
Total Expenses	392,750	396,678	400,644	404,651	408,697
Profit before Tax	1,811,250	2,358,323	3,015,556	3,804,989	4,753,071
Tax (30%)	543,375	1,650,826	2,110,889	2,663,492	3,327,150
Profit After Tax	1,267,875	707,497	904,667	1,141,497	1,425,921