PDW MANUFACTURING (T) COMPANY LIMITED

Feasibility Report

For

Set Up of Manufacturing of Iron Rolls and Beams

By;

PDW MANUFACTURING (T) COMPANY LIMITED

P O Box 105033

DAR ES SALAAM

Executive Summary

1 Introduction

This study is done with an objective of preparing a Feasibility Report for M/s PDW MANUFACTURING (T) COMPANY LIMITED, of Dar es Salaam for a project of setting up of Manufacturing Unit of Iron Rolls and Beams in Coast Region, Tanzania.

The scope of services for the proposal feasibility report for development of manufacturing unit for the production of building materials in Misugusugu-, Kibaha, Coast Region, include: Market assessment, Development program, land and civil works, project implementation schedule, project cost, financial projections, and conclusion & recommendations.

The overall approach comprised a combination of secondary and primary research. A multi-disciplinary team of appropriate personnel with experience in techno economic studies and market research were deployed for undertaking this assignment.

The assignment commenced with a planning for the primary and secondary research. Initially, our team interacted with PDW MANUFACTURING (T) COMPANY LIMITED officials to understand the requirements of the study.

Later, the team continuously interacted with PDW MANUFACTURING (T) COMPANY LIMITED for their inputs on the plan of the unit, machinery, the constructing cost, project cost, financing etc.

The data obtained from the secondary and primary research has been analyzed and incorporated in the report. A worksheet model has been prepared for feasibility calculations.

The report is prepared on the basis of best of the information provided by the various stakeholders and associations/agencies. The information in the report should not be claimed and be used as evidence for any purpose.

2 Demographic Indicators & Development – Tanzania

Tanzania has been showing an appreciate growth in the past few years. The development taking place in the country has been in pace with the other

developing nations. The GDP in real terms grew by 7.1 % in 2007, compared to 6.7 % in 2006. Over the years the construction has shown a decent increase.

Since the country started to implement economic and institutional reforms, there has been a steady increase of Foreign Direct Investment (FDI) inflows in the economy. Tanzania is among top three recipients of foreign direct investments (FDI) in non-oil producing African countries after South Africa and Ethiopia. Inflows of FDI have risen from US $ 463.40 million in 2010 to US $ 12.50 million in 2017.

3 Genesis & Details of the Project

The project involves set up of manufacturing unit of Iron Rolls and Beams at Kibaha, Coast Region.

M/s. PDW MANUFACTURING (T) COMPANY LIMITED of Dar es Salaam, was incorporated on the 14th December, 2023 as private limited liability company under the Companies Ordinance (Cap 212 of the Laws of Tanzania).

The day to day activities would be managed by an individual appointed for the said purpose. It is expected that a significant number of people will be employed, during the construction of the commercial complex and about 60 local citizens would be employed permanently, excluding the security guards, once it becomes operational.

5 Project Cost and Means of Finance

The development cost of the entire project has been estimated to be around US $ 1.5 million. The major factors contributing towards the cost of the project is the cost of machinery and building construction.

It has been conveyed to us that the promoters have already had consent form the bank. Considering the size of this project, and also keeping in mind the 3 months of implementation period, the contingencies and pre-operational expenses have been estimated at US$ 50,000/-

The finance for the project is already arranged for by the promoters. The table below indicated in details the manner in which the investment is going to be arranged:

COST OF THE PROJECT AND MEANS OF FINANCE		
USD		
NO.	**PARTICULARS**	**TOTAL**
1	Building and Civil Work	200,000
2	Plant and Machinery	500,000
4	Motor Vehicles	350,000
5	Furniture & Fixture	50,000
6	Pre-operative Expenses	70,000
7	Others	30,000
8	Working Capital	300,000
	TOTAL	**1,500,000**

7 Financial Projections

Details of financial projections are attached as appendices to this report. However, in brief the annexed project financials show that the project will be one with a full proof financing scheme.

For the purpose of calculations and projections the following assumptions were made:

1. Long term loan is availed @ 8% per annum

The detailed calculations of the projected financial are given in the annexure. The Net Present Value for the project comes out to be US$ 1,109,296/= and the IRR is reasonably good at 19%. Pay Back for the project is estimated to be around 4.59 years.

The next annexure indicates the calculation for the Break Even Analysis and the Margin of Safety. It must be noticed that the average Return on Investment for the five years is more than 22%, which is a very good sign for the investors.

As far as DSCR is concerned we can see that for the coming years it is expected to be more that I which means that the company can repay the loan from its current profits only and note require to repay from its accumulated resources.

8 Development Value

The Project's development value to the country is as under:-

The project will generate employment to several people both during the development and after completion. It has been estimated that directly or indirectly this project will provide employment to nearly 60 individuals excluding the security guards.

Government will also earn revenue in terms of various levies on the Company associated with the operation of the complex. Further as indicated in the financial projections the total contribution for five years by way of income-tax itself will be to the tune of about US$ 778,910. Last but not the least, the manufacturing units are always considered to be a national property and will therefore add to the national wealth.

It may be mentioned here that total investment of US$ 0.83 million will play a good part in boosting the local economy. Considering all relevant factors it is being recommended that the grant of 0% import duty and VAT deferment on capital goods and deemed capital goods is granted to this project not only to make the project viable but also to catalyse other development benefits that may accrue to the country on acceptance of this project.

1.1 Approach and methodology

Approach

The overall approach comprised a combination of secondary and primary research. A multi-disciplinary team of appropriate personnel with experience in techno economic studies and market research were deployed for undertaking this assignment.

Methodology.

The assignment commenced with a detailed planning for the primary and secondary research. Initially, our team interacted with PDW MANUFACTURING (T) COMPANY LIMITED officials to understand the requirements of the study. Later, the team continuously interacted with PDW MANUFACTURING (T) COMPANY LIMITED for their inputs on the plan of the commercial complex, the material that would be used, the construction cost, project cost, financing etc.

- **Secondary Research**

A detailed desk research was undertaken to gain a fair undertaking of the construction industry, its trends, market size, best practices etc. The sources from which the secondary data was collected included in-house database, internet,

and various periodicals. The secondary research was used for planning the primary research for the study and identifying the data to be collected by way of primary research. A detailed desk research was undertaken to gain a fair understanding of the construction industry, its trends, market size, best practice etc. The sources from which the secondary data was collected included in-house database, internet, and various periodicals. The secondary research was used for planning the primary research for the study and identifying the data to be collected by way of Primary research.

- **Primary Research**

Interview guidelines were developed for the compilation of the necessary information by way of interview.

1.2 Data Analysis and Report Preparation

The data obtained from the secondary and primary research has been analyzed and incorporated in the report. A worksheet model has been prepared for feasibility calculations.

Report Format

The report is presented in 07 chapters.

Chapter 1 Introduction

This chapter outlines the objectives, scope, approach & methodology for the study.

Chapter 2 Demographic Indicators & Development – Tanzania

This chapter discusses about the demography of Tanzania and the macro-economic developments that are taking place in the Country.

Chapter 3 Genesis & Details of the Project

The chapter discusses the initiation of the project, the stakeholders, location, construction details, components of the projects, employment details and other relevant details.

Chapter 4 Project Cost and Means of Finance

The chapter presents the elements of the project cost and discusses the means of financing for the project.

Chapter 5 Financial Projections

Financial statements including projected income statement, projected cash flow statement and projected balance sheet for the first 05 years of operation and financial indicators such as IRR and payback period are given in this chapter.

The Return on Investment on annual basis for the project has also been calculated.

Chapter 6 Developmental Value

This chapter mentions about the benefits incurring to the nation and the citizens as a result of this implementation of the project in consideration.

Chapter 7 Conclusions and Recommendations

The chapter discusses the conclusions derived from the study and recommendations how to go ahead.

Annexure

1.3 Limitations

The report is prepared on the basis of best of the information provided by the various stakeholders and association/agencies. The information in the report shall not be claimed and be used as evidence for any purpose.

2. Demographic Indicators and Development – Tanzania.

2.1 Tanzania – The Developing Economy

In the African continent Tanzania is among the fastest developing economies. Tanzania has clinched the top slot in the improvement index as published by the Centre for International Development at Harvard University.

The report titled "The Africa Competitiveness Report 2000/2001" ranks Tanzania as first on improvement index. Investors in Tanzania are highly optimistic of the future of the economy.

Low inflation, a reasonable stable currency, friendly government and peaceful country are what most of the international company chiefs quoted as being economic driving force.

Tanzania has been showing an appreciable growth in the past few years. The development taking place in the country has been in pace with the other developing nations.

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3. Genesis & Details of the Project

3.1 Introduction

The project involves setting up of Manufacturing Plant for Iron Rolls and Beams at Kibaha, Coast Region.

Tanzania is growing commercially and is being viewed positively by outside world. The tourists are becoming more and more interested in viewing the national parks and hidden beauties. Tanzania depends largely on the performance of its agricultural sector for its social and economic development. Like many developing countries it is the agricultural sector that constitutes the major source of national food reserves and, at the same time is an engine for generating foreign exchange and raw materials for basic industries.

However, present economic reforms taking place in the country have started to show that other sectors of the economy like – general engineering and fabrication, tourism, general trade and commerce in non-tradition products, are becoming increasingly important sectors of the economy, especially considering their potential for generating foreign exchange earnings.

As a consequence it is imperative that the need for more and more manufacturing units will be felt and the fact is that there is shortage of such steel structures in Dar es Salaam and other neighboring regions or Tanzania as a whole as one of the key financial input of the Country regions.

It is therefore inferred that such project should be undertaken. It is confirm that PDW MANUFACTURING (T) COMPANY LIMITED has the required expertise for the Project.

With ready market, availability of proven management expertise and availability of funding to the extent needed, the success of the project is guaranteed.

3.3 Ownership:

Donglin Guo and PDW International Company Limited of Hong Kongi are Shareholders, promoters and first directors of the PDW MANUFACTURING (T) COMPANY LIMITED. Its head office will be in Coast Region.

3.4 Location

The site is to be developed at Kibaha Coast Region. This place is well served with the necessary utility facilities, including the central sewerage system for all liquid waste. Communication links are also available.

3.5 Day to day management.

The management of the company has the required expertise in-house. The day to day activities would be managed by an individual appointed for the said purpose.

3.6 Employment

It is expected that a significant number of people will be employed, during the construction of the commercial complex and about 55 local citizens would be employed permanently, excluding the security guards, once it becomes operational. Security personnel will be contracted from an outside security firm.

3.7 Strategies

In order to achieve the objectives it is planned to implement the following strategies;

- Establish an effective preventive maintenance programme of the equipment, which will ensure sustainable equipment availability for operation.
- Establish a quality assurance and control system that will ensure provision of quality products and services.
- Conduct regular evaluations of production and servicing processes to ensure optimum costs of products and services.
- Device and implement productivity improvement measures
- Develop and implement an effective marketing policy
- Develop and implement and advertising and promotion programme
- Establish effective financial and resources management.

3.8 Market

Recent reforms taking place in the economy indicate that there is and increase in demand for steel and steel structure. The following are some of the factors that have contributed to such an increase in demand for these products in the country:-

- Increased level of rehabilitation and expansion of roads by the Government and international assistance agencies – which has subsequently resulted in increased kilometers of passable roads by small and heavy duty vehicles.
- Rise in people's standard of living and a change in people's consumption patterns;
- General improvement in the national economy, especially the balance of payments which has made it possible for the Government to achieve greater capability to import critical products into the country;

- Increased general level of investments in industrial activities which are the major users of industrial inputs;
- Increase transit trade between Tanzania and its neighbours especially – Uganda, Rwanda, Burundi, Malawi, Zambia and the Democratic Republic of Congo.

These factors have lead to increased demand for general engineering activities for products in the country. Furthermore, these factors have created the impetus for increased inflow of investment capital by foreign and local private investors who now have decided to venture in the importation and industrial raw materials.

The reforms which are now being introduced in this sector aim at influencing the inflow of and increased supply of both capital goods and other industrial productions and their distribution in the country and beyond and national borders.

3.9 The Technology & Process

Steelmaking is the process of producing steel from iron ore and/or scrap. In steelmaking, impurities such as nitrogen, silicon, phosphorus, sulfur and excess carbon (most important impurity) are removed from the sourced iron, and alloying elements such as manganese, nickel, chromium, carbon and vanadium are added to produce different grades of steel. Limiting dissolved gases such as nitrogen and oxygen and entrained impurities (termed "inclusions") in the steel is also important to ensure the quality of the products cast from the liquid steel.

Making the Iron

To create pure steel, the products that go into it- lime, coke and iron ore- must be made into iron. These are all put into a blast furnace and melted down to create what is called molten iron or hot metal. The iron still has many impurities at this point, and they will have to be removed to ensure the metal is not brittle.

Primary Steel Making

To get the impurities out, the molten metal is infused with scrap steel. Oxygen will be forced through the furnace as well, which gets out a lot of the carbon and other impurities. For electric furnaces, electricity will be forced through the furnace and the same results can be achieved. After this process has finished, we have raw steel.

Secondary Steel Making

The different grades of steel are used for different tasks. The grading is based on which elements are still in the metal, such as carbon dioxide. A lot of the carbon will be removed, but aluminium will take its place to create a Drawing Quality steel. To create structural steel, there is more carbon left inside, and this gives the steel more tensile strength. Certain techniques can be implemented to alter the level of impurities left, including:

- Stirring
- Raising or lowering the temperature
- Removing the gasses
- Ladle injection

When the process is over and the right grade has been achieved, the next step can begin.

Continual Casting

Next, the steel in its molten form is cast into cooling moulds. This allows the steel to become hard, and the steel is drawn out of there while it is still hot. Guided rollers are used to pull it out and then the steel is cut into the desired lengths. It may be used for beams, billets, slabs or other items, and when the parts are fully cooled they are sent elsewhere for primary forging.

Primary Forging

In this step, the rough cast items are formed into shapes through a process called hot rolling. This get rid of defects in the shape and creates the desired

quality of steel. This process can be used to make seamless tubing, long and flat products and a variety of bespoke items.

Secondary Forming

To create the final shape of the steel there are a number of secondary techniques that can be used, including:

- Coating
- Thermal treating
- Joining
- Pressing
- Drilling
- Machining
- Riveting

That is the entire process by which steel is formed. If you are creating project out of steel and would like some professional advice about what technique to use or what type of steel to implement then contact us. We can take your design plans and turn them into the products you want to ensure the success of your project. Call us today for a free quote.

Production Capacity

The project expect to produce 6,000 Tons of steel per day as per secondary modern type of machines

4. Project Cost and Means of Finance

4.1 Cost of Project

The development cost of the entire project has been estimated to be around US$ 0.83 million. The major factors contributing towards the cost of the project is the cost of machinery and cost of equipment's.

5. Financial Projections

Details of financial projections are attached as appendices to this report. However, in brief the annexed project financials show that the project will be one with a full proof financing scheme.

The financing is so prudently designed that the smooth cash flow position is guaranteed throughout the gestation period.

5.2 Financial Indicators

Considering the usage and demand of Iron Rolls and Beams, it can be safely presumed that the premises will safely enjoy 65% occupancy from year 1 and then 5% increase every year. On the basis as mentioned above, the profitability for the company in year 1 has been worked out as following:

Table i: Annual Profitability of the Company

Particulars	**Year 1**
Capacity Utilisation	65%
Sales Turnover	2,535,000
Less Cost of Production	1,394,250
Gross Profit	1,140,750
Less	
Administration Expenses	202,800
Marketing Expenses	25,350
Financial Expenses on Long Term Loan	231,667
Depreciation	481,432
Total Indirect Cost	941,249
Operating Profit Before Tax	199,501
Taxation @ 30%	59,850
Operating Profits After Tax	139,651
Proposed Dividends	-
Cumulative Net Cash Profits CF to Balance Sheet	139,651
Net Cash Profit from Operations	621,083

The detailed calculations of the projected financial are given in the annexure. The Net Present Value for the project comes out to be US$ 1,109,296/- and the IRR is reasonably good ate 19%. Pay Back Period for the project is estimated to be around 4.59 years.

The next annexure indicates the calculations for the Break Even Analysis and the Margin of Safety. It must be notices that the average Return on Investment for the five years is more than 22%, which is a very good sign for the investors.

The chart below indicated the summary of the projected profits of the company from the first five years of the operations.
Over a period of five years operations the total amount of Reserves generated shall be to the tune of US$ 1,817,456. It shows a comfortable position for the company.

6. Developmental Values

The project's development value to the country is as under:-

1. The project will generate employment to several people both during the construction and after completion. It has been estimated that directly or indirectly this project will provide employment to nearly 60 individuals excluding the security guards.

2. Government will also earn revenue in terms of various levies on the Company associated with the operation of the complex. Further r as indicated in the financial projections the total contribution for five years by way of income-tax and withholding tax will be to the tune of about US$ 778,910.

3. The project will also contribute directly and indirectly in the generation of foreign exchange.

4. Last but not least, the manufacturing units are always considered to be a national property and will therefore add to the national wealth.

7.5 IMPLEMENTATION SCHEDULE

The company is in process of Import fabricated structures, machines and equipment's which will expected to reach on March/April 2024. The installation process will finish before July/August 2024, and startup of project will be expecting to be on December 2024.

7. Conclusions & Recommendations

The economic impact from implementing and operating it is also positive.

Since the project is technically feasible, financially and economically viable, socially and from nation's point of view desirable a fast implementation thereof is recommended. It is important that there are no cost overruns so as to enable the realization of the benefits as outlined above.

It may be mentioned here that total investment of US$ 1.5 million will play a good part in boosting the local economy.

Considering all relevant factors it is being recommended that the grant of 0% import duty & VAT deferments on capital goods and deemed capital goods is granted to this project not only to make the project viable but also to catalyze other development benefits that may accrue to the country on acceptance of this project.

FINANCIAL STATEMENTS

PROJECTED INCOME STATEMENT						
		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR5
Sales Revenue		2,175,000	2,610,000	3,132,000	3,758,400	4,510,080
Cost of Sales		435,000	435,000	435,000	435,000	435,000
Gross Profit		**1,740,000**	**2,175,000**	**2,697,000**	**3,323,400**	**4,075,080**
Operating Expenses						
Administrative Overhead						
Costs		51,800	52,318	52,841	53,370	53,903
Motor Vehicle running		60,000	60,600	61,206	61,818	62,436
Salaries and Wages		43,800	44,238	44,680	45,127	45,578
Depreciation		156,250	157,813	159,391	160,985	162,594
Utility Costs		23,000	23,230	23,462	23,697	23,934
Insurance		37,500	37,875	38,254	38,636	39,023
Interest on Loan		8,600	8,686	8,773	8,861	8,949
Total Expenses		**269,150**	**271,842**	**274,560**	**277,306**	**280,079**
Profit before Tax		**1,470,850**	**1,903,159**	**2,422,440**	**3,046,094**	**3,795,001**
Tax (30%)		441,255	570,948	726,732	913,828	1,138,500
Profit After Tax		**1,029,595**	**1,332,211**	**1,695,708**	**2,132,266**	**2,656,501**

PROJECTED BALANCE SHEET					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Fixed Assets	1,100,000	943,750	822,500	701,250	580,000
Long term Assets					
Depreciation	156,250	121,250	121,250	121,250	121,250
Total long termassets	**943,750**	**822,500**	**701,250**	**580,000**	**458,750**
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	**400,000**	**400,000**	**400,000**	**400,000**	**400,000**
Total Assets	**1,343,750**	**1,222,500**	**1,101,250**	**980,000**	**858,750**
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	**943,750**	**822,500**	**701,250**	**580,000**	**458,750**
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	**1,343,750**	**1,222,500**	**1,101,250**	**980,000**	**858,750**

OTHER OPERATING COST						
Other Operations Cost		**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**
Motor Vehicle running expens		60,000	60,400	60,800	61,200	61,600
Salaries and Wages		43,800	48,180	52,998	58,298	64,128
Adminitrative Overhead Costs		51,800	56,980	62,678	68,946	75,840
Utility Costs		23,000	25,300	27,830	30,613	33,674
Interest on Loan		8,600	7,740	6,966	6,269	5,642
Raw Materials		112,800	124,080	136,488	150,137	165,150
Total Costs		**300,000**	**322,680**	**347,760**	**375,463**	**406,035**

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		500,000	400,000	300,000	200,000	100,000
Motor Vehicle		350,000	310,000	305,000	300,000	295,000
Furniture & Fixtures		50,000	43,750	37,500	31,250	25,000
Total		**1,100,000**	**943,750**	**822,500**	**701,250**	**580,000**
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		100,000	100,000	100,000	100,000	100,000
Motor Vehicles		40,000	5,000	5,000	5,000	5,000
Furniture &Fixtures		6,250	6,250	6,250	6,250	6,250
ANNUAL DEPRECIATION		**156,250**	**121,250**	**121,250**	**121,250**	**121,250**
CLOSING FIXED ASSETS		**943,750**	**822,500**	**701,250**	**580,000**	**458,750**