PETROPAK LIMITED

FEASIBILITY STUDY

FOR

ESTABLISHMENT OF MANUFACTURING FACILITIES

FOR

RETREADING TIRES

Prepared by:
PETROPAK LIMITED
P.O. Box 14525
Dar-es-salaam

June 2024

1.0 EXECUTIVE SUMMARY

1.1 Introduction

Over the years, a lot of development has taken place in the tyre manufacturing industry across the world. High standard tyres are being manufactured using premium technologies, so that they could perform flawlessly not only in their 'first life', but also in their second and even sometimes third life. So, along with that, the re-treaded tyre industry has been growing, as stronger tyre casings, enhanced re-manufacturing techniques and high-quality rubber compounds are being used.

M/S Petropak Limited is now seeking to capitalize on its sustained market growth of which it has already established by setting up a re-treading tyre plant with an estimated annual production capacity to produce **210 tyres per day or 70,560Tyres per annum.**

1.2 The Project:

The main aim of a project is the establishment of retreading Tires manufacturing facility of which will entails importation of retreading tyre plant with an installed capacity to manufacture **210 tires per day or 70,560 Tires per annum** to produce re-tread tires for sale to local and for export to the regional market. Re-treading is a process through which old tyres are used of which a worn casing of a tyre that has a good structural quality is taken off and put through a process in which it gets a completely renewed tread and sidewall rubber. After that, the revamped tyre is taken forward for a curing process in which the new rubber is vulcanized to the original casing and hence, the tyre gets a newly made tread pattern.

It preserves about 90% of the material in spent tires and the material cost is about 20% compared to manufacturing a new one. Retreaded tires provide about 60%-80% of the life of the new tires other activities will include importation of trucks, and 4WD cars for administrative and sales supervision operations.

1.3 The Sponsors:

The project is sponsored by **Petropak Limited** of Dar-es -salaam region. M/S Petropak Limited is a registered company under the Tanzania Companies 2002 Ordinance vide Certificate of Incorporation No. **96784** dated 31st January 2013. The shareholders of the company are:

Shareholder	Nationality	Shares%
1)Dialla Jamal Kassam	Tanzanian	55
2) Adithya Satish Kumar	Tanzanian	25
3) Satish Kumar	Indian	20

1.4 Capital Investment Plan

The projects total Investment cost is US$ **1,350,000** and its breakdown is as follows:

	TOTAL
Land & Buildings	**300,000**
Plant, Machinery & Equipment	**762,000**
Vehicles	**130,000**
Furniture & Fittings	**40,000**
Others	**8,000**
Pre operational Expenses	**10,000**
Initial Working Capital	**100,000**
Grand Total	**1,350,000**

1.4 Source of financing

It is planned that some investment cost will be financed by personal shareholder's contribution and term loan which will be sought from various Bank.

1.5 Financial Profitability:

Based on a set of assumptions given here-in, the project demonstrates a profitable trend in its future operations. The project's projected Income Statement and Cash flow indicate the M/S Petropak Limited would be able to recoup the planned investment funds from year one and hence indicates that the project is financially and economically viable.

1.6 The Implementation Plan:

It is planned that the project will take 5 years from the time M/S Petropak Limited commences implementation of the project to the time the plant commences commercial services. M/S Petropak Limited shall appoint a team comprising of a competent building contractor, and engineers in order to achieve the set implementation time.

1.7 Developmental Linkages:

The re-trading tyre manufacturing plant shall be capable of having the following socially and economic benefits:

- Promote increased availability of quality Re-tread tires products for the local and foreign markets,
- They are more economical and environmentally friendly way to extend the life of tires in any fleet
- Generating foreign exchange through import substitution

- Create employment for local indigenous people;
- Promote inter-regional trade through exports to neighboring Democratic Republic of Congo, Uganda and Burundi just to mention a few.

2.0 THE PROJECT

2.1 Introduction

The re-treading tyre manufacturing plant is promoted by M/S Petropak Limited of Dar-es salaam region. This is a limited liability company that was incorporated and registered under the Tanzania Companies 2002 Ordinance vide Certificate of Incorporation No. **96784** dated 31st January 2013. The shareholders of the company are:

Shareholder	Nationality	Shares%
1)Dialla Jamal Kassam	Tanzanian	55
2) Adithya Satish Kumar	Tanzanian	25
3) Satish Kumar	Indian	20

The shareholders have a proven performance in managing similar range of products. M/S Petropak Limited mission aim is to operate its dedicated assets and capabilities as a moving pipeline and to offer a safe, reliable and cost-efficient source of quality Re-tread tires products. In this case business development would focus on growing with these clients by providing active participation into planning and distribution strategies of the clients mainly corporate clients.

2.Project Description

The main aim of a project is the establishment of retreading Tires manufacturing facility of which will entails importation of retreading tyre plant with an installed capacity to manufacture **210 tires per day or 70,560 Tires per annum** to produce Re-tread tires for sale to local and for export to the regional market. The project will install retreading manufacturing plant, whereby the plant will retread worn out tires to produce

Re-tread tires. Re-treading is the process of recycling a tyre that's worn, but still has enough of a solid structure so that the treads can be replaced. retread tires are sometimes used by the drivers to take advantage of, as are often cheaper than buying a replacement. Re-treading is much more common practice for vehicles that need their tyres replacing more frequently, such as buses and lorries. Re-treading is also very common for tyres used in aviation, in all kind of vehicles such as taxis, school buses or military vehicles.

In summary the project entails the following:

- Construction of a factory building;
- Importation of Tires retreading plant
- Importation of trucks, and 4WD motor vehicles for administrative and sales supervision operations

2.4 Location

The project will be located at, **Plot no 10932/3,15113 Mbagala Industrial area Temeke Dar-es-salaam region**. The site is well accessed by a Tarmac Road making it reachable throughout the year. The site is served with electricity, water and telephone. It has a large compound that can allow extensive future expansion of factory buildings.

2.5 Plant Production Capacity

On completion the project shall be able to produce about **210 tires per day or 70,560 Tires per annum** of re-tread tires.

2.6 PRODUCTION PROCESS

Tires are industrially retreaded, revamped and then put through a curing process that causes the new rubber to vulcanise to the original casing.

The result is a new tyre with a new tread pattern. The processing of tyre re-treading is as is as follows;

1. Tire inspection

The used tyres are carefully tested and inspected for various criteria as well as to ensure its structural quality if is still intact. Suitable casings are selected out of the old and worn-out tyres for the process of re-treading. Every casing undergoes rigorous and thorough visual inspection in the plant to find and mark punctures, ruptured cords, separations, or any other minor faults in the tyres. All the casings that fail the inspection test are rejected. Only safe and structural sound tires are retreaded.

Trained and qualified specialists perform a thorough hands-on inspection of every part of the tire. Eelectrical inspection technology is used to examine the crown and sidewall for issues that may not be visible to the naked eye. Also, laser technology is used to to assess material quality and do non-destructive strain testing. By this anomalies, embedded debris, and other non-visible damage are identified.

2. Buff & Repair

Buffing is a process of removing the worn-out tread and any surface containments from the tire casing into a uniform surface. The uniform surface allows more flexibility and correct placement of the new tread on the top of the casing to provide exact bonding while curing. The selected casing needs to be buffed precisely and inflated at the specified rim size and tyre pressure as recommended in original use to ensure the proper radius and profile of the buffed area. This prepares the tire for the application of new

tread material. At this stage, any damaged tire material is removed and make any necessary repairs to get the tire casing into optimal condition.

3. Cushion & Build

After buffing and repairing, the tire casing undergoes further preparation to ensure optimal adhesion of the new tread material. This may involve cleaning, skiving and applying boding agent. Cushion is applied which is an uncured bonding layer - onto the casing surface. Then a new tread is applied to be perfectly straight and centered on the tire casing on the freshly buffed surface.

4. Tread Application;

A new layer of tread rubber is applied to the prepared tire casing using specialized machinery and techniques. The type of tread pattern and rubber compound used can be customized based on the intended application and customers preference.

5. Envelop & Cure

The retreaded tire is placed in a curing chamber where heat and pressure are applied to bond the new tread to the casing. This process ensures a strong and durable bond that can withstand the rigors of road use. Then The re-tread tire is fully assembled and wrapped and cured to permanently secure the new tread to the bonding layer.

6.Final Inspection

Final inspection is done by repeating the inspection process to ensure the re-tread tire meets quality specifications. The newly re-treaded tire is expected to provide better grip, reliability and top-grade tire performance

7) Quality Assurance: quality control measures are implemented throughout the retreading process to maintain high standards and minimize the risks of defects. This includes regular testing calibration of equipment's, and adhesive and best practices.

8) Additional Services. The project will provide additional services such as tire balancing, alignment, and storage solutions for re-treated tires. These services will help customers to optimize the performance and longevity of their tires.

2.7 ENVIRONMENTAL ASPECT

Retreading is highly environment friendly. When the existing tyres are made ready for further use, the manufactures save landfill space. Also, it reduces carbon dioxide emission and saves millions of gallons of oil which is required to manufacture new tyres.

Due to their heavy metal and other pollutant content, tires pose a risk for the leaching of toxins into the groundwater when placed in wet soils. Their hollow, round shapes can collect water and become a breeding ground for mosquitoes and waterborne disease while also trapping methane, a harmful greenhouse gas, that can tear through landfill lining. Tyres are also, unfortunately, non-biodegradable, which means that they will continue to fill waste sites to the brim for years to come without breaking down or decomposing.

3.0. MARKETING ASPECTS;

3.1 Enabling Environment

Tanzania reached an important milestone in July 2020, when it formally graduated from low-income country to lower-middle-income country status. Tanzania's achievement reflects sustained macroeconomic stability that has supported growth, in addition to the country's rich natural endowments and Tanzania GDP is expected to reach 1123.00 USD by the end of 2024 and the growth rate has accelerated to 5.4 % in 2024. Because of the strategic geographic position of Tanzania/S PETROPAK LIMITED considers itself to be in a unique position in that it could service a sizeable proportion of Tanzania's main economic sectors and that of the neighboring countries. The Tanzania's economic political and social environment is thus of crucial importance to the company.

3.2 Demand

There is a tremendous increase in number of trucks and trailers in the Tanzanian market due to growth across multiple sectors of the economy. The current outlook of the replacement tyres market is promising. The automotive industry has been witnessing steady growth, leading to an increase in the number of vehicles on the road. This has subsequently raised the demand for replacement tyres. Additionally, the development of advanced technologies, such as run-flat tires and self-healing tires, has further boosted the market growth. The future of the replacement tyres market is expected to be positive, with a projected Compound Annual Growth Rate (CAGR) of %. Factors such as the growing automotive industry, increasing awareness about road safety, and the rising disposable income of consumers are expected to drive the market

forward. Moreover, the expanding sales of electric vehicles and the trend of regular tire replacements for optimal performance will contribute to the market's growth.

3.3 SUPPLY

Tire Retreading manufacturing is growing at a moderate pace over the last few years and is estimated that the supply of retread tires will grow significantly in future. New technologies, have made retreading tires suitable market. Based on End User, the market is into many Sectors of the economy hence Increasing demand to augment market growth and hence encourage the establishment of more manufacturing facilities. Technological innovations for the development of cost-effective methods are also expected to have a positive impact on growth. In addition, the increasing scope of tire re-treading is owing to its advantages and is expected to fuel the demand for the tire retreading market.

3.4 Demand -Supply Gap

If Demand for re-treading tires products is not met, the gap will increase tremendously. Assuming the various activities will continue to increase and supply will increase at the slow rate annually, the demand-supply gap in the next 10 years will not be met. The introduction of tires re-treading facilities will help to bridge the gap.

3.5 Distribution

Production will be sold at the factory, where both wholesale and retail customers would be served. The company will also have distribution trucks, which would carry the product to various depot. This would be a strategy to increase sales.

3.6 Marketing Strategies:

PETROPAK LIMITED Management Team shall take proactive marketing and promotional strategy to ensure that the company achieves high turnover of sales through sales made to corporate customers. In order to achieve optimal business turnover management shall design and implement the following strategies.

i) Distribution of Sales

Distribution of brochures to wholesale agents.

ii) Advertisement

These would include the local media namely; local television, Radio commercials and Newspaper advertisements etc.

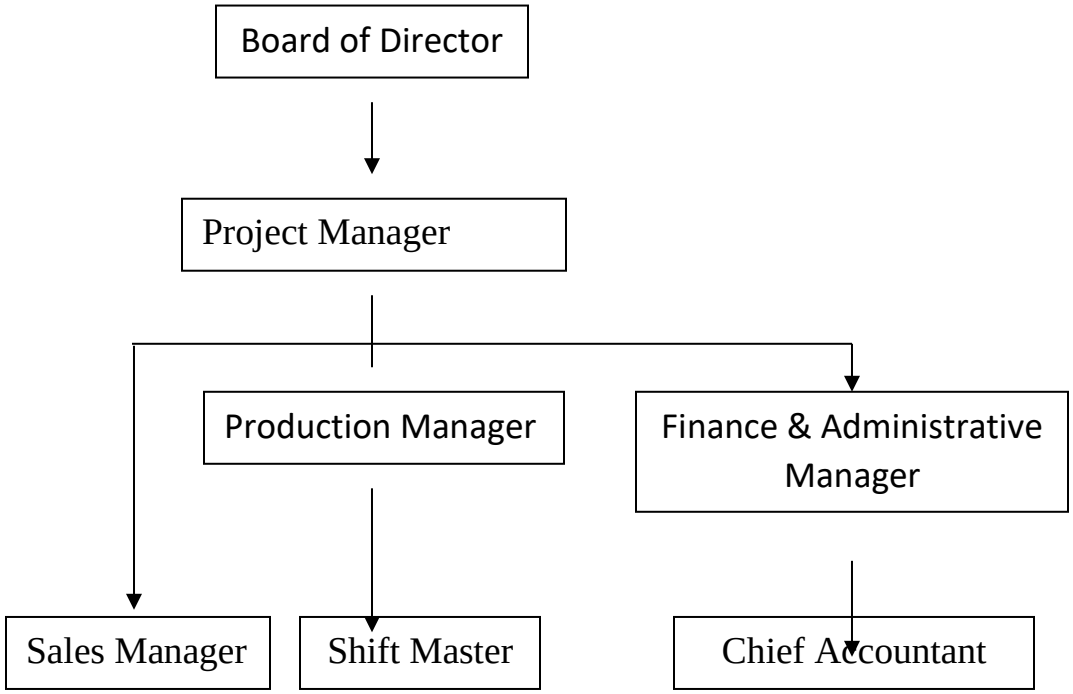
4.0 MANAGEMENT

4.1 Staff Recruitment Strategy

The strategy shall be to fill in key managerial positions with people who have extensive experience and sound qualifications in managing companies that produce retread Tires. The staff would include a General Manager who will be assisted by 3 departmental managers namely the Finance and Administration Manager Production Manager and Marketing Manager.

4.2 Organization Structure

The organization structure of the project is proposal to be as follows:



4.3 Manpower Requirement

The company will employ 55 persons. The company will need to recruit expatriate personnel for the positions of General Manager, Engineers, Foreman, Maintenance Technician, Processing Technician, Laboratory Technician etc. Other positions will be allocated to Tanzanian nationals based on skills and experience in the Tires retreading activities

5.0 CAPITAL INVESTMENT COSTS

PETROPAK LIMITED proposes to invest **US$ 1,350,000** for developing this project. It is planned that some investment cost will be financed by personal shareholders' contribution and the term loan which will be sought from Bank. Furthermore, the sister company's Self-Generated Funds shall be utilized at a later stage for working capital funds.

USD

	TOTAL
Land & Buildings	**300,000**
Plant, Machinery & Equipment	**762,000**
Vehicles	**130,000**
Furniture & Fittings	**40,000**
Others	**8,000**
Pre operational Expenses	**10,000**
Initial Working Capital	**100,000**
Grand Total	**1,350,000**

5.1 Financing The total investment cost of the project is planned to be financed by the shareholders equity and if the need arise it will be sought loan from various banks both local or foreign.

USD

	Local	**Total**
Owners' Equity	**337,500**	**337,500**
Loan	**1,012,500**	**1,012,500**
Grand Total	**1,350,000**	**1,350,000**

6.0 PROJECT FINANCIAL VIABILITY

Assumptions and considerations

The financial analysis indicates that the proposed project would be a profitable venture;

6.1 Projected Profit and Loss Accounts

The project is expected to make a post-tax profit of **US$1.367M** during its first year of operation rising to **USD 2.38M** at the end of the 6th year.

6.2 Projected Cash flows

The projected cash flows show that the project would be able to honour its financial obligations as they fall due throughout the project's economic life and still remain with reserve of cumulative cash that could be re-invested in the project.

7.0 CONCLUSION AND RECOMMENDATION.

7.1 Conclusion

Results of the analysis of the proposed venture indicate that: -The venture is expected to be commercially viable; To conclude, tyre retreading has the following advantages:

- Retreading tires has economic & environmentally friendly solution. It can help harmful chemicals stay out of the earth, water, and air. It can prevent tires from becoming disease-carrying-pest breeding grounds, and can keep them from starting raging fires
- The venture will create job opportunities.
- The venture will benefit the Government through several taxes both direct.
- The project will have economies of scales effects
- Promote increased availability of quality re-treaded tyres product for the local and foreign markets,
- Promote inter-regional trade through exports to neighbouring Democratic Republic of Congo, Uganda and Burundi just to mention a few.

7.2 RECOMMENDATIONS:

We recommend that the government to take the following actions to support the manufacturing activities proposed by ***PETROPAK LIMITED*** in order to benefit from the positive effects. This feasibility study has pointed out, is to give sufficient incentives and Every assistance from concerned parties is expected to make this venture a success. The sponsor desire is to start immediately to avoid cost escalations.

PETROPAK LIMITED

CAPITAL INVESTMENT COST USD

	TOTAL
Land & Buildings	**300,000**
Plant, Machinery & Equipment	**762,000**
Vehicles	**130,000**
Furniture & Fittings	**40,000**
Others	**8,000**
Pre operational Expenses	**10,000**
Initial Working Capital	**100,000**
Grand Total	**1,350,000**

PETROPAK LIMITED
PROPOSED FINANCING PLAN

	Local	Total
Owners' Equity	**337,500**	**337,500**
Loan	**1,012,500**	**1,012,500**
Grand Total	**1,350,000**	**1,350,000**

PETROPAK LIMITED

DEPRECIATION SCHEDULE USD

SN ITEM	Opening Balance		1	2	3	4	5	6	7	8	9	10
Building and Civil Works	300,000	5%	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Machinery & Equipment	762,000	12.5 %	95,250	95,250	95,250	95,250	95,250	95,250	95,250	95,250	-	-
Furniture and Fittings	130,000	12.5 %	16,250	16,250	16,250	16,250	16,250	16,250	16,250	16,250	-	-
Motor Vehicles	40,000	25%	10,000	10,000	10,000	10,000	-	-	-	-	-	-
Pre-Operational Expenses	10,000	20%	2,000	2,000	2,000	2,000	2,000	-	-	-	-	-
Total			**138,500**	**138,500**	**138,500**	**138,500**	**128,500**	**126,500**	**126,500**	**126,500**	15,000	15,000

PETROPAK LIMITED
PROJECTED SALES REVENUE

USD

YEAR	1	2	3	4	5	6	7	8	9	10
	60%	**80%**	**100%**							
SALES REVENUE products	2,640,000	3,520,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000
TOTAL SALES REVENUE	**2,640,000**	**3,520,000**	**4,400,000**	**4,400,000**	**4,400,000**	**4,400,000**	**4,400,000**	**4,400,000**	**4,400,000**	**4,400,000**

PETROPAK LIMITED
PROJECTED PROFIT AND LOSS STATEMENT

USD

ITEM/YEAR	1	2	3	4	5	6	7	8	9	10
Revenue from Operations	2,640,000	3,520,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000
Cost of goods sold 43% 0f total revenue	1,135,000	1,513,000	1,892,000	1,892,000	1,892,000	1,892,000	1,892,000	1,892,000	1,892,000	1,892,000
Gross Profit	**1,505,000**	**2,007,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**
Operating Profit										
Less: Depreciation	**138,500**	**138,500**	**138,500**	**138,500**	**128,500**	**126,500**	**126,500**	**126,500**	15,000	15,000
Profit Before Tax	**1,366,500**	**1,868,500**	**2,369,500**	**2,369,500**	**2,379,500**	**2,381,500**	**2,381,500**	**2,381,500**	**2,493,000**	**2,493,000**
Taxable Income	**1,366,500**	**1,868,500**	**2,369,500**	**2,369,500**	**2,379,500**	**2,381,500**	**2,381,500**	**2,381,500**	**2,493,000**	**2,493,000**
Corporation Tax – 30%	409,650	560,550	710,850	710,850	713,850	714,450	714,450	714,450	747,900	747,900
Net Profit After Tax	**956,850**	**1,307,950**	**1,658,650**	**1,658,650**	**1,655,650**	**1,667,050**	**1,667,050**	**1,667,050**	**1,745,100**	**1,745,100**
Revenue Reserves	**956,850**	**2,264,800**	**3,923,450**	**5,582,100**	**7,237,750**	**8,904,800**	**10,571,850**	**12,238,900**	**13,984,000**	**15,729,100**

PETROPAK LIMITED
PROJECTED CASH FLOWS STATEMENT

USD

ITEM/YEAR	0	1	2	3	4	5	6	7	8	9	10
INFLOWS Equity &term loan	1,350,000		-	-	-	-	-	-	-	- -	
Profit Before Tax& Depreciation	-	**1,505,000**	**2,007,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**
TOTAL INFLOWS	1,350,000	**1,505,000**	**2,007,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**	**2,508,000**
OUTFLOWS Investment & Reinvestment Taxation	1,350,000	409,650	560,550	710,850	710,850	713,850	714,450	714,450	714,450	747,900	747,900
TOTAL OUTFLOW	1,350,000	409,650	560,550	710,850	710,850	713,850	714,450	714,450	714,450	747,900	747,900
NET OUTFLOW	-	**1,095,350**	**1,446,450**	**1,797,150**	**1,797,150**	**1,794,150**	**1,793,550**	**1,793,550**	**1,793,550**	**1,760,100**	**1,760,100**