Business Plan

Thermal recycling of used tires, RTI and waste plastic.

2023

LIMITED LIABILITY COMPANY "INVESTMENT COMPANY"

“SANFU INDUSTRIAL COMPANY LIMITED”

Madodo,Mwanambaya , Mkuranga - Pwani Tanzania

Company registration certificate number: 168163169

Registration Date: 30 AUGUST 2023

Type of Project: Projects related to environmental protection in Tanzania

Project Country: Tanzania

Business partnership entity in the Project Country ("Partnership Entity"): Cihen Lili Description of the Project: The project objective is to establish a pyrolysis plant in Tanzania

Contents

Summary.

The project involves the construction of a pilot project in Tanzania on recycling used tires, rubber and plastic waste by low-temperature pyrolysis. The final products of this technology are: fuel oil, fuel metal, carbon and gas. All these products are sufficiently in demand in Tanzania, especially the first three.

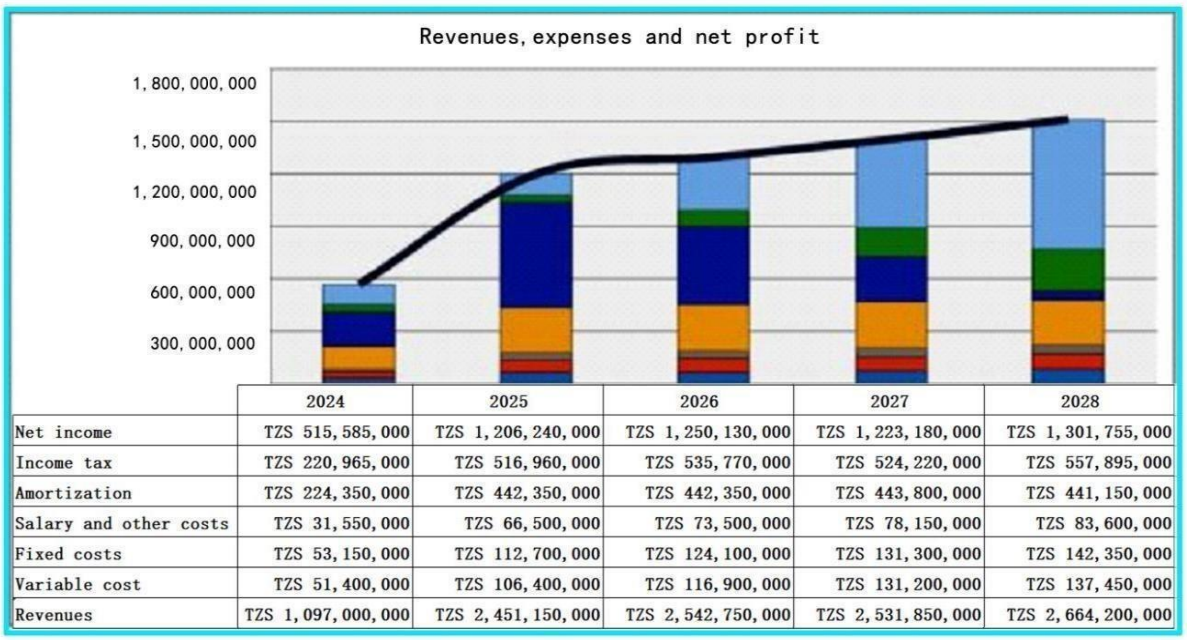
The technology was developed by a Chinese industry veteran whose founder is a leader in this field in China. He has been in the industry for decades. This technology has been operating stably in China for many years to prove the feasibility and effectiveness of this technology.

Members of the company are involved in the production and operation of a number of factories in China, with the processing capacity of 50,000 tons, 100,000 tons and 200,000 tons of used tires per year.

The purpose of this business plan is to analyze the application and development of this technology in Tanzania

An analysis of the situation in Tanzania, especially in the light of events in recent years, shows that this technology is very important and cost-effective for Tanzania. The construction of the pilot plant will at least partially solve two major problems in Tanzania: disposal of waste and environmental pollution, and provide Tanzania with industrial fuel alternatives and metal recycling, which is very important for Tanzania today.

Graphs and charts



	2024	2025	2026	2027	2028
Net income	TZS 515, 585, 000	TZS 1, 206, 240, 000	TZS 1, 250, 130, 000	TZS 1, 223, 180, 000	TZS 1, 301, 755, 000
Income tax	TZS 220, 965, 000	TZS 516, 960, 000	TZS 535, 770, 000	TZS 524, 220, 000	TZS 557, 895, 000
Amortization	TZS 224, 350, 000	TZS 442, 350, 000	TZS 442, 350, 000	TZS 443, 800, 000	TZS 441, 150, 000
Salary and other costs	TZS 31, 550, 000	TZS 66, 500, 000	TZS 73, 500, 000	TZS 78, 150, 000	TZS 83, 600, 000
Fixed costs	TZS 53, 150, 000	TZS 112, 700, 000	TZS 124, 100, 000	TZS 131, 300, 000	TZS 142, 350, 000
Variable cost	TZS 51, 400, 000	TZS 106, 400, 000	TZS 116, 900, 000	TZS 131, 200, 000	TZS 137, 450, 000
Revenues	TZS 1, 097, 000, 000	TZS 2, 451, 150, 000	TZS 2, 542, 750, 000	TZS 2, 531, 850, 000	TZS 2, 664, 200, 000

A financial model specifically targeted at this project was established to demonstrate the economic benefits of the project. Even in the worst case scenario, the project should pay back the principal within 5 years, and the future profitability of the plant should exceed 50%. This is undoubtedly a very good result. The construction of the pilot project will not only teach him the profitability of his work, but also optimize the technology to expand the resource base and replicate the data factory throughout Tanzania on the basis of the experience gained.

1. The situation in Tanzania.

Road transport is becoming cheaper and more convenient every year, so the disposal of used tires is a growing problem. Landfills are filled with waste rubber, which is usually thrown into trash cans or landfills without necessary treatment, or even randomly discarded in the wilderness and set on fire, which leads to environmental problems. . The most severe situation is typical of Dar es Salaam and other major cities in Tanzania, where tire recycling requires huge capacities.

Worn tires are large-capacity products consisting of polymeric materials, which are not amenable to biological decomposition process in nature, even after lying in the ground for a long time. The most objective way of getting rid of waste rubber tires is recycling, and store huge mountains of this kind of waste - is not an option, as the tires area threat to the environment. Bus at ignition isolated life-threatening carcinogens - biphenyl and benzo (a) pyrene, not to mention other chemical compounds anthracene, fluorentan, pyrene. It is noteworthy that the European Council of 02.04.1999,adopted a directive "On the dumps" on which in 2003 banned the burning of tires.

Therefore, recycling of tires - the right solution for caring for the environment. It should also be noted that they are made from petroleum,a limited natural resource, and its economy should use the services for the processing of tires.

According to expert estimates in Tanzania in the past five years, the market of tires was 6.4 million. Units / year, resulting annually produce more than 180 thousand. Tons of waste. At existing facilities utilized only about 14 thousand. Tonnes of used tires, which is less than 10% of the needs. In Tanzania, the non- existent power, using the latest technology of recycling used tires. However, in recent years the state

bodies of Tanzania adopted several decisions aimed at solving this problem.

Through our commitment to sustainable development, Tanzania aims to balance the broader economic and social challenges of development and environmental protection. For this reason, the country subscribes to the vision of a prosperous and equitable society living in harmony with our natural resources. This is also reinforced in the Constitution under the fundamental right to a clean and healthy environment. Sound environmental management entails use of waste reduction technologies in production, sustainable product design, resource efficiency, re-using products where possible and recovering value from products. Although, elimination of waste entirely may not be feasible, systematic application of modern waste management systems should be explored and implemented.

In order to achieve a workable and sustainable waste management strategy, collaborative efforts from different stakeholders is very important. This National Solid Waste Management Strategy (NSWMS) seeks to establish a common platform for action between stakeholders to systematically improve waste management in Tanzania . It is for this reason that the Vice President's Office with other stakeholders undertook an assessment of waste management practices mainly in Dar es Salaam to form a basis on which this Strategy was developed. The Strategy lays the framework for improved waste management in the country.

An important issue in the field of waste management as a secondary raw material is the imperfection of market mechanisms of the system of collection, preparation and disposal of such waste, in particular, used tires, the improvement of this system will prevent pollution of the environment and bring this waste in repeated economic turnover.

Adoption of the proposed draft order the Ministry of Environment "On establishing the minimum monthly payment for services for organizing the collection, harvesting and recycling of used tires" will enhance the effectiveness of the current system of handling worn tires. The purpose of the order is the adoption of minimum monthly service fees for the organization of the collection, harvesting and recycling of used tires, which will create the necessary preconditions for the implementation of the requirements of the Cabinet of Ministers of Tanzania dated July 27, 2011 № 1136 "Some of the collection, harvesting and recycling of used tires", which provides for the creation in Tanzania of the collection, harvesting and recycling of used tires, as well as ensuring the implementation of appropriate control by specially authorized bodies of executive power to meet the requirements of current legislation by enterprises, institutions and organizations of all forms of ownership, individual businessmen, including business entities that manufacture or import tires and tire use in its operations, which resulted in the formation of the worn tires on codes of product categories 4011, 4012, 4013 (including all sub-categories) according UKTVED, activities associated with the collection, preparation and disposal of used tires and / or the use of waste as secondary material and / or energy resources, are the owners of used tires.

This order will create the infrastructure system for collecting, harvesting and recycling of used tires, which will build a new, capital-intensive, fully automated installation using the best available technology that will ensure compliance with the most stringent requirements of environmental and sanitary-epidemiological legislation.

American and Swedish experts conducted a study which found that the tires - a rather dangerous part of the car: the dust arising due to wear rubber, can cause serious illness.

By simple calculations Swedish researchers found that everyday an ordinary citizen of Sweden breathes 6 grams of rubber dust, and American - 13.

As for Tanzania, then, according to preliminary estimates, this figure could reach up to 20 grams per person daily. Discarded in landfills or buried tires degrade in vivo for at least 100 years. Even if the tire is not in use,it allocates a certain amount of chemicals (all of them can have up to 100). The most harmful carcinogens are benzpyreneand other polyaromatic hydrocarbons, which are found in the tires up to 15 connections. Also there are 4 tires from 12 species N-nitrosamines. All of these substances are included in the list of dangerous toxins that makeup the International Organization for Research on Cancer and the United States Environmental Protection Agency.

Contact tires with rainfall and groundwater leaching followed by a number of toxic organic compounds.

During the combustion of tires produced are chemical compounds that are getting in the air, becoming a source of danger to humans. In addition, depending on the conditions of combustion can be formed as a number of highly dangerous organic compounds: benzapiren (especially dangerous carcinogen) dibenzoantratsen (especially dangerous carcinogen). No coincidence that the European Council 2 April 1999 adopted a special directive "On the dumps" on which since 2003 a ban on incineration.

WASTE TYRE PYROLYSIS PROCESS

2. Existing technologies of recycling of used tires.

Existing international and domestic experience shows that the most common methods of disposal of tires are burning to produce energy (the most popular burning them in cement kilns), pyrolysis at relatively low temperatures to produce a light distillate, solid fuel with similar properties to charcoal, and metal and obtaining rubber crumbs and the powder used to replace the natural rubber and synthetic polymers in the manufacture of building materials and mixtures thereof.

2.1. Restoration of worn tires.

Restoring tires - is its overhaul in which updated or tire tread, in order to prolong the life of the tire. Recovery is environmentally friendly way in which can be increased tire life.

The share of retreaded tires in different countries varies. Thus, eg., In the US recovery is not actually play any role in Japan recovers only every tenth of a tire in Germany - one in five in the Netherlands - one in three.

Determinant for car owners of vehicles is primarily advantageous expense ratio and lifetime. However, from a technical point of view, no bus recovery can be repeated any number of times without affecting the quality and safety of operation (typically, the bus can be reduced as much as possible only twice). Each retreaded tire inevitably turns into a worn-out.

Widespread doubts about the quality and safety of retreaded tires. For example, retreaded tires approved for use for vehicles having a certain speed limit.

2.2. Burial of used tires.

Worn tires legally or illegally stored on landfills mixed with other waste and landfills, designed exclusively for used tires. The number stored in the world of tires in landfills is estimated at a billion pieces. Lack alternatives tire recycling increases the number of tires stored in dumps. Against removal to the landfill of waste tires are economic, technical and environmental causes.

Due to the mixed landfill disposal of used tires extracted from the economic turnover, and therefore can not be used for further processing. This way of using the tires can be equated to the destruction of resources.

Worn tires, because of their properties is the product not in principle suitable for burial. As previously mentioned, the tires cause great harm to the environment. In addition, the shape of the tire and specific weight due to cavitation (the formation of voids) do not allow a regulated landfill compaction.

Lack of control over waste, arson, spontaneous combustion (eg., During a lightning strike) lead to the duration of the fire in landfills, which are due to good flammability (flammability) tires is difficult to extinguish. In 90 years this has led to devastating fires of tires in landfills in the United States and Canada, where only in Ontario during the month burned more than 12 million tires. Such fires due to the high level of emissions of gaseous and liquid substances lead to severe air pollution, topsoil, subsoil waters.

2.3. Recycling tires into crumb.

Shredding rubber waste recognized as the most simple and rational way of processing, as it allows to preserve physical, mechanical and chemical properties of the material. However, it is the final stage of the use of the resulting chips and a stumbling block cost-effective solution to the problem of complete recycling of rubber waste.

To render the additive in paving or asphalt mastic, need to make the formulation. Two equal-sized wheels, but different manufacturers, will in their composition heterogeneous mass in which you want to add components to impart the desired properties. It is known that for over a hundred years there have been numerous efforts to combine rubber with bitumen and asphalt with a view to recycling and giving astringent properties of rubber-like materials. Were developed many technological schemes of direct introduction of rubber in asphalt mixture, the use of crumb rubber as filler in road-building materials.

Were built hundreds of experimental sections of roads, bridges and airfields coatings, which initially showed a wonderful performance. But then there was a slow swelling of the rubber particles trapped in the structure of asphalt. Coverage under such internal loads and decompresses rapidly destroyed. Unrelated rubber particles of asphalt and chip, practically unchanged, carried by the wind, contaminating the surrounding area.

Thus, more than a century of negative experience with rubber waste in road construction compromised in the eyes of experts Road the idea of using rubber (vulcanized rubber) in road construction materials.

To produce crumb of any product, you must purchase additional equipment that will bring to nothing the declared comparative cheapness. For such production requires grit with minimum dimensions that require the use of cryogenic grinding technology. In addition, the range of products that can be made from rubber crumb is limited. This coating for sports grounds, a pavement for tram and railway crossings, and soon.

2.4. Pyrolysis of scrap tires.

When using the tire pyrolysis technology under the influence of heat in the absence of oxygen are separated into solid, liquid and gaseous substances. Wherein long polymer chains are converted into molecular hydrogen particle. Technology Basics concluded that shredded waste tires, and waste production and the consumption of polymeric materials (polyolefins, polystyrene, etc.) Are subjected to pyrolysis at 450-550 ° C. As a result of processing obtained by pyrolysis tire pyrolysis oil, combustible gas, carbon and steel.

Output

Pyrolysis gas, usually (unless specific tasks) is used as fuel for a partial coating on the heat consumption of the pyrolysis process itself.

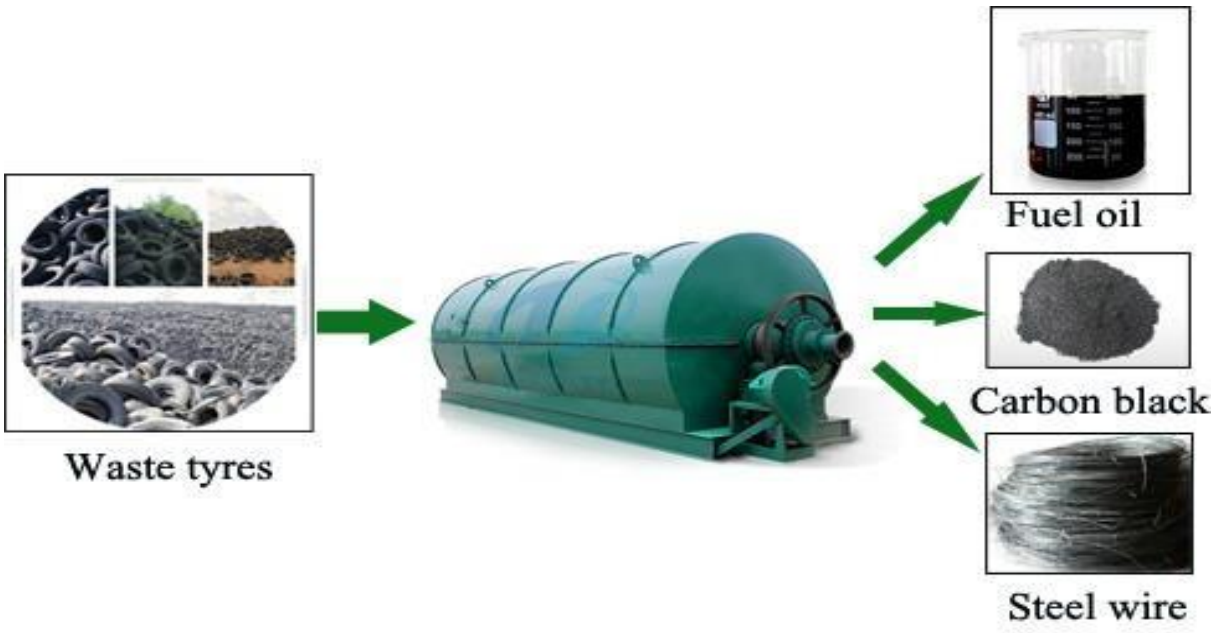
Pyrolysis resins can be used as an additive to fuel oil, or may be processed together with the crude oil or its fractions, respectively, increasing the production of end products or intermediates.

Solid carbonaceous pyrolysis residue in a tire suitable as a substitute for some of the carbon black in rubber mixtures, as well as a filler for a variety of commercial products, from Bakelite resins and mixtures ending paving.

With a large variety of technological solutions proposed by both domestic and foreign experts, at this stage of the economic situation in Tanzania, the priority method of disposal of rubber waste should be technologies that provide:

- high environmental safety of the proposed process;
- extremely low energy consumption of the recycling process;
- waste-free process;
- receive output products of commercial value in terms of Tanzania.

Satisfies all of the requirements of the processing technology of waste rubber tires and plastic waste by low-temperature pyrolysis without oxygen.



PROJECT EMPLOYEMENT PLAN

At full capacity the project will directly employ a minimum of 54 people 50 of whom are locals and 4 foreigners. The foreigners are experts in the manufacturing of stained glass. They will build capacity for locals. Table 3 provides summarized details on the number of direct employees to be engaged in this project. Besides the direct employment the project is expecting to produce at least 100 indirect jobs when at full capacity. Annex 4 gives a detailed presentation of jobs distribution plan.

Employment Plan

CATEGORY	MALE	FEMALE	TOTAL
Local	08	02	10
Foreign	90	10	100
TOTAL	**98**	**12**	**110**

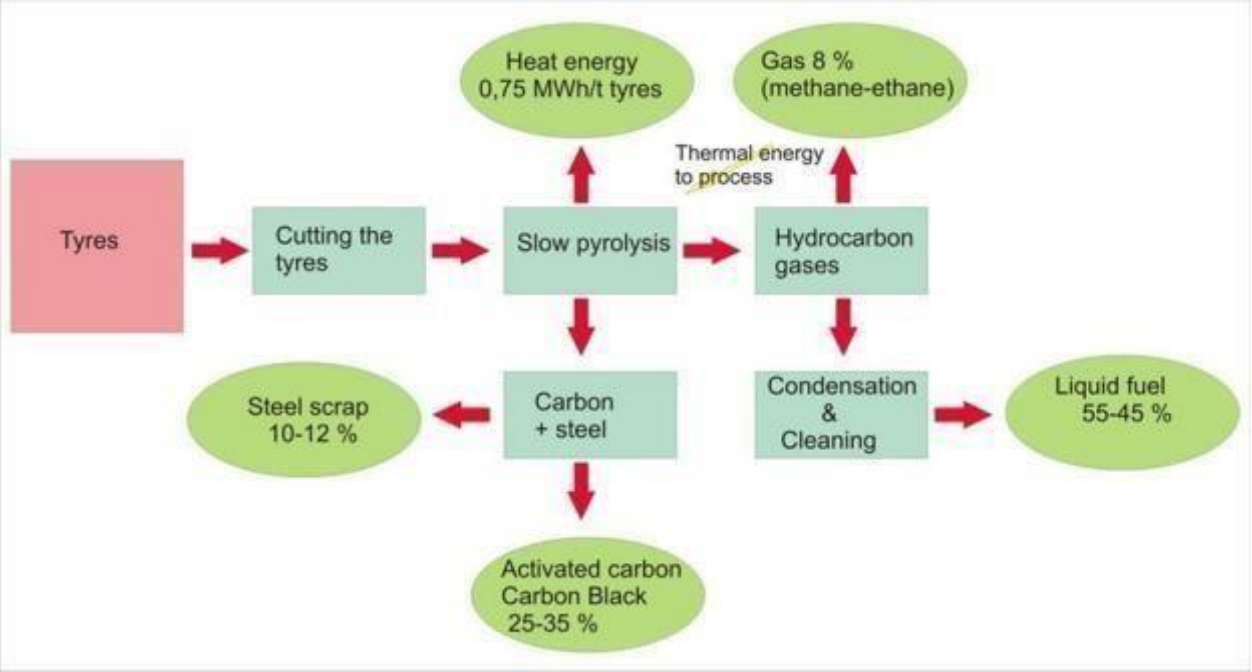
DETAILED JOB INFORMATION

CATEGORIES	LOCAL		FOREIGN		NUMBER
	Male	Female	Male	Female	
Senior Management Team:					
Managing Director			1	1	2
Chief Plants Overseer			1		1
Managers:					
Human resource		1			1
Accounts Manager		1			1
Plant Supervisor			2	2	2
Supervisors: Production Lines	2				2
Operators: Production Lines	6				6
Marketing Manager		1	1		1
R&D Manager			1	1	2
Other Staff:					
Drivers	10				10
Plant Workers	70				70
cleaners	3	2			5
cookers		2			2
Stores and Procurement		2			2
TOTALS	**91**	**9**	**6**	**4**	**110**

3. Description of the technology of low-temperature pyrolysis.

The very idea of a low-temperature pyrolysis of used tires is not new and is widely used in the world. However, the Finnish company PeatecOy managed to create an industrial design with optimum process parameters. In addition, the technology Peatec Oy ensures the most stringent requirements for cleanliness of emissions into the environment.

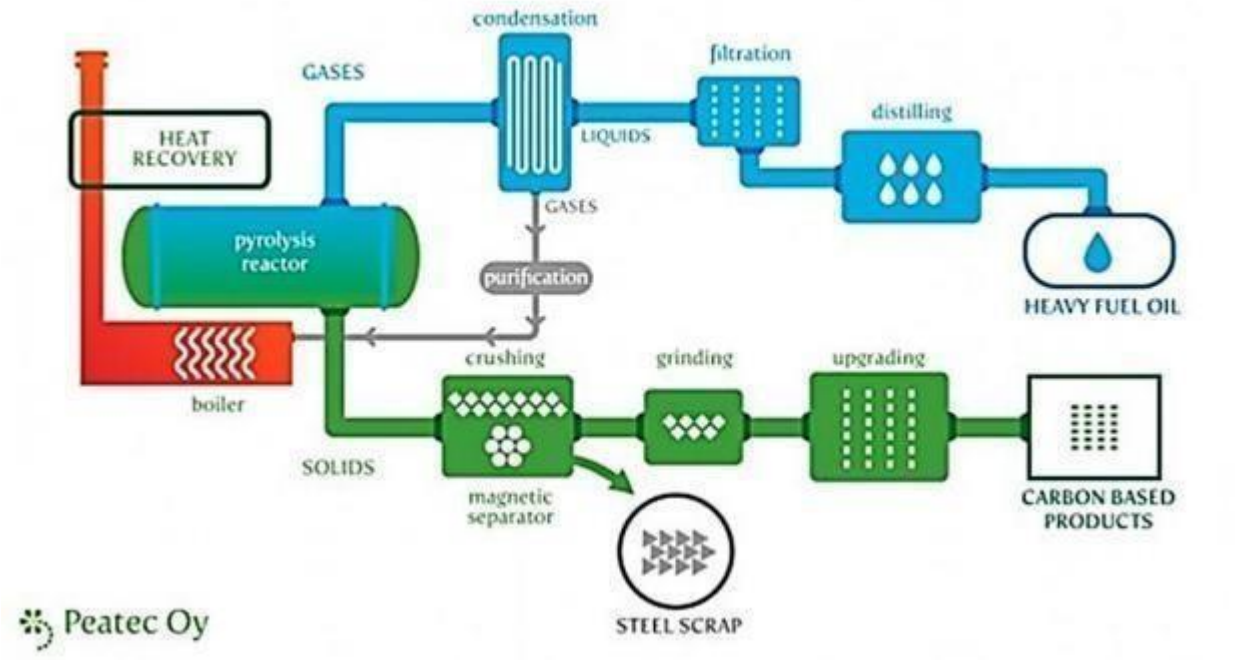
Used tires are shredded and pre-fed to the reactor, where the feedstock is heated. Under the influence of the decomposition temperature of the starting material for liquid fuel (45-55%), a combustible gas (8%), metal cord (10-12%) and carbon black (25-35%). In addition, excess heat that is not less than 300 KW.



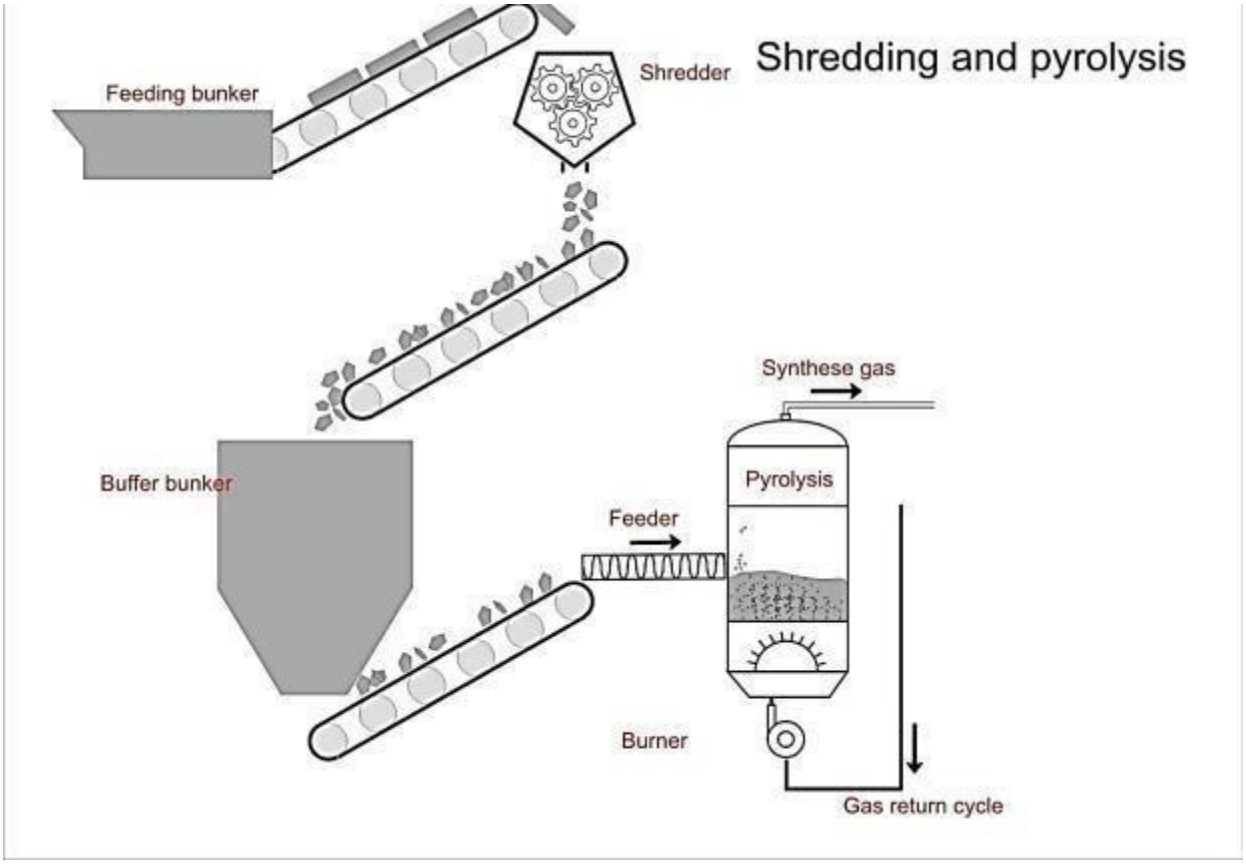
Technological scheme of installation for waste tires and waste plastic includes:

- boiler to heat the reactor. During installation the boiler start running on auxiliary fuel, and after the pyrolysis process proceeds to use the boiler fuel gas, which is formed in the reactor.
- main reactor in which the pyrolysis process of the starting material.
- The condenser, which condenses the liquid fraction of the pyrolysis products.
- Filter and distiller of the liquid fraction of the pyrolysis products.
- Magnetic separator for separating the metal from the total weight of the solid fraction.
- Chopper and modifier for carbon black.

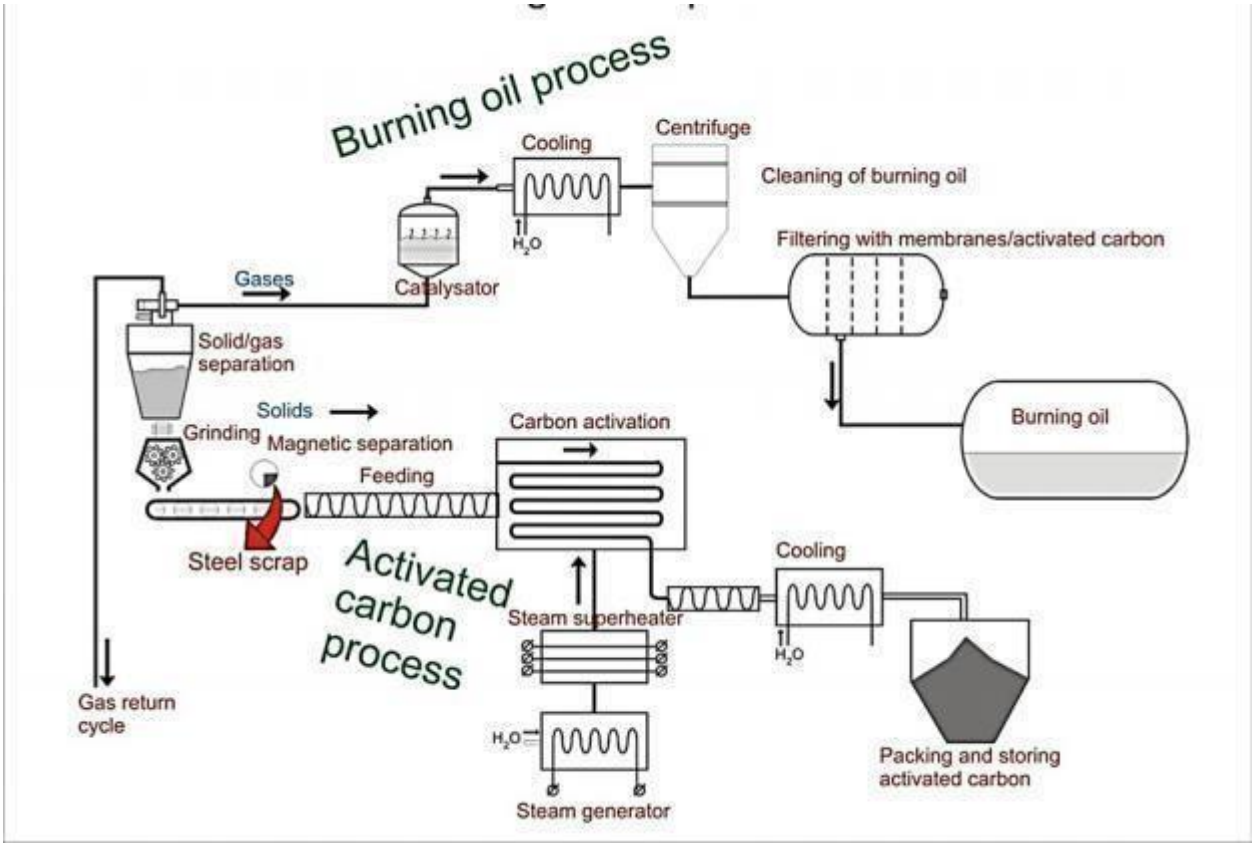
The combustible gas which is formed during pyrolysis of the capacitor after purification fed to the boiler and burned for process heat. Excess heat can be used for heating of industrial buildings and nearby homes. In addition, excess heat may be used to generate electrical energy using ORC module.



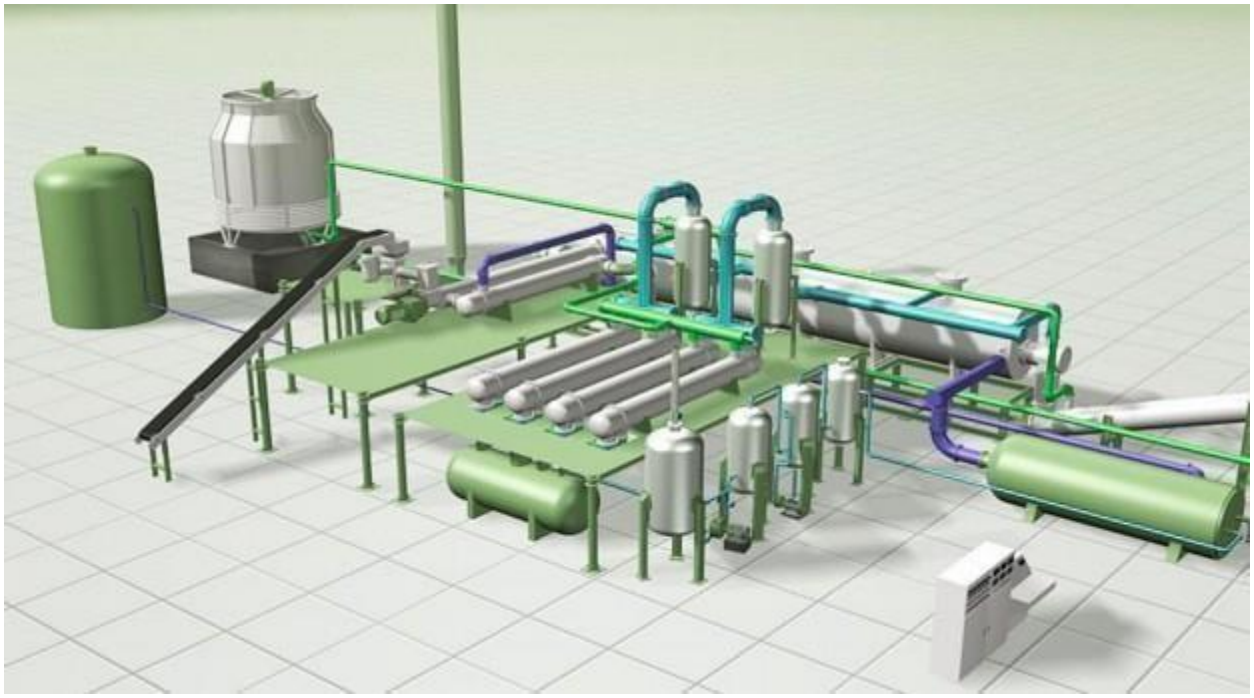
Boot Process The reactor is as follows. The used tires are crushed at the beginning and fed to a buffer tank. From the original hopper chopped raw material by a screw conveyor is loaded into a pyrolysis reactor.



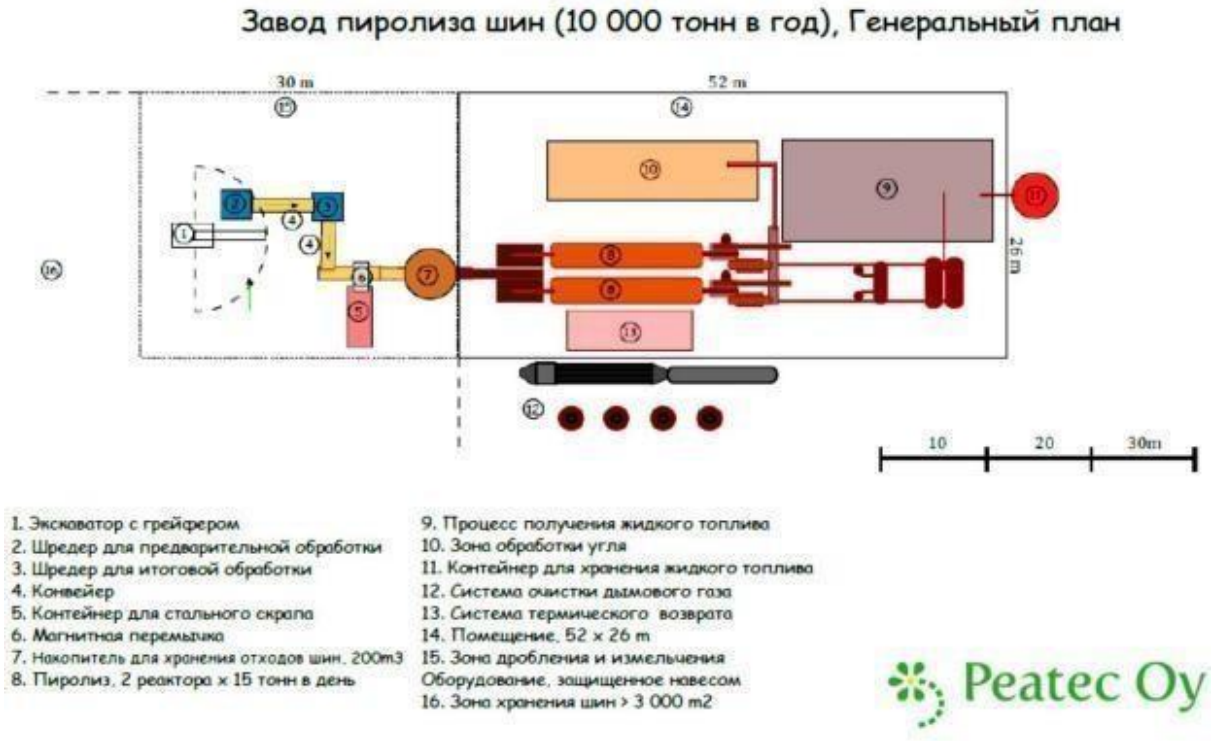
The pyrolysis process and obtain a final product are shown in the scheme below.



The project plants for the treatment of used tires, rubber and plastic waste with a capacity of 10,000 tons per year.



Industrial plant with a capacity of 10,000 tons per year.



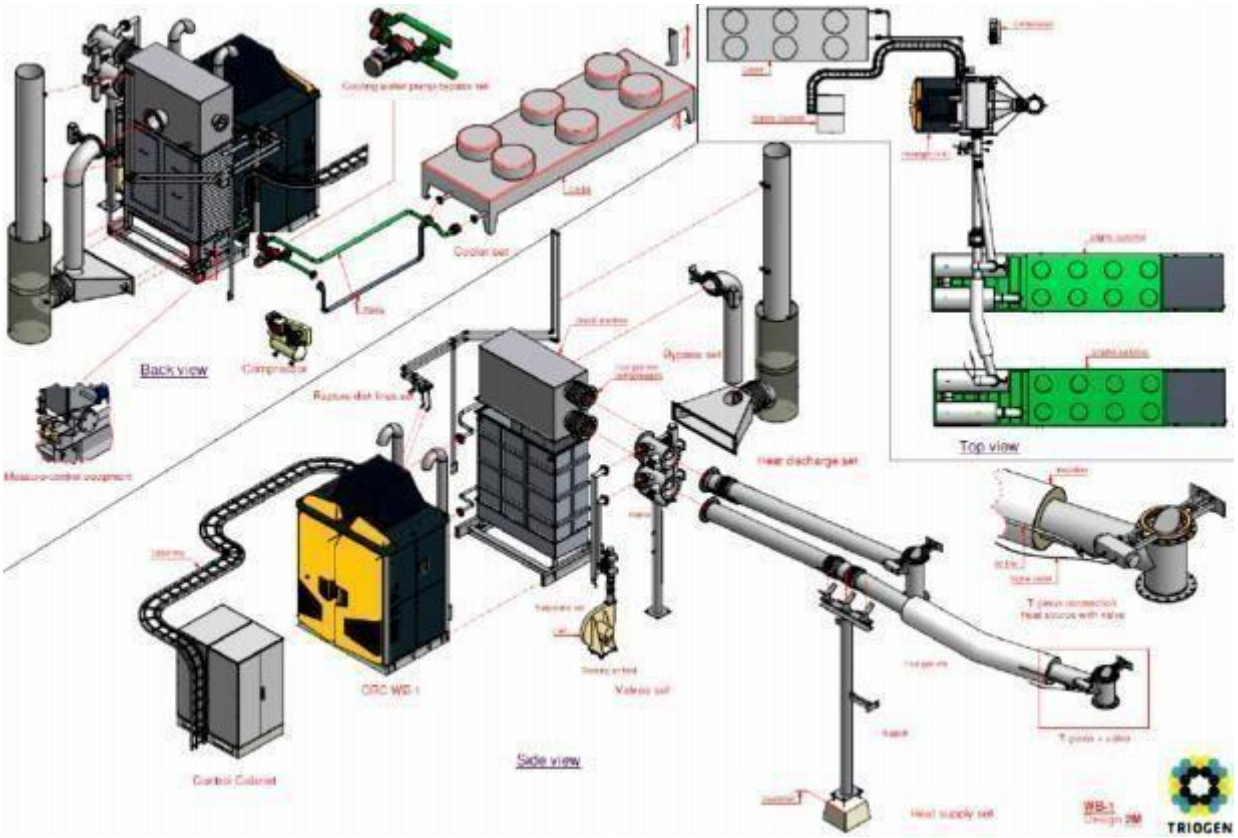
4. Energy efficiency.

The energy intensity of the pyrolysis technology is high enough. Effective process for pyrolysis of the starting material must be heated to a sufficiently high temperature and to maintain this temperature throughout the process. Then, in order to condense the vapors, they must be cooled below the condensation temperature of the liquid fraction. Evaporation and condensation of fluid require any large amount of energy as latent heat of vaporization of oil depending on the fraction of 200 to 500 kJ / kg. Therefore, at an output line for the liquid fraction of at least 1 ton per hour, the capacity of the capacitor is of the order of 200 kW. This power is dissipated as the cooling water of low temperature heat. Approximately the same amount of heat is removed with cooling of carbon black. All these low-grade heat can be recovered and used to produce electrical energy.

The costs of electricity in this technology is also quite high. The total installed capacity of electrical equipment (crushers, pumps, conveyors, and soon) is not less than 400 kW.

In the process of tire pyrolysis combustible gas is released. This gas with vapor of the liquid fraction fed into the boiler and burned. An exemplary flow of the gas is up to 35 kg / h. Consequently, the thermal capacity of the boiler is not less than 500 kW, and we have a surplus of thermal energy not less than 300 kW.

Convert low-grade heat into electrical energy by using ORC modules are currently commercially available. For combustion of 1 kg of gas take at least 10 m3 of air. The same quantity of combustion gases is discharged into the atmosphere at a temperature not lower than 350 ° C. These gases can be submitted at ORC module of TRI-O-GEN and get at least 300 kW of free electricity for their own needs.



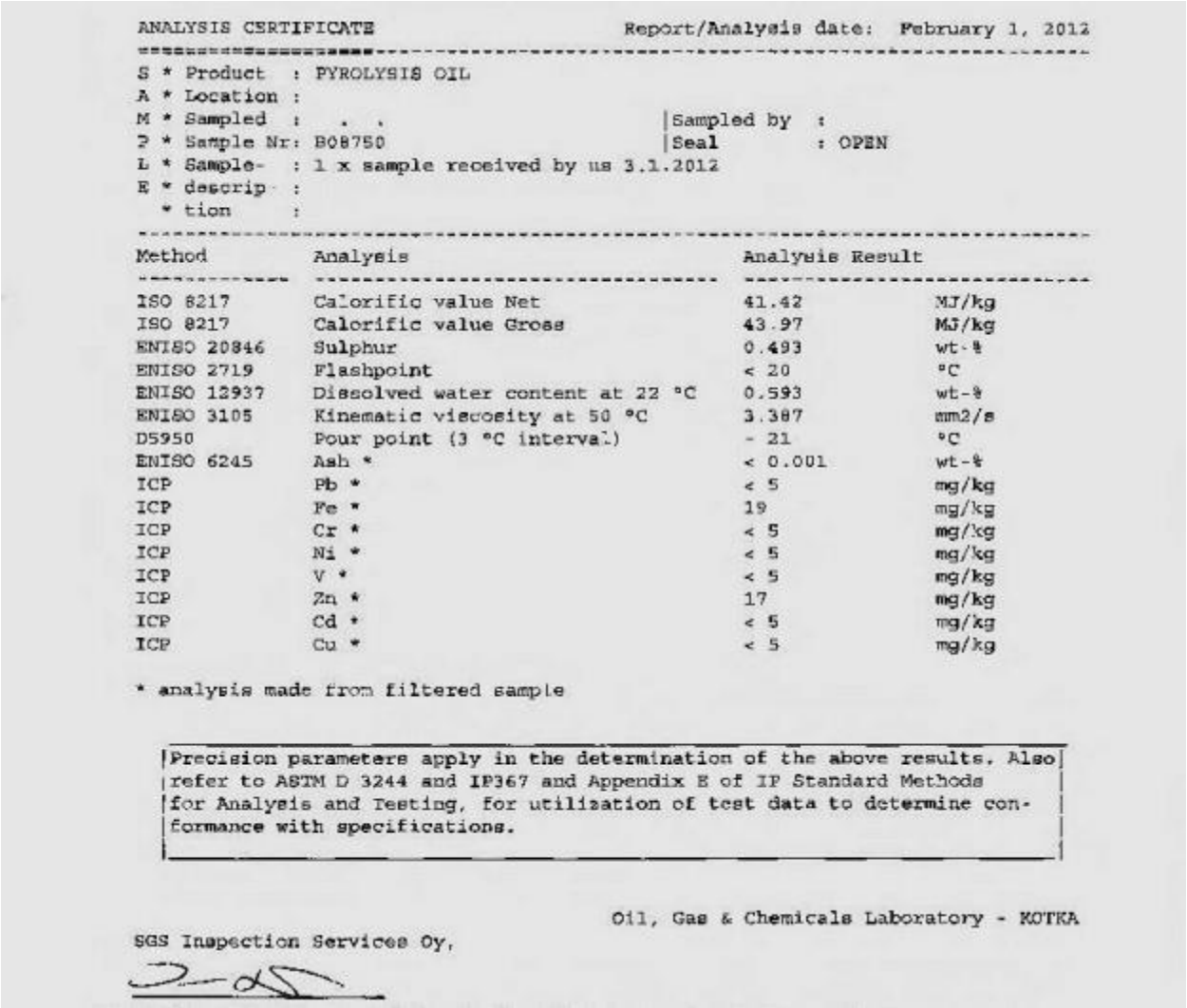
5. The final products.

During the processing of 10,000 tons per year at the output we will have at least 4,500 tons of heating oil, 3,500 tons of carbon, 1250 tons of metal courts, 750 tons of fuel gas (methane, ethane).

5.1. Characteristics of industrial diesel oil.

The main product, which is obtained by pyrolysis - a industrial diesel oil. The product was installed in a laboratory SGS. According to the recommendations of the developer of technology, this product can be added to motor fuel or added to crude oil to its processing at the refinery. However, in the present circumstances of the energy crisis in Tanzania this product is suitable to use as a backup fuel boiler installations. According to the report laboratory SGS, the calorific value of the fuel is not less than 0.01 Gcal / kg. With the cost of thermal

energy in Tanzania for at least 1000 -1200 UAH / Gcal total annual income from burning 4,500 tons of industrial diesel oil will beat least $ 2.8 million. Extract from SGS report is listed below, and the full report isgiven in the appendix.



ANALYSIS CERTIFICATE — Report/Analysis date: February 1, 2012

S * Product : PYROLYSIS OIL
A * Location :
M * Sampled : . .
P * Sample Nr: B08750
L * Sample- : 1 x sample received by us 3.1.2012
E * descrip :
* tion :

Sampled by :
Seal : OPEN

Method	Analysis	Analysis Result	
ISO 8217	Calorific value Net	41.42	MJ/kg
ISO 8217	Calorific value Gross	43.97	MJ/kg
ENISO 20846	Sulphur	0.493	wt-%
ENISO 2719	Flashpoint	< 20	°C
ENISO 12937	Dissolved water content at 22 °C	0.593	wt-%
ENISO 3105	Kinematic viscosity at 50 °C	3.387	mm2/s
D5950	Pour point (3 °C interval)	- 21	°C
ENISO 6245	Ash *	< 0.001	wt-%
ICP	Pb *	< 5	mg/kg
ICP	Fe *	19	mg/kg
ICP	Cr *	< 5	mg/kg
ICP	Ni *	< 5	mg/kg
ICP	V *	< 5	mg/kg
ICP	Zn *	17	mg/kg
ICP	Cd *	< 5	mg/kg
ICP	Cu *	< 5	mg/kg

* analysis made from filtered sample

Precision parameters apply in the determination of the above results. Also refer to ASTM D 3244 and IP367 and Appendix E of IP Standard Methods for Analysis and Testing, for utilization of test data to determine conformance with specifications.

Oil, Gas & Chemicals Laboratory - KOTKA

SGS Inspection Services Oy,

5.2. Characteristics of the fuel gas.

The second most important product of pyrolysis. Combustible gas (methane and ethane), and a pair of liquid fuel boiling fractions which were not condensed in the cooler to the boiler and completely combusted. The resulting thermal energy is used for the following purposes:

- On the technological needs for heating the pyrolysis reactor;
- For the production of electrical energy by means of ORC module;
- For heating and hot water production building;
- For heating and hot water supply of nearby houses.

All consumers above except the last can significantly reduce production costs. The latter will give the consumer a small (in terms of Tanzania) income. This is explained by the fact that in Tanzania tariffs

for electricity and heat for businesses are quite high, and the population pays for the same energy of only

25%. Therefore, the process resulting in a combustible gas used to the maximum for production purposes, and in case of excess power this energy intensive to develop additional production. In this case it is possible to obtain the maximum economic benefit.

5.3. Characteristics of carbon black.

Carbon black,which has been obtained by pyrolysis may be used as a filler:

- in the production of new tires;
- producing paints (as a black dye);
- in the manufacture of building materials.

In addition, this product can be used as for the production of activated carbon and subsequently used as filler in exhaust filters.

5.4. Features metal courts.

Steel cord and spikes separated in a magnetic separator after the end of the pyrolysis process. Used as scrap metal as a raw material for steel production. For its successful implementation within the enterprise must be provided briquette press steel cord.

6. Marketing Plan.

For successful implementation of this project is necessary to solve two problems. Firstly, it is necessary to ensure a stable supply of raw materials to the plant. Secondly, the implementation must provide astable starting product.

6.1. Organizing the collection of used tires.

Theoretically collecting used tires have no problems. As stated above in Tanzania has already accumulated more than 5 million scrap tires generated annually and has up to 200 thousand pieces. For this project, you must annually 10,000 tons or about 100 thousand pieces. However, all this stuff is scattered over a large area to collect it needs a certain system.

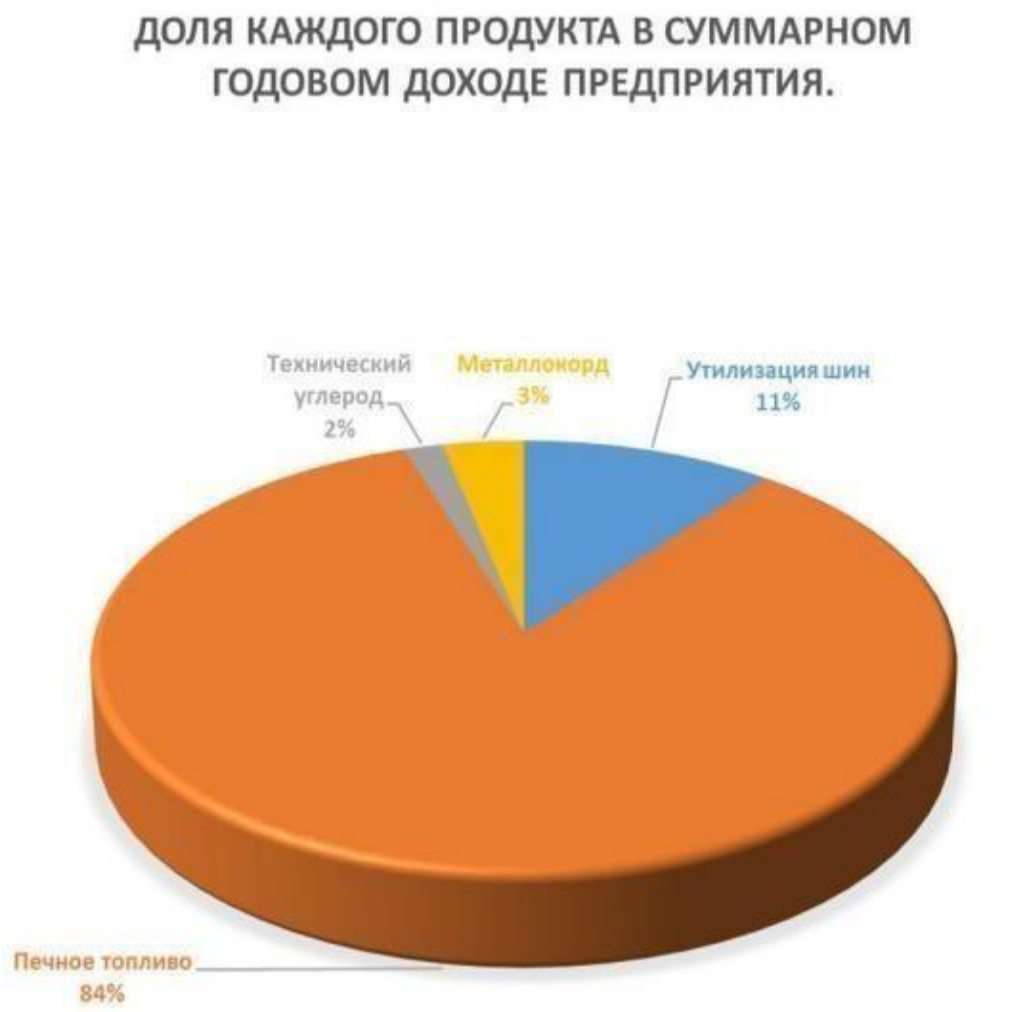
The first category of suppliers of used tires - a road transport companies. With this second group no particular problems, since according to law they are required to take the used tires specialized companies for disposal at applicable rates. You only need to enter into a long-term contract of transport enterprises and periodically take used tires as they are formed. In this regard, a more optimal work closely with companies that are engaged in the supply of motor spare parts enterprises. As a rule, these enterprises are engaged and delivery of spare parts to customers. Therefore, bringing cars go empty back and can take used tires. For example, the Tanzanian company "xyz transportation company" engaged in transportation of different type of goods with different type of cars and trucks for the business, and has offices in all major cities of Tanzania. Using their procurement network can organize the collection of used tires from all regions of Tanzania.

The second category of suppliers of used tires - are companies who receive the tires. In most cases, such

enterprises in Tanzania are not engaged in disposing of these tires, but simply warehoused them in their territory. These companies are happy to give their accumulated tires, but to pay for its disposal will not. In Tanzania, still enough abandoned areas on which to store the junk. Protect such landfills is also not necessary. Therefore, these companies should be considered as important suppliers of raw materials, but to pay for the disposal of them can not count. Moreover, the transportation to the disposal site they also will not pay.

The most difficult category of suppliers of used tires - a private car owners. This category will take the tires only at presence of economic incentives. This is a small fee for surrendered tires or discount when you buy new tires. Other levers of influence on this category in Tanzania is not there. It is easier to throw the used tires at illegal dumps or just leave on the road. It should be noted that this category is very large and to work with them it is necessary. The easiest way in this plan to work through the point of sale of tires in the form of discounts on the purchase of new tires. This is of course an additional cost, but it will provide the company with raw materials.

6.2. Sale of finished



As can be seen from the diagram, the main income of the company receives from the sale of industrial oil. As already mentioned earlier, in Tanzania this product is best used as a backup fuel boiler installations, namely as furnace fuel. In this case, the minimum requirements for the quality of the product. In the context of Tanzania is simply unlimited market. Even if a barrel of oil will fall to $ 40 a fuel will be in demand. According to its characteristics, this industrial oil in any case better fuel oil M-100, in all respects.

Annual production of industrial oil in this project is 4500. In terms of thermal energy it will be 45 thousand Gcal per year. For example, one of the factory with a total area of 30,000 m2 consumption per heating season 3000 Gcal. heat. Thus it will be enough fuel for heating only 15 factory in Tanzania. Another example is the amount of heating oil is comparable to the fuel needs of a small factories boilers (11 MW and 10 Gcal / h). Similar utility boilers in Tanzania more than 10 thousand.

In view of the foregoing, any problems with the implementation of industrial oil in Tanzania is not there. Enough to sign long-term contracts with several factories heating plants. For the price, too special there is no alternative. Natural gas costs the same as the calorific value below. Fuel oil costs the same. Wood pellets will cost considerably more expensive. And soon.

Sale of carbon black and steel cord for a total of less than 5% of the total income of the enterprise. With the sale of steel cord no problems. He will always be in demand. Since carbon black complex. Of course, as a filler for paints it is claimed, but in this regard, many other similar materials. Competition in this area is very large. In this regard, the project includes the development of technology for production of activated carbon, which can be used for the filter media. In this case, the product value increases.

Payment for the disposal of used tires is more important, as is 11% of total revenue. Getting this payment is especially important in the first stage of the project. This is clearly seen in the financial plan. It was noted above that in the context of Tanzania to receive full payment for this is quite difficult. Two of the three categories of potential suppliers produce this payment will not. It is simply unrealistic and unlikely anything will change substantially in the near future.

Exit need to look for an entirely different direction. This project is aimed at solving environmental problems of the country and region-specific. This makes it possible to receive certain benefits on payment of land for the construction of the plant, certain payments from the local budget to eliminate illegal dumping and so on. In addition, the legislation of Tanzania provides the ability to compensate fully or partially interest on the loan, which is used for environmental projects. In this direction need to work very actively.

In the most extreme case, the project is fully paid off through the sale of industrial oil. Therefore, all other products are secondary. This does not mean that these products should not engage in reverse. However, at the first stage it is not so important.

7. The financial plan (financial model).

The financial model was developed for a comprehensive study of the project and allows you to calculate a variety of configuration options, performance and financial stability with changes in market conditions.

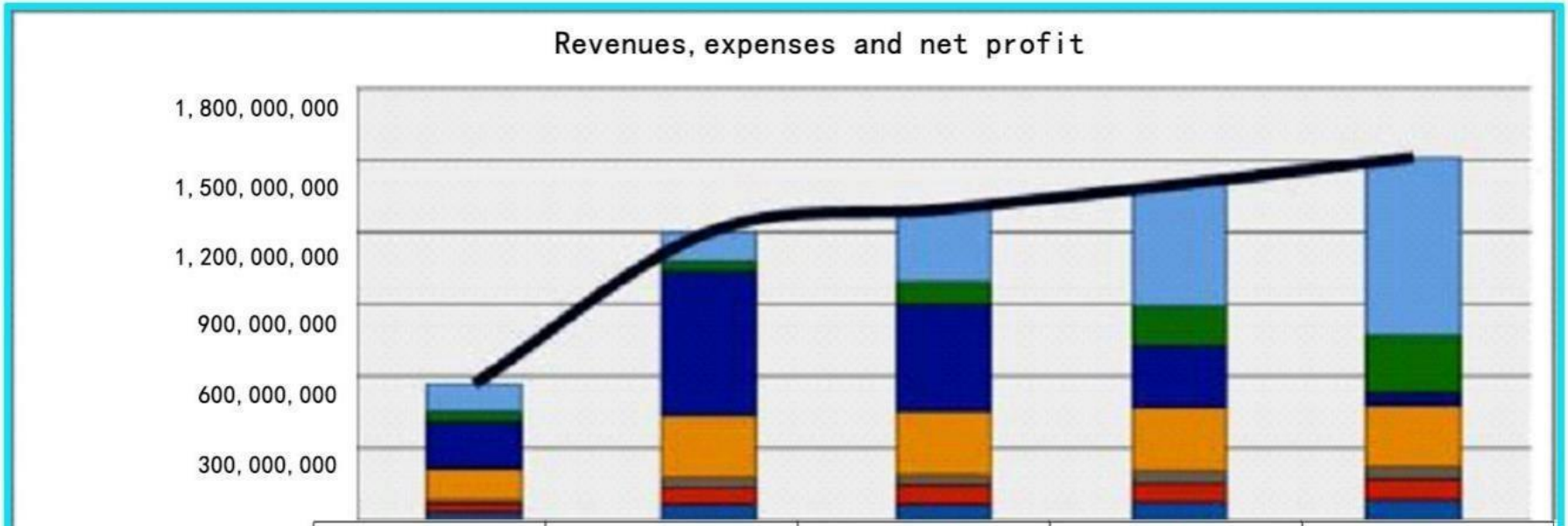
Projected Investment Plan

INVESTMENT BREAKDOWN		INVESTMENT PLAN				
ITEMS	**FINANCING IN USD**	**2024**	**2025**	**2026**	**2027**	**2028**
Land & Buildings	100,000	100,000				
Plant	780,000	180,000	100,000	100,000	100,000	300,000
Vehicles	249,000	55,000	40,000	86,000	68,000	
Furniture & Fittings	39,000	25,000	10,000	4,000		
Pre Expenses	37,000	35,000	2,000			
Others	0					
Working Capital	195,000	105,000	48,000	10,000	32,000	
TOTAL	**1,400,000**	**500,000**	**200,000**	**200,000**	**200,000**	**300,000**
FIXED CAPITAL	1,232,000					
WORKING CAPITAL	168,000					
CAPITAL ADDITIONS		**500,000**	**200,000**	**200,000**	**200,000**	**300,000**

SANFU INDUSTRIAL COMPANY LIMITED
CASH FLOW PROJECTION FOR THE PERIOD FIVE YEARS FROM AUGUST, 2024 TO 2028
P. O. BOX 80901 DAR ES SALAAM

A: OPERATING ACTIVITIES	2,024	2,025	2,026	2,027	2,028	
Cash inflows	1,000,580,500	1,200,696,600	1,440,835,920	1,729,003,104	1,746,293,135	7,117,409,259
Cash outflows	-260,150,930	-720,417,960	-864,501,552	-1,037,401,862	-1,047,775,881	-3,930,248,185
CASH LOWS (A)	**740,429,570**	**480,278,640**	**576,334,368**	**691,601,242**	**698,517,254**	**3,187,161,074**
B: INVESTMENT ACTIVITIES						
Cash inflows	-	-	-	-	-	-
Cash outflows	110,250,000	78,095,000				188,345,000
CASH FLOWS (B)	**110,250,000**	**78,095,000**	**-**	**-**	**-**	**188,345,000**
C: FINANCE ACTIVITIES						
Cash inflows	102,957,000					
Cash outflows	73,099,470					
TOTAL CASH OUTFLOWS (C)	**176,056,470**	**-**	**-**	**-**	**-**	**-**
NET CASH FLOW (A+B+C)	1,026,736,040	558,373,640	576,334,368	691,601,242	698,517,254	**3,551,562,544**
OPENING BALANCE	**-**	**1,026,736,040**	**1,585,109,680**	**2,161,444,048**	**2,853,045,290**	**-**
CLOSING CASH BALANCE	**1,026,736,040**	**1,585,109,680**	**2,161,444,048**	**2,853,045,290**	**3,551,562,544**	**3,551,562,544**

Graphs and charts



	2024	2025	2026	2027	2028
Net income	TZS 515,585,000	TZS 1,206,240,000	TZS 1,250,130,000	TZS 1,223,180,000	TZS 1,301,755,000
Income tax	TZS 220,965,000	TZS 516,960,000	TZS 535,770,000	TZS 524,220,000	TZS 557,895,000
Amortization	TZS 224,350,000	TZS 442,350,000	TZS 442,350,000	TZS 443,800,000	TZS 441,150,000
Salary and other costs	TZS 31,550,000	TZS 66,500,000	TZS 73,500,000	TZS 78,150,000	TZS 83,600,000
Fixed costs	TZS 53,150,000	TZS 112,700,000	TZS 124,100,000	TZS 131,300,000	TZS 142,350,000
Variable cost	TZS 51,400,000	TZS 106,400,000	TZS 116,900,000	TZS 131,200,000	TZS 137,450,000
Revenues	TZS 1,097,000,000	TZS 2,451,150,000	TZS 2,542,750,000	TZS 2,531,850,000	TZS 2,664,200,000

SANFU INDUSTRIAL COMPANY LIMITED
PROFIT AND LOSS PROJECTION FOR THE PERIOD FIVE YEARS FROM AUGUST, 2024 TO 2028
P. O. BOX 80901 DAR ES SALAAM

A: REVENUE	2024	2025	2026	2027	2028	
heating	515,870,000	2,451,150,000	2,542,750,000	2,351,850,000	2,664,200,000	10,525,820,000
TOTAL REVENUE (A)	**515,870,000**	**2,451,150,000**	**2,542,750,000**	**2,351,850,000**	**2,664,200,000**	**10,525,820,000**
B:EXPENDITURE						
Purchases	103,174,000	1,225,575,000	1,017,100,000	940,740,000	1,065,680,000	4,352,269,000
Fuel	41,269,600	73,534,500	76,282,500	70,555,500	79,926,000	341,568,100
Business Licence	600,000	600,000	600,000	600,000	600,000	3,000,000
Electricity and water	10,317,400	49,023,000	50,855,000	47,037,000	53,284,000	210,516,400
Security	15,476,100	18,383,625	19,070,625	17,638,875	19,981,500	90,550,725
Salaries and Wages	25,793,500	49,023,000	50,855,000	47,037,000	53,284,000	225,992,500
Transport charges	15,476,100	73,534,500	76,282,500	70,555,500	79,926,000	315,774,600
Telephone and Communication	2,579,350	4,902,300	5,085,500	4,703,700	5,328,400	22,599,250
Consultancy	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	15,000,000
Rent	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	50,000,000
Others	5,158,700	24,511,500	25,427,500	23,518,500	26,642,000	105,258,200
Stationeries	2,579,350	2,696,265	2,797,025	2,587,035	2,930,620	13,590,295
TOTAL EXPENDITURE (B)	**235,424,100**	**1,534,783,690**	**1,337,355,650**	**1,237,973,110**	**1,400,582,520**	**5,746,119,070**
PROFIT MARGIN (A-B = C)	**280,445,900**	**916,366,310**	**1,205,394,350**	**1,113,876,890**	**1,263,617,480**	**4,779,700,930**
CLOSING CASH BALANCE	**54.36%**	**37.39%**	**47.41%**	**47.36%**	**47.43%**	**45.41%**

SANFU INDUSTRIAL COMPANY LIMITED

FINANCIAL POSITION PROJECTION FOR THE PERIOD FIVE YEARS FROM AUGUST, 2024 TO 2028

P. O. BOX 80901 DAR ES SALAAM

Details	2024	2025	2026	2027	2028	TOTAL
Assets						
Non-current assets	316,682,100	625,153,340	760,260,285	777,748,113	773,150,481	3,252,994,319
Current assets	90,480,600	178,615,240	217,217,224	222,213,747	220,900,137	929,426,948
Total assets	**452,403,000**	**893,076,200**	**1,086,086,122**	**1,111,068,733**	**1,104,500,687**	**4,647,134,742**
Liabilities						0
Capital and reserves	203,067,000	411,750,000	589,935,200	584,568,700	605,150,067	2,394,470,967
Long-term liabilities	224,350,000	442,350,000	442,350,000	443,800,000	441,350,000	1,994,200,000
Currant liabilities	24,986,000	38,976,200	53,800,922	82,700,033	58,000,620	258,463,775
Total liability	**452,403,000**	**893,076,200**	**1,086,086,122**	**1,111,068,733**	**1,104,500,687**	**4,647,134,742**

Conclusions.

The above analysis leads to the following conclusions:

A recent report by the International Food Policy Research Institute (IFPRI) predicts a reduction of overall household expenditure due to persistent food, fuel, and fertilizer price shocks in Tanzania. This project will not completely solve the problems of Tanzania in the fuel crisis, naw fuel price is double the price of 2022 in few year later it may increase even much, with our project we may not solve the crisis in full percent but we reduce the effect of this crisis, but it is only a plus for this project. The small market share of this fuel - this is the maximum guarantee that in small percent the fuel problem will be reduce.

Secondly, this is a big step in solving environmental problems in Tanzania in terms of waste disposal. In Tanzania, the share of waste does not exceed 5%, while in other European countries, the figure is 60- 90%. Waste in Tanzania is still stored in landfills, causing huge damage to the environment. Currently, waste dumps employs more than 5% of the territory of Tanzania. Of course this project can not completely solve the environmental problem, but this is the first step that you can further develop and expand.

Third, Investing in a tyre pyrolysis plant offers a promising avenue for profitability. The market demand for pyrolysis products, such as pyrolysis oil used in various industries, presents a sustainable revenue stream. Simultaneously, it promotes resource recovery by converting waste into valuable commodities.These plants not only generate revenue but also stimulate economic growth by creating job opportunities in plant operations and related industries. They contribute to the local economy while addressing the global issue of tyre waste. Modern pyrolysis machine is designed to maximize efficiency and yield. They incorporate advanced features for precise temperature control, ensuring optimal product quality and minimizing tyre waste. regulatory bodies worldwide are increasingly supporting tyre pyrolysis initiatives. They offer incentives, subsidies, and favorable policies to promote the adoption of this environmentally responsible technology.

SGS

PEATEC OY

Laboratory Report Nr: P 52062(L 83-12)

ANALYSIS CERTIFICATE Report/Analysis date: February 1, 2012

S * Product	: PYROLYSIS OIL		
A * Location	:		
M * Sampled	: . .	Sampled by	:
P * Sample Nr	: B08750	Seal	: OPEN
L * Sample-	: 1 x sample received by us 3.1.2012		
E * descrip-	:		
* tion	:		

Method	Analysis	Analysis Result	
ISO 8217	Calorific value Net	41.42	MJ/kg
ISO 8217	Calorific value Gross	43.97	MJ/kg
ENISO 20846	Sulphur	0.493	wt-%
ENISO 2719	Flashpoint	< 20	°C
ENISO 12937	Dissolved water content at 22 °C	0.593	wt-%
ENISO 3105	Kinematic viscosity at 50 °C	3.387	mm2/s
D5950	Pour point (3 °C interval)	- 21	°C
ENISO 6245	Ash *	< 0.001	wt-%
ICP	Pb *	< 5	mg/kg
ICP	Fe *	19	mg/kg
ICP	Cr *	< 5	mg/kg
ICP	Ni *	< 5	mg/kg
ICP	V *	< 5	mg/kg
ICP	Zn *	17	mg/kg
ICP	Cd *	< 5	mg/kg
ICP	Cu *	< 5	mg/kg

* analysis made from filtered sample

Precision parameters apply in the determination of the above results. Also refer to ASTM D 3244 and IP367 and Appendix E of IP Standard Methods for Analysis and Testing, for utilization of test data to determine conformance with specifications.

Oil, Gas & Chemicals Laboratory - KOTKA

SGS Inspection Services Oy,

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Member of the SGS Group (SGS SA)
Business ID 0634247-4

Laboratory Report Nr: P 52062(L 84-12)

ANALYSIS CERTIFICATE — Report/Analysis date: February 1, 2012

S * Product	: PYROLYSIS OIL		
A * Location	:		
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P * Sample Nr:	B08750	Seal	: OPEN
L * Sample-	: 1 x sample received by us 3.1.2012		
E * descrip-	:		
* tion	:		

Method	Analysis		Analysis Result	
D86	Distillation			
		IBP	66.0	°C
		10%	159.1	°C
		30%	232.8	°C
		50%	308.1	°C
		80%	369.0	°C
		90%	> 370	°C
		FBP	> 370	°C
EN 12916	Aromatics		*	
GC-MS	Benzene		0.2	wt-%

* Analysis performed at SGS Tallin, see attached report

Precision parameters apply in the determination of the above results. Also refer to ASTM D 3244 and IP367 and Appendix E of IP Standard Methods for Analysis and Testing, for utilization of test data to determine conformance with specifications.

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SGS

ANALYTICAL REPORT

Ref.no.: T 1 1079.1
Page 1 of 1

Client	: SGS INSPECTION SERVICES OY, Särkiniementie 3, P.O. BOX 128, FI-00211 Helsinki, Finland
Client ref.no.	: P52062
Product	: Petroleum product
Sample description	: One 150 ml glass bottle (non-sealed) received from SGS Inspection Services Oy By HRX courier and marked as follows: REFNO: 52062 PREPARED: 05.01.2012 11:15 INSTALL: SGS Mussalo Laboratory VESSEL: Client's sample; PRODUCT: PYGAS DESCR: Third part. Ex SAMPLE RECEIVED 3.1.2012 FROM PEATEC
Date of receipt	: 23 January 2012
Sample no.	: 20123.082

Test	Method	Unit	Result
Polycyclic aromatic hydrocarbons (POLY - AH)	EN 12916-2006	% (m/m)	More than 12 (13.2)**
Aromatic (mono-)		% (m/m)	29.1*
Aromatic (di-)		% (m/m)	More than 10 (10.9*)**
Aromatic (tri & higher-)		% (m/m)	More than 2 (2.3*)**
Total aromatics		% (m/m)	More than 42 (42.3)**

* - The result may be approximate due to the product nature.
** - The reported result is outside of the scope of the test method and therefore the precision statement of the test method does not apply.

Tallinn, 24 January 2012

Irina Gulenko
Deputy Laboratory Manager

Possible Risks and Obstacles

Every industrial project includes risks, which can be depended on external issues or company'sabilities to manage or run the business. Before making investment decision, we have to point out all the known and foreseen risks and to eliminate as many of them as possible. Even if we make the preparative works well, some things will still remain uncertain or it's hard to forecast them. After eliminating or deceasing possibilities of realization of risks, we will decide if we can live with the remaining risks or we consider them too dangerous to continue the project.

1. List of Risks and Questions to be Analyzed

Below listed items can be considered as potential risks. All of them have to be analysed and each risk should be minimized as well as possible taking other business aspects into account.

	Raw material	**Technical process**	**End Products**
Financial	Is the Company capable to finance rawmaterial flow	Can we finance the investment Can we keep the Investment budget Can we bear possible delay or stop ofthe production process	Can we afford to keep products in stock
Technical	Is the quality of tyres goodenough	Does the technology and technical process work	Can we make end products good enough for market
Human resources		Can we get professional labour Do we have the rightmanagement	Can we get salesmen for the products
Health, Safety and Environment	What kind of restrictions there are for storing of old tyres	What kind of restrictions there are for processing old tyres Permissions needed	Restrictions Permissions Certificates Analyses Authoritycontrol
Competitors	What if we cannot get tyres(raw material) due to competitors	Can our competitors establish similar orbetter process	Are there any other products similar or better than ours
Public opinion	What is thepublic opinion about storingthe tyres	Any inconvenience topublic due to our process - their	Public opinion about our products

		possibility to act	
Time/scheduling	Can we get enough raw material in time	Can we getthe machinery in time Is this theright time to establish the factory	Are we delivering in time
Market (price/volume)	How stabile is the raw material price		Can we get the price budgeted - how does the price effect to result Is there market enough for our products
Business growth	Is there enough raw material for growth Can we use other raw materials	How easily we can increase capacity How easily we can establish new plants	What is the volume of market Is there a market for new products
Legal aspects	What if legislation concerning tyre recycling changes	Are thereany legal issues preventing tyre recycling process	Are thereany legal issues limiting use of recycled products

Importance and level of each risk will be evaluated numerically and most of the attention will be paid to solve the most important issues. However, as written before, besides of the local business environment, also Peatec's experiences for decreasing the risks are used in following analyses.

2. Risk Analyses

Next we have to analyse problems above – their probability and possible impact to success of investment. We estimate the probability of current risk in scale 0 to 5 as follows

0	No risk at all – probability that this risk comes true is zero or it doesn't effect to result of investment project at all
1	Only theoretical risk – generally this could happen but probability is very, very low and possible effect to project is barely noticeable
2	Slight risk – probability is very low and/or possible effect in case risk is realized is very limited
3	Moderate risk – probability is low and/or effect to project is moderate. This risk realization will not cancel the project but effect to financial result or timing.
4	Risk – this risk is reality and could come true and/or the effect of the realized risk is remarkable. Risk coming true will effect seriously to financial result, timing or status in market etc.

5 High risk – probability for this risk is remarkable and/or the result of the realized risk is fatal for the project. Risks evaluated in this levelshall be carefully analysed and possible effects and counteracts estimated.

Section	Problem/risk	Short Analyze, solution	Level of Risk
Financial risks	Is the company capable to finance raw material flow?	Peak Power should sign an Agreement for delivery of raw material to plant free of charge, say the raw material will not tie any funds at all. Agreement should be valid until end of 2029. Raw material can theoretically be problem only after that. However, this item has to be agreed with raw material supplier.	2
Financial risks	Can the Company finance the project?	Investment for the plant is approximately 1 B TZS. It is essential that the whole financing is firmly agreed before investment decision. Certainly, lack of financing will stop the project.	4
	Can the company keep in investment budget?	Peatechas received binding offers for the similar machinery to be installed in Finland. The rental/purchase agreement for the building should be done using Peatec's consultancy. The budgeted 13M€ is slightly over dimensioned and including the price of the building.	1
	Can we bear possible delays or standing time of production?	Salaries are the biggest expense item in operative budget, representing about 30 % of the costs. If the plant is idling 6 months with full personnel the annual incomes are decreased 50 % but the production is profitable. If any standing time will be longer than 2 months, it is possible to dismiss temporarily workers until problem is solved and thus save in expenses.	1

	Can we afford to keep products in stock?	The stock capacity is planned to keep one month production in stock, capacity is enough for that. According to preliminary agreements concerning sales of and products should be delivered weekly and invoiced monthly. Considering the EBIT >50 % company can bear stocking the goods a few months financially but company's own stores are not enough	2
Technical, technology	Is the quality of tyres good enough?	Generally, there are no "unsuitable" tyres at all. All the tyres can be recycled, only some tyres give better results than the others. Average quality oftyres in Finland (and Europe generally) is very good for pyrolysis. The same machinery can use also plastics as a raw material.	1
	Does the technology and technical process work properly?	We are using only tested technology which is already in use at Peatec's premises. There are plenty of factories using similar technology from the suppliers we are using.	0
	Can we make end products good enough for the market?	We have given end product laboratory analyses (done in independent laboratories like SGS) results to potential oil customers and they have accepted the product quality. However, signed preliminary sale agreements should be done before the investment decision. Carbon is the only end product which sales is still open. More detailed analysis is necessary in order to maximize the value of carbon.	2
Human Resources	Can we get professional labour?	The availability ofthe labour depends on the situation ofthe plant. This issue has to be considered when deciding the location.	2

Human Resources	Do we have the right management?	Management at the moment is the one who will work out the plan. Key persons are experienced in business and international operations and they are dedicated to this business. This group also has very good experience of the technology. But this is important question and should be followed carefully and when necessary, professional local people shall be hired.	3
	Can we get salesmen for the products?	Most ofthe products are will be sold according to preliminary agreements already before the investment decision. End products are commodity type and they have existing large market. According to strategy, Peak Power distributes its' products through strategic partners.	1
Health, Safety and Environment	What kind of restrictions there are for storing of old tyres?	Generally, there are no restrictions as long as they are properly stored and protected from fire. Peak Power has to organize storing and all the required permissions for that.	1
	What kind of restrictions there are for processing old tyres	There are no restrictions as long as meets all the requirements set from authorities. We need to co-operate closely with Environmental authorities concerning emissions and type ofproduction	2
	Permissions needed	Process requires HSE certificate and permission. Most probably we will hire an external consult for taking care of permissions required. That is a time-taking	2

		process and that is why it has to be started in the beginning of the process. Laboratory analyses from existing plants emissions (same type of machinery) will be submitted to controlling authorities and they will meet easily the limits set by officials. Time maybe the critical factor.	
	Restrictions Permissions Certificates Analyses Authority control	Peak Power will cooperate with professionals controlling quality, emissions and process. There are some certificates, like REACH-classification which are required. Peatec already has a lot of documentation about similar technology, which will be useful in the new plant.	1
Competitors	What if we cannot get tyres (raw material) due to competitors	A binding contract concerning delivery of tyres should be signed already in the preliminary stage. This is an important matter and therefore alternative suppliers will be named and the situation with them will be periodically checked.	3
	Can our competitors establish similar or better process	We will negotiate with machinery supplier about local exclusivity to use their machinery. Also, we should guarantee the exclusivity to use the raw material in our market area. After combining these two items, competitors may build similar plant using worse machinery but they don't have the tyre raw material. Considering the sales of our product, there is enough market for all players.	2
	Are there any other products similar or better	Products made of crude oil are corresponding to ours, but technically we are at the same level and pricewise we can sell even cheaper if necessary. A big advantage is that our	2

	than ours	products are “green” recycled.	
Public opinion	What is the public opinion about storing the tyres?	This issue has to be discussed with representatives of local community. In case ofnecessity, walls can be built around stock. Tyres are stored in proper way in 24/7 guarded area.	2
	Any inconvenience to public due to our process – their possibility to act?	All the emissions will be in given limits, easily. We are prepared to filter possible smell also even though it is not chemicallybeyond permission limits. It is very important to act in open and informative way in order not to arouse any public suspect or resistance. Possible resistance may cause delays but cannot stop the process.	2
	Public opinion about our products?	Open informing and marketing are key factors for creating and keeping a “green” image to our products. Ecology and recycling are the trends oftoday and that is for our favour.	1
Time/scheduling	Can we get enough raw material in time?	Total production of used tyres in Tanzania is more 120 000 tons. We have to make long- term agreements with tyre recyclers. We have planned to build a store for 10 000 tons of tyres so that we have always tyres enough for process. Furthermore, in future it is possible to import from other countries.	2
	Can we get the machinery in time?	Delivery time for the main components is 6 months according to offer but we have considered 8 months in our main schedule.	1
	Is this the right time to establish the factory?	All the factors are now on our side – technology is ready and developed, long term location problem with tyres, public opinion about recycling, state policy and financial	0

		aid…All these factors support project now.	
	Are we delivering end products in time?	Our production is process type, so that it is possible to estimate rather accurately monthly production and agree upon deliveries accordingly. We also will have one month buffer stock at the plant to balance deliveries.	2
Market (price/volume)	How stabile is the raw material price	Our contract for tyre delivery should guarantee the stabile tyre price until year 2029. After that the price shall be negotiated again. Import from other countries will be considered as well.	2
	Can we get the price budgeted for end products – how does the price effect to result?	A separate study and analysis concerning this question has been carried out.	2
	Is there market enough for our products?	All the 4 products produced are commodities having already a very large market. We will sign preliminary contract concerning sales. For starting the plant, at least 60% of the revenues should be secured by preliminary agreements. Especial attention will be paid to increase the value of carbon for suitable customer.	2
Business growth	Is there enough raw material for growth?	Tyre raw material in Tanzania is enough to double the production. As the hand ling of old tyres is a problem in neighbouring countries as well, we don't see a problem with raw material availability. Also we can	1

		use other raw materials, like plastics.	
	Can we use other raw materials?	Yes, technology is suitable and tested for other raw material as well, like plastics and other organic scrap.	1
	How easily we can increase capacity?	There is no technical, legal or management excuse preventing increase of capacity, only question existing question is financing.	0
Business growth	What is the volume of market for end products?	End products we produce are standard commodities having a huge market already in Central Europe. Certainly, products are coming into competed market, but they are very competitive compared to traditional products.	1
	Is there a market for new products?	Peatec is investing to R&D and development in order to increase quality ofproducts and develop new ones. Especially carbon based (new) upgraded products should have market – with higher prices. We will follow Peatec's innovations and realize them if it can provide even better profitability for us.	2
Legal aspects	What if legislation concerning tyre recycling changes?	Our way to turn ecologically problematic product into valuable materials provides negative carbon footprint. We expect legislation to be changed during next ten years but it will be changed into more ecological direction providing even better position for us.	1
	Are there any legal issues preventing tyre recycling process?	There are no laws or other legal matters preventing tyre recycling as long as environmental permission is correctly granted and observed. For us, old tyres are not waste but valuable raw material.	1

	Are there any legal issues limiting use of recycled products?	No, on the contrary. It is possible to gain tax discount for products due to recycled raw material. Furthermore, public opinion is favouring recycling strongly.	0

3. Findings of the Risk Analyse

Based on the risk evaluation, we have found out three most important risks which are needed to analyse deeper. In the next chapters we analyse the risks related to financing, management and raw material availability.

3.1. Risks on Financing

We are starting a new company without any remarkable funds or assets, so that both establishment of the business and business growth shall be financed by funds coming outside of the company. Company business will be on healthy basis and estimated profit (EBIT) is on very good level. This provides possibility to pay the external loans back in rather short time period. However, the investments to the technology are big and we have to use purchased components as a guarantee for the loans to betaken. The guarantee value is an essential factor when selecting a bank for the loan.

Nevertheless, external funding is required in the beginning when the plant will be established. Finding a competent partner(s) being able to fund the company is essential. Considering business nature and profitability it should be possible – company will give a very good return for invested money in rather short time.

3.2. Management Risks

Generally, any company is as good as its' management. In case of new plant to be established this is very true, since company is new, technology is new for the local management, customers are new – everything is new. This means that all the procedures, documents, systems etc. shall be established from scratch. Considering that at the sametime production process shall be founded, task waiting for management is huge.

The management role will be shifted to the new company during the first months of operation. According to our contract with Peatec, during preliminary and constructive phase of the project, we will receive all needed

information and training in order to run the pyrolysis plant. However, the importance of recruiting the best possible management cannot be overestimated.

Our main supplier's, Peatec, management team is experienced in pyrolysis technology and certainly, most of people in charge have experience in running own business. Peatec knows where it is committing. Team members have also international business background and their capability to communicate in several languages makes it easier to make and maintain international contacts which are extremely important considering the technical development and business growth.

At the moment, the management team is a combination of long experience and young enthusiasm - most members have technical education, which is good for technical process and production. Also the management team members have good experience and great results about green energy investment projects.

The management team will be modified according to the forecasted needs. In the very beginning we are pointing out the experience about financing, successful investment projects and knowledge about reliability of pyrolysis technology. Later on, the management will be more in the operational side dealing everyday with customers, personnel, suppliers, authorities etc.

3.3. Raw Material Availability Risk

Even there area lot of old tyres reaching the end of their life every year; we still have to consider this as one of the most crucial issue when planning investment to the new plant. The plant cannot operate without raw material and that is why this issue has to be solved already before the investment decision. This very important risk is relatively easy to minimize by contacting the recycling companies and making agreement on the tyre deliveries. Also, we will have a back-up plan to guarantee the availability in case of severe problems with the selected supplier. Due to the high margin of our business, in case of necessity we can pay for the tyres, even more than other old tyre consumers.

Also, raw material availability and the logistic chains from other countries will be analyse and if needed, utilized during the operation of the plant.