



OÜ «CATALANA»
European Leader International Consortium Group of Companies «PYROLY»

BUSINESS PLAN

Construction and commissioning of the infrastructural project "PYROLY-TAEBLA".



July 1, 2020

Tallinn

Description of the Project

The goal of this project is to establish and launch in two stages, on the territory of a land plot of 7.73 hectares, cadastral number 77601:001:0565, located at: METSALAO, KADARPIKUKÜLA, LÄÄNE-NIGULA VALD, the production based on disruptive technologies allowing to comprehensively solve the issues of processing all types of human waste in the absence of secondary emission, to create new industrial and agricultural segments compatible with each other, to make a profit, creating additional jobs and, consequently, increasing tax revenues in the budget, to raise the social level of society and protect it from environmental disasters.

Stage 1

purchase, manufacture, installation and commissioning of equipment for grinding rubber goods, obtaining products for their subsequent processing.

- Site 1 - acceptance and processing of rubber goods (tire casings) to obtain crushed raw materials - "chip" fractions 25x25mm - and rubber crumb from 0.1mm up to 6mm. High-tech equipment, developed by the American specialists, allows to process up to 30 tons of tires of various diameters per hour and obtain purified rubber crumb with low energy consumption, low noise level, and a small number of maintenance personnel,

Stage 2

- Site. 2 - Complex "PYROLY-EKOPYR 200" for processing of crushed raw materials - having an agreed combination of existing technologies (provided with the certified equipment that does not require development or tests) will allow to obtain the maximum yield of electricity, heat, oil products and other combustible substances from processing solid waste, including polymers. In addition to obtaining oil products, the complex provides the project with electricity and heat. This Complex is 100% environmentally friendly, has no outlet pipes for fumes, vapors and emissions of any harmful substances into the environment. Technologically, all the processes happen in a closed cycle leading to the production of a useful economic product. The complex is not dependent on the supply of rubber, since it can process the entire range of human waste, and in case of a hitch in the supply of plastic and rubber, it will continue to operate processing solid municipal waste.

OÜ Catalana (registry code 10651017) founded on March 14, 2000. with an authorized capital of 145,488 euro, is the initiator and operator of the project and the official representative of SPE "Otechestvennyye Tekhnologii LLC" (TIN 5047210651), in the European Union, the developer of the waste processing project, including waste, solid waste, rubber goods, polymers, agricultural waste, wood, peat, oil sludge, tar, etc., into marketable products, oil products, energy and heat.

The manufacturer of 80% of the equipment for the implementation of the PYROLY-EKOPYR200 complex is OÜ Vergine (registry code 11096090);

the supplier of raw materials is OÜ BalticTradePartner (registry code 12376733);

the operator of the production site is OÜ AnatolyInvest (registry code 14073675);

the consumer and buyer of the manufactured products is Zubrorus OÜ (registry code 10043217), involved in the sales of rubber crumb products, rubber crumb and tire reclaim.

the consumer and buyer of the manufactured products is Võru Naftabass OÜ (registry code 10573286), involved in the sale of petroleum products.

The project has been supported at the level of the City and Regional Administration, the possibility of providing tax incentives is being considered.

1.1. The project structure

Institutional–legal form

Company - OÜ Catalana (registry code 10651017)

Organizational structure of the company

A linear organizational structure is planned.

	The main management:	
Director General	Juri Šantšuk	d.o.birth 08/03 1968
Chief Financial Officer	Yurii Didukh	d.o.birth 18/08 1960
Technical Director	Vetseslav Maltsikov	d.o.birth 31/07 1971
Pyroly-Taebpla Plant Director	Aleksander Tsiunchik	d.o.birth 08/09 1969
Production Manager	Ruslan Väli	d.o.birth 18/08 1968
Sales Director	KaidoKoppel	d.o.birth 18/03 1970
Development director	DmitriiSemjonov	d.o.birth 23/06 1971

1.2. Project financing structure

The amount of money required for the implementation of the project is 15 500 (fifteen million five hundred thousand) euro excluding currency and technical risks. The financing of the project is to be carried out mainly from the borrowed and credit funds secured by a land plot and other real estate, and, partially, from own funds;

- the funding is expected to be attracted by obtaining the investments from partners;
- the fund is also expected to be attracted by receiving a loan, approximately at 4% rate of interest in euro per annum;
- the available real estate (land plots), the purchased equipment, the signed contracts, the lease rights are provided as security;
- the interest payments on the loan are made after the launch of the complex and will be covered from current cash flows in accordance with the agreed schedule.

1.2. Technical and economic indicators of the first stage of the project

Site 1.

To ensure the accomplishment of the goal, the equipment of the American company ECO Green Equipment is deployed the first stage (Appendix # 1)

Turnover	
Operating time 10 hours a day, 28 days a month	3 360 working hours a year
Tires supply	27000 tons a year.
Payment for the tires handed over to the sites 27 000×129 €	3 483 000€/year.
Implementation of Riigi aktsiaselts Eesti Energia :	
14 000× 45 €	630 000€ /year
10 000 × 124 €	1 240 000€ /year.
Turnover	5 353 000€ /year.

Expenditures

Purchase of the equipment and site arrangement	2000 000 €
Wages of employees per month 7 people× 1600 €	
Including payroll taxes	11 200€/month
Electricity shredder group 195 kW/h× 10hours = 1950 kW/day × 22 days	
42900 kW/month	
Electricity for crumb production 215 kW/h×10 hours = 2 150 kW/day ×22 days= 47300 kW/month	
Total energy consumption: 90 200× tariff 0,15 €	13 530€/month
Lighting of the territory and facilities = 5000 kW/month	750€/month
Contingency fund	4 000 €/month

Total expenditures per month: 27 710 € and 334 290 € per year.

Financial indicators

The first year: 5 353 000 – 2 000 000 – 334 290 minus tax in total 40% of the turnover 2 142 200 = 876,510 € / year - net profit.

The second and subsequent years: 2 876 510 € / year - net profit.

1.3. Technical and economic indicators of the second stage of the project.

Site 2

Pyrolysis plant "PYROLY-EKOPYR 200", with the capacity up to 200 m³ per day for the processing of industrial rubber goods, solid waste including plastic and the entire polymer group.

The cost of the new set of equipment will amount to 13,500,000 euro. The price includes a special-purpose refinery, installation supervision and commissioning. The equipment does not need to be connected to any external networks (electricity, water, gas, etc.) to function.

The cost of the complex includes equipment for improving the quality of carbon black as well as the cost of design work. (Appendix # 2)

Expenditures

Expenditures	Per month (euro) €	Per year (euro) €
Electricity costs (rated load)	129 225	1 550 700
Wages	22 500	270 000
Other	2 000	24 000
Total:	153 725	1 844 700

Electricity consumption at the rated load of machine operation is about 1,282 kW/h.

The cost of electricity is 0.15 excluding VAT.

The monthly consumption is 1,282 kWh × 24 hours × 28 days × 0.15 € / kW 129 225 €

- Wages 15 × 1500 € 22,500

- "Other expenses" include:

- 1) the cost of routine maintenance, including consumables;
- 2) various "unplanned" costs that may arise during the production of the reclaim (for example, packaging, molding, etc.);

The cost of electricity after the start-up of the PYROLY-EKOPYR 200 unit will not be included in the calculations. It will become additional profit in the project, since the future power supply in the entire production site will be provided by the power resources produced by the unit itself.

ECONOMIC INDICATORS OF THE COMPLEX

The reactor is designed to process crushed raw materials in the volume of 200 m³ per day, consequently, we obtain the following indicators based on the mass of 1 m³ / 650 kg = 130 tons/day.

When processing the waste with a moisture content of 20%, we get the following result:

1. Pyrolysis liquid - up to 50%.
2. Carbon black (ash content up to 7%) - up to 25%.
3. Gas (propane-butane-ethane), ash residue - up to 25%.
4. Process water - up to 3 %.
5. Steel wire cord - up to 5 %.

Pyrolysis products per 1 day / 30 days:

- Pyrolysis liquid (density of 1 liter = 0.89 kg) = 65/195 tons.
- Carbon black – 26/780 tons.
- Combustible gas - 24/720 tons.

the entire volume is used to keep the plant running.

- Process water – used in the production process. 1,5/45tons.

Gas consumption of the pyrolysis reactor - 600 m³/hr.

When fractionating a pyrolysis liquid, we obtain following results:

- Gasoline AI-92 25 – 30 %. DENSITY AT 20° C, g/cm³ = 0,71-0,76
- DT Euro-5 45 – 50 %. DENSITY AT 20° C, g/cm³ = 0,80-0,85
- Fuel oil M-100 12 – 15 %. DENSITY AT 20° C, g/cm³ = 0,92-0,99
- Propane-butane 15 - 20 %. 50% used in the production
- ethane gas
- Heavy tar 5 – 8 % DENSITY AT 20° C, g/cm³ = 1,2-1,5

The calculation of the fuel amount is made at the minimum % values and the lowest possible prices.

Light and dark fractions, for 1 day / 30 days.

• Gasoline AI-92	16,25/487,5 tons	x 350 €/t	5 688€/	170 640€
• DT Euro-5	29,25/877,5 tons	x 350 €/t	10 238€/	307 140€
• Fuel oil M-100	7,8/234 tons	x 160 €/t	1 248€/	37 440€
• Propane-butane-ethane gas	9,75/292 tons	x 140 €/t	1 365€/	40 950€
• Heavy tar	3/90 tons	x 100 €/t	300€/	9 000€

Additionally, when processing rubber goods and plastics:

Carbon black	30/900 tons x 200 €/t	6 000€/180 000€
Steel wire cord	7/182 tons × 40 €/t	280€/ 7 280€
Liquid carbon dioxide	28/ 840 tons x 130 €/t	3 640€/109 200€

TOTAL AMOUNT PER DAY/ 30 DAYS: 28 759 €/861 650€

Payback period of the project (pessimistic scenario)	– 36 months after the launch.
Manufacturing, installation and commissioning time	– 10 months.
Design and georeferencing	- 3 months.

Stage 2.

Financial indicators

Profit 861 650 €/month minus 153725 €/month expenditures, the net income amounts to 707 925 € / month × 12 = 8 495 100 € income per year, minus 40% tax, therefore, the net profit will be **5 097 060 €**.

Reference information for the **PYROLY-EKOPYR 200** complex:

1. The installation allows to process any type of solid waste, oil sludge, rubber goods, plastics, organic matter, medical and agricultural waste and others, except glass and metal.
2. The temperature ranges of the reactor are adjusted from 350° to 1150°, which allows for the operation in both low-temperature mode from 350° to 850° and a high-temperature pyrolysis mode from 850° to 1150°.
3. The possibility of varying the temperature modes allows over a short period of time to transfer the operation of the reactor to generation of heat and electricity (additionally, it is necessary to add the price of a gas turbine and gas control units).
4. The equipment has a unique environmental safety (there is no exhaust pipe) and versatility in terms of input raw materials, as well as an unparalleled system for obtaining light fractions of oil (gasoline, diesel) from mixed garbage, compliant with GOST.
5. The manufactured equipment can process from 10 to 100 000 (and more) m³ of waste per day, the volume of daily processing is determined by the customer.
6. The prices stated in the calculations are provisional and are adjusted for each project individually.

The key conclusions

The proposed combination of the well-known and test-proven technologies as a single technological chain allows for the efficient and complete use of waste, the extraction of energy, heat, and other products contained in waste, obtaining raw materials for the production of alternative energy sources.

The rational integrated use of the advanced technologies solves the problem of neutralization, concentration, release and disposal of toxic components and harmful emissions, including dioxins and salts of heavy metals, thus, minimizing the impact on the environment.

The proposed equipment and the correct proportions of various technologies provide a highly profitable production of secondary raw materials and commercial products, staying within the city budget costs for sanitary cleaning and waste disposal.

The project allows the authorities, enterprises and organizations, entrepreneurs and the public in a short time to solve the problem of waste management using advanced methods, - namely, to eliminate landfills with the transition to processing waste from wheels at newly created production sites, to provide tangible prerequisites for the social and economic development of the city.

This project solves both the environmental problems and the issue of employment as well as increases the population's well-being, it allows for additional impressive tax inflows into the budget with the possibility of distributing the funds for the needs of our society.

Сводная финансовая таблица

Stage #	Sites	Annual net profit, taking into account 40% expenditures per each site, taxes, deductions to the budget, planned costs	Annual turnover	Investments
2.	Site 2	5 097 060	10 339 800	13 500 000 €
1.	Site 1	2 876 510	5 353 000	2 000 000 €
Total		7 973 570	15 692 800	15 500 000 €