



Tyre recycling in Ukraine

Presentation

Company info

The main field of Company (Green Plastic LLC) is the production of equipment for recycling automobile tyres and plastic waste into useful products (diesel and refined fuel fractions, carbon black, plastic pellets, electricity), **and** also the mentioned recycling itself.

The Company operates in this field for over 10 years. It has a complete technical base, production site and a team of needed professional experts among its 15 employees.

It already operates a small (5m3) tyre fuel production plant, and now is in the process of construction a large one (18m3).

To continue its activities in current war conditions, the Company moved from West to Eastern part of Ukraine.

Plant relocation



Project description

The project involves the construction of a plant for processing of EOL tyres into a modern high capacity pyrolysis reactor and the production of high quality materials: rCB and fuel. Fuel will have an initial destination as fuel for market reasons, but it can be further processed into valuable materials.

The Company has already partially invested into construction of the plant (there is a site, some equipment has been purchased), but it is not enough money now to complete the project.

To complete the construction and put the plant into operation, the Company needs 500 thousand EUR, but investors are considering Ukraine a high risk country.

Location - Chernivtsi, West Ukraine

What the Company wants to do

The Company wants to finish the construction of 18m³ pyrolysis plant to:

- produce and market tyre fuel
- produce and market standard rCB
- produce electrical energy out of pyrolysis gas for its own current plastic granulation business

Economic and industrial context in Ukraine

Annual sales of car's tyres in Ukraine are estimated at up to 4 mln pcs.

Also, Ukraine has heavy industrial regions and sectors, which utilize many large road machinery - trucks and also construction, industrial and agro machinery, as well as large municipal transportation parks with buses and trolleybuses in every small to large citizen areas.

However, volume of these tyres market is not known due to lack of proper statistics.

Waste legislation and regulatory framework

According to current legislation car owners and other machinery operators are required either to store used tyres in own premises, or to outsource special storage facilities elsewhere, or to pass over these tyres to special landfills. Burning and just throwing them away is prohibited.

Waste car tyre generated annually is estimated at 40+ kilo tons. Waste tyres coming from OTR or large industrial machinery is estimated to a 1/3 to 1/2 of car tyre volume mentioned. No statistics for sure for now.

Tyre recycling companies

Per our estimation, the number of companies of different sizes that deal with tyre recycling across the country, is expected to be within the figure of 30. Their average annual capacity is estimated to be within 500 - 1000 tons of tyres.

Generally their main product is tyre fuel, pyrolysis gas and unrefined carbon black. Some of them perform granulation of tyres and supply it to construction industry companies for using in game yards and the like.

Problems and solutions in current context of Ukraine

Problems:

- imported gas for heating and industrial heat generation has become very expensive
- due to russian attacks there are energy supply interruptions that bring stoppages to production business and cause financial losses
- Ukraine has accumulated a surplus of waste tyres

Solution:

Pyrolysis gas and fuel can replace expensive conventional energy, remove business interruptions, reduce tyre waste

Opportunities

The Covid before and then the war have highlighted the urgent need of a transition toward a circular economy model:

- Tyre industry discovered to be vulnerable as the rubber supply chain is long and exposed to risk of interruption
- EU tyre industry depends on supply of Carbon Black from Russia who is the bigger world producer, which volume cannot easily be replaced in the short period by rCB from China or India
- There is an increasing interest for rCB, not just from tyre industry but by rubber and plastic industry as a whole
- GreenPlastic has technical background in material recycling and with the technical support from ETRA would like to develop the Project.

Risks related to implementation and expansion of tyre recycling

- **Source base.** Pyrolysis is a heavy capitalized project, therefore in current circumstances we don't expect new significant players appear on market. Current source base will allow us to have stable supply for our nearest project (18m3 plant) operation at full capacity.
- **Oil prices.** There is a risk of decrease in the global price of oil, which can pull down the price of the Company's products. Current long-term oil price forecasts don't show significant expected reduction.
- **Damage to equipment.** Due to periodic air strikes over Ukraine there is a risk that equipment could be destroyed. However, we've mitigated this risk by relocating our facilities to Western Ukraine + the plant itself will take small land plot, so the possibility the strike hits this equipment is rather small.

Support needed by Company

We have invested already over 200k EUR of own funds into new plant construction. Now we need extra 500k EUR of financing to complete it.

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