RECP Best Practice Catalogue

Recovery of waste material through pyrolysis

Developed within the framework of MED TEST II

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

switchmed

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Best Practice - Recovery of waste material through pyrolysis

SECTOR:	**Others**
SUBSECTOR:	Manufacture of glass and glass products
PRODUCTS	Glass reinforced pipes and fittings
CATEGORY	Technology upgrade/Eco-innovation
APPLICABILITY	Process

COMPANY NAME	---
COMPANY SIZE	Large

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Description of the problem (Base scenario):	The company suffered from high quantities of spillage of raw material (epoxy, filler, fiberglass, and Sand), that occurred during the building of the pipes and fittings. Those spilled material cannot be reused into the process as they harden quickly after being mixed. This makes the reuse of the material after setting not pos 
Description of the solution	Installing a pyrolysis plant at the company, which will be fed by the spilled material will lead to three main outputs, pyrolysis oil which is similar to mazot or diesel depending on the input material, carbon black which can be readily sold in markets, and finally some recovery of fiber glass and other fibers to be reused in the process.

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Economic Benefits	Generation of 397,000 Euro/year from sales of Carbon black corresponding to 661.65 ton/year. Reduce energy consumption by 181,127 Euro/year (43,963.32 Gj/year)-(>40% of the baseline). Reduction of raw material consumption by 88,220 Euro/year due to recoverd fiber (2% of baseline) Creating jobs for the operation of the pyrolysis plant TOTAL annual revenue excluding the expected operating costs is around 641,337 Euro
Environmental Benefits	Generation of 661.65 Ton/year of Carbon black Reduce energy consumption by 992.4 Ton/year of Crude oil equivalent to 43,963.32 GJ (>40% of baseline) Reduction of raw material consumption by 220.55 Ton/year due to recoverd fiber (2% of baseline) Valorization of 2,205 tons of solid waste (100% of baseline)

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Capital investments & financial indicators	Cost of Pyrolysis plant 224,000 Euro Payback around 0.4 years
Suppliers	Imported (not identified yet)
Other aspects	Full feasibility of the measure is needed from suppliers. Technical characterization of the waste is needed.
Implementation	The measure is in the full feasibility phase.
Replicability sectors	The same concept can be replicated in • Chemical industries having high losses of material
Aspects to investigate for replicability	Calorific value of spilled material Physical and chemical properties of material Available space for installation
Useful resources	