

SOLID WASTE TRANSFORMATION FOR ENERGY PRODUCTION

Geographical Location of the Project

Antioquia - Huila - Tolima
5 Municipalities
Colombia



Advantages of the Technology

- Waste processing without the need for sorting, including inorganic materials.
- CO2 capture for utilization and the generation of byproducts.
- Modular system, allowing scalability.

Project basic data

- Transformation of 35,000 tons of solid waste annually.
- Production of 2.100.000 Mw of energy annually.
- Green plant: 18.600 tons/year of CO2 mitigated.
- Production of 12.110 tons of pozzolans annually.

Solid waste background Colombia

- Only 40% of landfills have a lifespan of more than 9 years.
- In 7 capitals: Bogotá, Bucaramanga, Ibagué, Cartagena, Pereira, Yopal, and Quibdó, where 3,140,000 tons are disposed of, their landfills have less than 3 years of operation remaining.

Environmental Benefits

- Reduce the use of landfills.
- Achieve Sustainable Development Goal 11, one of its parts requires countries to develop instruments to promote waste prevention and valorization.
- Close open-air dumpsites.
- Encourage each municipality to have a Comprehensive Solid Waste Management Plan (PGIRS).
- Reduce greenhouse gas emissions by 20% by 2030.

Advantages of the Technology

- 24/7 Operation.
- Hazardous substances are bonded in a crystalline form (non-leachable).

Business Model

Project Advantages

- Aligned with the commitments of CONPES 3874 of 2016: Circular economy.
- National Development Plan 2022-2026 (PND): "Zero Waste" Program.
- COP 21; specifically, reducing greenhouse gas emissions by 20% by 2030.



Proposal

Reception, processing, and transformation of solid waste to obtain high calorific value pellets (CDR). The CDR undergo a pyrolysis process and are then introduced into a reactor that produces energy with 70% efficiency - 2.100.000 Mw/y

The input-output ratio of waste to pellet production is 1:1. CO2 emissions are captured with the purpose of converting them into by-products, allowing the plant to be classified as green and the energy to be within the regulatory framework of renewable and/or alternative energy.

Scope

- 100 tons of solid waste per day.
- Emission of carbon credit certificates.
- Replacement of open-air "dumps."
- Integration of energy into the SIN (National Interconnected System).

Financial Data

Capex

100M USD

ROI

1.2 Years

IRR

104,68%

Contract period

30 Years

Interest Rate

9% E.A.R

Income

6.512M USD

Expenses

619M USD