Feasibility Study

Plastic-to-Oil Production Company

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1. Executive Summary

This project aims to establish a company specialized in converting plastic waste into fuel (diesel, industrial gasoline, and heavy oil) using **pyrolysis technology**.

The business contributes to environmental sustainability by reducing plastic pollution while generating profitable alternative energy products.

The project combines environmental impact with strong financial returns.

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2. Project Concept

The company will collect and process plastic waste (mainly PE, PP, and PS plastics).

Through a **thermal pyrolysis process** (350–500°C in an oxygen-free environment), plastic materials break down into vapor.
This vapor is then condensed into liquid fuel products.

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3. Project Objectives

- Reduce plastic waste pollution
- Produce cost-effective alternative fuel
- Generate high return on investment
- Support circular economy principles
- Contribute to environmental sustainability

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4. Market Analysis

Industry Opportunity

- Global plastic waste is increasing annually
- Rising fossil fuel prices
- Strong global movement toward renewable energy
- Limited local competition in plastic-to-oil technology

Target Customers

- Cement factories
- Industrial manufacturing plants
- Power generation facilities
- Fuel distributors

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5. Technical Study

Production Process

1. Collection and sorting of plastic waste
2. Shredding and cleaning
3. Feeding material into pyrolysis reactor
4. Thermal decomposition (350–500°C)
5. Vapor condensation into liquid oil
6. Gas recovery (used to fuel the heating system)

Expected Production Capacity

- 5 to 10 tons of fuel per day (depending on plant size)

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6. Location & Facility Requirements

- Required land area: 1,000 – 3,000 m²
- Industrial zone location recommended
- Access to three-phase electricity
- Water supply availability

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7. Estimated Investment Costs

Capital Expenditure (CAPEX)

- Pyrolysis production line: $500,000 – $1,000,000
- Construction & infrastructure: $150,000
- Licensing & consulting: $50,000

Operational Costs (Monthly OPEX)

- Salaries & labor
- Electricity & utilities
- Raw materials

- Maintenance

Estimated monthly operating cost:
$40,000 – $60,000

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8. Expected Revenue

Example scenario:

- 8 tons production per day
- Average selling price: $600 per ton
- Daily revenue: $4,800
- Monthly revenue: $120,000 – $140,000

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9. Profitability & Payback Period

- Estimated net monthly profit: $40,000 – $60,000
- Investment payback period: 18 – 24 months

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10. Environmental Impact

- Significant reduction of plastic waste
- Lower greenhouse gas emissions
- Reduced landfill pressure
- Reduced reliance on traditional fossil fuels

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11. Success Factors

- Strong operational management
- Stable plastic waste supply contracts
- Pre-signed fuel sales agreements
- Compliance with environmental regulations
- Continuous quality control