

Abstract:

Plastic waste poses a significant environmental challenge worldwide, resulting in pollution of land, water, and air that adversely affects human health and wildlife. Challenges include inadequate recycling infrastructure and high volumes of single-use plastics. However, recycling emerges as a crucial solution, addressing environmental impact, resource conservation, and the reduction of new plastic demand. Combining efficient recycling systems with awareness campaigns for responsible consumption and eco-friendly alternatives offers a comprehensive strategy to tackle the global plastic crisis.

The project's main objective is to establish a sustainable and economically viable system for recycling Polyethylene Terephthalate (PET) plastic waste in Nablus city. Furthermore, it aims to raise awareness about reducing plastic waste and promoting sustainable practices. To achieve these objectives, an economic feasibility study has been conducted to explore the potential for a PET plastic recycling factory.

This feasibility study explores the viability and potential benefits of establishing a PET recycling plant in Nablus, aiming to address the pressing challenges associated with plastic waste management in the region. The study begins with a comprehensive analysis of the current state of plastic waste management in Nablus, emphasizing the escalating environmental impact and the social implications of inadequate waste disposal. The project proposes the establishment of a PET recycling plant as a strategic intervention, offering a systematic approach to reduce the environmental footprint and promote a circular economy.

Key components of the feasibility study include an in-depth market analysis, encompassing the demand for recycled PET products in local and international markets. Additionally, a detailed examination of the technical and technological requirements for the recycling process, alongside the identification of potential site for the plant, forms an integral part of the study. The financial feasibility aspect involves a thorough cost-benefit analysis, taking into account initial investment, operational costs, and revenue projections.

The financial analysis, spanning a ten-year period, reveals promising results, demonstrating profitability and positive returns on investment. The study incorporates detailed projections for initial setup costs, operational expenditures, and revenue streams. These financial results underscore the project's potential to not only cover its costs but also generate sustainable profits over the projected timeframe.

Furthermore, the socio-economic impact assessment highlights job creation, skills development, and community engagement as additional positive outcomes.

In summary, the findings of this feasibility study provide valuable insights into the practicality and sustainability of establishing a PET recycling plant in Nablus. This project aims to contribute not only to the reduction of plastic pollution but also to the creation of a more sustainable and environmentally conscious community, aligning with global efforts towards a circular economy and responsible waste management.