Team ID: U18

Phoenix Group

Team Member Name	Year	Major
Margarita Sinko	2022	Finance and Philosophy
Snigdha Reddy Sama	2023	Neuroscience and Philosophy
Hannah Raveh	2023	Computer Science
Joaquin Martinez	2025	Philosophy

Advisor(s): Dr. Joan Martínez Evora

Topic: The Power of Waste

Audience: Waste Management's Board of Directors

Sustainable Development Goal

SDG #12: Ensure sustainable consumption and production patterns

SDG #13: Take urgent action to combat climate change and its impacts

Executive Summary

Phoenix Group is proposing a plan of substantial financial and ethical benefit to Waste Management's Board of Directors. Currently, the greenhouse gasses emitted from landfills in the U.S. produce 17% of the U.S. 's methane, accounting for 114.5 million metric tons. This methane production comes at a significant cost; one ton of methane causes 84 times more warming than one ton of carbon dioxide, making methane, and the landfills that produce it, a powerful contributor to the climate crisis.

By 2050, it is expected that waste generation will have increased by 70 billion tons, so we must find sustainable ways to handle this waste to prevent further environmental damage. We propose Waste Gasification as a method for Waste Management to deal with the waste that would end up in their landfills. This innovative process addresses two problems: unsustainable waste management and energy consumption. Waste Gasification involves treating waste with oxygen and steam at high temperature which turns waste into syngas, a renewable fuel, and stone. In short, Waste Gasification transforms all sorts of waste, and produces high-value end products, while requiring little space and maintenance relative to landfills.