



ENERGY

FINDINGS

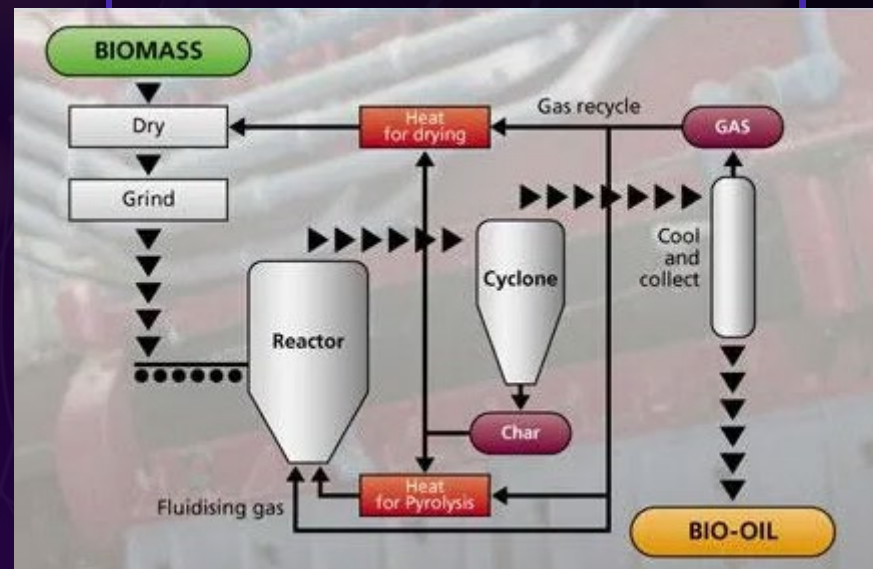
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Introduction

The rise in industrialization and population, the generation of solid waste is increasing rapidly, which is ultimately creating a negative impact on our ecosystem. Economic growth has caused notable changes in the perception of mankind regarding waste generation activities which has caused environmental changes. Per capita waste generation is increasing all over the world. It affects not only the environment but human health and economic aspects as well. As per the UN environment program data, worldwide approximately 11.2 billion tonnes of solid waste is collected annually . The entire world, especially underdeveloped and developing countries is struggling with a huge amount of solid waste generated each year. Management of such a huge amount of waste has become critical day by day.

WHAT?

This innovative and sustainable solution that holds immense potential for addressing the global issue of plastic waste while contributing to the generation of clean energy. My proposal focuses on the utilization of Cold Plasma Pyrolysis, a groundbreaking method for decomposing plastic waste at a temperature range of 600 °C. The idea of taking plastic and converting it is not a new idea but there is no other company on record using plastic to convert into energy and powering the US on waste that is sitting on a landfill anyway...we are in a time where things need to make sense and help the world and the plastic problem is only getting worse.



Pros and cons

PROS

1. **Energy Recovery:** Cold plasma pyrolysis breaks down plastic waste into valuable energy sources like **hydrogen**, **methane**, and **ethylene**. These can be used as clean fuels, reducing our reliance on fossil fuels and mitigating greenhouse gas emissions .
2. **Resource Recycling:** By converting plastics into useful materials, cold plasma pyrolysis aligns with the principles of a **circular economy**. Instead of discarding plastics, we can reintroduce them into production cycles, minimizing waste .
3. **Reduced Landfill Burden:** Implementing cold plasma pyrolysis could divert a significant portion of plastic waste away from landfills. This reduction in landfill usage contributes to environmental preservation .

CONS

1. **Complex Technology:** Cold plasma pyrolysis requires specialized equipment and expertise. Widespread adoption hinges on refining and simplifying the technology .
2. **Energy Input:** While it recovers energy, the process itself consumes energy. Balancing input and output is crucial for overall sustainability .
3. **Costs:** Initial setup costs and ongoing maintenance can be substantial. Evaluating the economic feasibility is essential .



WHY?

This Innovative way of harvesting energy can mean self sufficiency. The people of the USA can achieve a cheaper bill. Waste problem will be rectified. Did I say its safe for the environment ?

The advantages of using cold plasma over conventional pyrolysis is that the process can be tightly controlled, making it easier to crack the chemical bonds in HDPE that effectively turn heavy hydrocarbons from plastics into lighter ones. You can use the plasma to convert plastics into other materials; hydrogen and methane for energy, or ethylene and hydrocarbons for polymers or other chemical processes.



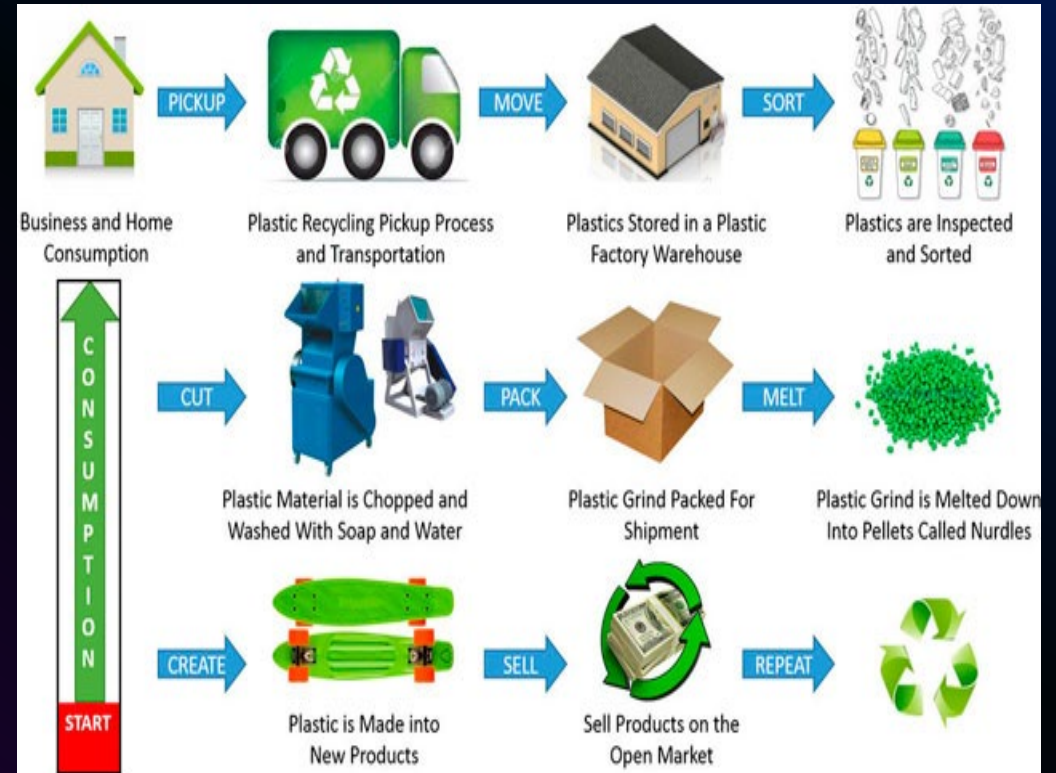
HOW?

- Implement Cold Plasma Pyrolysis technology in waste management facilities to convert plastic waste into valuable resources
- Work with local waste management to ensure transport from home are separated from regular waste
- Send out brochures with incentives to dump plastic waste designated for pyrolysis process in bin provided
- Once landfills are depleted, Give each person a bin designated for all recycled waste that goes to the nearest site in place



SUMMARY

Recent research conducted in Singapore has demonstrated the successful conversion of plastic into formic acid through Cold Plasma Pyrolysis. Formic acid, a valuable chemical, can be utilized to generate electricity in power plants and electric vehicles, showcasing the versatility and potential of this approach. I propose to implement Cold Plasma Pyrolysis technology in waste management facilities to convert plastic waste into valuable resources, including formic acid. This process aligns with environmental sustainability goals and provides an additional source of clean energy.



Thank you

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