
The Garbage Oracle - a Projected Idea Of Plasma Gasification Of Wastes

Worldwide, improvements in renewable energy technology through technological advances, access to finance, quality assurance standards and product efficiency are catalyzing rapid growth in the field of energy access especially in large area of urban population. However, there has been a considerable disparity with the same provision among the rural population. Providing an uninterrupted access to energy will have direct effects on education and economic opportunities, indirectly reducing the population to the exposure to pollution, providing clean water access, and empowering farmers and families by providing them with the technology they need to stay connected and learn conserving. The focus area is to provide reliable electricity which is consistent.

Providing access to high quality, reliable electricity will result in greater productivity amongst various sectors of population. "The Garbage Oracle" is a projected idea of plasma gasification of wastes. In contrast to solar energy wherein it is weather dependent; waste to energy, garbage is available round the clock. Waste to energy is to be tailored to the need of a community, decentralizing the energy system and providing an energy security. Clearly there is a tremendous value in taking unwanted resources and converting them into valuable energy commodities. With this we can clean up earth and nurse mother earth back to health. If there is consistent energy access, it can create economic opportunities, through jobs in small enterprises and can allow existing businesses to flourish staying open in the evenings to serve more customers. In rural sectors consistent electrification can transform lives and communities, for example, farmers can use water pumps without disruption, children can do their school work during the evenings instead of using kerosene lamps which has its health hazards, improves access to clean water and sanitation, and it can enable better medical facilities in health clinics.

Waste to energy technology can be a phenomenal game-changer and a powerful first step to stabilize and restore the climate. Research has given an indication that this process has shown progress at a rapid pace over the last 5-10 years due to an increased concern over clean energy and sustainability. Plasma gasification seems like a viable and eco-friendly solution to manage the million tons (and growing) of municipal waste. Through this method landfill which contaminate local groundwater can be eradicated and electricity can be generated from garbage. A Radical Breakthrough that is intended through this proposal is:

- The system is compact as compared to other waste disposal facilities, far less toxic emissions compared to landfills or other waste-to-energy facilities.
- In form of combustible gases with safe disposal of waste recovers significant amount of energy.
- Bio-medical waste, Toxic waste, like asbestos can be safely processed.
- Syngas, byproduct of the process, can be used to produce energy, like biofuel which is as clean or cleaner than natural gas.
- Metal which is recoverable (nearly 100 percent) and can be used to make new steel.
- Waste is shrunk almost completely to 1 percent its original size

The Applicable Fields of this technology are in Sugar mills(Energy recovery from bagasse),

Petrochemical companies and refineries (Tar sand waste oil), Agro Industries (Energy recovery from agro waste such as groundnut shell, bagasse, Cotton stalk, coffee husk, rice husk, paddy husk etc.), Municipal corporations, collecting floral waste, Hospitals, FMCG companies, Slaughter houses, Animal waste disposing and can be installed in tourist/hilly locations in the country where disposal of plastic bags, bottles etc. is a matter of concern and significant transportation of garbage cost could be saved.

Gasification is not just environmentally friendly; it's a good business decision. Selling the syngas and surplus electricity can be profitable. The solid byproduct from the gasification process is slag. If air-cooled, it forms black, glassy rocks which can be used in concrete or asphalt. Molten slag can be funneled into brick or paving stone molds. This by product can be available as ready-to-use construction material. The molten material will end up with rock wool if blow compressed air through a stream. Rock wool has the potential to revolutionize the plasma waste treatment industry as it is an efficient insulation material, twice as effective as fiberglass, lighter than water, but very absorbent. It could potentially be used to help contain and clean oil spills in the ocean. Farmers can plant seeds in slabs or blocks of rock wool a different insight into hydroponic growing system. Waste treatment through gasification is unique, it not only gets rid of garbage and generates electricity, it also produces byproducts that are valuable commodities themselves. Perhaps the most amazing part of the process is that it's self-sustaining.