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Case Study On Waste Disposal and Power Generation By Plasma Gasification Technology

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Abstract: - One of the greatest challenges of developing countries today is power generation. The demand for Electric power is far above generation and distribution capacities. For instance, only about 4000MW of electricity is available for nearly 170 million people in Nigeria today. On the other hand, the cities are littered with municipal solid wastes in open dumps which are dangerous to health and environment. Sustainable and successful waste management should be safe, effective, environmentally friendly and economically viable. Application of plasma Physics in waste to energy can be one of the novel ways of sustainable power generation. In plasma gasifying cupola, the organic waste materials are gasified to generate a syngas and steam which can be used to generate electricity by integrated gasification combine circle. The inorganic part of the waste is vitrified to a benign residue used for construction. This paper describes the physics and technology involved, and the benefits of implementation of this technology in waste to electric power generation. This might be an environmentally Safe and sustainable economic solution for waste management and alternative clean power generation