

ABSTRACT

The Application of Renewable Energy to Wastewater Treatment Plants in Trinidad

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Renewable energy has great potential in Trinidad & Tobago due to its geographic location. Municipal-scale renewable energy power plants utilizing solar photovoltaic or wind energy require large areas of land which may not be available but smaller stand-alone systems have the potential to collectively reduce the amount of power required from existing natural gas fueled combined cycle power generation plants. Solar photovoltaic systems show the most economic potential of the renewable energy technologies studied at the chosen wastewater treatment plant but still have a significantly higher financial cost to consumers than using electricity from the grid. Existing low prices of electricity mainly attributed to subsidized natural gas costs make renewable energy sources less attractive to most commercial-scale consumers, however, changes in local fiscal and regulatory policies as well as globally declining prices of photovoltaic equipment can stimulate an increase in the use of renewable energy systems in the near future.

Keywords: Mairiga Akil Edwards; Wastewater Treatment; Renewable Energy; Solar Energy; Photovoltaic; Environmental Cost Benefit Analysis; Caribbean; Trinidad