

## **Area 3: Johnston Rhode Island Combined Cycle Electric Generating Plant Fueled By Waste Landfill Gas**

### **Project Summary/Abstract**

Applicant Name: Rhode Island LFG Genco LLC

Project Director/Principal Investigator: Stephen Galowitz

Project Title: Area 3: Johnston Rhode Island Combined Cycle Electric Generating Plant Fueled by Waste Landfill Gas

Project Objectives: The objective of the Project is to maximize the productive use of the substantial quantities of waste landfill gas generated and collected at the Central Landfill in Johnston, Rhode Island.

Project Description:

- **Methods** – The Project will consist of several components.
  - The landfill gas collection system will be modified and upgraded to optimize the efficient collection and conveyance of landfill gas to a central processing point.
  - A state-of-the-art gas clean up and compression facility will be constructed consisting of dewatering, sulfur removal, siloxane removal and intermediate and high-pressure gas compression.
  - A 3200 foot high-pressure pipeline will be constructed to convey the cleaned landfill gas from the clean up and compression facility to the power plant
  - A combined cycle electric generating facility will be constructed consisting of five Solar Taurus 60 combustion turbine generator sets, each of which will be equipped with turbine inlet chilling, heat recovery steam generators and post combustion emissions reductions systems. The steam produced will be fed to a single steam turbine generator set.
  - The voltage of the electricity produced will be increased at a newly constructed transformer/substation and the electricity will be delivered to the local transmission system.
- **Impact** – The Project will produce a myriad of beneficial impacts.
  - The Project will create 453 FTE construction and manufacturing jobs and 30 FTE permanent jobs associated with the operation and maintenance of the plant and equipment.
  - By combining state-of-the-art gas clean up systems with post combustion emissions control systems, the Project will establish new national standards for best available control technology (BACT).
  - The Project will annually produce 365,292 MWh's of clean energy, an amount sufficient to satisfy all of Rhode Island's ambitious renewable energy standard in 2009.
  - By destroying the methane in the landfill gas, the Project will generate CO2 equivalent reductions of 164,938 tons annually.
- **Participants** – In addition to the applicant, participants include:
  - Project Development Sponsor -Ridgewood Renewable Power
  - Owner's Engineer – Jacobs Engineering Group
  - Major Vendors – Solar Turbines, domnick hunter, Rentech, Merichem