

**FINDING OF NO SIGNIFICANT IMPACT
FOR THE
RHODE ISLAND LFG GENCO, LLC COMBINED CYCLE ELECTRICITY
GENERATION PLANT FUELED BY LANDFILL GAS
JOHNSTON, RHODE ISLAND**

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the *Final Environmental Assessment for the Rhode Island LFG Genco, LLC Combined Cycle Electricity Generation Plant Fueled by Landfill Gas, Johnston, Rhode Island* (DOE/EA-1742). Based on the analyses in the Environmental Assessment (EA), DOE determined that its proposed action – awarding a federal grant to Rhode Island LFG Genco, LLC (RI-LFGG) to facilitate expansion of an existing landfill gas collection system and construction and operation of a combined cycle landfill gas-to-electricity generating plant – would result in no significant adverse impacts. DOE further determined that the proposed project would have potential beneficial impacts to the nation’s energy efficiency and local air quality. Additionally, beneficial local socioeconomic impacts could occur as a result of increased employment opportunities and spending in the project area.

BACKGROUND: As part of the *American Recovery and Reinvestment Act of 2009* (Recovery Act; Public Law 111-5, 123 Stat. 115), DOE’s National Energy Technology Laboratory (NETL), on behalf of the Office of Energy Efficiency and Renewable Energy’s Industrial Technologies Program, is providing up to \$156 million in federal funding for competitively awarded agreements to facilitate the deployment of district energy systems, combined heat and power systems, waste energy recovery systems, and energy-efficient industrial equipment and processes at single or multiple installations and sites.

The federal action of providing funding for these Industrial Technologies Program projects requires compliance with the *National Environmental Policy Act of 1969* (NEPA; 42 U.S.C. 4321 et seq.), the Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508) and DOE’s NEPA implementing procedures (10 CFR Part 1021). DOE prepared an EA to evaluate the potential environmental consequences of providing a grant for this proposed project under the Industrial Technologies Program.

PURPOSE AND NEED: The overall purpose and need for DOE action pursuant to the Industrial Technologies Program and the funding opportunity under the Recovery Act is to set up U.S. industry as the world leader in energy efficiency and productivity. The program’s goal is to facilitate a 25-percent reduction in industrial energy intensity by 2017. The Industrial Technologies Program’s three-part strategy intends to achieve this objective by:

- Sponsoring research, development, and demonstration of industry-specific and crosscutting technologies to reduce energy and carbon intensity;
- Conducting technology delivery activities to help plants access today’s technology and management practices; and

- Promoting a culture of energy efficiency and carbon management within industry.

The strategy also calls for an 18-percent reduction in U.S. carbon intensity by 2012. DOE seeks to identify projects and suitable technologies that it can fund to meet this goal. RI-LFGG's proposed project in Johnston, Rhode Island, would also contribute to the nation's economic recovery by creating or helping to retain manufacturing jobs in the United States in accordance with the objectives of the Recovery Act.

DESCRIPTION OF THE PROPOSED ACTION: DOE's proposed action is to provide a grant to partially fund RI-LFGG's proposed project – expansion of an existing landfill gas collection system and construction and operation of a combined cycle (gas turbine and steam turbine) landfill gas-to-electricity generating plant. The project would include: (1) removal of several metal buildings from a previously developed commercial site; (2) construction of a combined cycle power generation plant at that site; (3) reuse of two existing buildings as a gas conditioning plant to remove impurities from the gas prior to use to produce electricity; (4) upgrade/expansion of the landfill gas collection system; and (5) production of steam and electricity from gas generated by the landfill. DOE would provide a \$15 million financial assistance grant in a cost-sharing arrangement in order to facilitate construction and operation of the project. The cost of the project is estimated at \$100 million.

ALTERNATIVES CONSIDERED: In addition to the Proposed Action, DOE considered the No-Action Alternative as required under NEPA. Under the No-Action Alternative, DOE would not provide funds for the proposed project. For the purposes of the EA, DOE assumed that the project would not proceed without DOE funding. This assumption established a baseline against which the potential environmental impacts of the proposed project were compared.

ENVIRONMENTAL CONSEQUENCES: DOE evaluated the potential environmental consequences of the proposed project and the No-Action Alternative. DOE considered 14 environmental resource areas in the EA. However, not all areas were evaluated at the same level of detail. For five of the resource areas, DOE determined there would be no impacts or the potential impacts would be small, temporary, or both, and therefore did not carry these areas forward for additional analysis. DOE focused its more detailed analyses on those resources that could require new or amended permits, have the potential for significant impacts or controversy, or interest the public. These resource areas included: air quality; noise; aesthetics and visual resources; water resources; biological resources; cultural resources; socioeconomics; energy, utilities, and materials; and waste.

The proposed project would be operated in a nonattainment area for ozone. More than 56.9 tons of sulfur oxides, 162 tons of nitrogen oxides, 42 tons of volatile organic compounds, 44 tons of particulate matter, 706 tons of carbon monoxide, 0.6 tons of hydrogen sulfide, and 4.1 tons of hydrochloric acid would be emitted per year during operation of the facility. The Rhode Island Department of Environmental Management approved an application for a major source permit for installation of a landfill gas fired combustion turbine and combined cycle power plant at the existing landfill in 2009. DOE concludes that operation of the system would conform to the State's implementation plan and would be in compliance with federal and Rhode Island air quality regulations. As required, air emissions credits would be purchased to offset any emissions resulting from power generation at the proposed facility.

The proposed project would have a net beneficial impact on air quality in the region, as operation of the new system would convert a nuisance (landfill gas) into a resource (energy). By using over 66,000 tons per year of methane from the landfill gas, the project would generate carbon dioxide equivalent reductions of greater than 1.4 million tons annually. Additionally, an indirect benefit would be an avoidance of greater than 160,000 tons per year of carbon dioxide from not using fossil fuels for generating a similar amount of electricity by standard means. The proposed plant would generate 366,000 megawatt-hours per year of electricity, with a net reduction in greenhouse gases.

Demolition and construction activities associated with the proposed project would generate temporary noise from heavy equipment; however, most noise would be limited to the immediate area of the proposed project site. A handful of nearby residences may experience a short-term annoyance from demolition and construction noise. These impacts would be lessened by confining demolition and construction activities to normal working hours and employing noise-controlled equipment to the extent possible. Noise from operations would not be substantially different from the current ambient conditions.

The proposed facilities and required utility connections would be developed in proximity to freshwater wetlands. Although aspects of the proposed project would occur adjacent to these wetlands, only very minor impacts are anticipated. Specifically, construction of the Gas Conditioning Plant and Combined Cycle Plant may result in minor wetland impacts along Cedar Swamp Brook and Upper Simmons Reservoir. However, terms and conditions listed in an approved Insignificant Wetland Alteration Permit, issued by the Rhode Island Department of Environmental Management, would mitigate those minor impacts and provide positive, long-term effects on biological resources.

The proposed project would result in a 42 MW increase in generation capacity. Current capacity at the landfill is approximately 20.4 MW, with approximately 14.4 MW scheduled to be decommissioned to facilitate expansion of the landfill. The proposed project would therefore increase energy production capacity approximately 21.6 MW over current capacity and 36 MW over projected capacity.

Wastewater generated by the gas conditioning plant would flow through two existing lines to the landfill's leachate system treatment plant, and from there to the City of Cranston's Water Pollution Control Facility. Based on the anticipated volume to be produced and the city's capacity, no substantial effect on the wastewater treatment plant's operation is anticipated.

DOE also evaluated socioeconomic impacts with respect to potential benefits of the proposed project on the surrounding communities. The project is anticipated to result in small increases in local employment and local spending, potentially providing a minor beneficial impact to the local communities. Minor benefits to biological resources would also result from planned restoration related to minor impacts to an adjacent wetland from previous operations at the combined cycle plant location.

DOE determined that there would be no adverse impacts for the other resource areas evaluated in detail in the EA, or the impacts would be small, temporary or both.

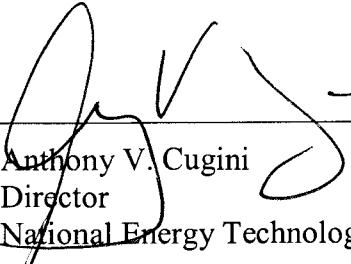
Under the No-Action Alternative, DOE assumed the project would either be delayed, as RI-LFGG sought other funding sources, or abandoned altogether. The potential environmental consequences, if the project was delayed, could be different if the project was modified. If abandoned, the potential environmental consequences would not occur. Furthermore, the potential beneficial impacts would change or not occur.

PUBLIC AVAILABILITY: DOE issued the Draft EA on July 9, 2010, and advertised its availability in the *Middletown Journal* on July 10, 11, and 12. In addition, DOE sent a copy of the Draft EA for public review to the Marian J. Mohr Library in Johnston, Rhode Island. DOE established a 15-day public comment period that began July 10, 2010, and ended July 25, 2010; and announced it would accept comments by mail, email, and facsimile. Copies of the Final EA and this FONSI are available at DOE's National Energy Technology Laboratory web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

The Draft EA was distributed to various federal, state, and local agencies with jurisdiction or special expertise. DOE conducted formal consultations by mail with the responsible U.S. Fish and Wildlife Service (USFWS) field office, the Rhode Island Department of Environmental Management (RIDEM), the State Historic Preservation Office (SHPO), and the Narragansett Indian Tribe of Rhode Island. The USFWS concluded that no threatened or endangered species were known to occur in the project area; and that preparation of a biological assessment or further consultation was not required. The SHPO concurred with DOE's determination that no historic properties would be affected. No public comments or other correspondence were received.

DETERMINATION: On the basis of the evaluations in the Final EA, DOE determined that its proposed action, to provide a \$15 million Recovery Act financial assistance grant, and RI-LFGG's proposed project, expansion of an existing landfill gas collection system and construction and operation of a plant to generate electricity using landfill gas, would have no significant impact on the human environment. Although the proposed project would require purchase of emissions credits to offset air emissions, power generation operations would comply with and operate within all amended permit requirements. The proposed facility would be developed in proximity to freshwater wetlands and, although aspects of the project may result in some minor wetland impacts, approved permit conditions would provide mitigation and positive, long-term effects on any impacted biological resources. All other potential environmental impacts DOE identified and analyzed in the EA would be small, temporary or both. Therefore, preparation of an environmental impact statement is not required and DOE is issuing this Finding of No Significant Impact.

Issued in Pittsburgh, Pennsylvania, this 26 day of August 2010.



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