

## Contract Details

### Contract Type:

Landfill Gas to Energy (LFGTE); Power Purchase Agreement; Design/Build, Own, Operate, Maintain; Renewable Energy

### Capacity:

2.1 MW

## Summary

Located in Stafford County, Virginia, the Rappahannock Regional Solid Waste Management Board (R-Board) operates and maintains the Regional Landfill and recycling drop-off facilities for the benefit of the citizens of Stafford and Fredericksburg. No tax dollars are spent on the operation and maintenance of the Regional Landfill and recycling facilities. The R-Board partnered with Ameresco to design/ build, own, operate and maintain a renewable energy plant that would utilize methane from the landfill to create renewable energy and provide a revenue stream.



Ribbon-cutting ceremony at the Rappahannock Regional Landfill.

## Customer Benefits

The R-board operates and maintains the local landfill in Stafford County, Virginia. This cooperative is focused on being an efficient, cost-effective, environmentally sound operation. They knew they had a resource that could be harnessed for both revenue and renewable energy, and they wanted to do the right thing for the environment and for the community they serve.

As a result, the purchaser of this renewable energy, Constellation New Energy (CNE), offers its customers a renewable energy option. Landfill gas-to-energy (LFGTE) projects helps CNE diversify their electrical generation portfolio and be responsive to their environmentally conscious customers.

## Accolade

*"In addition to the significant environmental benefits, the R-Board will receive revenue from the sale of the gas. This revenue will help off-set landfill operation costs. It's a win-win situation for everyone."*

*–Paul Milde  
R-Board Chairman*

## Services Provided

Established in 1987, the R-Board in Stafford County is a joint venture of the governments of Stafford and Fredericksburg. No tax dollars are spent on the operation and maintenance of the Regional Landfill and recycling facilities.

Revenue produced through fees charged to commercial trash haulers goes directly into the R-Board's operating fund.

A by-product of the decomposing waste in the landfill is landfill gas, which is about half methane and half carbon dioxide, with some trace gases, such as hydrogen sulfide and nitrogen. It is created as the trash breaks down in an oxygen-free environment, under the cover of soil in the landfill. Methane must be destroyed instead of being released into the atmosphere. The R-Board has a gas collection system and has flared the landfill gas as required by state regulations. This is done with an open flame at extremely high temperatures. The open flame



The decomposing waste at the Rappahannock Regional Landfill is transformed into energy.



## About R-Board

The R-Board is a joint venture of the governments of Stafford and Fredericksburg. The R-Board operates and maintains the regional landfill and recycling drop-off facilities for the use and benefit of the citizens of Stafford and Fredericksburg.

Learn more at [www.r-board.org](http://www.r-board.org).

## About Ameresco

Ameresco, Inc. (NYSE:AMRC) is one of the leading energy efficiency and renewable energy services providers. Our energy experts deliver long-term customer value, environmental stewardship, and sustainability through energy efficiency services, alternative energy, supply management, and innovative facility renewal all with practical financial solutions. Ameresco and its predecessors have constructed billions in projects throughout North America.

For more information about Ameresco and our full-range of energy efficiency and renewable energy solutions, please visit [www.ameresco.com](http://www.ameresco.com).



A crane sets the gas engines in place.

## Services Provided (cont.)

produces a great deal of heat, and the R-Board has found a way to use this wasted resource: to generate electricity. Members of the R-Board agreed that they had to seize the opportunity to capture the landfill gas and put it to beneficial use.

To meet its goals, the R-Board signed a 20-year contract with Ameresco to convert the gas into a renewable energy source. Now that the project is operational, it generates alternative energy and offsets the need to use other, more polluting fuels to generate power.

The project also provides additional benefits for the landfill and community, including reduced emissions of potent greenhouse gases, and a revenue stream that will be used for landfill operations and other community priorities.

The project mechanics involve diverting the landfill gas from the flare to the plant that Ameresco designed and constructed. The plant is equipped with two GE Jenbacher internal combustion engines, which are designed to operate on landfill gas. Ameresco constructed an 18,500-square-foot facility to house the project, which generates 2.14 MWs of power.

The ribbon-cutting ceremony for the power plant and

open house at the landfill was held in 2008. The power generated by the project is purchased by CNE, which uses the renewable energy to diversify its power portfolio and provide its customers with a green power option.

## Environmental Benefits

Through R-Board's partnership with Ameresco, the Board reduced their carbon footprint.

The annual green benefits from this carbon reduction equal:

- ▶ the removal of 17,000 cars from the road
- ▶ the planting 19,000 acres of trees
- ▶ the powering of 13,000 average-size homes

The project helps reduce the need for energy from traditional power plants fueled by fossil fuels.

