**Contract Details**

**Contract Type:**
- Energy Efficiency; Energy Savings
- Performance Contract; Guaranteed Energy Savings

**Facility Size:**
- 38,710 sq. feet

**Energy Project Size:**
- $600,000

**Energy Savings:**
- 1,744,572 kWh annually

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**Summary**

In cooperation with the Alaska Energy Authority and grants from the Village Energy Efficiency Program (VEEP), Whole Village Retrofit (WVR) and the Energy Efficiency and Conservation Block Grant (EECBG), Ameresco secured funding for energy saving measures in Emmonak. Eight buildings, including one school, reaped the benefits of energy upgrades bolstered by Ameresco’s project engineering design and implementation experience. Various efficiency measures were chosen and local contractors were utilized, helping to stimulate the local economy.

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**Customer Benefits**

With the help of the Alaska Energy Association (AEA) and the Alaska Housing Finance Corporation (AHFC), Ameresco helped the City of Emmonak implement over $600,000 worth of energy upgrades. With Ameresco’s guidance, the City was able to identify and take advantage of 19 energy conservation opportunities (ECOs). Emmonak benefited from various upgrades ranging from building envelope improvements, to lighting retrofits, to HVAC equipment enhancements. Long-term effectiveness of the installed ECOs was augmented by an educational training program delivered by Ameresco. In order to design and develop the correct project and training program for the City, Ameresco needed to have an in-depth understanding of the special needs of the population.

**Accolades**

“We are very excited and impressed with the new EK2 boiler installation at City Hall. We are showing everyone we can in the community these new boilers because we are very happy with them and the project with Ameresco.”

- Martin Moore
  Emmonak City Manager

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**Environmental Benefits**

Through the partnership with Ameresco, Emmonak will reduce its carbon footprint. The annual green benefits from this carbon reduction are equivalent to:

- the reduction of 1,326 tons of CO₂
- the removal of 236 cars from the road
- the planting of 257 acres of pine forests

The project helps reduce the need for energy from traditional power plants fueled by fossil fuels.
About the City of Emmonak
Emmonak is located at the mouth of the Yukon River, 10 miles from the Bering Sea, on the north bank of Kwiguk Pass, and in the Yukon Delta National Wildlife Refuge. The area encompasses 7.5 sq. miles of land and 1.1 sq. miles of water. Temperatures range from -25 to 79 °F. Precipitation averages 19 inches per year, while snowfall averages 50 to 60 inches per year. The City experiences a seasonal economy as a center for commercial fishing, purchasing, and processing on the lower Yukon River. The City is accessible by air and water, as there are no roads connecting to the City.

Learn more at http://www.commerce.state.ak.us/dca/commdb/CIS.cfm?comm_boro_name=Emmonak.

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 ameresco.com and alaska.ameresco.com.

Services Provided (cont.)
redesigned the respective heating system flow to be more efficient.

Lighting upgrades replaced T-12 fluorescent lighting and magnetic ballasts with T-8 lamps and electronic ballasts. High intensity discharge (HID) lighting systems in the medium and high bay areas such as the water treatment plant, maintenance shops, and school were replaced with T-5 fluorescent fixtures. HID lighting is often used in areas with high ceilings or roof structures. The fixtures generate high luminous flux, are reasonably energy efficient, and are long lasting. Such systems often remain illuminated continuously since the re-strike times make periodic switching in irregularly occupied spaces a nuisance. Continuous operation of HID fixtures reduces the overall energy efficiency of lighting systems designed around their use. Newer, high output fluorescent sources are characterized by quick warm-up with instant light output and improved efficiency.

Occupation Sensors were installed to detect and shut off lighting in unoccupied spaces. Ameresco used typical sensing technologies, such as infrared, ultrasonic, and audible sound, which are often combined in one sensing unit to avoid shutting off lights in an occupied area by mistake. There are various mechanical systems operating with inefficient motors throughout the City, and replacing them with National Electrical Manufacturers Association (NEMA) premium efficiency motors could increase energy efficiency by 2-3%.

A comprehensive recommissioning of the boilers in each building was necessary to optimize system operations. Ameresco made efforts such as replacing, repairing, calibrating or installing sensors or switches; correcting air linkages; conducting combustion efficiency test services; and cleaning combustion chambers and stacks. Many of the existing units in the village were original to the buildings they served, and had reached the end of their useful service life. Replacing existing hot-water heating boilers with more energy efficient units reduces energy use, improves system operations, and reduces maintenance costs. In some locations, a storage tank was installed to replace the building’s domestic water heater. Additionally, the inefficient fuel oil burning domestic water heaters (DWHs) were replaced with more efficient electric models. Because the cost of fuel is so high in Emmonak, the cost-saving potential in fuel oil vs. electric is quite high, and this measure is expected to generate savings to merit its installation.

Un-insulated or poorly insulated hot water pipes result in unnecessary heat gain/loss and lead to longer run times for boilers. Ameresco installed insulation where it was non-existent and replaced it in areas where it was damaged.

Ameresco installed a waste oil heater at the public works building to eliminate the fuel oil burner. The fuel oil burner was a Modine model POR145B with a heating capacity of 145MBH. The burner had a hand-written install date of 1999, but occupants informed Ameresco that the heater had been scavenged at another date, so this install date was inaccurate and the burner was likely older.