



JBER

Energy Management



Power the Force. Fuel the Fight.



"The United States Air Force's mission is to fly, fight and win in air, space and cyberspace. To achieve this mission and protect the Nation's interests, the Air Force requires ready Airmen, robust weapon systems, and resilient infrastructure—all of which require energy to operate."

United States Air Force Energy Flight Plan



America's Premier Joint Base





JBER Energy Management Resiliency & Assure Supply



JOINT BASE ELMENDORF RICHARDSON LANDFILL GAS ELECTRICAL POWER PLANT



JBER LANDFILL GAS ELECTRICAL PLANT - 1.2 MW GENERATING UNITS

- Partnership between JBER, Doyon Utilities (DU) and the Municipality of Anchorage to use LFG to generate 7 megawatts (MW) of electricity.
- Operational in Dec. 2012. Provided 26% of JBER's electrical demand in FY16.
- Business Case for expanding to 6th unit is under study for a total of minimum 8.4MW.
- Exceeds EO 13693 requirement for renewable energy.
- Provides lower energy costs – est. NPV of \$73M over the 50yr. life of the contract.
- With DU's standby generators, provides complete electrical energy independence for JBER-R from the local power grid in the event of an emergency.



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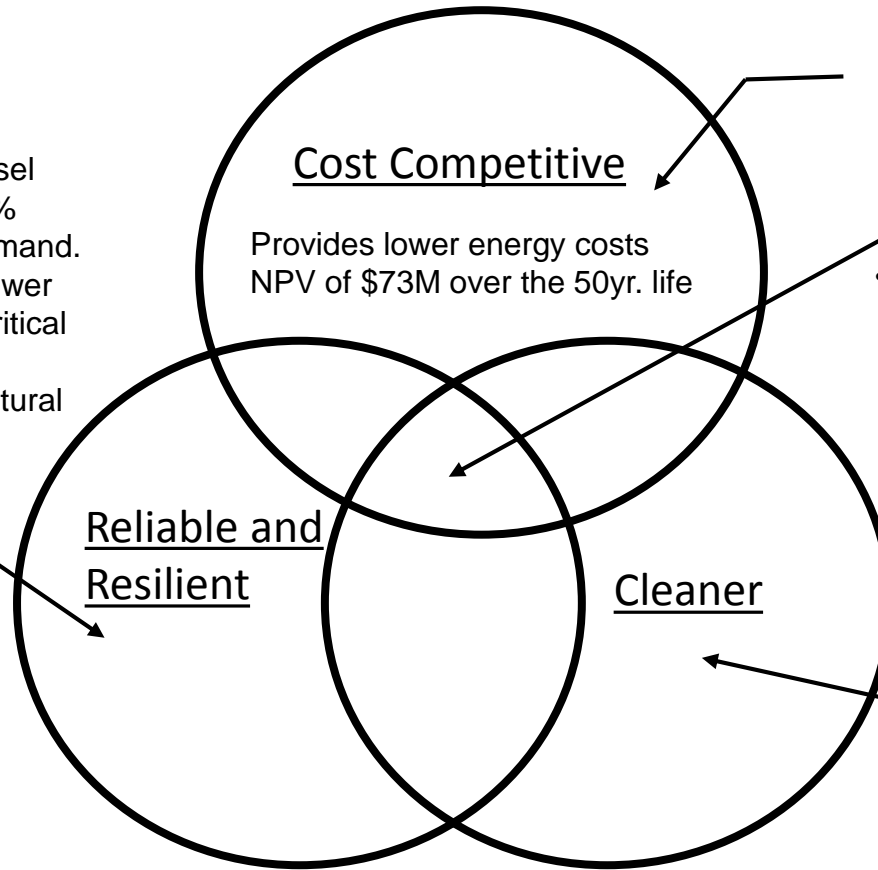




JBER Energy Management Resiliency & Assure Supply



- Landfill Gas Additional Generation.



- Fossil Creek Substation will allow competition among multiple utilities for the non-LFG electrical load. It will lower rates by moving from Commercial to Transmission Rates.

Sweet Spot

- By expanding LFG to planned 6th unit (or more), this sweet spot will increase in area.
 - Provide a greater level of resiliency.
 - Potential to eliminate an additional 7,000 tons GHG
 - With the inter-tie, LFG will be able to run all units during off peak hours.
- Eliminates 7,800 tons GHG annually.
- Meets nearly 100% of PACAF's renewable energy goal.

- With in place backup DU diesel generation, can provide 100% JBER-R electrical power demand.
- With electrical intertie can power significant % of total JBER critical load year round.
- Dual Fuel – Methane and Natural Gas



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Major Projects:

- Complete Upgrade of JBER-Richardson Electrical Distribution System
 - From 7.2 kV to 12.5 kV
 - 34.5 kV Transmission Line (Will Intertie with JBER-Elmendorf 2017)
- Landfill Gas to Energy Electrical Generation Plant
 - 7.0 MW Generation (Business Case Underway for More Generation)
- 9.0 MW Backup Electrical Generation Facility (JBER-Richardson D St Sub)
- Rebuilt JBER-Elmendorf 34.5 kV/12.5 kV Substation 2
- Rebuilt/extended 2 miles of 12.5 kV overhead distribution lines.



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JBER Energy Management Optimize Demand



By making the best use of its energy resources, the Air Force achieves an edge toward ensuring operational supremacy and moves towards its strategic vision to enhance mission assurance through energy assurance.

- Reducing the Air Force's need for energy is the single best action it can take to improve energy resiliency.
- It decreases reliance on foreign energy sources and an aging commercial infrastructure, reduces the financial resources the Air Force needs to commit to energy, and increases the impact on-base clean energy sources can have.
- The Air Force will consider any project that enables it to make better use of the resources it uses.



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JBER Energy Management Optimize Demand



Projects:

- Energy Projects completed or in construction FY2016.
 - 141 Facilities
 - \$8.5M Investment
 - \$1.5M estimated annual savings
 - 92,600MBTU estimated annual savings
- Energy Projects funded.
 - 108 Facilities
 - \$11.2M Investment
 - \$1.5M estimated annual savings
 - 75,000MBTU estimated annual savings



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JBER Energy Management Optimize Demand



Projects (cont.):

- Energy Projects awaiting funds.
 - 6 Facilities
 - \$4.6M Investment
 - \$1.0M estimated annual savings
 - 44,000MBTU estimated annual savings
- Energy projects include a mix of Heating System improvements, Energy Management Control Systems (EMCS) and lighting upgrades. In addition to energy and \$ savings:
 - Heating System upgrades provide improved temperature control and comfort.
 - EMCS provides a complete view of energy consumption which helps identify future projects.
 - Lighting upgrades provide improved lighting quality, control and reduced replacement intervals.



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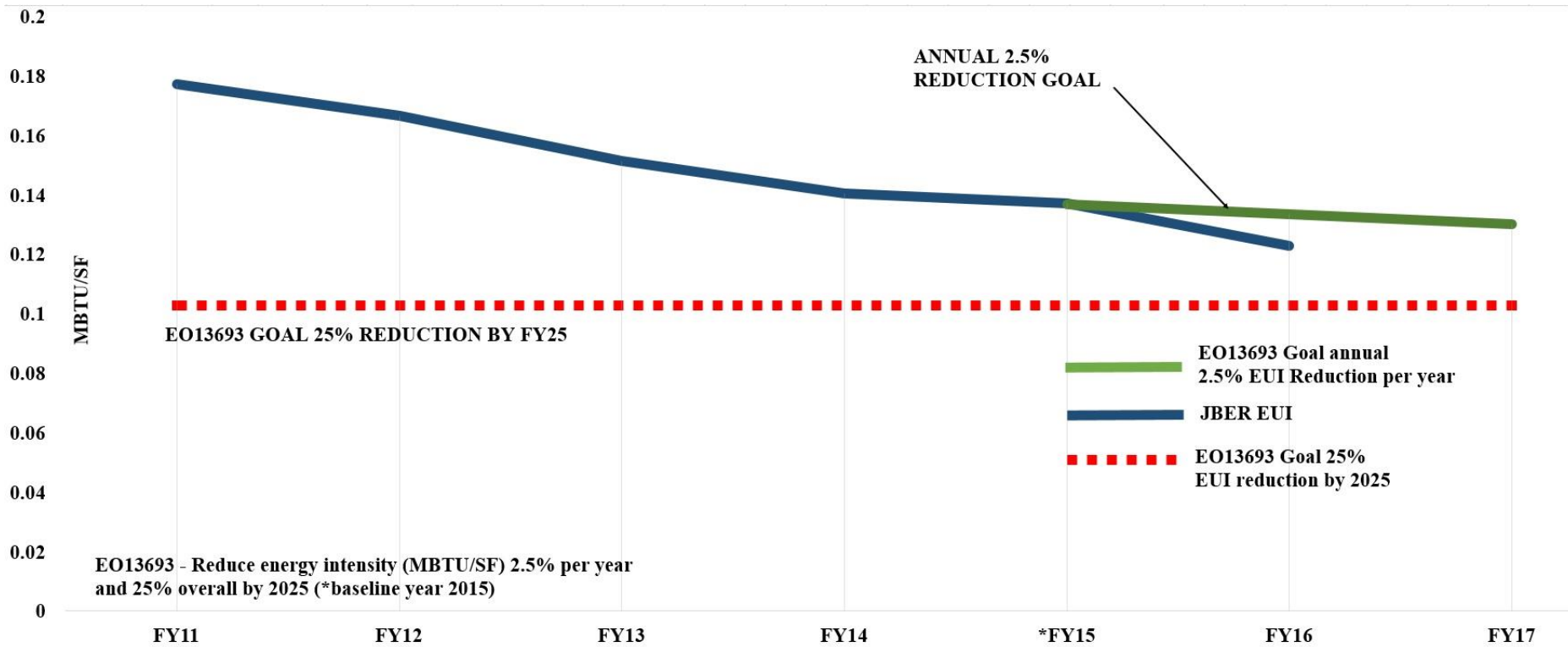




JBER Energy Management Optimize Demand



Energy Reduction:





JBER Energy Management Foster Energy Aware Culture



The JBER Energy Team Mission:

- Promote energy awareness.
- Energy Action Month.
- Draft Installation Energy Policy and supporting installation regulations.
- Train Facility Managers annually on their energy responsibilities.
- Identify and develop projects that enhance energy efficiency.
- Monitor energy consumption at the base and facility level.
- Report energy consumption.
- Keep abreast of technology improvements in energy consuming equipment.



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JBER Energy Management Foster Energy Aware Culture



Energy Awards:

- Fiscal Year 2011
 - AFCESA Reducing Energy Appreciation Program Award
 - PACAF Air Force Energy Conservation Award
- Fiscal Year 2012
 - PACAF Air Force Energy Conservation Award
- Fiscal Year 2013
 - Secretary of Defense Environmental Award for Sustainability
 - GSA Award for Sustainability
- Fiscal Year 2014
 - Federal energy Management Program (FEMP) Award – Landfill Gas Plant Project
- Fiscal Year 2015
 - FEMP Award – JBER Energy Management Team
- Fiscal Year 2016
 - FEMP Award Individual Career Exception - Mr. Jon Dalsfoist



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