

Prairie View A&M University

Energy and Water Management Plan

October 31, 2018

1. Progress Report

Prairie View A&M University is committed to energy conservation. PVAMU has shown positive reductions in energy consumption by embarking on an aggressive heating and cooling scheduling program to allow the HVAC systems to turn off when buildings are not in use.

Utility consumption building profiles are generated and reviewed weekly to ensure buildings are operating as designed. And, monthly campus utility consumption and costs are reviewed to ensure energy conservation initiatives are obtaining expected results. Energy conservation initiatives have reduced the campus source Energy Use Index (EUI) from 215.1 mBtu per square foot in November 2014 to 206.9 mBtu per square foot in June 2018.

2. Goals

Prairie View A&M University began implementation of an ESCO project in 2018. The project's goals are as follows:

- Reduce electricity consumption by 8,774,446 kilowatt-hours (kWh) each year
- Reduce utility annual electricity demand assessments by 19,104 kW each year, averaging 1,592 kW per month
- Reduce natural gas consumption 5,104 MCF each year
- Generate \$75,185 in revenue using existing assets
- Address the life-cycle replacement needs for the cooling towers.
- Providing long-term, non-obsolescent assets that continue to deliver cash flow and reliability benefits beyond term for debt service

3. Strategy for Achieving Goals

A self-funding ESCO project has been developed composed of the following seven measures to best address the immediate needs of PVAMU in a cost effective manner:

- ECM1: Interior lighting retrofits
- ECM2: Exterior lighting retrofits
- ECM3: Metering instrumentation and controls improvements
- ECM4: Chilled water Plant improvements
- ECM5: Steam system improvements
- ECM6: Demand response
- ECM7: Variable flow chilled water distribution
- ECM8: Air handling unit VFDs

4. Implementation Schedule

The Prairie View A&M University ESCO project schedule is as follows:

Interior lighting retrofits: 12/17/18

Exterior lighting retrofits: 8/21/18
 Metering instrumentation and controls improvement: 12/24/18
 Chilled water Plant improvements: 10/12/18
 Steam system improvements: 7/13/18
 Demand response: 10/19/18
 Variable flow chilled water distribution: 7/27/18
 Air handling unit VFDs: 8/31/18
 Close out: 3/4/19

5. Finance Strategy

The ESCO project was funded by a low interest loan made available through the Texas Bond Review Board's (BRB) state allocation of Qualified Energy Conservation Bonds (QECB) program, with cost avoidance from energy consumption reduction guaranteed by an energy service company (ESCO) to pay back both principle and interest in less than 18 years after construction is complete. Project scope, budget, and payback were determined through an energy audit of campus facilities. The QECB program is administered in Texas by the BRB and awards are made after project applications are received, evaluated, and approved by the BRB and Governor's Office, and reviewed by the State Energy Conservation Office (SECO), as well as part of the BRB evaluation process. The application for this project was evaluated on technical and financial requirements and selected for funding based upon meeting strict engineering and financial merits.

ESCO funding summary is as follows:

<u>Funding Source</u>	<u>Budget Amount</u>	<u>Average Estimated Annual Debt Service</u>	<u>Debt Service Source</u>
Qualified Energy Conservation Bonds	\$14,534,013	\$906,740	Energy Savings
Cash (Designated Tuition)	<u>\$ 768,017</u>	N/A	N/A
Total Project Funds	<u>\$15,302,030</u>		

6. Gasoline Consumption

- Reduce fleet vehicles - retiring old ones and upgrading to more economical vehicles when applicable.
- Reducing fleet size where available.
- Increasing preventive maintenance on golf carts and vehicles to ensure proper operation and improve efficiency.

	Gasoline (Gallons)	Diesel (Gallons)
FY17	30,976	17,722
FY18	34,158	13,596
% Increase (Decrease)	10%	(23%)

7. Employee Awareness Plan

Prairie View A&M University encourages student, staff and faculty energy conservation involvement thru articles in a campus newsletter and campus wide notifications.

8. Designated Contact Person

Dr. Terence Finley, Assistant Vice President for Business Services

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