

Texas Tech University Energy Savings Program January 2009 Update

The Texas Tech Energy Savings Update is being submitted in accordance with Governor's Executive Order RP 49, Electric Conservation by State Agencies.

A. Energy Goals

1. Campus Energy Use (E&G)

Energy units are converted to kbtu to allow for comparisons of the various energy forms. Goals and energy use are then stated in kbtu/sq ft. Estimated savings are based on energy consumption for the same time period from the previous year normalized to current energy costs and campus square footage.

For the first quarter of FY09 the campus consumed 42.07 kbtu/sq ft, a decrease of 7.9% from first quarter FY08.

In Table I, the campus energy use is broken down by utility type.

Table I: Campus (E&G) Energy Use (kbtu/sq ft): September-November

Utility	FY08 Actual	FY09 Actual	% Change from previous year	Est. Savings
Electricity	13.13	12.17	Down 7.3%	\$ 123,800
Natural Gas	3.45	3.86	Up 11.9%	(\$ 11,400)
Steam	12.47	12.81	Up 2.7%	(\$ 15,900)
Chillwater	16.64	13.23	Down 20.5%	\$ 251,500
Total	45.69	42.07	Down 7.9%	\$ 348,000

Since RP 49 first went into effect, we have reported the above Campus Energy Use data (Table I) for only E&G buildings. In complying with both RP 49 and HB 3693, and in order to maintain continuity with our previous reporting practices, we will continue to report E&G.

2. House Bill 3693

In compliance with House Bill 3693, Texas Tech University has set a goal to reduce total electrical consumption by 2.5% for FY09. Table II shows the kilowatt hours per square foot for the whole campus, i.e. both E&G and Auxiliaries. For the first quarter of fiscal year 2009 we are down 10.1% over the first quarter of fiscal year 2008. The exceptional decline of electricity use during this quarter is attributed to two energy projects in Education and General and one project in Housing which were in progress throughout last fiscal year.

Table II: Whole Campus Electricity Use (kwh/sq ft): September-November

Whole Campus Electricity Use in kwh/Sq Ft	Previous Year Reference Data	2.5% Reduction Goal	Actual Consumption	Percent Increase/Decrease from previous year, by quarter
1st Quarter	4.2790	4.1721	3.8474	-10.1%
2nd Quarter	3.6157	3.5253		
3rd Quarter	3.7309	3.6376		
4th Quarter	3.7516	3.6578		
Yearly Total	15.3772	14.9928	3.8474	

3. Fleet Fuel Management Plan (Vehicles)

- a. In FY06, Governor Perry's Executive Order RP-49 required agencies to establish an energy conservation program by setting a percentage goal for reducing its usage of electricity, gasoline and natural gas.

As a result of that order, Texas Tech University established the following goals related to vehicles:

- Reduce fuel consumption by 5% per year

- Average miles per gallon 12.4

In the first quarter of 2009, Texas Tech vehicles averaged 11.6 miles per gallon. These figures represent an increase in fuel efficiency of 1.3 miles per gallon compared to the first quarter of 2008. This represents a 12.6% increase in fuel efficiency.

Historical University Vehicle Fleet Data

	Miles	Fuel	Miles Per Gallon
1st Quarter 08	662,092	63,868	10.3
2nd Quarter 08	546,135	42,657	12.8
3rd Quarter 08	714,926	58,007	12.3
4th Quarter 08	671,156	57,835	11.6
1st Quarter 09	654,959	56,582	11.6

B. Current Energy Reduction Plans

1. Campus Energy Use

- a. Texas Tech has received funding from TPFPA using the Master Lease Purchase Program for four energy projects.
 - 1) AHU VFD Project – Estimated cost of \$600,000 with a payback of 2.3 years. Project is 97% complete and should be finished by February 09.
 - 2) International Textile Center Performance Contract - \$573,000 with a 6 year payback. Project is 100% functional and the final report should be complete by February 2009.
 - 3) CHACP I Stack Heat Recovery - \$800,000 with an estimated 1.9 year payback. Fanning, Fanning and Associates, Inc is preparing the construction documents for bidding.
 - 4) CHACP II Stack Heat Recovery - \$500,000 with an estimated 3.6 year payback. Fanning, Fanning and Associates, Inc is preparing the construction documents for bidding.

In addition, Housing has been working on the following projects.

- 1) Relamp of residence halls in Housing with fluorescent lighting.
- 2) Install newer, more efficient outdoor lighting around residence halls.

- b. Perform a minimum of 1 detailed energy audit per month beginning with the largest consumers of energy.
 - 1) Texas Tech completed 2 detailed energy audits this Quarter.

2. Fleet Management

The Texas Tech University tactics to achieve this goal are:

- 1) Improve overall fuel efficiency of fleet vehicles by replacing older, inefficient vehicles with newer, more efficient vehicles.

Texas Tech University has acquired seventy new, more efficient vehicles since the Governor's executive order.
- 2) Continue the aggressive Preventative Maintenance program to maintain all vehicles at their peak efficiency.

Routinely, notices are sent to all vehicle custodians advising when preventive maintenance services are needed.
- 3) Continue to utilize the State's Fleet Data Management System.
- 4) Educate personnel on the efficient use of University vehicles.
- 5) Document agency best practices for operation and maintenance.

New initiatives will continue to be collected and shared with appropriate vehicle custodians and operators through the Vehicle Fleet Management quarterly newsletter.

C. Future Energy Reduction Plans

Texas Tech is currently evaluating several energy reduction projects such as exterior LED lighting retrofits, building commissioning and re-commissioning procedures, boiler blowdown heat recovery and air-handler upgrades. We will go forward with engineering analysis and take action based on feasibility, available funding and favorable payback.

D. Fuel Consumption Reduction Plans

The Vehicle Fleet Management office will network with vehicle custodians to exchange information on vehicle efficiency and solicit additional best practices and other creative initiatives for the university vehicle fleet.