

Texas Tech University Energy Savings Program August 2008 Update

The Texas Tech Energy Savings Update is being submitted in accordance with Governor's Executive Order, RP 49, Electric Conservation by State Agencies. Energy numbers come from the Energy Report filed with SECO semi-annually. Texas Tech is slightly below where we were the third quarter of last year (44.77 vs 45.81 kbtu/sq ft).

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 third quarter of FY08 the campus consumed 44.77 kbtu/sq ft, a decrease of 2.3% from FY07. For the Fiscal Year to date, campus energy use is down 1.3%.

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

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

Utility	FY07 Actual	FY08 Actual	% Change	Est. Savings
Electricity	36.63	37.35	Up 2.0%	\$(45,300)
Natural Gas	15.72	14.14	Down 10.1%	\$ 76,100
Steam	55.36	50.81	Down 8.2%	\$349,500
Chillwater	36.42	39.95	Up 9.7%	\$(217,100)
Total	144.13	142.25	Down 1.3%	\$163,200

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 FY08. Table II shows the kilowatt hours per square foot for the whole campus, i.e. both E&G and Auxiliaries. For the 3rd quarter this fiscal year we are down 1.7% over the same quarter last fiscal year. For the Fiscal Year to date, campus electrical use is up 1.1%.

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

Whole Campus Electricity Use in kwh/Sq Ft	Previous Year Reference Data	2.5% Reduction Goal	Actual Consumption	Percent Increase/Decrease for the Reporting Period
1st Quarter	4.1003	3.9978	4.2791	+ 4.4%
2nd Quarter	3.6038	3.5137	3.6156	+0.3%
3rd Quarter	3.7942	3.6994	3.7309	-1.7%
4th Quarter	4.0384	3.9374		
Yearly Total	15.5367	15.1483	11.6259	

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 FY2007, the Texas Tech University vehicle fleet consumed 207,867 gallons of fuel and traveled 2,385,964 miles.

In the third quarter of 2008, Texas Tech vehicles consumed 58,007 gallons of fuel and traveled 714,926 miles. These figures represent a 2.9% increase in fuel consumption compared to FY07-03. Additionally, there was an increase of 16% in miles traveled compared to FY-03.

The fleet efficiency increased to 12.3 mpg in the third quarter of FY08 compared to 10.9 in the third quarter of FY07.

The Texas Tech University vehicle fleet increased by .7% in FY08-03 compared to FY07-03

Historical University Vehicle Fleet Data

	Miles	Fuel	Miles Per Gallon
FY07-1	600,613	52,987	11.3
FY07-2	496,083	43,274	11.5
FY07-3	616,358	56,345	10.9
FY07-4	672,910	55,261	12.2
FY08-1	662,092	63,868	10.3
FY08-2	546,135	42,657	12.8
FY08-3	714,926	58,007	12.3

B. Current Energy Reduction Plans

1. Campus Energy Use

- a. Texas Tech has received funding from TPFA using the Master Lease Purchase Program for two energy projects.
 - 1) AHU VFD Project – Estimated cost of \$600,000 with a payback of 2.3 years. Project is 65% complete
 - 2) International Textile Center Performance Contract - \$573,000 with a 6 year payback. Project is 98% complete.

- b. Texas Tech is seeking TPFA funding for the following projects.
 - 1) CHACP I Stack Heat Recovery - \$800,000 with a 1.9 year payback

- 2) CHACP II Stack Heat Recovery - \$500,000 with a 3.6 year payback
- c. Perform a minimum of 1 detailed energy audit per month beginning with the largest consumers of energy.
- 1) To date we have completed 12 detailed audits.

2. Fleet Management

- a. 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.
The Preventive Maintenance program for all Texas Tech University vehicles will continue to be monitored. 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.
The Texas Tech University Vehicle Fleet Management office will continue to use the Fleet Focus database to monitor vehicle utilization, efficiency, maintenance and accuracy of vehicle reporting. Any discrepancies will immediately be addressed with appropriate vehicle custodians.
 - 4) Educate personnel on the efficient use of University vehicles.
The Vehicle Fleet Management office of Texas Tech University initiated a letter from the Vice-President of Operations to all vehicle custodians in December 2005, advising Governor Perry's Executive Order and the university's established goal of 12.4 mpg. Additional information included individual vehicle miles per gallon data for FY2005 and tips for improving vehicle efficiency.
 - 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

1. CHACP I Blowdown Heat Recovery - \$500,000 with a 3 year payback
2. CHACP I VFDs on Chillwater Pumps - \$133,000 with a 4 year payback
3. CHACP II VFDs on Chillwater Pumps - \$100,000 with a 4 year payback

D. Fuel Consumption Reduction Plans

1. 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.