

## Texas Tech University Energy Savings Program May 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. Energy consumption for the second quarter of this year is slightly below the same quarter of last year (51.79 vs 54.60 kbtu/sq ft). However, we are four months behind on our energy projects, so we have not yet met our reduction goal for electricity.

### 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.

Through the second quarter of FY08 the campus consumed 97.48 kbtu/sq ft, a decrease of 0.9% from FY07.

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

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

Utility	FY07 Actual	FY08 Actual	% Change	Est. Savings
Electricity	24.39	25.37	Up 4.0%	\$(82,400)
Natural Gas	11.05	10.11	Down 8.5%	\$ 44,900
Steam	39.36	35.50	Down 9.8%	\$322,900
Chillwater	23.52	26.50	Up 12.7%	\$(166,200)
<b>Total</b>	<b>98.32</b>	<b>97.48</b>	<b>Down 0.9%</b>	<b>\$119,200</b>

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.

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

<b>Whole Campus Electricity Use in kwh/Sq Ft</b>	<b>Previous Year Reference Data</b>	<b>2.5% Reduction Goal</b>	<b>Actual Consumption</b>	<b>Percent Increase/Decrease for the Reporting Period</b>
<b>1<sup>st</sup> Quarter</b>	4.1003	3.9978	4.2791	+ 4.4%
<b>2<sup>nd</sup> Quarter</b>	3.6038	3.5137	3.6156	+0.3%
<b>3<sup>rd</sup> Quarter</b>	3.7942	3.6994		
<b>4<sup>th</sup> Quarter</b>	4.0384	3.9374		
<b>Yearly Total</b>	15.5367	15.1483	7.8947	

## 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%
- 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 first quarter of 2008, Texas Tech vehicles consumed 63,868 gallons of fuel and traveled 662,092 miles. These figures represent 21% increase in fuel consumption compared to FY07-01. Additionally, there was an increase of 10% for the number of miles traveled compared to FY07-01.*

*In the second quarter of 2008, Texas Tech vehicles consumed 42,657 gallons of fuel and traveled 546,135 miles. These figures represent 1.4% decrease in fuel consumption compared to FY07-02. Additionally, there was an increase of 1.4% miles traveled compared to FY07-02.*

The fleet efficiency increased to 12.8 mpg in the second quarter of FY08 compared to 11.5 in the second quarter of FY07.

The Texas Tech University vehicle fleet increased by 3.9% in FY08-02 compared to FY07-02.

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

**B. Current Energy Reduction Plans**

**1. Campus Energy Use**

- a. Texas Tech has received funding from TPFAs 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 10% complete
  - 2) International Textile Center Performance Contract - \$573,000 with a 6 year payback. Project is 98% complete.
- b. Texas Tech is seeking TPFAs 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 11 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 preventative 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 Flash Economizer - \$300,000 with a 3 year payback
2. CHACP I VFDs on Chillwater Pumps - \$1,000,000 with a 5 year payback
3. CHACP II VFDs on Chillwater Pumps - \$210,000 with a 5 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.