TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™

June 30, 2011

Ms. Donna Geiger
Office of the Governor
1100 San Jacinto
Austin, Texas 78701

Mr. John O'Brien
Deputy Director
Legislative Budget Board (LBB)
Robert E. Johnson Bldg. – 5th Floor
1501 North Congress
Austin, Texas 78701

RE: RP-49, FY 2011 – 3rd Quarter Update

The Texas Tech University Health Sciences Center (TTUHSC) Energy Savings Update is being submitted in accordance with Governor's Executive Order, RP 49, Electric Conservation by State Agencies. TTUHSC continues to promote energy conservation measures and strategies and seek new ideas to reduce consumption and improve building system efficiencies.

A. Energy Consumption & Goals

Attached is Exhibit I where our 3rd Quarter FY2011 consumption breakdowns can be found. Exhibit I also includes previous quarters, overall totals for each utility and energy equivalents to facilitate comparisons between quarters and annual totals.

Additionally, Table I (Page 2) shows a breakdown for each type of utility in kBtu per square foot. The energy units were converted to kBtu to allow for comparisons of the various energy forms and then divided by the appropriate campus square footage to obtain an energy utilization index in kBtu/square foot. A negative % change indicates a decrease in consumption, while a positive number indicates an increase compared to the previous year.

In the 3rd Quarter FY2011, the campus consumed 58.93 kBtu/sq ft, a decrease of 3.61% compared to the 3rd Quarter FY2010. Year-to-date (YTD) FY2011 energy utilization index is 184 kBtu/sq ft, a decrease of 1% as compared to YTD FY2010. Heating Degree Days (HDD) for the 3rd Quarter FY2011 decreased by 42% compared to 3rd Quarter FY2010. Cooling Degree Days (CDD) for the 3rd Quarter FY2011 increased by 63% compared to 3rd Quarter FY2010.

Table I: Campus Energy Use (kBtu/Sq ft): March - May

Utility	FY10 Actual	FY11 Actual	% Change
Electricity	18.92	18.55	-01.96%
Nat. Gas	13.34	13.00	-02.55%
Steam	14.76	11.29	-23.51%
Chilled Water	14.12	16.09	13.95%
Total	61.14	58.93	-03.61%

Texas Tech University Health Sciences Center continues to undergo significant capital improvements and steady growth, which are expected to increase the overall energy consumption.

B. Current Energy Reduction Plans

Texas Tech University Health Sciences Center has identified the following tactics and measures for potential consideration in reducing the campus energy consumption. Projects will be prioritized based on a variety of factors including return on investment, cost and availability of funding. Below is a partial list and status of projects that are completed or currently being designed and/ or implemented.

1. Mechanical system modifications to reduce energy consumption at the Medical Science Building, El Paso. *Project completed.*
2. Installation of a dual duct air distribution system for TTU Health Sciences Center at El Paso to operate the HVAC system according to the design intent. *Project is currently in implementation phase.*
3. Implementation of centralized Computer Maintenance Management System to effectively manage maintenance work orders and renovation projects. *Project is currently in implementation phase.*
4. It's our operating policy to use F28T8 lamps for office/laboratory/classroom and other such areas, and F25T8 lamps for hallway/toilet and other areas which need less illumination. This is being done to comply with the lighting power density requirement of the state energy code. All F32T8 lamps, HID lamps are currently planned to be replaced.
5. Lighting retrofit for LB Institute for Women's Health, Amarillo. *Project completed.*
6. Lighting retrofit for Regional Academic Health Center, Odessa. *Project is currently in implementation phase.*

7. Complete installation of occupancy sensors for automatic lighting control. *Project is being implemented through new construction and renovations.*
8. Replace inefficient motors with energy efficient motors at the HSC building, Lubbock. *Project is currently in implementation phase.*
9. Replace air handling units which are old, inefficient and under capacity, by newer energy efficient air handling units. *Project is being implemented as and when necessary.*
10. Install variable frequency drives for air handling units which operate at partial load frequently. *Project is currently in planning phase.*
11. Replacement of existing chiller with a new energy efficient chiller at Regional Academic Health Center, Odessa. *Project is currently in implementation phase.*
12. Replacement of existing chiller with a new energy efficient chiller at Texas Tech Medical Center, El Paso. *Project is currently in design phase.*
13. Install dedicated cooling for Medical Pavilion data/ communication rooms. *Project is currently in design phase.*
14. Install new direct digital control (DDC) system at the WHRI/ LBIWH building, Amarillo. *Project is currently in planning phase.*
15. Replace air handling DX units at the Southwest campus, Lubbock. *Project is currently in planning phase.*
16. Install chiller optimization module in the PFSOM and MSB1 facilities, El Paso. *Project is currently in planning phase.*
17. Replace existing boilers with new high-efficient boilers at the WHRI/ LBIWH building, Amarillo. *Project is currently in design phase.*
18. Recommissioning of air handling units at the HSC building, Lubbock. *Project is currently in planning phase.*
19. New energy efficient LED lights are being tested for performance and reliability.

C. Future Energy Reduction Plans

TTUHSC Engineering Services has conducted energy audits and identified various energy conservation projects which are projected to cost about $4,234,083 with an estimated payback of less than 6 years. The details of which are included in the 'Resource Efficiency Plan' in accordance with 34 TAC, Chapter 19.

D. Fuel Consumption Reduction Plans

TTUHSC continues to emphasize energy conservation awareness with strategies such as regular preventative maintenance, and an emphasis on tire pressure and conditions to gain economies.

Your consideration of this update and information is appreciated.

Sincerely,

George G. Morales, P.E.
Assistant Vice-President for Physical Plant & Support Services

Enclosure: EXHIBIT 1

XC: Elmo Cavin
Executive Vice President of Finance & Administration

Director, State Energy Conservation Office
Comptroller of Public Accounts
111 E. 17th Street, Suite 1114, Austin, Texas 78774

EXHIBIT I

FY2010 QUARTERLY ENERGY CONSUMPTION					
ENERGY	1st Quarter FY 2010	2nd Quarter FY 2010	3rd Quarter FY 2010	4th Quarter FY 2010	Total FY 2010
ELECTRICITY, kWh	13,396,554	12,238,116	13,577,396	16,269,146	55,481,212
NATURAL GAS, ccf	291,888	437,774	317,900	191,583	1,239,145
STEAM, mlb	24,483	49,162	31,480	19,732	124,857
CHILLED WATER, tn-hr	2,672,699	2,510,310	2,818,841	4,733,632	12,735,482
ENERGY EQUIVALENT, (kBtu)	135,295,322	172,104,503	148,197,905	154,184,285	609,782,014
N:B: Natural Gas is used to produce the Thermal Energies of Steam and Chilled Water					

FY2011 QUARTERLY ENERGY CONSUMPTION					
ENERGY	1st Quarter FY 2011	2nd Quarter FY 2011	3rd Quarter FY 2011	4th Quarter FY 2011	Total FY 2011
ELECTRICITY, kWh	14,198,646	12,453,963	13,572,871		40,225,480
NATURAL GAS, ccf	241,391	414,318	315,915		971,624
STEAM, mlb	26,405	46,872	25,109		98,386
CHILLED WATER, tn-hr	3,292,850	2,723,865	3,349,889		9,366,604
ENERGY EQUIVALENT, (kBtu)	142,441,989	170,420,902	147,196,346		460,059,236
N:B: Natural Gas is used to produce the Thermal Energies of Steam and Chilled Water					