



July 7, 2014

Mr. Elmo Cavin,  
Executive Vice-President of Finance & Administration  
TTUHSC, El Paso

RE: FY 2014 – 3<sup>rd</sup> Quarter Update (Posted on TTUHSC website)

Texas Tech University Health Sciences Center (TTUHSC-El Paso) Physical Plant continues to promote energy conservation measures and strategies and seek new ideas to reduce consumption and improve building system efficiencies. In October 2013, a new 2-year natural gas contract with the Texas General Land Office (GLO) was initiated. It's projected that this contract will save an estimated \$75,000 annually. A new School of Nursing (SON) building will come on line in the fall adding to the campus energy consumption and cost, estimated to be \$100,000 per year.

#### **A. Energy Consumption & Goals**

Attached is Exhibit I where our 3<sup>rd</sup> Quarter FY2014 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 3<sup>rd</sup> Quarter FY2014, the campus consumed 43.97 kBtu/sq ft, a decrease of 27% compared to the 3<sup>rd</sup> Quarter FY2013. Cooling Degree Days (CDD) for the 3<sup>rd</sup> Quarter FY2014 has decreased by 17% compared to 3<sup>rd</sup> Quarter FY2013. Heating Degree Days (HDD) for the 3<sup>rd</sup> Quarter FY2014 has increased by 3% compared to 3<sup>rd</sup> Quarter FY2013. Energy usage reduction is mainly due to the control component upgrade, and operational improvements throughout the campus. Reduction of CDD also contributed to energy usage reduction.





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

Utility	FY13 Actual	FY14 Actual	% Change
Electricity	28.33	25.81	-08.90%
Nat. Gas	31.68	18.16	-42.68%
Total	60.01	43.97	-26.73%

**B. Current Energy Reduction Plans**

We have 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 currently being planned, designed and/ or implemented.

1. Install new control components and upgrade control system software. *Project is in implementation phase.*
2. Boiler energy recovery system in the Medical Science Building, El Paso. *Schematic design completed. Project is on hold.*
3. Complete installation of occupancy sensors for automatic lighting control. *Project is being implemented through new construction and renovations.*
4. Operationally the campus should 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. *Project is ongoing.*
5. New energy efficient LED lights, for both interior and exterior building use, are being tested for performance and reliability. *Project is in testing and analysis phase.*
6. Install new variable speed drive chillers to replace older chillers that do not meet current energy standards. *Project is in preliminary assessment phase.*
7. Continuing to investigate options for energy recovery of LAB Exhaust in MSB1.
8. Moving all building automation control monitoring to new control room. *Project in progress.*





**C. Future Energy Reduction Plans**

The 'Resource Efficiency Plan' (REP) submitted every two years in October, identifies a comprehensive list of projects and measures for the campus energy conservation. The REP is prepared in accordance with 34 TAC, Chapter 19. The REP is used for both short and long term planning purposes and energy reduction activities.

Semiannual Fleet Fuel consumption is to be reported in the April and October reports.

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





### EXHIBIT I

FY2013 QUARTERLY ENERGY CONSUMPTION					
ENERGY	1st Quarter FY 2013	2nd Quarter FY 2013	3rd Quarter FY 2013	4th Quarter FY 2013	Total FY 2013
ELECTRICITY, kWh	4,996,482	3,859,229	4,221,160	6,060,112	19,136,983
NATURAL GAS, ccf	163,215	211,162	156,709	116,478	647,564
ENERGY EQUIVALENT, (kBtu) – N.G. & ELEC.	33,831,462	34,879,050	30,516,515	32,657,086	131,884,113

FY2014 QUARTERLY ENERGY CONSUMPTION					
ENERGY	1st Quarter FY 2014	2nd Quarter FY 2014	3rd Quarter FY 2014	4th Quarter FY 2014	Total FY 2014
ELECTRICITY, kWh	4,539,409	3,868,631	4,322,295		12,730,335
NATURAL GAS, ccf	109,362	143,511	100,962		353,835
ENERGY EQUIVALENT, (kBtu) – N.G. & ELEC.	26,735,443	27,956,542	25,130,849		79,822,834

FY2014 QUARTERLY COST INFORMATION						
ENERGY	1st Quarter FY 2014	2nd Quarter FY 2014	3rd Quarter FY 2014	4th Quarter FY 2014	Total FY 2014	Budget FY 2014
ELECTRICITY	\$347,777	\$267,862	\$289,429		\$905,068	\$1,332,552
NATURAL GAS	\$70,902	\$85,784	\$65,262		\$221,948	\$419,300
TOTAL	\$418,679	\$353,646	\$354,691		\$1,127,016	\$1,751,852

