



October 30, 2015

Office of the Governor
1100 San Jacinto
Austin, Texas 78701

Mrs. Ursula Parks, Director
Legislative Budget Board (LBB)
Robert E. Johnson Bldg. – 5th Floor
1501 North Congress
Austin, Texas 78701

RE: TTUHSC-El Paso, Annual Energy Report, FY2015

The Texas Tech University Health Sciences Center El Paso (TTUHSCPE) Annual Energy Report for FY-2015 is being submitted in accordance with Senate Bill 700 (83R) 4 Tex. Gov. Code §447.009 (c) and (e). TTUHSCPE continues to promote energy and water conservation measures and strategies and seek new ideas to reduce consumption and improve building system efficiencies.

A. Energy Consumption & Cost

In FY2015, the institution consumed 128,543,951 kBtu. FY2015 energy utilization index (EUI) is 207 kBtu/sq ft, the same as FY2014. FY2015 energy cost index (ECI) is \$2.97/sq ft, a decrease of 1% compared to FY2014. The gross area (gsf) of the institution has increased by 7% as compared to FY2014. Heating Degree Days (HDD) for the FY2015 has increased by 0.7% as compared to FY2014, and Cooling Degree Days (CDD) for the FY2015 has increased by 1.3% as compared to FY2014.

TTUHSCPE continues to undergo capital and system improvements, increase in overall occupancy and steady growth, which are generally expected to increase the overall energy consumption. Attached Exhibit 'A' shows FY2015 energy consumption and cost breakdowns. It includes FY2014 energy consumption, cost, and energy equivalents to facilitate comparison between annual totals. Exhibit 'B' shows a benchmarking report for comparison of energy index (EUI & ECI) values of TTUHSCPE from FY-2010 to FY-2015 with the median index value range of health related institutions in Texas.

B. Energy Conservation Plan & Action

TTUHSC has a continuous program to educate the faculty and staff regarding energy conservation. TTUHSC Engineering Services Department maintains specific operating policy and procedure relating to the energy conservation program and utility review. Operating policy and procedures make the responsibility of energy conservation the





obligation of every employee. Flyers, brochures, and periodic reminders are in process. A key element of the plan is to prevent waste and assure the conservation of resources.

TTUHSC Engineering Services has identified several projects for potential consideration in reducing the campus energy consumption. Projects were prioritized based on a variety of factors including life-cycle cost, and payback period. Projects that were implemented in the past were listed in the previous annual reports. Below is a partial list and status of projects that were completed in FY-2015 or are currently being designed and/ or implemented.

1. Construction of School of Nursing, El Paso building was completed. The building complied with energy code requirements, and has high efficiency scroll chillers, a condensing boiler, energy efficient lighting with occupancy sensors, and variable flow fans and pumps.
2. Install new control components and upgrade control system software for existing buildings. *Project is completed.*
3. Boiler energy recovery system in the Medical Science Building, El Paso. *Schematic design completed. Project is on hold.*
4. Complete installation of occupancy sensors for automatic lighting control. *Project is being implemented through new construction and renovations.*
5. The campus intends 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. *Project is ongoing.*
6. New energy efficient LED lights, for both interior and exterior building use, are being tested for performance and reliability. *Project is being implemented through maintenance and renovations.*
7. Install new variable speed driven chillers to replace older chillers that do not meet current energy standards. *Project is on hold.*
8. Preliminary assessment of energy recovery of lab Exhaust in MSB1 indicates high payback period. *Project is deferred.*

C. Future Energy Reduction Plans

Verification of building systems control sequences and logic are a high priority. Plans include implementation of energy recovery systems, chiller upgrades, LED lights, and implementation of renewable energy for the campus. A comprehensive list of projects is included in the 'Resource Efficiency Plan', and "Energy & Water Management Plan'.





D. Fuel Consumption and Cost

TTUHSCEP continues to emphasize fuel conservation awareness with strategies such as group travel, and regular preventative maintenance. FY-2015 total fuel consumption has increased by 3% as compared to FY-2014. TTUHSCEP has several lease buildings in the area, which require employees to drive to those locations frequently.

Fuel (gasoline/propane/diesel) Data:

FY15 Consumption	FY15 Cost	FY14 Consumption	FY14 Cost
14,348 Gallons	\$ 38,491	13,904 Gallons	\$ 46,656

The total miles driven in FY2015 have increased by 8% as compared to FY2014.

Your consideration of this update and information is appreciated.

Sincerely,

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

Attachment: EXHIBITs 'A' & 'B'

XC:

1. Frank Stout,
Chief Operating Officer, TTUHSC El Paso
2. Director, State Energy Conservation Office
111 E. 17th Street, Suite 1118, Austin, Texas 78774

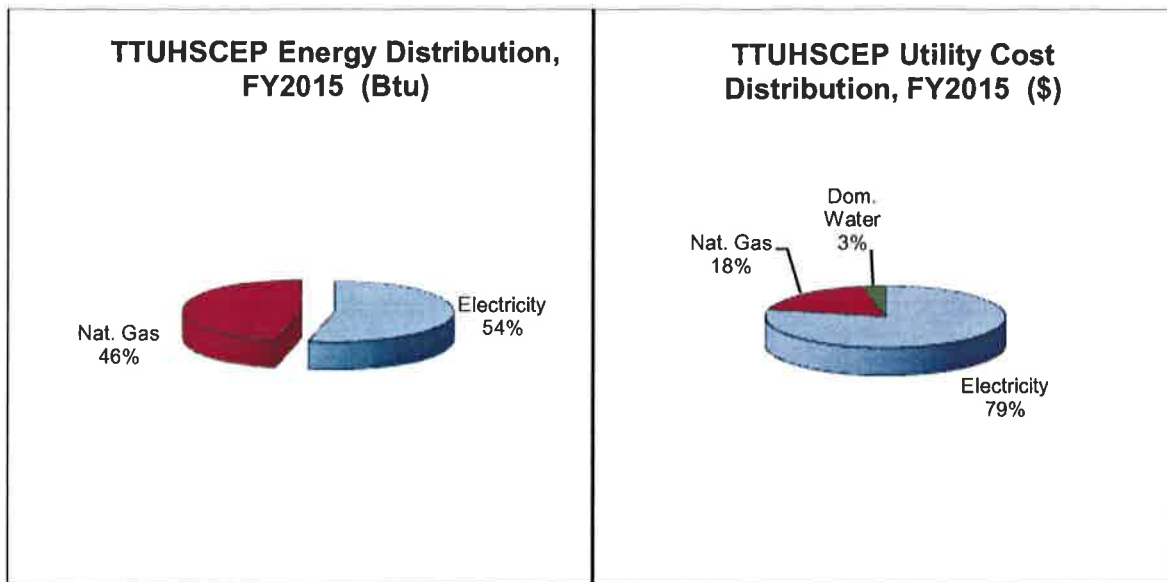




EXHIBIT 'A'

ANNUAL ENERGY CONSUMPTION AND COST				
ENERGY TYPE	CONSUMPTION		COST	
	FY 2015	FY 2014	FY 2015	FY 2014
ELECTRICITY, kWh	20,197,588	18,518,723	\$ 1,496,444	\$ 1,406,940
NATURAL GAS, ccf	579,866	549,138*	\$ 349,935	\$ 323,303*
TOTAL ENERGY (kBtu), COST (\$)	128,544,571	119,655,778*	\$ 1,846,379	\$ 1,730,243*

Note: The new SON building with an area of 35,354 GSF was added in 2015



* Revised due to the correction of Texas Gas Service under billing of natural gas for one of the buildings in El Paso in FY-14.

Note: The annual water consumption intensity for the institution is 28 Gal/sf, which is within the limits of SECO (State Energy Conservation Office) water conservation guidelines.





EXHIBIT 'B'
(ENERGY BENCHMARKING REPORT)

Institution	Energy Utilization Index (EUI) in kBtu/gsf	Energy Cost Index (ECI) in \$/gsf
Texas Tech Univ Health Sciences Center El Paso (FY-15)	207	\$2.97
Texas Tech Univ Health Sciences Center El Paso (FY-14)	207	\$2.99
Texas Tech Univ Health Sciences Center El Paso (FY-13)	259	\$3.34
Texas Tech Univ Health Sciences Center El Paso (FY-12)	276	\$3.83
Texas Tech Univ Health Sciences Center El Paso (FY-11)	265	\$3.48
Texas Tech Univ Health Sciences Center El Paso (FY-10)	287	\$3.71
Health Related Institutions in Texas (Median)	289	\$3.90
TTUHSC Energy Management Plan Target	226 - 250	< \$3.37

N.B.:

1. EUI can increase significantly with more research and hospital space; occupancy density; year of construction; building plug loads etc.
2. ECI can vary significantly with the local utility cost.
3. CLEAResult, 4301 Westbank Drive, Austin, TX 78746, provided the median EUI and ECI of HRIs in Texas for years 2011 & 2012.

