Energy and Water Management Plan

Section 1: Instructions

Texas Government Code §447.009 requires each state agency and institution of higher education to set and report percentage goals for reducing its usage of water, electricity, transportation fuel, and natural gas. Per 34 Tex. Admin. Code §19.14 (2016), these goals must be included in a comprehensive energy and water management plan (EWMP) submitted every fiscal year to the State Energy Conservation Office (SECO) by **Oct. 31**. This requirement is intended to streamline and standardize the energy reporting requirements of state agencies and institutions of higher education.

Please complete Section 2: Agency Information and Section 3: Providing Agency or Section 4: Tenant Agency, as applicable, for **Fiscal Year 2020**. Save this form as "EWMP-Agency-FY2020.docx" and return this form by email to seco.reporting@cpa.texas.gov no later than **Oct. 31**.

Please visit the SECO's Energy and Reporting website for more information. For questions about reporting, please contact seco.reporting@cpa.texas.gov or call 844-519-5676.

Section 2: Agency Information

Please provide the name and number (if applicable) of the agency that is submitting an Energy and Water Management Plan.

Agency Name: Texas Tech University Health Science Center El Paso

Agency Number: 774

Please provide the contact information for the person(s) responsible for implementation of the recommendations in the plan and the contact information for the person(s) responsible for reporting and submitting the plan, if different.

Implementation Contact

Name: Al Flores

Title: Managing Director

Email: Al.Flores@ttuhsc.edu

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Reporting/Submission Contact

Name: Gabriel A. Garza

Title: Engineer

Email: Gabriel.A.Garza@ttuhsc.edu

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Section 3: Providing Agency

Does your agency occupy or manage a state-owned building and pay the utilities?

☒Yes ☐No

If NO, please skip to **Section 4: Tenant Agency**.

If YES, please complete the following:

Have you submitted, or will you be submitting by October 31, FY 2020, energy and water usage data for your agency and properties using the ENERGY STAR Portfolio Manager tool?

☒Yes ☐No

Progress Report

The Progress Report section must outline the progress of activities related to the implementation of projects from the previous Energy and Water Management Plan (if applicable), including continuation of or new preliminary energy audits, a summary of the results, utility efficiency and cost savings. *Agencies should periodically conduct preliminary energy audits to identify new utility savings opportunities.*

TTUHSCEP has implemented several energy conservation projects that have had positive results and solid payback. From FY2015, TTUHSCEP has significantly decreased our utility consumption (approx. 20%) which reflects approx. $430k reduction in cost from the prior baseline year to this past fiscal year. The TTU System is currently in process of hiring energy consultants and vendors to assist with a system wide energy management plan and procurement of natural resources. This is an effort to further improve our energy footprint and unify efforts for all institutions within the TTU System.

Goals

The Goals section must summarize the future goals for utility conservation. Pursuant to Texas Government Code §447.009, each state agency and institution of higher education shall set percentage goals for reducing the agency's or institution's use of water, electricity, transportation fuels and natural gas. The percentage goal should state a target year and reference the target goal relative to a benchmark year.

TTUHSCEP will establish a new benchmark year set as fiscal year 2020. TTUHSCEP will set a 5% reduction in EUI and ECI throughout the campus over the span of five years, with a target of 1% reduction each year. TTUHSCEP will utilize the EUI and ECI to accommodate the addition of two buildings (Medical Science Building II and Oral Health Clinic) in FY2021, which adds approximately a total of 260k Sq. Ft. to the institution. A detailed breakdown of buildings and space type will be identified in the ENERGY STAR Portfolio Manager, as well as, EUI and ECI indicators for energy goal reduction.

Utility	Target Year	Benchmark Year	Percentage Goal
Water	FY2025	FY2020	5 %
Electricity	FY2025	FY2020*	5 %
Transportation Fuels	FY2025	FY2020	5 %
Natural Gas	FY2025	FY2020	5 %

*Texas Government Code Section 388.005(c) and (f). Entities who began energy conservation tracking prior to September 1, 2007 or in attainment areas, may substitute their own electricity benchmark year.

Strategy for Achieving Goals

The Strategy section must describe how the agency or institution plans to prioritize and implement cost effective utility efficiency measures in order to meet the established utility conservation goals.

TTUHSCEP has identified various projects to assist in our efforts to reduce utility consumption and improve our energy efficiency. Shown below are a list of energy projects:

- Installation of utility meters (electric, water, & gas) to monitor consumption and detect abrupt changes in real time.
- Locate and identify HVAC controllers for equipment that are outdated or damaged that require replacement to ensure proper control and operation of systems.
- Implementation of Lighting Controls Management Software to assist with scheduling and monitoring of lighting usage and consumption.
- Retrofit existing lighting fixtures to new LED fixtures with drivers compatible with Lighting Controls Management Software.
- Review existing control sequences for HVAC systems to identify program/logic that can be optimized to assist in energy conservation. Or implement new logic to complement existing systems.
- Install VFD's to constant speed motors on campus (if applicable).
- Ensure all new construction and existing building renovations meet applicable energy codes.

Implementation Schedule

The Implementation Schedule section must outline a proposed timeline for implementing utility cost reduction measures and a strategy for monitoring utility savings of the installed utility measures.

TTUHSCEP has identified the following projects for potential consideration in reducing the campus energy consumption. TTUHSCEP Engineering Services has performed cost benefit analysis of all the identified energy conservation projects. Currently, these projects are in various stages such as in planning, design, or implementation. The implementation schedule will be according to the availability of funds and building resources. TTUHSCEP goal will be to: establish Lighting Controls Management Server by FY2021, identify HVAC controller that need to be replace by FY2021, install utility monitors by FY2022, replace the majority of florescent lighting fixtures on campus by FY2024, & adjusted/revamp control sequences of HVAC systems by FY2025.

Finance Strategy

The Finance Strategy section must describe how the agency or institution plans to obtain funding for the recommended utility cost reduction measures. This section should show the estimated cost of all projects and the funding sources to be used.

TTUHSCEP utilizes a few different methods to obtain funding for energy projects to reduce the utility costs. One method is to establish capital projects for future fiscal years then allocate internal funding to be invested. Another is to re-invest utility savings realized from previous energy saving project. Lastly, to sought after rebates from utility providers, such as SCORE Program by El Paso Electric Company. Which provides incentive when installing high efficiency equipment during renovations or new construction.

Transportation Fuel Consumption (if applicable)

*If your agency maintains one or more state-owned vehicles and **does not** report fuel usage via the Texas Fleet System, document the total gallons of transportation fuel used by your facility and fleet vehicles below.*

Does your agency maintain one or more state-owned vehicles? ☒Yes ☐No

Does your agency report its fuel usage via the *Texas Fleet System*? ☒ Yes ☐ No ☐ No Vehicles

Transportation Fuel Type	Amount
Unleaded Gasoline*	Refer to Texas Fleet System
Diesel	"
Bio-Diesel	"
E85 (Flex Fuel)	"
Compressed Natural Gas (CNG)	"
Unleaded for Gas Hybrids	"
Liquefied Petroleum Gas (LPG)	"
Ethanol	"

*Do not include unleaded gasoline for gasoline hybrids

Employee Awareness Plan

The Employee Awareness Plan section must outline how the agency will make employees aware of utility cost reduction measures, both directly (affecting change in behavior) and indirectly (not designed to affect behavior).

TTUHSCEP communicates energy conservation practices to personnel and patients that occupy the facilities thru the webpage for TTUHSCEP "The Scope", memorandums, and emails. The key elements of TTUHSCEP Employee Awareness Plan are to prevent waste and assure conservation of resources. Shown below are initiatives broken down into two categories: Direct and Indirect:

Direct Initiatives (effecting change in behavior):

- Require all personnel to turn off lights, computers, printers, and any other office machine when labs, classrooms, and offices are unoccupied.
- Do not allow idle classrooms to be used as study halls. Instructed to use the library or small study rooms instead.
- Consolidate laboratory functions and utilize spaces more effectively.
- Do not allow comfort-heating appliances to be used to supplement the building heating system.
- Instruct custodians to turn off lights in hallways and offices after cleaning.
- Perform regular preventive maintenance on all major and high energy use equipment.

Indirect Initiatives (not designed to affect behavior):

- Establish institutional guidelines and standards for thermal comfort as listed in ASHRAE 55.
- Reduce the operating hours of air handling units and other main mechanical equipment.
- Identify equipment that can be switched OFF during nights and weekends for all facilities.
- Install lighting occupancy sensors and interlock with HVAC Systems.
- Implement control logics such as economizer operation using a combination of enthalpy and dry bulb temperature, discharge air reset inversely to return air temperature, and chilled water temperature reset control.

Section 4: Tenant Agency