Energy and Water Management Plan

Section 1: Instructions

The 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 2021. Save this form as “EWMP-Agency-FY2021.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: Alfonso Flores, Jr.
Title: Managing Director
Email: Al.Flores@ttuhsc.edu
Phone: 915-215-5157

Reporting/Submission Contact
Name: Al Flores
Title: Managing Director
Email: Al.Flores@ttuhsc.edu
Phone: 915-215-5157
**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 2021, 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.

In the fiscal year 2021, TTUHSCEP has included the addition of four buildings; Medical Science Building II, Oral Health Clinic, Facilities Support Building, and Clinical Business Support Building in FY2021 (addition of approx. 260k ft²). The impact of these additions has increased the overall source EUI for the TTUHSCEP Campus. We continue to retro-commission the HVAC systems in these new buildings to effectively use the building systems to reduce electrical consumption in these new facilities, especially for the use of the chillers in these new facilities. We continue to see an overall reduction in energy consumption in our existing buildings, a decrease in EUI, which aligns with the target goals listed.

TTUHSCEP continues to upgrade our older control systems to align with the new HVAC Management system. We have retrofitted and upgraded HVAC systems in the smaller building with RTU units. These upgrades allow the University to economize during cooler temperatures and increase the fresh air exchanges.

**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’s benchmark year is fiscal year 2020 and the goal is to reduce energy usage by 5% by fiscal year 2025, which includes a cumulative target reduction of 1% each year.

<table>
<thead>
<tr>
<th>Utility</th>
<th>Target Year</th>
<th>Benchmark Year</th>
<th>Percentage Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>FY2025</td>
<td>FY2020</td>
<td>5 %</td>
</tr>
<tr>
<td>Electricity</td>
<td>FY2025</td>
<td>FY2020*</td>
<td>5 %</td>
</tr>
<tr>
<td>Transportation Fuels</td>
<td>FY2025</td>
<td>FY2020</td>
<td>5 %</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>FY2025</td>
<td>FY2020</td>
<td>5 %</td>
</tr>
</tbody>
</table>

*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 replace 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: expand the Lighting Controls Management Server by FY2024, identify HVAC controller that need to be replace by FY2023, install utility monitors by FY2023, 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.
Energy and Water Management Plan

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

<table>
<thead>
<tr>
<th>Transportation Fuel Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unleaded Gasoline*</td>
<td>Refer to Texas Fleet System</td>
</tr>
<tr>
<td>Diesel</td>
<td>“</td>
</tr>
<tr>
<td>Bio-Diesel</td>
<td>“</td>
</tr>
<tr>
<td>E85 (Flex Fuel)</td>
<td>“</td>
</tr>
<tr>
<td>Compressed Natural Gas (CNG)</td>
<td>“</td>
</tr>
<tr>
<td>Unleaded for Gas Hybrids</td>
<td>“</td>
</tr>
<tr>
<td>Liquefied Petroleum Gas (LPG)</td>
<td>“</td>
</tr>
<tr>
<td>Ethanol</td>
<td>“</td>
</tr>
</tbody>
</table>

*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 (affecting 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**
We currently do not have any current major energy projects implemented at this time. All work has been completed based on funds availability and available resources. We will continue to re-establish a baseline on our current facilities as we have added approximately 250,000 of assignable square footage to the campus, thus increasing the energy demands of the campus. We are also looking to replace mechanical and electrical infrastructure to modernize the equipment and increase the efficiency ratings of the equipment that we have in place. We are planning this work in the FY23 fiscal year, which will likely run into the next two fiscal years.