

Fort Bend Independent School District

District Energy Plan

Approved October 23, 2017

EXECUTIVE SUMMARY

In accordance with Texas Education Code Section 44.902 and FBISD Policy CL (Legal), the Board of Trustees must adopt a long-range energy plan with the goal to reduce electrical use by five percent beginning with the 2008 state fiscal year. The plan must include strategies for achieving energy efficiency. This document will serve as the FBISD Energy Plan.

Recognizing that utilities are the largest expenditure for the District after payroll, we believe that the prudent use of our natural resources will aid tremendously in maintaining the highest level of fiscal responsibility. To that end, it is important to note that the strategies included herein represent the District's first steps toward developing a more robust plan to improve the effective and efficient use of energy. In an October 2016, internal audit of Energy Management, Gibson Consulting Group recommended that FBISD "develop an approved energy plan, set reduction goals and monitor performance". This Energy Plan fulfills the stated recommendation and maintains our key initiative of energy management and reduction of energy consumption.

This Energy Plan will establish the guiding principles to keep the District compliant, knowing that a successful energy management plan involves not only maintenance and operations staff, but also administrators, teachers, students, the community and designers. Education and awareness are powerful tools to create buy-in from everyone. Clear goals and baseline analysis allow for clear measurement of savings over time. To aid in this effort, the department will make changes to the plan once an Energy Consultant is retained to assist the district with the development of innovative and robust energy strategies.

FACILITIES ENGAGEMENT PROCESS

Implementation

Implementation of this plan requires the joint effort of the trustees, administrators, teachers, staff, support personnel, and students of the District. Our aim is to save utility dollars, reduce our carbon footprint and ensure good stewardship of our limited natural resources while ensuring an environment conducive to learning and working.

Objectives

- Raise awareness of utility consumption and opportunities for savings
- Reduce purchased utility consumption, while maintaining an acceptable indoor environment
- Measure and track utility usage
- Ensure that prudent conservation measures are used in construction and renovation
- Explore opportunities to lower costs (rates, billing structure, etc.) associated with utilities
- Create an Energy Committee to ensure representation of all District stakeholders
- Set reasonable guidelines to achieve successful energy management while providing an environment conducive to student achievement

Efficiency Strategies

As Fort Bend ISD continues to face increasing budget pressures, implementing strategies for energy savings can have a significant positive impact on the budget. By implementing policies for energy use

reduction in new construction and renovation as well as in building operations and maintenance, our school district can direct much-needed funds to student services and personnel.

The core of the District Energy Plan is to present the following six strategies:

Strategy #1: Use of Lowest Cost of Ownership Equipment

The Design and Construction Department will evaluate and recommend new and replacement HVAC equipment based on the lowest cost of ownership to the District. This will include, but not limited to, the initial purchase cost, maintenance costs and energy costs over the life cycle of the equipment.

Strategy #2: Tracking and Reporting of Utility Usage and Cost

A critical component of managing utility dollars is tracking and reporting utility usage and expenditures. This data aids in determining the effectiveness of our efforts and determining where those efforts may be best focused. It is the responsibility of the Energy Management department to track and report this usage in a usable manner with reasonable frequency by:

- Comparing current usage to historical baselines to account for current performance
- Benchmarking performance in order to assess if costs are reasonable
- Generating facility-specific reports to share with principals and administrators
- Generating District reports and posting on the District web site
- Evaluating conservation measures implemented by analyzing performance data
- Recommending improvement actions based on this data

Strategy #3: Generating Awareness of Usage/Auditing

It is the responsibility of the Energy Management department to generate awareness of the current state of our utility usage and cost based on compiled data provided to the District, as well as to communicate best practices to achieve greater savings. Energy Management's periodic visits to school campuses are to deliver an update on utility efficiency and to communicate additional opportunities for savings. Each campus will create student-led sustainability teams to perform monthly energy audits. Audits will include identifying lighting and projectors left on in unattended spaces, exterior doors left open and water spigots running unattended. Energy Management performs a walk-through audit of each school to ensure the school is operating efficiently and to identify potential areas for improvement. The department will conduct individual campus audits at least once every four years. Energy Management will share audit results with each campus and develop District-wide efficiency and reduction initiatives.

Strategy #4: Creating an Energy Committee

FBISD shall create an energy committee in order to ensure that all District stakeholders are included in creating efficiency programs and standards and to assist in the assessing and implementing energy reduction by acting as energy ambassadors. This committee may include interested parties from the administration, teacher representatives from each school, students and/or staff, as well as community members and board members who would like to participate. FBISD will select committee members on an annual basis.

The committee will conduct itself in the following manner:

- Meet on a quarterly basis at a minimum and additionally as needed
- Receive reports on current state of utilities in the District

- Review any plans and procedures to ensure that all factors are considered in implementing efficiency measures
- Determine and/or investigate additional efficiency measures for consideration
- Plan and implement energy programs
- Discuss or review any matters of concern that may arise
- Assist in communicating with all District stakeholders

Strategy #5: Facility Use Guidelines

The manner in which we operate District facilities will have the most significant impact on district utility costs. FBISD aims for the efficient use our District’s resources, similar to the manner in which we might do so in our homes. In order to control unnecessary costs and continually reduce energy utilization, the department has implemented the following measures have:

The Energy Manager sets reasonable general school day operating schedules for District buildings. The energy manager schedules the after-hours operation of HVAC (Heating, Ventilation and Air-Conditioning Equipment) to accommodate the needs of school business outside of these hours. Energy Management has scheduled the equipment to operate at optimal set point in all classrooms during the times listed below.

Scheduling Guidelines

Elementary Schools: 7:00 a.m. - 4:00 p.m.
 Middle Schools: 8:00 a.m. - 5:00 p.m.
 High Schools: 6:30 a.m. - 4:00 p.m.

- After hours, the campus scheduler must request the operation of HVAC equipment at least 2 working days in advance. This allows FBISD to accommodate all reasonable requests and to locate after-hours events in the most efficient manner possible. The Energy Manager will make periodic checks to ensure that the campus scheduler submits requests during actual facility usage time-periods.
- All events that can be conducted during normal school hours should be scheduled during that time period
- After-hours schedules for multiple functions should be scheduled to occur during the same time period and in the same area of the building whenever possible
- After-hours events should occur as soon after school as practicable.
- Requests should include the time-period in which the users will occupy the space. The energy management system will set up the appropriate heat-up or cool-down time necessary for the equipment in the space.
- Enterprise Funds will process rental requests per the signed rental agreement. Campuses should not submit requests for rentals.
- The custodial department will schedule after-hours requests for custodial work, not the campus.
- Due to the high cost of energy during the summer, FBISD will make every reasonable effort to limit summer scheduling or to consolidate activities to limited zones in a building.

Site Based Recommendations

- Personal, energy-using devices (i.e. refrigerators, microwaves, coffee makers, radios, lamps, space heaters, etc.) are strongly discouraged due to the cost incurred by the District and excess burden placed on pest management, safety, and building electrical load.

- The room occupants shall turn off the lighting when an area will be unoccupied for five minutes or longer. The room occupants are responsible for ensuring they turn off the lights in areas where occupancy sensors are not in place.
- Outdoor lighting should be off during the daytime. Please report any issues via the work order system.
- Employees shall turn off computers, monitors, copiers, fax machines etc. at the end of the day.
- FBISD will purchase Energy Star rated equipment, such as printers, copiers, refrigerators, etc. whenever possible.
- In order to minimize the intrusion of humid outside air, exterior doors and windows shall remain closed when the HVAC system is operating.

Strategy #6: HVAC Guidelines

- The Energy Manager will institute temperature set points that provide a reasonable level of comfort within the framework of appropriate dress. Generally, the set point will be 74 degrees in the cooling season and 69 degrees in the heating season.
- During unoccupied times, the temperature will be 85-90 degrees during the cooling season and 50-55 degrees in the heating season. This will protect against potential damage caused by freezing or humidity and decrease the time necessary to return the space to appropriate occupied conditions. This also provides a reasonable working environment for custodial crews. During periods of extreme heat, the Energy Manager will identify selected locations to provide a cool-down area for workers.
- The facility should submit hot or cold complaints via the work order system in order to address any problems as quickly as possible.
- In temporary buildings, or other areas in which the room occupant has control of the HVAC system, the room occupant should apply the same guidelines and the occupant has the responsibility to set back their system appropriately at the end of the day. Custodians should make appropriate adjustments if the occupants have not done so.