



Energy and Utility Management Plan and Procedures

Updated September 7, 2018 by:
Danny Helm
Energy Manager

Purpose

In accordance with Texas Education Code Section 44.902, the school board must establish a long-range energy plan which includes strategies for achieving energy efficiency. This plan and procedures document will serve as the district's long-range 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. This, in turn, aids in ensuring that more of every taxpayer dollar is used for creating the appropriate environment for exceptional student achievement.

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 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, in order to create and maintain a long range energy plan in accordance with Texas Education Code Section 44.902.
- Ensure that prudent conservation measures are used in construction and renovation
- Explore opportunities to lower costs (rates, billing structure, etc.) associated with utilities
- Maintain an Energy Committee to ensure representation of all district stakeholders
- Create Energy Efficiency and awareness through the use of the Energy Dashboard
- Set reasonable guidelines to achieve successful energy management while providing an environment conducive to student achievement

Energy Efficiency Goals

Track and Report 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. This is accomplished 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, to maintain transparency
- Evaluating conservation measures implemented by analyzing performance data
- Recommending improvement actions based on this data

Generate Awareness of Usage/Auditing/Incentive Programs to Save

With the data that is compiled and provided to the district, it is the responsibility of the Energy Management department to generate awareness of the current state of our utility usage and cost, as well as to communicate best practices to achieve greater savings. Additionally, other educational opportunities in regard to utility efficiency may be implemented to raise awareness within the district.

Periodic visits to school campuses are conducted to deliver an update on utility efficiency and to communicate additional opportunities for savings. A walk-through audit of each school is performed to ensure the school is operating efficiently and to identify potential areas for improvement.

District-Wide Energy Committees

An energy committee has been formed and maintained in order to ensure that all district stakeholders are included in creating efficiency programs and standards. This committee may include interested parties from the administration, teachers, students and/or staff, as well as community members and board members who would like to participate. Committee members will be selected 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

Facility Use Guidelines

The manner in which we operate district facilities will have the most significant impact on district utility costs. We aim to efficiently use our district's resources, similar to the manner in which we might do so in our homes. In order to control unnecessary costs, the following measures have been implemented:

Scheduling Guidelines

- The Energy Manager sets reasonable general school day operating schedules for district buildings, listed below. Additional operation of HVAC (Heating, Ventilation and Air-Conditioning Equipment) is scheduled to accommodate the needs of those conducting appropriate school business outside of these hours, as described below. Equipment will be scheduled to operate at optimal setpoint in all classrooms during the times listed below.

Elementary Schools: 8:20 a.m. - 4:35 p.m.

Junior High Schools: 8:55 a.m. - 5:05 p.m.

High Schools: 7:35 a.m. – 3:50 p.m.

- Additional operation of HVAC equipment must be requested through the campus scheduler and submitted via FS Direct at least 2 working days in advance. This allows sufficient time to ensure schedules are accommodated properly. Efforts will be made to accommodate all reasonable requests and to locate after-hours events in the most efficient manner possible, according to location and attendance. Periodic checks will be made to ensure that requests are being made during actual facility usage time periods.
- Requests should include the time period in which the space will be occupied. The control system operators will set up the appropriate heat-up or cool-down time necessary for the equipment in the space.
- Rental requests will be processed per the signed rental agreement and by the rental office. Campuses should not submit requests for rentals.
- After-hours requests for custodial work are to be scheduled through the custodial department and not at the campus level.
- Due to the high cost of energy during the summer, every reasonable effort will be made to limit summer scheduling or to consolidate activities to limited zones in a building.
- More specific information regarding scheduling may be found on the Intranet, under Maintenance.

HVAC Guidelines

- The Energy Manager will institute temperature setpoints that provide a reasonable level of comfort within the framework of appropriate dress. Generally, the setpoint will be 72-74 degrees in the cooling season and 68-70 degrees in the heating season.
- During unoccupied times, the temperature will be setup to 85 degrees during the cooling season and setback to 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, selected locations may be operated to provide a cool-down area for workers.
- Hot or cold complaints should be submitted via the MaintenanceDirect 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 same guidelines should be applied 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.

Other Guidelines

- Personal, energy-using devices (i.e. refrigerators, microwaves, coffee makers, radios, lamps, etc.) are strongly discouraged due to the cost incurred by the district and excess burden placed on pest management, safety, and building electrical load. Space heaters are prohibited due to fire risk.
- Lighting is to be turned off when an area is unoccupied. The room occupants are responsible for ensuring the lights are turned off in areas where occupancy sensors are not in place.
- Natural lighting should be used when and where possible, especially in winter.
- Outdoor lighting should be off during the daytime. Please report any issues via the MaintenanceDirect work order system.
- Computers, monitors, copiers, printers etc. should be turned off at the end of the day.
- Irrigation should not occur when rains have been sufficient or during school hours. Please report any issues to Service Center Dispatch at 77612.

Purchase Energy/Equipment & Construction Guidelines

The cost of energy has a significant impact on the district's annual utility costs. Therefore, it is the responsibility of the Energy Manager to investigate opportunities to lower electricity rates, as well as identify savings opportunities in billing for all utilities.

In addition, the Energy Manager will be included in discussions regarding equipment selection for devices that consume a significant amount of energy, such as HVAC and lighting. The Energy Manager will also be involved in discussions on construction and renovation design in order to review for efficiency opportunities. These decisions can have a significant impact on potential future costs and it is prudent that the district have all information prior to decision-making.

General Equipment Guidelines

The Energy Manager maintains an Energy Design Guideline for construction and renovation projects with minimum criteria for cost-effectiveness. These guidelines should be followed in all projects as they represent the greatest value to the district, while maintaining the appropriate conditions. Some of the minimal criteria are listed below:

- Classroom lighting should be 28w T8 lighting with electronic ballasts
- Gymnasium lighting should be T5 lighting with electronic ballasts
- LED lamps should be used instead of incandescent
- HVAC unit selection should be evaluated for life cycle cost, where possible
- Plumbing fixtures should be low-flow
- An Energy Management System or network thermostat should be included

Please contact the Energy Manager for the most current Energy Design Guideline.

Explore Opportunities for Efficiency Savings

There are several opportunities for efficiency savings in the district that require further investigation in order to determine the cost and savings benefit. The following items have been evaluated by the Energy Manager and viable projects will continue to be delivered to the administration for consideration. These opportunities may include, but are not limited to:

- Additional LED Lighting Retrofits
- Additional Power Factor Correction
- Incentives and grants on construction and renovation projects
- Air Handler & Plant Optimization
- Limiting of After-Hours Activities where appropriate
- Consideration of Irrigation Control improvements
- Retrocommissioning of existing buildings
- Central Automation of Outdoor Lighting
- Demand control programing
- Energy Star certification

It is also the responsibility of the Energy Manager to explore other funding opportunities, such as incentives and grants.

Contact Information

Any additional thoughts or comments are welcome and may be directed to the Energy Manager. Energy Manager, Danny Helm, may be reached at 682-867-7655 or dhelm@aisd.net