



Long-Range Energy Plan

September 2024

Grand Prairie ISD Long-Range Energy Plan

Purpose

In compliance with [Texas Education Code Section 44.902](#), the board of trustees of a school district shall establish a long-range energy plan to reduce the district's annual electric consumption by five percent beginning with the 2008 state fiscal year and consume electricity in subsequent fiscal years in accordance with the district's energy plan.

This plan ensures that energy use aligns with the [district's energy reduction goals](#) in subsequent fiscal years. It outlines different strategies for efficient energy management plans with relevant action items and plans.

Mission

To create a sustainable and energy-efficient learning environment that nurtures environmental stewardship, reduces operational costs, and fosters a culture of sustainability among students, staff, and the community.

Benefits

- **Financial Savings.** By lowering energy consumption, the district will see a significant reduction in electricity bills, providing savings that can be redirected toward educational programs or facility improvements.
- **Environmental Impact.** Reducing energy consumption decreases the district's greenhouse gas emissions, contributing to a reduction in overall environmental impact.
- **Sustainability Culture.** Engaging students and staff in energy conservation efforts promotes a culture of sustainability and personal responsibility toward energy use and environmental protection.

Strategy 1: District-Wide Energy Plan Engagement

Engaging the entire district in energy conservation efforts is crucial for achieving meaningful and sustainable results. Energy savings initiatives are most effective when they involve all stakeholders—administrators, teachers, students, and facilities staff—who each play a role in implementing and maintaining energy-efficient practices.

Objectives	Action Items and Key Results
<p>a. Establish Energy Committee</p>	<p>Formation of Committee: Create a dedicated committee consisting of school administrators, teachers, students, and facilities staff to lead energy initiatives and ensure broad stakeholder involvement.</p>
	<p>Regular Meetings: The committee will meet quarterly to review and update energy plans, oversee the implementation of energy-saving programs, and address any challenges.</p>
	<p>Ongoing Education: Provide continuous education to the school community about the energy plan, including workshops, seminars, and other learning opportunities.</p>
<p>b. Launch Awareness Campaigns</p>	<p>Educational Workshops: Organize workshops and create student committees to educate the school community about energy goals and initiatives. Use posters, digital communications, and other materials to spread awareness</p>
	<p>Website Updates: Post energy goals and progress on the GPISD website to engage and motivate the community to participate in energy-saving efforts.</p>
	<p>Employee Handbook Updates: Update the Employee Handbook to include information on energy conservation practices and expectations.</p>

Strategy 2: Energy Usage and Benchmarking

To effectively reduce energy consumption, it's essential to understand current usage patterns and identify areas where improvements can be made. Energy audits and monitoring provide the data needed to set realistic goals, track progress, and make informed decisions.

Objectives	Action Items and Key Results
a. Conduct Yearly Baseline Energy Audits	Comprehensive Audits: The Energy Management team should conduct thorough energy audits each year to establish baseline data and identify areas for potential improvement.
	Reporting: Produce detailed reports of the audits to share with stakeholders, highlighting progress and areas needing attention. The energy management team is responsible for generating the fiscal year energy report.
b. Efficient Energy Monitoring System	Energy Management Software: Utilize energy management software to analyze energy consumption patterns and pinpoint opportunities for savings. Ensure that all electrical meters are registered with Smart Meter Texas .
	Building Management System (BMS): Integrate BMS to monitor and manage energy use across schools, optimizing systems such as lighting and HVAC for improved efficiency.
	Energy Star Portal: Use the EPA Energy Star Portfolio Manager tool to assess and score the energy performance of each school. Ensure that the data is regularly updated to maintain accurate and current benchmarking results.

Strategy 3: Efficient Heating and Cooling

Heating and cooling systems are major energy consumers in any facility. Optimizing their operation through smart scheduling and maintenance can lead to significant energy savings.

Objectives	Action Items and Key Results
a. Temperature Setpoints During Summer and Winter Season	Thermostat Guidelines: Set thermostats to 72-76°F in summer and 68-70°F in winter. During unoccupied periods, set temperatures to 85°F in summer and 55°F in winter, adjusting to 65°F during severe winter storm or outside temperature is below 32°F to protect equipment from damage caused by freezing.
	Occupant Control: In areas where the room occupant has control over the HVAC system, the same guidelines should be applied. The occupant is responsible for setting back their system appropriately at the end of the day. Custodians should make the necessary adjustments if the occupants have not done so.
b. Facilities Scheduling	Temperature Setbacks: Set air conditioning to a setback mode 15 minutes after classes end each day and turned on only when school hours resume the next day, except for approved after-hours areas.
	Event Scheduling: Ensure after-hours functions are scheduled and approved through FMX as per GPISD guidelines .
c. Building Envelope and HVAC Maintenance	Insulation Improvements: Enhance insulation in walls, roofs, and floors to reduce heat loss and gain. Ensure all doors and windows are closed and secure.
	Efficient Windows and Doors: Install energy-efficient windows and doors and use thermal imaging to identify insulation gaps.
	Regular HVAC Maintenance: Schedule regular maintenance for HVAC systems and upgrade pumps and fans to variable frequency drive (VFD) systems where possible. Implement cooling-tower water treatment program to improve efficiency of cooling tower fans.

Strategy 4: Low Energy Lighting System and Electrical Asset Management

Lighting and various school equipment are significant contributors to a facility's energy consumption. Upgrading to more efficient lighting solutions and optimizing equipment use can lead to substantial energy savings.

Objectives	Action Items and Key Results
<p>a. Efficient Lighting Solutions</p>	<p>Lighting Upgrades: Replace incandescent and fluorescent bulbs with energy-efficient LEDs and install dimmers and daylight harvesting systems to adjust lighting based on natural light levels. Natural lighting should be used when and where possible.</p>
	<p>Automatic Controls: Install occupancy sensors and programmable lighting controls in classrooms, restrooms, and common areas to ensure lights are off when not in use.</p>
	<p>Lighting Guidelines: Implement guidelines requiring occupants to turn off lights when leaving rooms and ensure custodians verify lights are off after hours.</p>
	<p>Outdoor Lighting: Ensure outdoor and parking lot lighting is off during daylight hours.</p>
<p>b. Electrical Asset Management</p>	<p>Inventory Assessment: Conduct an inventory of all electrical equipment to identify high-energy users and replace outdated equipment with Energy Star-rated models if applicable.</p>
	<p>Power Quality Audits: Energy Management team should perform power factor and power quality audits to detect and address energy inefficiencies.</p>

Strategy 5: Green Operations

Green operations focus on incorporating energy conservation practices across various aspects of facility management. This includes optimizing kitchen operations, managing IT equipment, and reducing the use of personal appliances.

Objectives	Action Items and Key Results
<p>a. Kitchen and Cafeteria Operations</p>	<p>Conduct a Comprehensive Inventory: The kitchen supervisor should perform a thorough inventory of all kitchen equipment and replace any inefficient appliances with Energy Star-rated models to ensure optimal energy efficiency.</p>
	<p>Unplug Equipment During Breaks: Ensure that all kitchen equipment is unplugged when not in use, particularly during extended school breaks, to prevent unnecessary energy consumption.</p>
	<p>Optimize Freezer Use: Set all freezers to their optimal temperature settings. In schools with multiple freezers, consolidate all items into one or two freezers and turn off the remaining units to reduce energy use.</p>
	<p>Manage Cafeteria Lighting and Temperature: Turn off all lights and set the thermostat to an unoccupied mode when the cafeteria is not in use to conserve energy</p>
	<p>Deactivate Vending Machines During Breaks: Turn off vending machines during long school breaks. For machines with low usage, combine products into fewer machines and turn off the rest to reduce energy consumption</p>
<p>b. IT Equipment</p>	<p>Evaluate IT Equipment Energy Use: Assess the energy consumption of IT equipment, including server rooms, computer labs, and printer areas. Implement power management settings on all devices and encourage users to turn off equipment when it is not in use to reduce overall energy consumption.</p>

Objectives	Action Items and Key Results
c. Personal Appliances	Guidelines Implementation: Implement Personal Appliance Guidelines to minimize the use of personal appliances.
	Shared Appliances: Utilize shared appliances in teacher and staff lounges to reduce the need for personal devices.
d. Participate in Demand Response	Implement Demand Response Guidelines: Energy Management should implement demand response protocols from June to September each year to reduce peak demand charges. This involves following established procedures to manage energy consumption during high-demand periods effectively.
	Optimize HVAC Settings and Manage Loads: The HVAC team should adjust HVAC setpoints according to demand response guidelines during events. Head custodians will assist by ensuring that no unnecessary energy loads are present, further supporting energy conservation efforts during these critical periods.
e. Summer Break Programs	Optimize Summer Scheduling: Make a concerted effort to limit summer scheduling and consolidate activities to fewer schools or facilities to reduce energy consumption and operational costs.

Strategy 6: Facility Design and Construction

Incorporating energy-efficient design principles into new facility projects and renovations ensures that buildings operate efficiently from the outset. This strategy minimizes energy consumption and reduces environmental impact throughout the facility's lifespan.

Objectives	Action Items and Key Results
a. Design Integration	Incorporate Energy-Efficient Features: Ensure that new facility designs integrate high-performance insulation, energy-efficient HVAC system and sustainable materials to enhance overall energy efficiency and sustainability
	Explore Renewable Energy Options: Investigate the potential for incorporating renewable energy sources, such as solar power, to enhance sustainability and reduce reliance on non-renewable energy.
b. Adapt Energy-Efficient Design Standards	Adapt to Recent Energy-Efficient Standards: Ensure that all renovations and new projects adhere to the latest version of CHPS (Collaborative for High Performance Schools) or LEED (Leadership in Energy and Environmental Design) standards. This includes integrating updated sustainable practices and energy-efficient technologies to enhance building performance and minimize environmental impact.

This document is maintained by the GPISD Energy Management Team. For comments or suggestions, please contact darwin.saldua@gpisd.org or joshua.jackson@gpisd.org. Version 2024.