Energy-Efficient Education
Cutting Utility Costs in Schools

Amid recent state and national reports of rising energy bills, Comptroller Carole Keeton Rylander directed her State Energy Conservation Office (SECO) staff to work with her nationally recognized Texas School Performance Review (TSPR) team to find ways to help schools hold the line on energy costs.

Less than 51 cents out of every education dollar is spent on instruction, and one of Comptroller Rylander's goals for Texas in the 21st Century is to drive more of every education dollar directly into the classroom, where it belongs. While schools can't operate without lights, heating and cooling, they can reduce their energy bills to increase the amount of funds available for instruction.

SECO administers a variety of energy efficiency and renewable energy programs that can significantly reduce energy consumption in school districts. For example, the Energy Management Partnership Program has identified more than $10 million in energy savings for school districts in Texas. The LoanSTAR program is recognized as the nation's largest and longest-running energy efficient, government run public loan program. The program has helped public entities realize energy efficiency savings of more than $94 million and predicts savings of more than $500 million by 2020.

Recognizing the potential for savings, Comptroller Rylander asked SECO and TSPR to find and share new ways to equip school districts with the tools necessary to reduce the cost of operating facilities. These strategies for controlling energy costs, when implemented through a comprehensive program of energy management, can help districts direct more education dollars to the classroom.

Energy Management Goals

According to a February 2001 Dallas Morning News article, the Dallas schools' gas bill for December 2000 was $398,612, a jump of 170 percent over the $147,756 bill for December 1999. District officials expect their gas bill for the 2001 school year will be $877,000 over budget. In January 2000, the Terrell Independent School District (ISD) spent $4,400 to heat the entire district: eight campuses and two smaller buildings. In January 2001, it cost more than $10,000 to heat just one school, Terrell High. Mesquite ISD reports heating bills in some less energy-efficient buildings have gone up 170 percent since 1999. According to the same article, in

many school districts, energy costs are the second-largest item in their annual budgets, behind salaries. The U.S. Department of Energy in its information on EnergySmart Schools at http://www.eren.doe.gov/energysmartschools/about.html reports that American primary and secondary schools spend more than $6 billion each year on energy. Data reported to the Texas Education Agency (TEA) through the Public Education Information Management System (PEIMS) in 1998-99 shows Texas public schools spent $660 million for utilities. Approximately $450 million of that amount was for electricity to heat, cool and light their facilities.

The goal of energy management is to keep operating costs down by reducing energy waste while providing a safe, comfortable environment for learning. Reaching this goal is complicated. Districts are required to meet federal, state and local rules and regulations regarding Americans with Disabilities Act (ADA) facility modifications, indoor air quality, student-teacher ratios and a laundry list of local priorities that can impact a district's operating budget.

The energy cost to operate school facilities is sometimes overlooked when they are designed and built. Most districts will operate and maintain their facilities for 25 to 50 years and in some cases even longer. It makes sense to invest in quality materials, energy-efficient equipment and a solid maintenance program.

The maintenance budget should cover day-to-day maintenance as well as preventative maintenance needed to keep the facility running efficiently. In recent years, school districts have been faced with higher operating costs and less funding. A number of districts have paid for the higher operating costs by reducing maintenance and other budgets that affect the district's facilities.

Districts that are successful in keeping their energy costs down typically have implemented a districtwide energy management program. The most successful energy management programs reflect a number of common denominators that can guide the novice in setting up a locally controlled energy management program. While each district is unique, there are energy conservation recommendations that can be used by all.

1. Establish an energy policy and energy conservation plans for the district and individual campuses.

The board, superintendent, principals, teachers, students, cafeteria workers, facility managers and cleaning crews should all be involved in developing an energy policy and plan for your school or district. Problems must be prioritized and a process set in place to determine what changes can realistically be made through short- and long-term goals to increase energy efficiency in your buildings. Saving energy saves money and helps protect the environment. Be sure your message about saving energy is relayed to everyone. Call a special assembly, make posters for the halls, make reminder announcements on the public address system and write articles for the school newsletter. The program must be reinforced throughout the school year. Without reminders to save energy, your school's occupants will fall back into old energy-wasting habits. The money saved is money that can be returned to the school for educational programs.

Obtain commitment from the top. Without a commitment from the school board and the superintendent, energy management either won't get off the ground or may be abandoned at the first sign that someone in the district is unhappy with the program. The road to a successful energy management program begins with a strong signal from the board that energy efficiency is a district priority.

Formalize this commitment in a written policy statement that should cover a number of important points. A good policy:

- Acknowledges the rising utility costs of the district and the necessity for energy cost controls.
- Sets realistic and attainable goals and timelines for accomplishing these goals.
- Applies to the entire district, not just one part, and requires a commitment from all staff and students.
- Authorizes or designates an energy manager or advocate who answers directly to the superintendent and board.
- Requires the preparation of an energy management plan for board approval that will keep the program visible, relevant and responsive.
- Allots an energy management budget that is directly linked to expected savings.

The length and level of detail of the policy statement can vary, depending on the size and organizational complexity of the district and the disposition of the board.

Establish a realistic energy-saving goal. To set a goal, the board and administration must know what is happening today and what the experts say is possible if conditions are optimal. The goal should be realistic and attainable within a predetermined amount of time. The most desirable results having the greatest probability of being achieved should be defined. But, having a goal that is not known or understood by the people who control the light switches and thermostats is a sure-fire formula for failure. The policy must recognize that energy management is something everyone in the district, including staff and students, must be committed to accomplishing. In the American School and University Magazine's *30th Annual School Maintenance and Operations Cost Study: Dwindling Support*, the national cost for electricity, gas and other fuels ranged from 90 cents to $1.16 per square foot of facilities, or an average of approximately $1 per square foot. How does your district compare? How do individual buildings within your district compare? The U.S. Department of Energy provides some interesting statistics at: http://www.eren.doe.gov/energysmartschools/about_stat.html for example, nationally, energy use in schools is $100 per student per year. In Texas, the average is about $165 ($660 million in energy costs divided by 3.99 million students). This might indicate that Texas has room for improvement. Does your district have room for improvement?

Make energy-saving goals and strategies applicable to all. No group or organization should be exempt from the district's energy management policies and goals. Certainly, there will be some areas of the district that use more energy than others. For example, certain career and technology-related programs use heavy equipment that, by nature, uses a significant amount of energy. Sports stadiums have lights that require a tremendous amount of power. While these are important activities, there are things that can and should be done to conserve energy, and everyone must understand his or her role in the process. And, by no means should the central administration office be exempt from conservation measures.

Designate an energy manager. Someone within the district or school needs to be a strong advocate for energy conservation. This person should understand the basic concepts of energy-using systems and energy accounting and, even more importantly, should possess strong communication and excellent organizational skills. The designated or hired energy manager usually reports to the superintendent and, from an organizational standpoint, should have sufficient authority to implement programs and obtain cooperation from district staff. Some of the problems that will arise if the energy manager does not have sufficient authority will

come when difficult recommendations are made that will impact major functional areas of the district, like facility maintenance and operation or technology. Directors and managers of affected areas may be resistant to change, and the energy manager must have the authority to work with these people to resolve the issue in a way that meets their needs but still conserves energy.

One of the initial tasks of the energy manager includes compiling energy consumption data and working with the maintenance department and other operational personnel to develop energy-efficient operation and maintenance procedures for board approval.

The energy manager will regularly report to the board on the status of the program and on any new initiatives that are being considered. Program results are expected to be quantified in actual dollars saved as well as cost avoidance over the base year. This means that the manager will need to establish a tracking system for base-year costs and usage rates, so accurate savings estimates can be made.

Develop a plan that keeps the program visible, relevant and responsive. When you start an energy management program, make sure the staff and students are aware of the goal and plan. While the board may have established the policies, the superintendent, principals, teachers, students, cafeteria workers, facility managers and cleaning crew must all be involved in developing the plan. Brainstorm about ways to save energy in your school. Use experts from within your community to help you come up with ideas.

Maintain interest in the program by sending newsletters and memos noting the latest accomplishments. Also, implement an incentive program. You can have competition between campuses; the campus that achieves the goal first will be rewarded. This reward can be a plaque or some type of compensation for their efforts.

By keeping the program visible, you can continue to increase savings. If you continue to remind people of the program, they will continue to participate and come up with new ways to reduce energy. Involving the students will have an added advantage of fostering a sense of ownership of the building. Students will be less likely to vandalize facilities if they feel pride in their buildings.

In 1997, the Wichita Falls ISD in North Texas began the process of identifying the energy equipment upgrades and improvements needed to improve school operations and reduce costs. Working with Rebuild Texas, led by SECO, and Texas A&M University's Energy Systems Laboratory, savings opportunities were identified through heating, ventilating and air

conditioning (HVAC) system upgrades and modifications, including chiller replacements, air handling unit replacements, control system upgrades, energy management system installations and modifications, general lighting system upgrades, lighting controls, stadium lighting modification and upgrade, and gymnasium lighting retrofits.

The Wichita Falls ISD project has been monitored by Texas A&M University. The project cost $2.5 million and will pay for itself in less than ten years with annual savings of $293,090.

In February 2001, Wichita Falls ISD was honored by the U.S. Department Of Energy Rebuild America and Rebuild Texas for successfully completing a program to retrofit its existing schools. At this time, the Wichita Falls ISD schools have qualified as Energy Star Buildings. Final certification by a professional engineer is underway with guidance from Texas A&M University.

Link the budget to the plan. Sometimes it costs money to make money. Some energy savings cannot be achieved without investing in more energy-efficient equipment, in maintenance, in personnel or in monitoring systems. Because the idea is to save money and energy, whenever money is spent there should be a clear cost-benefit analysis that shows the expected return on the investment. The board should hold those responsible for implementation accountable for the results they promised.

The annual budget needs to contain funding to keep all equipment operating at peak efficiency through preventative maintenance and planned replacement. Keeping your facilities' equipment operating efficiently can help hold down energy costs as well as improve indoor air quality and indoor comfort.

Budgeting for preventative maintenance will allow for needed repairs to equipment. By maintaining the equipment, you will increase its useful life and improve its performance. Budgeting for the planned replacement of equipment is a helpful way to reduce the need for bonds and other one-time, large expenditures. For example, expending $50,000 per year to systematically replace aging furnaces may be manageable, whereas a one-time expenditure of $1 million for 20 furnaces might require a bond.

Additional Resources:

Below is an additional resource you may find helpful. Information in the document and URL listed below are not necessarily endorsed by this agency, only provided as a resource.

2. Turn it off or turn it down when not in use.

Common sense says lights, air conditioners and heating units should be turned off or down when a building is not in use. But, getting everyone to do their part is sometimes easier said than done. And, there are some innocuous-looking pieces of equipment that use energy that you may not think about, like soft drink machines and computer monitors. One way to get everyone to save energy is to set some guidelines or procedures that everyone can follow.

The Mount Pleasant ISD in East Texas has an energy management program, and from 1995-96 through 1997-98, the district achieved an annual average of $178,000 in cost avoidance, when current costs are compared to consumption prior to implementation of their energy management program. The district's energy management program focuses on educating people about the importance of turning off devices or lights when not in use.

Lights. The amount and quality of light in buildings affects our health, safety, productivity and comfort. Lighting accounts for approximately 30 percent of school energy bills. Using more light than necessary and leaving lights on when a room is not in use are common mistakes. Turn lights off in unoccupied rooms. The savings are instantaneous.

One way to cut down on lighting costs is to make maximum use of natural lighting. Studies have shown that students learn better in natural light than in artificial light. Use partial lighting and dimmer switches in areas that are suitable for this technique. Teachers should experiment with light levels in classrooms and determine the optimum level for different tasks such as reading and taking notes.

Using energy-efficient bulbs and ballasts can be a quick energy win. New lighting technologies that have developed over the past 10 years can help reduce lighting costs by 30 to 60 percent and, at the same time, enhance lighting quality and reduce environmental impacts. All fluorescent and high-intensity discharge lamps require an auxiliary piece of equipment called a ballast. Ballasts have three main functions. First, they provide the correct starting voltage, because lamps require a higher voltage to start than to operate. Next, they match the line voltage to the operating voltage of the lamp, and finally, they limit the lamp current to prevent immediate destruction. Electronic ballasts improve fluorescent system efficiency by converting the 60 Hz (hertz are a measure of frequency) input frequency to a higher frequency, usually 5,000 to 40,000 Hz. Lamps operating at these higher frequencies produce about the same amount of light, but consume

12 to 25 percent less power. Other advantages include less noise, less weight, virtually no lamp flicker, and some models have dimming capabilities.

MYTH: There is a myth that frequently turning fluorescent lights on and off can cause premature failure of the bulbs and end up costing the school district more for bulbs, labor, etc. The misconception is that an electrical surge occurs when fluorescent lights are switched on, and that this surge consumes much more energy than could ever be saved by turning out the lights.

FACT: The electrical surge is extremely short and insignificant. The wear on the light bulbs is far outweighed by energy savings when the lights are turned off.

Another option to consider is installing motion sensors. The lights will automatically be turned off if no motion is detected in a room or hallway within a stipulated period of time. Leaving lights on unnecessarily for just one hour a day increases electricity costs by 5 to 10 percent per month. For example: let's say you have a room with two banks of 3 light fixtures. Each fixture has two 40-Watt fluorescent bulbs. In one hour, you're using 480 Watt-hours or 0.48 kilowatt-hours (kWh). On the other hand, if those lights are turned off just two hours a day, you will save almost 1 kWh and keep almost 1.6 pounds of carbon dioxide out of the air. Instruct cleaning crews to turn lights on only in the room they are cleaning and to turn them off as they leave.

Exit Signs. Every school has a dozen or more very important signs to guide you to the nearest exit in case of a fire or other emergency. The signs are lit to make them visible at night or if the corridor is filled with smoke. They even have back-up battery power so they will operate during an electrical failure.

By law, these signs must operate 24 hours per day, seven days per week all year. It would be a bad idea to install switches on them to turn them off when no one is in school, since one mistake could result in the loss of life. This is one energy-using device that really does need to be on all the time.

A typical exit sign contains two incandescent light bulbs. The bulbs are usually 15 or 20 watts each, adding up to 30 – 40 watts per sign. Although that's a low wattage, energy consumption adds up, due to the constant operation. For example, 365 days per year times 24 hours per day equals 8,760 hours per year; 8,760 hours times 30 watts is 262,800 watt hours or about 263 kWh (thousand Watt hours). An average cost in Texas for a kWh is 8 cents. At that rate, energy costs for a year of operation will be $21 for the 30W sign and $28 for the 40W sign. That doesn't seem too bad

for a device that could save your life, but costs add up when you consider all the schools in Texas.

There are more than 7,300 campuses across the state. If each school has an average of 10 exit signs, that would mean 70,000 signs are lit 24 hours a day 365 days a year. The total energy bill for emergency exit signs would be $1.5 to $2 million per year. Pollution from generating the electricity for the signs is not included in this cost.

A new type of exit sign is widely available. It uses LED (Light Emitting Diode) arrays that consume 1 Watt, instead of incandescent bulbs that consume 15 to 20 watts each. LED technology reduces the energy use of an exit sign to about 18 kWh per year, for a cost of only $1.44. Each LED exit sign will save $20 or more per year, compared to an incandescent sign, and do the same job of helping to save lives. Another benefit is the long life of LEDs. Incandescent bulbs for exit signs are special long life bulbs that last from 2000 to 5000 hours (regular incandescent bulbs last about 750 hours), but still require replacement about two to four times each year. LED bulbs last 20 to 80 years under normal sign usage! That means a lot less climbing up and down ladders to replace bulbs for maintenance personnel.

Soft Drink and Vending Machine Lights. The lights in soft drink and vending machines help advertise the products inside. Who pays for this advertising? Your school pays for it in the electric bill. The average soft drink machine uses two fluorescent bulbs, which total 80 watts. These bulbs light nearly the entire front of the machine. Add to this the energy required to operate the ballast, a component required to alter the electricity when using fluorescent bulbs. Using a very conservative estimate of only 2 kWh per day usage, a soda machine uses an annual total of 730 kWh just for lights. At an average rate of 10 cents per kWh, this amounts to $73 per year for just one machine!

Through aggressive energy management, the Wylie ISD just east of Dallas reduced their utility budget by 12 percent between April 1, 1999 and April 30, 2000. As part of Wylie ISD's energy management program, they removed light bulbs out of the soft drink machines and saved about $2,000 per year.

Computer Screen Savers and Monitors. Screen savers prevent screen damage and may provide entertainment. But, while those flying toasters or wacky designs are displayed on your screen, your computer is accessing the CPU and maybe the hard drive, which causes your computer to use energy just as if you were working on a document. Even screen savers that make the screen go blank don't significantly lower energy use.

The best way to save your screen and save energy at the same time is to turn off your computer when you are not using it. If you will be away for 30 minutes or more, turn everything off – the monitor and the CPU.

The second best way to save your screen and save energy is to turn off your monitor (while leaving the CPU on) if you will be away 15 minutes or more. Your monitor uses the most energy and simply switching if off when not in use will cut your energy use. The CPU will continue to use energy but this is a good compromise. There are even hardware devices that detect keyboard inactivity and automatically cut power to the monitor until someone touches the keyboard.

There is a third way to save energy and your monitor's screen at the same time. Every computer user should be using this method regardless of whether they are doing the first two. Use the power management features of your computer. Unless your computer is very old, you will have some options for power management (PM). Power management uses software loaded in your computer to cut power to the monitor and make your computer "sleep."

If you follow these simple guidelines, the Department of Energy claims that your screen and your whole system will last longer.

Heating and cooling equipment. During the day, thermostats should be set at 68 degrees during the heating season and 78 degrees during the cooling season. Set back the thermostats at night and weekends for optimum efficiency. For every degree that the thermostat is turned back, energy is saved. The actual amount will depend upon your use and billing rates. School policies should prohibit leaving windows or doors open while heating and cooling systems are operating. Also, some electric rates are set based on highest peak consumption, called peak load charges. When electricity use spikes at one time, on one day, the district may have to pay a higher rate for months to come. In one district, one day's peak energy consumption set the rate for the district for the next twelve months. The result was devastating for the district. Using high energy consuming equipment on a staggered cycle can help the district avoid energy use spikes. Some districts have successfully used timers to automatically turn on equipment at timed intervals to avoid spikes.

The Comal ISD in Central Texas implemented an energy conservation program and partially implemented an energy management system. Some of the procedures for the district's energy conservation program include: setting thermostats at 74-76 degrees for cooling and at 68-72 degrees for heating, turning lights out when rooms are not in use, discontinuing the use of space heaters and unplugging all unnecessary equipment before leaving school.

Comal ISD also installed an automated energy management system in nine of its 16 schools. Comal ISD employs a part-time energy manager to coordinate the district's energy conservation program and energy management system.

Given Comal ISD's heated and air-conditioned space of more than 1.3 million square feet and its energy cost of just over $716,000, TSPR found in May 1999 that the Comal ISD used 54 cents per square foot of energy. The EPA estimates the average level of school district energy costs per square foot is $1. Comal ISD's energy costs are significantly below this benchmark by 46 cents per square foot, saving the district $600,000 annually.

Water heaters. Heating water can use a lot of energy. Equip heaters with timers and temperature settings regulated according to task. The water temperature in lavatories and classrooms should not be set higher than 90 degrees. Water for showers should not be set higher than 100 degrees. It is more efficient to heat water when needed in science labs than to maintain tap water at high temperatures. School kitchens may require hotter temperature settings for safety and health purposes. Finally, do not leave faucets running or dripping. Water is another valuable resource that is costly and must be conserved.

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

Calculating Energy Costs
(State Energy Conservation Office)
A formula is given to assist energy managers in calculating energy costs using the example of a beverage machine:
http://www.window.state.tx.us/tspr/energy/calc.html

Technology Related Energy Conservation
(University of Michigan)
Guide to Green Computing: What You Can Do On and Off Campus:
http://www.energymanagement.umich.edu/ems/Green_Computing.html

Energy Conservation Resource Materials
The Lawrence Berkeley National Laboratory Environmental Energy Technologies Division, Building Energy Measurements and Performance Analysis: http://EETD.LBL.gov/EA/Buildings/

EnergySmart Schools
Facts and myths about energy management:
http://www.eren.doe.gov/energysmart schools/myths.html

3. Use energy managers, management firms and committees – when and why!

The level of energy management expertise needed in each district will vary, depending on the size and organizational complexity of the district and the disposition of the board. But, without fail, someone within the district should be designated as the advocate for energy management. This person should understand the basic concepts of energy-using systems and energy accounting. Even more importantly, this person must be a strong communicator with excellent organizational skills.

Whether the energy manager is part-time or full-time, and whether they have a little or a lot of experience and knowledge of energy programs will often govern how much external expertise will be needed as the district seeks to control energy costs. The energy manager will need to compile energy consumption data and work with maintenance, facility management staff and other operational personnel to develop energy-efficient operation and maintenance procedures. This person will need to prepare regular reports to the board and assist in developing cost and savings information about new initiatives that are being considered.

If your district is small you might want to hire a part-time energy manager or share the expense of one with a neighboring district. In the smallest districts, a teacher or administrator from within the district is given this role in addition to their other duties. Their time will be limited. Therefore, help from inside and outside the district may be needed to produce the desired results.

Energy Manager. If your district pays a demand rate for electricity, which is an amount that utility companies charge for energy use that exceeds some predetermined amount, at one or more campuses and the energy expenses are more than $200,000 annually for the entire district, you should consider designating or hiring an energy manager. Demand rates need to be carefully monitored to ensure that energy use does not spike above the stipulated rate that triggers additional charges on the utility bill. And at $200,000 per year in energy costs, someone should be checking the bills for errors and making sure that everyone in the district is doing their part to conserve energy and dollars.

The energy manager should monitor the energy performance of the district's facilities. By tracking performance, this person will be able to identify potential problem areas and recommend solutions before they become urgent.

The energy manager can set up a system to monitor usage and track progress of any energy project. There are a number of commercially available software packages that will enable the district to maintain historic utility cost and usage data. This will enable the district to spot unfavorable trends and invoicing errors, improve the utility budget planning process, evaluate costs for proposed facility additions or deletions and assess the cost impact of various rates.

If the district does not wish to purchase and train on new software, it can use a spreadsheet to track energy use and cost.

In some cases, by simply reviewing monthly energy bills, an energy manager can more than pay for his or her salary.

Energy Management Firm. The Texas Education Code allows school districts to contract with energy management firms, which are companies that specialize in controlling energy costs, for energy conservation measures such as insulation, storm windows or doors, automatic energy control systems, efficient lighting fixtures and energy recovery systems. School districts are allowed to finance these conservation measures with a lease/purchase contract, more commonly referred to as a performance contract, when dealing with energy retrofits.

By contracting with an energy management firm to design and establish an energy management and accountability program, the Corpus Christi Independent School District (CCISD) along the coast of Texas was able to conserve energy and save millions of dollars in energy use.

The 1995 CCISD contract was divided into four phases, each lasting approximately one year. CCISD self-funded all four phases and each phase provided additional savings for the district. As part of the contract, the firm installed an energy management system throughout the district, upgraded all lighting and replaced outdated and non-functioning equipment. The energy management firm guaranteed a savings of $76,989 annually for eight years. The first phase was completed in 1996, and the district reports that guaranteed savings were exceeded. The fourth and final phase began in January 1999 and is now complete.

CCISD also has a contract with another firm for audits of electric, gas and water/wastewater billings. The audits identify overcharges and secure refunds. An annual savings of $60,000 is projected.

Energy Management Committee. Support of the director of maintenance, custodial director, business manager, director of food services, school principals, key assistant superintendents, teachers and students is critical to program success. Strategies must be in place to

convince these participants that they have a vested interest in the success of the energy program. An energy committee composed of representatives from these groups is frequently set up to guide the decision-making process and to enlist broad-based support for the program.

The Marshall ISD in East Texas has been very successful in saving energy dollars. Their energy costs decreased 50 percent, while their floor space increased by 134,559 square feet. In 1984 the cost of heating and cooling amounted to 95 cents per square foot. By 1997 the district was able to reduce the cost to 48 cents per square foot. Their actual energy savings have amounted to $2,834,859. This amount does not include additional dollars saved in cost avoidance.

Marshall ISD implemented several strategies to achieve an effective energy management program from 1984-1997. One of the strategies was to establish an energy management team. Every member of the maintenance staff who has anything significant to do with energy consumption is included on the maintenance energy management team.

Utility Companies. Utility companies can also be a good source of information. Most companies will send representatives to work with your district and provide tips on how to conserve energy. As a major user of energy in their service area, it is in the best interest of the utility company to ensure that you are efficient, so they will have the capacity to serve other customers.

Additional Resources:

Below is an additional resource you may find helpful. Information in the document and URL listed below are not necessarily endorsed by this agency, only provided as a resource.

Sample energy manager job description
http://www.window.state.tx.us/tspr/energy/manager.html

4. Conduct energy audits of your buildings.

You need to know your buildings' energy performance. How much is it costing to heat, cool and light each building? This is usually determined by calculating the buildings' energy cost per square foot and the energy use per square foot. This can be done on a spreadsheet or with commercially available software.

Next, you need to know the components that are driving your energy costs. Often, experts are brought in to look at each energy-using component of the facility such as lights, heating and air conditioning equipment and computers. They also check the windows and doors for air leaks, the insulation to determine how well the building holds the heating or cooling and the plumbing to determine if fixtures are efficient and in good working order.

By using a diligent energy conservation program, including installing new software and electronic energy management systems, the Socorro ISD in El Paso maintains low overall energy consumption and saves money. The district uses an energy software program to analyze its utility consumption and cost and an electronic energy management system to make more efficient use of energy. The district also retrofitted lighting fixtures to improve energy use. Energy experts estimate the appropriate level for school district energy costs per square foot at $1 or less. Given this benchmark, Socorro ISD has relatively low energy costs of 77 cents per square foot.

Your energy manager should also use this standard when reviewing costs, and target buildings with higher than standard energy costs. For example, if you have three buildings operating at under $1 per square foot and one operating above, you would start with the one that is operating above $1, because this is where you will find the greatest potential for savings.

Energy audits can help identify and prioritize future energy retrofits as well as document projects that are working well. If you do not have a master plan for facilities, you will need to develop one. By revisiting your facilities through the energy audit process, you can update your master plan. Sometimes a building's performance changes. And, by conducting regular audits, you can prevent any future surprises.

SECO has engineering firms under contract that will, at no cost to the district, conduct a preliminary audit of your building(s) and identify maintenance and operations procedures, projects for retrofit and financing options. These audits often find low-cost or no-cost projects you can

undertake immediately to save energy. A district often knows how it is being billed for energy, how much energy per square foot each building is using and how much it costs per square foot. It understands that this data enables them to compare their usage and cost with local and state data in order to flag energy hogs. If one elementary school costs 54 cents a square foot to operate and another of comparable size and orientation costs 94 cents, they know it. An energy audit can help the district find out why.

Low-cost/no-cost projects are initial targets for energy savings and can be implemented before major capital investments are made in energy retrofits. Some districts have used savings from low-cost/no-cost projects to fund capital projects.

Through an energy audit, areas where energy retrofits could benefit the district are identified and prioritized, and estimated costs and savings are identified. These energy retrofits can be used to upgrade facilities and equipment and generally pay for themselves within 8 to 10 years through energy savings and reduced maintenance costs.

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

Energy Management Program Checklist
http://www.window.state.tx.us/tspr/energy/checklist.html

Scheduling an Energy Audit
(State Energy Conservation Office)
For information about how your district can sign up for preliminary energy audits and other SECO and Department of Energy programs:
http://www.seco.cpa.state.tx.us/schools&gov.htm

The Energy Star Program
(Environmental Protection Agency)
Benchmarking Tools and other information specifically designed for school districts is provided at:
http://yosemite1.epa.gov/estar/business.nsf/webmenus/Schools

5. Purchase energy-efficient lighting, appliances and equipment.

Older equipment and appliances lose efficiency over time. For example, heating and air conditioning equipment purchased and installed 15 years ago may use twice the electricity of today's energy efficient equipment. Many boards and administrations will avoid replacing heating and air conditioning equipment, saying the budget cannot support the cost. What they fail to take into consideration is that by replacing the old equipment with energy-efficient equipment, they will pay for the new equipment in a few years through energy savings.

The board should require a cost-benefit analysis on each energy-related purchase. Look for the Energy Guide label on appliances. The federal government requires appliance manufacturers to provide information about the energy efficiency of their products so consumers can consider the life cycle cost of the appliance as well as the purchase price. The life cycle cost of an appliance is the purchase price plus the operating cost over the projected life of the appliance. Energy Guide labels list the manufacturer, the model, the capacity, the features, the average amount of energy the appliance will use per year, the appliance's comparison with similar models and the estimated yearly energy cost.

The energy efficiency ratings are given to heating and cooling equipment, refrigeration units and other types of equipment. The more energy efficient the equipment, the less the equipment will cost over time to operate, even if the equipment costs more to purchase. Some energy ratings are as follows: EER – Energy Efficiency Rating (room air conditioners); SEER – Seasonal Energy Efficiency Rating (central air conditioners); HSPF – Heating Season Performance Factor – with SEER (heat pumps); AFUE – Annual Fuel Utilization Efficiency (furnaces and boilers).

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

Energy Star Program
(U.S. Environmental Protection Agency)
Simple savings tools are provided that can help you make the most economical purchases for your facilities by providing an estimate of potential savings.
http://www.epa.gov/nrgystar/purchasing/2c_savings_calc.html

Federal Energy Management Program
Recommended efficiency levels, Federal supply sources, cost-effectiveness examples, and other buyer aids are provided for commonly purchased products. http://www.eren.doe.gov/femp/procurement/

U.S. Environmental Protection Agency
Information to measure the energy performance of your organization. http://www.energystar.gov/products/

6. Use performance contracts and other financing options.

After an effective maintenance and operation program is in place, the district should turn to more capital-intensive retrofit projects. These might include heating and air conditioning systems that may not only be inefficient but at the end of their useful lives. Incandescent lighting may need to be replaced with high-efficiency fluorescent or metal halide lighting systems. Mechanical or computerized energy management controls may yield excellent paybacks.

The district should use a master planning approach to establish priorities, consider project dependencies and set up the most appropriate sequence for completing the retrofits.

After you have conducted a thorough energy audit and know where the greatest potential for energy savings exist in your school or district, the next step is to consider how you will finance those projects.

In moving to the financing area, the district must carefully identify and evaluate all available funding options: local maintenance money, bond money, grants, loans, alternative funding methods (lease-purchase, performance contract and shared savings arrangement). In making the final decision, it may well combine several methods to get the best overall "bang for the buck."

Cash. Those fortunate districts with a significant fund balance may be capable of paying for the entire project with cash. If this is practical, there are no financing costs, and the energy savings can be realized as soon as the projects are completed. Certainly this is ideal; no interest – immediate savings.

Some communities simply do not believe in financing anything – not even new schools. Money is saved until the expenditure can be afforded. With energy retrofits, this can be a costly decision. Every year the retrofits are postponed is another year that energy costs will remain high. A cost-benefit analysis for these districts should clearly show the energy costs (losses) for not acting as well as the cost for conventional and performance-based financing after being offset by the projected energy savings.

Bonds. Bonds carry a stated interest rate and are typically payable over 20 to 25 years. When deciding whether this is the best option for your district, there are several big questions to consider. What is the useful life of the

equipment being purchased? How much will this cost, with interest, over the life of the contract? What is the overall effect on cash flow?

If the equipment must be replaced every 10 years, it would be inappropriate to finance it for 20 to 25 years. If the equipment will still be around in 20 years, the district needs to consider the total cost of the project over time. In performing a cost-benefit analysis, the district should calculate the total amount of interest that will be charged over the life of the bond versus the total amount of implied interest that will be paid during the course of a performance contract.

Finally, everything boils down to cash flow. If projects are financed with a bond, the payments may be lower than with a performance contract and the costs may be paid out of debt service rather than maintenance and operating (M&O) funds, while the energy savings are savings to M&O. This could be good for a district at or near the $1.50 M&O tax cap.

Performance contracts. Performance contracts are a means to an end. They enable a district to fund needed projects without issuing a bond or tying up district funds. Only projects with hard-dollar energy-saving potential should be considered for performance contracting, since these contracts are dependent on energy savings to finance the overall project cost.

With a performance contract, energy savings are used to pay for capital improvements. Depending on how the contracts are worded and the manner in which they are accounted for, these are all typically M&O savings and costs – an offset.

Some districts need energy retrofits and lack either the needed manpower or the expertise to oversee these projects. By funding these projects through a performance contract, the projects are handled in a turnkey fashion and the district looks to one contractor for the entire project.

Performance contracting should be your decision. School districts should use a request for proposal (RFP) when soliciting performance contractors. This does not obligate the district to enter into a contract, but it will help to ensure that your district will be receiving the equipment it wants and needs at a fair price.

You should know what you want to purchase through the performance contract. An independent party, preferably an engineer, can help you develop specifications that you can take to the performance contractor. Don’t let the performance contractor determine the equipment you will be installing. They are in the business of selling and installing equipment. Buy what you need, not what they want to sell you.

In 1997, the Mount Pleasant ISD entered into a performance contract with a vendor that installed equipment to monitor and control building temperatures, enabling Mount Pleasant ISD to lower its utility costs sufficiently to pay for the new system. The district also developed a two-year plan to improve its HVAC system at several schools and used performance contracting to guarantee energy savings on those projects.

Energy retrofit project financing. The State Energy Conservation Office (SECO) has information on obtaining a very low-interest loan for installing and retrofitting energy-efficient equipment. The LoanSTAR (Saving Taxes and Resources) revolving loan program offered by SECO has served as a national model for state and federal loan programs for energy efficiency retrofits. To date, the program has saved Texas taxpayers more than $94 million through energy efficiency projects financed for state agencies, institutions of higher education, school districts and local governments.

Projects financed by LoanSTAR include, but are not limited to, energy-efficient lighting systems; high efficiency heating, ventilation and air conditioning systems; computerized energy management control systems; boiler efficiency improvements; energy recovery systems; and building shell improvements.

LoanSTAR's annual percentage rate (APR) of interest for school districts is a constant 4.04 percent. This is a flat rate that is charged to school districts across the state. The program's revolving loan mechanism allows borrowers to repay loans through the stream of cost-savings generated by the funded projects.

The Tyler ISD in East Texas conducted an assessment of the lighting system districtwide and installed new lighting with funding from a low-interest state loan and bond funds. An assessment of HVAC equipment was also conducted. Since 1997, the district reports electricity savings of $275,000. The Corpus Christi ISD, a district with nearly 40,000 students, is realizing annual savings of more than $475,000 from its use of performance contractors.

To assure the school district will generate the anticipated savings, SECO performs design specification review and construction monitoring when the project is 50 percent and 100 percent complete.

Qualified Zone Academy Bonds (QZAB). The QZAB program is a federal program. QZABs are a new type of bond that school districts can use to save money on school renovation projects. The QZAB program is designed to provide tax credits to bond holders that are approximately

equal to the interest that states and communities would ordinarily pay the holders of taxable bonds.

Texas was allocated $32.5 million in bond authorization for calendar year 2000. The Texas Education Agency is now accepting and reviewing applications for the QZAB program. The agency may designate school district bonds as QZAB eligible after reviewing district applications and private business contributions submitted by the district and its partners. The bonding authorization will be allocated on a first-come, first-served basis.

For the district to gain QZAB designation, it must meet the program's proof of eligibility, provide an assurance of private business contribution, and submit the district's program intent. An application must be filed and the designation must be approved prior to the district issuing its QZAB debt.

Texas Association of School Boards Capital Acquisition Program. This program also offers loans to purchase and install energy-saving equipment. The minimum loan amount is $100,000 and interest rates range from 4.4 percent to 5.3 percent, depending upon current financial market conditions, the length of the loan, and the district's bond rating. Loan terms are set at three year, four year, seven year, or ten year periods and are not related to project payback. The application procedure is simple: completion of a one-page form and submission of the district's most recent budget and audit.

Private Lending Institutions or Leasing Corporations. Banks, leasing corporations and other private lenders have become increasingly interested in the energy efficiency market. The financing vehicle frequently used by these entities is a municipal lease. Structured like a simple loan, a municipal leasing agreement is usually a lease-purchase arrangement. Ownership of the financed equipment passes to the district at the beginning of the lease, and the lessor retains a security interest in the purchase until the loan is paid off. A typical lease covers the total cost of the equipment and may include installation costs. At the end of the contract period, a nominal amount, usually a dollar, is paid by the lessee for title to the equipment.

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

Qualified Zone Investment Bonds
(Texas Education Agency)
The Texas Education Agency provides information to school districts regarding eligibility and allocations for the QZAB program.
http://www.tea.state.tx.us/school.finance/facilities/index.html#qdesc

Texas Association of School Boards Capital Acquisition Program
Toll-free phone number: 1-800-580-8272
http://www.tasb.org/member_services/financial/cap.shtml

LoanSTAR Revolving Loan Program
(State Energy Conservation Office)
Toll-free phone number: 1-800-531-5441, extension 3-1931
http://www.seco.cpa.state.tx.us/ls.html

7. Get everyone into the act.

There are a million little things that your school and district can do to save energy, and everyone can get into the act.

Some of the small but effective things, like planting trees around buildings, can be done with the help of parent and community volunteers. Trees prevent heat from reaching the building, provide shade and help improve the environment.

Checking door and window weather-stripping is another effective way to stop energy dollars from leaking through the cracks. Check outside air dampers, heating, ventilation and air conditioner filters. Replace old or broken caulking and weather-stripping. Develop maintenance schedules for keeping tabs on the condition of these items. Sound maintenance and operations procedures need to be in place to recoup savings associated with turning off lights in unoccupied areas, sensibly reducing equipment operations during the summer months, maintaining heating and air conditioning equipment and attending to caulking and weather-stripping problems to lower infiltration (but not at the expense of air quality). Savings generated from these actions may offset the cost of more expensive retrofits. It does little good to design or retrofit a building for energy efficiency if the building and its energy systems are not properly operated and maintained.

The bottom line for most energy management programs is getting the people who control the energy-using equipment to understand how they are involved in the overall conservation of energy.

By developing policies and programs to promote and reward student and staff participation in energy conservation, the Spring ISD outside of Houston achieved energy savings. Spring ISD developed a rebate program that rewards each school for efficient energy use by sharing savings with any school that reduces its usage below the budgeted amount. The school receives a check for 50 percent of the savings amount. Spring ISD's office of Construction and Energy reviews actual energy costs against budgeted amounts and sends a monthly report to each school. Principals encourage students and staff to participate in activities such as turning off lights and closing doors when leaving a room to retain conditioned air in the classrooms. Some principals have encouraged operation staff by sharing cost savings with the mechanics. The district has saved from 7 to 14 percent per year for the five years of the rebate program.

Get kids into the act. SECO has three Energy Education Outreach programs that can help your schools implement a million little, and not so little, things to save energy and get everyone into the act. There are two

energy-monitoring programs: The WATTEAM, serving schools in Central Texas, and the Watt Watchers serving the rest of Texas. The third is the Texas Energy Education Development (TEED) project that serves junior high, middle school and high school student councils and science/environmental clubs in schools throughout Texas.

"Simple behavior changes alone save some $7,000 per school. That's a lot of bake sales." – David Nemtzow, President, Alliance To Save Energy (ASE).

Start an "Energy Patrol" in your school. Over 2000 Texas schools are participating in SECO's Watt Watchers and WATTEAM Program. Student teams patrol assigned areas of their school, checking for lights left on in unoccupied rooms. "Tickets" or thank you notes are left for the occupants to remind them to turn off lights when they are not needed. Start-up kits and training for the patrols are free. This popular hands-on energy education program for students can actually save up to 30 percent on utility costs.

"Every school should do this. It just makes sense to teach this kind of responsibility and goodness knows, we all want to save money. I can't think of any reason not to try it." – Wayne Este, Hunt ISD, former school board president.

As mentioned earlier, student councils, science and environmental clubs and any school organization with an adult sponsor (grades 1-12) can do their part to educate their schoolmates, teachers and the general public about ways to save energy in their schools, homes and communities.

The TEED project can help students learn about energy resources and take an active role in teaching others the importance of using energy efficiently – all while having fun and gaining self esteem by doing worthwhile energy saving projects and activities.

An energy education program, such as TEED, will not only save money at schools, but will help students develop the habit of saving energy that will stay with them throughout their lives. In TEED, students conduct energy projects and activities throughout the school year that promote energy conservation awareness. These projects could range from designing posters and locker tags containing energy-saving reminders or tips, to mentoring elementary and middle school students on energy-saving projects, to weatherizing low-income homes in their community. A compilation of these projects and activities, an Energy Report, can be submitted to TEED for its "Outstanding Energy School" Awards Program, conducted in conjunction with the Texas Association of Student Councils

each spring. The Energy Report form is available on the TEED website listed in this section.

"The TEED program has made a significant contribution to the energy awareness of our students, faculty and community. By applying techniques learned through TEED, our school has lowered the utility costs. It's truly a worthwhile program" – Anne Newman, Teacher, Marshall High School.

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

Alliance to Save Energy
The Alliance to Save Energy promotes the use of today's and tomorrow's energy-efficient technologies that cut utility bills, energy use, and pollution while increasing home comfort.
http://www.ase.org/media/newsrel/archives99.htm

Energy Education Outreach Program
WATTEAM is a student energy patrol that monitors energy waste in the public schools of Texas.
Toll-free phone number: 1-888-Watteam (928-8326)
http://www.watteam.org

Watt Watchers
The Watt Watchers program encourages student involvement in the way school buildings and its occupants use energy.
Toll-free phone number: 1-888-USWATTS (879-2887)
http://wattwatchers.utep.edu

Texas Energy Education Development (TEED)

A "Kids Teaching Kids" philosophy of energy education.
Toll-free phone number: 1-888-TEED-TEX (833-3829)
http://teed.org

8. Use renewable energy sources when cost effective.

Renewable energy sources are solar (solar thermal or photovoltaic), wind, biomass and geothermal. Many of these renewable energy resources can be used to generate electricity at your school and might also provide unique educational opportunities for students.

Solar energy can be used to generate electricity in two ways. Photovoltaic (PV)cells can convert sunlight directly into electricity. Schools can use PV to replace or supplement electric power from the utility by installing solar cells on existing facilities or integrating solar cells into the design of a new facility.

The Childress High School in West Texas, began generating power on July 3, 1999, as the first Watts on School system provided by their local utility, American Electric Power. The system is rated at 4 kilowatts and is capable of producing enough energy each month to power a typical Texas home.

Solar thermal describes technologies that use the heat of the sun for heating water or producing electric power. Solar collectors can gather solar thermal energy in almost any climate to provide a reliable, low-cost source of energy for many applications. A solar hot water system or a passively heated building are examples of this type of energy.

Wind power is being successfully used in West Texas, where “wind farms” generate electricity as the wind turns turbines that look like sleek, high-tech windmills.

McKinney ISD’s Walker Elementary incorporated solar energy and wind energy in their sustainable school design. The solar collectors are used for domestic hot water and the windmill powers the circulation of the school’s rainwater collection system.

Wind power systems often incorporate additional generating systems, such as diesel generators or solar arrays. These "hybrid" systems provide improved reliability of power supply and operational flexibility. When the power from the wind turbine is not sufficient, the alternate power source comes on line.

Alternative Fuel. Where possible, consider converting school buses and other school vehicles to use alternative fuels. The State Energy Conservation office also offers an Alternative Fuels Curriculum and Teacher Training Program. The program integrates clean transportation

fuels information into science courses for middle and high school students. The program has trained 937 Texas science teachers, who have taught more than 103,000 students about alternative fuels and the potential role of electricity and alternative fuels in a global climate change.

Materials for the curriculum consist of an introductory 13-minute video, 22 hands-on classroom activities, full color posters and other resources. The activities were field tested by more than 50 Texas science teachers and reviewed for accuracy by 18 technical experts.

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

High Performance School Buildings
(National Clearinghouse for Educational Facilities)
Information on classroom materials for renewable energy education and a list of resources for sustainability.
http://www.edfacilities.org/ir/high_performance.cfm

Alternative Fuels Program
(State Energy Conservation Office)
Toll-free phone number: 1-800-531-5441, extension 3-1931
http://www.seco.cpa.state.tx.us/alt.html

Renewable Energy Demonstration Program
(State Energy Conservation Office)
Toll-free phone number: 1-800-531-5441, extension 3-1931
http://www.seco.cpa.state.tx.us/re_html.htm and
http://www.infinitepower.org

9. Build with energy conservation in mind.

The path to an energy-efficient school starts when you solicit architects and engineers. At the very beginning of a project, state that you are planning to build an energy-efficient facility.

When you design your new facilities, specify that the equipment and materials should be energy-efficient and include control systems. By building new facilities with energy efficiency in mind, you can reduce the operating cost of the facility.

Keep in mind the life-cycle costs of the facility, which are the costs to operate the facility over its useful life. Make design decisions based on the life of the component by optimizing the long-term energy efficiency rather than the initial cost. Most school facilities are used for 50 years or more; so make sure you build facilities that you will be able to afford to operate for that long. From site orientation to designing energy-efficient features, planning is important.

The McKinney ISD's Roy Lee Walker Elementary and J.J. Pickle Elementary in the Austin ISD in Central Texas were included in a recent study, "Daylighting in Schools: Improving Student Performance and Health at a Price Schools Can Afford." The paper discusses the evidence regarding daylighting and student performance and development, and presents four case studies of schools that have cost-effectively incorporated daylighting into their buildings. Recent rigorous statistical studies, involving 21,000 students in three states, reveal that students perform better in daylit classrooms and indicate the health benefits of daylighting.

SECO offers the Sustainable School Design Program. The McKinney ISD's Roy Lee Walker Elementary and the Austin ISD's J.J. Pickle Elementary schools will serve as sustainability models for other districts. Both schools will demonstrate the multiple benefits of natural daylighting, improved indoor air quality and energy efficiency on the students and teachers.

According to a 1992 study conducted by the Alberta Department of Energy in Canada, students benefited significantly from attending schools where daylight, rather than traditional artificial lighting, was the principal source of internal lighting. The study found that students enrolled in schools where daylighting was prevalent exhibited among other things: reduced absenteeism by 3.5 days per year, increased concentration levels,

a significant reduction in library noise, better scholastic performance and more positive moods induced by natural light.

Sustainable design takes into consideration total environmental and economic impacts. The concept of sustainability in development is based on principles of resource efficiency, health and productivity. These principles require that we look at buildings, energy sources and development on a full, life-cycle basis. This approach takes into consideration the total environmental and economic impacts, energy sources, product manufacture, transportation, design and construction, operations and maintenance, building reuse and deconstruction and disposal.

The initial cost to build McKinney ISD's Walker Elementary was about 15 percent higher than the average, but the savings over the life of the structure will more than make up for the additional costs. The sustainable features at Walker don't just save money and energy in the long run, they provide a valuable learning opportunity for the students. The sustainable building practices at Walker include: building siting and orientation; optimizing natural lighting, providing for task lighting and specifying high-efficiency electric lighting; establishing an energy budget for each project; specifying locally or regionally produced products; designing to minimize cut-off waste and providing for recycling during construction; specifying materials and finishes with low or no volatile organic compound emissions and providing adequate ventilation; considering energy, water, materials consumption, transportation and impacts on natural systems when selecting products and materials; minimizing impervious surface and providing infiltration and retention of storm water; landscaping with native vegetation; and looking for opportunities to provide shelter or habitat for compatible species as well as to restore waterways, vegetation and habitats.

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

Sustainable Building Design
(State Energy Conservation Office)
Toll-free phone number: 1-800-531-5441, extension 3-1931
http://www.seco.cpa.state.tx.us/re_sustain.htm

Innovative Design Study
(North Carolina)

An analysis of the performance of students ay daylit schools.
http://www.innovativedesign.net/ppt/dayliteprod/

McKinney ISD, Walker Elementary School
A virtual tour of the McKinney ISD's Walker School.
http://www.mckinneyisd.net/walker

Study by the Heschong Mahone Group
An Investigation into the Relationship between Daylighting and Human Performance.
http://www.h-m-g.com/
(you will be required to register before downloading)

Energy Smart Schools
"Can School Buildings Affect Student Performance?"
http://www.eren.doe.gov/energysmartschools/teach_energy.html

10. Identify discounts; don't let others take your share.

There are a number of state and federal programs that can give school districts relief from high utility bills. If your school district qualifies for these programs, but doesn't apply, others will get your share.

The State Power Program, an energy program begun in September 1999 by the Texas General Land Office (GLO), can save participating districts 4 to 5 percent on their utility bills, if their current utility provider is also a participant in the state program.

During the 1999 Legislature, Senate Bill 7 authorized the Commissioner of the GLO, under Chapter 35 of the Texas Utilities Code, to negotiate and execute contracts for the conversion of royalties taken in-kind to other forms of energy. These other forms include electricity for sale to public sector retail customers, including public school districts, state institutions of higher education, state agencies and political subdivisions of the state.

Districts are not charged to participate in the program and they are able to keep their present utility provider and keep the same services they currently use.

The federal Universal Service Fund for Schools and Libraries, more commonly referred to as E-Rate, provides discounts on telecommunications services to schools and libraries. Discounted services can include local telephone service, high-speed data communications lines, Internet access and internal connections. The Schools and Libraries Division (SLD) of the Universal Service Administrative Company (USAC) administers E-Rate with oversight from the Federal Communications Commission (FCC).

Discounts range from 20 to 90 percent on eligible services. The discounts are based on the number of students eligible for the federal school lunch program. To be eligible to participate in the E-Rate program, schools must have an approved technology plan. The Texas Education Agency is the official approving-agency for public schools in Texas.

Additional Resources:

Below is a list of additional resources you may find helpful. Information in the documents and URLs listed below are not necessarily endorsed by this agency, only provided as a resource.

State Power Program
(General Land Office)
To receive an application and more information on the State Power Program.
Toll-free phone number: 1-800-998-4456

E-Rate
Universal Service Administrative Company Schools and Libraries Division

Conclusion

If a school district decides to control its own energy destiny by hiring an energy manager, making energy management an ongoing, integral component of district operations and setting up realistic cost-saving goals, it can find ample models in Texas. In energy-wise districts, top-level administration delivers a clear and forceful message of commitment and solicits broad-based support for the program from all sectors of the district. Realistic energy-saving goals are established, based on initial data gathering, and procedures are set in place to reach these goals. At the center of the process is an energy manager responsible for making the system work and generating results.

Contact Information:

State Energy Conservation Office
Comptroller of Public Accounts
111 E. 17th Street, #1114
Austin, Texas 78774
1-800-531-5441 extension 3-1931
http://www.seco.cpa.state.tx.us

Texas School Performance Review
Comptroller of Public Accounts
P. O. Box 13528
Austin, Texas 78711-3528
1-800-531-5441 extension 5-3676
http://www.window.state.tx.us/m26edu.html