



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

ENERGY SAVINGS PLAN

December 2005

Executive Summary

The Texas Commission on Environmental Quality (TCEQ) has maintained an ongoing commitment to reduce the consumption of electricity, gasoline, and natural gas from agency operations. Because the agency's role as a steward of taxpayer resources and current energy needs both demand a renewed commitment to energy conservation, the TCEQ will commit to a five percent reduction in energy consumption over the five-year period starting January 1, 2006.

The agency's plan for achieving the new 5% energy reduction goal will include measures included in the FY 2003 Resource Efficiency Plan as well as additional energy conservation measures detailed here. The resulting Energy Savings Plan will involve four major components including:

- ✓ Existing Energy Savings Measures;
- ✓ New Energy Savings Measures;
- ✓ Cooperative Measures with the TBPC; and
- ✓ Fleet Fuel Management Measures

The central office of the TCEQ is located at Park 35 Circle in North Austin. The six building complex is comprised of five state-owned buildings and one leased building, altogether housing a total of approximately 2,300 employees. The TCEQ also has twenty field offices located throughout the state, three of which are in state owned buildings operated by the Texas Building and Procurement Commission (TBPC).

Over the last several years, the TCEQ has undertaken a number of resource conservation measures as a part of the Resource Efficiency Plan adopted in FY 2003. As a part of this plan, an initial review of the agency's energy consumption was conducted through preliminary energy audits (PEAs) that were conducted on all buildings owned or leased by the agency and a review of all utility billings over the course of the past five years. Other steps such as an update of the operating software of the five energy management systems currently in operation at Park 35, a contract with HVAC technicians to re-calibrate and balance HVAC equipment provided concrete opportunities for reductions in energy consumption.

Because responsibility for facilities management and maintenance of the five state-owned buildings at Park 35 was transferred from the TCEQ to the TBPC on September 1, 2003, the TBPC, with input from the Support Services Division of the Office of Administrative Services, is the primary point of contact for all resource conservation and energy management projects at the TCEQ. With the expansion of the role of TBPC in facilities management and maintenance, a collaborative approach will continue to facilitate ongoing conservation efforts at the TCEQ.

To measure the agency's progress in reaching this 5% reduction goal, the agency will use the average recorded consumption of electricity, gasoline, and natural gas during calendar year 2005. Pursuant to Executive Order RP 49, the TCEQ will report its progress along with ideas for additional savings to the Office of the Governor and the Legislative Budget Board beginning

April 1, 2006. In measuring progress towards the 5% reduction goal, the TCEQ will attempt to take into account any changes in the overall structure or day-to-day operations of the agency that might generate corresponding increases or decreases in energy consumption.

This plan and each quarterly report will be posted on our external web site for public review and comment.

Current Energy Consumption

The agency's energy consumption during calendar year 2005 will be used as a baseline for measuring progress towards the 5% reduction goal. Future updates will include this information.

Energy Savings Program Plan

Existing Measures

Since the FY 2003 Resource Efficiency Plan was adopted, the TCEQ has worked to implement a number of energy conservation measures that will serve as a major component of renewed efforts to meet the 5% savings goals over the next five years. The existing measures implemented by the TCEQ include:

- Occupancy sensors were installed in many rooms in Building A. The occupancy sensors automatically shut off the ceiling lights in the room when it is unoccupied.
- The agency participates in Austin Energy's Green Choice Program through a commitment to "purchase" 100% of our energy needs from renewable sources. The agency's commitment helps to increase demand for renewable sources of energy while decreasing the demand for energy from non-renewable resources system-wide.
- Electronic light ballasts were replaced in Buildings A through F on the Park 35 campus to accommodate more efficient fluorescent lighting tubes that also generate less heat.
- New energy management system software was installed allowing for more effective management of heating, ventilation, and air conditioning (HVAC) systems to ensure optimal operation.
- An HVAC thermal storage system was installed for Building A. This system produces ice during the evening which is used at peak electrical demand times during the day to cool the building with an estimated yearly savings of \$30,000.
- Roofing and insulation were replaced on Buildings C, D, and E. The improved R-rating of insulation and five layer roofing increases energy efficiency.
- Solar screens were installed on Building C. Offices had significant improvement in controlling temperature reducing demand on HVAC and improving climate conditions for agency staff.
- Caulking was replaced and sealant was applied to improve R-rating of tilt walls in Building A.
- Inefficient, leaking plexiglass in the atrium of Building C was removed and replaced with a roof and flat glass which resulted in less temperature exchange and increased HVAC efficiency.
- Motion sensors were installed on all soft drink machines. These sensors shut off the advertising lights on the machine and reset the compressor to an energy saving schedule.

New Energy Savings Measures

In order to reach the agency's goal of reducing energy consumption by five percent over the five year period starting January 1, 2006, future efforts will build on existing measures by undertaking or continuing the following activities:

- When replacing existing equipment or purchasing new equipment, the agency will purchase only energy saving flat screen monitors and lower energy consumption and reduced-heat-output processors, servers and routers. It is estimated that flat screen monitors consume approximately 20% less energy when operating than a conventional CRT monitor.
- The agency will continue to identify and purchase Energy Star rated information technology equipment.
- Existing technology allows for the use of equipment as both a copy machine and a network printer. The agency will look to meet network printing needs in various office clusters by enabling agency copy machines in common areas to serve as both a copy machine and a network printer.
- The agency will continue to retire less energy efficient monitors as we rack-mount new equipment in the computer room.
- The Utility Awareness Plan that was part of the 2003 Resource Efficiency Plan will be expanded to include additional resources and materials aimed at increasing employee awareness to promote behaviors that positively affect resource conservation and efficiency. Components of this program will include:
 - ✓ frequent internet pop-ups with links to conservation articles on the agency's internal web site;
 - ✓ inserts on energy and fuel conservation topics in pay stub envelopes;
 - ✓ e-mails from agency commissioners and the executive director;
 - ✓ inclusion of an energy and fuel conservation segment in new hire orientation;
 - ✓ discussion of energy and fuel conservation topics in staff meetings at all levels;
 - ✓ energy and fuel conservation articles in the *Natural Resource*, (TCEQ agency newsletter);
 - ✓ brown bag luncheons to discuss energy and fuel conservation topics held at various agency sites throughout the state;
 - ✓ a series of e mail messages to all agency personnel which provide hints for conserving energy and fuel;
 - ✓ development of monthly Energy and Fuel Conservation Awareness program themes;
 - ✓ a recognition program for regional offices with exceptional performance in conserving energy and fuel to promote greater participation among regional offices;
 - ✓ energy and fuel conservation posters in building break rooms, and common office areas;
 - ✓ announcements of training opportunities in the area of energy and fuel conservation outside the agency;

- ✓ printed reminders to unplug televisions, VCRs, and other appliances typically operating on “standby” when not in use;
- ✓ placement of windshield stickers in all agency vehicles reminding drivers of the agency’s idling policy;
- ✓ printed reminders to turn off computer monitors, copiers, printers on nights and weekends; and
- ✓ printed reminders to turn off lights in rooms that are not equipped with occupancy sensors when rooms are not in use.

To help measure the success of the employee awareness measures listed above, the agency will conduct a staff survey beginning January 2006. This survey will help to establish current levels of general awareness among employees while also helping to target specific areas where increased attention may be necessary. Future surveys will be conducted periodically to help gauge both employee awareness and employees’ compliance with energy conservations policies and procedures.

Cooperative Measures with TBPC

As was mentioned previously, responsibility for facilities management and maintenance of the five state-owned buildings at Park 35 was transferred from the TCEQ to the Texas Building and Procurement Commission on September 1, 2003. The TCEQ will work cooperatively with the TBPC to implement the following measures:

- Renew the agency’s commitment to renewable energy resources through its participation in Austin Energy’s Green Choice Program.
- Energy conservation will be a priority in planning and contracting for facility renovations, repair, and replacement.
- Efforts have already been made to install energy saving measures in common use rooms in Building A. The agency will work to assess additional opportunities for energy conservation from interior and exterior lighting retrofits including occupancy sensors in conference rooms, work rooms, and other common use rooms, and higher-efficiency lighting fixtures in hallways and other areas without employee workspaces.
- Purchase high efficiency Energy Star rated compressors, chillers and related HVAC components utilizing environment-friendly refrigerants.
- Efforts will be made to update building energy management software for Buildings A-F, as available, to increase efficiency.

Fleet Fuel Management Plan

Current agency estimates show that approximately 170,000 gallons of fuel were consumed by vehicles in the agency’s fleet. An essential component of the agency’s commitment to reducing

energy consumption by 5% over the next five years will be ongoing efforts to reduce fuel consumption in TCEQ fleet vehicles. In order to reach this goal, the agency will implement or continue the following measures and strategies:

- While the agency has implemented consistent preventive vehicle maintenance schedules to ensure that all fleet vehicles are properly maintained, the agency will continue to evaluate maintenance schedules and procedures to attempt to identify additional opportunities to maximize fuel economy in fleet vehicles.
- The agency will continue to fully utilize Fleet Focus, the State's Fleet Data Management System, to track and analyze fuel and maintenance costs.
- To help reduce the need for employee travel for inter-agency meetings, a video conferencing network was installed providing service to all sixteen regional offices as well as six conference areas in our central offices. Employees will be encouraged to make use of this network as an alternative to traveling when scheduling and conducting meetings with both internal staff and external customers.
- Pursuant to existing statutory fleet requirements, approximately 259 of the 379 vehicles in the agency's fleet, have been converted to LPG (Liquified Petroleum Gas). To reduce the number of trips necessary for refueling LPG vehicles, the agency has installed an onsite LPG refueling station on the Park 35 campus.
- In addition to existing mandates to purchase alternatively fueled vehicles, the agency has adopted an official policy requiring that hybrid vehicles be purchased when replacing passenger cars, SUVs, or full-size pickup trucks in the agency fleet whenever feasible. To date, the agency has purchased seven hybrid vehicles and plans to purchase several more over the next year.
- Traveling between the six buildings on the Park 35 campus for deliveries has traditionally required the use of a vehicle with an enclosed compartment. In an effort to reduce both fuel consumption and vehicle emissions from agency delivery routes, the TCEQ recently replaced two of its gasoline powered mail delivery vans with electric GEM vehicles to be used for mail delivery routes on the TCEQ Park 35 campus.
- The agency has adopted an official policy prohibiting unnecessary idling in agency vehicles for periods exceeding three minutes. By reducing unnecessary idling, the agency can reduce fuel consumption while also reducing air emissions.



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