

**Energy Conservation Plan  
For  
The Texas Board of Professional Engineers  
Q3 FY 2006**

**Introduction:**

In accordance with the provisions of Executive Order RP-49, the Texas Board of Professional Engineers has developed a plan for conserving energy and has set a goal for reducing its usage of electricity and natural gas. The executive order requires the plan to consist of the Resource Efficiency Plan and the Fleet Fuel Management Plan (vehicles). The Texas Board of Professional Engineers does not have vehicles assigned to the agency so that portion of the plan does not apply to our agency.

The Texas Board of Professional Engineers is a Self-Directed Semi-Independent agency and is focused on cost savings. The agency does not receive appropriations from the state and must fund all the agency costs.

# RESOURCE EFFICIENCY PLAN

For

Texas Board of Professional Engineers

(Updated July 1, 2006)

<u>TABLE OF CONTENTS</u>	<u>Page</u>
Introduction	3
1. Accomplishments in Fiscal Years 2005-2006	3
2. Goals for Utility Consumption Reduction	4
3. Energy Consumption Comparison	5
4. Schedule and Monitoring of Implementation	5
5. Financing Strategy	5
6. Utility Awareness Plan	5
7. Description of Agency Facilities	6
8. Two Year History of Agency Utility Use	6
9. Savings Monitoring and Evaluation Plan	6
10. Project Implementation Update	6
11. Agency Contacts	7

---

Attachment A - Description of Agency's Facility

**INTRODUCTION**  
**To**  
**Texas Board of Professional Engineers (TBPE)**

**Overview**

TBPE was legislatively founded in 1937 following the New London School explosion. Almost three hundred students and teachers were killed as a result of improperly designed mechanical and electrical devices. The agency was established to regulate the practice of engineering through licensing and rules of practice.

TBPE is classified as a small state agency with 30 full-time staff members. The Board, which governs the agency, is currently composed of six professional engineers and three public members appointed by the governor and confirmed by the senate for six-year staggered terms.

**Mission**

The mission of the Texas Board of Professional Engineers is to protect the health, safety, and welfare of the people of Texas by ensuring that the practice of engineering in the state is carried out only by those persons who are proven to be qualified and by regulating the practice of professional engineering in Texas.

**Services**

TBPE issues licenses to engineering firms and businesses providing engineering services to the public. It also enforces violations to the Texas Engineering Practices Act and Rules. Advisory opinions are issued to the public as appropriate to make interpretations of the Act and explain factual or hypothetical situations of application that may not be clear.

**Infrastructure & Energy Conservation**

The agency occupies one building of approximately 9,246 gross square feet in Austin, which was constructed in May 1979. There is a basement that is not conditioned and is used for storage.

Thermostat settings for the heating and air conditioning systems are set at a constant 74 degrees and are not allowed to be changed by anyone other than the deputy executive director. The hot water heater has a timer to ensure it heats water only during the time the members of the staff might be in the building.

Staff members are also trained to turn off lights when they leave their offices for lunch or at the end of the day. Energy saving settings are enabled on computer workstations to ensure that monitors are turned off after 20 minutes of inactivity.

**1. Accomplishments for FY 2005-2006**

1. Installation of a dedicated air conditioning system for the computer room.
2. The agency had several additional thermostats installed in offices that previously shared the thermostat with the computer room.
3. The agency is currently conducting an analysis of the windows in the building for energy leaks.
4. The soda machine was recently removed which will reduce electrical consumption.

5. All fluorescent lights and ballasts replaced with high efficiency F-32 T-8 system. This project replaces a 0.75 amp ballast with a 0.28 amp unit.
6. Cleaned air system ductwork.

## **2. Goals for Utility Consumption Reduction**

The Vision of the agency regarding utility consumption is as follows:

The TBPE will take every reasonable action to reduce energy use and use energy as efficiently as possible.

The Mission of the agency regarding utility consumption is as follows:

Provide a comfortable work environment for the staff of this agency within the efficient use of energy and other resources.

The utility reduction goals of the agency indicated below are in support of the agency's Vision, Mission and Goals.

### Goal One

Determine and implement all cost effective energy conservation measures that are compatible with the needs of the staff in the performance of their duties. Reduce energy use by 10% over the FY04-09 period.

This will include operations of the building and its' systems as well as cost effective replacement of equipment or the installation of equipment that will save energy and reduce energy costs.

In order to decrease energy consumption by 10% the following energy saving measures will be implemented:

Track the energy usage after installation of new fluorescent lights and ballasts (high efficiency F-32 T-8 system). Although savings will be significant, it will be difficult to determine the exact amount until the end of the fiscal year. We anticipate an annual savings of 15% to 20%.

At the end of the workday, turn off all computers or have all computers go into system standby. This measure should reduce energy cost by more than \$750 per year.

Wrap the hot water heater with an insulated blanket and reduce the heating temperature to 110 degrees. This measure should reduce energy costs by approximately \$75 per year.

### Goal Two

Develop and implement effective utility conservation staff awareness.

In order to achieve savings, and to recognize additional opportunities for energy conservation, each staff person must be made aware and informed of how they can help and understand the advantage of their individual participation. Various avenues will be used to complete a Utility Awareness Plan through the State Energy Conservation Office of universal conservation educational items, and benchmarking with other private and public organizations as appropriate.

### Goal Three

Develop and implement a utility consumption and cost tracking system.

### **3. Energy Consumption Comparison**

There is one gas, one electric, and one water meter serving the agency. In fiscal year 2003, the agency spent approximately \$17,650 for all energy sources.

Due to the improvements mentioned above, the agency has seen a significant drop in energy consumption. Although all data is not available for the entire year, based on the current trend, the agency anticipates spending approximately \$17,000 for all energy sources in fiscal year 2006.

### **4. Schedule and Monitoring of Implementation**

#### Implementation Schedule

The following actions and schedule will be used:

1. Continue to monitor operations that affect energy use and make recommended changes as needed.
2. Continue to determine equipment needs that will improve energy efficiency and recommend an implementation schedule based upon financial resources as needed.

#### Monitoring Strategy

The monthly costs and use of electricity, gas, and water will be checked quarterly and compared to the base year of FY02 to determine if progress is being made to meet planned efficiencies.

### **5. Financing Strategy**

The primary financing strategy for the identification and implementation of energy conservation measures will be the Texas LoanSTAR Program administered by the State Energy Conservation Office (SECO).

The secondary financing strategy for the identification and implementation of energy conservation measures will be the aggressive solicitation and negotiation of cash rebates from utility providers to be earned from consumption reduction.

While the agency anticipates the likely provision by SECO of some common utility awareness curriculum and graphics, the balance of the Utility Awareness Plan (UAP) will be developed and included in the agency's overall training program.

### **6. Utility Awareness Plan**

The agency will include both direct and indirect awareness in the development of its UAP. We anticipate and support the resource efficient multi-agency development through SECO of common elements of utility awareness that would have broad application, particularly those regarding direct awareness. We understand that SECO already contemplates the development of conservation related graphics such as posters, flyers, light switch signs, etc. for state agency distribution

To the maximum extent reasonable, we plan to develop the agency specific direct and indirect elements of the UAP. Indeed, improvements such as automatic activating sensors on plumbing and lighting fixtures that indirectly increase and enhance staff energy conservation awareness will be implemented as it is cost effective to do so.

The intent of the direct awareness is to bring about an appropriate culture change whereby informed staff not only act in prescribed ways to conserve energy, but also become encouraged and facilitated to be proactive in their own ongoing discovery of new energy conservation opportunities. Various means to foster and reward this incentive will be explored, including appropriate forms of recognition.

## **7. Description of Agency Facility**

The agency occupies one building of approximately 9,246 gross square feet in Austin, which was constructed in May 1979. There is a basement that is not conditioned and is used for storage. A complete description is in Attachment A.

## **8. Two Year History of Agency Utility Use**

A list of the agency's utility consumption and cost is tracked by the agency.

## **9. Savings Monitoring and Evaluation Plan**

The agency will determine various measurement and verification (M&V) applications appropriate to and commensurate with the variety of energy conservation measures (ECMs) that are implemented in order to confirm the resulting consumption reductions and related costs savings.

The agency will balance cost of obtaining the measurements and performing the calculations with the benefit that is produced. Generally, the M&V should not cost more than 10% or so of the savings. However, in low risk ECMs this percentage may be reduced, and in high risk ECMs this percentage may need to be increased.

The agency will review the specific needs of each ECM installation when making decisions on what M&V to apply. The agency will also specify installation acceptance requirements and functional performance requirements for each installation.

## **10. Project Implementation Update**

### Continuous Commissioning

The building will be checked quarterly to ensure that there is no significant damage to it or to the operating systems.

### Retrofit Commissioning and Design Review

Any utility systems or equipment that are installed will be checked to ensure they are working according to the design before the project is finalized as complete.

### Operational Energy Conservation

Agency procedures include specific requirements related to the operation of heating and air-conditioning equipment, such as temperature set points, relative humidity, and hours of operation. Also, included are the current energy and water related design requirements and guidelines.

### Energy Manager

The energy manager is the deputy executive director.

## **11. Agency Contacts**

### Designated Official

The designated official responsible for the implementation of the recommendations included in the Resource Efficiency Plan is the deputy executive director.

### Primary Contact Person for Resource Efficiency Plan

**Lance Kinney, P.E.**

**Deputy Executive Director**

**Texas Board of Professional Engineers**

**1917 IH-35 South**

**Austin, Texas 78741**

**Phone: (512) 440-7723**

**Fax: (512) 440-0417**

### Alternate Contact Person for Resource Efficiency Plan

**Peggy Phillips**

**Purchaser**

**Texas Board of Professional Engineers**

**1917 IH-35 South**

**Austin, Texas 78741**

**Phone: (512) 440-7723**

**Fax: (512) 442-1414**

## **Attachment A: Description of Agency's Facility**

The Texas Board of Professional Engineers occupies a one-story (basement under part of the executive suite) building at 1917 I-35 South in Austin, Texas. It has approximately 9,246 square feet of conditioned space and an unconditioned basement that is used for storage and access to the crawl space. The area under the executive suite is open covered parking. Perimeter parking is on the south and east sides of the building.

The building, built in May 1979, is configured such that almost all the administrative area is on the perimeter and is glass around the entire perimeter of the building. Most of the interior is storage or workspace. The grounds are irrigated.

A park area of approximately one acre is on the north side of the building. It includes a walking trail and benches. Part of the area is watered by an irrigation system.

A gas meter supplies the hot water heater, which is in the unconditioned basement and the heating unit of the HVAC units that are on the roof. All other utility systems are electric.

Water, wastewater, and electricity are supplied by the City of Austin. Gas is supplied by Texas Gas Service.