

2003 INNOVATIONS AWARDS PROGRAM
Application Form

1. Program Name Governor's Utility Savings Initiative in State Facilities
2. Administering Agency State Energy Office Department of Administration
3. Contact Person (Name & Title) Larry Shirley, Director, State Energy Office
4. Address 1830-A Tillery Place, Raleigh, NC 27604
5. Telephone Number 919-733-2230
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7. E-mail Address larry.shirley@ncmail.net
8. Please provide a two-sentence description of the program.
The **State Facilities Utility Savings Initiative** (USI) provides tools to 25 agencies and 17 universities to reduce utility expenditures and conserve energy and water through no and low cost measures in over 96 million square feet of state buildings. The programs involve rate reviews of utility bills, no and low cost operations and maintenance surveys and sample building monitoring, and comprehensive training in energy management including strategic energy planning and conservation awareness.
9. How long has this program been operational (month and year)?
The **Utility Savings Initiative** began in June 2002.
10. Why was the program created? (What problem[s] or issue[s] was it designed to address?)
This program was developed in response to the budget crisis and repeated shortfalls in funding from appropriations for operations and utility expenditures in over 12,500 state facilities. The **USI** was enacted by the Governor's Commission to Promote Government Efficiency & Savings on State Spending under the Capital Management Subcommittee chaired by the Secretary of the Department of Administration.
11. Describe the specific activities and operations of the program in chronological order.
May 2002: Feasibility Study conducted which determined significant savings potential from electric rate reviews and no and low cost energy and water efficiency measures.

June 2002:

- Formation of Multi-departmental Steering Committee chaired by State Energy Office, including Department of Administration Facilities

Management, State Construction Office, Department of Correction, Department of Transportation, University General Administration, Department of Environment and Natural Resources, Office of State Controller, and Office of Budget and Management

- Initial training session attended by 65 agency and university personnel.

July 2002: Governor's Memorandum to all state agencies and universities to request support for the **Utility Savings Initiative**, the appointment of a Liaison for point of contact, and a request for account numbers to be submitted to State Energy Office.

August 2002 – December 2002: Electric rate reviews conducted by State Energy Office of over 5,000 electric accounts in consultation with Office of State Controller and electric utilities to determine appropriate rates using State Energy Office specified load factors.

August 2002- January 2003: No and low cost survey checklist developed and survey teams established at four partner universities, one regional council of government team and two state construction office teams to conduct walk-through surveys in 500 buildings comprising approximately 20 million square feet, or approximately 20 percent of the state's total of 96 million square feet.

September 2002: Seminars were conducted in Coastal, Mountain and Central regions for 160 state employees on Operations and Maintenance no and low cost energy and water conservation measures, including boiler, chiller and heating, ventilating and air conditioning systems.

October 2002: Representative sample of 20 monitored buildings on four partner campuses were chosen by five asset types: office, classroom, assembly, laboratory, and shop, with installation of monitoring equipment on selected electrical panels.

November-January 2003: Provided summary of checklist findings to liaisons and facilities directors for recommended no and low cost efficiency measures in surveyed buildings.

January 2003: Results of rate review recommendations to save approximately **\$710,000 annually** forwarded to agencies and universities. Rate changes completed to date by agencies and universities total \$570,000 projected savings for the current year.

February-March 2003: Conducted five regional workshops in Conservation Awareness Teams and Water Efficiency training for approximately 90 state employees, providing posters, "Turn it off" stickers, and CD training materials.

October 2002-May 2003:

- Trained 35 state employees in 14 day Energy Management Diploma class.

- Trained approximately 100 designated “utility managers” from agencies and universities in Strategic Energy Planning workshops, to include mandate signed by facility, fiscal, and executive management and State Energy Office.

12. Why is the program a new and creative approach or method?

- Rate reviews were conducted on all known electric accounts for state facilities, totaling over 5,000 accounts, using methods independent of traditional conservative utility recommendations by using selected load factors and on-peak estimates based upon historical building use. This resulted in a greater number of rate change recommendations and increased savings.
- The **Utility Savings Initiative** is a comprehensive, multi-programmed approach to obtain reductions in utility expenditures through no and low cost measures implemented by state employees.
- Low and no cost surveys were conducted including four university partner teams to include student involvement under guidance of professors.
- Heavy focus on training of agency and university personnel in energy management and conservation awareness to address behavioral conservation measures.
- Programs rely heavily on existing partnerships with universities and other state departments for technical assistance, pulling together as a team to “Lead by Example” and promote efficiency in state facilities by state government employees.

13. What were the program’s start-up costs? (Provide detail about specific purchases for this program, staffing needs and other financial expenditures, as well as existing materials, technology and staff already in place.)

Existing Staff: Operations and Maintenance Program Manager federally funded.

Staffing needs: Added two positions: Rate Review Program Manager, and Project Coordinator Program Manager, both federally funded.

Facility surveys were obtained under Memorandum of Understanding for ½ cent per gross square foot with four partner universities and one council of government survey teams, and for travel expenses only for two state construction “facilities condition assessment program” teams. The approximate cost for surveying 20 million square feet, and installing monitoring equipment in twenty buildings was \$95,000, which was federally funded.

An additional \$20,000 funded monitoring equipment, including digital thermometers and data loggers, was covered under an existing energy office program for efficiency research.

14. What are the program’s annual operational costs?

Training: approximately \$ 30,000.

- Most workshops at minimal cost using no cost state facilities with donated instructor time
- Ongoing technical training opened up to state employees at no or low cost.
- Five Strategic Planning Workshops, One Rate Review Seminar, Three Operations and Maintenance Seminars, Three Boiler Workshops, Five

Conservation Awareness Team and Water Efficiency Workshops, Energy Management Diploma (14 day series)

- Total attendees 580 state personnel

Awareness materials approximately \$4,000

- Posters “Save Energy, Save Water, Save Money” customized for State Energy Office, with contact phone and website
- “Turn It Off” stickers customized with state website
- CD’s with No/Low Cost Efficiency training (provided by Rebuild America)

15. How is the program funded?

US Department of Energy and Petroleum Violation Escrow funds.

16. Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number.

No, currently operating under Governor’s Memorandum, but have requested Governor’s Executive Order for Energy and Water Conservation.

17. What equipment, technology and software are used to operate and administer this program?

Access Database to track electric rate changes and maintain contact information.

Microsoft Excel spreadsheets to track account numbers.

Property Office database in Excel referenced for facility data.

18. To the best of your knowledge, did this program originate in your state? If YES, please indicate the innovator’s name, present address and telephone number.

Yes, the **Utility Savings Initiative** no/low cost program was originated by the North Carolina State Energy Office under the direction of Larry Shirley, Director, State Energy Office, 1830-A Tillery Place, Raleigh, NC, 27604, phone 919-733-2230.

19. Are you aware of similar programs in other states? If YES, which ones and how does this program differ?

No, I am not aware of other state facilities efficiency programs which comprehensively address utility rate reviews and no and low cost measures and behavioral conservation measures, without heavy reliance on performance contracting, to achieve utility savings.

20. Has the program been fully implemented? If NO, what actions remain to be taken?

- Receipt of Strategic Energy Plans from agencies and universities (May 31, 2003).
- Annual reporting from agencies and universities of billed utility data, and analysis to determine benchmarks and key performance indicators for state facilities, and calculation of estimated savings (August 31, 2003).
- Annual reporting from agencies and universities of no and low cost energy conservation measures implemented to allow calculation of estimated savings.

- Pilot web-based utility accounting and bill payment program to fully manage utility expenditures for select agencies and universities, with first year cost subsidized by State Energy Office (July 1, 2003- June 30, 2004).
- Program and training to address KW demand peak shaving strategies (Spring 2003).
- Ongoing technical training in motor efficiency, energy management systems controls, etc., as opportunities and funding allow.
- Performance Contracting legislated in 2002 for state agencies and universities for up to \$50 million total for all projects to be implemented 2003.

21. Briefly evaluate (pro and con) the program's effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples.

Pro-

- The Rate Review program reviewed over 5,000 electric accounts to identify over \$710,000 in savings from rate changes, and verified that over \$570,000 in rate changes have been implemented to date.
- The **Utility Savings Initiative** has truly initiated awareness statewide of the need to effectively manage our utility expenditures, including improvements to bill paying procedures and the need to track usage in addition to total costs reported to the Office of State Controller under the current accounting system.
 - A refund of \$60,000 was received for one monthly water bill which had been paid, which should have been under \$3,000.
 - A refund of \$200,000 was received due to an erroneous electric meter constant over a five year period for a 7,800 square foot building.
 - A refund of \$28,000 for a one year period was received due to error in an electric meter constant.
- Flexibility in operating budgets which fund utility expenditures can provide incentive to reduce energy and water costs to meet budget reductions.
- Conservation Awareness Teams are an effective tool to address behavioral efficiency measures, such as turning off lights and computer monitors. Agency and University Conservation Awareness Teams have been established which pull together multiple departments, such as facilities management, fiscal officers, publicity, housekeeping, students, etc.
- One agency division Conservation Awareness Team has estimated over \$173,000 in annual savings due to conservations measures implemented to date.

Con-

- Difficulty in measuring no and low-cost savings in order to accurately gauge effectiveness of conservation programs. To monitor the success, both utility usage and cost data are needed to compare with an established baseline. Also, the need for separately metered or monitored buildings is apparent in the case of complexes which are master metered to facilitate building energy studies.
- Funded through federal funds, which may not be available to all states.

22. How has the program grown and/or changed since its inception?

This program has continued to evolve under the direction of bimonthly meetings of the USI Steering Committee. Originally programs were geared to offer tools and training in electric rate review and quick implementation of no and low cost operations and maintenance conservation measures. However, programs were added to address needs for accountability and utility accounting. The utility accounting program will include usage and cost data from utility bills combined with building data to identify savings opportunities and to evaluate the effectiveness of the programs. Also, the rate review program will be expanded to include billing reviews of other utilities, such as natural gas and water and sewer, to identify savings opportunities. To address accountability, a strategic energy plan will be requested from each agency and university to include areas of utility accounting, implementation of survey recommendations, and establishment of conservation awareness teams. The plan also includes a mandate signed by upper management and the State Energy Office to facilitate cooperation at all levels.

23. What limitations or obstacles might other states expect to encounter if they attempt to adopt this program?
- Start up funding for initial programs and training. However, it should be noted that first year savings from the electric rate review program far exceeds the costs of first year implementation.
 - Need for highest level of authority to implement the programs, preferably with an Executive Order or legislation, to ensure cooperation with behavioral and no and low cost conservation efforts and support from all levels of state government.

Please note: Supporting Documentation/Supplemental Materials to be forwarded by hard copy via regular mail.
Thank you.

Add space as appropriate to this form. When complete, return to:

CSG Innovations Awards 2003

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DEADLINE: All original applications must be postmarked or e-mailed by April 11, 2003, to be considered for an Innovations Award for 2003.