STATE AND TERRITORY ENERGY OFFICE ACTIVITY IN THE COLLEGE AND UNIVERSITY SECTOR

NASEO National Association of State Energy Officials
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Executive Summary

In 1998–99, there were over 9,600 postsecondary institutions in the 50 states, District of Columbia, and outlying areas[1] (SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, "Institutional Characteristics Survey" (IPEDS–IC: 1998–99)). This overwhelming statistic signifies the great opportunity available to State and Territory Energy Offices eager to explore cooperative facility energy efficiency efforts within the college and university sector.

According to the Rebuild America College and University website, about 78 percent of all college and university buildings were constructed before 1980, with a median construction year of 1967. Many have not been regularly maintained over the past few decades and function more poorly than their ages would suggest. Rebuild America data show that of the 528 million square feet of space improved with energy efficient measures under the program to date, the college and university sector only accounts for 8% of the amount of space improved. The K-12 schools sector is the most active, with 36% of the 528 million square feet improved.

Almost half of these buildings may need renovation. A 1995 study published by The Association of Higher Education Facilities Officers (APPA), "A Foundation to Uphold", found that about half the gross square footage on U.S. college and university campuses has *not* been constructed or renovated since 1995; thus many are ripe for renovation.

In addition, total primary energy use on U.S. campuses is about 1 quad per year, which is the same as the amount of energy used in the entire world every 23 hours, and also the same as 8 billion gallons of gasoline (over 20 days of total use for the country)[2].

The NASEO Buildings Committee addressed the State and Territory Energy Offices in an effort to learn more about energy office activity within the emergent college and university sector. This information will allow the Buildings Committee to make educated plans for future efforts.

Based upon the results of the data collection effort, the following future efforts correspond to the needs cited by the State Energy Offices:

- Coordinate exploratory meetings between interested State Energy Offices and NACUBO/ APPA members to identify potential projects and needs. In addition, assist in identifying potential State Energy Office/University partnerships.
- Promote working relationships between State Energy Offices and corresponding identified universities and provide technical and educational assistance that facilitates project development and implementation. This would include collaboration with the Rebuild America Technical Assistance Team.
- Work with Rebuild America and Energy Star to promote university sector tools and resources via the State Energy Offices.

1 The Outlying areas include American Samoa, the Federated States of Micronesia, Guam, Marshall Islands, Paulu, Puerto Rico, and the Virgin Islands.

2 http://www.rebuild.org/sectors/col_uni.asp

- Pilot test a peer-to-peer university sector meeting (regionally or statewide). This would be similar to the NASEO-led K-12 School Decision Maker Forums and would be aimed at developing and sharing project implementation strategies.
- Develop web based training materials aimed at university officials that address financing, benchmarking tools, incentives, performance contracting, and commissioning.
- Participate in NACUBO/APPA conferences and committee meetings to better understand the energy issues facing colleges and universities, and develop appropriate strategies for successful collaboration.

Introduction

In September 2002, the Buildings Committee of the National Association of State Energy Officials (NASEO) directed staff to determine the level of activity within the college and university sector by the State and Territory Energy Offices. NASEO undertook a data collection effort to explore current activities, interest, and potential for future projects and partnerships between energy offices and colleges and universities.

Twenty-five State Energy Offices responded. Ninety-six percent of respondents are involved in activities in the college and university sector. With the information the State Energy Offices provided, the NASEO Buildings Committee can move forward with plans for future buildings energy efficiency efforts in the college and university sector. Following are the results of this data collection effort.

The goal of the NASEO Buildings Committee college and university data collection effort is to learn more about the activities, programs, and projects in which State Energy Offices are participating in this important sector. From the responses, NASEO hopes to identify similar priorities and opportunities that exist between the buildings energy efficiency efforts of states and needs of the colleges and universities. In addition, NASEO hopes to learn more about how it can assist State Energy Offices and universities to increase communication where appropriate, support energy efficiency projects and technologies, educate stakeholders, define potential project initiatives and opportunities, and leverage resources. These activities would be undertaken in coordination with the State Energy Program, Rebuild America Program, ENERGY STAR, and other complimentary initiatives.

With assistance from The Association of Higher Education Facilities Officers (APPA) and the National Association of College and University Business Officers (NACUBO), and support from the U.S. Department of Energy, NASEO hopes to capture a high level synopsis of the scope of higher education energy efficiency programs and projects involving or supported by the State Energy Offices.

In all, 25 State and Territory Energy Offices responded to the request for information (a list of respondents is included in Appendix A). NASEO will use the findings to open communication and encourage information exchange among experienced states and states requiring assistance to further promote college and university energy efficiency programs.

About the Information Collected

The purpose of the data collection was to gain a quick, reasonably accurate view of the major, current, and energy-related higher education activities in the states and territories. NASEO's Buildings Committee did not look to attain a comprehensive understanding of all energy efficiency and renewable energy activities underway in the nation's postsecondary facilities through the energy offices; nor were the questions designed using strict rules of survey methods or statistical analysis. In addition, some questions in the survey necessitate follow-up and clarification.

However, from the responses, the NASEO Buildings Committee, State Energy Offices, public decision-makers, and other organizations will gain a general sense of the current activities taking place and potential opportunities available throughout the nation's energy offices in the college and university sector.

Highlights of Survey Results

When initial data collection began, the number of State Energy Offices involved in activities within the college and university sector was unknown. The number involved exceeded expectations as all responding State Energy Offices are participating in some way in the sector.

Several State Energy Offices have programs to assist colleges and universities in identifying cost effective ways to reduce energy use in their facilities, via energy audits and feasibility studies, energy savings projects and approaches, new construction design reviews, project bid specification preparation and review, project proposal reviews, and commissioning and contractor selection. Financing programs are also abundant. Some programs are set up so all colleges and universities in the state have the ability to tailor the program to their needs. Other programs are specifically designed for certain universities.

One State Energy Office participates in a state agency energy advisory group that meets bi-monthly to provide a network of communication and technical support to facilitate sustainable, economical, and efficient use of natural resources in the state. The group participants include several state universities.

State Energy Offices identify funding for colleges and universities to participate in energy efficiency measures as the biggest overlying issue. This came up in multiple responses.

Energy Offices are generally aware of the many tools and resources available from Rebuild America and ENERGY STAR but responses to other questions expose a need for better education, thus greater awareness, of this availability.

Detailed Survey Results and Discussion

With the large number of colleges and universities throughout each state and territory in the nation, the NASEO Buildings Committee recognized the potential for a broad-scale effort aimed toward promoting energy efficiency in the sector and has decided to make it the focus for the coming year. The recognition that there exist numerous prospective programs, possible projects, and promising partnership opportunities is evident in the results of this survey.

During NASEO's 2002 Annual Meeting in Florida, the Buildings Committee determined that more information was needed to determine where the committee's efforts should focus. With this in mind, the Buildings Committee directed NASEO staff to gather information from the states and territories. The committee members agreed that the activity and interest of the states in the higher education sector was of most interest, and more specifically:

- campus leaders involved;
- type of colleges and universities involved;

- barriers colleges and universities site as preventing them from participating in performance contracting or related programs;
- recommendations of activities states could work together on;
- awareness of university-related resources and/or tools available from Rebuild America or ENERGYSTAR; and,
- resources that may be of assistance.

The key outcome of the committee meeting was the recognition that there is great potential within the college and university sector that many State and Territory Energy Offices could tap. The committee decided that the State Energy Offices should be contacted to gain a better understanding of the: 1) states involved in the college and university sector; 2) level of involvement and interest; 3) resources needed; and, 4) awareness of federal programs.

Following is a question-by-question analysis of the data collection effort, as well as the aggregate responses for each question.

Overview of Question 1

This question was intended to determine how many State Energy Offices are involved in promoting energy efficiency or clean energy applications in the college and university sector. Below is the question as it appeared in the survey.

✓ **Question 1**

Is your office involved with promoting energy efficiency or clean energy applications in the college/university sector (e.g. performance contracting)? Please circle: YES NO

23 respondents indicated "YES", 2 respondents indicated "NO".

One respondent answering "NO" to this question is currently designing a performance contracting program.

Some potential follow-up for question 1 includes the extent to which State Energy Offices are involved (i.e. the level of resources) and the length of time involved. This information would help determine potential leaders in the sector that could provide support and ideas to states new to exploring college and university sector activities. Also, this information will guide federal officials in the development of energy program for colleges and universities and assist the private sector in targeting states for increased efficiency retrofit opportunities.

Overview of Question 2

Question 2 was a continuation of the previous question, asking respondents to describe activities in the sector, if they answered "yes" to Question 1. Question 2 incorporated two additional questions about (2a) the type of higher education institutions with which the state is working (e.g. Public 2-4 year, Private), and (2b) the campus leaders involved.

✓ **Question 2**

If you responded 'Yes' to Question 1, please describe in a few sentences, and/or an attachment, your activities in this sector.

The responses to Question 2 varied greatly due to the extent of involvement within the sector. This initial question helped to designate states that have experience in the sector that will be able to lead other states needing assistance. Several states have already initiated performance contracting programs with colleges and universities. One state has an Energy Fund, available to all publicly funded institutions implement energy conservation measures under a performance-based energy efficiency contract. The responses to this question are included as an attachment to this document to assist the Buildings Committee.

✓ **Question 2a**

In what sector of higher education are you working (e.g. Public Two or Four Year, Community College, Private Institution)?

Public 2 – 4 year: 14
Community College: 7
Private Institution: 4
All: 5
Other: 2

Responses to this question will allow the Buildings Committee to determine the best target segment within the sector. State Energy Offices are developing the most relationships with public colleges and universities. The two respondents to the "Other" category are working with private non-profit educational facilities and two-year technical colleges.

✓ **Question 2b**

Which campus leaders are involved (e.g. Vice President of Facilities, Vice President of Finance, etc.)?

Respondents provided a wide variety of answers to this question, including (Note: The number of respondents that indicated each particular campus leader is to the left of the leader's title):

- President/Vice President of the University: 4
- Directors of Plant Operations, Facilities Management, Physical Plant, Maintenance: 6
- Chief Financial Officer: 2
- Vice Presidents of Facilities, Business and Finance, Administration Services, Operations, Property, Procurement, Physical Management: 10
- Vice Chancellor, Associate Vice Chancellor: 3
- Assistant Vice Provost for Administrative Services, Energy-Utilities Engineer, Energy Manager, Facility Manager, Facility Planner: 8

- Legal Counsel: 1
- Faculty/Research Labs/Student Leaders: 2

The varied answers to this question demonstrate the expansive list of contact persons within the universities. The contact person depends on several factors such as the size of the university (i.e. number of students, square footage) or type of efficiency program (small-scale, large-scale). The responses to Question 2b compel further research including how substantive and sustained the referenced contact is.

Most State Energy Offices are working with what seems to be a high-level authority in the colleges and universities – Vice Presidents of the major departments: Facilities, Business and Finance, Administration Services, Operations, Property, Procurement, and Physical Management.

Overview of Question 3

This question was intended to determine the barriers preventing colleges and universities from beginning energy efficiency programs or projects. Identifying the problems that keep them from participating or reduce their participation in performance contracting or related programs will allow the Buildings Committee to generate possible solutions to assist colleges and universities in overcoming barriers.

✓ Question 3

What do you hear from the colleges and universities that keep them from participating or reduce their participation in performance contracting or related programs?

Respondents cited the following participation barriers:

- Lack of timing
- Funding
- Multiple decision makers
- Insufficient staff
- Performance contracting skepticism
- Better to wait to accrue funds than to finance
- Too little opportunity to be effective
- Limited access to performance contracting
- Lack of familiarity/education on performance contracting and
- Student counteraction of energy efficiency measures
- Rather retain savings than have future energy budgets reduced other energy efficiency measures and savings potential
- Bad timing
- Too many building projects already underway

State Energy Offices that may have heard and were able to overcome these issues voiced from colleges and universities can offer advice as to how other states can move forward as these issues are presented.

The greatest barrier State Energy Offices cited regarding participation from colleges and universities was funding. Next would be misunderstandings or a lack of education about performance contracting and other energy efficiency measures.

Overview of Question 4

This question determined whether states not involved in the college and university sector are interested in becoming involved.

✓ Question 4

If your office is not involved with the college and university sector, are you interested in exploring opportunities in this sector? Please circle: YES NO

Both respondents that answered "NO" to Question 1, indicating they are not involved in the college and university sector, responded "YES" having interest in exploring opportunities in the sector.

As mentioned above, two State Energy offices responded "NO" to Question 1, that they are not currently involved in the college and university sector. However, in their explanations, one energy office is in development of a performance contracting program. Although these energy offices are not yet fully involved, they are exploring opportunities.

Overview of Question 5

Question 5 allowed for more detail on the resources State Energy Offices deem as necessary to better reach and work with colleges and universities.

✓ Question 5

If you are currently working in this sector (or are interested in doing so), what resources would be of most assistance?

____ Financing information or training
____ Benchmarking software and tools
____ Identification of potential partner universities
____ Other, please specify: _____

Respondents indicated that the following resources are needed most (Note: The number of respondents that indicated each particular resource as a need is to the left of the resource):

- Financing information or training: 11
- Benchmarking software and tools: 11
- Identification of potential partner universities: 4

The "Other" comments are specified below:

- Information on other campus awareness campaigns
- Grants/incentives to help offset efficiency project identification and project cost
- Whole Building Modeling
- Training on the International Protocol for calculating energy savings for performance contracts
- Training on building commissioning

Corresponding to the number one response from Question 3 regarding barriers colleges and universities, funding is not only the top barrier, but also the top resource State Energy Offices see as needed most in the sector. Not far behind was the need for benchmarking software and tools.

Overview of Question 6

Question 6 requested recommendations of broad joint state and university initiatives that the State Energy Offices may be considering or would consider.

✓ Question 6

Are there particular activities you might recommend where State Energy Offices could work together with colleges and universities under a broad joint state initiative (e.g. performance contracting, new green buildings, campus energy awareness)?

Respondents suggested the following activities:

- Enabling statutes
- College/University Decision-Maker Forums (modeled after K-12 School Decision-Maker Forums)
- Performance contracting
- Sustainable buildings
- Measurement and verification of energy and water savings
- Facilitating college and universities working with ESCO's
- Assistance in showcasing a "green bldg"; demonstrating energy technologies
- Securing tax exempt capital for implementing energy efficiency projects
- Helping with energy strategic planning, setting up energy advisory board
- Instituting energy efficient procurement practices and campus awareness campaign
- Establishing a formal NASEO/NACUBO partnership
- Setting up and holding a national energy conference on higher educational facilities
- New green buildings, campus energy awareness
- Utilize model documents made available from the Energy Services Coalition

Responses to this question will lead the Buildings Committee on future possibilities within the college and university sector.

Overview of Question 7

The intent of Question 7 was to gain a sense of the number of State Energy Offices aware of the higher education sector-related resources available from Rebuild America and ENERGY STAR. The available resources can benefit state energy offices' promotion of energy efficiency programs in the sector. The resources include: financial information and connections to financial assistance; technical information and tools; contractual assistance; energy efficiency guides; and software, all dedicated to energy efficiency within the higher education sector.

✓ Question 7

Are you aware of the university-related resources and/or tools (e.g. case studies, benchmarking, financing information) available from Rebuild America and ENERGY STAR?
Please circle: YES NO

19 respondents indicated "YES", 6 respondents indicated "NO".

Most respondents are aware of some of the Rebuild American and ENERGY STAR resources available. As benchmarking software and tools were cited as one of the greatest resource needs in Question 5, existing Rebuild America and ENERGY STAR resources should be promoted. The software and tools offered by these programs can assist colleges and universities in reaching their energy efficiency goals.

Appendix A

Respondents:

1. Alabama
2. Arizona
3. California
4. DC
5. Florida
6. Hawaii
7. Idaho
8. Kentucky
9. Louisiana
10. Massachusetts
11. Missouri
12. Nebraska
13. Nevada
14. New Mexico
15. New York
16. North Carolina
17. North Dakota
18. Ohio
19. Rhode Island
20. South Carolina
21. Tennessee
22. Texas
23. Utah
24. Washington
25. Wyoming