(2) MidWest Rebuild Application Center

This effort is to develop a Midwest Regional Rebuild America Application Center (Center) that will provide the Midwestern States with the information, education, and technical assistance necessary to continue and expand, in a coordinated manner, their Rebuild America program activities. The Center will apply specific structure to the Rebuild America program on a regional basis, supporting (not replacing) the efforts of the states within the region. This effort will focus on building capacity and documenting results. An effective way of growing capacity in times of shrinking budgets is to provide the forum and mechanisms for the states to tap into and utilize the knowledge, experiences, and best practices of all the states and other energy information entities in the region.

Total project cost:
Funding request:
Project Lead: University of Illinois Chicago, Energy Resources Center
Project Participants: Energy Center of Wisconsin

Start Date:
End Date:

Presentations/Publications

During the quarter the program partners continued to create and make presentations given to the participating State Energy Offices. As a follow-up to the survey of the Advisory committee and presented in May 2006, staff prepared additional information on the priority area selected "Energy Efficient Colleges and Universities". During several conference calls completed this quarter, an approach for this effort was developed and presented for comments and approval of the Advisory Committee. A meeting of the Advisory Committee was held August 9, 2006 to further define and develop strategies for the project. A report on this effort was developed in November 2006 and was distributed to the Advisory Committee. Details of that report are delineated later in this fourth quarter report.

In addition during this quarter two draft brochures were developed for the project. The brochures are designed to be stand alone or as a combined single piece as follows:

- A brochure featuring the "Midwest Regional Building Technology Center". This brochure reflects the change in the name of the activity as recommended by USDOE staff and the Advisory Committee and explains the goals and activities of the Center.
- A brochure entitled "Universities and Colleges, Midwest Regional Building Technology Center Outreach Activity. This brochure outlines the first major sector activity as selected by the Advisory Committee.

Copies of these brochures are included as appendix A of this report.

Finally, staff completed an update for the Advisory Committee on the further developments and refinements of the Website.

Patents

None.

Progress in Past Quarter and Current Status

The Energy Resources Center and the Energy Center of Wisconsin began this effort the Midwest Regional Rebuild Application in last January. During the first quarter considerable progress toward completing Task one "Developing and Expanding State Rebuild Capacity" and Task two "Developing and Implementing Center Services" was achieved. This work was continued during the fourth quarter, as the Advisory Committee met several times via teleconferencing. This progress was continued during the fourth quarter. The project Website was further defined and information on the college and university

sector was added. The Website can be accessed at http://www.ecw.org/mwrebuild. As a result of subcontract with the Midwest Energy Efficiency Alliance staff continued including MEEA's related activities to Center's Reports. MEEA will assist the advisory group and the project by designing and implementing promotional and training webinars for the project.

Listed below are featured activities for the fourth quarter.

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- **Meetings of the Advisory Committee.**

A primary effort of Task I "Developing and Expanding State Rebuild Capacity was the formation of an Advisory Committee and subsequent meetings and teleconferences for this effort. During the third quarter the Advisory Committee several meetings were held via teleconferences. In November 2006, a progress report was completed specifically to discuss and approve the first regional sector and project. The project "Energy Efficient Colleges and Universities" has been endorsed by all members of the committee and during this quarter considerable progress was made on this effort.

- **Development of a Sector related Project "Energy Efficient Universities and Colleges."**

During this quarter staff developed project objectives, an approach, and identified key partners for this effort. Listed below is an outline of those efforts:

Project Objectives:

1. Provide information, education, and technical assistance to the colleges and universities in the Midwest in the areas of:
   - Energy Efficiency Measures
   - Reduced Energy Costs
   - Sustainable Energy / Environmental Design
   - Energy Financing
   - Energy Reliability
2. Measure the effectiveness of this effort in the Midwest in terms of College and University participation (partnership) in the program, their utilization of the information and technical assistance, and their actual investment of resources (time & money) in upgrading their facilities in terms of energy efficiency and environmental improvement.

Approach:

• Identify and engage the College and University organizations that represent the Midwest Institutions of higher learning.
• Implement a web based Midwest information capability that will:
   - Facilitate access to energy information and provide regional perspective for this targeted market sector (hot link to other sites to avoid duplication of effort)
   - Contain all information, educational materials, tools, and reports generated by the Center and/or other sources relevant to this project
   - Foster ongoing collaboration among the targeted market sector (universities and colleges) stakeholders (including the ability for stakeholders to make technical inquiries that will invoke a quick response from the Center … technical assistance)
   - Compliment (not replace) individual state and/or targeted market websites dedicated to energy efficiency measures or technologies
   - Bring together the best practices from Midwest State activities focused on this targeted sector

• Develop, organize, and implement a series of webinars (teleconferencing workshops) targeted at the University and College sector in the Midwest. The webinars will address those energy efficiency measures & technologies of most interest to University and College facility managers and energy administrators. Continuing education credits for participants of the webinar series will be sought.

• Develop 5 to 10 project profiles (two page case studies) highlighting university/college implementation programs that can be utilized as examples for follow on outreach activities in this market sector.

Finally, the Center, with the assistance of the Advisory Committee, will provide follow up assistance to the State Energy Offices (SEO) in the Midwest to evaluate the success or failure of this type of regional project.

Within the availability of resources (time and funds), the Center will attempt to expand these efforts into the second and third priority market sector identified by the Advisory Committee: K thru 12 Schools and Government Buildings.

Identifying & Partnering With Key Organizations

Five (5) professional organizations representing colleges and universities have been identified by the Center. The support of these organizations in the Midwest in developing the information, education, and technical assistance made available by the Center will ensure the participation of their memberships. These organizations represent facility managers, building administrators/VPs, and education planners within the targeted market of colleges and universities. The five national organizations identified are:

- Association of Higher Education Facilities Officers (APPA)
- Association of College and University Business Officers (NACUBO)
- Society for College and University Planning (SCUP)
- American Association of Community Colleges (AACC)
- Association for Facilities Engineers (AFE)

AFE is the only association listed that is not targeted exclusively to higher education facilities. The identified organizations have regional and/or local chapters that would be better suited for the Center to partner with to ensure the Midwest audience is appropriately reached. The corresponding regional and/or local organizations are:

- Midwest Association of Higher Education Facilities Officers (MAPPA)
- Central Association of College and University Business Officers (CACUBO)
- Society for College and University Planning – North Central Region (SCUP-NCR)
- Association for Facilities Engineers - North Central Region II (AFE-NCR)
- Association for Facilities Engineers – Midwest Region III (AFE-MW)

The project team provided the Advisory Committee and organizations including website urls, contact information, membership description, etc for these organizations.

In addition to the contacts above, the state energy offices will assist in contacting the proper organizations and institutes of higher learning within their states to solicit their input and support for the regional project.

- **Continued Coordination with USDOE**

The closing of the USDOE Regional Offices made it imperative that staff maintain a continued and closer relationship with the USDOE Rebuild Program. To this extent, staff made several trips to Washington D.C. to keep abreast of USDOE activities concerning the Rebuild America Program. After discussions with USDOE staff, it was determined to rename the effort to be called the Midwest Regional Building Technology Application Center to better align the effort with current USDOE

directions. In this quarter that change was approved by the Advisory Committee and is being incorporated into our ongoing efforts.

- **Information Clearinghouse Development and Activities**

A critical element to the success of this effort will be the development of organization of the Midwest Rebuild Application Center technical Clearinghouse database and Website. As such, work was continued during this quarter to establish the Clearinghouse and Website within the Energy Center of Wisconsin.

During the planning of this project, and during the first three quarters, a unique website and clearinghouse identity was established and information integrated into the ECW's information system... This system serves as the ongoing engine, required to establish a Midwest rebuild information clearinghouse system. Further information as reported by the Energy Center of Wisconsin is included below:

> The Center web site was officially launched in September 2006 and may be viewed at http://ecw.org/mwrebuild. The website has been set up utilizing the original project title of Midwest Rebuild America Application Center. This will be changed once the new name of the center is finalized. The web site is populated with the following menu headings:
> - **Market Sectors** page connects a viewer to a library of technical resources, event listings, and partnerships organized by market sector.
> The first market sector to be populated is the Colleges & Universities.
> Government, schools (K-12), and retail stores are other market sectors that will soon be populated.
> - **E-Line** page is a viewer's connection to technical assistance from a variety of experts via an email version of a tech hotline.
> - **News & Notes** page will list the Advisory Committee meetings/conference calls and links to meeting documents.
> - **Partners** page lists the state/regional partners and links to websites and
> the individual Midwest state Rebuild America pages.
> - **About Us** page will describe the program and organizations that direct the program efforts.
> - **Contacts** page lists the contact information for the Center program managers from the University of Illinois at Chicago and the Energy Center of Wisconsin.
> - **Home** menu item returns the viewer back to the program's home page.
>
> The primary steps in establishing the web site included:
> - Developing a website "entity relationship diagram" to drive the overall structure of the web site. The diagram is a web map showing connectivity among database tables.
> - Creating database tables.
> - Designing the front-end of the website was loosely based on the existing
> Rebuild America colors.
> - Writing PHP/MySQL code to draw content from database.
> - Writing javascript code for mouseover capability in Online Library and global menus.
> - Setting up the process for content population.
> - Coding webpages with a tracking code to capture usage statistics for quarterly and annual reporting.
> - Programming and testing E-line message capability.
> - Populating the website with content for the Online Library, Events, and
> Partnerships for the College/University market sector.
> The information contained within the website is continuously being updated. The

Center has to date, concentrated on our first target market (colleges and universities), but will be populating the website with information on other commercial and institutional market sector of interest in the Midwest.
Any comments and/or suggestions for the Center regarding the website should be directed to Andrea Minniear at the Energy Center of Wisconsin aminniear@ecw.org. The Center welcomes your comments.

- **Webinar Series Update**

Survey to Identify Potential Webinar Topics
A segment of the project deliverables includes developing, organizing, and implementing a series of webinars or web-based teleconference workshops targeted at providing energy efficiency, reliability, and sustainability information to colleges and universities. Per the request of the Advisory Committee during the several teleconferences, a survey was conducted of the targeted market sector to identify the current "hot topics" of energy efficiency, reliability and sustainability within higher educational facilities.
This survey was implemented by assessing nine (9) annual conference agendas and program summaries from the professional associations listed above, with the intent to identify the "hot topics" for the webinars. 82 conference breakout sessions/presentations relating to energy efficiency, reliability and sustainability were identified and grouped into the following tiers. (The first tier of identified topics are those topics which were most resented at the annual conferences).

1st Tier of Identified Topics
- Sustainability
- LEED
- Renewable energy
- Energy Management
- Energy Savings
- Funding

2nd Tier of Identified Topics
- Katrina / Disaster Preparation
- Commissioning
- Strategic Planning
- Energy Pricing

3rd Tier of Identified Topics
- Green Design / Sustainability
- Performance Contracting
- Ground Source HVAC
- Economic Development

4th Tier of Identified Topics
- Chilled Water Systems
- Steam Systems
- Environment and Energy Controls
- Thermal Storage
- Maintenance Programs
- Building Automation for High Performance Labs
- Energy Efficiency

- Natural Gas Applications
- Renovating Historic Buildings
- Student-Staff Partnerships for
Energy Conservation
- Energy Efficient Lighting
- Improvement of Air Handlers

- **Continued Review of Rebuild America Midwest Activities**.

The Energy Center of Wisconsin continued their online search and research effort to identify past and ongoing Rebuild activates within the Midwestern state. During the fourth quarter, this activity has concentrating on adding additional information on sectors prioritized by the Advisory Committee including colleges and universities, k-12 schools, and commercial buildings. The Midwest State Energy Offices continued to provide information for completed this database which will subsequently be added to the Website.

- **Establishing Program and Center Metrics.**

During the fourth quarter the Center staff continued compiling a Center metrics, and to develop those metrics as a means to set priorities for the Center's management and/or evaluations.

- **Developing Project Profiles and Targeted Workshops**

During the fourth quarter, project staff continued efforts to identify areas for development of targeted workshops. Discussions with the Advisory Committee and other staff at the State Energy Offices indicated that in person workshops were often difficult to plan, and the time commitment for attendees often limited participation. While targeted workshops will still be held on a limited basis, web based training seminars and webinars will also be utilized.

Previously, staff also asked the State Energy Offices to provide successful Rebuild projects for development into project profiles. This activity continued during the fourth quarter and an outline for initial profiles citing successes on college campuses was developed. Two page case studies will be developed providing clear and consistent information for outreach activities. The Advisory Committee approved the use of a format similar to one developed by the Midwest CHP Application Center. A draft prototype is attached as Appendix B of the report.

The Center will develop 5 to 10 project profiles (two page case studies) highlighting recently implemented programs in higher educational facilities that can be utilized as energy efficiency examples for follow-on outreach activities in this market sector. By developing a short series of these project profiles, various programs can be compared and analyzed using consistent, reliable, and accurate information (benefits and issues).

The Center is requesting that the state energy office representatives recommend one or two colleges or universities within their state that have recently completed an energy project at their facility that could be utilized for the project profiles. The minimum information being sought at this time includes:
- Name of institution
- Location
- Brief description of energy efficiency measure implemented
- Year of Implementation
- Primary contact name with contact information at the university/college (phone and/or email)

Each project profile will differ in the type of programs implemented and the degree of information able to be collected. Therefore, the project profile template will remain flexible enough to

accommodate to the various implemented programs yet still follow a similar template. See Appendix C for the Project Profile template. The type of information required by the Center to develop a good project profile includes:

- Campus profile (# of buildings, students, square footage, etc.)
- Project goal
- Accomplishments
- Strategies and steps taken
- Funding and resources
- Total costs
- Total savings (if applicable)
- Energy savings reduction (%)
- Benefits
- Key partnerships and parties involved
- Challenges and responses
- State involvement
- Environmental impact
- Project photos
- Materials and resources
- Favorable quote(s) by facility representatives

Plans for the Next Quarter:

During the next quarter much activity will; center on continuing work on Task I. "Developing and Expanding State Rebuild Capacity. Center staff will continue to develop the Regional project "Energy Efficient Colleges and Universities", and other priorities identified by the Advisory Committee.

Staff will also continue to further identify and evaluate previous and ongoing rebuild activity both in the Midwest and throughout the Country. This effort will also focus on identifying particular market sectors or program efforts that appear to be most relevant to the Midwest. The Center will develop a survey to identify potential webinar and targeted workshop topics and issues, especially as they relate to the targeted higher education sector. Staff will work closely with our partners, but especially with the Midwest energy efficiency Alliance on this effort.

Staff will continue to work closely with the Advisory Committee to identify most conducive path to further expand the Midwest Regional Building Technology Application Center efforts in the Midwest. The Website and Clearinghouse efforts will continue expansion.

Staff will continue to identify and add additional stakeholder groups such as utilities, trade associations, and individual rebuild partner companies. Staff will also work closely to work with as the Midwest Energy Efficiency Alliance (MEEA) to schedule and conduct webinars and other educational events associated with our college and university sector activities. Project profiles will be developed, finalized and distributed. In addition, staff will explore other efforts to further publicize activities associated with the Center, USDOE Buildings Programs, and our State partners.

Finally the Center staff will expand work on Task II "Developing and Implementing Center Services". This will include completing the structure of the Information Clearinghouse and refinement of the Rebuild Website for the Midwest. Last quarter, this included development of a specific section dedicated to promotion of ideas, workshops, and webinars generated by the Center's focus on the higher education sector. Next quarter this work will continue and be expanded into additional sectors.

In addition staff will continue to develop protocols and methodologies to improve the technical assistance portion of the project. This effort was initially targeted as a webbased effort. That effort will be continued but meetings with advisory committee indicated a need for additional technical assistance activities directly from program staff. During this quarter staff initiated efforts to improve this service and will seek additional advice from the Committee in the near future.

Appendix A, Draft Copies of Program Brochures

Insert Logo for "Midwest Buildings Technology Application Center" MBTAC

Midwest Buildings Technology Application Center

Background

Today, the U.S. Department of Energy Building Technology Program (BTP) develops program materials on a national scale. However, the successful implementation of those technologies and tools depends on the state and local activities to form partnerships in the market sectors of major interest within the states. With tightening budgets at both the state and federal levels, it is becoming increasingly more difficult for the states to secure the resources necessary to build capability and capacity within their states to continue and expand their individual partnership efforts.

The National Association of State Energy Offices (NASEO) with the support of DOE, has sponsored the development & implementation of the Midwest Buildings Technology Application Center (MBTAC). The MBTAC, located at the University of Illinois at Chicago and the Energy Center of Wisconsin provides the Midwest States and their commercial building partners with the **information, education, and technical assistance** necessary to continue and expand, in a coordinated manner, the deployment of DOE BTP energy efficient technologies and practices. The MBTAC supports (not replaces) the efforts of the states and their partners.

Center Mission

The MBTAC will grow the effectiveness of the DOE BTP program outputs through fostering coordination, interaction, sharing, and transferring of activities & knowledge between the eight State Energy Offices and their partners in the Midwest Region.

The eight Midwest states the Center serve include:

- Illinois
- Indiana
- Iowa
- Michigan
- Minnesota
- Missouri
- Ohio
- Wisconsin

Application Center Services

- **Information Based Web Site**
  Ensure the availability of data, tools, results, and best practices through easy electronic access. The website can be accessed at: www.ecw.org/mwrebuild
- **State Partnerships**
  Ensure that State Energy Office program experts share their experiences & knowledge with their peers from other states in the region. This peer-to-peer transfer of knowledge will build capacity within the states faster and more efficiently
- **Technical Assistance E-Line**
  Provide the needed technical assistance and expertise to the states and their commercial partners through a central regional source so costs are reduced, access is made easier, and specific regional needs are addressed. The regional hot line for all stakeholders is located at: http://www.ecw.org/mwrebuild/eline.php
- **Targeted Education**
  Provide additional forums, such as targeted workshops, seminars, site demonstration tours, webinars, and other appropriate deployment activities to expedite the transfer of DOE BTP technologies & information throughout the Midwest
- **Advisory Committee**
  Design, implementation, and monitor of MBTAC program through the strategic participation of client states & their partners through an active and ongoing Advisory Committee

Further Information

Energy Resources Center
University of Illinois at Chicago
1309 S. Halsted Street (MC 156)
Chicago, Illinois 60607
(312) 996-4382

Visit us at www.ecw.org/mwrebuild/

ENERGY CENTER OF WISCONSIN

UIC ERC ENERGY RESOURCES CENTER

Exhibit B Draft Project Profile Outline for University and College Sector

Universities and Colleges

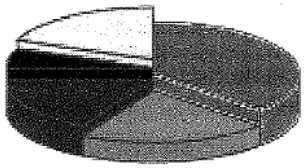
Energy Efficient Building Technologies and Building Practices

Midwest Buildings Technology Application Center Outreach Initiative

Universities Consume Energy Like Mini-Cities

Universities and colleges are actually office buildings, restaurants, retail shops, multi-family dwellings, sports facilities, entertainment complexes, and schools rolled into one. Today, these mini-cities face severe budgetary challenges as they strive to operate, update, and replace aging, inefficient buildings. Enrollment is rising along with energy costs and student demand for energy-intensive amenities like air conditioning, high-speed Internet connections, advanced telecommunication systems, and health club facilities.

Energy Use in Universities



32% Space Heating ■ 05% Space Cooling
24% Water Heating □ 17% Other

Opportunities to Manage Energy Consumption

Universities and colleges are realizing that energy management is a key to reducing operating costs and improving the campus environment. New campus designs and renovations are employing sustainable energy design & operation approaches, including the implementation of energy efficiency and renewable energy technologies. These concepts are being further integrated with innovative environmental, water, and transportation solutions to optimize cost savings and environmental benefits.

The Midwest Buildings Technology Center (MBTAC) has launched an outreach initiative in 2007 targeted towards the implementation of energy efficient building technologies and better building practices within Universities and Colleges in the Midwest. The initiative's focus will begin with a series of workshops that will bring industry experts to the universities and colleges via interactive Internet-Teleconference webinars. The webinars, approximately 2 hours in length, will be conducted once per month over a 6 month time frame covering the following subjects.

- Sustainable Energy Design and Operation
- Renewable Energy Projects
- Energy Efficiency Projects
- Purchasing Options for Electricity and Natural Gas
- Funding Energy Projects
- Central Plants

For more information and a schedule of webinars, visit http://www.ecw.org/mwrebuild/events.php?sectorid=1.

Appendix C Project Profile Template

energy savings in colleges & universities

Example State University

--- energy program type ---

Project Profile

Quick Facts

Location:
???
Size of Campus:
???
Energy Program:
???
Program Accomplishments:
???
Year Implemented:
???
Total Program Costs:
???
Total Savings:
???
Simple Payback:
???
Energy Savings:
???
Environmental Impact:
???
Funding:
???
Program Partners:
???

Project Overview

Text describing project overview and basic highlights.

Picture Description

Program Implementation Steps

Text describing program implementation steps or other information.