

Achieving energy independence at UW River Falls

A university campus functions as a small community. Because of its density, relative independent control of its land and buildings and visible leadership it can serve as a test ground for innovative solutions to our dependence on fossil fuels. In 2006, Governor Doyle announced that four Wisconsin college campuses would be selected to participate in a pilot program to achieve energy independence by 2012. The University of Wisconsin—River Falls was one of the campuses selected for this program.

What does energy independence mean for UW River Falls? It means acquiring or producing enough renewable energy to meet its energy needs. In 2007, the campus used:

- 14,000,000 kWh of electricity equal to the average annual consumption of 1,400 houses in Wisconsin.
- 115 MMlbs of steam used for water and space heating (produced by burning natural gas, coal and some fuel oil) equal to the

average annual consumption of 1,150 houses in Wisconsin.

UW River Falls needed to know what their options were for meeting their energy needs with renewable sources. Wisconsin Public Power Inc., a regional power company serving River Falls Municipal Utilities, contracted with the Energy Center of Wisconsin to identify and analyze those options.

There were varied approaches and innumerable potential combinations of strategies and technologies for reaching UW River Falls' goal of energy independence.

UW River Falls needed to know what their options were for meeting their energy needs with renewable sources.

The first step was to narrow them down to a manageable few. This process involved calculating the degree of "independence" produced by the various approaches and the resulting life cycle cost of implementing them. As a result of this narrowing, Energy Center staff selected four possible scenarios for achieving energy independence. Each sce-

continued on page 2



PHOTO COURTESY JENS GUNELSON, UWRF

UW River Falls strives for energy independence by 2012.

INSIDE THIS ISSUE

- Energy Independence at UW River Falls
- Regional Effort to Save Energy
- Learn to be Green
- Dear President-elect Obama

SEEK LEARN ACT



226-acre main campus with 26 buildings.

continued from page 1

nario included a combination of measures (ranging from building efficiency and conservation to biomass-fueled boiler plants to purchasing green power) that together meet the campus's energy needs. These scenarios were selected based on the percent of carbon-dioxide reduction achieved compared to UW River Falls' baseline energy consumption. The four scenarios were:

Standard Scenario—attempts to make full use of existing campus infrastructure with as little capital investment as possible;

Geothermal Scenario—implements a campus-wide geothermal heat pump system to meet cooling and heating needs, produces an all-electric campus;

Cogeneration: Thermal Load Scenario—produces steam using biomass fuel to meet heating and cooling demand, with electric production secondary; and

Cogeneration: Electric Load Scenario—produces steam using biomass fuel to meet all electric demand, with thermal needs secondary.


The key findings from the analysis of these four scenarios were that:

- Energy independence can be achieved for as little as \$19.1 million net present value over the existing baseline, or roughly \$10 per gross square foot in today's dollars.
- Achieving partial independence costs much less. For example, 64% independ-

ence can be achieved at one-tenth of the 100% cost. Costs rise dramatically after this threshold.

• Life cycle costs are highly dependent on energy cost escalation assumptions. Under a high escalation scenario, energy independence actually saves money over the life cycle.

For more details on the study and results, download *Least-Cost Paths to Energy Independence at a Midwestern University* from www.ecw.org.

UW River Falls has adopted a two-phase approach to achieving energy independence: first tackle energy efficiency and renewable options for producing electricity, and then address the replacement of steam plant fuels with renewables. Project planning, financing, and further detailed studies are underway. 




FOR MORE INFORMATION
contact Lee DeBaillie, Technical Director, 608.238.8276 x111 or ldebaillie@ecw.org

New website for the Wisconsin Geothermal Association



The Energy Center of Wisconsin recently helped the Wisconsin Geothermal Association launch a new website, with informative technical information and resources to help consumers and businesses pursue this efficient technology. The WGA is a non-profit organization advocating for the usage of geothermal heating and cooling systems in Wisconsin. The Association works with the Energy Center to administer its operations and provide technical assistance to consumers.

On the new website, consumers, business owners and building professionals can

learn about the basics of geothermal heating and cooling technologies and see case studies of the technology in action. Visitors to the site can also see upcoming geothermal events and training in Wisconsin or use a search tool to find geothermal professionals in their area for more information. This can be especially useful to home and building owners interested in finding contractors to give them personalized quotes for their project. The site also contains a geothermal FAQ and help with further research. It can be found at: www.wisgeo.org. 

S E E K L E A R N A C T

Regional effort to save energy

At a glance, it might seem like the cities of Milwaukee, Apple Valley, Minn., Grand Rapids, Mich. and River Falls, Wis. have little in common. But scratch the surface and you will find that they share a goal—they are all on the way to becoming models of community-wide energy efficiency.

Representatives of these communities met in Chicago last month to kick off a regional collaboration designed to pioneer implementation of energy efficiency investments and practices.

Each of the cities has unique plans to reach energy savings goals in their neighborhoods, business communities and municipal facilities. By working together, they hope to share their expertise and realize greater savings than have been achieved in the past.

Milwaukee, Apple Valley, Grand Rapids and River Falls will demonstrate the unique and essential role of cities in achieving significant improvements in energy efficiency.

A year ago, Midwestern governors pledged to meet the projected energy growth in the region through energy efficiency by 2015. This translates to roughly a two percent reduction in the use of energy each year.

Iowa, Minnesota and Wisconsin utilities already have some of the best energy efficiency programs in the country. These programs capture annual savings ranging from .5 percent in Wisconsin to .6 percent in Minnesota and .7 percent in Iowa.

Milwaukee, Apple Valley, Grand Rapids and River Falls will demonstrate the unique and essential role of cities in achieving significant improvements in energy efficiency. The project partners have agreed to work with the Energy Center of Wisconsin to share routines for evaluation, training and communications.

“The cities will learn from each other, cultivate new ideas and identify resources for their local projects,” said Ingrid Kelley, project manager for the Energy Center.

According to Kelley, an underlying premise of the project is that cities are better positioned to achieve accelerated energy efficiency goals than other levels of government. Their density, independent regulation of land and buildings and highly visible leadership give them opportunities to identify effective strategies for their community.

The Energy Center of Wisconsin will manage the collaboration, facilitate communications among the cities, develop online training opportunities, maintain a website for participants and publish a guidebook at the end of the two-year project.

“The whole idea is to make it easy for one community to replicate best practices from another community,” Kelley explained. “Partners will have the opportunity to learn what works and what doesn’t. They won’t have to reinvent the wheel.”



FOR MORE INFORMATION
contact Ingrid Kelley, Project Manager, 608.238.8276 x136 or ikelley@ecw.org

Ingrid Kelley’s new book, *Energy in America*, is a gold mine for sustainable community design advocates and planners. It provides a practical foundation for including energy in community planning and developing *energy-conscious* smart growth plans.

Available from University Press of New England www.upne.com

Energy Center of Wisconsin announces...

AUTHOR ON BOARD!

“Ingrid Kelley’s extraordinarily ambitious book aims to help ‘give us the freedom to make radical new choices’ about our energy future...”

—Ralph Cavanagh, Energy Program Co-Director, Natural Resources Defense Council

More about the book at University Press of New England www.upne.com • Published November 2008 University of Vermont Press

ENERGY IN AMERICA
INGRID KELLEY

S E E K L E A R N A C T



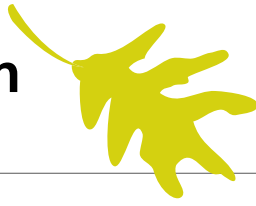
I Used to Be a Pop Bottle



I Used to Be a Pop Bottle



Learning to be Green



More than 4,000 professionals participate in Energy Center of Wisconsin training programs annually. They attend our live events or online programs to learn how to design and build energy efficient, sustainable, high performance homes and buildings. They attend to learn how to manage energy use to reduce our impact on the environment. In return, we have an obligation to do our best to lessen the environmental footprint of our events.

Reducing the environmental impact of our programs means incorporating environmental considerations into all stages of each event. It means looking at everything from travel and meeting venue to training materials, from food and beverage to electricity use.

We start by bringing the training program to you, at your desktop or in your community. We offer many programs online through our Energy Center University website, www.ecw.org/university. Our online programs let you stay home, reducing your carbon footprint while you learn and earn continuing education credits.

When we hold live events, we often schedule the same program in two or three different cities so participants don't have to travel too far. We choose locations that work well for the audience likely to attend the program. And our staff carpools to events, reducing our travel impact.

The facilities we choose to host our events already have green measures in place such as energy efficient lighting,

linen reuse programs, and heat recovery systems to name a few. We also look for facilities that contract with local food sources. Beginning in January 2009 we will use MeetGreen® minimum guidelines when choosing a training site to ensure that the Energy Center is doing its part to reduce energy use and the overall carbon footprint of each event.

If you have attended some of our programs in the past, now you will notice a few changes. We're using recyclable nametag holders and lanyards made from recycled soda bottles. We collect the nametag holders and lanyards at the end of the training program and re-use them. We're also working with each facility to provide in-room recycling for glass, aluminum and paper. And, bottled water is a thing of the past—we now provide pitchers of ice water and glasses for our

We're using recyclable nametag holders and lanyards made from recycled soda bottles.

participants. We use linen and china rather than disposable products and request that our facilities donate left over food items to a local charity, rather than tossing them into the garbage.

The Energy Center makes every attempt to use electronic communications to get the word out about our programs. We use email announcements for many of our programs and limit the number of print materials we mail. You can register for any of our programs online. And for some events, we distribute materials on our website, rather than bring printed copies to the training. When we do provide printed training materials, we use recycled content paper, and only print what we need.

The Energy Center provides quality educational programs with minimal environmental impact. Not only do we train the next generation of energy professionals, but we walk the walk ourselves. For a full list of Energy Center training opportunities visit www.ecw.org/university.



FOR MORE INFORMATION
contact Sherry Benzmiller,
Project Manager, 608.238.8276
x121 or sbenzmiller@ecw.org

S E E K L E A R N A C T

Staff news

NEW FOLKS

Our growing Energy Center family has five new employees.

Claire Cowan recently joined the Energy Center from the consulting firm ICF International and is supporting the Center's energy efficiency policy and planning work. Claire has a Master's in Environmental Science and Management from the University of California Santa Barbara, where she specialized in environmental economics and policy, and was a member of the women's outrigger canoe team. Now that she lives in a colder climate, Claire spends her free time throwing rocks at houses. But she's not really a vandal, just a proud member of the Madison Curling Club.



Andy Mendyk is a recent graduate of UW Madison's masters program in Agricultural and Applied Economics with a Graduate Certificate from the Nelson Institute in Energy Analysis and Policy.



Claire Cowan Andy Mendyk Leslie Post Phil Jahnke Sauer Dave Vigliotta



He's applying his energy and economic analysis skills to the Energy Center's biomass mapping projects and energy efficiency potential studies. When he's not analyzing energy, he may be generating enough to light a 60 watt bulb for over a minute when inadvertently checking an opponent in a game of hockey. Andy recently traded in his well-worn long distance running shoes for hockey skates and is a frequently seen face within Madison's adult hockey scene.

Leslie Post began combining her communications training with her passion for saving the world in 1979 at a Community Action Agency in her home town of Zumbrota, Minn. Working for govern-

ment, nonprofits and an electric utility, Leslie has promoted the efficient use of energy to a wide variety of audiences and stakeholders. Now she's bringing her passion and creativity to the stories the Energy Center has to tell. Leslie escapes the complexities of the English language in her garden and would rather be in Mexico, lounging on a beach or snorkeling than enduring Wisconsin winters.



Phil Jahnke Sauer applies his experience in obtaining education credits for continuing education programs to the Energy Center's professional training programs. Phil has a diverse background ranging from marketing, PR, synchronous and asynchronous training implementation, to the deli arts and milking cows. In his free time, Phil

continued on page 6

S E E K L E A R N A C T



continued from page 5

likes to cook and read about cooking. He puts a pinch of humor, a cup of smarts, and a bunch of initiative in all his recipes.

Dave Vigliotta comes to the Energy Center from the Association of Family and Conciliation Courts. He brings more than


six years of nonprofit marketing and development experience including working at Lee Iacocca's family foundation in Boston. When he's not chasing his 13 month old, he enjoys hiking and playing guitar in his free time. Dave has a Bachelor's degree in marketing from Plymouth State University in



New Hampshire and serves as Chair of the Public Relations, Outreach and Marketing Committee at Madison community radio station—WORT 89.9 FM.

STAFF ON COMMITTEES


Lee DeBaillie has been selected as a member of Wisconsin's team participating in the National Governor's Association Center for Best Practices' Policy Academy on Advanced Strategies for Buildings. Seven states have been selected by the NGA to participate in this policy academy which will develop action plans and implementation strategies for improving energy use in buildings.

Abby Vogen Horn was selected to serve on the Daylighting Committee of the Illuminating Engineering Society (IES). This committee develops recommendations for using natural light in buildings and integrating it with electric lighting design. The committee is currently charged with updating the IES Recommended Practice for Daylighting. 

Improving display lighting efficiency

Display lighting for retail or cultural applications has been a challenging frontier for implementing more efficient products. These applications are focused heavily on quality and the industry has been slow to embrace new, more efficient technology. In Madison, Wis., this challenge has been met for several downtown stores through work by a few individuals from the Wisconsin Department of Administration. Jim Mapp has led an innovative approach to overcome resistance from businesses to new lighting options. Jim has offered more efficient bulbs to try for free to store owners who have inefficient display lighting. The resulting energy savings and light quality experi-

enced in these trials generally convinced owners to change many of their lights. The methods and resulting energy savings of this campaign have been highlighted in a case study by the Energy Center, which can be found on the Midwest Building Technologies Application Center (MBTAC) website: <http://www.ecw.org/mwbuildings/LightingRetrofits.pdf>.

The case study analyzes the energy savings for several of the local businesses and includes tips for other store owners interested in taking advantage of such savings. The MBTAC website is a collaboration among the Energy Center, UIC Energy Resources Center and the US DOE. 




SEEK LEARN ACT

INNOVATIVE PROGRAMS THAT PROVIDE PRACTICAL GUIDANCE

RES RESIDENTIAL **C&I** COMMERCIAL & INDUSTRIAL **L&L** LUNCH & LEARN

DATE	EVENT	PRESENTING FACULTY	LOCATION
RES January 15	Cold Climate Houses—Getting to Zero Defects	Joe Nagan	Middleton, WI
L&L January 21	Green Business: Are you Ready?	Marge Anderson	Rothschild, WI
C&I January 22	Commercial Solar Thermal Design and Installation	Bill Guiney and Bob Ramlow	Neenah, WI
C&I January 27	Integrated Design for Energy Efficiency	Kevin Van Den Wymelenberg	Green Bay, WI
C&I January 29	Integrated Design for Energy Efficiency	Kevin Van Den Wymelenberg	Delafield, WI
L&L February 4	Developing and Initiating an Energy Efficiency Plan	Tom Tucker	Green Bay, WI
C&I February 10	Demand Control: Your Action Plan to Savings	Steve Schaefer	Eau Claire, WI
C&I February 11	Demand Control: Your Action Plan to Savings	Steve Schaefer	La Crosse, WI
RES February 12	Managing Exterior Moisture	Dave Hepfler	Eau Claire, WI
C&I February 17	Green Building and Sustainable Development	Sherry McKibben	Neenah, WI
C&I February 19	Green Building and Sustainable Development	Sherry McKibben	Delafield, WI
RES March 4–6	Better Buildings: Better Business Conference 2009	<i>Keynote:</i> Ed Begley, Jr.	Wisconsin Dells
RES March 11	Managing Exterior Moisture	Dave Hepfler	Madison, WI
C&I March 17	Sustainable Sites and Water Efficiency	Rebecca Mirsky	Hudson, WI
L&L March 18	Geothermal—Commercial Focus	Manus McDevitt	Oshkosh, WI
C&I March 19	Sustainable Sites and Water Efficiency	Rebecca Mirsky	Delafield, WI
C&I March 24	Optimizing Fans and Pumps	Ron Wroblewski	Eau Claire, WI
C&I March 24	eQUEST: Introduction to Schematic Design	Lee DeBaillie	Wauwatosa, WI
C&I March 25	eQUEST: Introduction to Detailed Design	Marlin Addison	Wauwatosa, WI
C&I March 25	Optimizing Fans and Pumps	Ron Wroblewski	La Crosse, WI
C&I March 26–27	eQUEST: Advanced (two-day training)	Marlin Addison	Wauwatosa, WI

 **ONLINE TRAINING COURSES** Energy Center University captures live trainings as webcasts that stream speaker audio and video along with PowerPoint. The trainings feature nationally recognized presenters and offer the convenience to learn the latest technology and strategies from your home or office at anytime. Learn more at www.ecw.org/university.

S E E K L E A R N A C T

Promoting energy efficiency and renewable energy: recommendations for President-elect Obama

The Association of State Energy Research & Technology Transfer Institutions (ASERTTI) chaired by the Energy Center's Executive Director,

Susan Stratton, has provided an initial recommendation to members of President-Elect Obama's transition team. This recommendation builds on the actions

taken by ASERTTI over the past year to elevate state and local collaborative activities and to gain greater support from the U.S. Department of Energy for state and local efforts.

ASERTTI recommends creating a new high-level position (i.e., Deputy Assistant Secretary) at the U.S. Department of Energy on *State and Local Innovation and Collaboration (SLIC)* in the renewable energy and energy efficiency arenas. This position (with the appropriate cross-cutting budget authority) would help strategically focus and align human and financial resources to accelerate the adoption, commercialization, and implementation of clean energy and energy efficiency technologies at the state, local, and federal levels.

The full letter can be downloaded from ASERTTI's website at www.asertti.org.



ASERTTI
Association of State Energy Research & Technology Transfer Institutions

What's New From ASERTTI

ASERTTI Transition Recommendations

This week, ASERTTI provided its initial transition recommendations to members of President-Elect Obama's transition team. The recommendations build on the actions taken by ASERTTI over the past year to elevate state and local collaborative activities and to gain greater support from the U.S. Department of Energy for state and local efforts. If you have any suggestions or comments as ASERTTI begins the process of follow-up on our recommendations, please contact David Terry at 703.395.1076. [View recommendation letter.](#)

SUPPORTING OUR MISSION



newsletter from

Energy Center of Wisconsin
455 Science Drive, Suite 200
Madison, WI 53711

The Energy Center develops solutions to energy challenges that promote economic and environmental sustainability through innovative research and education.

We envision the efficient use of energy resources, a healthy environment, and a strong economy.

Please email Melanie Lord, mlord@ecw.org with comments and questions about e².

© 2008 ECW. All rights reserved.



SUPPORTING MEMBERS

PLATINUM

Alliant Energy • We Energies • Xcel Energy

GOLD

Madison Gas & Electric • WPPI Energy • Wisconsin Public Service Corporation

BRONZE

Superior Water Light & Power/Minnesota Power Company

BOARD MEMBERS

- DAVID BENFORADO**—Municipal Electric Utilities of Wisconsin
PHYLLIS DUBÉ—We Energies
HENRY HENDERSON—Natural Resources Defense Council
NANCY FRANK—UW—Milwaukee School of Architecture and Urban Planning
RICK JOHNSON—Badger Meter, Inc.
GERALD KULCINSKI—University of Wisconsin—Madison
ERIC LAWSON—Potter Lawson, Inc.
BARBARA NICK—Wisconsin Public Service Corporation
TERRY NICOLAI—Alliant Energy
BILL OEMICHEN—Wisconsin Federation of Cooperatives
DON RECK—Xcel Energy
KEITH REOPELLE—Clean Wisconsin
ROY THILLY—WPPI Energy
BILL WARD—Proctor & Gamble Paper Products Company
LAURA WILLIAMS—Madison Gas & Electric Company
JOHN WILSON—Michael, Best & Friedrich
JUDY ZIEWACZ—Office of Energy Independence
NATHAN ZOLIK—Public Service Commission of Wisconsin

S E E K L E A R N A C T