

# LINK

THE NEWSLETTER OF THE GREAT LAKES REGIONAL  
POLLUTION PREVENTION ROUNDTABLE



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## In This Issue

Editorial Musings	1
<b>Featured Articles</b>	
IN Company Installs Alternative System	2
MnTAP Provides Energy Assistance	2
Phosphorus Reduction in Upper Mississippi River	2
Energy 2006 Conference	3
Stay Warm PA Initiative	3
A Vegetarian Truck?	4
<b>Items of Interest</b>	
NEHS Conference	4

## Editorial Musings

This edition of LINK features articles on energy efficiency. There couldn't be a more appropriate topic for this time of the year. Actually, for any time of the year!

I was trying to remember when I actually heard this term for the first time and the affect it had on me. It was probably back in my grade school years (I'm not giving you a date because that would be dating me!). But 'energy conservation' was the term I remember that spilled off the lips of most who were concerned with this issue. All I know is that whenever a teacher, parent, or person of authority said to turn off the lights when leaving a room to conserve energy, I would do it, but it really didn't have any meaning to me. It was just another task to do and interrupt my daily schedule. Of course, this chore was forgotten most of the time. My world was not affected, so who cared if the lights were on or off? My parents would try to keep the thermostat at 68 degrees and we kids would turn it up. All we knew is we were cold! Even in college, energy efficiency had little meaning to me. Of course I thought it was something society

as a whole should be aware of and take action, but it still had no real impact for me.

It wasn't until I had my first job away from home that the term had TRUE meaning to me. Those first utility bills were a shock to me and my wallet! Believe me, the lights were turned off when leaving a room and the thermostat was adjusted to lower temperatures depending on the time of the day! I think that is the way it is with most everyone. It's sad but true. People are realizing that energy efficiency is necessary more today than ever before, with the high costs of fuel, not only for our homes but also for our vehicles.

These are just a few things that I do to be more energy efficient:

- turn down the thermostat
- use energy-efficient light bulbs
- use cold water whenever possible when doing laundry
- turn off lights whenever leaving a room
- plug up all of the cracks and holes where cold/warm air escapes

What does energy efficiency mean to you? What do you do in your home or work place to create a more energy efficient environment?

The following articles illustrate what others are doing to make our world more energy efficient. Hopefully the articles will give you and others ideas to create a more energy efficient environment.

Wayne Duke, Editor

## Featured Articles

### Indiana Company, Utilimaster Corp., Installs Natural Gas-Fueled Distributed Generation System

Utilimaster Corporation recently installed an innovative natural gas-fired combined heat and power (CHP) distributed generation (DG) system at its paint shop and production facility, and began its operation last month. The system, designed by NiSource Energy Technologies of Merrillville, Ind., incorporates a natural gas-fueled micro turbine for electric generation that recycles the exhaust heat in their plant operations.

“This CHP application is an excellent example of Utilimaster’s commitment to finding energy-efficient and environmentally-friendly solutions that allow the company to maintain its competitive edge in terms of product quality and value,” said Dan Murray, former Director of Environment, Health and Safety for the Utilimaster facility and current Assistant Commissioner of IDEM’s Office of Pollution Prevention & Technical Assistance. “When a project combines energy savings, improved product quality, and environmental benefits, it’s a winning situation for the customers, the company, and our local communities.”

“A major environmental advantage of this system is that it emits 90 percent less nitrogen oxide (NOx) than a conventional coal-fired electric generation system,” added Murray. “This reduction in emissions is the equivalent of removing about 73 cars from the road.”

The CHP system works by producing 70 kilowatts of electricity in a microturbine and recycling the waste heat. The exhaust gas (waste heat) heats a hot water loop that dispatches heat via an integrated energy management system to two production areas in the plant—a desiccant drying system in the truck wash line and a drying oven in the small parts wash and painting line.

The unique part of the CHP process is the desiccant system, which uses a honeycomb wheel-like cassette that can remove approximately four times more moisture from the air than traditional radiant heaters. Moist air passes through the wheel, where the moisture is chemically absorbed, and hot dry air is returned to expedite the drying process. Waste heat from the micro turbine is used to remove the moisture from the desiccant wheel and that air is routed and utilized in other areas of the plant.

Utilimaster received a \$30,000 grant for the installation of this project from the Energy and Recycling Office (ERO) of the Indiana Department of Commerce through the Distributed Generation Program. The program enables businesses to install and study alternatives to the central generations of electricity such as micro turbines and combined heat and power applications.

### MnTAP Begins Providing Energy Efficiency Assistance

Four Minnesota Technical Assistance Program (MnTAP) staff attended a certified energy manager (CEM) training in November 2005. With CEM credentials, staff plans to increase energy efficiency assistance in conjunction with pollution prevention assistance.

Under a grant from the U.S. Department of Energy (DOE), MnTAP will work with three energy intensive industries in Minnesota—mining, papermaking, and metal casting—to prevent pollution by improving energy efficiency. MnTAP has agreed to organize two training sessions for DOE Best Practices and assist in six plant assessments.

With support from a U.S. EPA Region V grant, MnTAP is working to include energy efficiency into the Technology Diffusion model. Metal casting is one industry that will be focused on to accelerate the adoption of energy efficient technologies.

MnTAP is purchasing equipment to enable staff to better provide energy assistance. The first purchase was an ultrasonic leak detector that will be used to pinpoint compressed air leaks.

Energy resources are available online at [mntap.umn.edu/energy](http://mntap.umn.edu/energy).

### Phosphorus Reduction in the Upper Mississippi River

MnTAP has concluded a two-year grant from The McKnight Foundation to reduce loading from industrial point sources of phosphorus in the Upper Mississippi River basin using pollution prevention strategies. The project involved working with publicly owned treatment works (POTWs) to inventory industrial phosphorus sources, identify pollution prevention opportunities for industrial users, assist industries with implementation of pollution prevention techniques, and document the results. Technical staff provided assistance to companies that were identified as industrial point sources of phosphorus.

MnTAP conducted outreach to over 100 POTWs and 100 industries through presentations and newsletters. Technical assistance included 120 phone calls with POTWs and 61 with industry, 36 site visits to POTWs and 51 site visits to industry. MnTAP facilitated five pollution prevention teams and sponsored three student interns in companies. This level of technical assistance resulted in 35,150 pounds of phosphorus reduced, 4.5 million pounds of biological oxygen demand (BOD) and total suspended solids (TSS) reduced, 37 million gallons of water conserved. Companies saved \$348,000.

MnTAP conducted similar work in the lower Mississippi River basin in 2000-2002. Both grant reports, as well

as a number of phosphorus reduction resources, are on MnTAP's Web site at [mntap.umn.edu/potw/phosphorus.htm](http://mntap.umn.edu/potw/phosphorus.htm).

## Energy 2006: Empowering the Future



Mark your calendar for Energy 2006!

Featuring:

- Comprehensive technical programs
- Valuable networking
- Informative Technical Tours
- Extensive Exhibit Hall
- Additional training opportunities offered before and after the official Energy 2006 Program

Energy 2006 marks the ninth annual premier Energy Workshop for federal, state, local, and private sector energy managers, energy service companies, utilities, procurement officials, engineers, and other energy professionals. The workshop and exhibit expo will provide intensive training sessions, information on the latest products and industry companies, as well as the chance to network with peers.

The Technical Training Program offers multiple training sessions covering the topics required to achieve progress toward energy efficiency and renewable energy goals. The exhibit expo provides the opportunity to learn from exhibitors who provide on-hand information on services and technologies in the market today that can help accomplish higher efficiency, reliability, and energy independence.

**When:** August 6-9, 2006  
**Where:** Hyatt Regency Chicago  
**Registration:** For more information on E2006, please contact Danette Delmastro at 202-586-7632 or e-mail: [danette.delmastro@ee.doe.gov](mailto:danette.delmastro@ee.doe.gov)

## Coming Soon...Spring 2006 Edition

The spring 2006 edition of the LINK newsletter will focus on electronics waste. The LINK spring 2006 article solicitation will be sent to GLRPPR members via e-mail on or about March 1, 2006; articles will be due March 31. Send article ideas or questions to Wayne Duke at [wduke@wmrc.uiuc.edu](mailto:wduke@wmrc.uiuc.edu).

## Stay Warm PA Initiative

In conjunction with Governor Edward G. Rendell's "Stay Warm PA" initiative, the state departments of Environmental Protection and Aging offered tips and advice to Pennsylvanians about weatherizing their homes

and adopting energy conservation practices to help ease the anticipated financial shock of record energy prices this winter.

According to DEP, weatherizing your home can help to reduce energy bills from 10 to 50 percent. DEP recommends these tips to improve energy efficiency at home:

- Inspect your home and seal any cracks or openings around windows, doors, fireplaces, pipes, electrical outlets, and bathroom, kitchen, or clothes dryer vents. If you own an older home, adding storm doors and windows can reduce heat loss by up to 50 percent. Purchase plastic window covering kits or interior storm window kits.
- Add insulation to your attic, as well as any walls and floors that are adjacent to an unheated space such as a garage.
- Have your furnace or heating unit serviced to ensure it is working safely and efficiently. Replace furnace filters regularly.
- Set your thermostat at 68 degrees and dress warmly. Use more blankets at night.
- Open draperies on sunny days; close them at night and on cloudy days.
- Replace incandescent bulbs with more energy-efficient and last longer compact fluorescent bulbs.
- Lower the thermostat on your hot water heater to 115 degrees F.
- Turn off electric appliances when not in use.

Lowe's, with some 60 stores across Pennsylvania, is partnering with Governor Rendell to hold weatherization workshops at senior centers and other locations. The home improvement company also is providing plastic sheeting, caulking, door guards, and other weatherization materials at no cost to volunteer groups helping to winterize homes of seniors and needy families.

Administered by the Department of Community and Economic Development, the Pennsylvania Weatherization Program works to make homes more energy efficient. Targeted to low-income, elderly, or handicapped residents, the program offers services such as modification or replacement of heating systems, taking steps to reduce air leakage, installing attic insulation, and educating consumers about conservation methods.

On Oct. 19, Governor Rendell announced a comprehensive "Stay Warm PA" plans to address the looming energy crisis. Key components of the Governor's plan include:

- Seeking additional federal funds for the Low Income Home Energy Assistance Program (LIHEAP).

- Authorizing up to \$18 million in state resources, including \$15 million for LIHEAP and \$3 million for the state's Homeowner Emergency Mortgage Assistance Program.
- Asking energy companies to help low-income consumers meet their winter bills.
- Creating a partnership with home supply retailers to help seniors and others winterize.
- Marshaling families and friends to help take care of their homes to help lower winter heating bills.
- Convening a statewide Stay Warm PA summit with volunteers and religious organizations to protect the most vulnerable citizens.
- Enabling the Energy Star sales tax holiday.
- Reducing the commonwealth's energy use.
- Ensuring that poor families have a second chance to make energy payments before utilities are turned off.
- Removing hurdles for poor families seeking to reconnect fuel service.

For more information about Governor Rendell's Stay Warm PA initiative, visit the Governor's Web site at [www.governor.state.pa.us](http://www.governor.state.pa.us). To learn about assistance programs, weatherization resources, and energy conservation ideas, visit [www.staywarmpa.com](http://www.staywarmpa.com).

## A Vegetarian Truck in Illinois?

What do we mean by a vegetarian truck? Engineers at the Illinois Waste Management and Research Center (WMRC) have embarked on a new venture to prove that automobiles can indeed be vegetarian. Well, kind of. The engineers are collecting waste cooking oil from the University of Illinois at Urbana-Champaign dining halls and producing small amounts of 100% pure biodiesel for performance testing in a standard diesel Ford 250 truck.



In conjunction with researchers at the Illinois Natural History Survey, WMRC engineers have begun studying ways to produce biodiesel from algae. Algae is the most efficient oil-producing organism on the planet.

A chemical process called transesterification removes glycerin from the vegetable oil. Methanol and lye (sodium hydroxide) is used to do this. The oil is heated to speed the reaction. The glycerin settles to the bottom and the lighter biodiesel rises to the top. Biodiesel is nontoxic and biodegradable but using the methanol-lye mixture can create toxic fumes. A titration test is run to determine the right amount of lye to add to the waste

oil to prevent this from occurring. WMRC is investigating other chemicals to use during the process. To learn more about the "vegetarian" truck, visit [www.wmrc.uiuc.edu/main\\_sections/tech\\_assist/biodiesel.cfm](http://www.wmrc.uiuc.edu/main_sections/tech_assist/biodiesel.cfm).

## Items of Interest

### Printers NEHS Conference

The Printers National Environmental Health & Safety Conference for 2006 will be held at the Indianapolis Marriott Downtown in Indianapolis, Indiana on March 27-29. The conference brings together printers, suppliers, state and federal government representatives, and others who serve the graphic communications industries as innovators, decision-makers, and holders of experience. Topics of interest include: A Record of Sustainable Environmental Excellence, Effectively Communicating Your EHS Policy, Plant Security Tips, along with various breakout sessions. For more information about reservations and the conference, visit [www.nehsconference.org](http://www.nehsconference.org). For up-to-date information about environmental compliance and pollution prevention, visit [www.wmrc.uiuc.edu/main\\_sections/info\\_services/pneac.cfm](http://www.wmrc.uiuc.edu/main_sections/info_services/pneac.cfm).

### Fine Print

LINK is a free quarterly publication of the Great Lakes Regional Pollution Prevention Roundtable. For subscription information, please contact the editor or see our Web site at [www.glrppr.org](http://www.glrppr.org).

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