

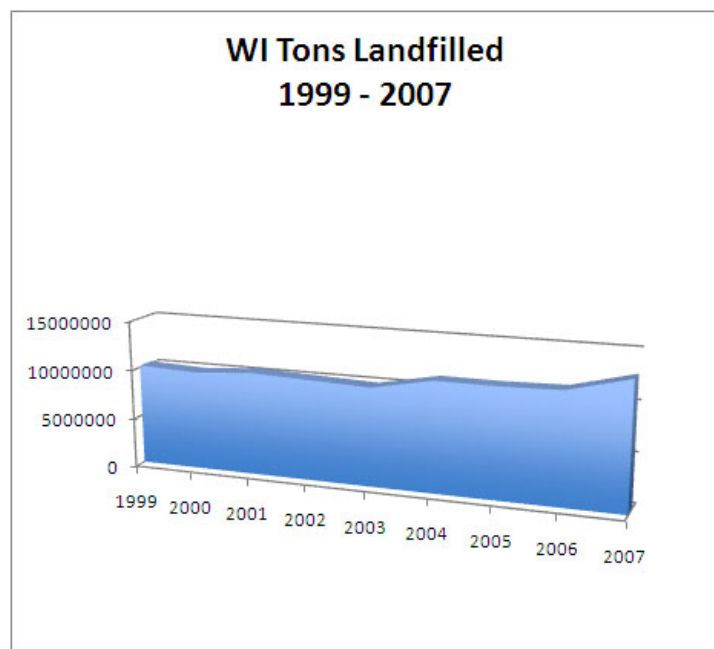
## **Waste to Energy (WTE) – Has Its Time Come?**

*Steve Brachman*

Capturing energy from waste materials has garnered significant attention recently, as climate change and sustainability issues have grown in recent years. Most of the focus is on the production of either biofuels from agricultural wastes and crops or the production of electricity by burning woody wastes. However, not much focus has been given to our current waste stream, which is primarily landfilled. A recent presentation by Jack Lauber, hosted by the Wisconsin DNR, illustrated that more attention should be paid to this energy source.

Lauber is a Research Associate at Columbia University's Earth Engineering Center in New York and affiliated with WTER, the Waste to Energy Research Technology Council. As a former Chief of Technology Assessment in the New York State Department of Environmental Conservation Division of Air, Jack was charged with reviewing and approving a number of waste to energy projects for that state, including the first Teller dry injection system in Dutchess County, NY.

In his presentation Lauber described the considerable progress that has been made in improving the performance of modern waste to energy facilities. He cited how Europe has embraced this technology as part of an overall effort to improve recycling as well as reduce greenhouse gas emissions, demonstrating that the leading European WTE countries also have the highest degree of recycling. In addition, new European facilities go well beyond typical US facilities in terms of pollution control.



So why does waste to energy make sense now? Lauber suggested that the following factors make it more attractive:

1. Better controls on emissions have led to far fewer emission problems, particularly with dioxins, while reducing residue volumes.
2. It produces less greenhouse gas and other harmful emissions as compared to landfilling.
3. Front end recycling is in place, particularly in Wisconsin.
4. There is a need to have energy produced locally to reduce our reliance on outside sources of energy, and
5. WTE reduces transportation costs associated with waste management and produces less transport related emissions.

Finally, Lauber suggested that we could no longer afford to waste the inherent energy value of the municipal waste stream. He noted that one ton of MSW is equivalent to a barrel of oil and that some materials are better off treated in a modern waste to energy facility. For example, because most communities can only recycle 15-20% of their plastics at best (due to the huge variety and poor economics), Lauber suggested that thermal destruction with energy recovery makes the most sense for the remaining plastics.

The implications of altering our disposal methodology in Wisconsin are significant. With recycling markets in poor shape and greenhouse gas emissions growing, we will need to examine in more detail alternative strategies for utilizing the energy potential of our current waste stream.

## Master Composter Training Sites Set for 2009

*Joe Van Rossum*

The locations for the Master Composter Program initial training workshops have been set for the spring of 2009. Workshops will be held in four locations this year. The Master Composter program is a train-the-trainer program that aims to build the capacity of composters to share their knowledge and enthusiasm for composting with others. In order to become a certified Master Composter, trainees must attend the one-day workshop, participate in a Wisline program and complete three outreach activities.

The composters who participate in the program will gain a more thorough understanding of the composting process as well as common uses for compost. The program also provides an introduction to vermicomposting and techniques to reduce the amount of waste generated. Most importantly, Master Composter trainees will learn strategies that will enable them to share their knowledge and interest in composting with others.

One day workshops are scheduled to be held in the following communities:

- Menominee County, February 28
- Iowa County, March 21
- Milwaukee County, April 18
- Barron County, April 25



For additional information about the scheduled workshops or the Master Composter Program, please contact Joe Van Rossum, SHWEC Recycling Specialist: [vanrossum@epd.engr.wisc.edu](mailto:vanrossum@epd.engr.wisc.edu) or 608-262-0936.

## Energy Workshops Schedule Now Online

*Sherrie Gruder*

If you're interested in working in the energy industry or just want to learn more about sustainable practices and technologies for your own use, the Midwest Renewable Energy Association (MREA) is offering a variety of educational and hands-on workshops in WI, MN and IL in 2009. Workshops range from solar electric, solar hot water and wind basics, installation and site-assessor trainings, to straw bale construction and starting a renewable energy business.

Workshop participants come from varied backgrounds including homeowners, builders, educators, architects, engineers, and others. Some scholarships will be available. The 2009 schedule can be viewed at [http://www.the-mrea.org/course\\_workshops.php](http://www.the-mrea.org/course_workshops.php).



In addition, on June 19-21 the MREA will host its 20th Renewable Energy and Sustainable Living Fair. This event is the world's largest and longest running energy education event and is held in central Wisconsin. It offers programs for all ages and knowledge levels. The Fair is powered by working renewable energy systems. The Midwest Renewable Energy Association (MREA) is a nonprofit organization that promotes renewable energy, energy efficiency, and sustainable living through education and demonstration. For more information go to [www.the-mrea.org](http://www.the-mrea.org) or call 715-592-6595.

## DNR Offers Wisconsin Clean Diesel Grant Program

*David S. Liebl*



To help reduce fine particle air pollution from diesel combustion, the Wisconsin Department of Natural Resources has established the Wisconsin Clean Diesel Grant Program to help lower diesel emissions from both public and private vehicle fleets across the state. The program is funded by the U.S. Environmental Protection Agency through the Diesel Emission Reduction Act.

Two hundred and eighty thousand dollars are available for both on-road and off-road projects. Eligible on-road fleets may apply for up to \$10,000 for idle reduction and/or retrofit devices. Eligible off-road fleets may apply for up to \$20,000 for engine repowers, idle reduction and/or retrofit devices. While engine repowers and idle reduction projects require a minimum 50% direct match from the applicant, retrofits are eligible for 100% funding.

### Eligible Equipment:

- Operates on diesel fuel
- Equipment is a mobile air emissions source, defined as any vehicle or equipment that is intended to move from one location to another to perform its function and is capable of emitting contaminants while moving (i.e. stationary air emission sources are not eligible.)
- Intended to remain in the fleet for at least 3 years. For off-road equipment, 3 years or 3,000 hours, whichever comes first.
- Has had a NOx reflash/low NOx rebuild, if applicable (i.e. pre-1999 on-road vehicles affected by the federal Heavy Duty Diesel Engine Consent Decree)



### Eligible Applicants:



- Owner of the equipment, or if leased, the applicant must provide a written statement from owner providing permission to alter the equipment.
- Applicant is a local government, or a business either headquartered in Wisconsin or having an operational base office in Wisconsin
- Able to meet the minimum match requirements – match to be provided via direct costs

Applications must be submitted to the DNR by February 6, 2009. For application forms and other information see: <http://dnr.wi.gov/air/mobile/CleanDieselGP.htm>.

Or, contact: Jessica Lawent, (414) 263-8653, [jessica.lawent@wisconsin.gov](mailto:jessica.lawent@wisconsin.gov)  
Muhammed Islam, (608) 264-9219, [muhammed.islam@wisconsin.gov](mailto:muhammed.islam@wisconsin.gov)

## Research Examines Hospice Role in Disposing of Pharmaceuticals Following Patient Death

Researchers from the University of Wisconsin - Madison recently completed a study on hospice professionals from across the state to determine their attitudes and practices related to the proper disposal of medications following patient death. Graduate student James T. Spartz, under the direction of Assistant Professor Bret Shaw from UW-Extension and the Department of Life Sciences Communication, found results that were both enlightening and cause for some concern.

Researchers Spartz and Shaw discovered inconsistent medication disposal procedures among hospice agencies statewide. Consistent industry-wide disposal standards do not exist. Crushing drugs and mixing them with undesirable materials such as used coffee grounds or kitty litter is the current recommended practice for most medication disposal in the home. To some, this only seems like pollution postponement. To others, it is simply another unfunded and time-consuming mandate without state or federal resources or leadership. Incineration of pharmaceuticals is considered a better alternative, though not without its own environmental repercussions, but is not generally available outside of medical facility settings.

The hospice industry was chosen for the current study because it has been found that surplus medications are commonplace during the home administration of hospice care as well as following patient death. It was also thought that hospice professionals would be open-minded regarding the topic of encouraging proper disposal of pharmaceuticals. Both of these conditions proved to be true as validated by qualitative and quantitative survey results.



In recent years, the Environmental Protection Agency, U.S. Geological Survey, and U.S. Fish & Wildlife Service, among others, have found a broad range of pharmaceutical compounds in public water systems. Trace levels of analgesics, antibiotics, anti-convulsives, cancer drugs, lipid regulators, psychiatric drugs, and some narcotics have been found. While effects from pharmaceuticals and personal care products (PPCPs) on humans are yet to be determined, scientists have been recording, among other more subtle effects, changes in the sex characteristics of fish and other more harmful

effects on aquatic plant life. Serious questions are now being raised about long-term human and nonhuman health effects resulting from exposure to PPCPs in public waterways.

Guidelines released by the Wisconsin Department of Health Services (DHS) in 2007 formalized some basic suggestions regarding medication disposal. Specifically: "DO NOT flush medications. Destroying medications by placing them in the sink or toilet and flushing them into the waste

water is highly discouraged, because waste water treatment plants do not remove medications. Drug components can harm plants and animals that live downstream.”

Results from the current survey suggest that media reports about pharmaceutical contamination in public waterways are alarming to some hospice professionals and the families they serve. According to the respondents in this study, hospice patients also seem very concerned about what could be seen as simply throwing away expensive medications. It has been estimated that the value of wasted medications in the U.S., just for adults over 65, exceeds \$1 billion annually. What’s more, prescription drugs that have street value, such as narcotics commonly used in palliative care, are subject to diversion, or the intentional use by someone other than the prescribed. Diversion issues are a growing concern for hospice patients, their families, and hospice staff nationwide.

Respondents in this survey also called for pharmacists to be more proactive in discussing disposal options with patients. In light of this, it is refreshing to see work like that of PharmEcology Associates of Brookfield, WI, encouraging increased awareness among pharmacists for “cradle-to-grave” pharmaceutical stewardship practices. Survey results also indicated that, if given a choice, hospice professionals would prefer to have the option of returning medications for regulated re-use. Wisconsin Assembly Bill 197, signed into law on July 5, 2005, exemplifies some of the common traits of this type of legislation. It permits the donation of any drug used to treat cancer or chronic diseases, provided that the drugs are in their original sealed packaging. This legislation has opened the door for innovative consumer medication-return partnerships between state agencies and Capital Returns, Inc., a Milwaukee-based pharmaceutical returns management service.

Hospice and other statewide service industries are working to expand pharmaceutical disposal options and increase awareness of these options for consumers. The results of the interviews and survey in this investigation show growing concern among hospice professionals for the environmental implications of improper medication disposal and call for stronger leadership by state legislators and regional hospice administrators. Working towards more clear and consistent guidelines, and a wider array of options for medication disposal, will be the job of elected officials and grassroots activists concerned with this important issue.

For more information on disposal guidelines for household pharmaceutical waste products, visit the Wisconsin Department of Natural Resources site at: <http://dnr.wi.gov/org/aw/wm/pharm/household.htm>. For more information about this survey, contact James T. Spartz at Life Sciences Communication, UW-Madison, by phone (608) 890-2264 or email: [jspartz@wisc.edu](mailto:jspartz@wisc.edu).

## **Energy Independent Communities Pilot Begins**

*Sherrie Gruder*

On Wed, January 14, Governor Doyle awarded over \$400,000 in grants to 23 community groups working to create a “25x25” Plan to meet the Governor’s goal of generating 25 percent of the state’s electricity and transportation fuels from renewable resources by the year 2025. A number of the 23 communities collaborated to submit joint applications (e.g. 9 communities/tribes in Chequamegon Bay). Overall, 43 applications were submitted representing 71 communities in the joint applications. They requested more than \$2.3 million in funding toward sustainable energy planning.

The 2009 Wisconsin Energy Independent Community Partnership pilot communities selected are: Brown County and Oneida Tribe; City of Washburn, City of Ashland, City of Bayfield, Town of La Pointe, Town of Bayfield, Ashland County, Bayfield County, Red Cliff Band of Lake Superior Chippewa; Village of Osceola and Osceola School District; City of Marshfield; City of Columbus; City of Evansville; City of Platteville; City of Lancaster; City of Oconomowoc; Town of Fairfield; Village of Spring Green and Town of Spring Green, and the River Valley School District.

Energy Independent Communities are responsible to:

- assess energy use of municipal buildings, infrastructure and fleet
- undertake a strategic comprehensive energy planning process
- produce an energy independent community plan to achieve 25% renewables by 2025

The 25x25 Plan process began late January and will be completed by December 2009. During this process, there are opportunities for other communities around our state to learn from the experiences of the pilot communities and to participate in forum discussions. Open meetings on the topic will be held by the Office of Energy Independence during the months of March, June, September and December. The first meeting will be held at the Wisconsin Renewable Energy Summit in Milwaukee on Thursday, March 26. For more information about the meeting go to [www.localgovinstitute.com](http://www.localgovinstitute.com). Information about the WI Renewable Energy Summit is at <http://renewableenergysummit.org/>.

For more details about the Energy Independent Communities program or Governor Doyle's Energy Independence Executive Order and related programs, please visit <http://power.wisconsin.gov>.

To view the Governor's press release, go to [http://www.wisgov.state.wi.us/journal\\_media\\_detail.asp?locid=19&prid=3898](http://www.wisgov.state.wi.us/journal_media_detail.asp?locid=19&prid=3898).

For more information about the Energy Independent Communities Partnership, go to <http://power.wisconsin.gov/section.asp?linkid=1238&locid=131>.

## **European Union's Chemical Substitution Policy and Its Potential Impact Upon Wisconsin Manufacturers**

*Steve Brachman*

REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) is a major reform of EU chemicals policy, affecting all global supply chains that produce and use chemicals. In June 2007, the new EU policy on chemicals, REACH, entered into force and will have a significant impact on Wisconsin businesses. As a result, thousands of chemicals manufactured in or imported into the European Union will have to be registered with the newly established European Chemicals Agency (ECHA) in Helsinki, Finland.

The success of REACH will depend on a prompt, effective process for identifying the most hazardous chemicals on the European market and replacing them with safer alternatives. Currently, the European Chemicals Agency (<http://echa.europa.eu>) has identified 15 "substances of very high concern" that will be targeted for safer replacements. This "candidate list" of chemicals meets the criteria of "substances of very high concern" defined in the legislation, such as those that may cause cancer or persist in our bodies and the environment for

long periods of time. Part of the listing process includes a requirement for companies to provide information to consumers concerning the presence of these substances in consumer products.

However, this first listing is considered insufficient by a number of parties, especially the International Chemical Secretariat (ChemSec). ChemSec, in collaboration with an NGO Advisory Committee, has identified 267 substances that meet the REACH criteria which they have dubbed the SIN (Substitute It Now) List (<http://www.sinlist.org>). The list was published September 17, 2008 at a Substitution Conference. NGO's are now lobbying the EU to expand the candidate list. As the list is expanded, it will be important for Wisconsin chemical companies and suppliers to pay close attention to REACH if they want to continue to do business in the European Union.

## **EPA Designates Five Wisconsin Counties and One Township as Non-attainment for PM2.5**

*David S. Liebl*

Brown, Dane, Milwaukee, Racine, and Waukesha counties, along with Pacific Township in Columbia County, have been designated as non-attainment areas under new stricter federal air quality standards for fine-particles (PM2.5).

Fine-particles primarily come from burning coal, oil, diesel, wood, or gasoline by power plants, wood stoves, cars, trucks, buses and marine engines. Fine particles can cause serious respiratory health problems, and elevated levels of fine particle pollution can occur at any time during the year.

An area is considered non-attainment if it either does not meet the new 24-hour standard of 35 micrograms per cubic meter or is determined to contribute to air quality in a nearby area that does not meet the standard. EPA's designation of the six areas in Wisconsin as non-attainment of the new standard is based on the three most recent years of air monitoring data (2005 through 2007).



Official publication of EPA's designations in the Federal Register is scheduled for sometime in January 2009. The state will have until February 20, 2009 to show that it has complete, quality assured and certified monitoring data for 2008 that, when used with two previous years of data, indicates compliance with the rule. Recent DNR air monitoring data for Brown, Columbia, and Dane counties suggests that these areas may attain compliance with the new standard. In these cases, EPA will publish a supplemental amendment to the federal register by April, 2009. The effective date of final designations will be 90 days after publication in the federal register.

Areas designated as non-attainment may face restrictions on industrial development until such time that they can show they are back in compliance with the standard. Over the last few years, Dane County and its business and government partners operating through the Dane County Clean Air Coalition (supported by UW-Extension), have taken a number of steps to help reduce emissions of fine particles in an effort to avoid being designated as a non-attainment county. These steps include technical assistance to industry, a rideshare initiative, non-road clean diesel demonstration project, MG&E's Energy 2015 Plan, and a clean school bus initiative.

For more information about Dane County's efforts to meet the new fine particle standard see:

<http://www.healthyairedane.org>.

## Sustainable Business Practices and Strategies Webinar

*Sherrie Gruder*

The Building Communities Focus on Sustainability webinars for February and March will focus on businesses and jobs. The February 17, 2009, 11:30am-12:30pm session features Bob Willard, a leading expert on the business value of corporate sustainability strategies. He has authored two books, *The Sustainability Advantage* and *The Next Sustainability Wave*, and created a DVD of his presentation, *The Business Case for Sustainability*. He worked 34 years with IBM Canada, is on the faculty of the Sustainable Enterprise Academy, and serves on the advisory board of the Natural Step Canada.

This session looks at how businesses can capture the opportunities associated with sustainability. It quantifies the benefits of business sustainability strategies and offers insights into how these advantages can be communicated to business leaders. Specific examples are used throughout the presentation.

The March 17 Session: *Green Collar Jobs: Sustainable Work in a Low Carbon World* explores the nature of green collar jobs and their implications for business and community development. It looks at links with environmental concerns, efficiency considerations, and workforce (and employment) development in terms of education and skills requirements.

Presenters: Gary Green, Department of Rural Sociology, University of Wisconsin-Madison, Andrew Dane, University of Wisconsin-Extension Barron and Chippewa Counties and Sarah White, Center on Wisconsin Strategy.

These programs are being downloaded for group viewing and discussion in 36 county Extension offices and UW campuses across Wisconsin. They are also downloadable at individual offices or homes for anyone who has a phone connection and computer with an Internet connection (requires 2 lines). For more information and to register, go to <http://www.uwex.edu/ces/cced/communities/ConferencePrograms2008.cfm>.

Later programs include *Local Food Networks: Food Localization as a Sustainability Strategy* (April), *Sustainability Indicators and Measurement* (May), and *Community Organizing for Sustainability* (June).

### ***Events, Training, Workshop and Tour Opportunities.....***

#### Federation of Environmental Technologist, Inc. (FET) Upcoming Events

Through February 24, 2009, **Essentials of Hazardous Materials Management 11-Week Course**, Green Bay, WI.

February 11, 2009, **Industrial Wastewater 3-Week Course**, Milwaukee, WI.

March 31, 2009, **FET Environment & Energy Symposium**, Liberty Hall, Kimberly, WI.

Participants can select one of the following full day seminars: Water Issues, Including Stormwater & Water Discharge; Energy Issues for Business; and DOT HazMat Training.

Register at [www.fetinc.org](http://www.fetinc.org) or call 414-354-0070

2009 Wisconsin Buy Local Food Regional Workshops: Farmers will receive practical advice on pricing farm products during the morning session. Participants will spend the afternoon collaborating on options for promoting local foods in local communities. Dates and locations:

February 4, 2009, Eau Claire  
February 5, 2009, Phillips  
February 6, 2009, Oconomowoc  
February 7, 2009, Platteville

8:30am – 5:00pm

Upcoming Classes at Lakeshore Technical College

February 18-20, 2009, Ammonia Emergency Response Tech Level  
February 19, 2009, Emergency Planning/Coordination  
March 5, 2009, Industrial Emergency Response Operations Refresher  
March 6, 2009, Industrial Emergency Response Technician Refresher  
March 16-20, 2009, Industrial Emergency Response 40 Hour Technician  
March 19, 2009, DOT Haz Mat for Supervisors  
March 24, 2009, OSHA Inspection – How to Survive It

All Classes are held at the Cleveland Campus  
1290 North Avenue  
Cleveland WI 53015

For more information see: <http://www.gotoltc.edu/seminars>

If you have any questions or concerns, contact Ruth Semph via e-mail [ruth.semph@gotoltc.edu](mailto:ruth.semph@gotoltc.edu) or by calling directly at 920-693-1167 (or) toll free 1-888-468-6582, extension 1167.

Master Composter One-Day Workshops:

February 28, 2009, Menominee County  
March 21, 2009, Iowa County  
April 18, 2009, Milwaukee County  
April 25, 2009, Barron County