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(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2009-10
(session year)

Assembly
(Assembly, Senate or Joint)

Special Committee on Clean Energy Jobs...

COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
  (**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
  (**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**

* Contents organized for archiving by: Stefanie Rose (LRB) (December 2012)

AMERICAN INNOVATION:

MANUFACTURING LOW CARBON TECHNOLOGIES IN THE MIDWEST

EXECUTIVE SUMMARY

THE °CLIMATE GROUP

FREDERICK A. AND BARBARA M. ERB INSTITUTE
FOR GLOBAL SUSTAINABLE ENTERPRISE
UNIVERSITY OF MICHIGAN

JANUARY 2010

EXECUTIVE SUMMARY

For too long, the overwhelming body of research related to climate policy has focused exclusively on the costs associated with taking action. And when research has been conducted about the benefits, the findings have often been too vast to easily understand and deconstruct. This report therefore aims to answer the following question:

WHAT IS THE ECONOMIC OPPORTUNITY FOR MANUFACTURING SELECTED LOW-CARBON TECHNOLOGIES IN THE MIDWEST?

To answer this question, we estimate the economic benefits associated with growth in three low-carbon technology markets: wind turbine components, hybrid powertrains and advanced batteries.

We estimate these benefits in two different scenarios.

- The "policy scenario" assumes that three climate and energy policies are in place: a "green" stimulus program; a $17 price on carbon, resulting from a cap on US emissions; and a national renewable electricity standard (RES) of 20% by 2020.

  For wind turbine components, we consider a "high" and "low" policy scenario to account for differences in how policy might affect US wind capacity. For hybrid powertrains, we only consider one policy scenario, due to consistency in projections of the share of hybrids in total US vehicle sales. For advanced batteries, we consider a "high" and "low" policy scenario to account for differences in the share of the advanced battery market that will be supplied by US manufacturers.

- The "no policy" scenario assumes that these three climate and energy policies are not in place.

The findings in this report should be considered in light of its narrow scope.

This report does not measure the net economic impact of climate and energy policies, in that we do not look at the costs associated with these policies. The revenues and jobs we found in low-carbon sectors do not take into consideration revenues and jobs lost in other sectors. More research is therefore needed to ascertain a truly complete picture.

We also do not consider all of the economic benefits of climate and energy policies, which include substantial energy efficiency savings, new jobs created outside of the manufacturing sector, benefits from the manufacture of hundreds of additional low-carbon technologies not examined in this report, and opportunities to export these low carbon technologies to other countries.

Instead, we take a deep look into one part of the potential benefits: the increased manufacture of three low-carbon technologies in the Midwest.

Low Carbon Technologies in the Midwest

Primary Metals	Chemicals	
Energy-efficient appliances	Amines for carbon capture and storage (CCS)	
Energy-efficient HVAC and building systems	Electrolytes for advanced batteries	
Public transportation systems	Energy-efficient building insulation	
Wind turbine components	Enzymes for increasing the energy efficiency of industrial processes	
	Photovoltaic (PV) solar cells	
Machinery Production	**Automotive**	
Biomass boilers	**Advanced batteries**	Diesel particulate filters
Combined heat and power systems	**Hybrid powertrains**	Lightweight vehicles

Of the 250 low-carbon technologies identified by McKinsey & Company, we look at 3 of the 15 in which the Midwest has a competitive advantage.

We estimate the benefits of manufacturing low-carbon technologies for only the Midwest region, defined as Illinois, Indiana, Michigan, Ohio, and Wisconsin, and we do so only until 2015.

Our limited scope enables us to take sector specific factors into consideration, and not to make too many assumptions about the future, which we feel leads to a more accurate estimate than would otherwise be possible.

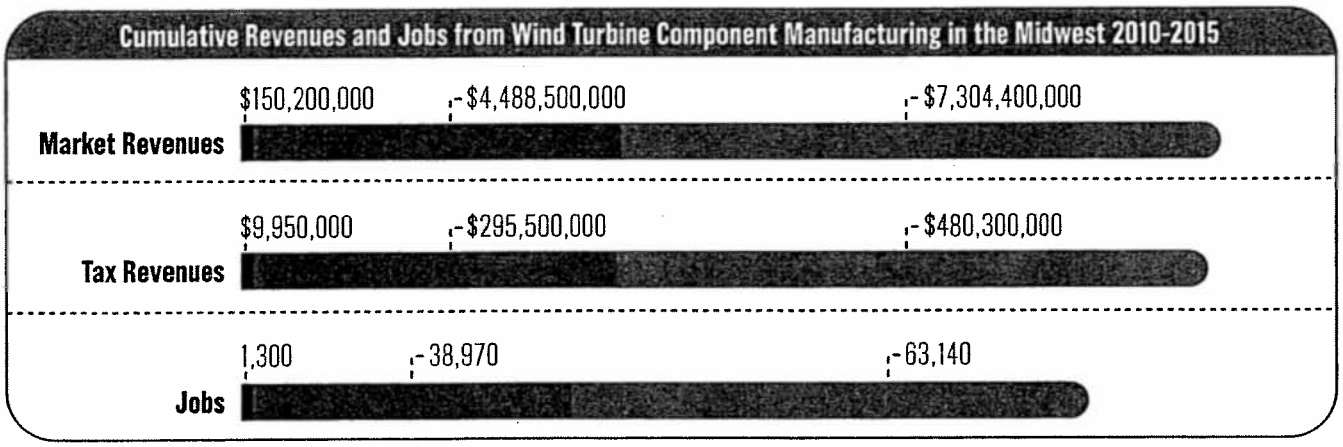
The end result provides a realistic answer to the question we set out to address.

Wind Turbine Components

Our case study on wind turbine components found that the three climate and energy policies would lead to significant new market revenues, state and local tax revenues and jobs.

In the "policy-low capacity" scenario, where policies would increase US wind capacity to 65.7 GW, we estimate $4.3 billion in additional market revenues, $286 million in additional tax revenues and more than 37,600 new jobs in the Midwest by 2015. ("Additional" revenues and jobs are in comparison to the "no policy" scenario.)

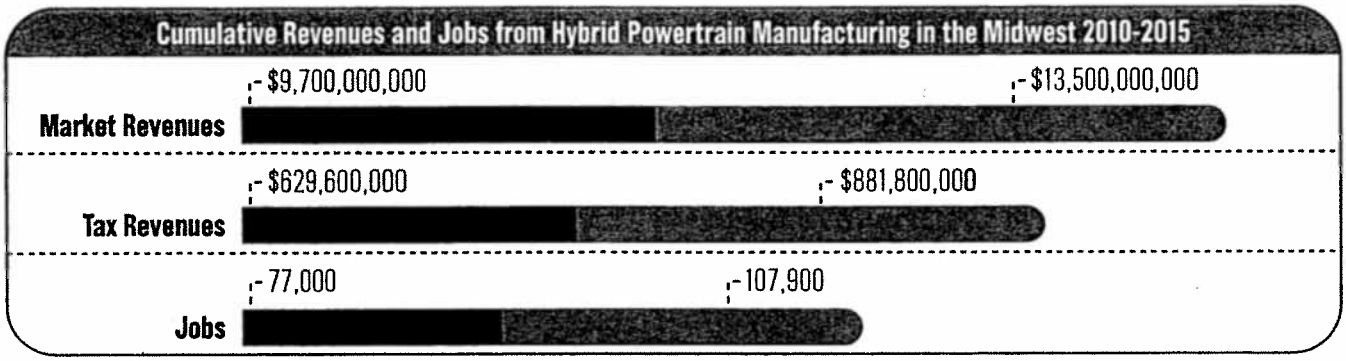
In the "policy-high capacity" scenario, where policies would increase US wind capacity to 90 GW, we estimate $7.1 billion in additional market revenues, $470 million in additional tax revenues and more than 61,800 new jobs in the Midwest by 2015.



	No Policy (28.6 GW)	Policy-Low (65.7 GW)	Policy-High (90 GW)
Market Revenues	$150,200,000	$4,488,500,000	$7,304,400,000
Tax Revenues	$9,950,000	$295,500,000	$480,300,000
Jobs	1,300	38,970	63,140

Hybrid Powertrains

Our case study on hybrid powertrains found that the three climate and energy policies would lead to $3.8 billion in additional market revenues, $252 million in additional tax revenues and 30,900 new jobs in the Midwest by 2015.



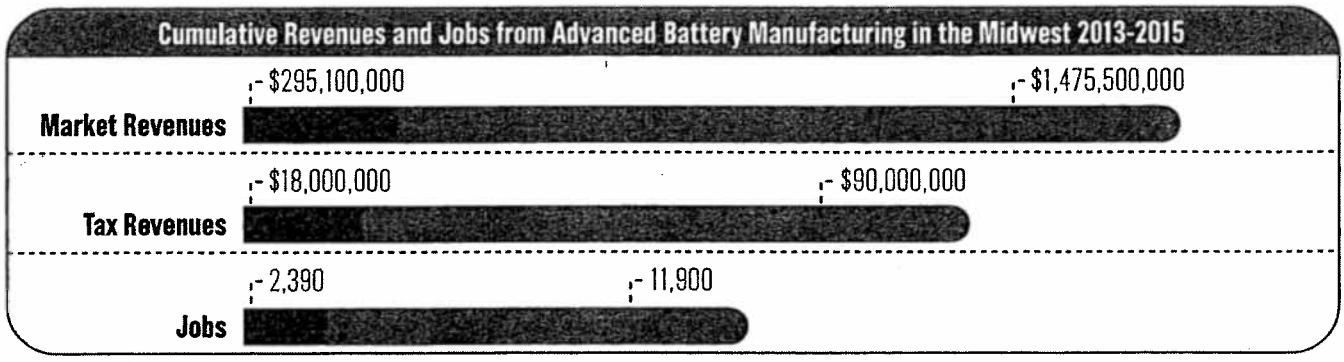
	No Policy	Policy
Market Revenues	$9,700,000,000	$13,500,000,000
Tax Revenues	$629,600,000	$881,800,000
Jobs	77,000	107,900

Advanced Batteries

Our case study on advanced batteries found that the three climate and energy policies would lead to modest new market revenues, state and local tax revenues and jobs.

In the "policy-low share" scenario, where the US supplies 10% of the domestic advanced battery market, we estimate $295 million in additional market revenues, $18 million in additional tax revenues and more than 2,300 new jobs in the Midwest by 2015.

In the "policy-high share" scenario, where the US supplies 50% of the domestic advanced battery market, we estimate $1.4 billion in additional market revenues, $90 million in additional tax revenues and 11,900 new jobs in the Midwest by 2015.



	No Policy (US supplies less than 1% of total demand)*	Policy-Low Share (US supplies 10% of total demand)	Policy-High Share (US supplies 50% of total demand)
Market Revenues	NA	$295,100,000	$1,475,500,000
Tax Revenues	NA	$18,000,000	$90,000,000
Jobs	NA	2,390	11,900

* Because the US currently supplies less than one percent of the global advanced battery market, the size of the domestic advanced battery market in the "no policy" scenario is assumed to be zero.

In total, the three climate and energy policies would lead to additional market revenues of up to $12.3 billion, additional tax revenues of up to $812 million and up to 104,640 new jobs from the wind turbine component, hybrid powertrain and advanced battery manufacturing sectors in the Midwest by 2015.

For access to the full report, including state by state estimates,
please visit: http://www.theclimategroup.org/our-news/events/2010/1/21/american-innovation-report/

"The climate and our economy need help urgently. This timely report documents the huge boost we can give our economy if we adopt strategies to accelerate investment in the low-carbon technologies that will rejuvenate the industrial Midwest, put our people back to work and ensure the Midwest remains globally competitive."

Pat Quinn, Governor of Illinois

"The Climate Group's latest publication, American Innovation:Manufacturing Low Carbon Technologies in the Midwest provides clear, solid job and revenue numbers for low carbon manufacturing in the Midwest. The report is a validation that in reducing greenhouse gas emissions, the opportunities are commensurate with the challenges."

Stanley "Skip" Pruss,
Michigan's Chief Energy Officer and Director of the Department of Energy, Labor & Economic Growth

"20th century innovations gave America a standard of living unimaginable a century before. In this new century, the industries that will thrive are those that are able to make that standard of living sustainable - by using renewable resources, and ones that do not contaminate our air, water and threaten our climate. As demand shifts from oil-burning cars to ones powered by renewably-generated electricity, the American Midwest can develop the components for that supply chain, the turbines to capture the wind electricity for those cars, and the batteries to store that electricity. The findings in this report show that this kind of Midwest leadership is indeed possible. Just as the region thrived in the 20th century, with a proper adjustment to orient in line with global trends, it will thrive again in this century."

Mike Granoff, Head of Oil Independence Policies, Better Place

"With debate over the implications of prospective climate change regulation hotter than ever in the U.S., American Innovation: Manufacturing Low Carbon Technologies in the Midwest US offers timely insight into some of the ways well-crafted policy responses can spur greentech innovation and generate economic opportunity."

William L. Thomas, Counsel, Skadden, Arps, Slate, Meagher & Flom LLP

For more information please contact Allison Hannon, Midwest Regional Manager, The Climate Group, (312) 831-3151, ahannon@theclimategroup.org.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KEY CONCERNS REGARDING SB450 / AB649

- **Static, inflexible energy efficiency standards mandated in SB450/HB649 are not appropriate for electronics.**

  - It is economically and technologically damaging for Wisconsin to burden consumers, retailers and manufacturers of high tech products with state-imposed regulations for energy efficiency. In the highly dynamic and competitive market for consumer electronics, mandatory regulations based on artificial limits could stifle future innovation, impede product convergence and harm consumer choice of product features and functions.

  - Consumer electronics are vastly different by design and function from the other residential, industrial and commercial equipment, such as boilers, furnaces, refrigerators and water heaters that are commonly subject to such standards. Moreover, other approaches (in particular, ENERGY STAR) are much better suited to addressing energy efficiency and keeping pace with the highly competitive, dynamic and rapidly-evolving consumer electronics market.

- **The federal ENERGY STAR program is already in place for consumer audio and video products, including compact audio, DVD players/recorders and TVs.**

  - ENERGY STAR is managed by the U.S. Environmental Protection Agency and establishes stringent energy efficiency specifications that cover power consumption in both standby and active modes of operation.

  - According to the U.S. EPA, the ENERGY STAR program for electronics saved over 23 billion kilowatt hours of electricity in 2007 and more than 2 billion ENERGY STAR consumer electronics products have been sold to date.

  - ENERGY STAR works because it establishes effective, uniform and voluntary energy efficiency specifications at a national level that encourage competition and protect innovation

  - The ENERGY STAR label is recognized by more than 70 percent of consumers, according to the U.S. EPA.

  - The ENERGY STAR program benefits from strong participation by manufacturers and retailers and is supported by other major energy efficiency stakeholders, including utilities.

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Before the
WISCONSIN JOINT SELECT COMMITTEE ON CLEAN ENERGY
Wisconsin Legislature
Madison, Wisconsin

February 10, 2010

COMMENTS OF THE
CONSUMER ELECTRONICS ASSOCIATION
ON

SB450 / AB649

The Consumer Electronics Association (CEA) represents more than 2,000 companies, including more than 30 companies in Wisconsin, involved in the design, development, manufacturing, distribution and integration of audio, video, in-vehicle electronics, wireless and landline communications, information technology, home networking, multimedia and accessory products, as well as related services that are sold through consumer channels. CEA members design, make, sell and install consumer audio and video equipment, televisions and other high tech products which could be impacted by **SB450 / AB649** or similar legislation.

CEA's concerns are limited to only two pages of the legislation and three specific provisions contained in the current versions of SB450 / AB649:

1. Compact audio products;
2. DVD players and recorders;
3. Televisions.

Appliance energy efficiency standards are not appropriate for electronics.

Consumer electronics are vastly different by design and function than the residential, industrial and commercial equipment that is listed in this legislation. The market for consumer electronics is dynamic, highly competitive and characterized by rapid innovation, significant time-to-market pressures, rapid rates of market penetration, and rapid transition from one technology to another. These characteristics are a major distinction between the high tech products included in the legislation (compact audio products and DVD players/recorders, televisions and other equipment named in the bill (boilers.).

In addition, there are significant design, performance and use differences between televisions, consumer audio and video products and the electro-mechanical equipment listed in this legislation. Unlike such equipment, which tends to be designed for a single purpose (heating, cooling, etc.), TV's, audio, video and other consumer electronics are complex, high tech devices that typically offer several features and functions and are used in at least three ways that distinguish them from commercial and industrial machines. People use consumer electronics to (1) communicate with one another; (2) be entertained; and (3) to receive and store and transfer information. We believe it is inappropriate and economically and technologically damaging for Wisconsin to burden consumers, retailers and manufacturers of high tech products with state-imposed regulations for energy efficiency –*especially when better alternatives exist which are already working to save energy*, such as the national ENERGY STAR program.

Artificial energy use limits on TVs were recently proposed in California, where a study demonstrated that this type of regulation would have profoundly negative economic impacts, including the unnecessary removal of a significant number of TVs from retail store shelves, resulting in lost sales and lost jobs.

A recent study of a proposal for energy use regulations in California projected that such measures, which were intended to remove a significant share of TVs from store shelves, would destroy 4,600 jobs tied to TV sales, distribution and installation, and also would cost California $50 million a year in lost tax revenues (Source: Resolution Economics, LLC).

Voluntary, consumer-oriented programs such as ENERGY STAR are already in place, have been highly successful, and have resulted in significant energy savings and reduced greenhouse gas emissions.

The consumer electronics industry is a strong supporter of the voluntary, market-driven and national approach to saving energy represented by the federal ENERGY STAR program (www.energystar.gov). This successful public-private partnership, which benefits from strong participation by manufacturers and retailers, captures a broad range of consumer electronics – including the consumer audio and video named in SB450 / AB649. ENERGY STAR succeeds by creating a competitive incentive for energy savings. The ENERGY STAR program, coupled with the natural trends toward energy efficiency in electronics design, provides consumers with the products and features they demand, along with a logo recognized by more than 70 percent of consumers. The market penetration of ENERGY STAR products in the consumer electronics sector has been significant, particularly for televisions and consumer audio and video products for which this legislation proposes regulatory mandates. The success of ENERGY STAR represents an energy savings achievement in Wisconsin and the U.S. Notably, this achievement is a direct result of the voluntary, industry-supported and consumer-focused nature of the ENERGY STAR program. Wisconsin state regulations for televisions and consumer audio and video products are completely unnecessary.

ENERGY STAR Program Achievements: Energy Saved (Billion kWh)

ENERGY STAR Product Category	2005	2006	2007
Consumer Electronics (including A/V)	9.3	12.3	14.7
Residential Office Equipment	9.5	6.3	8.5

Source: ENERGY STAR Annual Reports, 2005-2007.

ENERGY STAR Program Achievements: Emissions Avoided (MMTCE)

ENERGY STAR Product Category	2005	2006	2007
Consumer Electronics (including A/V)	1.9	2.4	2.8
Residential Office Equipment	1.9	1.2	1.6

Source: ENERGY STAR Annual Reports, 2005-2007.

New federal specifications are now in place for consumer audio and video products as well as televisions.

The ENERGY STAR program, as administered by the U.S. Environmental Protection Agency, has a proven ability to keep pace with the rapidly-evolving consumer electronics industry. Next generation specifications for consumer audio and video products, including TVs, have been finalized and are now in place.

The latest version (Version 2.0) of the ENERGY STAR specification for Audio/Video (A/V) products is final as of November 16, 2009. All A/V products that offer audio amplification or removable disc playback (e.g., CD, DVD, Blu-ray) are now eligible to earn the ENERGY STAR. The new specification establishes on-mode and low-power sleep-mode power consumption limits and Auto Power Down requirements that A/V products must meet in order to earn the ENERGY STAR label. Consumer A/V products covered under Version 1.0 Audio/DVD program, including Home-Theatre-in-a-Box, audio amplifiers, A/V receivers, Shelf systems, DVD Players, and Blu-ray Disc players, will be subject to these new requirements on July 30, 2010. Products previously excluded from earning the ENERGY STAR, such as commercial audio amplifiers and docking stations, are eligible to qualify under the new requirements effective immediately.

The Version 4.0 and 5.0 ENERGY STAR specifications for TVs have been finalized as of September 3, 2009. These requirements establish challenging on-mode power consumption levels, take steps to ensure a TV is viewed in the mode in which it qualified for ENERGY STAR so consumer savings are realized, and curb energy associated with downloading program guide data. The effective date for the Version 4.0 requirements in this specification is May 1, 2010. The effective date for the Version 5.0 requirements is May 1, 2012. ENERGY STAR qualified TVs use about 30 percent less energy than standard units.

States have overwhelmingly rejected appliance efficiency standards for high tech consumer products

State	*Bill No. (Year)*	*Mandatory standards and regulations for consumer audio and/or video products*
AZ	HB 2390 (2005)	Rejected
CT	HB 5523 (2006)	Rejected
HI	HB 3050 (2006) HB555 (2009)	Rejected
MD	SB 674 (2007) HB1238 (2009)	Rejected
MO	SB433 (2009)	Rejected
MN	SB 656/HF 864 (2009)	Rejected
NJ	AB 1763/SB 1253 (2009)	Rejected
NV	SB242 (2009)	Rejected
RI	SB 2844 (2006) & HB 7610 (2006)	Rejected
TN	HB 46/SB827 (2007) HB1709/SB486 (2009)	Rejected
TX	SB 16 (2009) SB 12 (2007)	Rejected
VT	HB 253 (2006) H316 (2009)	Rejected
WA	HB 2758 (2008) HB1004 (2009)	Rejected

Conclusion

CEA is a strong supporter of the voluntary, market-driven and national approach to energy efficiency represented by the federal ENERGY STAR program. This successful government-industry effort, which benefits from strong participation by retailers and manufacturers, captures a broad range of consumer electronics and creates a competitive

incentive for energy savings. This program, coupled with the natural trends toward energy efficiency in electronics design, provides consumers with the products and features they demand.

In many ways, electronics are part of an energy savings solution. Many home networking products help save energy by providing increased control over home heating, cooling and lighting systems. Information technology and telecommunications products allow teleworking and remote access to information and entertainment content, both of which save fuel and reduce greenhouse gas emissions.

A new national study commissioned by the Consumer Electronics Association (CEA®) shows that using electronics to telecommute saves the equivalent of 9 to 14 billion kilowatt-hours of electricity per year — the same amount of energy used by roughly 1 million U.S. households every year.

The findings also indicate the estimated 3.9 million telecommuters in the United States reduced gasoline consumption by about 840 million gallons, while curbing carbon dioxide (CO2) emissions by nearly 14 million tons. This level of CO2 reduction is equal to removing 2 million vehicles from the road every year.

CEA respectfully urges you to oppose SB450 / AB649 in its current form and remove the section of the bill mandating artificial –and unnecessary– energy limits for consumer electronics.

Respectfully submitted,

CONSUMER ELECTRONICS ASSOCIATION

By: /s/_____

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Cooperative Network
Focus On...
A PUBLICATION OF COOPERATIVE NETWORK
January 2010

Wisconsin's Climate Change Legislation

In the next several weeks, the Wisconsin Legislature will consider sweeping proposals derived in part from the recommendations of **Governor Doyle's Task Force on Global Warming**. Following an extraordinarily lengthy drafting process that began in the summer of 2008, a bill was introduced in the first week of January and special committees were created in both legislative houses to hold hearings and prepare the bill for floor debate.

Oftentimes, the effects of legislation are noticed only by small segments of the public. This bill is different. Probably even more so than with the far-reaching state budget bills, everyone who resides or does business in Wisconsin will be affected directly and often visibly, if what's been dubbed the **Clean Energy Jobs Act** is passed into law.

"Probably even more so than with the far-reaching state budget bills, everyone who resides or does business in Wisconsin will be affected directly and often visibly..."

Universal Impact

It isn't hard to explain why the effects of the Clean Energy Jobs Act (Assembly Bill 649 and Senate Bill 450) would be so broadly felt. It would increase the price of energy across the board, affecting the cost of every phase of production, transportation and consumption of every kind of goods; in short, all human activity. Electricity, natural gas, propane, coal, motor and home-heating fuels, all would cost more because of increased regulatory compliance costs, reduced flexibility in fuel selection for generating electricity, and higher state fees added to utility bills to generate revenue for energy conservation and efficiency programs.

Many conflicting claims are made. Proponents of the legislation say it will create thousands of "green jobs" and turn Wisconsin into a Mecca for renewable energy development. They say it will actually reduce individual ratepayers' utility bills because even with energy prices going up, consumers will use less as energy production, consumer appliances and people's own behavior all grow more efficient. Critics say the rising energy prices will eliminate tens of thousands of jobs, driving them to other states or countries without the costs and regulatory burdens Wisconsin would impose on itself. It will take time to sort out which parts of all these claims are likeliest to represent reality.

Here are some key components of the proposal that, depending on one's perspective, may be viewed as cause for celebration or for deep concern:

- Enhanced renewable portfolio standard (RPS) for electric utilities — Wisconsin law requires electric utilities to obtain 10 percent of their power from renewable sources by 2015. The new proposal accelerates the timeline to 10 percent by 2013 and increases the percentage to 25 by 2025. It also mandates growing percentages of the renewable quota to be generated in-state, with six percent of renewables to be Wisconsin-based by 2020 and 10 percent by 2025. Some say this domestic-sourcing requirement is needed to make sure job creation occurs here, not in other states. Others say it will needlessly increase the price of energy that can be generated more efficiently in windier states and brought here by transmission lines.
- Advanced Renewable Tariff — Utilities would be required to buy renewable energy from local, customer-owned facilities at a price exceeding the utility's own retail rates, to ensure cost recovery and profitability for generation owners. The additional cost of purchasing this power would be borne by other ratepayers. In the initial bill draft, electric cooperatives were exempt from this provision. Cooperatives were exempted because of the inherent problem with asking all electric cooperative members to pay higher electric rates to subsidize the smaller number of members who produce renewable energy.
- Enhanced energy conservation/efficiency goals — This provision calls for a two percent reduction of electricity use by 2015 and a one percent reduction in use of natural gas, propane, and heating oil by 2013.

—continued on back—

Cooperative Network
Focus On...

Prepared and distributed to provide issue-specific information on matters pertaining to Wisconsin's and Minnesota's member-owned cooperatives.

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Universal Impact —continued from front—

- Nuclear Plants — Wisconsin's effective prohibition would be modified to ease restrictions on regulatory approval for new nuclear power plants. New restrictions appear, including a requirement that a plant's entire output must be used in-state. Beyond practical, operational questions, this raises constitutional issues some believe may invalidate the revised language and keep the existing ban in place.
- Low-carbon fuel standard — The proposal would create incentives and disincentives based on a life cycle analysis of carbon footprints by fuel type. Some suggest it would have a negative impact on corn-based ethanol fuels produced in Wisconsin and other types of fuel used by Wisconsin agriculture. It's also disturbing that a low carbon fuel standard would likely give a pricing advantage to oil imported from the Middle East compared with oil from Canada. That's troubling, since more than half of Wisconsin's motor fuels are refined from Canadian oil.
- Energy crop reserve program — This provision calls for incentives to farmers for growing crops to be used as energy feedstocks, but the bill provides no actual funding for the incentive payments.
- Energy conservation code for agriculture facilities — This new code would specifically address energy efficiency standards for barns and milking parlors.
- Repeal of fee limits — This provision repeals limits on the fees added to monthly utility bills for energy conservation programs. In doing so, it creates a new energy conservation fee to be paid on propane and heating oil sales, thereby raising consumer energy costs.

Delegation of Authority

Questions have been raised concerning broad delegation of authority to state agencies and even to non-legislative bodies outside Wisconsin. It's been suggested that at least some of these provisions may be unconstitutional.

One open-ended grant of authority goes to the Public Service Commission (PSC) in administering Utility Public Benefits Fees. These fees, added on to monthly gas and electric bills, finance energy conservation and efficiency programs under the Focus on Energy umbrella. The proposal would greatly expand these programs and the PSC's latitude in funding them.

Investor-owned utilities now must collect the equivalent of 1.2 percent of their operating revenues from customers and remit that money to the state for Focus on Energy. Cooperatives and municipal utilities must collect an annual amount averaging $8 per meter, with no individual assessed in any given month for more than 1.5 percent of the total of all other charges on the bill or $375, whichever is less. Co-ops and municipals may also conduct their own programs rather than pay into the state fund.

The new proposal retains the option for locally-administered programs but repeals the 1.5 percent/$375 caps on individual bills. In a January 7 memorandum, the nonpartisan Legislative Council advises: "The overall result of the new process is to change the current funding formula, 1.2 percent of investor-owned utilities operating revenues plus $8 per meter of municipal utilities and retail electric cooperatives, with a level of funding that PSC determines is sufficient to accomplish all cost-effective energy savings that can potentially be accomplished in such programs."

This may be of concern to those familiar with the history of legislatures and governors of both parties raiding "segregated" funds to balance Wisconsin's chronically deficit-ridden budgets, spending the money for purposes other than those for which it was collected. Utility public benefits fees have been a favored target. In 2009, three years after passage of legislation supposedly prohibiting such raids, utility public benefits were tapped again, to pay district attorney salaries.

Other grants of authority that may stir controversy:

- A requirement that the Department of Natural Resources adopt a low-carbon fuel standard if an advisory panel appointed by the Midwest Governors Association recommends one and it's endorsed by whomever is our governor and a majority of the other participating governors. Some contend this cedes Wisconsin's law- and rule-making authority to a non-legislative body with no jurisdiction over this or any other state.
- A requirement that the DNR adopt vehicle emission standards identical to those prescribed by the California Air Resources board, a move some contend would submit Wisconsin residents to the authority of another state's regulatory agency.

Great Expectations

A lengthy paper would be needed to explore all the provisions in the Clean Energy Jobs Act. It requires development of new energy efficiency codes for residential, commercial and government buildings and consumer appliances. It prohibits sale of television sets that draw more than three watts of power in standby mode. It regulates truck-idling to no more than five minutes in a 60-minute period. It creates municipal taxing authority to finance renewable and energy-efficiency projects, and seeks to do much more.

One thing not specified is the anticipated impact on global climate if all the many challenges posed by the bill are successfully met. It is much to be hoped that this, along with realistic expectations on job gains and losses and other economic impacts will be thoroughly discussed in the brief time before this bill is presented for passage.


FORWARD

Incentives for Renewable Bio-gas Production are Important for Wisconsin and the Nation

- Renewable Domestic Energy: Wisconsin has the resources (woody bio-mass, crop residues, landfills, livestock manure, etc.) to produce 51 billion cubic feet per year of renewable gas. Annual bio-gas production could potentially heat and provide hot water for 630,370 Wisconsin homes per year.
- Additional Revenue Source: Renewable bio-gas has the potential to produce $366,244,964 in sales annually for Wisconsin businesses.
- A Cleaner Environment: Renewable bio-gas would provide CO_2 reductions of 3 million tons per year which is equivalent to taking 594,966 gasoline-powered light-duty vehicles off the road.
- Job Creation: 14,747 jobs for Wisconsin

Types of Resources to Produce Renewable Bio-gas	Annual Bio-gas Production when 50% Market Penetration is Achieved (Bcf)	CO_2 Emission Reductions (total tonnes avoided)
Crop Residues/Non-Food Energy Crops	25.66	1,405,677
Landfills	6.35	347,562
Wood and Wood Wastes	18.36	1,005,855
Livestock Manure	0.43	223,176
Total	50.80 *	2,982,270 **

* Heating and hot water for 630,370 Wisconsin homes per year @ 83 MMBtu/year
* $ value in sales annually at $7.00 per MMBtu = $366,244,964
** CO_2 savings equivalent to 594,966 gasoline-powered light-duty vehicles per year off the road (@ 5 tonnes of CO_2 per vehicle per year)
** $ Value of CO_2 reductions annually at $15.00 per tonne = $44,734,043
** CO_2 reductions are due to natural gas combustion avoided (all sources) and for livestock manure only, methane emissions avoided

Sources
(1) Milbrandt, A., "A Geographic Perspective on the Current Biogas Resource Availability in the United State," NREL/TP-560-39181, December 2005, Table 10.
(2) GTI analysis
(3) A.G.A. Gas Facts, 2007 Data, Table 6-14
(4) Argonne National Laboratories, "A Full Fuel-Cycle Analysis of Energy and Emission Impacts of Transportation Fuels Produced from Natural Gas," ANL/ESD-40, December, 1999, Table A-1.1
(5) Socioeconomic Drivers In Implementing Bio-Energy Projects, Domas et al, Science Direct,28 (2005) 97-106
(6) Renewable Energy and Jobs, Environmental California Research and Policy Center, July 2003
(7) http://www.biofuelassessment.dtu.dk/upload/uafhængige%20centre/biofuelassessment/fritsche.pdf
(8) De La Torre Ugarte, D. G., et al. (2003). The Economic Impacts of Bioenergy Crop Production on U.S. Agriculture, U.S. Department of Agriculture and Department of Energy, Agricultural Economic Report No. 816
(9) Renewable Energy Policy Report, "the Work that Goes into Renewable Energy," No. 13, November, 2001, p. 3
(10) http://www.greenjobs.com/Public/info/industry_background.aspx?id=13
(11) http://www.reddi.gov.on.ca/guide_ecimpactassessment.htm#3.3.1, multiplier is direct + indirect + induced

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gti

GTI is an independent not-for-profit organization serving research, development, and training needs of the natural gas industry and energy markets. Most of the nearly 230-person GTI staff is based at GTI's headquarters located on an 18-acre campus in the Chicago suburb of Des Plaines, Illinois. Over 70% of our personnel are highly trained engineers and scientists. GTI has over 280,000 square feet of office, laboratory, shop, library, and training space with over 110,000 square feet devoted to laboratory, fabrication and testing facilities.

GTI provides programs and services (contract R&D, collaborative R&D, technical services, and education programs) to industry, government and consortia that seek competitive advantages through the development and implementation of technology. GTI programs help organizations outsource and leverage technology investments. GTI also operates offices and facilities in Washington, D.C., Catoosa, Oklahoma (near Tulsa), Houston, Texas, and Birmingham, Alabama.

GTI currently manages approximately $50 million in government and industrial research and development contracts per year (over 100 projects), and has been managing contracts of this type since the 1940's. GTI's RD&D (Research, Development, and Demonstration) project management process has been recommended as a model for other RD&D management agencies, and has been used successfully on commercialization of nearly 500 products. The estimated Net Present Value of products brought to commercialization by GTI in just the last 5 years is between $4 and $7 billion.


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your community energy company

MGE Comments on LRB 3883/1

A December 21, 2009 memo from Roy Thilly and Tia Nelson seeks comments from former members of the Governor's Global Warming Task Force (GWTF) regarding the consistency of LRB 3883/1 with the GWTF Report, and on other issues that require additional discussion. Madison Gas and Electric Company (MGE) appreciates the opportunity to add to the task force's discussion.

The job of transforming the Governor's Task Force on Global Warming recommendations into legislation was not likely to be an easy one. In some instances the recommendations were very clear. In other places the report contained ambiguities due to the complexity of the proposal, or the inability to reach a clear consensus position. With some exceptions the LRB draft does an excellent job of readying the task force's recommendations for legislative review.

Conservation and Energy Efficiency

MGE's representative on the task force also served as co-chair of the Conservation and Energy Efficiency Work Group and we therefore have taken a closer look at energy efficiency related provisions of the bill. We have identified three areas where we think the draft bill departs from the task force recommendations.

Energy Efficiency and Conservation - Joint Finance Committee Review

The Conservation and Energy Efficiency Work Group recognized and assumed the continuation of Joint Finance Committee review of increases of the budget of the statewide energy efficiency program if and when the program would spend beyond the 1.2% of gross utility revenues level established by Act 141. The Report on page 69 clearly states that unless specifically recommended for change all substantive and procedural provisions of Act 141 were to be preserved. The Joint Finance Committee's role in reviewing budgets exceeding 1.2% of annual utility revenues was specifically mentioned in the discussion of the timetable for the program (see page 71 of the Report).

Suggested change: the LRB draft (page 81, line 7, as section 105) repeals this role for the joint committee and in doing so removes important legislative involvement in overseeing the program and its budget. The current statutory language in s. 196.374(3)(b) 2 to 4 should be retained.

Energy Efficiency and Conservation - Large Energy Customer Cap on Program Cost Recovery

A discussion of the recovery of energy efficiency program costs from large energy customers requires a longer perspective. In the fall of 2004, the Governor's Task Force on Energy Efficiency and Renewables concluded the work that produced an outline of proposals that were later enacted as 2005 Wisconsin Act 141. The report of that earlier task force discussed the issue of cost allocation and artificial caps on recovery of costs from certain customers. The Task Force on Energy Efficiency and Renewables, which included a wide variety of stakeholders including large energy consumers, recommended that once Public Benefits funding was protected from state budget transfers the existing caps on recovery of costs should be reexamined. The 2004 task force recognized that modifying the caps would address funding equity concerns arising between customer classes and administrative problems created by the caps. MGE believes that the Public Benefits funding security issue was effectively addressed by the program reforms included in Act 141 and has answered the condition sought by the previous task force.

The current Governor's Global Warming Task Force presented an updated look at this issue as part of its final recommendations. First, the Report at page 74 specifically notes that equitable participation by large energy customers (both as to benefits and costs) is recommended and indeed, required, in order to meet the proposed energy savings goals. This means the previous funding caps for large energy customers needed to be changed. However, the task force recognizing the potential for "rate shock" for large energy customers also suggested that changes to the funding levels for the statewide program from large energy customers occur over a transition period (see page 71 of the Report).

Suggested change: unfortunately, LRB 3883/1 does not address the large customer cap issue but it should include a provision to modify the cap. The suggested statutory changes submitted to the Legislature by the PSC on December 30, 2008 are an option that should get further consideration. Without action on the large energy customer cap the separate task force recommendation to significantly increase our statewide energy efficiency effort will lead to widening of the inequity in the recovery of costs, and not address the administrative issues created by the current cap.

Energy Efficiency Directive to PSC

The legislative directive controlling the exercise of regulatory authority by the PSC related to energy efficiency needs further discussion. The specific provision is section 67 of the bill on page 72 line 18 of LRB 3883/1. It proposes a general directive to the PSC to exercise its regulatory authority to pursue reductions in electricity and natural gas usage. It includes specific examples of policies such as energy efficiency programs, load management and demand response, and tariffs to reduce energy use. MGE agrees with the emphasis the task force placed on energy efficiency to reduce GHG emissions, but also believes that the energy efficiency goals the task force agreed to are more appropriately addressed and very adequately guided by the revised quadrennial PSC proceeding called for in the bill.

Enacting an additional general energy efficiency directive to the PSC may have uncertain and perhaps undesirable consequences for the PSC and for ratepayers. For example, the PSC may face litigation over many of its decisions. Challengers could argue a PSC decision did not "ensure that the maximum reductions in the use of and demand for electricity and natural gas" are achieved. Rather than embroil the PSC in such litigation, perhaps the state should continue to use the expertise of the PSC, utilities and other parties in the quadrennial PSC proceeding to pursue appropriate energy efficiency policies.

Suggested change: MGE would favor deleting the separate legislative directive on energy efficiency found in section 67 of the bill (page 72, line 18).

Enhance Renewable Portfolio Standard

MGE had a representative on the Generation Work Group, and as a utility that would be required to carry out the legislative mandates included in the bill, as well as those that may result from federal legislation, we would like to comment on concerns we have identified in the bill draft.

RPS Legislative Findings Inconsistent With Report

The legislative findings proposed to accompany the enhanced RPS proposal present a view of the energy grid that MGE does not fully share. Additionally, we question the desirability of including a findings section along with the RPS law revisions. For example, the delivery of imported electricity to meet a portion of Wisconsin's energy needs has never been threatened due to the reliability of the transmission system.

Wisconsin, like other states, participates in a regional bulk power market that has provided significant benefits to Wisconsin consumers. The State has also taken a leadership role in developing the

M-RETS tracking system for trading renewables between participating states and renewable generators and utilities. Our state has accepted the view that participation in a regional renewable trading market would keep the cost of renewable energy down and promote the development of renewable energy throughout the upper Midwest. The proposed legislative findings suggest that Wisconsin policymakers are pursuing a more balkanized energy system than what currently exists, or than what will be helpful for the continued development of a regional renewable market.

Suggested change: delete the legislative findings section of the enhance RPS provisions found on pages 101-102, Section 170 of the draft.

Advanced Renewable Tariffs Provision Inconsistent With Report

MGE believes that the renewable tariffs authority for the PSC proposed to be created as section 196.379 of the statutes (pages 115-118 of LRB 3883) is not consistent with the Report and should not be included in the bill. The Report describes renewable tariffs as an enabling policy for the enhanced 25 by 25 RPS recommendation (see page 120, section 5). In our view, it is clear the task force did not see renewable tariffs as going beyond the enhanced RPS. Specifically, the Report notes that there would be no additional GHG reductions achieved by renewable tariffs beyond those obtained from the enhanced RPS (see page 120, section 5 of the Report), and not a policy that could be used to increase renewables beyond the RPS level. Feed-in-tariffs, Advanced Renewable Tariffs, or simply Renewable Tariffs as they are termed in the bill, should remain a voluntary tool for utilities to use for meeting the RPS requirements of state law.

MGE is concerned that the use of mandatory renewable tariffs will undermine green power programs currently administered by Wisconsin utilities. MGE offers a nationally recognized green power program to its customers. The program is successful in part because MGE carefully manages the renewable resources it uses in the program to blend higher cost renewables like solar with lower cost renewables such as wind and keeps the premium customers pay for green power reasonable. Forcing more high cost renewables into our green power program would put the program at risk of being too expensive for our customers. If we are mandated to purchase higher priced renewable electricity and that cost is shifted onto our other customers, ratepayers in the MGE service territory will be subsidizing renewable energy and the accompanying GHG reductions that could have been achieved at lesser cost.

MGE was also surprised that the LRB draft interprets the task force recommendation as an invitation to propose a partial repeal of the 2005 Act 141 provision that prohibits the PSC from ordering utilities to engage in additional renewable energy programs if the utility is in compliance with its RPS obligations.

This Act 141 provision was a key recommendation of the earlier Governor's Task Force on Energy Efficiency and Renewables previously referred to and was seen as important to the consensus that was achieved between the various energy stakeholders and legislators involved in that still recent process. From a utility perspective the regulatory certainty provided by Act 141 is essential for planning an orderly acquisition of renewables and the management of costs. This continued certainty was recognized by the task force when it noted that all other provisions of the existing RPS law would apply to the "enhanced" RPS (see page 113 of the Report).

The Governor's Task Force on Global Warming agreed to a challenging goal of obtaining 25% renewables by 2025. If the PSC is authorized to order additional renewables beyond the RPS level it is possible that utilities will be revisiting their renewable policy through every rate and construction case in response to intervener's, project owners, or PSC requests for additional levels of renewable energy or higher tariff rates even though the utility may already meet or exceed the overarching goal of the RPS.

Suggested change: delete section 196.379 (pages 115-118 of LRB 3883/1)

RPS In-State Requirement

MGE acknowledges that the final task force recommendations did include a proposal for an in-state resource component for the enhanced RPS. We raised concerns about the policy as part of our comments on the straw man proposal where the proposal first emerged. The recommendation for a substantial increase in the percentage of energy MGE must obtain from renewable resources and the relatively short time frame to do so will be challenging.

The additional requirement that certain percentages of renewable resources come from in-state resources could add more complexity and cost to the task as MGE may need to favor an in-state projects or resources over an otherwise less costly and easier to develop project in a nearby state.

Enhanced Renewable Portfolio Standard - General Comments

The proposed 25 by 25 policy represents a long-term commitment to utilize additional renewable resources to supply Wisconsin's electricity. The Legislature will need to do a careful job of designing the policy so that customers gain the benefits of renewable energy without unreasonable costs that will be painful for customers during tough economic times like those we are currently experiencing. Although the challenge of meeting the enhanced renewable standard seems greater than when it was first recommended by the task force, MGE continues to support enactment of a 25 by 25 standard.

In addition to the weaker state economy, other events have occurred since the task force last met. The possibility of federal action on climate change has shifted dramatically since the time the Governor's Task Force on Global Warming last met in July of 2008. The Waxman Markey proposal HR 2354 has passed the House of Representatives and the U.S. Senate anticipates acting on climate and energy legislation in 2010. At some point there is a strong likelihood that federal law will address many of the same policy areas as were recommended by the task force.

In the event of the enactment of a federal renewable requirement along side of the Wisconsin requirement, MGE may need to alter its regulatory compliance planning to take into account differences between the two standards. For example, it is very possible that the separate standards may use different definitions of eligible resources. In the event of inconsistent resource definitions, even if the Wisconsin and federal percentage were set at the same level, it is possible that one compliance approach could result in MGE and its customers purchasing a higher overall level of renewable resources, or make alternative compliance payments to the federal government, to assure compliance with both standards. Dual compliance would likely come at a higher cost to customers.

As an alternative, MGE could limit its selection of energy resources to those that it is certain will comply with both state and federal laws. That approach however, may cause MGE to bypass energy alternatives that are either lower cost, favored by our customers, or otherwise desirable to promote.

The bill draft includes provisions that are meant to help the state react to developments in federal policy through the efforts of the DNR and Climate Change Coordinating Council, which will make recommendations for additional state policy changes no later than June 1, 2014. However it is likely that significant differences between state and federal policies could develop in the very near future which could make using the processes in the bill draft inadequate while adding unreasonable costs to Wisconsin energy consumers and regulatory complexity in the interim. MGE thinks that now is the time for the

legislature to consider how to address these differences and to the extent feasible set into motion the capability of harmonizing state and federal resource standards.

In conclusion, MGE would like to again commend the effort of the drafting group. It continues to be the preference of MGE to support legislation that adheres to the task force report. While important issues deserve more consideration before MGE can endorse the bill as a workable reflection of the task force's work, the differences seem surmountable. MGE remains committed to supporting policies that achieve the goals of the task force and appreciates the opportunity to further the recommendations.

Respectfully submitted

Madison Gas and Electric Company

January 6, 2010


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E PLURIBUS UNUM

Hi! We're Wisconsin-grown switchgrass pellets!
You can burn us for energy.

We can also take a bite out of the $16 billion that Wisconsin sends out of state every year for fossil fuels.

Instead, that money can go to the **farmers** that grew us and the **businesses** that turned us into pellets and distributed us!

Homegrown Renewable Energy Campaign

Policies to promote homegrown energy production for our agricultural and energy future

The 50 members of the Wisconsin Homegrown Renewable Energy Campaign support the following policies within the Clean Energy Jobs Act that would make Wisconsin a leader in **clean energy**, stimulate **rural economies** and **create jobs**:

Advanced Renewable Energy Tariffs

This program, also called a Renewable Energy Buyback Program, would set payments to utility customers who want to "feed renewable energy" into the electric grid, enabling farmers and rural businesses to help Wisconsin become more energy independent with smaller scale biopower, wind and solar. Right now, buyback rates vary all over the state, and certain utilities don't offer buyback rates at all. Legislation to establish consistent Advanced Renewable Energy Tariffs will ensure that homeowners, farmers, schools, churches and small businesses who generate excess renewable energy can count on stable payments from their utility.

Energy Crop Reserve Program

The Energy Crop Reserve Program would award contracts to farmers to establish native perennial plants, which farmers can then harvest and sell for bioenergy production. This policy will ensure that farmers and landowners can continue to make profits from their working lands as they transition to the production of biofuels. Ensuring that there is an adequate supply of biomass will create even more economic development as the number of businesses, aggregators, distributors and biofuel producers increase in the state to take advantage of these new resources.

Low-Carbon Fuel Standard

An LCFS is a market-based approach to promoting the cleanest, low-carbon fuels for Wisconsin. Biofuels are big winners under an LCFS, and Wisconsin's abundant natural resources and crops like switchgrass put our state in a position to capture this rapidly developing clean energy market. An LCFS would also help insulate us from the fluctuating oil prices we see now caused by our over-reliance on foreign fuel sources.

Homegrown Renewable Energy Campaign Members

A New Day Energy, LLC
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Agrecol Corporation
Arch Electric, LLC
Artha Sustainable Living Center LLC
Better Environmental Solutions
Biomass Solution
Bubbling Springs Solar
Cardinal Solar
Clean Wisconsin
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Energy Concepts, Inc.
Full Spectrum Solar
GHD, Inc.
Global Energy Options
GrassWorks, Inc
Green Diesel Wisconsin Foundation
H&H Solar Energy Services
Lake County Energy
Lake Michigan Wind and Sun, Ltd.
Legacy Solar
Marathon Renewable Energy, Inc.
Marth Wood Products
Michael Fields Agricultural Institute
Midwest Renewable Energy Association
Next Step Energy, LLC
Northwind Renewable Energy, LLC
Organic Valley Cooperative
Partners in Forestry Landowners Cooperative
Photovoltaic Systems, LLC
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Seventh Generation Energy Systems
The Nature Conservancy
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UrbanRE Vitalization Group
W.E.S. Engineering
Wave Wind, LLC
Wind Energy Systems LLC
Wisconsin Biodiesel Association
Wisconsin Center for Environmental Education
Wisconsin Farmers Union
Wisconsin League of Conservation Voters

For more information, contact Bridget Holcomb, Michael Fields Agricultural Institute: 608-256-1859 or Bridget@MichaelFieldsAgInst.org


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WISCONSIN LOW CARBON FUEL STANDARD

Wisconsin's proposed Clean Energy Legislation has a laudable goal – to reduce greenhouse gas emissions. However, the bill proposes a low carbon fuel standard (LCFS) which will jeopardize Wisconsin jobs, hurt the state's economy, will have a minimal impact on emission, and lacks necessary opportunities for public involvement.

Murphy Oil USA operates a small refinery in Superior. It is a very small refinery by industry standards (For example, the Flint Hills refinery in Minnesota has a capacity of 320,000 barrels per day (BPD) compared to 35,000 BPD at the Superior Refinery). Although lacking the economies of scale of other refineries in the region, Murphy's dedicated and mostly union workforce, and strong community support has allowed our facility to stay in business and seek unique advantages particularly in the asphalt paving business. Further, our Superior location provides good access to Canadian crude oil via the Enbridge Pipeline.

The plant is a significant economic driver in NW Wisconsin with 150 full time employees and a contractor workforce that averages about 125 full time employees. These jobs are threatened by the LCFS portion of this legislation.

Murphy is the only manufacturer of petroleum based fuels in the State of Wisconsin. Murphy is also in the bio-fuels production business having recently acquired an ethanol production facility in North Dakota. Nearly all of the gasoline produced at the refinery is blended with ethanol, and much of our diesel is blended with bio-diesel.

Murphy has a number of concerns with the LCFS:

- Outsourcing of the legislative process.

  As proposed, the legislative and rule making responsibility for a LCFS would be "outsourced" to a quasi-non-governmental organization and the Governors' of other states.

  This sets new and bad precedent. Under this proposal, the Wisconsin Legislature would vote without knowing the bill's eventual impact on their constituents.

  The Legislature will be ceding its authority to the "Low Carbon Fuel Standard Advisory Group" (special interests not responsible to the voters of Wisconsin) which "makes recommendations on the design of the state LCFS". If the majority of Midwest Governors endorse those recommendations, the WDNR must promulgate rules consistent with those recommendations. Under this proposal, Wisconsin residents and their representatives are never able to consider and debate the costs and benefits for a rule that will affect each and every family in the state.

- Uncertain Impacts

  As of now, the LCFS that must be met is undefined. The Legislature should hold thoughtful, transparent, and robust debate about the benefits to be gained from the LCFS versus the potential impacts on motorists and employers, fuel supply reliability, and the impact on Wisconsin's economy. That debate is not possible before the standard is defined.

- Enforcement Concerns

  The bill clearly specifies fines of $5,000 for any person who sells a transportation fuel that does not meet the (undefined) standard.

  What is not clear is how one will distinguish fuel that meets the LCFS from fuel that doesn't meet the (yet to be defined) standard. Regardless of the source of the crude oil, transportation fuels are similar in their carbon content. You can't sample fuel at a retail

outlet and determine if it is low carbon or not. What we are really talking about here is how much energy goes into extracting the crude oil and transporting it to a refinery.

Murphy produces about 2% of the transportation fuel sold in Wisconsin. All other petroleum diesel, gasoline, and kerosene sold in Wisconsin come from outside the State (most of it via pipelines). Petroleum products moved by pipeline are "fungible" meaning that the products are indistinguishable from one another, and therefore difficult or impossible to trace the exact origin of the fuel. Think about power from wind turbines and a coal fired plant produced into the grid. A user could pay for power from one source or another, but there is no way to determine where the user's power actually came from. The same generally applies to fungible petroleum products.

Conceivably, one would have to track the source of the gasoline back from the retailer to a terminal, back up a pipeline to a specific refinery (potentially almost anywhere in the country) to a specific batch of fuel. As difficult as that sounds, it is even more difficult to determine exactly what crude oil was being run (potentially several sources at once).

Keep in mind that the Midwest is a large net importer of finished petroleum products (mainly from the Gulf Coast). Think about how you will determine that naphtha made in Texas from a blend 50 % Saudi Light / 50% Russian Urals crude then sold to a refinery in Louisiana for further processing into gasoline along with components made from Venezuelan heavy and Mexican Isthmus crude oil meets the standard or not.

- Potential Unintended Consequences

Presumably, this bill aims to curb the use of oil from the Alberta oil sands region and to boost the production of bio-fuels in the Midwest. This creates a problem for operations at our refinery and most other Midwest refineries that process synthetic crude oil from the Oil Sands.

However, the standard may also restrict the use of "heavy" conventional Canadian crude oil. About 50% of the transportation fuel sold in Wisconsin is derived from Canadian sources. Other sources of petroleum products that meet the LCFS will be needed (at a higher transportation cost) until such time as sufficient biofuel production capacity exists. Should this burden be imposed on Wisconsin residents at this time?

Heavy Canadian crude oil is used to manufacture paving asphalt. Over a third of the crude oil processed at Superior is done so specifically for asphalt production. The Superior Refinery produces a significant amount of the Midwest region's asphalt. If fuel derived

from heavy oil (being processed to produce asphalt) is unable to meet the undefined and unknown LCFS, then Superior would not be able to produce asphalt, jeopardizing the continued operation of the refinery, which would lead to supply problems in the Midwest.

Canada is a friendly neighbor. Canadian oil is plentiful and secure. The infrastructure to bring Canadian oil to market is already in place in Wisconsin and the Midwest. Forcing the region to use other sources of oil (e.g. Mideast, Venezuela, Russia) is not good policy.

The LCFS establishes a Midwest only market for fuels. Refinery maintenance, pipeline outages, or other issues may result in supply interruptions and price spikes as fuels from other parts of the nation may not be able to be brought to the Midwest.

California is attempting to enact a similar LCFS. Once the entire fuel life cycle carbon emissions are taken into account (including land use considerations), it is likely that domestically-produced conventional corn based ethanol will not meet the standard. Wisconsin could run into a similar unintended consequence of killing the local incumbent biofuels industry. Next generation biofuels should be encouraged, but without jeopardizing existing biofuels that contribute about 10% of domestic fuel supplies. .

- Limited Reductions in greenhouse gas emissions

Greenhouse gas (GHG) emissions are a global issue. A Wisconsin LCFS imposed in the hopes of reducing the use of fuels derived from sources such as the oil sands will not be effective. Canada will continue to produce oil sands and that product will find markets. China is currently making investments in the region. In this case, GHG emissions will not be reduced, but Wisconsin motorists will pay more for their fuel.

MURPHY
OIL USA, INC

DAVID J. PODRATZ

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NBCSL

33RD ANNUAL LEGISLATIVE CONFERENCE

December 2–6, 2009
Marriott Harbor Hotel
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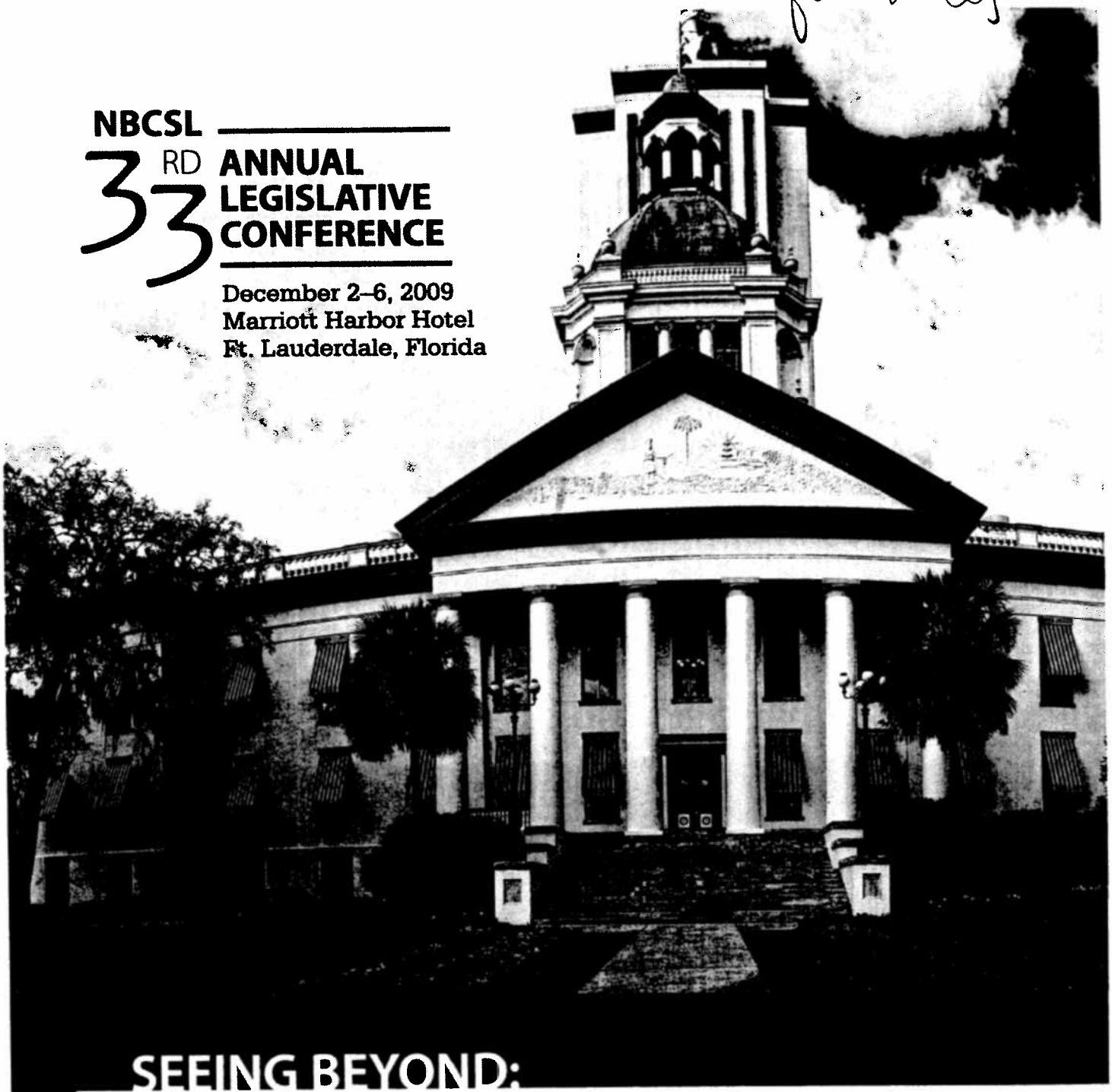

SEEING BEYOND:

Sustainable Progress in the Economic Recovery

2010 Ratified Resolutions

SUPPORTING THE INCLUSION OF NUCLEAR ENERGY AS A VALUABLE PART OF THE U.S. ENERGY PORTFOLIO AND A SOURCE OF DEVELOPMENT FOR MINORITY-OWNED BUSINESSES ALREADY IN AND WISHING TO ENTER THE ENERGY PRODUCTION INDUSTRY

WHEREAS, the National Black Caucus of State Legislators (NBCSL) believes that environmentally responsible and equitable job preservation and job creation are desirable and achievable overarching objectives for U.S. policymakers to pursue as previously stipulated in the passed resolutions of PS-ETE-08-05, PH-ETE-08-33, LS-LMV-08-11, PH-ETE-09-23; and

WHEREAS, nuclear power plants provide high-paying, stable employment and garner public acceptance in the communities in which they operate, generating nearly a half-billion dollars in yearly economic activity and nearly $100 million in state, local and federal taxes annually; and

WHEREAS, America's 104 nuclear plants generate 20 percent of the electricity for our homes and businesses, every day around the clock, without emitting pollutants or greenhouse gases into the atmosphere; and

WHEREAS, the nuclear industry's continually improving safety record, growing public support, steadily improving performance and indispensability as a component of U.S. energy security and environmental protection strategies has bolstered the industry's expansion plans, and prompted submission of applications to build some 25 new nuclear plants, which will provide employment for as many as 2,400 workers during a four-year construction phase, with 400 to 700 permanent operations jobs which cannot be off shored; and

WHEREAS, anticipation of a new wave of nuclear plant construction -- four to eight new plants are expected to be completed by 2017 -- already has spurred private investment of more than $4 billion and creation of some 16,000 new jobs in the just the past several years in domestic nuclear industry construction, components manufacturing and service sectors, one of the most tangible examples of the "green jobs" economy long espoused by NBCSL; and

WHEREAS, the nuclear industry is working with community colleges around the country to develop and implement education and training programs for enabling more students to enter the nuclear workforce and benefit from good jobs, excellent benefits and community enhancement; and

WHEREAS, policies have been adopted at both the federal and state levels to assist the nuclear power and supplier industries in embarking on a vigorous expansion program, ranging from the Energy Policy Act of 2005 (EPAct) Title XVII clean energy loan guarantee program to various state legislation and regulation allowing for early cost recovery for new project construction, all with the intent of insulating federal taxpayers from project risk and reducing final project costs for consumers; and

WHEREAS, the U.S. Department of Energy under President Obama has proposed revised rules for the EPAct Title XVII that are more workable than the previous rules for the program, which presently authorizes $18.5 billion in loan guarantee volume to fund the first three to four new nuclear projects to provide the hosts of energy security, environmental, economic and social benefits enumerated above; and

WHEREAS, the U.S. commercial nuclear industry continues to pursue a comprehensive integrated strategy of

used fuel management that includes: safe ongoing on-site fuel storage; potential interim fuel storage in willing host communities; research of recycling technologies to maximize fuel's energy potential and eventually close the nuclear fuel cycle by an economical, proliferation-resistant method; and eventual permanent disposal of some fuel products in one or more repositories; and

NOW, THEREFORE, BE IT RESOLVED, that the NBCSL supports exploring the development of safe, secure and economically beneficial new nuclear plants in the United States with renewed urgency to enhance our energy security, help the country reach our clean air objectives and provide support for strong economies and develop thousands of good paying jobs and provide educational opportunities; and

BE IT FURTHER RESOLVED, that the NBCSL calls upon its legislative members to examine state initiatives that provide financial backing of new clean air technologies, including nuclear and to examine legislation that would overturn and repeal state bans on nuclear power plant construction; and

BE IT FURTHER RESOLVED, that the NBCSL finds promise in the creation of a permanent federal financing platform similar to the Clean Energy Deployment Administration concept that enjoys significant bipartisan, bicameral support in Congress to provide loans, loan guarantees and other credit support to clean energy technologies, including new nuclear power plants and new nuclear equipment manufacturing facilities as long as such a platform would carry with it the requirement that nuclear energy utilities meet at least a 20 percent minority-owned business compliment in all tier I and tier II supplier contracts of the nuclear energy industry; and

BE IT FURTHER RESOLVED that the NBCSL urges Congress to provide tax incentives for investments in nuclear power plants, new nuclear-related manufacturing and minority workforce development for the outreach and hiring of minorities to operate nuclear power plants, and expand existing production tax credits provided by EPAct 2005; and

BE IT FURTHER RESOLVED, that the NBCSL is very concerned about the siting and transporting of nuclear waste especially given the history of other energy wastes being deposited in communities of color; and as a result of this concern urges the U.S. Congress to explore resources in improving innovation around nuclear spent fuel recycling technology; and

BE IT FURTHER RESOLVED that the NBCSL supports creation of a National Blue Ribbon Commission to provide long term policy guidance for used fuel recycling and eventual disposal with the requirement the Commission be comprised of 25 percent minorities representing both the public and private sectors; and

NOW, BE IT FINALLY RESOLVED, that a copy of this Resolution be transmitted to the President of the United States, the Vice President, Members of the United States House of Representatives and the United States Senate and other federal and state government officials as appropriate.

SPONSOR(S): Resolution Senator Anthony C. "Tony" Hill, Sr. (FL)
Committee of Jurisdiction: Energy, Transportation and the Environment Policy Committee
Certified by Committee Chair: Representative Bill Crawford (IN)
Ratified in Plenary Session: Ratification Date is December 4, 2009
Ratification is certified by: Representative Calvin Smyre (GA), President


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Procorp
Enterprises LLC

Procorp was founded in 1987 to provide superior, cost-effective methods of wastewater management to industries with high strength wastes. Procorp built its reputation by developing flexible, reliable and innovative treatment systems that fully comply with regulatory discharge standards. Treatment process designs are based on a thorough understanding of the processing plants that generate wastewaters and how these factory operations impact treatment requirements.

Today, Procorp provides sustainable water and wastewater treatment solutions to a number of industries including: food and beverage producers, dairy processors, meat processor, and municipalities.

Wastewater is typically seen as an annoying expense that is not the core focus of their business, but must be dealt with. It is regulated both on the influent and effluent end of the pipe and those ever stricter regulations are costing companies money. Additionally, corporations and end users are increasingly aware of the impact their purchases have on the environment and are beginning to demand that producers take responsibility and protect the environment.

Anaerobic digestion with energy recovery has become an increasingly popular and accepted method of dealing high strength wastewaters generated by the industries noted above. However, this type of treatment requires a significant capital investment that is not feasible for many of these companies. It is through grants, incentives and reasonable buy-back rates that these processes are being implemented. The buy-back programs are over loaded with demand, therefore are unreliable in helping clients to calculate the cost payback of a renewable energy biomass system.

This legislation will put into place the incentives necessary to allow businesses to make the right choices. The implementation of these systems will mean jobs and revenue growth, not just for Procorp, but for our clients who are implementing them and our vendors and sub contractors who supply parts and services.

10200 Innovation Drive, Suite 500 Milwaukee, WI 53226 Phone: 414.258.8777 Fax: 414.258.8066 www.procorp.com
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FORWARD

Wisconsin
Renewable Quarterly

Fall 2009 Volume 14, No. 2

Doyle Signs Wind Siting Reform Bill into Law

***Governor Doyle signs Senate Bill 185** into law as Act 40. In the front row immediately behind the Governor from left to right, Curt Pawlisch, R.J. Pirlot (bow tie, Wisconsin Manufacturers and Commerce), Senator Jeff Plale, Rep. Soletski, Steven Peters (Rep. Soletski staffer), Walter Lueder (Wisconsin Farmers Union, open collar), Ryan Schryver (Clean Wisconsin), and Michael Vickerman (RENEW Wisconsin).*

Governor Doyle's signing of Senate Bill 185 (SB 185), a bill that will create statewide standards for permitting wind projects in Wisconsin, is a powerful demonstration of Wisconsin's desire to welcome new wind energy development within its borders. With Doyle's signature, SB 185 is now 2009 Act 40.

A plain English explanation of the Act 40 can be found on RENEW's blog at http://renewwisconsinblog.org

Governor Doyle signed the legislation September 30 at an ABB production facility in New Berlin. Towering behind the signing table were several lines of power conversion systems fabricated at ABB's New Berlin plant for the wind industry. The two legislative coauthors of SB 185, Sen. Jeff Plale and Rep. James Soletski, were on hand to watch their legislation become law.

The legislation enjoyed bipartisan support in both chambers. SB 185 cleared the Senate September 15 on a 23-9 vote and the Assembly a day later on a 65-31 vote.

The new law directs the Public Service Commission (PSC) to initiate a rulemaking proceeding for promulgating rules that specify the maximum restrictions that a local government may impose on the installation of wind energy installations, regardless of size and location. During the rulemaking process, the PSC will receive advice and guidance from a stakeholder committee to be convened in the next several weeks.

As part of this proceeding, the PSC will establish minimum setback distances that provide reasonable protection for neighboring residences and occupied structures as well as standards for decommissioning turbines at the end of their operating lives. The rules will also address several other issues relating to the protection of public health and safety, including sound measurement protocols, maximum sound thresholds, moving shadows, communication signal interference and lighting.

The passage of SB 185 culminated a grueling two-year effort by RENEW Wisconsin and other renewable energy supporters to seek a legislative fix to the patchwork quilt of local regulations that has made Wisconsin a veritable minefield for commercial wind developers. In late

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New RENEW Members

RENEW welcomes the following new businesses and individuals who joined since the last newsletter:

Cardinal Heating • Laura Caspari Ingrid Kelley • Elizabeth Kimbrough MMK Solar Thermal • Northern Battery • Pieper Electric, Inc. • Paul Sager

To join RENEW, complete and return the membership form on page 2.

Doyle Signs

continued from page 1

2007, RENEW enlisted wind developers, environmental groups and labor to join forces and push back against the blanket restrictions on wind development being adopted willy-nilly by local governments.

Out of this effort emerged Wind for Wisconsin, a broad-based coalition consisting of more than 60 companies and organizations representing farm, labor, environmental, health, and manufacturing constituencies.

The bipartisan nature of the final votes reflected the diversity of groups and businesses united behind the Wind for Wisconsin banner.

The breadth of its supporters enabled Wind for Wisconsin and its legislative champions to overcome a well-organized network of opposition groups.

Notwithstanding the substantial winning margins in both chambers, the legislation narrowly survived eight weakening amendments in the Assembly.

One of the amendments would have required the PSC to establish setback standards from buildable parcels of land. That amendment was defeated on a tie vote.

The PSC opened a docket (1-AC-231) on the wind siting rules to establish uniform statewide standards.☼

Solar Outlook Set to Dim in 2010

by Michael Vickerman
RENEW Wisconsin

In contrast to the rapid growth experienced in the last three years, installed solar electric capacity in 2010 will likely decline sharply.

In statements directed to the Public Service Commission (PSC), three utilities – Wisconsin Electric Power (WE), Wisconsin Power and Light (WPL), and Wisconsin Public Service (WPS) – acknowledged that their voluntary solar incentive programs have been discontinued for new customers.

All three had offered, on a limited basis, a special buyback rate for the generated electricity, which effectively cut in half the payback period for the systems.

These three incentive programs spurred homeowners and businesses to install nearly 2.5 megawatts of solar electric capacity. But for those incentives, installations would not have reached the 2.5 MW milestone that PSC Chair Eric Callisto recently celebrated at the installation of a system serving the Town of Menasha.

Though voluntary initiatives are certainly welcome, they cannot by themselves sustain a vibrant solar marketplace. By far the most effective way to maintain solar's momentum is for the Legislature to require utilities to purchase a set amount of renewable energy from their own customers at a reasonable price.

Going into 2010, the only investor-owned utility that has a special buyback rate is Madison Gas and Electric (MG&E), which pays its customers 25 cents per kilowatt-hour for electricity generated from their solar systems. MG&E's voluntary program still has room for another 600 kilowatts of customer-owned solar.

Until their voluntary initiatives had reached capacity, both WPS and WPL had been paying the same rate as MG&E, while WE had offered a 22.5 cents for each kilowatt-hour generated.

If renewable energy is to drive job growth in Wisconsin, lawmakers must create favorable marketplace conditions to support new installations going forward. No policy will accomplish that goal more effectively than a state initiative to establish higher buyback rates.☼

Number of Solar Electric Systems Funded by Focus on Energy

2004	14
2005	33
2006	82
2007	108
2008	334
2009	375 (est.)

Yes! I want to help RENEW promote the use of clean, renewable energy resources to diversify Wisconsin's energy resource mix.

Name _____

Organization _____

Address _____

City/State/Zip _____

E-mail _____

Make your check payable to RENEW and mail to RENEW, 222 S. Hamilton St., Madison, WI 53703
608.255.4044 · www.renewwisconsin.org

Please accept my membership in the following category:

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___ Kilowatt member - $25 - $50
___ Conservationist member - $10 - $25
___ Additional contribution of $_____

Your contribution is tax deductible.

WISCONSIN RENEWABLE QUARTERLY
Fall 2009, Volume 14, Number 3

RENEW Wisconsin, a nonprofit membership organization, advocates the adoption of sustainable energy strategies to power Wisconsin businesses and households in an environmentally responsible manner. Through a combination of public policy and private sector initiatives, RENEW aims to increase the use of clean, renewable, and locally available resources to produce thermal and electric energy.

Research and publication are funded in part by the Focus on Energy Renewable Energy Program.

RENEW also moderates a blog at www.renewwisconsinblog.org.

PSC Approves Coal to Wood Conversion

by Ed Blume
RENEW Wisconsin

The Public Service Commission (PSC) approved the plan to repower an aging northern Wisconsin coal-fired plant with locally available wood fuel.

The approval allows Northern States Power Company-Wisconsin (NSPW), a subsidiary of Xcel Energy, to install the state's first biomass gasifier. The system will produce synthetic gas from a variety of wood sources to produce electricity at the company's Bay Front Power Plant in Ashland.

This project will yield multiple dividends to the utility's ratepayers and the local economy in and around Ashland.

Since 1979, Bay Front has used woody biomass discarded or under-utilized by the existing forest products firms from northern Wisconsin, Upper Peninsula of Michigan and northeastern Minnesota.

The conversion will require an additional 200,000 to 250,000 tons of biomass annually, most coming from within a radius of 50 miles, which includes the counties of Ashland, Bayfield, Douglas, Iron, Sawyer and Gogebic (Michigan), according to Xcel testimony at the PSC.

The larger supply will come from waste wood generated by forest products firms, forest harvest residue, dead and dying tress, and creosote-treated railroad ties.

"This project swaps out 20 megawatts (MW) of old, boutique coal for locally grown biomass, keeping ratepayers' fuel dollars in Wisconsin," said PSC Chair Eric Callisto. "Our ratepayers send over a billion dollars out of state every year to buy coal for power generation. Today's decision helps keep more of those dollars here in Wisconsin."

Capital projects are few and far between in northern Wisconsin. Rather than closing down an inefficient plant that relies on imported fossil fuel, NSPW is extending its life and improving its environmental performance with this switch to a sustainable energy source.

The plant will gasify the wood products through pyrolysis, a high-temperature chemical process that reacts carbonaceous materials with a controlled amount of oxygen to produce a synthetic gas (syngas) to power a generator.

Up to 100,000 tons of coal and 4,000 tons of petroleum coke will be displaced from current generation operation, significantly reducing greenhouse gasses and other pollutants. According to the PSC's environmental assessment, NOx and SOx emissions will be at least 60% lower than burning coal to generate the same amount of BTUs. Mercury and particulate matter will be 80% lower.

Greenhouse gas emissions will drop to zero, because gasification is considered carbon "neutral." According to Xcel testimony, the carbon returned to the atmosphere from combusting the biomass-based syngas is the same in quantity as the carbon absorbed from the atmosphere to produce the wood fuel.

In addition, harvesting the biomass could contribute to the health of the state's forests if done in compliance with the state's biomass harvesting guidelines. In turn the forests should be able to sequester more CO_2.

The End of Coal Generation?

With apologies for the sports analogy, Midwestern coal interests took a called third strike in the last year with the PSC's decision on Bay Front.

Just weeks ago, project developers announced cancellation of plans to build Big Stone II, a $1.6 billion coal-fired plant located in South Dakota that would have served Minnesota utilities. According to the ***Saint Paul Pioneer Press,*** "the recession and uncertainty about federal climate-change regulations that scared off banks and other potential partners."

The PSC threw the first strike a year ago when it rejected plans for Alliant's coal/biomass plant in Cassville.

Renewables Profile

Rick Adamski: A Not-so-Typical Dairy Farmer

Though he modestly calls himself a typical dairy farmer, Rick Adamski's Full Circle Farm in Shawano County belies that description. Adamski runs an all-organic operation with grass-fed cattle, free-ranging chickens, a solar hot water system on the farmhouse, and a 35-kW wind turbine standing tall in the pasture.

Adamski farms the 240 acres across the road from the house where he was born and where his 86-year-old parents still live. Wife Valerie, son Andrew, 18, and daughter Jenna, 13, help out with the work.

He inherited his land use ethic from his parents, who were the model of "conservative use of resources - not a scrap was wasted." This approach was a matter of survival for them growing up during the Great Depression.

As a student at University of Wisconsin-Stevens Point, Adamski became acutely aware of modern agricultures complete dependence on fossil fuels. Though he would eventually earn a degree in soil science and resource management, Adamski began thinking about a more sustainable approach to farming, with an emphasis on natural grazing and renewable resources.

In 1984 Adamski decided to strike out on his own as a farmer. Though he wanted to go organic from the get-go, the process took time. Now he sells everything he produces to Organic Valley Cooperative.

Rick and Valerie hosted a pasture walk this summer, which drew several hundred people. Along the way the crowd stopped at the foot of Adamski's 110-ft.-tall wind turbine, the newest sustainability feature at Full Circle Farm, where they heard Rick highlight two key factors that made this installation possible: Focus on Energy incentives for small wind systems and We Energies expanded net energy billing program for wind generators under 100 kW.

Is your dairy farm typical of those in your community?

It is typical because it is what used to be representative of this community. This area has a strong history of dairy farms owned and operated by families. Our farm is certified organic since 2003. There are three organic dairy farms in the township.

How does owning a 35 kW wind generation system add value to your farm?

I think it diversifies the source of income for us. At current conditions the cost effectiveness is marginal. However, as climate change, diminishing fossil fuels, competition for these limited fossil fuels, and an ever-growing world population put more upward pressure on these traditional nonrenewable resources, the energy generated by our wind turbine will only increase in value.

Since June 2005 Shawano County has had one of the most onerous wind ordinances in the state. You walked into the county's wind-permitting buzzsaw with your eyes wide open. What made you think you could succeed in obtaining a permit?

I watched the entire process of the Shawano County wind turbine ordinance develop, and I knew that it is built upon a house of cards. Those who claimed to be protecting our health and safety only looked at the exaggerated claims of wind turbine problems. They did not have a comprehensive view of the negative effects of climate change. They taught people to fear the evil wind farm developers as if they were going to take over the township. The committee that was appointed by the town board to create an "informational meeting" did not allow Mick Sagrillo to be on the panel because he was "too positive" about wind energy. The list of prejudices that led to the Shawano County wind ordinance could fill several books. I felt that I could get a favorable ruling with more objective review at the county level than which I could receive here at our town level.

Because the ordinance classifies a 135-foot 1.5 as a large turbine, it specifies a multitude of data requests that must be submitted and tests that must be performed - testing for groundwater contamination and signal interference, preparing agricultural impact and avian wildlife studies, and calculating ice "throw" distances. How many of these conditions were waived and how many did you have to comply with?

Most of these tests were waived for the conditional use permit for this wind turbine. I requested 14 variances from the ordinance and essentially received all of them. Several variance requests were modified, and all were accepted but one. I had to have a sound test completed at the closest residences with the turbine running and then with the turbine turned off. At these three places there was no decibel reading difference with the wind turbine on or off. I sent letters of information to livestock producers within one mile of us to let them know that WE Energies would do stray voltage investigations on their premises at no expense to them. I am supposed to report any dead birds or bats found within one hundred feet of the wind turbine. We hosted a nest of killdeer this spring at the base of the tower and enjoyed watching the little killdeer run around the legs of the tower.

How helpful was the installer (Seventh Generation) in supporting you through the application process?

Seventh Generation helped us with

technical assistance for the permitting process, the base construction and the turbine construction. They helped complete the interconnection agreement with We Energies and with our electrical contractor.

The resource that I used to wade through the county's permitting process was Mick Sagrillo, the lead Focus on Energy staff person for small wind systems. Mick attended several of the first meetings with me. He provided technical data and explanations of specifics beyond my understanding. He helped explain details about the safety issues based upon his vast experiences.

What were your impressions of the turbine installation process?

I was impressed with how quickly the turbine was installed. From arrival of the turbine (Monday, January 26) to commissioning of the turbine (February 10) was 15 days! This was all done with few complications; the greatest of these was that the temperatures were seldom above 15 degrees Fahrenheit!

Since its commissioning, how well has the turbine been operating?

I think that it is doing well. We have had to adjust the set points and the bias voltage several times, and the hydraulic pressure fault keeps coming back. We are making progress on these and it seems to be working better all the time. As of July 5 it has generated 19,000 kWh after almost 21 weeks of operating. The wind site assessment estimated that this turbine at this site should be able to generate 60,000 kilowatt-hours. I believe that we will be able to accomplish this most years.

Do you think the example you set will encourage others in Shawano County to install farm-sized wind turbines?

***Rick Admaski worked along with** installers from Seventh Generation Energy to complete turbine installation in the frigid days of February 2009. Focus on Energy granted approximately $30,000 toward the turbine project and approximately $2,000 for the solar hot water installation on Adamski's residence.*

There sure is a lot of interest in this. Many, many people ask me about the details of the turbine's performance. They say that they would like to do the same. They realize that the economics are not great at this time, but I am certain they now see this as an option for the future.

Do you believe your installation will prompt Shawano County to revise its ordinance to accommodate small wind turbines?

I do not think that Shawano County will revise its ordinance because of our installation.

Throughout this process the Shawano County board was a follower. They did not lead the process. That was done by the activists that wanted to create a protectionist ordinance for the status quo of electrical generation.

The public sentiment is that this ordinance is extremely restrictive, but the sentiment does not motivate many to want to work to bring about its change.

It took you about four years to see this project through. Were there times when you considered abandoning this initiative?

Yes, there were times when I considered quitting. I thought about selling the farm and moving to a new environment that was more favorable to change. I found inspiration in the realization that this is my home and that all of our children will be paying the price for the continued dependence upon burning fossil fuels. Fossil fuels took hundreds of millions of years to create and we are on track to use them up within a few hundred years! This wasteful stewardship of our resources needs to be changed soon!

Have you always been this persevering?

Yes, this is a virtue and a vice of mine. In this case I used it as an ally to see me through the six hearings of being called names. I relied upon the quiet assurances from many that did not need a public forum to support me.

Educating School Districts on Solar Air Heating

by Michael Vickerman
RENEW Wisconsin

How much of a building's space heating load can the sun provide? To answer that question with hard data and real-life experience, Focus on Energy began a search in late 2008 for business customers eager to host solar air preheating systems, monitor their performance, and disseminate their results. After reviewing several proposals, Focus on Energy selected two locations for showcasing this particular solar energy application.

One of the Focus on Energy-funded demonstration sites is the Cooperative Educational Service Agency, located in Chippewa Falls. Better known as CESA 10, this agency provides energy management services to 30 school districts in northwest Wisconsin. A low-rise building with plenty of unshaded roof space, the CESA 10 office presents an ideal setting to test a solar application that could very well be a good technology fit for the schools served by this agency.

"We hope this installation will enable us to practice what we preach," said Todd Wanous, an energy manager at CESA 10 and the driving force behind this demonstration.

Placed in service in August 2009, CESA 10's innovative installation features Wisconsin's first example of a modular rooftop air heating system called SolarDuct®.

On the roof are three banks of corrugated collector panels, each connected to the building's air handling system. The dark-colored panels are covered with ventilation holes that draw in outside air. Sunlight striking the panels warms the air passing through the holes. Through the ducts running behind the arrays, ventilation fans draw the preheated air into the building's air handling system.

CESA 10's SolarDuct® unit is designed to supplement, not replace, the natural gas furnaces that used to be the sole source of space heat. However, this system does not necessitate additional fans or blowers to move the preheated air throughout the building. As a result, there is no parasitic energy loss to factor in.

Air temperatures along the corrugated surface can vary widely when the sun is low in the sky. In the morning, the east–facing ridges run about 30 degrees warmer than the west-facing ridges. The phenomenon is reversed in the late afternoon. About two hour's worth of direct sunlight can produce a 25 degree difference between outside air and the preheated air feeding into the air handling units.

The system is equipped with bypass dampers that are activated whenever the interior temperatures reach a certain preprogrammed level. On a cool autumn morning, the preheated air will warm the building interior to a comfortable temperature by mid-morning. To prevent overheating, the bypass dampers kick in to direct the preheated air into the atmosphere instead of the air handling system. When outside air temperatures drop below a certain point, all of the preheated air gets used inside the building.

Wanous and his colleagues laid out and assembled the three modular collector arrays in just one day. An HVAC contractor then connected each array to the existing air-handling system and put in the bypass dampers and control system. The entire installation and commissioning process lasted about a month.

The arrays are not bolted into the roof. Instead, they are anchored by concrete patio tiles that Wanous purchased at a nearby Menards. With the patio tiles in place, each six-foot section weighs about 200 pounds. Between the heavy concrete tiles and the shallow pitching of the collector panels, CESA 10's system is well-protected against wind damage.

But CESA 10's experiment with solar energy is not limited to space heating. Some time after learning that its solar proposal was approved, Wanous and his colleagues decided to integrate photovoltaic (PV) panels with two of the three rooftop arrays, totaling 1.4 kilowatts of generating capacity.

The close proximity of the PV arrays to the SolarDuct system sets up an intriguing research opportunity. As a rule, when ambient temperatures rise, PV efficiency declines. With the current configuration, however, the heat radiating from the PV panels will be drawn into the SolarDuct system, potentially increasing electrical output. If the hypothesized efficiency gains are confirmed, we are likely to see many more of these hybrid configurations installed in the future.

When the metering equipment is installed, CESA 10 will begin posting real-time performance data on line at http://www.cesa10.k12.wi.us, under the Facilities Management link. The results should help Focus on Energy and CESA 10 confirm the accuracy of RetScreen's analysis of this technology. For the CESA 10 system, RetScreen estimated a simple payback of 16 years with incentives.

News of CESA 10's solar air heating system spread quickly throughout its service territory. In September 2009 representatives from area school districts flocked to CESA 10's open house to see the solar systems for themselves. Wanous is optimistic that the rooftop demonstration will inspire many school districts to follow CESA 10's example.

"Every school has the same or more roof space than we have," Wanous said.

SOLAR THERMAL 2009
Madison, WI - December 3-4

A national conference and expo for the solar thermal professional. Installers, manufacturers, site assessors, dealers, distributors, state agency representatives, and policy makers will not want to miss this *one-of-a-kind* conference. Sessions on solar hot water, solar hot air, and solar space heating. Complete details at www.the-mrea.org.

RENEW Slams Isthmus on Antiwind Article

Less than a week before the Legislature began taking up SB 185, the wind energy siting bill backed by RENEW and other Wind for Wisconsin coalition members, ***Isthmus***, an independent newsweekly based in Madison, chummed the political waters with an unambiguously negative treatment on wind projects in Wisconsin.

Titled "The War on Wind," the ***Isthmus*** article, regurgitated a laundry list of antiwind talking points without attempting to assess the factual foundation supporting them. Closer to a kneecapping than fact-based reporting, the article also insinuated that RENEW and Clean Wisconsin had become bought-and-paid-for mouthpieces for wind energy developers and that we had forsaken our guiding environmental principles in promoting a bill that would establish uniform standards for permitting wind generators.

Fortunately, the article had no bearing on SB 185's road through the Legislature. Because the ***Isthmus*** article set a new low in reporting on windpower development, we believed it necessary to send an equally unambiguous message back to the newspaper. Reprinted below are two letters penned by RENEW Board members.

Link to article: www. thedailypage. com /isthmus/article.php?article=26856.

Dear Editor,

McCombie's article brought the fear-mongering, myth-based, ultra-wacky hysterics of Wisconsin antiwind activists to the front page of an otherwise reputable publication.

"Wind turbine syndrome" is the latest attempt to halt the installation of clean, renewable energy in our state. Those opposed to wind power projects have historically voiced concerns of annoying shadows, noise, and a ruined view shed of their otherwise perfect neighborhood. But about a year ago, Internet stories of wind turbines making people sick began to surface, and it caught the public's attention. Your reporter was duped into believing these outrageous claims and proclaiming them as fact.

The fact is that there are thousands of wind turbines installed all over the world, and in many places they've been operating for decades without any evidence of "wind turbine syndrome." Wisconsin is finally starting to install renewable energy, but that progress has been harmed by a handful of extremists more concerned about their property value than the economical and environmental benefits of wind power.

I am a teacher. As such, I expect my students to be able to separate fact from fiction. Clearly you do not require the same from your reporters. Didn't anybody check the article for accuracy or journalistic integrity? There were many factual mistakes – names of companies, the state's renewable energy portfolio of 10% by 2015 (not 25% by 2025), the attempted explanation of "spinning reserve" and how the electrical grid works – that should have been caught before publication. The article had a strong antiwind sentiment and said next to nothing about the benefits of wind power. It named pro-wind lobbyists but no antiwind lobbyists. Why?

I have spent many hours on and underneath wind turbines of all sizes, and have never felt sick. Nor have any of the systems' owners/hosts that I've met. What makes me sick is the profound hatred these near-sided, selfish, wind opponents have towards change and progress. Did McCombie visit a wind farm? Did he hear jet engines?

I wouldn't have been at all surprised if I read an article like this in the Manitowoc ***Herald Times Reporter*** or Calumet County's ***Tri-State News***. But this is the Isthmus! How in the world did this make front-page "news?" I'm absolutely disgusted and no longer consider this a publication worthy of my patronage.

I am one of the many people who have worked endless hours for many years trying to educate the public about the benefits of renewable energy and wind power, and McCombie's article is the perfect example of why my job can be so challenging. His final report merely repeated the voodoo-science spewed on antiwind websites. Unfortunately, his words were printed on the front page, and presented as "truth" and/or "news" to your readers. This should have been printed in the "opinion" section, if at all.

Jenny Heinzen
President, RENEW Wisconsin
Manitowoc, Wisconsin

Dear Editor,

Brian McCombie's article spent a lot of time quoting wind opponents, including Linda Barry's artless, unfunny cartoon, and gave no perspective on how we got here.

Ten years ago, new state legislation allowed independent wind developers to get approval through the local community rather than the PSCW. During this window of opportunity for local control, many elected officials let themselves be bullied into shunning wind projects. A vocal minority used every means possible to delay and prohibit projects. In these communities, that minority denied farmers and landowners the right to reasonably use their land to make a living. Ten years of revenue and jobs in those communities: lost.

Meanwhile, tens of thousands of wind turbines operate throughout world, hundreds in our neighboring states, and several dozen in Wisconsin. Wind power development is a premium source of energy and economic development.

Enough already with fake controversy, egged on with stir-the-pot journalism. Time to act on our state motto: Forward.

Alex DePillis, EcoEnergy Wind
Madison, Wisconsin

Renewable and Energy Efficiency Events

December 3-4, 2009	**Solar Heating & Cooling Conference.** Madison, WI. A national expo for the solar thermal professional. Conference will highlight solar water and space heating technologies, and will feature keynotes, workshops, and exhibitors. More details at http://www.the-mrea.org.
January 6, 2010	**Conservation Lobby Day.** Madison, WI. Citizens from across Wisconsin descend on the Capitol to ask legislators to address the threats of global warming in Wisconsin through clean, renewable energy jobs and energy conservation. For details see www.conservationvoters.org.
March 24-27, 2010	**7th Annual Green Energy Summit.** The New Green Economy: Opportunities and Challenges. Milwaukee, WI. March 24: Green Business Day; March 25, Green Energy Day; March 26, Green Career Pathway/Sustainability Day. More information at www.greenenergysummit.us.
June 15-16, 2010	**Small Wind Power Conference.** Stevens Point, WI. Sixth annual conference for the small wind professional. Hosted by the Midwest Renewable Energy Association. For details see www.the-mrea.org.
June 18-20, 2010	**The Energy Fair.** Custer, WI. The nation's premier sustainable energy education event. Three days of workshops, demonstrations, and exhibits highlighting renewable energy and sustainable living. For details see www.the-mrea.org.

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