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(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ... PUBLIC HEARING - COMMITTEE RECORDS

2009-10

(session year)

Senate

(Assembly, Senate or Joint)

Committee on Environment...

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) (September 2013)

Speaking Notes
Gary Mar
Wisconsin Senate

Thank you, Mr. Chairman.

For the record, I am Gary Mar, the Minister-Counselor in Washington, D.C. for the Province of Alberta, Canada.

Why is an Albertan, living in D.C., testifying on a bill before the Wisconsin Senate? It's because Alberta is the largest supplier of natural gas to the U.S. and, along with Saudi Arabia, we are the largest foreign supplier of oil to the United States.

We provide more oil to the U.S. than Venezuela, Nigeria or Iraq. We are one of your major sources of foreign oil, and yet you can drive from Madison to Edmonton, the capital of Alberta, in not much more than one day (1,500 miles).

In fact, with 170 billion barrels of proven reserves, Alberta's oil sands are the second largest oil reserve on the planet. Continued development of the oil sands is critical to North America's energy secure energy supply, as well as to North American security at large.

As has been pointed out in some of the commentary on the Bill before you, buying your oil from, and sending your dollars to some places in the world is neither good for business or for the security of the United States.

My purpose in appearing before you is to ensure you are aware of the contribution that Alberta makes to your energy supply and your economy.

Section 285.795 of the Bill opens the door for the State of Wisconsin to adopt a Low Carbon Fuel Standard – or LCFS - as recommended by the Midwest Governors' Association.

Alberta recently co-hosted a visit of the Midwest Governors' Association LCFS advisory group. We discussed with the group the discriminatory nature of the California LCFS, and how similar legislation could further harm international relations, trade and energy security.

In your consideration of this Bill we do ask that you seriously consider how any actions you might take could either purposefully or inadvertently do harm to the benefits we both receive from the energy sector and other trade between our two jurisdictions.

The annual value of trade between Alberta and Wisconsin is \$1.5 billion. More than 140,000 Wisconsin jobs are supported by Canada-Wisconsin trade.

A recent study revealed the economic benefits of oil sands development to the U.S. and individual states.

The economic benefits to Wisconsin are identified as:

- an average annual increase in industry output of more than \$1 billion between 2010 and 2025;
- an average annual increase in GDP of \$523 million between 2010 and 2025.

In addition, oil sands development will create almost 11,000 Wisconsin jobs between 2009 and 2015.

Alberta currently supplies you with almost 14,000 barrels of oil a day, and 76.4 billion cubic feet of natural gas per year.

Wisconsin receives much of its refined oil products from Illinois and Minnesota and other mid-western states. It should be no surprise to you that Alberta is the main oil supplier to these jurisdictions.

And . . . Alberta is the safe and reliable energy supplier to the United States.

North America's reliance on oil will not be solved in our generation. While we make the transition to other sources of energy we can at least ensure that your oil comes from a responsible and secure energy provider.

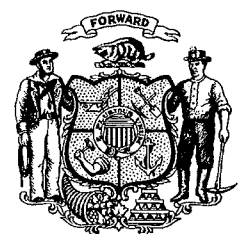
While it is America's goal to reduce oil imports, we think it is beneficial to ensure a continued and growing supply from Canada and Alberta.

The dollars you spend buying oil or petroleum products that originate in Canada are not 'lost' dollars.

In conclusion, I would just like to leave you with this one request.

While you pursue new energy policies, including a potential LCFS, please ask the question – will this result in Wisconsin becoming more dependent on oil from Saudi Arabia, Iraq and Venezuela, because we have cut off supply from our northern neighbours - our friends and allies?

That concludes my remarks for today. I am open to questions from the panel. Thank you.



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 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.

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➤ 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.

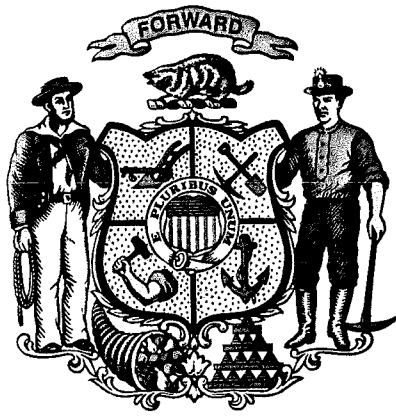
Canada is a friendly neighbor. Canadian oil is plentiful and secure. The infrastructure to bring Canadian oil to market is already in place in Wisconsin and the Midwest. Forcing the region to use other sources of oil (e.g. Mideast, Venezuela, Russia) is not good policy.

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.



My name is Erin Roth, I am the Executive Director for the WI Petroleum Council based in Madison. The Council is affiliated with the American Petroleum Institute in Wash, DC. API is the major trade association for over 400 member companies involved in the exploration, production, transportation, refining and marketing of crude oil and natural gas.

I am here today to speak in opposition to the Low Carbon Fuel Standard provision found in AB 649. The petroleum industry believes that this provision, if it passes, could restrict the use of certain what the industry calls "heavy crudes" because of the carbon content from wells to wheels. The majority of crude used to refine motor fuels in the Midwest is heavy crude. The language in the bill if enacted, and if the MGA Accord is signed by a majority of Governor's that signed the original accord, would penalize these crudes coming from Canada, North Dakota and elsewhere and encourage more use of "light crudes" that have a lower carbon footprint like Saudi Arabian and other Middle Eastern crude oils making these energy resources more expensive and less secure. There is also the real potential that with this rulemaking authority, if no other legislature within MGA were to adopt a LCFS, our DNR could unilaterally propose such requirements creating another "boutique" fuel in WI. And, even if an LCF becomes a regional fuel it still is a boutique fuel that according to the Marshall Institute study on LCFS would cost some 61 cents per gallon more, not to mention the possible negative supply implications. The WPC believes

energy from to meet this demand? Certainly, many potential biofuels that currently are in research are decades away from being a viable and cost effective alternative to oil. Corn ethanol has its own limitations in terms of production and other issues. Electric vehicles have promise but will not displace fossil fuels as a major mode of transportation. How are we going to fuel the high speed train from Chicago to Mpls.?

I hear anti-oil folks constantly saying we need to reduce our dependence on foreign oil. Does that mean they support more domestic production? I hope so, but doubt it. Although the U.S. still produces most of the oil it consumes. It must import about 48% of its crude oil from other producing nations. However, remember, when you say foreign oil it means CA and MX. Canada and Mexico are the #1 and #2 importers of crude oil to the U.S. The vast majority of motor fuel sold in WI is made from Canadian crude. About half of this crude is oil derived from the Alberta Oil Sands. Besides conventional Canadian crude oil imports, the Alberta oil sands contain some 173 billion gallons of recoverable barrels based upon today's technologies. This is 2nd only to Saudi Arabia. In fact, 23% of our nation's oil come from our friends from the North. 99% of the crude oil Canada produces is transported to the U.S., much of this through Wisconsin via the Enbridge Pipeline.

The Alberta oil sands development makes up an area of about the size of Iowa. However, only about 4% of the land mass is under production. 80% of current production is by

a means of steaming the oil out of the ground called INSITU. The other 20% is accomplished by strip mining. The footprint of a typical INSITU site is about 7 acres as opposed to the mining process that takes up 100's of acres. It is true that crude oil from the Alberta Oil Sands has a greater carbon life cycle footprint. However, it is similar to other heavy crudes like Venezuelan in its carbon footprint.

As you know, Canada and Alberta have a strong track record of environmental protection. They have some of the most precious and pristine areas in the World. Producers must follow strict rules that adhere to government environmental regulations. There is also strict requirements on reclamation of mined areas. Recently, the Province of Alberta committed \$4 billion to reduce the carbon footprint through new technologies like carbon capture and sequestration and better mining practices. The Province and Ottawa government are committed to reducing the carbon footprint in the oil sands area, as well as the water usage.

A recent study by the Canadian Energy and Environmental Research Institute determined that the growth in Oil Sands production will increase employment in the United States by some 343,000 jobs between 2011 and 2015. To put that into perspective, in 2007, Chrysler, Ford and General Motors had 250,000 employees nationwide and that was prior to the recession. 343,000 new jobs, most paying family-supporting wages at refineries, pipeline companies, construction workers and hundreds of vendors making tires, fittings, shovels and thousands of needed goods and

services. For Wisconsin, alone, the Oil Sands will add more than \$500 million to our state gross domestic product and create more than 7,000 jobs in Wisconsin. Recently, Citgo Refining in Lamont, IL conducted a study of their blue collar workers annual gross wages and benefits and found the average wage and benefits to be \$120,000 with minimal post-secondary education. These are real boots on the ground jobs. Continued trading with a friendly neighbor like Canada will provide decades of abundant energy to fuel Wisconsin's economy and jobs. Companies and employees from the likes of Falk Steel, P&H Mining, Bucyrus Erie, Manitowoc Cranes and many other WI suppliers depend on the oil sands for the manufacturing of equipment and living wage jobs. Refineries in the Midwest have committed over \$20 billion in refinery expansions directly a result of increased importation of Canadian crude that will create greater Midwestern and national energy security and supply.

A LCFS in WI or regionally only creates crude oil winners and losers. Under an LCFS, Saudi oil wins out over Canadian crude; Nigerian oil beats Colorado production; and, Libya overtakes California crude oil. The alternatives to using CA or ND oil due to an LCFS pose a huge challenge to my member companies. It will mean an increased reliance on Middle Eastern, Venezuelan and other unfriendly country's oil, increasing global greenhouse gas emissions, to the benefit of countries like Communist China and India.

Low cost, secure and abundant energy are what fuel job

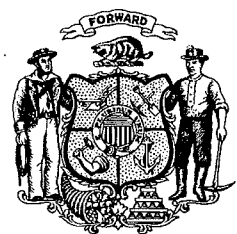
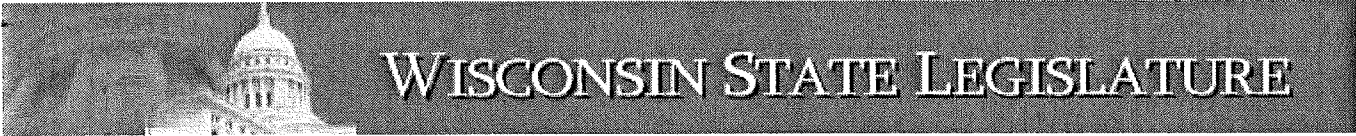
the state of WI should be doing everything it can to encourage abundant energy resources like Canadian oil into this state, rather than discourage their use.

The U.S. needs more supplies of all energy sources, including oil and natural gas, ethanol, biofuels, wind power and other alternatives to meet our growing demand. We also, as a nation, have to better learn to conserve our energy and be more energy efficient. Contrary to the belief of some, we will not run out of oil anytime in the near distant future. The oil industry is constantly finding new reserves whether it is in the Gulf of Mexico, off the coast of Brazil, Russia, the Bakken oil shale fields in North Dakota or the oil sands in Alberta. Technology may provide the industry in the future to recover reserves that are today unrecoverable. Who would have thought we would be drilling for oil in the Gulf of MX from a ship in two miles of ocean 10 years ago?

The U.S., consumed just less than 150 billion gallons of motor fuel in 2007. By 2028, the U.S. DOE estimates that figure to be 180 bgpy. In Wisconsin alone, we used around 2.8 billion gallons of motor fuel last year and that figure generally increases about 2% per year on average when the economy is good. 88% of the energy used in the U.S. for transportation, residential, industry and government is derived from oil. In the transportation sector, the U.S. DOE estimates that in 2028 over 80% of motor fuel will be derived from fossil fuels.

If not fossil fuels then here are we to get the cost effective

growth in this state. We believe an LCFS would only create the opposite. Thank you.





CLEAR HORIZONS, LLC. PEACE OF MIND THROUGH ORGANIC WASTE MANAGEMENT SOLUTIONS

Clean Energy Jobs Act A Winner for the State of Wisconsin

Job Creation – Manufacturing

- Biogas industry has potential to create \$2.5 billion in revenue over the next 10 years
- Manufacturing
 - 30% of content from WI manufacturers (\$750 million)
 - **With ART's, we could double the content manufactured in WI**
 - Increasing sales to \$1.5 billion
 - **Overcome manufacturer's reluctance to develop products for 1 or 2 sales/yr.**
 - WI technology could be deployed around the Country
 - \$3 billion potential for WI manufactures in states such as CA, OR, WA, NY, VT
- Purchasing
 - 80% of content is purchased from WI companies (\$2.0 billion)
 - Rockwell - automation equipment, Vilter - gas conditioning equipment, Evers Manufacturing - steel fabrications, and Pieper Electric - process containers in Milwaukee
 - AgrEnergy - digester kits in Mukwonago
 - Inland Power Group – biogas engine/gensets in Butler
 - Energenecs - gas safety equipment in Cedarburg
 - Centrysis - separation equipment in Kenosha
 - Patz – material handling equipment in Pound
- Technology development follows sales
 - More high tech job creation
 - Increased tax revenue for State
 - Technology/Intellectual property that can be exported to other States/Countries
 - Critical mass necessary to start driving down costs

Job Creation Analysis – Project Development

- **Biogas industry will create over 14,000 jobs over next 10 years**
 - 12,500 construction jobs
 - 1,500 highly-skilled professional positions
 - Project Managers, Engineers, Plant Operators

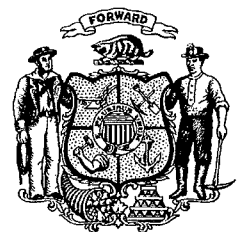
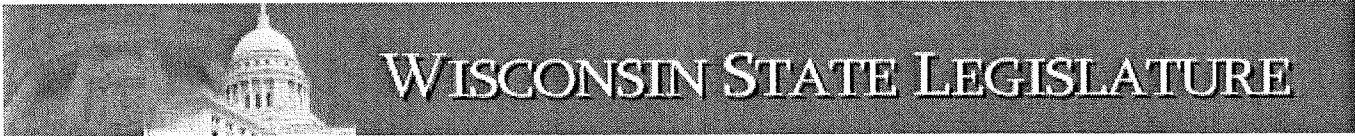
Additional Benefits of ART tariffs

- Rural/Metro Mutual Economic Development
- Distributed generation – Putting power closer to the users
- Long-term economic viability of renewable power
- Protect Environment
 - Land, water, and air
- Energy Independence – Not importing fuel/power

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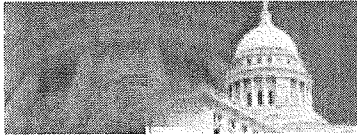
John Sheehan
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Mary Beth Stanek
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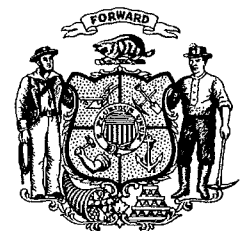
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Suncor

Pete Taglia
Clean Wisconsin

Dan Weiss
Duke Energy



WISCONSIN STATE LEGISLATURE



The Clean Energy Jobs Act, Biofuels and Oil Sands Frequently Asked Questions about the Low Carbon Fuel Standard (LCFS)

The Clean Energy Jobs Act (SB 450 and AB 649), announced recently by Governor Doyle, has been introduced by both houses of the Wisconsin legislature. The bill incorporates many of the recommendations made by the governor's Climate Change Task Force. The Clean Energy Jobs Act, if adopted, will increase Wisconsin's use of renewable energy, energy efficiency, cleaner fuels and cleaner cars. The Low Carbon Fuel Standard (LCFS) in the bill would be established based on recommendations currently under development by a broad stakeholder group of the Midwestern Governors Association (MGA): www.midwesterngovernors.org/LCFS.htm

Below are a series of answers to frequently asked question about how an LCFS will impact biofuels and oil sands (compiled by Pete Taglia of Clean Wisconsin and member of the Midwestern Governors Association's Low Carbon Fuel Standard Advisory Group). If you have questions about the LCFS you can contact Pete Taglia at ptaglia@cleanwisconsin.org.

Question: What is a Low Carbon Fuel Standard (LCFS)?

A LCFS is a fuel policy that will help break our dependence on foreign sources of oil and promote energy independence by gradually moving Wisconsin toward the cleanest and most efficient sources of transportation fuels. A LCFS rates different types of transportation fuels by their efficiency and carbon footprint and allows fuel providers to choose what mix of fuels will be used to meet the requirement.

Question: What types of fuels qualify for an LCFS?

An LCFS policy is unique in that all transportation fuels are able to compete in the fuel market, including the following resources:

- **Ethanol:** Alcohol fuel made from corn or cellulose (wood, plant stalks, harvest residues, etc.). Wisconsin has 8 corn ethanol plants producing almost 500 million gallons per year.
- **Biodiesel:** A diesel substitute (mono alkyl ester) made from vegetable and animal oils that is then mixed with petroleum diesel (e.g., B20 is 20% biodiesel). Wisconsin has 8 biodiesel plants that use soybean oil, waste animal fats, and waste grease feedstocks.
- **Renewable diesel:** A fuel chemically similar to petroleum diesel (a hydrocarbon fuel) but made with renewable resources such as wood waste. Flambeau River Biofuels in Park Falls and New Page in Wisconsin Rapids both received Department of Energy grants to produce renewable diesel from wood waste.
- **Compressed Natural Gas (CNG):** Wisconsin has approximately 20 CNG fueling stations and two school district bus systems that use natural gas. ANGI Energy Systems of Milton is a leading manufacturer of CNG fueling systems and Wisconsin leads the nation in the production of biogas from dairy manure and food wastes.

- Electricity: Wisconsin has numerous electric vehicles and plug-in hybrid vehicles as part of state, utility and private car fleets. Wisconsin's largest corporation, Johnson Controls, is a leading battery manufacturer that won a recent contract to supply batteries to Ford's new electric van¹ and Columbia Parcar of Reedsburg manufacturers a line of electric utility vehicles in WI².

Question: What Will Fuels Cost Under an LCFS?

Before answering the cost question it is important to note the cost of our current over-dependence on out-of-state petroleum: Wisconsin has no fossil fuels and currently sends over \$16 billion out of state for fossil fuels³, money that does not circulate in our state's economy creating jobs. In contrast, fuel money that stays in Wisconsin not only reduces our trade deficit but sends money to Wisconsin workers and businesses that then re-spend money in their communities resulting in even more jobs. A recent economic analysis provided in testimony to the Public Service Commission by the Wisconsin Paper Council illustrates the benefit of producing ultra-low carbon renewable diesel fuel at the Flambeau River Biofuels facility: purchasing \$16 million per year of local woody biomass would result in 131 direct jobs in forestry and 28 direct jobs at the renewable fuel refinery, **plus an additional 46 indirect and induced jobs in forestry and an additional 193 indirect and induced jobs at the facility**⁴.

Since an LCFS is a market standard, and not a mandate, the mix of fuels used will depend on the market availability and price of various fuels. But, importantly, a LCFS will diversify our fuel supply from our current over-dependence on petroleum. Increased fuel diversity will result in less volatility⁵ for consumers in Wisconsin and keep more fuel dollars in our state economy. Some of the fuel alternatives that an LCFS will help expand are not only lower in carbon and cleaner than petroleum, but are currently much cheaper. For example, compressed natural gas at recent prices is equivalent to approximately \$.86/gallon,⁶ which results in fuel savings of \$19,000 per year for the Fort Atkinson School District which recently converted all of its school buses to CNG⁷. The equipment needed to make CNG from biogas at existing methane digesters, landfills and wastewater treatment systems in WI can be paid for with fuel savings in less than 2 years providing a stable, low-priced, low carbon fuel for fleet use.

¹ http://media.ford.com/article_display.cfm?article_id=31292

² <http://www.parcar.com>

³ Wisconsin Energy Stats 2008 <http://energyindependence.wi.gov/docview.asp?docid=15768&locid=160>

⁴ IMPLAN Economic Model Testimony by Terry Mace, Exhibit 303, Wisconsin PSC Docket No. 4220-CE-169

⁵ Zibin Zhang and Michael Wetzstein, Transition to a Bioeconomy: Risk, Infrastructure and Industry Evolution Conference, Berkeley, CA, June 24-25, <http://www.farmfoundation.org/news/articlefiles/365-Wetzstein.pdf>

⁶ At a natural gas price of \$0.78104 per/therm, CNG is equivalent to approximately \$0.86 per gallon of gasoline (110,400 BTU per gallon of gasoline and 100,000 BTU per therm of CNG).

⁷ <http://www.fortschools.org/files/filesystem/SDFAOversview08-09.ppt>

Question: How Does an LCFS Help Existing Wisconsin Biofuel Producers?

A LCFS will benefit Wisconsin's corn ethanol producers. All of the existing corn ethanol plants in Wisconsin use natural gas as a heating fuel and have a lower carbon footprint than coal-fired ethanol plants in adjacent states; Wisconsin has tremendous opportunities to lower the carbon footprints of its corn ethanol plants even more by switching from natural gas to biomass for process heating. Moreover, if adopted, the Clean Energy Jobs Act would allow the thermal energy from biomass used in the ethanol refining process to generate credits for the state's Renewable Electricity Standard. Other portions of the Clean Energy Jobs Act will also help Wisconsin corn ethanol facilities with incentives to install biomass cogeneration boilers⁸ (which produce both heat and electricity) and access funds to increase their energy efficiency. Existing biodiesel producers in Wisconsin also produce a low carbon fuel that will benefit under an LCFS.

Question: How Does an LCFS Stimulate Next Generation Biofuels?

Advanced forms of biofuels under development in Wisconsin, such as cellulosic ethanol, biomass gasification diesel, and green gasoline will become particularly attractive due to their high efficiency and low carbon footprint. The LCFS will help ensure that Wisconsin remains a leader in the development of biofuels for decades to come. In addition, an LCFS treats all biofuels fairly, by measuring the energy content of the fuel, not simply the volume of fuel in gallons⁹.

Question: What is Biogas and How Does it Power Vehicles?

Like natural gas, biogas is made up of methane, an energy dense gas. Wisconsin leads the country in the number of methane digesters producing biogas from dairy manure and food wastes but has realized only a small fraction of the potential¹⁰. Methane digesters on farms, factories and food processing plants will be especially attractive when producing biogas that can be compressed and used in Compressed Natural Gas (CNG) vehicles as a transportation fuel under a Low Carbon Fuel Standard. Businesses across the state have begun to produce the equipment for distributing the fuel and manufacturing

⁸ A renewable energy industrial park is proposed for Jefferson, WI adjacent to an existing Valero (formerly Renew) corn ethanol facility with a cogeneration facility: http://host.madison.com/wsj/business/article_80f6742e-023f-11df-9fd3-001cc4c03286.html. The Belmont Bioag project proposed in Southwest WI would also use biomass cogeneration as well as an integrated greenhouse facility and is fully permitted <http://www.belmontbioag.com/>.

⁹ Wisconsin's homegrown resources can be used to produce many different forms of biofuels, including ethanol, biodiesel, biobutanol, renewable gasoline and renewable diesel, each with a different energy content. The same amount of agricultural or forestry feedstock will produce more gallons of ethanol fuel than renewable gasoline, but each gallon of renewable gasoline has more energy (120,000 btus/gallon) than ethanol (76,000 btus/gallon).

¹⁰ The Gas Technology Institute (GTI) estimates that Wisconsin has the resources to produce up to 50 billion cubic feet of renewable biogas each year, equivalent to the natural gas used by over 600,000 Wisconsin homes.

components for vehicles specifically designed to use these homegrown transportation fuels¹¹

Question: Will an LCFS ban Canadian oil?

No. An LCFS doesn't ban any fuel. The LCFS policy will require fuel producers to reduce the average carbon content of the total mix of fuels they sell from an established baseline. The Midwestern Governors Association has already recommended a 2005 baseline which would include significant imports of Canadian oil. Thus, heavy Canadian crudes are all ready part of the mix. Going forward, Canadian oil will continue to compete in an LCFS market based on its price and carbon footprint.

Even Canada is undertaking a number of initiatives to reduce the carbon content of their oil, recognizing that markets are moving toward lower carbon alternatives. In fact, Alberta was the first jurisdiction in North America to legislate industrial GHG emission reductions, including those of large oil producers.¹² Canadian oil producers are using a number of methods to lower their carbon footprints, such as using waste heat from electric generators to help refine the oil sands and initiating projects to capture carbon that is released from refiners. The most recent oil sand refinery proposed in Alberta, from Northwest Upgrading Inc., will use the latest technology to provide a fuel that has the same carbon footprint as fuel made from lighter California oil sources¹³. In another recent development, the Canadian Association of Petroleum Producers has indicated support for low carbon fuel standards similar in design to the LCFS in British Columbia.¹⁴

Question: How will the LCFS calculate the carbon content of fuels?

The carbon content of fuels under an LCFS is calculated using lifecycle assessment, an approach that takes into account all of the emissions it takes to make and transport a fuel. The GREET model developed at Argonne Labs (Batavia, IL) has been used by many jurisdictions and the U.S. EPA to calculate the carbon content (or intensity) of various fuels and other models, such as the BESS model from the University of Nebraska have been used. It is important to note that most of the inputs into the lifecycle assessment

¹¹ ANGI Energy Systems of Milton, WI is a leading compressed natural gas (CNG) and biogas fueling system manufacturer, Pressed Steel Container of Milwaukee is a leading manufacturer of CNG tanks for cars and trucks, Cornerstone Environmental of Madison designs biogas to CNG fueling stations for methane digesters like those made by Clear Horizons of Milwaukee and GHD of Chilton.

¹² Facilities emitting more than 100,000 tonnes of GHGs annually were required to reduce emissions intensity by 12 per cent by March 31, 2008, or pay \$15 per tonne into a Climate Change and Emissions Management Fund. In its first two years, the legislation has resulted in approximately 6.5 million tonnes of actual reductions in Alberta and \$122 million paid into the Climate Change and Emissions Management Fund. <http://www.canadasoilsands.ca/en/what-were-doing/greenhouse-gas.aspx>

¹³ California classifies crude oil as high carbon intensity or conventional carbon intensity. The developers project that the new project will meet the conventional (lower) carbon intensity. http://www.northwestupgrading.com/images/pdf/press_releases/NWU%20News%20Release%20January%2028.pdf

¹⁴ <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/oil-sands-producers-prefer-bc-carbon-rules/article1423127/>

models comes from information already collected at fuel producers and refiners (such as amounts of natural gas, coal, electricity or biomass used at a facility). Previous recommendations from the Midwestern Governors Association (MGA) identified an approach to assign default values for specific fuels as well as allowing individual facilities to provide their own information where it differs from the default¹⁵. The current MGA LCFS Advisory Group is refining these recommendations.

Question: Is electricity really a “fuel” for an LCFS?

An LCFS treats electricity used in plug-in hybrid vehicles or electric cars as a transportation fuel and applies the same carbon measurements to account for the emissions of carbon in the production of electricity. Wisconsin is well-suited to produce the next generation of electric vehicles and the increased amount of renewable electricity on Wisconsin’s electrical grid is lowering the carbon footprint of electric vehicles. When electric vehicles are charged from coal-fired power plants they have a modest reduction in carbon compared to conventional oil, while those powered with renewable electricity have very low carbon intensities¹⁶. A recent detailed study from economists at the University of Michigan found that the Midwest is well-suited to manufacture the hybrid-electric drivetrains, advanced batteries, and renewable electricity facilities to power electric cars, bringing tens of thousands of new jobs to Wisconsin by 2015: hybrid powertrains (7,000 to 9,900 jobs); advanced batteries (340 to 1,700 jobs) and wind turbine manufacturing (5,560 to 9,100 jobs)¹⁷.

Question: Will other provisions in the Clean Energy Jobs Act help Wisconsin biofuels producers provide low carbon fuels?

Yes. The Clean Energy Jobs Act includes a long suite of provisions and incentives that will help Wisconsin to meet a greater share of the low carbon fuel market. Wisconsin is well positioned to lead the nation in the production of low carbon fuels, with a mix of highly productive agriculture and forestry lands, world-class research institutions conducting hundreds of millions of dollars of biofuels research and a diversified manufacturing base already tooling up to build low carbon fuel technology. The Clean Energy Jobs Act also includes the following provisions:

- Expansion of Wisconsin’s award winning Focus on Energy program to provide Wisconsin’s residents and businesses with energy efficiency and renewable energy incentives.
- Enhanced Renewable Portfolio Standard (RPS) that allows renewable heat from cogeneration facilities, such as those used at plants producing ethanol and advanced biofuels, and biogas injected into the pipeline, to generate credits for sale to utilities
- Streamlined air permit requirements for industrial facilities to make it easier to install more efficient biomass boilers and cogeneration.
- Industrial development revenue bonds to provide incentives for the generation of electricity and heat from biomass.

¹⁵ http://www.midwesterngovernors.org/LCFS/LCFS_Final_Recommendations.pdf

¹⁶ http://mydocs.epri.com/docs/public/PHEVPressRelease_final.pdf

¹⁷ <http://www.theclimategroup.org/publications/2010/1/28/american-innovation-manufacturing-low-carbon-technologies-in-the-midwest/>

- Expanded bioenergy goals for the State of Wisconsin to ensure even more opportunities for the state to use its purchasing power to benefit rural biomass energy production.
- Biomass crop reserve program to award contracts to farmers to plant native perennial plants, which the farmer can then sell for bioenergy production. This program would also help make Wisconsin more competitive to receive Federal funding through the Department of Agriculture's Biomass Crop Assistance Program.
- Private forest landowner grant program to lower the cost for landowners to develop and implement sustainable forest management plans P. 60
- Forest carbon credit assistance and private forest owner outreach to help Wisconsin tap into the growing market for efficient biomass production and generate carbon credits.

Question: Is Wisconsin adopting California's LCFS?

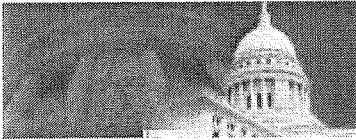
No. The proposed legislation in Wisconsin would adopt a *Midwest-specific* Low Carbon Fuel Standard that represents Midwestern fuels and resources. Other states (Massachusetts, Oregon, British Columbia) and regions (11 Northeastern states and the European Union) are also moving forward with LCFS policies based on their own fuel markets. The Wisconsin legislation would adopt the recommendations on the design of an LCFS from a stakeholder group of the Midwestern Governors Association that includes farm interests, ethanol and biodiesel producers, oil companies, oil refiners, electric vehicle part suppliers, environmental groups, utilities, and state agencies.¹⁸

Question: Did California's LCFS ban corn ethanol?

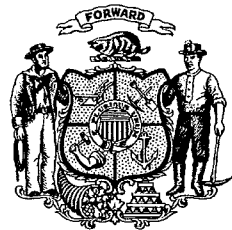
No. California included one controversial measurement in the treatment of corn ethanol, called indirect land use, that is being hotly debated. The MGA has not taken a position on how to treat indirect land use, and this is an area where the MGA is specifically working to develop a Midwest approach to biofuels. Nevertheless, contrary to previous statements by the petroleum industry that included misleading information, California's LCFS analyzed 13 different types of corn ethanol facilities (powered by coal, natural gas and biomass) and 9 of these corn ethanol fuels had lower carbon than conventional crude oil fuel¹⁹.

¹⁸ http://www.midwesterngovernors.org/LCFS/Advisory_Group_Roster.pdf

¹⁹ http://www.arb.ca.gov/fuels/lcfs/121409lcfs_lutables.pdf



WISCONSIN STATE LEGISLATURE



What your energy bill is funding

Since 2002, nearly \$166 million collected on utility bills for state energy programs has been diverted to other accounts.

Transfers from energy efficiency programs:

FISCAL YEAR	AMOUNT	TRANSFERRED TO:
2002-'03	\$8,365,600	General fund
2003-'04	\$17,600,000	County and municipal aid payments
2004-'05	\$20,000,000	County and municipal aid payments
2004-'05	\$236,800	Earned Income Tax Credits
2004-'05	\$9,232,000	Wisconsin Works (W-2)
2005-'06	\$18,185,300	General fund
2005-'06	\$954,500	Department of Health and Family Services
2006-'07	\$9,232,000	Wisconsin Works (W-2)
2006-'07	\$16,949,400	General fund
2006-'07	\$954,500	Department of Health and Family Services
2006-'07	\$9,232,000	Wisconsin Works (W-2)
TOTAL	\$110,942,100	

In 2006, Legislature passes fix to prevent raids from energy efficiency programs. Transfers came instead from low-income energy assistance and weatherization fund:

FISCAL YEAR	AMOUNT	TRANSFERRED TO:
2007-'08	\$9,232,000	Wisconsin Works (W-2)
2008-'09	\$9,232,000	Wisconsin Works (W-2)
2009-'10	\$9,139,700	Wisconsin Works (W-2)
2010-'11	\$9,139,700	Wisconsin Works (W-2)
TOTAL	\$36,743,400	

In June, Legislature passes surcharge now hitting utility customers:

FISCAL YEAR	AMOUNT	TRANSFERRED TO:
2009-'10	\$9,139,700	District attorneys
2010-'11	\$9,139,700	District attorneys
TOTAL	\$18,279,400	

OVERALL TOTAL: \$165,964,900

Utility surcharge could make some ratepayers hot

Money diverted to pay for district attorneys

By Thomas Content of the Journal Sentinel

Posted: Oct. 16, 2009

The latest reason that utility bills are going up around the state has nothing to do with keeping the lights on.

A new surcharge on utility bills, tacked on as part of the budget that was passed in June, will be used to pay the salaries and benefits of district attorneys in counties across Wisconsin.

The prosecutors are being paid from a fund originally designed to help poor people pay their utility bills and weatherize their homes. The extra fee, which hits We Energies customers in December, is the latest in a series of budget maneuvers that have sent a total of \$166 million from electricity ratepayers to non-energy-related state government purposes since 2002.

Low-income advocates are already worried about the next state budget, and will be holding strategy sessions within weeks to determine how to prevent such a move from happening again. The Legislature, they say, can't seem to resist raising any kind of fee - even those for programs helping the poor - to help balance the state budget.

"The bottom line is this is turning utilities into collectors for other things, and it's bypassing what the law was supposed to do," said Bob Jones, public policy director with the Wisconsin Community Action Program. "If it's not DAs, what's it going to be, something else?"

He added, "Low-income households are being punished, and utility customers are being punished."

Gov. Jim Doyle and Wisconsin lawmakers praised themselves in 2006 when they passed a bill that stopped budget raids on utility customers' bills. That legislation halted the diversion of \$111 million in funds for energy efficiency to help balance the state budget.

But the diversions continued - only the state tapped a different pot of money, the funds designed to help the poor pay utility bills or weatherize their homes.

We Energies will collect more than \$6 from every residential customer over the next two years for district attorney salaries, utility spokesman Brian Manthey said. Factories, the utility's largest customers, will pay about \$400 each over the next two years to fund DAs, he said.

We Energies will collect \$4 million this fiscal year for that purpose, or 12% more than the \$32 million for low-income energy assistance and weatherization programs that it would have collected without the new surcharge.

The new diversion of funds appears to have been an unintended consequence of a legislative move to halt similar budget transfers from the state's Focus on Energy program.

At the time, the Focus on Energy money was protected and it was believed that lawmakers wouldn't tap the low-income funds. They would be too leery of being perceived as taking money from the poor, several people actively involved in energy policy legislation recalled last week.

"At that time, no legislator would go after that," said Charlie Higley, executive director of the Wisconsin Citizens' Utility Board.

But it happened one year later, with the energy funds going to the Wisconsin Works, or W-2 program, and it's happening again with the funds for the prosecutors.

A Journal Sentinel review of budget documents prepared by the Legislative Fiscal Bureau shows the amount of money being raised from utility customers for non-energy uses essentially doubled, from \$18.3 million in the last budget to \$36.7 million.

And it's happening at a time when the effects of the recession are making it harder for people on fixed incomes to make ends meet. The Social Development Commission, which administers utility-bill energy assistance to poor families in Milwaukee County, processed 48,000 aid applications last year, said Deborah Blanks, SDC executive director.

Need could jump

With unemployment up sharply over the last year, the number of people getting energy assistance could jump by 10% or 20% this winter, she said.

"We're finding people who never thought that they would need energy assistance are coming to us for that support," Blanks said. "In tight budget times, the Legislature and leaders really have to look at ways to cover a broad spectrum of costs. At the same time, my concern is for the people who need it most, in terms of energy assistance to keep their houses warm during difficult, harsh Wisconsin winters."

Dan Schoof, deputy secretary of the state Department of Administration, said Doyle's proposed budget tried to fix the funding gap for energy assistance in this budget.

That proposal would have allowed full funding for low-income energy aid, but then would have tacked on another \$9.14 million for W-2. The Legislature went in a different direction, choosing to allocate that extra funding to county district attorneys.

The budget law requires that the fee be collected for two years - and not be carried over to the next budget, in 2011-'13.

Broader problem

Republican lawmakers see this as an example of a broader problem - with the budget raising fees on everything from cell phones to power bills to help fund state government and avoid raising taxes per se.

"This thing for DAs is very, very irritating thing for constituents, and I totally agree with them," said state Sen. Robert Cowles (R-Green Bay), who led the Senate's work on the 2006 bill that halted diversions of energy efficiency funds.

Funding district attorney salaries as part of a charge meant to keep the lights on "is absurd," Cowles said. "There's no nexus. There's no connection. It should be coming from the (state's) general fund."

Of the state's five investor-owned utilities, only one - Wisconsin Public Service Corp. - included a description in monthly statements that explained the new fee would pay district attorney salaries.

Federal funds

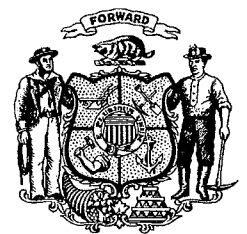
Schoof, of the Department of Administration, noted that the state has ample funds available for weatherization, thanks to a big jump in federal funding through the American Recovery and Reinvestment Act.

"I don't think anyone is suggesting right now that there are not enough resources for weatherization in the next two years, with the dollars that have come through with the stimulus bill," he said.

Low-income energy advocates welcome the federal stimulus dollars, but say giving money to W-2 and now district attorneys isn't helping poor people pay utility bills. Statewide, the amount of money paid out in energy assistance fell by 3.5% last year even as the number of people receiving energy aid jumped 17%.

The utility bill surcharge for district attorneys is required by law to end on June 30, 2011. But Jones, of WisCAP, said the budget-writers could keep the surcharge alive in the future.

"If I want to pay for DA costs, that's a legitimate cost but I shouldn't be paying that on my electric bill any more than I should be paying for that when I go to the grocery store."



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Wkl chg	Pct chg	Top Losers	Last	Wkl chg	Pct chg
+1.87	+89.0	SearchM un	6.25	-3.90	-38.4
+5.33	+87.1	ReadyMix	2.10	-.92	-30.5
+2.86	+54.9	ExideTc	5.41	-2.32	-30.0
+18.70	+44.2	AeroViron	24.15	-9.92	-29.1
+1.10	+41.5	PhaseFwd	10.60	-4.02	-27.5
+.86	+39.8	ParkBcp h	5.10	-1.85	-26.6
+4.83	+38.2	LithiaMot	5.82	-1.98	-25.4
+1.98	+37.5	CapBNC	3.11	-1.05	-25.2
+1.70	+36.9	PECO II rsh	3.75	-1.24	-24.8
+2.11	+32.4	Labophm g	2.00	-.62	-23.7
+3.26	+31.5	Hurray!	2.70	-.83	-23.5
+.71	+31.4	Netsulte	12.16	-3.63	-23.0
+1.78	+28.4	MoSys	3.55	-.94	-20.9
+.85	+28.3	SpiritAero	17.01	-4.44	-20.7
+2.74	+27.8	Toreador	10.07	-2.54	-20.1
+.85	+27.4	Santarus	3.77	-.93	-19.7
+1.16	+26.3	CreditAcc	42.79	-10.43	-19.6
+.58	+25.8	DoubtTake	8.22	-1.99	-19.5
+1.53	+25.3	GenCorp	4.51	-1.09	-19.5
+.51	+25.2	NIVS IntT n	2.94	-.69	-19.0

nd companies with extensive local operations

gh	Weekly Low	Last	Fri Chg	Wkly Chg	Wkly %Chg	Yrly EPS	52-wk %Chg
84	24.96	25.24	+2.1	-12	-.5	+2.12	+8.2
35	15.93	16.30	-.01	-47	-2.8	+0.10	+9
89	30.12	30.70	+1.0	-50	-1.6	+0.66	+8.9
99	19.14	19.38	-.04	-48	-2.4	+1.86	+23.8
29	1.01	1.06	+0.02	-19	-15.2	-14.13	-36.6
40	24.56	24.95	+0.9	-88	-3.4	-0.11	+18.7
98	12.09	12.55	+2.6	-16	-1.3	-1.25	-16.6
81	30.18	30.92	-.81	-51	-1.6	+4.14	+23.6
95	32.58	36.66	+0.4	-1.13	-3.0	+1.80	+53.9
75	6.27	6.37	+0.03	-31	-4.6	+0.29	-22.8
48	47.47	48.62	+1.7	-.09	-.2		+98.9
93	27.09	27.84	+1.30	-.22	-.8	+1.45	+26.3
75	8.42	9.10	+1.5	+35	+4.0	-10.17	+604.7
64	26.91	27.79	+3.9	-.47	-1.7	+1.18	+30.3
81	15.92	16.30	-.14	-23	-1.4	+0.57	+15.4
70	10.00	10.37	-.18	-36	-3.4	-6.62	+288.3
44	47.81	50.63	-.46	-1.75	-3.3	+3.93	+234.6
22	21.56	22.66	-.33	-1.03	-4.3		+168.9
76	.66	.70	+0.04	-.06	-7.8	-3.86	-40.1
23	41.88	42.56	-.72	-.34	-.8	+2.49	+64.3
39	17.53	17.75	-.05	+12	+7	+1.55	-7.3
17	48.33	49.82	-.05	-13	-3	+3.11	+36.0
57	18.51	19.07	-.26	-.75	-3.8	-2.85	+115.8
12	41.79	45.15	-.12	+3.61	+8.7	+2.23	+43.9
15	22.74	23.04	-.50	-.52	-2.2	+1.38	+42.3
15	9.80	9.80	-.35	-.35	-3.4	+0.60	-16.5
54	44.80	45.73	+0.03	+69	+1.5	+3.11	+34.3
64	39.93	40.73	-1.20	-.84	-2.0	+1.61	+38.1
03	15.25	15.79	-.25	-.29	-1.8	+1.03	+47.9
40	2.15	2.18	+0.01	-13	-5.6	-2.89	+10.2
70	21.81	22.57	-.12	-17	-7	-.25	+81.8
71	40.73	41.28	-.49	-57	-1.4	-2.00	+4.4
10	37.03	38.30	-.05	-.64	-1.6	+2.24	+60.4
97	27.35	28.06	-.41	+23	+8	+0.91	+136.8

Business Issues John Torinus

Mandates not always such a healthy choice

Democrats at all levels do love their mandates.

The mandate to purchase individual coverage was part of the reason health care insurance reform has crashed in Congress, but don't think it's going away. Forcing young healthy people into insurance pools is how the funds will be raised to cover people with pre-existing conditions.

The "healthies" would pay for the "unhealthies," which insurance companies would be mandated to include in their plans. The two mandates are inextricably linked.

Now, the Democrats in the Wisconsin Legislature are showing their zest for mandates as they push a sweeping energy agenda. To cut down on carbon emissions, they propose to mandate that 25% of the state's power come from alternative energy sources by 2025.

The top-down edict would carry an enormous price tag that would be paid by users of electricity. One estimate of the capital costs is \$16 billion over the next 15 years, which is about equal to the current investment in power generation in the state.

That number is derived from a price of \$2.5 million per megawatt of construction and a 25% renewable share that would equal 6,400 megawatts by 2025.

The irony is that the state is estimated to have 30% excess capacity at present. That has resulted from the slowdown in the economy and from new power plants coming on line in Oak Creek and Weston.

In the old days of the 1980s and 1990s, utilities projected about a 3% annual increase in energy use every year for as far as the eye could see. But the "new normal economy" sees no

such increases.

Indeed, We Energies reported that customer power use dropped 8% in 2009. That's a recessionary effect, but some consumption reduction may prove permanent.

Those stubborn facts do not deter the environmentalists in the Legislature. They simply recast their bill as a "green jobs bill." They and Gov. Jim Doyle assert that the 25% mandate will result in 15,000 green jobs.

It's hard to follow the logic or math of that calculation. You would think that the substitution of alternative energy for coal energy would be neutral vis-a-vis jobs, namely that every job gained on the green side would be lost on the black side.

Even more inexplicable is the absence of any visible economic model for the massive energy conversion. When a business is undertaking a major change in direction, such as a major acquisition, financial models are run to look at every variable, contingency and outcome. Modeling is tricky business because the assumptions are everything. But at least decision-makers in business have some guidance on the costs and returns on their plans.

Not so in the Legislature. Just slap on a mandate and damn the economic consequences. I won't get into the environmental argument about global warming and Wisconsin's wee role in global carbon emissions.

But to demand an economic model for what the 25% edict will mean for individual and business ratepayers seems irrefutably prudent. I've commented before that the smart guys who push these mandates must have taken rhetoric in place of math in college.

Numbers matter. We all

want environmental improvement, but the ways and means of getting there are all important. Like health care, we need sensible ways to pay for societal improvements.

The 23 business groups who oppose the global warming bill maintain that per capita energy costs will rise by more than \$1,000 per year by 2025.

The better approach to health care coverage and carbon reduction is collaborative. Government should work with energy companies and with consumers to devise new business models and technologies to cut costs as the transitions are made.

Sen. Ted Kanavas put it best. He has no problem with a goal of changing the mix of fuels in Wisconsin, but he added, "It has to happen naturally — not be forced."

The government at the state and national levels would be better off investing heavily in new energy sources, including safer nuclear, because carbon reduction will depend in the end on the development of new technologies.

That kind of investment, along with the right set of incentives, would make the shift away from coal more affordable. The intelligent decisions that underpin a marketplace would help make the shift less painful.

Does anyone really think that the broad-brush mandate approach won't be very expensive and very painful? Electric rates in this state shot up more than 50% in the last decade. We can't stand a lot more of that kind of inflation.

John Torinus is chairman of Serigraph Inc. of West Bend and a founder of BizStarts Milwaukee, a nonprofit organization dedicated to fostering entrepreneurship in southeastern Wisconsin. Contact him at torcolumn@serigraph.com.