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## WISCONSIN STATE LEGISLATURE ... PUBLIC HEARING - COMMITTEE RECORDS

2009-10

(session year)

Assembly

(Assembly, Senate or Joint)

Special Committee on Clean Energy Jobs...

### COMMITTEE NOTICES ...

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  - (**ab** = Assembly Bill)                      (**ar** = Assembly Resolution)                      (**ajr** = Assembly Joint Resolution)
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- Miscellaneous ... **Misc**

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



# DAIRYLAND POWER COOPERATIVE

A Touchstone Energy® Cooperative 

*Testimony provided to the*  
**Assembly Special Committee on Clean Energy Jobs**  
February 2, 2010

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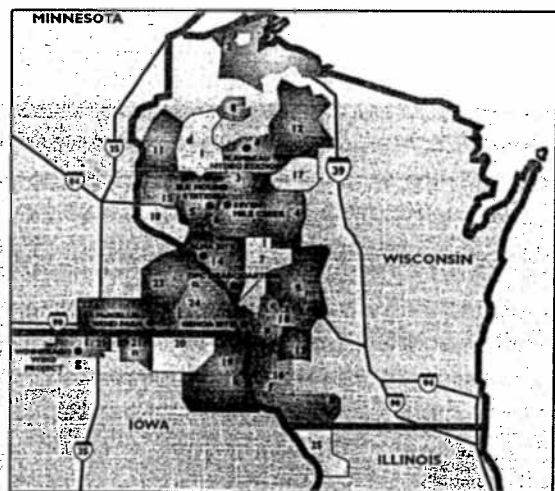
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To the members of the Special Committee on Clean Energy Jobs:

Thank you for the opportunity to provide informational testimony regarding the Clean Energy Jobs Act. Our verbal remarks today will summarize the detailed changes we recommend in our written testimony (see Addendum 1).

With headquarters in La Crosse, Wis., Dairyland Power Cooperative provides wholesale electricity to 25 member distribution cooperatives and 17 municipal utilities serving over 600,000 residents in Wisconsin, Minnesota, Iowa and Illinois. As you can see from the map shown here, our service territory encompasses most of rural western Wisconsin. We provide power through 18 retail electric cooperatives to Wisconsin's rural communities and farmers, and to the customers of 10 Wisconsin municipal utilities. In every county Dairyland serves, the per capita income is well below the state average.

We support the major goals of the Governor's Task Force which led originally to discussion of this bill in its current form: enhancing Wisconsin's Renewable Portfolio Standard, establishment of statewide energy efficiency goals and allowing the nuclear option to once again be available for future energy needs. While Dairyland provides four percent of Wisconsin's total energy generation, Dairyland provides seven percent of Wisconsin's renewable energy — a figure demonstrating our commitment to an aggressive renewable energy portfolio. It is from this perspective that we analyzed this first draft of the Clean Energy Jobs Act. We look forward to working with both special committees to improve the key provisions and advance a comprehensive energy policy in Wisconsin.



While there are a number of details in the first draft that concern our members, Dairyland believes we can get to a supportable bill that includes a 25x25 RPS, a statewide energy efficiency goal, and lifting of the nuclear moratorium. We recommend that the following details be modified, but please note that we have attempted to focus on major concerns, and our failure to address any particular issue should not be interpreted as our endorsement of the bill's provisions.

### **Enhanced Renewable Portfolio Standard (RPS)**

Dairyland Power is committed to a corporate goal of becoming 25 percent renewable by 2025, and similarly we believe our members will support a statewide 25x25 goal. However, as we dramatically increase Wisconsin's RPS, it is important to expand the types of renewables and tools utilities can use to meet that new, aggressive goal. At this point, we feel the bill inappropriately limits us in our work to meet a 25x25 RPS while keeping energy affordable for our members.

Furthermore, Dairyland is concerned about the bill's proposed in-state requirement and recommend that it be eliminated from the bill. We believe the in-state requirement adds undue cost on cooperative members by forcing Dairyland – a cooperative that provides power to customers in four states – to invest in Wisconsin-based renewable projects that may be less cost-effective and provide less renewable energy than projects in neighboring states.

We strongly recommend deleting the bill's section on Advanced Renewable Tariffs (ART). While this version of the bill exempts cooperatives from the ART requirement, we do not believe mandating ARTs for any utility is good public policy. Dairyland's Board has established a voluntary small renewable rate policy for systems under 40 kV and a small renewable tariff for energy projects under 2 MW. We strongly oppose any effort to have government agencies establish rates over democratically elected cooperative boards.

We are and will be making enormous investments to meet enhanced RPS goals, and because of this, it is critical we have the ability to choose which renewable projects and sources to develop in a manner that is cost-effective for our members. For every dollar we tie up in an ineffective ART project, we lose the ability to build more cost-effective renewable energy.

Finally, clarity is needed regarding the bill's definition of baseline for the purposes of calculating a utility's RPS requirement.

### **Energy Efficiency**

Dairyland is supportive of enhancing Wisconsin's statewide energy efficiency goals, however, we are concerned that this version of the bill doesn't represent the recommendations or intent of the Global Warming Task Force report.

In particular, we feel the efficiency provisions do not allow utilities to set or accomplish achievable goals. The Task Force report called for goal to be set over a program period, include an assumed rate of growth for electricity use, and focus on efficiency potential when setting long-range goals. These issues do not seem to be reflected in the language. In particular, the bill calls for 2% annual efficiency savings, year over year, in perpetuity. A goal like this is unrealistic and beyond the potential of any utility.

We are concerned the current language gives the PSC wide latitude to determine a rural electric cooperative's goals and judge whether a cooperative has met that goal – including whether a good faith effort was made or fault can be demonstrated. This is a broad expansion of PSC authority over cooperatives, and the bill's latitude and lack of legal parameters regarding this authority is concerning.

This bill must ensure cooperatives are enabled and supported in continuation of our highly successful commitment to community programs. The bill makes compliance for cooperatives administering commitment to community programs more difficult and costly for cooperatives to meet goals and to demonstrate compliance than for public utilities. The bill seemingly attempts to divert cooperatives' efficiency efforts from localized commitment to community programs to the statewide program.

We would urge careful and considerable redrafting of the bill's efficiency provisions, particularly as they relate to cooperatives. We are prepared to play a significant role in that redrafting and look forward to working with committee members to achieve those changes in a timely manner.

### **Nuclear Moratorium**

Dairyland Power supports lifting Wisconsin's nuclear moratorium. In the work of the Governor's Task Force, this was linked to the enhanced RPS and energy efficiency requirement. We are concerned that the bill, as drafted today, doesn't realistically ensure the moratorium would be lifted. If we are serious about a future of reducing carbon emissions, we believe Wisconsin's energy future must include nuclear generation. As a small utility we would not likely be in a position to build our own nuclear, but a regional project is a possibility. We favor a straight forward repeal of the current nuclear moratorium.

To achieve this, we urge the deletion of the entire output finding and the non-severability clause, and the deletion or clarification of the language requiring the PSC to implement the RPS and Efficiency program rules before the nuclear provisions can take effect. Finally, the U.S. Nuclear Regulatory Commission governs nuclear decommissioning, and it has not been demonstrated that their regulation is inadequate; therefore, we recommend removing all provision in the bill related to state involvement in nuclear decommissioning.

### **Alignment with Federal Legislation**

Dairyland recommends that this bill incorporate a strategy for rectifying state energy policy with federal legislation or regulation. The costs of complying with four different states' energy regulations are already significant for Dairyland Power and our members. To keep energy costs stable for consumers, there should be one compliance strategy for meeting both federal and state renewable portfolio and energy efficiency requirements.


### **Technical Modifications**

There are a number of technical changes required to make the bill supportable from Dairyland Power's perspective. Specifically, some changes are required to the section on renewable resource credits, the definition of biomass and what counts toward the new RPS, the definition of "non-electric energy," the use of the terms "service territory" and "premises," the definition of "energy content ratio," diesel truck idling, and the section regarding net zero buildings and homes by 2030. Again, while we won't speak to the details of these provisions in our verbal remarks, we anticipate you'll give the same level of attention to those issues as our policy recommendations.

### **Closing Remarks**

In summary, while we are supportive of the overall thrust of this legislation, we have major concerns about the way policies have been created, and several technical issues need to be addressed before we could support this bill. We look forward to working with members of this committee in addressing these issues!



A Touchstone Energy\* Cooperative 

## Detailed Modifications to the Clean Energy Jobs Act SB 450 / AB 649

(Addendum to Dairyland's verbal testimony, dated February 2, 2010)

### Detailed Policy Modifications

#### **Enhanced Renewable Portfolio Standard (RPS)**

Dairyland Power is committed to a corporate goal of becoming 25 percent renewable by 2025, and similarly we believe our members will support a statewide 25x25 goal. However, as we dramatically increase Wisconsin's RPS, it is important to expand the types of renewables and tools that utilities can use to meet that new, aggressive goal. At this point, we feel the bill inappropriately limits us in our work to meet a 25x25 RPS while keeping energy affordable for our members.

- **Clarify the RPS "baseline:"** In calculating a utility's RPS requirement, the bill preserves the existing definition of "baseline" as the utility's average renewable portfolio percentage in the years 2001, 2002, and 2003. Unfortunately, the bill is silent as to whether that baseline will incorporate the new criteria, definitions and restrictions made by this bill. This distinction could result in a significant difference in a utility's obligations. It is critical that we understand whether the bill imposes its new criteria, definitions and restrictions in calculating that baseline, or whether it is assumed the current utility baselines will remain in effect, calculated according to existing law, even after existing law is modified.
- **Delete the In-State RPS Requirement:** Dairyland provides electricity to more than half a million members in Wisconsin, Minnesota, Iowa and Illinois. It is for this reason that we are concerned about the bill's proposed in-state requirement and recommend that the in-state renewable requirement be eliminated from the bill, at least for utilities with significant service territories outside of the state.

We believe the in-state requirement adds undue cost on cooperative members by forcing Dairyland to invest in Wisconsin-based renewable projects that may be less cost-effective and provide less renewable energy than projects in neighboring states. The economic situation for our members has worsened throughout 2009 and we are concerned this provision could cause further undue harm. While supporters of an in-state requirement cite Wisconsin job creation as justification for this provision, we caution against a policy requiring multi-million dollar investments that seem to be less cost-effective than other renewable options, to achieve projected and possibly temporary job creation, and we believe it could jeopardize long-term utility jobs and destabilize rural Wisconsin's already struggling economy.

Despite our opposition to mandating an in-state renewable resource requirement in the RPS, it is worth noting that Dairyland is aggressively developing renewable energy in Wisconsin, most predominantly in the form of methane digesters and biomass conversion. Wisconsin utilities are and will continue to voluntarily invest in Wisconsin-based renewable projects where and when those investments make sense environmentally and economically. An enhanced RPS policy in Wisconsin should preserve our ability to do business in this manner.

- **Delete “Advanced Renewable Tariffs:”** We strongly recommend deleting the bill’s section on Advanced Renewable Tariffs (ART). While this version of the bill exempts cooperatives from the ART requirement, we do not believe mandating ARTs for any of the utilities is good public policy. If cooperatives were required to implement ARTs developed by the Public Service Commission, this policy would violate – in the most severe way – the core of the Cooperative structure: a cooperative’s members/consumers set their own rates through their democratically elected representatives.

Dairyland’s Board has established a voluntary small renewable rate policy for systems under 40 kV and a Tariff for small energy projects under 2 MW. We strongly oppose any effort to have government agencies establish rates. We believe mandatory ARTs would cause a significant increase in projects in rural Wisconsin, creating a disproportionate and unsustainable impact on rural electric cooperatives and Dairyland Power.

We are and will be making enormous investments to meet enhanced RPS goals, and because of this, it is critical we have the ability to choose which renewable projects and sources to develop in a manner that is cost-effective for our members. Advanced renewable tariffs, by definition, rely on buying very small amounts of energy that cannot be dispatched when it is needed, at prices designed to provide an investment return to the generator regardless of whether the energy is needed or is least cost. For every dollar we tie up in an ineffective ART project, we lose the ability to build more cost-effective renewable energy. Furthermore, mandatory ARTs would cause a significant increase in small renewable projects in rural Wisconsin, creating a disproportionate and unsustainable impact on rural electric cooperatives and Dairyland Power.

We recommend the legislature allow utilities to continue with voluntary renewable tariffs. At Dairyland we have made voluntary renewable tariffs a core offering in our community development portfolio. It is through this tariff structure and negotiated agreements that Dairyland has incented and built nearly 40% of Wisconsin’s methane digester projects. Voluntary tariffs are working.

In summary, we strongly urge the committee to delete all advanced renewable tariff provisions from this bill and preserve the Act 141 consensus establishing the original enhanced RPS agreement.

- **Delete the legislative findings regarding the enhanced RPS.**

### Energy Efficiency Goals

The details of the bill’s efficiency provisions should be modified in the following ways:

- **Retain Joint Finance Committee oversight:** The bill should be amended to retain Joint Finance Committee oversight if the required energy efficiency budget exceeds 1.2% of the utility’s revenues.
- **Set achievable goals:** The Global Warming Task Force report called for annual energy efficiency goals to be established over a program year, meaning possibly three to four years, as the average annual savings to be achieved during that period. This was to allow for program flexibility and recognize that conditions may change during that program period. This does not seem to be reflected in the language. Furthermore, the Task Force report also assumed an underlying annual growth rate for electricity is 1.8%, but the bill does not reflect that consensus assumption. Instead the bill calls for 2% savings annually, year over year, in perpetuity. A 2% annual efficiency goal in perpetuity is unrealistic and beyond the potential of any utility.
- **Curb expansion of PSC authority over cooperatives:** The current language gives the PSC wide latitude to determine a rural electric cooperative’s goals and judge whether a cooperative has met that goal – including whether a good faith effort was made or fault can be demonstrated. This is a broad expansion of PSC authority over cooperatives, and we question the bill’s latitude and lack of legal parameters regarding this authority. As a tool enabling this authority, the PSC is given the power to terminate cooperative contracts, force cooperatives into a statewide program, exert direction over cooperative budgets, and, as written in the bill, impose any other remedy the PSC establishes in its rules

process. We believe this exertion of PSC authority and regulation of cooperatives is excessive and inconsistent with the Global Warming Task Force recommendations.

- **Preserve Commitment to Community programs:** Language is needed to ensure cooperatives are enabled and supported in continuation of their highly successful commitment to community programs. As currently drafted, we are concerned the bill attempts to divert cooperatives' efficiency efforts from localized commitment to community programs to the statewide program.

The bill makes compliance for cooperatives, especially those administering commitment to community programs, more difficult and costly for cooperatives to meet goals and to demonstrate compliance with goals that it does for public utilities.

While public utilities satisfy compliance with the bill's efficiency provision by paying into the statewide program, for cooperatives' commitment to community programs, the bill requires that each cooperative's compliance be demonstrated with effectiveness outcomes, financial audits, independent reviews, and significant reporting requirements to the state. For cooperatives' commitment to community programs, even though compliance may be demonstrated on an individual retail cooperative basis or an aggregate Dairyland basis, it is much more difficult to comply on a single, small utility basis than on a statewide average basis.

Furthermore, Dairyland cooperatives' member are almost entirely small rural residential or farm consumers spread across the entire western half of Wisconsin. A single program for a large industrial or commercial customer may be able to achieve large savings, while it is more difficult to achieve comparable savings across the relatively small consumers who are cooperative members. Furthermore, because of population densities in the areas served by cooperatives, the cost of achieving reductions in electricity use will be borne at a much higher cost to our consumers than the cost of achieving the same savings in more densely populated areas served by public utilities.

In spite of the disproportionate burden on commitment to community programs created by this bill, the continuation of Dairyland's highly successful, valuable efficiency programs is important to our members. There is no certainty that these programs would be found satisfactory towards our compliance requirements under a commitment to community option, and furthermore, if we were forced to contract with the statewide program, there would be no assurances that the statewide program would contract with Dairyland Power to continue operating our existing efficiency programs. The discontinuation of our efficiency and load management programs would represent a significant lost benefit for cooperative members throughout rural Wisconsin.

- **Clarify the Budget for Non-Electric Efficiency Expenditures:** The bill seeks to extend the statewide efficiency goals beyond electric use, to propane, for example. If other fuel types are included in this program, it should be clearly stated that efficiency efforts in those areas must be funded by the users of that fuel types. Electric customers shouldn't subsidize efficiency programs for propane users.
- **PSC Cost Recovery:** The bill allows the PSC to recover costs it incurs to administer the energy efficiency programs outlined in the bill through assessments on utilities, including retail electric cooperatives and suppliers. This constitutes an additional cost on each cooperative administering its own commitment to community programs. Not only are we required to pay for our own independent audit, but we would also be required to pay for the PSC costs of reviewing that audit.

### **Nuclear Moratorium**

Dairyland Power supports lifting Wisconsin's nuclear moratorium. In the work of the Governor's Task Force, this was linked to the enhanced RPS and energy efficiency requirement. We are concerned that the bill, as drafted today, doesn't realistically ensure the moratorium would be lifted. If we are serious about a future of reducing carbon emissions, we believe Wisconsin's energy future must include nuclear. As a small utility we would not likely be in a position to build our own nuclear generation, but a regional project is a possibility. We favor a straight forward repeal of the current nuclear moratorium. To achieve this:

- **Delete the “Entire Output Finding:”** From a policy perspective, the entire output finding prevents utilizing nuclear as a powerful tool in the transition from carbon-heavy generation to noncarbon-emitting sources. From a technical perspective, there are serious questions about the feasibility and legality of the proposed “entire output finding.” This requirement would be troublesome for Dairyland even if it were to pass legal muster, as Dairyland is charged with providing power to members located in three states other than Wisconsin. The bill seems to prohibit Dairyland from owning any capacity beyond that needed to serve only its Wisconsin members. Similarly, the bill seems to require that the output of any new nuclear plant be used only to serve Wisconsin customers. Prohibiting the sale of surplus power out of state during times of low electricity demand in Wisconsin would not benefit Wisconsin consumers. Also, in an integrated, regional grid, it is impossible to determine where electricity produced at any particular location is actually consumed.
- **Delete the non-severability clause:** This provision, along with the “entire output finding,” is wholly inconsistent with the recommendations of the Global Warming Task Force. We urge deleting the non-severability clause.
- **Preserve federal regulation over decommissioning:** The bill discusses establishing Public Service Commission involvement in decommissioning nuclear facilities. It is important that the Legislature acknowledge that the U.S. Nuclear Regulatory Commission (NRC) governs nuclear decommissioning, and any additional state involvement would be an unnecessary and troubling attempt to duplicate authority over nuclear decommissioning. The state is not equipped with the expertise or resources to become involved in nuclear decommissioning, and it has not been demonstrated that NRC’s oversight of decommissioning is inadequate. We ask you to remove all provision in the bill related to state involvement in nuclear decommissioning.
- **Clarity and Timelines for PSC Action:** The bill conditions lifting of the nuclear moratorium upon action by the PSC in two ways. We recommend deleting both of these conditions. If deletion cannot be achieved, we urge careful redrafting of the bill’s language.

Regarding the first condition, the bill is ambiguous in its requirement that the PSC promulgate the RPS and Energy Efficiency provisions of this bill before the nuclear provisions can be implemented, but unfortunately, the difference between implementing the rules and implementing the programs is vast. Without clarity regarding this particular language, we are concerned that this provision would delay lifting the nuclear moratorium.

The second condition requires the PSC to publish notice that it has satisfied the first condition.

Noticeably, neither of these conditions is subject to a timeline. We are concerned that the absence of time requirements will lead to litigation, resulting in significant and perhaps indefinite delay in lifting Wisconsin’s nuclear moratorium. Therefore, we recommend deleting both of these conditions. The language used to craft these provisions is ambiguous and serves little purpose other than to invite years of regulatory, legal and political challenges that will delay lifting the nuclear moratorium.

- **Delete the legislative findings regarding nuclear.**

#### **Alignment with Federal Legislation**

As other utilities have remarked, Dairyland would recommend that the legislation incorporate a strategy for rectifying state energy policy and rules with federal legislation or regulation. The costs of complying with four different states’ energy regulations are already significant for Dairyland Power and our members. To keep energy costs low for consumers, there should be one compliance strategy for meeting both federal and state renewable portfolio and energy efficiency requirements.

#### **Detailed Technical Modifications**

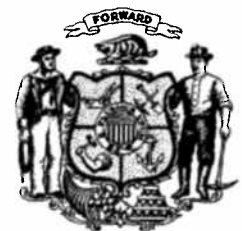


There are a number of technical changes required to make the bill supportable from Dairyland Power's perspective. While we won't speak to those in our testimony today, we do hope that you'll give the same level of attention to those issues as our policy recommendations. They are as follows:

- **Renewable resource credits:** Additional language is needed to clarify that the automatic transfer of RECs as part of a wholesale energy sale only applies to contracts or sales effective after the bill is enacted. Also, we suggest that the bill be modified to allow RECs to be banked from year to year, rather than requiring the RECs to be used in the same year in which they are generated.
- **Enhanced RPS / Biomass definition:** We recommend expanding the renewable definition to ensure methane digesters and various biomass feedstocks are expressly included. To accomplish this, we recommend deleting the bill's definition of biomass. The state's existing definition of biomass should be preserved with the addition of "animal byproducts and other gases" to the definition. It is our feeling that consistency and specificity in this area enables us, and others, to more securely plan and invest in renewable projects.
- **"Non-electric energy" definition:** Dairyland Power is investing and studying biomass conversion and co-firing of large scale coal-fired power plants. The bill appropriately allows utilities to count biomass boilers in its definition of "non-electric energy," however, the bill only allows us to receive credit for boilers placed in service on or after the effective date of the bill. We recommend that the bill language be modified to allow credits for biomass projects that are already being developed. At Dairyland, multi-million dollar biomass conversion projects have been underway for months. To hold these projects up until legislation passes so that we can "count" them in our renewable portfolio runs counter to the intent of the Global Warming Task Force. Whether a biomass project comes online in March 2010 or November 2010, that renewable generation should count equally and fully toward a utility's RPS.
- **"Service Territory" and "Premises" definitions:** In both the energy efficiency and RPS sections, the bill sets requirements that correlate to a utility's "service territory" and the "premises" of a cooperative's customers. The term "service territory" is not defined in the bill, and Wisconsin does not have defined service territories, relying instead on the anti-duplication provisions of Wis. Stat. 196.495. Likewise, the term "premises" is not defined in the bill.
- **"Retail electric cooperative" definition:** The bill defines a "retail electric cooperative" for purposes of the energy efficiency and RPS requirements to be a "cooperative association organized under ch. 185 that sells electricity at retail to its members only". The longstanding exemption in Wis. Stat. §196.01 (5)(a)1. for electric cooperatives from the definition of "public utility" is for cooperatives organized "for the purpose of serving members only." In both the RPS and energy efficiency sections, it would be preferable to make the definition of retail electric cooperative consistent with the Wis. Stat. §196.01 (5)(a)1. definition. A cooperative should not become subject to the requirements for a public utility if it should happen to serve a small number of non-members.
- **"Energy content ratio" definition:** The bill defines the term "energy content ratio" for facilities that use biomass and fossil fuel, but seems to limit the renewable resource credits for such a combined energy source facility to the total amount of "electricity generated by the facility that is sold at retail." That limiting phrase should be deleted as it is inconsistent with other provisions of the law that focus on the renewable generation of each generator, not what is sold at retail.
- **Freight Idling:** Exempt utility trucks.
- **Net Zero Buildings by 2030:** Delete this provision, or dramatically scale back from one hundred percent of residential and commercial structures.



# WISCONSIN STATE LEGISLATURE





February 2, 2010

The Honorable Spencer Black  
The Honorable James Soletski  
Co-Chairs  
Assembly Select Committee on Clean Energy Jobs  
State Capitol  
Madison, WI 53708

Dear Representative Black, Representative Soletski, and Members of the Committee:

Thank you for this opportunity to provide you with several comments regarding AB 649, the Clean Energy Jobs Act.

The Citizens Utility Board of Wisconsin is a member-supported, nonprofit organization that advocates for reliable and affordable utility service. CUB represents the interests of residential, farm, and small business customers of electric, natural gas, and telecommunication utilities before the Legislature, regulatory agencies, and the courts.

I had the privilege of serving on Governor Doyle's Task Force on Global Warming, and CUB's research director Dennis Dums also participated on several task force working groups and as my alternate.

CUB supports the recommendations of the task force, including the recommendations to strengthen Wisconsin's energy efficiency programs, to increase the requirements for renewable energy development, and to modify the so-called nuclear moratorium, as outlined in the report of the task force sent to Governor Doyle in July 2008. We believe these recommendations will help Wisconsin residents and businesses use less energy and reduce their monthly energy bills, spur the development of Wisconsin's renewable energy resources and related businesses, create new jobs, slow down the flow of dollars for out-of-state for fossil fuels, and reduce Wisconsin's greenhouse gas emissions.

I would like to thank Representative Black and Representative Soletski, and their colleagues in the Senate, Senator Mark Miller and Senator Jeff Plale, for drafting AB 649 and its companion SB 450. The bills largely reflect many of the recommendations of the task force.

However, I respectfully request that you consider making several changes to AB 649, so that it more closely follows the task force recommendations. More importantly, these suggested changes will provide more benefits to Wisconsin's residents and businesses.

(over)

February 2, 2010

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First, CUB supports the changes proposed by Roy Thilly and Tia Nelson, co-chairs of the task force, who, in a memo dated January 26, 2010, provided you with suggested changes from former members of the task force. In short, these suggested changes would strengthen the goals and requirements for Wisconsin's energy efficiency programs, and clarify several provisions of the renewable energy portfolio standard.

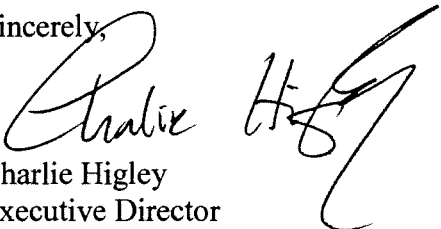
In particular, we strongly support the recommendation by former task force members that the Public Service Commission shall establish energy savings targets and budgets so that the state will meet or exceed the goals set forth in the existing "energy priorities law" 1.12(4) and the new Section 287, which creates 299.03. CUB believes strong energy efficiency goals and the budgets needed to meet them are essential requirements of a rational energy policy.

Second, CUB supports the changes proposed by the Coalition for Clean Energy in its memo to you dated January 27, 2010. As with the suggested changes from the former members of the task force, the suggested changes from the Coalition for Clean Energy ask to strengthen the requirements of the energy efficiency and renewable energy programs outlined in the bill.

Third, CUB supports the provisions in AB 649 regarding the modifications to the nuclear moratorium. We believe these provisions nearly capture the intent of the recommendations of the task force, especially the so-called "output finding" of Section 250, which creates 196.493(2)(am)4; and the "nonseverability clause" of Section 9141. These two items, along with other provisions of AB 649, work together to make sure that new nuclear power plants meet Wisconsin's need for electricity, and that the output from these plants will be sold to Wisconsin utilities, as recommended by the task force. That said, we believe the bill must strengthen the requirements for energy efficiency programs, as outlined above, before we can support the overall bill and the proposed modifications to the nuclear moratorium.

Thank you for this opportunity to provide you with our comments on AB 649.

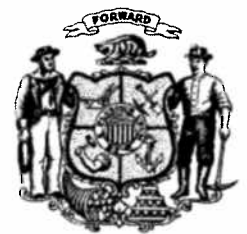
Sincerely,

A handwritten signature in black ink, appearing to read "Charlie Higley". The signature is written in a cursive style with a large, sweeping initial "C".

Charlie Higley  
Executive Director



WISCONSIN STATE LEGISLATURE



**Testimony to the Assembly Special Committee on Clean Energy Jobs.  
Frank Jablonski, Nuclear Energy Institute.  
February 2, 2010**

Thank you for the chance to provide testimony. My name is Frank Jablonski.

I am here today for the Nuclear Energy Institute. The Institute supports applying an array of technologies to the difficult problem of potential climate change. I am here to voice our qualified support for the bill, and to talk particularly about the advantages of nuclear energy as a climate change and job creation strategy for our state.

I was not always pro-nuclear. Studying the issues related to nuclear power, carefully, over a period of about two years, changed my mind. Many environmentalists are coming to similar conclusions.

When confronting issues as important as climate change and nuclear energy, my view is that environmentalists who are not-scientists should not pick and choose which general scientific consensus they will accept and which they will reject, unless they have themselves studied the issue in detail. My study disclosed that the general consensus among knowledgeable scientists is that nuclear energy's issues are manageable, and most scientists whose business it is to know about nuclear energy see it as a key tool in environmental, climate and energy security strategies for our country and our state. (Attachment 1).

Nuclear energy as it exists today, not three decades, offers seven key advantages that should entitle it to a place in the array of options.

First, on a life cycle basis, and after you back out the subsidies that are provided to every form of energy, nuclear stands out as the most well-developed non-carbon<sup>1</sup> energy option with the lowest cost. That sourced on not from nuclear energy advocates, but from to the Energy Information Administration. (Attachment 2)

Second, western nuclear power has an unparalleled record of safety. Our country, and the entire world outside the former Soviet bloc rejected Chernobyl-type designs in the early 1950's, when we were first developing civilian nuclear power plants.

Third, it is the only energy source that has, built into its operations, a mechanism and program for taking responsibility for its spent fuel or waste. If you want to talk about spent fuel, I would be happy to answer questions, but remember that, by design, natural gas and coal plants, and for that matter biomass plants, put their particulate and other waste into the air that we all breathe. They do this by design.

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<sup>1</sup> Multiple studies on the life cycle carbon footprint of potential technologies show nuclear about the same as wind energy, either a little better or a little worse. See, e.g., *Life Cycle Assessment of Electricity Generation Systems and Applications for Climate Change Policy Analysis*, Paul Meier, 2002, University of Wisconsin.

By way of contrast the used fuel from nuclear operations is confined, controlled, and managed, and we have about \$23 billion set aside to help chart our next step.

Fourth, it creates an enormous number of well-paying jobs, and it creates those jobs in our state. There are the jobs that are involved in construction, and then the jobs that are involved in operation. Nuclear has very low fuel costs (Attachment 3), so most of the cost of operating a plant goes into supporting a well-paid work force that produces low cost electricity. Contrast this, for example with natural gas, where most of the money spent leaves the state immediately to pay for imported fuel. (Attachment 3).

Fifth, nuclear energy is expandable at existing power plant sites, without the need for a massive investment in expanding transmission lines in locations where they do not already exist. This makes it compatible with our state's transmission siting law, which emphasizes use of existing corridors. It is compatible with that law in a way that new facilities in new locations are not.

Sixth, it is, by design, a baseload non-carbon resource and thus competes directly and immediately with baseload carbon resources that are the primary source of climate forcing emissions. Wind and solar, as valuable as they can be, aim to displace the use of fossil fuel use part of the time. They cannot, by themselves, replace coal-fired electricity, which runs in base-load mode. They need a compensating resource to fill in for when they are off line. Nuclear energy can directly and completely displace fossil fueled power plants, and their air pollution and greenhouse gas emissions, completely.

Last, nuclear is a young technology with enormous potential for further development. In fact it is undergoing further development in our state right now at the University of Wisconsin. We should be ready to take advantage of these developments as they come along.


For these reasons, we should be able to consider nuclear, and we should be able to consider it on a level playing field. That means a framework that does not, right out of the gate, contemplate a potential constitutionally based lawsuit. This is the only qualification that I would offer to the bill. My notes from the initial rollout hearing indicate that Mr. Thilly and Ms. Nelson were going to come back with revised language on the nuclear segment of the bill that matches up with the Task Force report. We are eager to look that over.

Thank you

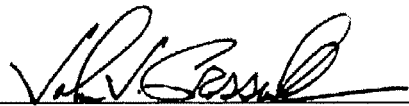
# A Sustainable Energy Future: The Essential Role of Nuclear Energy

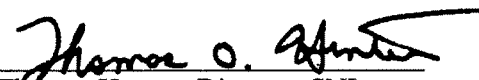
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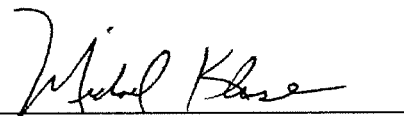
  
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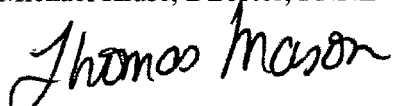
  
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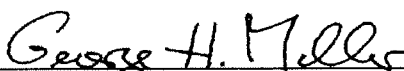
  
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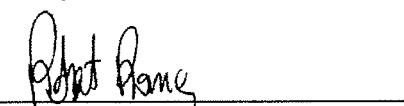
  
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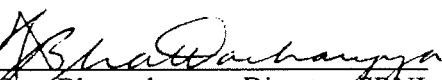
  
Thomas Hunter, Director, SNL

  
Michael Kluse, Director, PNNL

  
Thom Mason, Director, ORNL

  
George H. Miller, Director, LLNL

  
Robert Rosner, Director, ANL

  
Sam Bhattacharyya, Director, SRNL



## **A Sustainable Energy Future: The Essential Role of Nuclear Energy**

The Directors of the Department of Energy (DOE) national laboratories strongly believe that nuclear energy must play a significant and growing role in our nation's — and the world's — energy portfolio. This conclusion is based on an analysis of national and international energy needs in the context of broader global energy, environmental, and security issues. This paper provides details regarding our position in relation to nuclear energy. It is intended to be used as a basis for further discussion with stakeholders to help in developing specific near-term actions as well as a coherent long-term strategy incorporating the items listed below:

- Make maximum use of the current 'fleet' of operating light-water reactors, including plant life extensions, extended fuel burnup, and power uprates.
- Establish a national priority to immediately deploy advanced light-water reactors to meet our nation's increasing energy demand, while limiting greenhouse gas emissions and continuing to provide critical support to the Nuclear Regulatory Commission (NRC).
- Employ an integrated approach to manage used nuclear fuel and high-level waste, including interim storage, licensing of the Yucca Mountain Repository as a long-term resource, and exploration of optimal future waste management options.
- Implement an aggressive research and development (R&D) program on advanced reactors, reprocessing, waste management, and fuel fabrication concepts to enable timely identification of the technological options for a sustainable closed fuel cycle.
- Pursue partnering with other countries and implementation of an international regime that discourages the spread of enrichment and reprocessing capabilities and promotes the assurance of worldwide fuel supply and effective waste management.
- Strengthen international safeguards through aggressive R&D, thereby revitalizing U.S. safeguards technology and human capital and providing for U.S. leadership to help in assuring achievement of international security objectives and nonproliferation goals.
- Form a robust public-private partnership to ensure that (1) nuclear energy plays a more significant role in energy independence and environmental health, and (2) human infrastructure is rebuilt across industry, government, and academia.
- Incorporate independent and authoritative guidance and peer review from government and nongovernment entities to ensure that the U.S. nuclear energy agenda is responsive to current and future national needs and international conditions.

## **BROAD ENERGY CONTEXT**

Energy is vital to human civilization and underpins national security, economic prosperity, and global stability. Worldwide demand for energy is rapidly increasing and could double by 2050. At the same time, the evidence is clear that CO<sub>2</sub> emissions must be reduced globally. Abundant, affordable, and environmentally responsible energy must be developed, both domestically and internationally, to meet that demand.

Reducing U.S. dependence on foreign oil will provide economic and national security benefits, including both industrial competitiveness and international trade. Crude oil expenditures represent the largest deficit item to our balance of trade. To reverse the trend on energy imports, while at the same time meeting required reductions in CO<sub>2</sub> emissions, the United States must use energy more efficiently. Furthermore, our nation must develop and deploy multiple energy sources in the context of a strategic and comprehensive energy plan. A broad mix of energy technologies is essential to meet the growing demand.

## **BENEFITS OF NUCLEAR ENERGY**

Today, nuclear energy provides 16 percent of the world's electricity and offers unique benefits. It is the only existing technology with capability for major expansion that can simultaneously provide stability for base-load electricity, security through reliable fuel supply, and environmental stewardship by avoiding emissions of greenhouse gases and other pollutants. Furthermore, it has proven reliability (greater than 90 percent capacity factor), exemplary safety, and operational economy through improved performance.

We believe that nuclear energy must play a significant role in our nation's — and the world's — electricity portfolio for the next 100+ years. Nuclear energy has great potential for contributing more to our broader energy needs, however. For example, nuclear energy could supplement or even supplant fossil fuels by providing the electricity for electric-powered vehicles, or it could be used to generate hydrogen for vehicles that utilize hydrogen fuel cells. Nuclear energy could also help to generate high-temperature process heat, provide a valuable input for feedstock to chemical production and aid in the production of freshwater from seawater and contaminated surface and groundwater sources.

## **FOCUS EFFORTS AND INVESTMENTS: WHY NOW?**

There are many reasons to focus on and invest in the expansion of nuclear energy. First, time-critical clean energy needs can be met through reactor life-time extensions, higher fuel burnup, power uprates, and additional deployment of existing light-water reactor technology. Second, to maximize the benefits of nuclear energy domestically, advanced fuel cycles that cost-effectively optimize energy utilization and waste management are needed; however, there is a long lead time for developing the required technologies. Third, the United States now has a window of opportunity to influence global directions in safety, security, and nonproliferation throughout the nuclear fuel cycle. A strong, sustained, integrated effort across all three areas must begin now.

## **SUCCESSFUL PATH FORWARD**

The directors of the DOE national laboratories remain committed to U.S. energy security and the important role that an increased nuclear energy component can and should play in strengthening our energy security. Essentials for success are a strategy that integrates across DOE as well as other federal agencies; a concentrated effort to rebuild the necessary nuclear enterprise, including a broad-based R&D effort; and engagement with industry and the international community. Key to ensuring a successful effort is decisive leadership and a strong public-private sector partnership.

### ***Strategy and Policy Development***

To facilitate that leadership, all stakeholders must work together to develop a comprehensive strategic plan that has broad, bipartisan support and clear, consistent communications among government, researchers, the international community, industrial stakeholders, and the public. The development and implementation of a strategic plan should include:

- A clear statement of national energy policies. The full range of benefits and risks involved in nuclear energy create an inextricable link between government and industry. Furthermore, government policies and programs should be harmonized with those of the private sector. This relationship must be a partnership.
- A clear differentiation between short- and long-term goals. Private sector providers of nuclear power have expressed their priorities, but they are inevitably short term in nature and may not necessarily include long-term, national priorities.
- A sustainable approach to used fuel disposition and waste management. Confidence must exist in the ability to manage nuclear fuel and to dispose of nuclear waste safely so as to enable the sustainable expansion of nuclear energy.
- A clear focus on strengthening the nonproliferation regime. Enhanced safeguards and physical security, international fuel service arrangements, and new nuclear fuel cycle technologies can advance our nonproliferation objectives.
- A mechanism for review by the stakeholders to ensure that the strategy remains relevant to current and future national needs and international conditions.

### ***Rebuilding of the Nuclear Enterprise***

The nuclear sector stakeholders must address three key areas: manufacturing base, science and technology infrastructure, and human capital. Expansion of nuclear energy will create stresses on the industrial resources needed to build and operate nuclear power plants. Nuclear power plants require a large forged pressure vessel and head, huge civil works, a myriad of pumps and valves, miles of piping and wiring, and robust process and system controls that must be "N-stamp qualified." To have substantial growth in nuclear energy, more suppliers are needed. The worldwide forging capacity is very limited, and

none of it resides in the United States. This example illustrates one of the many choke points in the supply chain. Transport of material, support for construction, and enrichment of uranium for the fuel supply all must be considered. Moreover, financial institutions need to have confidence that a reliable supply chain exists before they will invest in new plant construction.

The science and technology infrastructure must include modern capabilities such as irradiation systems for testing new fuels and structural materials; chemical separations and characterization capabilities; and physics facilities for radiation transport, thermo-hydraulics, cross-sections, and criticality science. These and other capabilities require modern facilities; however, our current R&D infrastructure, which was built during the Cold War, has atrophied and is obsolete. Modeling and simulation technologies have made tremendous advances since the design of the existing facilities. The design of the next-generation facilities must incorporate state-of-the-art testing and diagnostics tools and be guided by the data requirements for advancing the realism and accuracy of high-performance simulation tools and approaches.

In addition, training the next generation of engineers and scientists must be an integral part of a robust nuclear program. A recent industry study pointed out that over the next five years, half of the nation's nuclear utility workforce will need to be replaced. To satisfy the need for both professional and crafts workers, government and industry must both play important roles to stimulate workforce development for construction, operations, and R&D by providing an environment that is exciting and thriving. Industrial and federal government commitment will be required to invigorate university and trade school programs. For example, the government should establish and fund a nuclear energy workforce development program at universities and colleges to meet the expected need.

### ***Research and Development***

To reduce cost, ensure sustainability, and improve efficiency, safety, and security, investments in a sustained nuclear science and technology R&D program are needed. Such a program must effectively support and integrate both basic and applied research and use, to the extent possible, modeling and simulation capabilities to address both near-term, evolutionary activities (e.g., life extensions of the current fleet) and long-term solutions (e.g., advanced reactors and fuel-cycle facilities). Industry will pursue evolutionary R&D to further improve efficiencies along each step of the current fuel cycle. It is incumbent upon the government, however, to implement long-term R&D programs for developing transformational technologies and options for advanced nuclear fuel cycles. Including regulators in the research and evaluation of results will facilitate the development of licensing and regulation of future nuclear facilities and technologies. Review of research plans and results by expert peer reviewers and open availability of the results will strengthen these efforts.

### ***International Engagement***

Thirty countries currently operate nuclear power reactors, and approximately thirty-five reactors are under construction outside the U.S. An additional two dozen countries

that have never used nuclear power to generate electricity (e.g., Egypt, Indonesia, Turkey, Vietnam) are now expressing serious interest in the technology, citing stability, security, sustainability, and environmental stewardship as key drivers. As a result, the amount and types of nuclear material in the world will grow, commerce in nuclear technology and materials will increase, and there will be interest in assuring a reliable supply of nuclear fuel. Ongoing bilateral and multilateral engagement will provide opportunities for improving our understanding of the needs, plans, and initiatives of other countries; the potential benefits and risks of these initiatives; and ways to positively impact technological development and choices. The R&D of viable technical options for the United States will also maximize our ability to influence the expanding global commercial enterprise.

## **CHALLENGES AND OPPORTUNITIES**

Important challenges and opportunities are on the horizon: near-term expansion, used nuclear fuel disposition, a sustainable “closed” fuel cycle, and nonproliferation and security. These are discussed below.

### ***Near-term Expansion***

An urgent need exists to extend the life of our existing nuclear plants; to begin building new plants, including addressing the financial constraints; and to implement further cost improvements. Relicensing for 60 years has already occurred for many existing reactors and is being aggressively sought for the remaining plants. In parallel, R&D activities that explore the technical feasibility and path forward for long-term operations to 80 years should also be pursued.

Capital investments required for construction of nuclear plants are substantial, and private sector investment decisions must seriously consider risks over a long planning horizon, including the ability to recover capital costs through the rate base. Since new nuclear power deployments are in the national interest, the private sector and government share the responsibility for undertaking the activities needed to ensure that the investment risk associated with constructing, licensing, and operating new light-water reactors is reduced sufficiently to enable commercial investment and deployment. The Energy Policy Act of 2005 provides important loan guarantees, standby support, and tax credits to mitigate financial and regulatory risks that need to be implemented: the financial community and rate regulators must be engaged to enable nuclear energy expansion. Finally, critical support of the NRC for license review and approval also needs to continue to ensure timely review of new license applications.

Further cost-effective technical improvements to light-water reactors are feasible. In addition to simplified reactor and ancillary systems, areas of emphasis include the development of sensing capabilities, robust communication systems, and development of advanced approaches to safeguards and physical protection. The achievement of a simplified safe and secure plant will also require systematic consideration of human factors as a major contributor to a plant’s economics, safety, security, and operational performance. Many of these advances can also provide cost-efficient operations and maintenance of existing plants.

### ***Used Nuclear Fuel Disposition***

The disposition of used nuclear fuel must be considered from both a short- and long-term perspective. Confidence regarding the disposal of waste is needed before the NRC will grant a license for a new plant and before private investors will accept the financial risk of ordering new nuclear plants. In the short term, this confidence can be achieved by continuing the licensing of a geologic repository at Yucca Mountain and enabling the continued interim storage of used nuclear fuel in dry casks and fuel pools.

Dry cask storage is a safe and secure interim solution, either at existing reactor sites or consolidated regionally if future circumstances dictate. Through policy and investment actions, government can make it clear that interim storage is not intended to push the burden of an ultimate solution to a future generation, but rather to keep waste management options open, pending the results of continued R&D investments. The use of dry casks incorporates proven technologies and regulatory regimes to protect the public from hazards during handling, transport, and storage.

The design and operation of the repository may evolve as knowledge advances. Yucca Mountain Repository was envisioned at a time when the country did not have plans for significant nuclear energy expansion. At that time, used reactor fuel was considered "waste"; thus, direct disposal was chosen as the approach. In the long term, given the envisioned expanded use of nuclear energy, it is both appropriate and timely to reconsider the sustainability of the fuel cycle and to recognize that even with recycling, a geologic repository will be required. In our opinion, R&D must be conducted, and a comprehensive evaluation of disposition pathways must be performed.

### ***Sustainable "Closed" Fuel Cycle***

As nuclear energy expands, the traditional once-through fuel cycle will not be sustainable. To maximize the benefits of nuclear energy in an expanding *nuclear energy future*, "closing" the fuel cycle will ultimately be necessary. Simultaneously addressing such issues as the full utilization of the fuel's stored energy content, waste minimization, and strengthening of the nonproliferation regime is essential and will require systems and economic analysis; and investigation of new technologies. Thus, the immediate urgency of our efforts should be directed toward conducting broad-based R&D to support an informed decision on how to proceed. The results of these investments will yield a deeper understanding of the above issues, and will provide the basis and timing for closing the fuel cycle. We believe that the decades-long hiatus in U.S. investment provides an opportunity and an advantage to avoid reliance on a dated recycling infrastructure. As a result, our nation has the opportunity, through new technologies and business models, to determine the best path forward.

An evaluation for light-water reactor recycling in the near-term must consider the increased efficiency in the use of fissile resources, the alteration of waste forms and reductions in overall waste burden, the anticipated need for plutonium/actinides to fuel fast reactors for burning or breeding, and U.S. nonproliferation objectives. Other considerations include establishing a credible U.S. role in an international fuel supply regime, getting our nation back into industrial-scale reprocessing, and demonstrating U.S.

leadership in providing nuclear safety, safeguards and other essential disciplines in the global nuclear renaissance. Integrated analyses of the factors above have not provided sufficient direct evidence to date to support substantial Federal Government investments to deploy existing technology for commercial scale recycling in light-water reactors. It is incumbent upon the Federal Government to establish the policy framework and working with industry ensure that technologies are available for deployment that satisfy that framework, including the non-proliferation and waste management considerations discussed in this paper, while the marketplace will ultimately determine the need for implementation within that framework.

### ***Nonproliferation and Security***

Strengthening the nuclear nonproliferation regime in the context of the global expansion of nuclear energy will require a multipronged approach. While the nonproliferation regime and other institutional measures will continue to provide the primary framework to ensure that the growth of nuclear power does not increase proliferation and terrorism risks, there should be a strong emphasis on limiting the spread of enrichment and reprocessing capabilities and enhancing our ability to track, control, and protect nuclear materials.

Three key areas will help to accomplish this focus: an assured fuel cycle service system with incentives for foregoing enrichment and reprocessing capability, improved safeguards technologies and transparency, and “safeguards by design” (i.e., designing safeguards technologies and methodologies into new facilities or systems). These key areas should be tightly integrated with other nuclear fuel cycle R&D and be informed by a risk assessment methodology. This methodology will enhance our ability to understand the benefits and risks of fuel cycle choices in the context of the overall fuel cycle system. These choices include technology options, framework options, and policy options. As an example, formulating international frameworks that support U.S. nonproliferation policy objectives will require understanding the energy goals and objectives of other countries, options for meeting these objectives, and a clear understanding of any specific trade-offs.

## **COMMITMENT OF THE NATIONAL LABORATORIES**

Our nation is facing urgent problems in energy, environment, and national security. Nuclear energy can play a vital role in meeting our future energy needs, reducing our dependence on foreign oil, and protecting our environment. However, a clear national strategy with bipartisan support and strong U.S. leadership is necessary. The national laboratories, working in collaboration with industry, academia, and the international community, are committed to leading and providing the research and technologies required to support the global expansion of nuclear energy.

## Attachment 2

### Estimated Levelized Cost of New Generation Resources, 2016.

Plant Type	Capacity Factor (%)	U.S. Average Levelized Costs (2008 \$/megawatthour) for Plants Entering Service in 2016				
		Levelized Capital Cost	Fixed O&M	Variable O&M (including fuel)	Transmission Investment	Total System Levelized Cost
Conventional Coal	85	69.2	3.8	23.9	3.6	100.4
Advanced Coal	85	81.2	5.3	20.4	3.6	110.5
Advanced Coal with CCS	85	92.6	6.3	26.4	3.9	129.3
Natural Gas-fired						
Conventional Combined Cycle	87	22.9	1.7	54.9	3.6	83.1
Advanced Combined Cycle	87	22.4	1.6	51.7	3.6	79.3
Advanced CC with CCS	87	43.8	2.7	63.0	3.8	113.3
Conventional Combustion Turbine	30	41.1	4.7	82.9	10.8	139.5
Advanced Combustion Turbine	30	38.5	4.1	70.0	10.8	123.5
Advanced Nuclear	90	94.9	11.7	9.4	3.0	119.0
Wind	34.4	130.5	10.4	0.0	8.4	149.3
Wind – Offshore	39.3	159.9	23.8	0.0	7.4	191.1
Solar PV	21.7	376.8	6.4	0.0	13.0	396.1
Solar Thermal	31.2	224.4	21.8	0.0	10.4	256.6
Geothermal	90	88.0	22.9	0.0	4.8	115.7
Biomass	83	73.3	9.1	24.9	3.8	111.0
Hydro	51.4	103.7	3.5	7.1	5.7	119.9

Source: Energy Information Administration, Annual Energy Outlook 2010, December 2009, DOE/EIA-0383(2009)

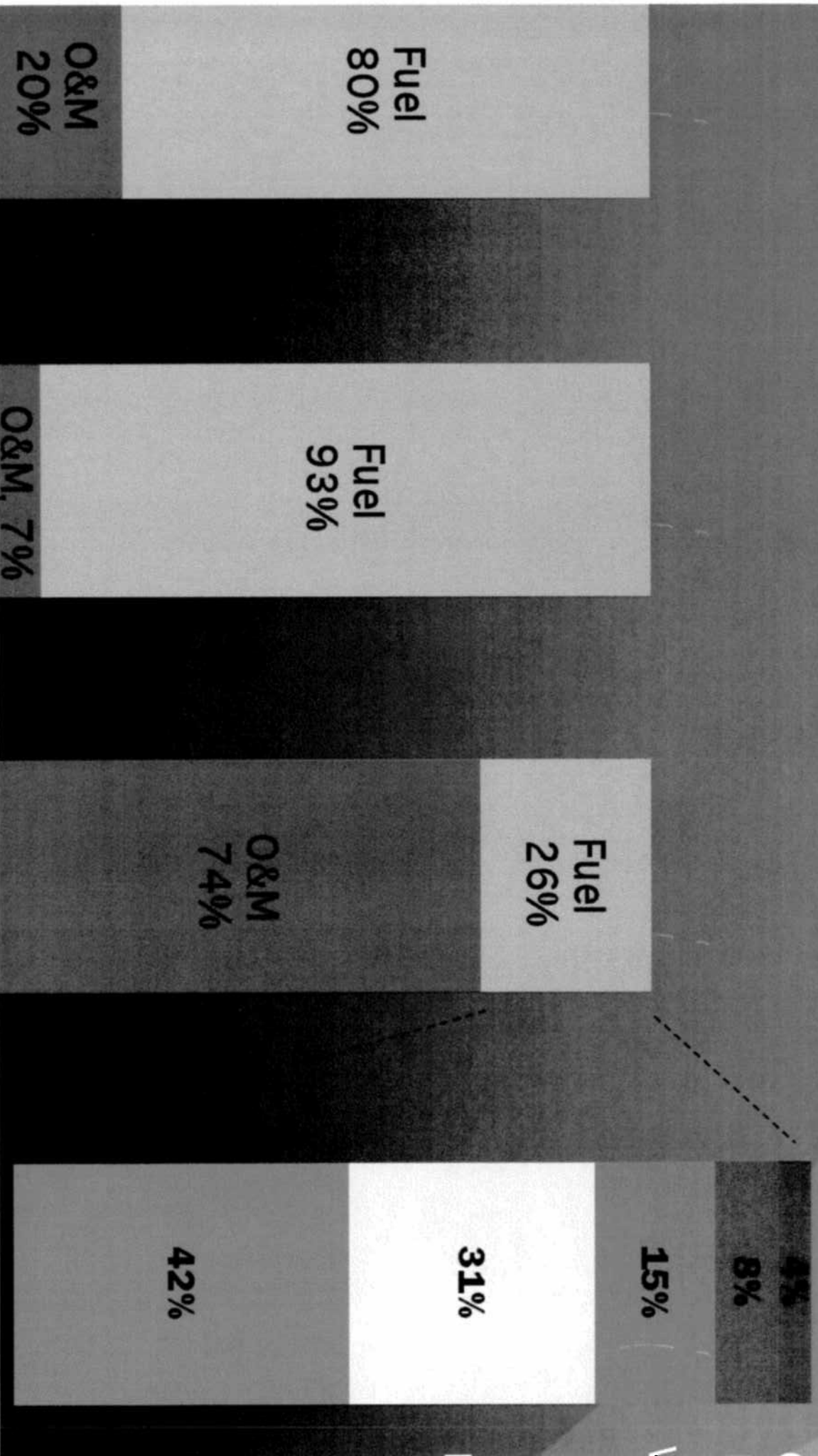
Accessible at:

[http://www.eia.doe.gov/oiaf/aeo/electricity\\_generation.html](http://www.eia.doe.gov/oiaf/aeo/electricity_generation.html)



# Power Production Costs

2008



O&M  
20%

Fuel  
80%

O&M, 7%

Fuel  
93%

Fuel  
26%

O&M  
74%

4%  
8%

15%

31%

42%

Coal

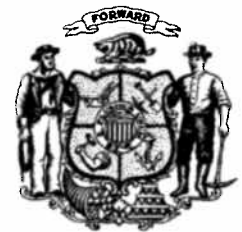
Gas

Nuclear

Nuclear Fuel  
Component Cost



# WISCONSIN STATE LEGISLATURE



## Clean Energy Jobs Act

Testimony submitted by Liz Klainot, Program Director of Peace Action Wisconsin  
February 2, 2010

My name is Liz Klainot and I am the Program Director for Peace Action Wisconsin. Peace Action Wisconsin has over 1000 members in Southeastern Wisconsin, all of them believe in the legislative process and are frequent voters. As members of a progressive organization focusing on peace, nuclear disarmament and sustainability, we are proud to live in Wisconsin. We support progressive reforms on peace and the environment, and overall, the Clean Energy Jobs Act is a very progressive bill and we support about 93% of it. The bill makes some great strides that make Wisconsin cleaner and less dependent on foreign fuel sources. However, there is one part of the bill that is not at all progressive, it is actually takes us a huge step backward.

Currently, Wisconsin law requires that in order to build a new nuclear reactor, there must be a federally licensed waste repository to handle the high-level radioactive waste the reactor creates. A provision of the Clean Energy Jobs Act would remove this requirement and instead replace it with a requirement that just says the Public Service Commission must approve a plan for its disposal. This is a step in the wrong direction. The current common-sense law was passed in 1984 and was a big step in protecting the health and safety of Wisconsin residents.

The proposed change in nuclear policy endangers the health of Wisconsin residents. Nuclear waste can be dangerous for hundreds of thousands of years. Many elements in radioactive waste are highly toxic. According to Dr. Helen Caldicott, just half a kilo of Plutonium, evenly distributed, could potentially cause cancer to everyone on earth. The risk of cancer is especially dangerous for children, who are 10 to 20 times more susceptible to the carcinogenic effects of radiation. Do we really want to endanger our residents this much? How could this possibly be a step forward?

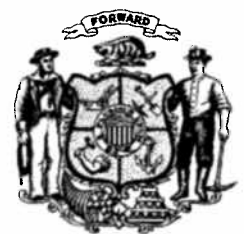
Nuclear energy is also not safe for the environment. The production of nuclear energy releases four to five times the CO<sub>2</sub> per unit of energy produced than renewables. It also releases dangerous toxins into the environment that remain dangerous for up to 240,000 years. This is certainly not "clean energy." We should be moving forward by relying on clean, renewable energies, but instead this would be another step backward.

Lastly, nuclear energy leads to the proliferation of nuclear weapons and is a threat to American security. The technology used to enrich uranium for nuclear power is the same used to enrich uranium for nuclear weapons. Reprocessing plants separate plutonium and uranium from fuel that has been irradiated by the reactors. This plutonium can be used in weapons production. Peace Action is strongly opposed to the production of nuclear weapons. By promoting nuclear energy we are also promoting the production of nuclear weapons. In addition, this encourages other countries to use nuclear power, but this technology can be used to create weapons. If a country is enriching uranium and has nuclear reprocessing plants, they can use this to create weapons. This is a threat to American and global security. In addition, we need to keep in mind that our nuclear capabilities could become a liability in the case of a terrorist act. This is a huge step backward!

Wisconsin has such a great progressive history. We have a tradition of moving forward with progressive policies. The Clean Energy Jobs Act could be this step forward, but only if the nuclear provisions are removed from the bill. It's 2010, the beginning of a new decade, let's jump forward rather than falling back far into the last century. Remove the nuclear provisions to protect the health and safety of Wisconsin residents. Let's make the Clean Energy Jobs Act something we can be proud of! Let's take a step forward, not backward!



# WISCONSIN STATE LEGISLATURE





122 State St., Ste. 310  
Madison, WI 53703  
[www.WisconsinEnvironment.org](http://www.WisconsinEnvironment.org)

## Assembly Committee on Clean Energy Jobs

February 2, 2010

Dear Representative Black, Representative Soletski and Committee members,

On behalf of Wisconsin Environment and our members across Wisconsin, I would like to thank you for the opportunity to voice our support for the Clean Energy Jobs Act.

Five years ago, Wisconsin Environment supported Act 141 to increase investments in clean, renewable energy. That plan was adopted with bi-partisan support and it has created real benefits for our state's environment and economy:

- We now receive about 5% of our energy from clean sources, with local wind farms supplying enough energy to meet the needs of 130,000 typical homes.
- As of 2008, Wisconsin's energy efficiency programs were saving enough energy to meet the annual needs of more than 160,000 households, increasing disposable income of Wisconsin residents by \$85 million.
- Using clean energy has reduced the amount of global warming pollution caused by 800,000 cars, along with the toxic soot, smog and mercury pollution that causes asthma and spoils our lakes and streams.

While we have made important progress, we have a long way to go. We still get 75% of our energy from fossil fuels, and we lack a plan to reduce our share of global warming emissions. Other states, such as Minnesota, Illinois, and Texas - as well as other countries including China - are doing more to create clean energy and the jobs that go with it.

Wisconsin Environment supports the Clean Energy Jobs Act as a plan to help the state take the next steps in the transition to a clean energy economy:

**Renewable Portfolio Standard** – We support increasing the state's commitment to 25% clean, renewable energy by 2025. We believe the RPS should emphasize the development of clean energy infrastructure for wind, solar and other renewables in-state. We recommend that the in-state requirement be increased so that ½ of the clean energy will be developed here in Wisconsin.

**Feed in tariff** – We support the feed in tariff policy. It is the central policy in the bill to promote distributed generation such as solar, small-scale wind and manure digesters. This type of distributed generation is not only clean, homegrown and renewable, it can help us diversify our energy mix. A more decentralized energy system will insulate us from price shocks, interruptions and fuel shortages. And, by making more of our homes and farms local energy generators, it can reduce the need for major transmission upgrades and base load power centers, saving ratepayers money. We recognize the need to establish reasonable cost-containment mechanisms through a cap on the amount of distributed generation that utilities would be required to pay for.

**Energy Efficiency** – We support creating clear goals to reduce energy usage 2% per year. We want to make sure the bill clearly links the planning and funding process for energy efficiency to levels that will achieve these benchmarks.

**Nuclear Power** – Given the threat of climate change, we should put every possible solution on the table, even nuclear power. However, we should prioritize the options that are the quickest, cleanest and cheapest alternatives. Far from a smart solution to global warming, nuclear power will actually set us back in the fight to solve it because of the time and exorbitant costs it would take to construct new plants. The same dollars directed toward efficiency and renewable energy programs can deploy those solutions much more quickly and reduce twice the global warming emissions. We oppose efforts to build new plants in Wisconsin. However, we are willing to support the changes as written in the legislation as representing the compromise as agreed-upon in the Task Force.

Most regular citizens aren't able to get away from work and attend a hearing such as this. So I'd like to close by sharing a story from one of our members, Lane Hall, from Wauwatosa, WI on why she supports clean energy:

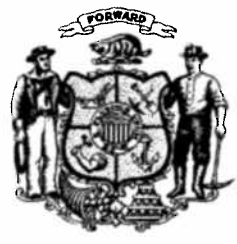
*My family is committed to trying to reduce our energy and "footprint." We have upgraded our furnace for high efficiency heat, insulated our 1927 home and replaced light bulbs with compact fluorescents. I strongly feel that clean energy, and renewable energy, along with conservation is not only an ethical action, but an essential act of collective health. This is why it is important to me: the more we can do at every scale (private, household, local, state, national, global) the more we can assure a better future. It is also important to "practice what we preach" when it comes to educating our children.*

Thank you,

Dan Kohler, Director, Wisconsin Environment



# WISCONSIN STATE LEGISLATURE





# WMC

WISCONSIN'S BUSINESS VOICE SINCE 1911

**TO:** Members, Senate Select Committee on Clean Energy  
**FROM:** Scott Manley, Environmental Policy Director  
**DATE:** February 2, 2010  
**RE:** Assembly Bill 649 – Wisconsin Global Warming Legislation

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Wisconsin Manufacturers & Commerce (WMC) has serious concerns with the energy and economic impacts of numerous proposals in Assembly Bill 649 (AB 649), which seeks to implement sweeping global warming regulations in Wisconsin. For the reasons cited below, we respectfully urge Committee members to oppose this legislation.

WMC is the state's largest business trade association, with roughly 4,000 members in the manufacturing, health care, retail, energy, banking, insurance and other service sectors of our economy. WMC is dedicated to making Wisconsin the most competitive state in the nation to do business, and toward that goal, we support consistent, cost-effective and market-driven regulatory approaches that recognize a balance between environmental protection and the competitiveness of Wisconsin's jobs and economy.

Before highlighting some of our specific concerns with this legislation, it is important to understand the importance of manufacturing to Wisconsin's overall economy, as well as the relationship between affordable energy and the viability of Wisconsin's manufacturing sector.

## **The Importance of Manufacturing to Wisconsin's Economy**

Wisconsin leads the nation with the single-most manufacturing intensive economy in the United States. In 2008, manufacturing accounted for \$48.9 billion in economic output—a 20.3% share of Wisconsin's overall economy. Wisconsin ranks in the top ten nationwide in exports, and manufacturing accounts for 94% of Wisconsin's exported goods.

Manufacturing is also one of the highest-paying sectors of our economy. The average manufacturing job in Wisconsin pays \$62,959 per year, which is 37% higher than the state average of \$45,905. These family-supporting jobs provide work for more than 430,000 Wisconsinites. Unfortunately, we have lost nearly 160,000 manufacturing jobs in the last decade, with more than 60,000 manufacturing jobs lost since 2008 alone.

## **The Link Between Manufacturing & Affordable Energy**

There are various reasons for the recent decline in Wisconsin manufacturing jobs, including rising prices for electricity. Manufacturing is one of the most energy-intensive sectors of Wisconsin's economy—factories consume more electricity each year than residential or commercial electric users. For example, electricity may account for 20% of a manufacturer's operating costs, with some manufacturers paying monthly electric bills that exceed \$1 million.

Many manufacturing sectors, including the food processing, pulp & paper, and foundry industries, are under intense regional, national and international competitive pressure. Increasing the cost of energy in our state may force the loss or migration of Wisconsin manufacturing jobs to other states and countries.

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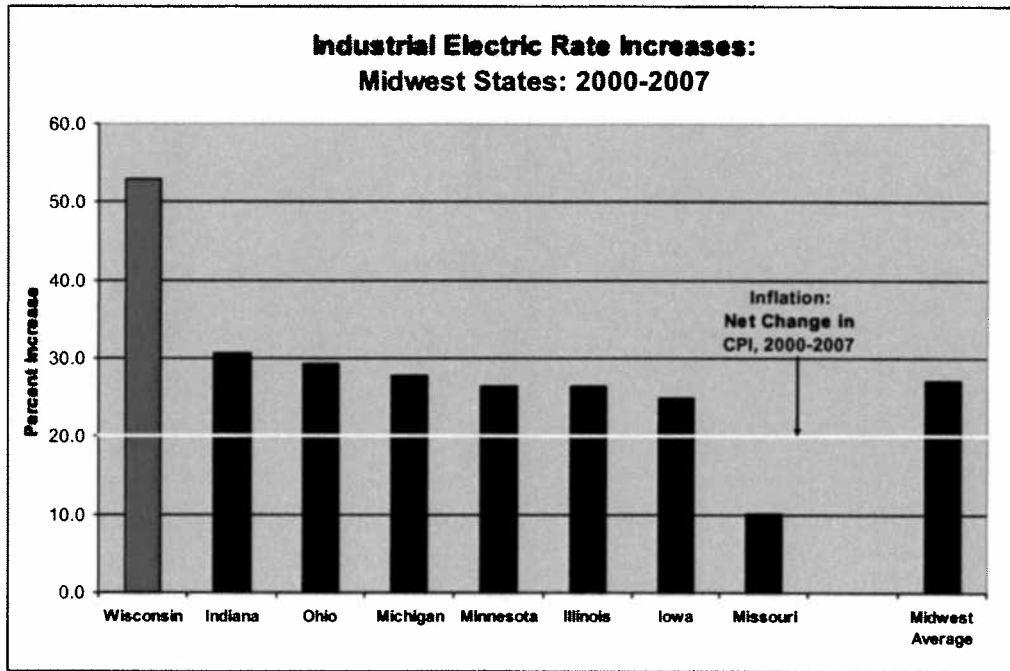
501 East Washington Avenue, Madison, WI 53703-2914 P.O. Box 352, Madison, WI 53701-0352  
Phone (608) 258-3400 • Fax (608) 258-3413 • [www.wmc.org](http://www.wmc.org)

*WMC is a business association dedicated to making Wisconsin the most competitive state in the nation.*

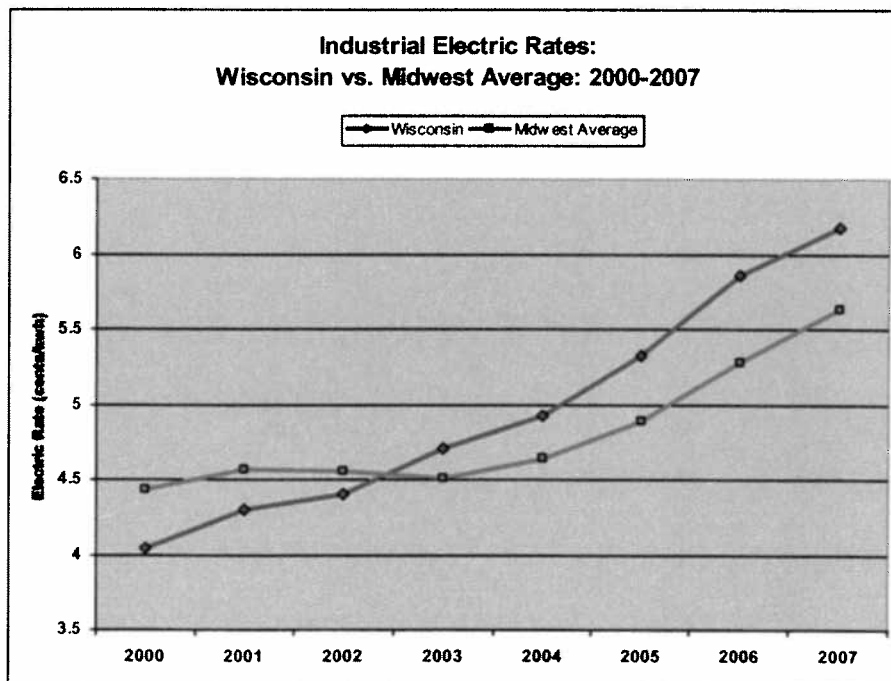


## Wisconsin Electricity Prices are Trending in the Wrong Direction

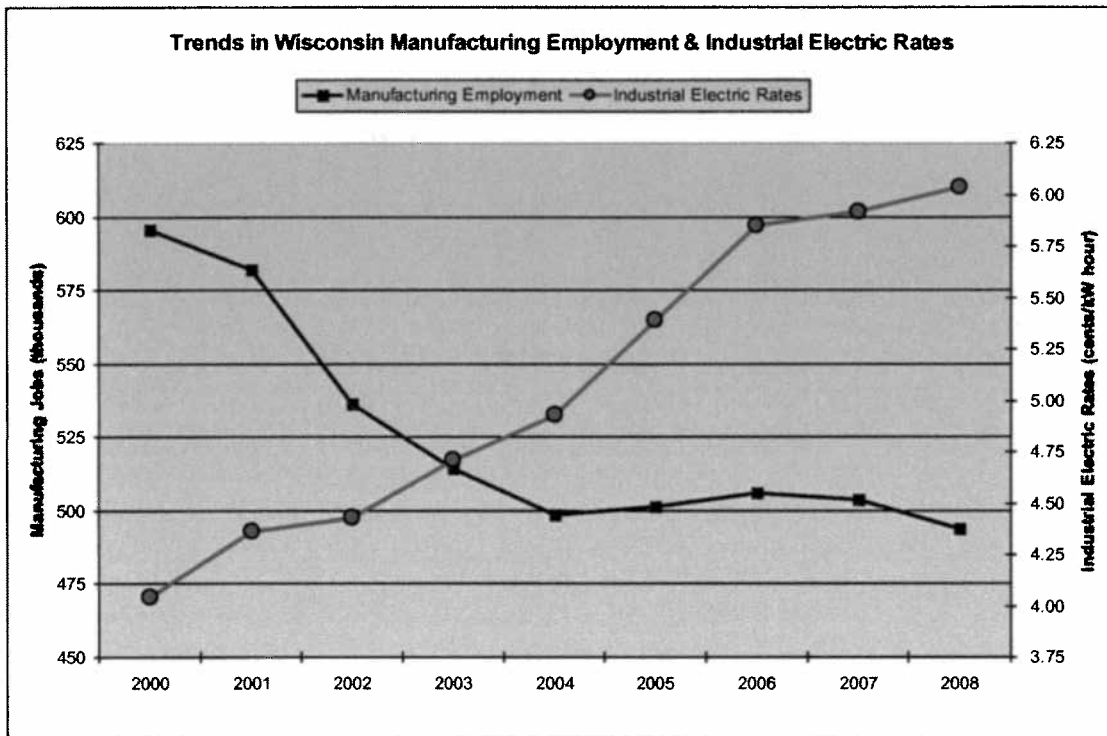
As shown in the graph below, industrial electric rates grew by more than 50% between 2000 and 2007—much faster than any other Midwest state, and more than twice the rate of inflation. While much of this increase is due to needed investments in additional generation and transmission to promote a reliable grid, Wisconsin cannot expect to attract and retain manufacturing jobs if we continue to make electricity more expensive here than in competing markets.



In 2000, our comparatively affordable electric rates gave Wisconsin businesses a competitive advantage in the Midwest. Since that time, steeply rising electric rates have placed Wisconsin employers at a competitive disadvantage as rates have climbed above the Midwest average.



There is a link between the affordability of electricity, and Wisconsin's ability to attract and retain well-paying manufacturing jobs. As the cost of electricity has risen, the number of manufacturing jobs has declined.



WMC is concerned that the expensive energy policies proposed in AB 649 will further widen the gap between the cost of electricity in Wisconsin, and the cost of electricity in competing states and countries. Manufacturing jobs rely upon affordable and reliable sources of energy, and the proposed bill threatens the viability of thousands of jobs by making our electricity significantly more expensive.

## 25 Percent Renewable Portfolio Standard (RPS)

WMC believes that renewable energy must continue to play a role in Wisconsin's future energy mix, and our organization supported the current 10% renewable mandate. However, the extent to which renewable energy exceeds the existing 10% mandatory threshold should be driven by market factors such as cost and demand, rather than an arbitrarily-imposed mandate from the Legislature. Wisconsin homeowners and businesses simply cannot afford to pay for ever-increasing renewable generation requirements regardless of cost.

The 25% RPS requirement proposed in SB 450 will be tremendously expensive. A study published last November by the nonpartisan Wisconsin Policy Research Institute (WPRI) concluded that the 25% RPS would cost \$16.2 billion in increased costs to generate electricity in Wisconsin. By comparison, Wisconsinites pay roughly \$5.5 billion each year for electricity. Consequently, electric customers in Wisconsin should expect double-digit increases in their electric bills each year if the Legislature adopts the 25% RPS policy.

Another cost estimate of the 25% RPS policy, which utilizes the assumptions of Governor Doyle's Public Service Commission (PSC), results in a very similar cost figure. The PSC published its *Strategic Energy Assessment 2014* (SEA) in April of 2009, and specifically examined the cost of meeting a 25% RPS. The PSC found that meeting the 25% RPS would require the addition of at least 400 megawatts of new renewable generation each year until 2025. The PSC further concluded that wind would be the most cost-effective source of generation, with a capital cost of \$2.32 million per megawatt.

***Using the PSC's published assumptions, it would cost roughly \$15 billion to construct 400 megawatts of wind each year between now and 2025 in order to meet the 25% RPS.*** Notably, this figure does not include the additional cost associated with constructing new transmission lines to add electricity to our grid. Because AB 649 would allow 60% of the renewable generation to be built outside Wisconsin's borders, the cost to transmit the electricity back to Wisconsin customers from states like Minnesota, Iowa and South Dakota is likely to be considerable.

Wisconsin businesses and families cannot afford to pay many billions of dollars in higher costs for electricity. We must find a way to curb the increasing cost of electricity in Wisconsin if we hope to keep employers in a competitive position to emerge from the current economic recession. Unfortunately, AB 649 would take us in the wrong direction by mandating expensive new renewable electricity requirements at a time when our state can least afford it.

According to the PSC, Wisconsin had a 30% surplus of electric generation capacity in 2008. We should not be mandating the construction of additional electricity when we already have more power today than we need to meet customer demand. Wisconsin is already on track to double our renewable generation over the next five years because of the existing 10% RPS law. Requiring Wisconsin electricity customers to spend \$15 billion or \$16 billion on additional renewable generation that is not needed to meet consumer demand is an unwise use of ratepayer dollars. Lawmakers should instead allow the current 10% mandate to work, and let market factors like cost, demand and affordability determine our future renewable energy portfolio.

## **Energy Consumption Goals & Energy Efficiency Spending**

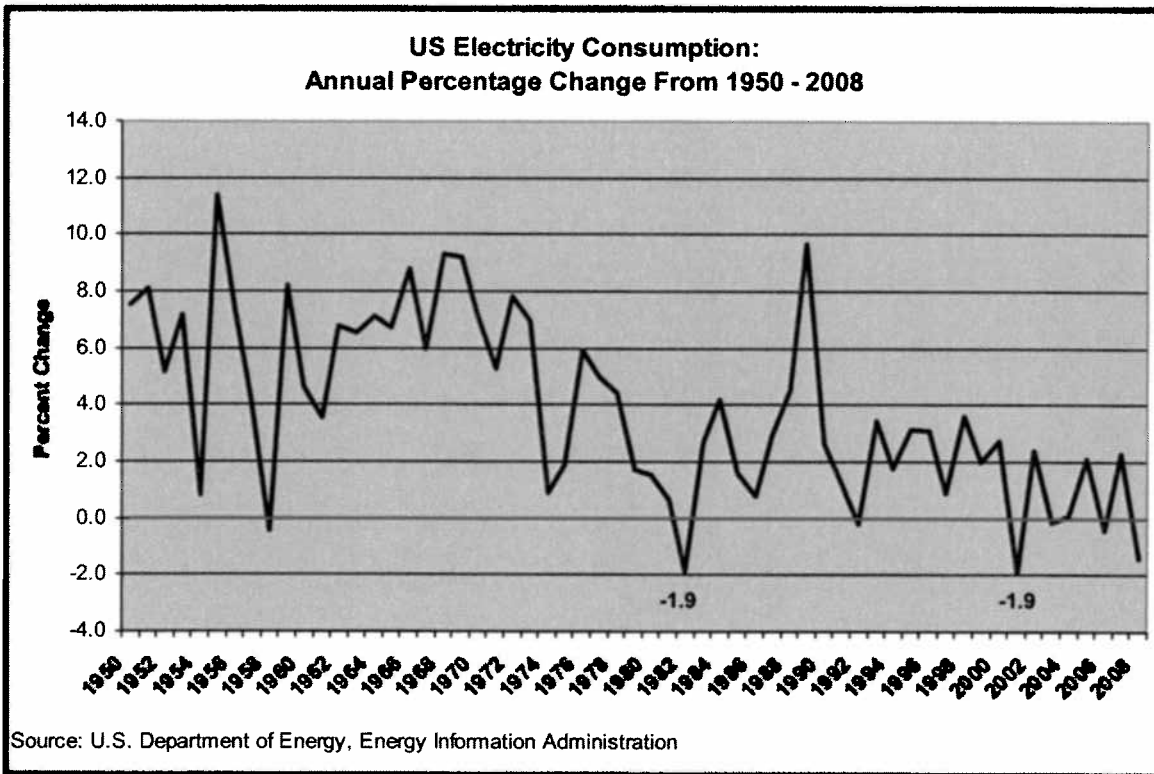
WMC believes that energy efficiency and conservation efforts remain the most affordable mechanism to reduce our state's energy footprint while keeping Wisconsin businesses competitive. Wisconsin businesses continually strive to conserve energy and make their operations more efficient. Significant progress has been made toward this goal, and will continue to be made by Wisconsin businesses.

Assembly Bill 649 would establish aggressive energy consumption reduction goals, and give the PSC broad authority to assess utility surtaxes on monthly energy bills to fund programs designed to meet the 2% annual reductions in consumption. The model proposed in AB 649 suggests that government can tax and spend its way toward meeting energy efficiency and conservation goals.

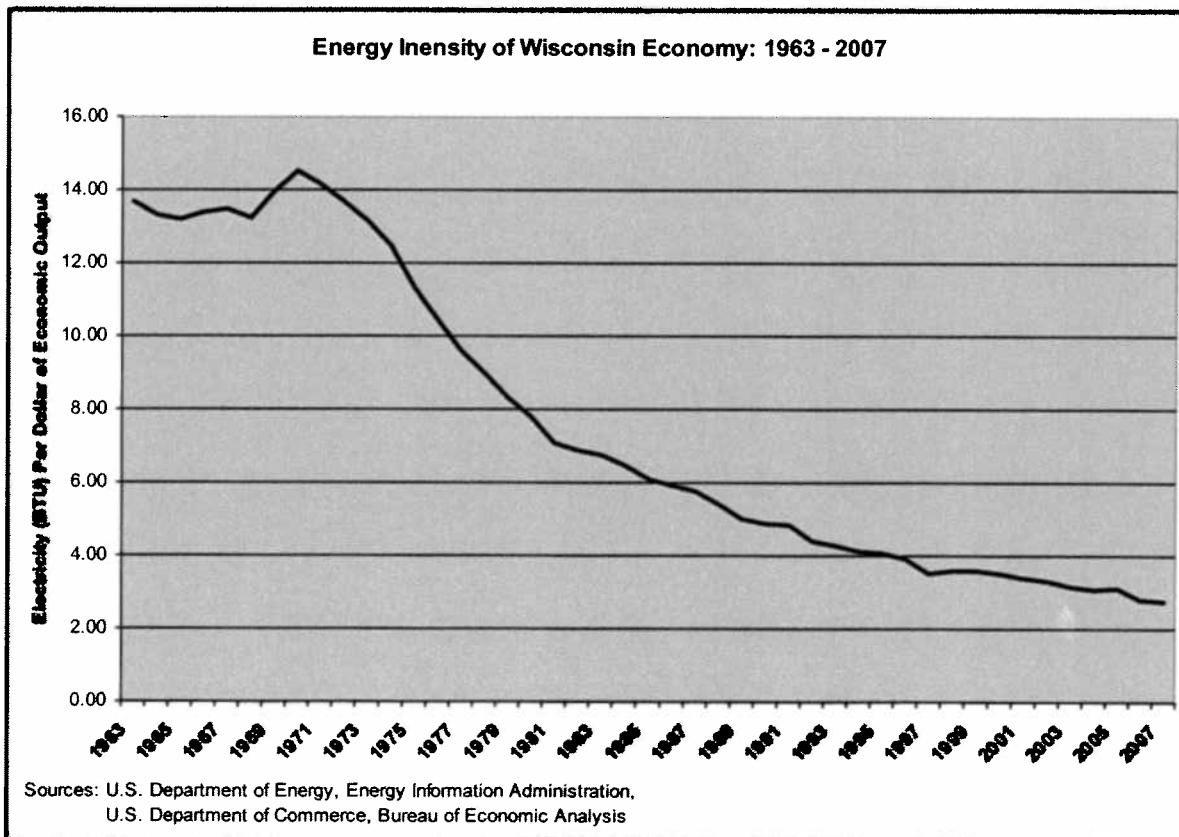
It is important for lawmakers to understand that reductions in overall consumption do not equate to energy efficiency. Rather, energy consumption is a measure of our overall growth and economic output. For example, when our population and economy are growing, there is a corresponding increase in electric consumption. When our economy is contracting, there is typically a reduction in electric consumption. Policies which seek to arbitrarily limit electric consumption are essentially limits on growth and economic output.

The 2% annual reduction goals proposed in AB 649 are unrealistic and unattainable. As the chart below shows, the United States has never seen a 2% reduction in electric consumption in the post-WWII history of our country. In fact, the data shows that we typically see significant increases in electric consumption, and those increases are attributable to a growing economy.

There have been only two instances where we have come close to a 2% reduction in electric consumption, and those occurred in 1982 and 2001 – both of which are instances of severe economic downturns. As bad as our post 9/11 economy was, at a 1.9% reduction in electric consumption, we still did not reach the levels called for in AB 649.



Without the need for monthly energy taxes and spending programs, Wisconsin's economy has become much more efficient when measuring the amount of electricity consumed per dollar of economic output.



As the graph shows, Wisconsin used 14.5 units of energy to produce each dollar of economic output in our state in 1970. By 2007, we were using only 2.7 units of energy to get that same dollar of economic output. That is a more than 5-fold increase in efficiency over a 35-year period.

History has shown that businesses have already made significant progress in terms of energy efficiency, and will continue to do so. This is an issue where the market drives innovation without the need for government intervention. That is, fuel and electricity are expensive—businesses cannot afford to waste either. The price of energy will continue to drive businesses to find ways to become more efficient. While grants and incentives are certainly helpful toward achieving that goal, it is important to ensure that increases in energy surtaxes do not make electricity less affordable. WMC, therefore, supports maintaining the agreed-upon cap on utility charges that applies to large industrial customers enacted in 2005 Act 141.

As noted above, WMC is concerned that the funding mechanism proposed in AB 649 is essentially a “blank check” grant of authority to the PSC to assess surtaxes on energy bills to pay for efficiency spending programs. This could result in significant increases in monthly energy bills, especially given the absence of legislative oversight. The Global Warming Task Force recommended at least tripling the amount collected in monthly energy surtaxes, and estimated the financial impact to be \$285 million by 2012, and \$380 million by 2020.

Aside from the magnitude of the higher energy taxes proposed in AB 649, we are concerned that money collected for energy efficiency and conservation purposes will be spent on unrelated programs. Since 2002, nearly \$166 million in utility surtaxes have been skimmed by the Legislature for unrelated budget spending, including more than \$18 million in the current biennium. Diverting utility taxes to pay for non-utility programs does not promote energy efficiency or conservation.

## **Advanced Renewable Tariff (ART)**

The ART policy would authorize the PSC to force utilities to purchase renewable energy from small-scale renewable energy facilities located within their service territory. By their very nature, these smaller projects often produce the least cost-effective renewable energy, which may explain the need to *require* their purchase by government mandate rather than having purchases occur voluntarily in the market.

In this regard, the ART policy implicitly requires utilities and their customers to purchase the most expensive renewable energy sources, and to do so at levels above and beyond their RPS requirements. The policy of forcing utilities to purchase renewable energy without regard to cost, and in place of less expensive alternatives, is not in the best interest of consumers. WMC also believes that the proposed ART language goes beyond what was contemplated by the Global Warming Task Force.

## **Nuclear Moratorium**

WMC supports legislation to repeal the state nuclear moratorium, and place nuclear generation on a level playing field with other generation types. Nuclear remains the only commercially available technology that generates base load electricity with no carbon emissions, no smog emissions, no particulate emissions and no mercury emissions. Nuclear is a safe, clean and reliable form of energy, and lawmakers should allow Wisconsin to consider it as an option to meet future generation needs.

Unfortunately, AB 649 falls well short of the reforms necessary to allow nuclear to be considered as a viable option for Wisconsin’s energy future. The numerous preconditions related to cost and need, which are restrictions that do not apply to the renewable generation mandate, place nuclear on an unlevel playing field. Moreover, the proposed restriction on selling nuclear power to other states is almost certainly unconstitutional, and is, therefore, likely to invalidate the entire nuclear language in the bill. Rather than the restrictive approach in AB 649, the Legislature should enact legislation consistent with

Assembly Bill 516 and Senate Bill 340 to allow nuclear generation to receive serious consideration in the future.

## **Conclusion**

WMC believes the energy policies in AB 649 will significantly increase the cost of electricity in Wisconsin, and result in thousands of lost jobs. Wisconsin's electric rates have risen faster than those of any other Midwest state in the last decade, and more than twice the rate of inflation. The 25% RPS mandate will add at least \$15 billion to the cost of generating electricity over the next 15 years, making our current competitive disadvantage relative to energy prices even worse. This is not a recipe for creating jobs.

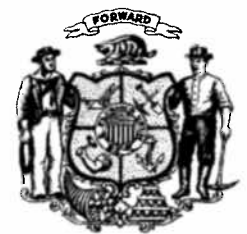
While the proposals in AB 649 may be very well-intentioned, they are the result of a task force process that did not meaningfully study economic costs or benefits. In reality, these policies will not make a significant reduction in greenhouse gas emissions – the task force's own modeling demonstrates that emissions in 2025 are expected to remain higher than 2005 baseline levels even after implementing all of the proposals, including the 25% RPS. These policies are therefore not an effective means to reduce greenhouse gas emissions.

WMC stands ready to work with legislators on reforms that will improve our business climate, and place our employers in a position to create jobs. Reducing our state tax burden, controlling state spending, eliminating unnecessary bureaucratic red tape, and curbing lawsuit abuse are steps the Legislature can take to immediately improve our state's business climate. By contrast, dramatically increasing the cost of doing business in Wisconsin with the expensive energy policies proposed in AB 649 will result in net job losses, not job creation. We therefore respectfully request that the Select Committee not move this legislation forward.

Thank you for your thoughtful consideration of this legislation. Please feel free to contact me if you have any questions, or if I can provide you with additional information at (608) 258-3400 or [smanley@wmc.org](mailto:smanley@wmc.org).



# WISCONSIN STATE LEGISLATURE



TO: The Assembly Special Committee on Clean Energy Jobs

FM: Bill McClenahan, Martin Schreiber & Associates

DT: February 2, 2010

**RE: *Invenergy Wind LLC testimony in favor of RPS and Clean Energy Jobs Act***

Thank you, Co-Chairmen, for the opportunity to testify today. I'm Bill McClenahan. I am here today to testify on behalf of Invenergy Wind LLC in support of the proposed Clean Energy Jobs Act and, in particular, in support of increasing Wisconsin's Renewable Portfolio Standard to 25% by 2025. Invenergy also supports requiring a majority of that renewable power to come from in-state sources, to ensure that the economic benefits are maximized in Wisconsin.

Invenergy is the largest U.S. non-utility developer of wind projects. Invenergy owns and operates the Forward Wind Energy Center, the first large scale wind facility permitted and constructed in Wisconsin and one of the state's largest wind farms at 129 MW. The renewable power from Forward is purchased under long-term contracts by Wisconsin utilities.

Invenergy is also seeking approval for a 100-turbine, 150 MW wind project in southern Brown County called the Ledge Wind Energy Center. That is enough power for approximately 40,000 homes. The project will prevent the emission of 480,000 tons of carbon dioxide, 1,350 tons of sulfur dioxide and 600 tons of nitrogen oxide every year.

The Ledge project represents an investment of more than \$300 million in Wisconsin. The project would provide approximately 150 construction jobs. It would also provide utility shared revenue payments of \$600,000 per year to the local towns and to Brown County. In addition, direct payments to landowners will total more than \$750,000 per year. These economic benefits – jobs, shared revenues and payments to Wisconsin landowners – are often ignored when people discuss the cost of renewable energy.

Critics also ignore the price certainty of renewable energy, which uses no fuel and is not subject to the price fluctuations of coal or natural gas. Increasing the state's percentage of renewable energy also helps reduce the risk of Wisconsin's over-dependence on coal.



But Wisconsin will not reap the benefits of renewable energy – the jobs, the shared revenues and the payments to the people who host it – without a requirement for utilities to increase the amount of electricity they get from renewable power. That is why Wisconsin needs an enhanced RPS. Increasing the RPS will benefit our environment, increase our energy independence and create new jobs and economic opportunities.

The Clean Energy Jobs Act proposes that 10% of the state's power come from in-state sources of renewable power. Invenergy believes that number can and should be increased. Although some people have questioned Wisconsin's capacity for producing renewable energy, Invenergy – with 2,000 MW of operating wind projects nationwide – sees plentiful opportunity for wind development in the state. In addition, there are opportunities for biomass, solar and other renewable projects. Wisconsin should not let those opportunities be exported to other states.

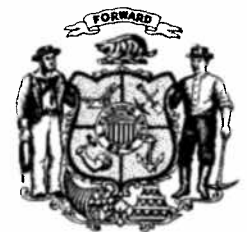
The importance of this issue is illustrated by Wisconsin Public Service Corporation's announcement that it plans to purchase 500 MW of energy from Manitoba Hydro. Although Wisconsin's neighboring states do not count large hydro toward their Renewable Portfolio Standards, the bill before you would count it toward the Wisconsin RPS. If not for the proposed requirement to provide or purchase renewable power from in-state sources, WPS could meet nearly its entire RPS – from 0 to 25% – with that 500 MW of Manitoba hydro. Other utilities could make their own purchases and do the same. Wisconsin can and should ensure that its energy dollars benefit its own workers, communities and landowners by keeping and increasing the in-state requirement in this bill. It's important to remember that the PSC, under the bill and under current law, can provide relief from the RPS requirements if costs or reliability require.

Again, I urge you to increase the state's RPS and to require a majority of the renewable power to come from in-state sources.

Thank you for the opportunity to testify.



# WISCONSIN STATE LEGISLATURE



February 2, 2010

Testimony to the Assembly public hearing on AB 649, the Clean Energy Jobs Act

Jennifer Nordstrom, Institute for Energy and Environmental Research

My name is Jennifer Nordstrom, and I coordinate the Carbon-Free, Nuclear-Free campaign for the Institute for Energy and Environmental Research. I was born and raised in Racine, where I now live with my family. My organization is a member of the Carbon-Free, Nuclear-Free Wisconsin coalition.

I am here because although the Institute for Energy and Environmental Research supports the vast majority of the Clean Energy Jobs Act, particularly the renewable portfolio standard and the efficiency targets, we have major concerns about the nuclear provision in the bill. This portion of the bill would change Wisconsin's current law on nuclear power, so that Wisconsin would no longer require that there be a federal nuclear waste repository before any new nuclear reactors can be built in Wisconsin. This is a very important law, because it protects Wisconsin from defacto nuclear waste dumps. Removing this requirement, as the nuclear provision of the Clean Energy Jobs Act would do, would open Wisconsin up to new nuclear reactors and nuclear waste. I would like to ask you to remove this provision in order to strengthen the Clean Energy Jobs Act.

We do not have to choose between coal and nuclear energy. My organization recently published a study showing that it is both technically and economically possible to have a 100 % renewable energy system in the United States by 2050. We can eliminate fossil fuels and nuclear energy at the same time. Renewable energy is plentiful in the United States, and much renewable technology is already cheaper than nuclear energy. Back-up systems, geographic integration, variety, and a smart grid will effectively deal with intermittency and baseload concerns.

For instance, the National Renewable Energy Laboratory, the US Government's Renewable Energy Lab, says that we can now talk about baseload wind energy, when we combine wind energy with compressed air storage. Compressed air storage is a commercial technology that has been used in the US and Europe for years. A wind energy system of 2,000 MW, when combined with a compressed air storage system of 900MW, yields 900MW of baseload wind energy. It still costs less than nuclear energy, and does not produce radioactive nuclear waste, is not connected to nuclear weapons proliferation, and does not carry the danger of catastrophic accidents. Because wind turbines can be built much more quickly, they don't require risky projections of electricity demand a decade into the future.

We support the renewable energy provisions of the Clean Energy Jobs Act, and encourage you to strengthen them. Wisconsin can go even further than this, and begin to plan for a fully renewable electricity system. We do not need coal or nuclear energy.

Nuclear energy is just an expensive distraction to the real solutions: renewable like wind, solar, geothermal, biomass. Every new nuclear reactor takes 7 or 8 years if all goes well, but more typically 10 years and \$10 billion to build. This is time and money than could be spent right now on renewables that will reduce our carbon emissions and strengthen our economy immediately.

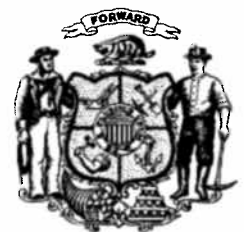
The city of San Antonio is currently learning this crucial lesson. In 2007, the city decided to invest in a share of two new nuclear reactors in Texas. After spending hundreds of millions of dollars on paperwork alone, they recently learned that the utility and contractors had concealed a \$4 billion cost increase from city officials and the public. The utility is suing the contractors for billions, the city got rid of several major players in the deal, and now, several years and 100s of millions of dollars later, San Antonio is looking towards renewables to really solve its energy problems, though it may suffer more financial consequences before it is able to get out of a bad deal.

In Georgia, Florida and South Carolina, clean energy legislation opened the door to new nuclear reactors, and now all three states are experiencing some sort of Construction Work in Progress. Construction Work in Progress is a plan where ratepayers pay in advance to build nuclear power plants without any guarantee they will ever be built or receive any of the electricity. According to testimony submitted last week to the Senate Committee on Clean Energy by Sara Barczak of the Southern Alliance for Clean Energy, "Florida's utilities now estimate that two new reactors will cost upwards of \$17 billion, more than a tripling of estimates just a few years ago. Progress Energy ratepayers are now paying about \$7 per month for two new reactors that are now off schedule and over budget and by 2018 they will be paying more than \$30 per month. No electricity is being produced nor will be for many years – it's possible that the reactors will never be built."

Let's not make this mistake in Wisconsin, and get distracted by the costly slow boondoggle of nuclear energy. Do not open Wisconsin to new nuclear reactors. Remove the nuclear portion from the Clean Energy Jobs Act, and pass a stronger bill with real solutions for Wisconsin's energy, environment, and economic needs.



# WISCONSIN STATE LEGISLATURE



# RENEW Wisconsin

222 South Hamilton Street, Madison, WI, 53703 • 608.255.4044 • [www.renewwisconsin.org](http://www.renewwisconsin.org)



## **Summary of Michael Vickerman's (RENEW Wisconsin) testimony before the Assembly Special Committee on Clean Energy, February 2, 2010**

RENEW Wisconsin strongly supports the provisions in SB450/AB649 to expand the state's Renewable Energy Standard to 25% by 2025, which includes a 10% in-state renewable energy set-aside. RENEW has evaluated the availability of specific resources to reach that standard and has concluded that meeting such a target is technically feasible. If adopted, the in-state set-aside will become the most powerful engine for job development and capital investment over the next 15 years.

We expect such a requirement to be achieved through a combination of utility-scale power plants and smaller-scale generating units dispersed throughout Wisconsin. With respect to distributed renewable generation, we note the following:

1. The vast majority of the distributed renewable generating units installed in Wisconsin serve schools, dairy farms and other small businesses, churches and local governments.
2. Utilities are not in the business of installing these systems themselves.
3. In many cases the renewable energy installation went forward because there was a special buyback rate available to accelerate the recovery of the original investment made by the customer. Last week, I gave the example of the Dane County community anaerobic digester project that, once operational, will treat manure taken from several nearby dairy farms in the Waunakee area and produce two megawatts of electricity with it. The electricity will be purchased by Alliant Energy through a voluntary biogas tariff worth 9.3 cents/kWh. Unfortunately, Alliant's biogas program is fully subscribed and is no longer available to other dairy farmers, food processing companies and wastewater treatment facilities served by Alliant.
4. Companies that install solar, wind and biogas energy systems are quintessentially small businesses, many of them family-owned. Renewable energy contractors and affiliated service providers constitute one of the few market sectors where young adults who have acquired the necessary skills to do the job well can find meaningful work at decent pay.
5. By its very nature, distributed renewable energy delivers nearly 100% of its economic punch to the local economy.

In stark contrast to other states, Wisconsin has a well developed market structure for supporting small-scale renewables. Through the ratepayer-funded Focus on Energy program, there is in Wisconsin a human infrastructure that trains and educates thousands of young people to work in the renewable energy arena. Indeed, Wisconsin is a leader in this area. Our expectation is that these workers will apply their skills in the state, fabricating and installing renewable energy equipment in a thoroughly professional manner.

But if we don't take equal care to create and sustain demand for their skills and services, these workers are apt to leave the state for greener pastures, and Wisconsin's investment in their education will have gone unpaid. This is why the issue of Advanced Renewable Tariffs is so important to RENEW members.

One final point: Last week several utility representatives recommended that the Legislature strip out the Advanced Renewables Tariff section. RENEW urges you not to heed their advice. While we would support a reworking of this section, including a program cap to limit rate impacts, we cannot support abandoning this initiative altogether and cannot further support a bill that is silent on policies to advance the distributed energy marketplace. That is a bottom-line priority with us.

Submitted by:  
Michael Vickerman  
Executive Director  
RENEW Wisconsin  
February 2, 2010

# RENEW Wisconsin

222 South Hamilton Street, Madison, WI, 53703 • 608.255.4044 • www.renewwisconsin.org



## Worksheet on Renewable Energy Production

February 2010

The Clean Energy Jobs Act (SB 450/AB 649) specifies in-state renewable energy set-asides as a part of a proposed expansion of Wisconsin's Renewable Energy Standard.

Question: Is it technically feasible to derive 10% of Wisconsin's electricity from in-state renewable energy sources by 2025?

Answer: Yes, it is. The worksheet below summarizes the analysis.

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	<u>Per annum totals</u>	<u>Calculation</u>
1. Wisconsin electric utility sales	70 billion kWh	
2. 10% of above total	7 billion kWh	
3. Existing renewable energy sales in WI (hydro accounts for about 2/3rds of the total. The remainder is generated from wood, wind and biogas. Biosolid waste is excluded from this total. (Source OEI 2007 WI Energy Statistics)	2.225 billion kWh	
4. Additions to 2007 baseline	4.775 billion kWh	Subtract line 3 from line 2
5. Between 2007 and 2010, 396 MW of wind generation was added, which should produce on average 1 billion kWh/yr. (estimated capacity factor - 29%)	1.000 billion kWh	
6. Quantity of in-state RE supply that must be added between 2010 and 2025	3.775 billion kWh	Subtract line 5 from line 4

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7.	200 MW biomass (60% cf) (110 MW to be on line in 2013 from three utility-scale projects)	1.05 billion kWh	
8.	120 MW biogas (75% cf) (15 MW already installed)	0.78 billion kWh	
9.	50 MW hydro (50% cf) (additional to current capacity)	0.22 billion kWh	
10.	750 MW wind (.27% cf) (additional to current capacity)	1.77 billion kWh	
11.	Subtotal	3.820 billion kWh	Sum of lines 7 through 10
12.	Existing RE (as of Jan. 2010)	3.225 billion kWh	Sum of lines 2 and 4
<b>Total</b>		<b>7,045 billion kWh</b>	Sum of lines 11 and 12

In tabular form it looks like this:

Resource	Capacity (in MW)	Capacity Factor	Output (billion kWh/yr)
Wind	750	27%	1.77
Biomass	200	60%	1.05
Biogas	120	75%	0.78
Hydro	50	50%	0.22
<b>Totals</b>	<b>1120</b>		<b>3.22</b>

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These production estimates are conservative and do not presume any technological or operational advances. This exercise does not assume any contribution from solar PV or nonelectric renewable energy sources.

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