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85% of Wisconsin schools were built in the 1960's and 70's, and are thus ripe for energy-saving retrofits

High performance or "green building" standards can reduce building energy costs by 20-50% and water usage by 30-50%

Between 1990 and 2000, efficiency standards for appliances saved U.S. consumers approximately \$50 billion on their energy bills

DOE predicts that three new appliance efficiency standards would lead to 120,000 new jobs nationally by 2020

Wisconsin consumes 2.6 billion gallons of gasoline and 803 million gallons of No. 2 diesel each year—all of which is imported from other countries and states.

Wisconsin has the potential to produce at least 900 million gallons of ethanol and 28 million gallons of biodiesel each year

**Building a Stronger**  
**Wisconsin**  
Center on Wisconsin Strategy



## Moving Wisconsin Toward Energy Independence: A Four-Point Plan

**W**isconsin is ripe for a far-reaching energy strategy that will move the state toward energy independence, as well as a cleaner environment and a stronger economy. Today the state depends heavily on three polluting energy sources that are produced entirely out of state: coal, natural gas, and oil. Each year, Wisconsinites spend over \$9 billion on importing energy—more than half of which goes toward petroleum products, including heating oil, gasoline, and diesel fuel, whose costs are likely to rise as a result of global resource depletion, and are highly unstable due to natural disasters and political upheaval in producing regions. About 70 percent of Wisconsin's electricity comes from imported coal, while only about 2 percent comes from Wisconsin-based renewable resources such as landfill gas, wood waste, crop waste, and wind.

Moving away from our dependence on imported, fossil-fuel-based energy and toward a policy that emphasizes efficiency and homegrown energy sources should be a key strategy. Governor Jim Doyle has taken significant first steps toward making Wisconsin energy independent (see box), but more needs to be done.

A comprehensive energy policy for the state would include four parts: energy efficiency, especially in the state's public and private buildings; renewably generated electricity from homegrown sources; efficient vehicles and renewable automotive fuels; and smart metropolitan growth and regional transit policies.

### **I. BRING WISCONSIN'S PUBLIC AND PRIVATE BUILDINGS UP TO THE HIGHEST ENERGY EFFICIENCY AND GREEN CONSTRUCTION STANDARDS.**

Buildings represent one of the largest potential sources of energy savings in Wisconsin. Nationally, the built environment accounts for roughly 40% of all energy consumption and 71% of electric power use. Improving statewide building performance will create considerable economic activity, both through energy savings that are reinvested in the state economy, and through jobs that are created through state investment in manufacturing, new construction, and retrofits. Any state efficiency program should ensure that in-state manufacturers of energy efficient products receive incentives and support. It should also guarantee in-state construction, installation, and operating and maintenance jobs by targeting investment to major construction and renovation projects. At the same time, it must include labor incentives and worker training programs, because many workers are unfamiliar with best practices, design concepts, and building strategies for high-performance building.

There are five initiatives that Wisconsin should undertake to improve its built environment, increase energy efficiency, save money and create jobs.

## **Governor Doyle's Commitment to a Sound Energy Strategy**

The governor signed Act 141 (2005) into law on March 17, 2006. It requires:

- 10% of the electricity sold in Wisconsin be from renewable sources by 2015.
- 10% of electricity used by state agencies be from renewable sources by 2007.
- 20% of electricity used by state agencies be from renewable sources by 2011.

The governor also created the Consortium on Biobased Industry to develop a plan to foster renewable, plant-based fuels. Many of the recommendations are reflected in the governor's 2007-8 budget proposal.

The governor has set a goal for the state to generate 25 percent of its power and transportation fuels from renewable sources by 2025. Wisconsin is also working to capture 10 percent of the total U.S. market share of renewable energy production by 2030, helping create jobs, grow the economy, and kick Wisconsin's addiction to fossil fuels. Some other planks of the governor's energy strategy include:

- Creating an Office of Energy Independence. The office will be led by an Executive Director who will report directly to the governor and include staff from the Departments of Administration Division of Energy, Agriculture, Trade, and Consumer Protection, Natural Resources, and the Public Service Commission.
- Creating a Task Force on Global Warming with leaders in business, labor, the environmental movement, and local government.
- Making a \$30 million state investment in renewable energy sources, including ethanol, biodiesel, hydrogen, solar, and wind power, through the establishment of a Wisconsin Energy Independence Grant and Loan Program. The program will provide companies and researchers with funding to develop technologies that increase renewable energy. Based on results from the current budget's biogrant program, the program is expected to leverage approximately \$300 million in private investment.
- Offering \$5 million in annual grants to help Wisconsin become the first state in the nation to produce ethanol from cellulose (woody forest and timber materials).
- Providing \$1 million in annual tax credits to locally owned gas stations and fleet operators install fuel pumps that dispense ethanol-based gasoline (E85).
- Taking four university campuses off the power grid within five years.
- Supporting commuter rail development efforts by providing \$1 million for preliminary engineering on a Kenosha-Racine-Milwaukee rail project.

- 1. Retrofit and build high performance schools.** Wisconsin should issue \$30 million in revenue bonds to pay for efficiency and renewable energy improvements in public schools. These bonds would only fund projects that can pay for themselves through energy savings. Initially, 85% of a district's energy savings would be used to pay off the bond, while schools would keep 15%. Once the bond was paid off, schools would keep 100% the savings.

Furthermore, any new school buildings should be built to high performance or "green building" standards, which have been shown to reduce building energy costs by 20-50% and water usage by at least 50% outdoors and 30% indoors. Applying green building techniques to schools has another benefit: Studies show that students' test scores are consistently better in schools with more daylight and ventilation in the classrooms. Thus, green school design achieves two important government goals—cost savings and student performance.

- 2. Make public facilities efficient.** Fully implement Executive Order 145. The governor's 2006 Executive Order 145 set a goal of reducing overall energy usage in state facilities by at least 10% by 2008 and 20% by 2010. The order directs state agencies to establish programs to analyze energy consumption in state-owned buildings and identify areas where consumption can be reduced. The EO will increase energy efficiency by requiring that all new state facilities be 30% more energy efficient than commercial code. The Wisconsin Department of Administration should ensure that state agencies not only analyze energy consumption but also conduct comprehensive energy audits that lead to retrofits to improve energy efficiency in all state facilities. Further, DOA should require that all contracts for audit and retrofit work, as well as new building construction, include provisions for apprenticeship utilization and job quality standards.
- 3. Encourage energy efficient private buildings.** Wisconsin can encourage private building owners to improve the energy efficiency of private commercial and residential buildings by providing them with low-interest options to finance the upfront cost of energy efficiency retrofits. The state can also offer tax credits for energy savings achieved in private commercial and residential buildings, similar to incentives offered in the federal Energy Policy Act of 2005. Incentives might include tax credits to private developers who propose developments receiving LEED or Energy Star certification. At the same time, the state should require that all new developments receiving public subsidies, including tax-increment financing, meet green building standards.
- 4. Require energy efficient appliances.** Wisconsin should follow California's example and adopt efficiency standards for 12 appliances not covered by federal law, and should adopt new standards as they are developed by the Appliance Standards Awareness Project.

## **II. INVEST IN RENEWABLE ENERGY STRATEGIES THAT TAKE ADVANTAGE OF IN-STATE LAND, WIND AND SOLAR RESOURCES, AS WELL AS LOCAL LABOR MARKETS**

Wisconsin gets only 2% of its electricity from renewable sources—the rest comes from imported sources, primarily coal. In a state with extensive land resources and advanced manufacturing potential, this should not be the case. The state moved toward greater energy independence last year by increasing its renewable portfolio standard—a requirement that a percentage of the state's electric power come from renewable sources—from 2.2% to 10% by 2015. But we can do more to encourage utilities and developers to invest in renewable energy projects; to ensure that the manufacturing, construction, and operating and maintenance jobs created by these projects provide a decent living for Wisconsinites; and to provide opportunities for rural communities and farmers to become partners in the renewable energy economy in this state.

1. **Strengthen and enforce energy priorities law.** One of the most important ways to ensure that renewable energy is taken seriously by utilities is to require them to consider these alternatives when building more power capacity in the state. Wisconsin already has an “Energy Priorities Law” requiring the state to prioritize energy efficiency and renewable energy resources over non-renewable carbon-based fuels. This law should be changed to elevate cleaner technologies, such as integrated gasification combined cycle with carbon sequestration, over dirty pulverized coal plants. The law should also be consistently enforced by the state’s Public Service Commission when reviewing applications for new generation facilities.
2. **Encourage development of renewable energy facilities.** One major barrier facing renewable energy developers is the high capital costs of some technology. Wisconsin can provide companies that make or use renewable energy technology with financial incentives such as state-level production tax credits, grants and loans, loan guarantees and low-risk debt structures, and pension fund investments in order to lower this barrier and spur innovation and production in the state.
3. **Provide workforce training opportunities for the renewable energy industry.** One of the most exciting pieces of the renewable energy economy is its potential to create local, family-supporting jobs in manufacturing, construction, and operating and maintenance. But for most workers, the renewable energy industry is still an unknown. Wisconsin can be a leader in connecting renewable energy industries to the state workforce development system, and in establishing technical college curricula, apprenticeship programs, and career ladders for renewable energy sectors around the state.
4. **Invest in renewable energy manufacturing using industrial development bonds and economic development grants.** Wisconsin should use its Industrial Development Bond Program and other economic development funds to encourage Wisconsin manufacturers to produce or use renewable energy or energy efficiency technologies. IDBs should be focused on manufacturers and industries that agree to use the proceeds for the purchase and installation of renewable energy systems, energy-efficient equipment, or clean distributed generation systems on their own sites. Preference for these loans should be given to companies that have an incumbent worker program, participate in apprenticeship programs, commit to hire a certain percentage of new workers from the local labor pool, or show a commitment to alternative energy or energy efficiency through previous actions or products.
5. **Tie state production incentives to local ownership.** Much of Wisconsin’s competitive advantage in the renewable energy economy comes from its extensive farm and forestland, which can either grow biomass for electricity production or provide land for wind turbines and transmission lines. Rural areas of the state are economically depressed compared to metro areas, with lower incomes, aging populations, and fewer good job opportunities for residents. For this reason, any state production incentive, including production and renewable energy tax credits, should give preference to farmer- or community-owned renewable energy production.

### **III. BRING WISCONSIN’S PUBLIC VEHICLE FLEETS AND PRIVATE VEHICLES UP TO THEIR HIGHEST STANDARDS OF FUEL EFFICIENCY AND RENEWABLE FUEL USE.**

Wisconsin consumes 2.6 billion gallons of gasoline and 803 million gallons of No. 2 diesel each year – all of which is imported from other countries and states. But we have the potential to produce at least 900 million gallons of ethanol and 28 million gallons of biodiesel each year, reducing our demand for oil and increasing our energy independence. Wisconsin can reduce its oil consumption by promoting clean,

renewable fuel alternatives and efficient motor vehicle technologies through policies and programs that prioritize in-state renewable fuel production. State officials have a tremendous opportunity to make our nation more secure, restore our beleaguered manufacturing sector, create good jobs, give a boost to farmers, improve air quality, and reduce global warming pollution. The Governor's Consortium on Biobased Industry was a good first step, and put forth many useful recommendations.

There are six policies that Wisconsin should undertake to reduce its oil consumption, increase the production and use of biofuels, and create jobs.

- 1. Support the emerging biofuels industry.** Wisconsin should implement policies to encourage the development of a Wisconsin biofuels industry and specifically the use of E85, biodiesel and cellulosic ethanol. There are three types of policies needed: those that build the market, those that encourage production, and those that build the distribution system for biofuels.
  - To build the market, Wisconsin should enact a minimum biodiesel content requirement on every gallon of diesel sold in the state, starting with a 2% content requirement and increasing as in-state production does, up to 20%. The state should also require all biodiesel producers and marketers to become accredited under "BQ-9000," the industry's quality assurance program.
  - To encourage sustainable local production, the state can provide tax credits or grants to state growers who invest in perennial, no-till, or low-till biomass feedstocks such as switchgrass. Wisconsin can also provide industrial development bonds or manufacturing conversion tax credits for in-state manufacturers and refiners that produce ethanol or biodiesel for motor fuel, especially those that use biomass heat in their plants; invest in cutting-edge technologies such as cellulosic ethanol; begin manufacturing component parts for renewable fuel or hybrid/flex-fuel vehicle operations; or transition from manufacturing traditional vehicles to manufacturing hybrids, advanced diesel, flex-fuel and other advanced drive train vehicles and related components.
  - To develop the distribution network for renewable fuels, Governor Doyle's budget includes tax credits for E85 pumps. Wisconsin should consider incentives for the distribution of cellulosic ethanol, or other renewable fuel alternatives. The state should also require all flex-fuel vehicles sold in the state to be clearly labeled as such by attaching a flex-fuel sticker or a special gas cap and require dealers to provide each purchaser of a flex-fuel vehicle with a list of E85 stations in the state.
- 2. Promote cooperatives and local ownership.** In 1999, Missouri established a tax credit system that provides incentives for agricultural producers to invest in cooperative renewable fuel production facilities. The legislation authorizes tax credits of up to 50% of any investment made by individual agricultural producers into cooperative renewable fuel production ventures. Wisconsin should implement a similar system to ensure that the emerging bioeconomy brings the most benefit possible to Wisconsin farmers and businesses.
- 3. Invest in new and emerging technologies.** Governor Doyle's budget includes substantial grants for cellulosic ethanol production. The state should consider funding research and demonstration projects in other emerging biobased technologies, including biodiesel production from alternative feedstocks such as oil-rich algae. Such projects should include full life cycle projects that demonstrate the market feasibility of biobased technologies. The state should also aggressively pursue federal financing for a state cellulosic ethanol demonstration facility. Further, Wisconsin should encourage collaboration between the biotech and agricultural sectors via research funding, enterprise zones, and other tools. Finally, the state

should stimulate private investment in state's renewable fuel and hybrid/flex-fuel vehicle industries by reducing risk to investors and developers through low-interest loans, accelerated depreciation, or subordinated debt structures.

**4. Stimulate demand for renewable fuel and advanced technology vehicles.**

States own large numbers of vehicles for use by their employees. There are several options to make state fleets more efficient and environmentally friendly, the easiest of which is simply altering purchasing guidelines to favor the most fuel efficient vehicles available. In 2001, New York's Gov. George Pataki ordered state agencies to buy alternative-fuel vehicles, including hybrid-electric vehicles, as part of their annual acquisition plans. By 2010, 100% of the state's new light-duty vehicles must be alternative fuel vehicles, with the exception of specialty, police or emergency vehicles. Wisconsin should follow New York's lead. In addition, state fleet vehicles should be run on biofuels whenever possible.

**5. Support industries that help reduce oil consumption.** Governor Doyle recently announced a Wisconsin Energy Independence Grant program. These grants should be awarded with an eye to Wisconsin's values, including in-state production and manufacturing, and local ownership. Grants should generally go to companies that:

- focus on renewable energy technologies that will make the best and most sustainable use of Wisconsin's natural resources, including crop, forestry, and animal waste;
- focus on renewable energy and energy efficiency technologies that will make the best and most sustainable use of Wisconsin's strength in traditional manufacturing by, for example, improving and building components for wind turbines, energy storage, or advanced automobiles;
- develop technologies that will capitalize on Wisconsin's strong potential to produce cellulosic feedstocks, such as switchgrass and wood waste;
- develop technologies that use renewable resources to replace petroleum in Wisconsin's existing end-product industries, such as the plastics and biotech industries; or
- focus on technologies that are scaleable to the individual farm or community level, such as community-scale anaerobic digesters and wind turbines, to give greater opportunity for cooperative ownership of these technologies.

**IV. WORK TOWARD SMARTER, MORE EFFICIENT DEVELOPMENT IN METRO AREAS AND ON TRANSIT CORRIDORS.**

Land use decisions are often overlooked as a major part of a state energy plan. However, the way a state decides to grow its metro areas and protect its open spaces is crucial to its energy consumption. States with compact metro areas, productive farmland, and protected open fields and forests use electricity, fuel and water much more efficiently than those characterized by suburban sprawl.

**1. Strengthen comprehensive plan policy to encourage compact cities and preservation of rural land.** Wisconsin should:

- integrate agricultural preservation programs into the comprehensive planning process, so that localities and intergovernmental units must think holistically about both metro and open space planning while drafting their comprehensive plans,
- require municipalities to draft local tax incremental financing (TIF) policies at the same time they draft comprehensive plans, to ensure that TIF planning is consistent with overall land use planning for the region.

- incorporate the state's 14 smart growth/equitable development goals into the comprehensive planning process, including the agricultural preservation and TIF policy pieces of this process. The state should also follow these guidelines when making its own planning decisions.
- give the state a seat at the table during the comprehensive planning process, so that state input and emphasis on the 14 smart growth goals is consistently articulated. Given Wisconsin's strong home rule tradition, the state should not have veto power over the plans, but should be allowed input throughout the process.

**2. Strengthen regional transportation planning organizations.** Wisconsin should follow states like California and invest more power in its 14 metropolitan planning organizations (MPOs) by combining these with regional transportation authorities (RTAs) and giving them autonomy over disbursement of federal and state transportation dollars. In California, these entities are run by elected commissioners who have authority to target their region's allocation of federal and state highway and transportation dollars to priority projects in the area, including transit and transit-oriented development (TOD) projects. Wisconsin should vest these agencies with the power to raise funds for transit projects, through bonding or regional taxes. Wisconsin should also give environmental organizations and organizations working on specific modal systems, such as regional rail and bike lanes, seats on the MPO boards to ensure a mix of transit and transportation priorities.

**3. Target state transportation money to projects that promote efficiency and oil savings.** While giving MPOs more autonomy over transportation funding, the state should also set priorities for this funding similar to the smart growth goals set during the comprehensive plan process. Specifically, Wisconsin should follow Massachusetts' lead and require transportation funding to be allocated on a "fix it first" basis, targeting infrastructure upgrades and highway repairs before spending money on new roads. This policy leads to much more efficient use of state resources, both because it requires the state to plan for constant repairs to aging infrastructure, and because it affects decisions on new highways and roads.

**4. Invest in regional rail between Minneapolis, Madison, Milwaukee and Chicago.** The economic corridor, sometimes called the I-94 corridor, between these four cities could be the economic backbone of the Midwest if these regions were better connected by transit. A regional rail system running between these cities, similar to the rail system running between the major East Coast cities, would provide an energy-efficient alternative that would allow business travelers to easily get from one downtown to another for day or overnight trips, without getting in cars or on planes. This would dramatically reduce carbon emissions in the state and provide new business and recreational opportunities in each of these cities. Governor Doyle has included some funds in his 2007 budget for these projects. The state should continue to support regional rail and to pursue federal funding as well.

**5. Pass statewide density bonuses for affordable housing and transit-oriented development.** One of the primary reasons that modern cities sprawl is the lack of decent affordable housing near metro centers. Wisconsin should follow states like California and New Jersey that have legislated statewide incentives for developers that include affordable housing in their projects, or that commit to building TOD near major transit hubs. Incentives are generally in the form of bonuses allowing developers to build at a higher density than normally allowed under local zoning laws; incentives might also include fewer required parking spaces, tax credits, or simple state grants or loans for development.

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 • The Center on Wisconsin Strategy (COWS) is a non-profit, nonpartisan "think-and-do tank" dedicated to improving economic performance and living standards in the state of Wisconsin and nationally. Based at the University of Wisconsin-Madison, COWS works to promote "high road" strategies that support living wages, environmental sustainability, strong communities, and public accountability.  
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