Unfinished Business: What the Midwest needs to do to Lead in the Clean Energy Economy

April 2011
TABLE OF CONTENTS
1 Introduction
4 Regional Progress Overview/Best Practices
6 State Progress on Clean Energy, by the Numbers
7 Assessment of Regional Initiatives
10 Policy Recommendations
11 State-by-State Assessments
11 Illinois
12 Indiana
13 Iowa
14 Kansas
15 Michigan
16 Minnesota
17 Missouri
18 Ohio
19 South Dakota
20 Wisconsin
21 Endnotes

ACKNOWLEDGMENTS

This report was made possible through the generous support of The Joyce Foundation and The Kresge Foundation.

The author would like to thank several individuals who provided valuable information for this report and whose insight helped shape it. They are: Keith Reopelle, Clean Wisconsin; Jesse Kharbanda, Hoosier Environmental Council; Ethan Fawley, Fresh Energy; David Gard, Michigan Environmental Council; Steve Morse, Minnesota Environmental Partnership; Nolan Moser, Ohio Environmental Council; Steve Flick, Show Me Energy; James Heisinger, Sierra Club’s South Dakota Chapter; and Dorothy Barnett, Climate and Energy Project.

We are extremely appreciative of the following groups, which provided information essential to the report: Blue Green Alliance, Clean Wisconsin, and the Ecology Center.

We are also grateful for review comments and assistance provided by Jack Darin (Sierra Club Illinois), Charles Griffith (Ecology Center), J. Drake Hamilton (Fresh Energy), Nancy Lange (Izaak Walton League of America), Zoe Lipman (National Wildlife Federation), Keith Reopelle (Clean Wisconsin), Lola Schoenrich, (Great Plains Institute), Sarah Shanahan (Clean Wisconsin), Eric Sundquist (Center on Wisconsin Strategy) and Frank Szollosi (National Wildlife Federation).

Prepared for the National Wildlife Federation by Jeff Alexander.

Report design and layout by Tuan Do.

The National Wildlife Federation is solely responsible for the content of this report. The views expressed in this report are those of the National Wildlife Federation and do not necessarily represent the views of reviewers or financial supporters.

Copyright 2011 National Wildlife Federation. All rights reserved.
A century ago, Henry Ford revolutionized manufacturing and transformed modern society by inventing the assembly line—a technology that increased industrial productivity while decreasing the cost of Ford’s Model T. The assembly line was a Midwest innovation that put a new and expensive technology, the automobile, within reach of ordinary consumers.

Ford’s genius gave rise to one of the world’s largest automakers and helped make the Midwest a global leader in manufacturing for much of the 20th century.

The industrial might of the Midwest has been deeply challenged over the past four decades; and the region lost more than 1.2 million manufacturing jobs between 2000 and 2009.1

The good news is that the Midwest now has an opportunity to reclaim its economic might by putting a new generation of clean energy and advanced transportation technology within reach of all consumers.

For example, recent policy leadership and public-private partnerships and investments have jumpstarted development of the next generation of automotive technologies and are a critical cornerstone for rebuilding region’s economy. In Michigan, Indiana and Ohio new advanced battery and electric vehicle technology manufacturing facilities are creating thousands of new jobs and are at the center of a coming transformation in how Americans travel and the position of U.S. auto leadership globally.

This report examines clean energy opportunities outside of the automotive manufacturing sector that draw further on the Midwest’s unique capabilities and make the region a center of manufacturing for the wind turbine components, solar panels, biofuel facilities and energy storage technologies that will drive the clean energy economy.

The burgeoning clean energy economy is sweeping the globe, with America’s competitors investing billions of dollars in new technologies and infrastructure improvements that could improve energy efficiency and increase the use of renewable energy sources, such as wind, solar and bio-fuels.

Studies have shown that clean energy could create as many as 1.2 million jobs in the Midwest over the next decade, with one-third of those in high-wage, highly skilled manufacturing positions and construction jobs.2

The Midwest has all of the natural resources, human capital and entrepreneurial spirit necessary to become a global leader in the manufacturing and use of both clean energy and advanced transportation technologies.

In addition to being at the center of the growth in advanced automotive technologies, Midwest states are already among the Top 10 job creating states in all five categories of the clean energy economy: Clean energy (Minnesota, Ohio, Michigan); Energy efficiency (Ohio, Wisconsin); Environmentally friendly production (Minnesota, Ohio, Iowa and Illinois); Conservation and pollution mitigation (Ohio, Illinois, Michigan); and training for clean energy jobs (Illinois).1

Under the guidance of the Midwestern Governors Association (MGA), the Midwest has also become a leader in efforts to promote clean energy policies, projects and technologies suited to create thousands of new jobs in the Midwest, while cutting pollution, increasing efficiency, and slowing global warming.

A HISTORY OF LEADERSHIP
Over more than 4 years, the MGA brought together state government, industry, agriculture, and public interest groups—almost 200 stakeholders, focusing on separate energy policy issues—to craft a detailed set of energy policy recommendations for the MGA states and the region. These recommendations were embodied in several, increasingly specific, policy documents and agreements.

Different groups of states have endorsed different elements of this clean energy strategy to date, but taken together, these policy recommendations provide an extraordinarily valuable resource for all Midwest states as they consider the direction and policies to pursue over the coming years.

Clean energy could create as many as 1.2 million jobs in the Midwest over the next decade.
The MGAs 2007 Energy Security and Climate Stewardship Platform, and Midwestern Greenhouse Gas Accord laid out high-level targets the signatory states believed the region could achieve, and identified the core policies necessary to achieve them. The 2009 Energy Security and Climate Stewardship Roadmap and Infrastructure Accord and Jobs Platform, and 2010 Greenhouse Gas Reduction recommendations drilled down further, to suggest the details and structure of those policies.

The process recognized the unique assets and challenges of the region. It brought together the key regional experts to work through tough regional issues and suggest the best ways for the region to lead economically and in clean energy.

Taking the region’s fossil energy infrastructure, agriculture and manufacturing base as an asset and a foundation, rather than a liability, the result was the nation’s most aggressive set of regional clean energy goals and a program to achieve them.

Also important, a pragmatic Midwestern approach created a sustained dialogue among industry, environmental and government leaders in the region that remains today as a potential basis for constructive bi-partisan policy agreement to implement leading clean energy policy region-wide.

The 2007 Energy Security and Climate Stewardship Platform, and GHG Accord represented a commitment by signatory states that the region could and should achieve nationally leading clean energy goals:

- By 2030: 30 percent of electricity consumed in the region (equivalent to 376 million MWh of retail sales) will be from renewable resources
- By 2015: Meet at least 2 percent of regional annual retail sales of natural gas and electricity through energy efficiency improvements, and continue to achieve an additional 2 percent in efficiency improvements every year thereafter.
- By 2025: At least 50 percent of all transportation energy consumed in the region will be supplied by regionally produced biofuels and other low-carbon advanced transportation fuels, with the expectation that a significant and additional portion of the region’s biofuel production will help the U.S. meet a national 25 by ’25 goal.
- By 2020: All new coal gasification and coal combustion plants will capture and store CO2 emissions. By 2050, the region’s fleet of coal plants will have transitioned to CCS.
- Reduce greenhouse gas emissions regionwide. The subsequent advisory group set a goal of 80 percent reduction in GHG emissions by 2050.

The Platform also included both state and regional policy recommendations to achieve these goals, such as state energy efficiency standards and regional cooperation to upgrade transmission infrastructure.

The 2007 MGA Energy Platform was intended by the governors “to demonstrate our commitment to this long-term transition to a lower-carbon energy economy.” They added, “Through this transition…our states will spur investment, create new jobs, and protect customers by stabilizing energy prices.”

These energy goals and policy recommendations were endorsed by the governors and premier of 9 states and 1 Canadian province, while the greenhouse gas reduction accord was signed by 6 states and 1 province with 4 additional states observing.

The 2007 agreements also served to launch new deliberations, which culminated in the detailed advisory group policy recommendations in the 2009 Energy Security and Climate Stewardship Roadmap, Infrastructure Accord and Jobs Platform. Together these documents were intended as a blueprint for regional economic recovery through clean energy leadership.

All the MGA process documents are available on the MGA website at: http://www.midwesterngovernors.org/energy.htm.

The Roadmap’s central recommendations for state policy include:

- Enact or enhance existing renewable energy standards (RESs) or objectives (REOs) so that they are sufficient to ensure that 10 percent of electricity consumed in the region comes from renewable sources by 2015 and 30 percent by 2030.
- Require retail energy providers to make energy efficiency (EE) a priority in order to meet a region-wide energy-efficiency standard of 2 percent annual savings for electric utilities and 1.5 percent annual reductions for natural gas-utilities.
- Adopt residential and commercial building codes that meet or exceed the national model energy codes, with an automatic, statutorily required increase to coincide with the national model code review process.
- Double the installed combined heat and power (CHP) capacity in the Midwest from 10,600 MW (2008) to 21,200 MW in 2030. That level of production would represent approximately 7.5 percent of the total electricity-generating capacity in the Midwest in 2030.
- Adopt state and provincial actions to improve the average fuel efficiency of passenger vehicles such as fleet-procurement standards for state vehicle fleets, tax incentives for high-efficiency vehicles and engines, production tax credits for advanced technology vehicles and efficient driver education.
- Work with affected stakeholders to develop a model regional low carbon fuel standard that will decrease the

A Gallup poll taken in early 2011 found that incentives for using alternative energy are favored by 83 percent of Americans.
greenhouse gas (GHG) intensity of transportation fuels by 10 percent in 10 years from the start of the program.

- Implement a range of strategies including investment in transit, bicycle and pedestrian infrastructure, building and expanding the Midwest regional Rail network and enabling development that promotes transportation system efficiency. [http://www.midwesterngovernors.org/Publications/RoadmapRecommendations.pdf](http://www.midwesterngovernors.org/Publications/RoadmapRecommendations.pdf)

The Roadmap and Accords also make recommendations on essential regional initiatives, including:

- Smart Grid and transmission infrastructure
- Biofuels, including low carbon fuel policies
- High speed rail and other new transportation choices
- Carbon Pipeline
- Jobs collaboration

In line with mandate of the 2007 GHG Accord, Midwest stakeholders also continued to develop policies to lead on greenhouse gas reduction both to position regional industries to capture the benefits of a low carbon economy and to ensure that federal climate policy would be shaped with clear input from the region. The stakeholder advisory group appointed by the governors completed recommendations for the design of a greenhouse gas reduction system in May of 2010. That system coupled strong reduction requirements with a commitment to protecting consumers and assisting in industry transition.

**TODAY’S CHALLENGE**

Today, Midwest states are taking action in some of these areas, but what’s missing is the urgent and comprehensive action across the region’s states and nationally that would turn MGA goals into realities and ensure the Midwest captures the economic benefit of energy efficiency, renewable electricity, advanced coal with carbon capture and storage, bio-fuels, high-speed rail and other elements of the clean energy economy.

Americans are in fact eager to push forward and finish the job of creating a clean energy economy that will provide a strong, stable and healthy future for their children and grandchildren.

A large number of public opinion polls have found that citizens across the Midwest want increased energy independence and greater energy security. Notably, a Gallup poll taken in early 2011 found that incentives for using alternative energy was favored by 83 percent of Americans surveyed, making clean energy the top concern among several others offered to respondents.5

A 2010 poll of Midwest voters found that 60 percent believed clean, renewable energy would create new jobs. That poll also found that a majority of voters in the region support the increased use of electricity from renewable sources, with most favoring wind and solar power.6

Investing in renewable energy technologies that reduce the region’s dependence on foreign oil will keep more money in the region, mitigate the environmental impacts of conventional energy sources and create tens of thousands of new jobs. The regional Energy Roadmap prescribes methods that could reinvent the region from what is currently the world’s fourth-largest source of carbon pollution to a center of clean energy and transportation manufacturing.

Bold bipartisan steps are needed to assemble the clean energy economy that will get our nation back to work. Leaders in Midwest states must drive the public policy changes to accelerate the transition to a revitalized economy built on clean, renewable, efficient energy and advanced transportation technologies.

Since the 2007 Platform agreement was signed, some policies moved within state legislatures, while others were not significantly considered. The lack of clear policy guidance from Congress, as well as federal rulemaking, has contributed to hesitation on the part of some states.

Still, Midwestern states can enact policies now that advance the region’s position as a leader in the clean energy economy.

There has been important progress within our region in capitalizing on the clean energy economy, but that needs to be more fully realized over the next two years. By sharing best practices, we can replicate success across our region and accelerate our economic recovery.

As a prelude the 2011-2012 legislative session, this report looks at the region’s progress in meeting the vision contained in the Roadmap and what actions are needed to strengthen the region’s position in the burgeoning clean energy economy.

Elected officials must act quickly if the Midwest hopes to restore its manufacturing base and become a major player in the global clean energy economy. Absent prompt government action on policies that would support the clean energy economy, the Midwest will lose more of its competitive advantage to China and other nations.

In 2009, for the first time ever, China’s investments in renewable energy surpassed those made by the United States. China is also close to surpassing the amount of renewable energy the U.S. produces annually.7

That must change.

The United States, and the Midwest in particular, cannot afford to let other nations lead the way on clean energy. We must embrace the challenges before us and take the bold steps necessary to foster increased production and use of renewable energy technologies.

Only then will we transform society and the region’s economy, just as Henry Ford did a century ago with the assembly line.
Regional Progress and Best Practices

The 2007 Energy Security and Climate Stewardship Platform and 2009 Energy Security and Climate Stewardship Roadmap, provide compelling policy guidance for a regional clean energy economy that creates jobs and cuts pollution. Some goals, such as on Low Carbon Fuel Policies and Greenhouse Gas Pollution Reduction Policies, were added as recommendations during the subsequent stakeholder process.

In the following sections we review regional and state progress against major goals laid out in these regional roadmaps, and critical next steps to achieve their critical economic recovery and clean energy objectives.

Here is snapshot of some of those goals and the progress to date:

**Renewable Energy**

**REGIONAL GRADE: B-**

**GOAL:** 10 percent of electricity consumed in the region will come from renewable energy sources by 2015, 20 percent by 2020, 25 percent by 2025 and 30 percent by 2030.

**PROGRESS:** Some states in the Midwest are leading the country in generating renewable energy while others lag. Iowa, for instance, leads the nation in the percentage of its electricity generated by wind power—in 2010 it delivered 3,675 MW and keeps climbing! However, current state renewable policies only gets the Midwest about 60 percent towards meeting the MGA goal of 30 percent renewable energy use by 2030.

**BEST PRACTICE:** Minnesota's renewable energy standard calls for 25 percent of electricity to be obtained from clean sources by 2025. The state's largest electric utility, Xcel Energy, must obtain 30 percent from clean sources by 2020.

http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MN14R&re=1&ee=1

**Energy Efficiency**

**REGIONAL GRADE: B**

**GOAL:** Meet at least 2 percent of regional annual retail sales of natural gas and electricity through energy efficiency improvements by 2015, and continue to achieve an additional 2 percent in efficiency improvements every year thereafter.

**PROGRESS:** Based on existing policies, the MGA states (excluding the Dakotas) will reduce annual energy retail sales by 1.264 percent annually by 2015.

**BEST PRACTICE:** Minnesota has a 1.5 percent annual energy savings goal for electric and natural gas utilities that began in 2010. Many states have similar goals, but over significantly longer terms.

http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MN18R&re=0&ee=1

**Building Codes**

**REGIONAL GRADE: A-**

**GOAL:** Update building codes every three years to reflect international energy efficiency standards.

**PROGRESS:** Most states have adopted 2009 codes or are in the process.


http://www.dsireusa.org/incentives/incentivecfm?Incentive_Code=IA10R&re=0&ee=1
Low Carbon Fuel Policies

REGIONAL GRADE: C+

GOAL: Reduce the carbon intensity of transportation fuels by at least 10 percent from a 2005 baseline within 10 years.

PROGRESS: Iowa, Minnesota and Michigan have enacted renewable fuel standards that mandate use of biofuels; but seven other states involved with the MGA energy initiative have not adopted low carbon fuel (LCF) policies, though Minnesota, Wisconsin and Michigan all introduced LCF bills in 2010. Some states have also provided research and commercialization funding for advanced biofuels and electric vehicle projects. A MGA LCF advisory group issued policy recommendations late in 2010, and await further action. http://www.midwesterngovernors.org/Publications/LCFPagDoc.pdf

BEST PRACTICE: Iowa’s renewable fuel standard requires 25 percent ethanol or biodiesel content by 2019. Iowa is also the nation’s top producer of ethanol and second leading producer of biodiesel. www.iowarfa.org/PDF/Iowa_RFS_Provisions_2ndVERSION.pdf

Transit, Rail & New Transportation Choices

REGIONAL GRADE: C

GOAL: Increase transit ridership per capita 3.5 percent annually from 2010 to 2030.

PROGRESS: While some states have made progress, others are taking steps backwards. Four states have adopted complete streets legislation that could help reduce vehicle miles traveled. Minnesota has substantially improved transit in the Twin Cities. Wisconsin passed legislation enabling more stable local funding for transit. Illinois and Minnesota have reorganized its Department of Transportation, with more emphasis on multimodalism and sustainability. No state has significantly addressed land use-transportation planning, nor does any state have an insurer offering true pay-as-you-drive insurance to individual motorists.

BEST PRACTICE: Illinois is creating jobs through a $1.1 billion investment in Chicago-St. Louis high-speed rail to provide new rail service to Quad Cities and Rockford. Indiana, Michigan and Iowa are also moving forward with major intercity passenger rail improvements. http://www.cwashesnaw.org/government/departments/public_health/news/2010-news-stories/complete-streets-legislation-passed-in-michigan

Greenhouse Gas Pollution Reduction Policies

REGIONAL GRADE: D

REGIONAL COLLABORATION: Convened by the MGA, an industry, environmental and government advisory group from seven states developed a regional greenhouse gas emissions reduction framework that would both deeply cut carbon pollution and protect and strengthen Midwest industrial sector and our economy.

GOAL: Reduce greenhouse gas emissions 30 percent below 2005 levels by 2030, and 80 percent below 2005 levels by 2050.

PROGRESS: Although no Midwest state regulates overall greenhouse gas pollution, six states have developed state Climate Action Plans that include robust reduction targets, emissions reporting and policy recommendations. A seventh state has committed to such a process.

It is the goal of the state of Minnesota to reduce statewide greenhouse gas emissions across all sectors producing those emissions to a level at least 15 percent below 2005 levels by 2015, to a level at least 30 percent below 2005 levels by 2025, and to a level at least 80 percent below 2005 levels by 2050.

BEST PRACTICE: Michigan’s climate action plan would decrease the state’s greenhouse gas emissions 33 percent below 2005 levels by 2025, with a net cumulative savings of about $10 billion. http://michigan.gov/deq/0,1607,7-135-50990-213752--,00.html

Cement masons pour pervious concrete in a residential area. Photo by Erika Ritzel/BlueGreen Alliance.
State Progress on Clean Energy, by the Numbers

- **8:** States that have adopted or are developing **Renewable Energy Standards** and other clean energy incentives: (IL, IA, MI, MN, SD, KS, OH, WI).

- **8:** States with **transit or high-speed rail infrastructure** plans (IL, IN, IA, MI, MN, OH, WI, MO).

- **7:** States have adopted or are developing **climate action** plans: (IL, IA, KS, MI, MN, MO, WI).

- **8:** States have adopted or are developing **energy efficiency** standards (IL, IN, IA, MI, MN, MO, OH, WI).

- **7:** States funding advanced **coal or advanced carbon sequestration** research and development (SD, IL, IN, IA, KS, MI, OH).

- **6:** States with advanced clean technology manufacturing incentives, from batteries to building supplies (IL, IN, IA, KS, MI, OH).

- **7:** States with **smart grid infrastructure** and new transmission incentives (KS, IL, IN, IA, MI, MN, SD).

- **4:** States with **complete streets laws** (IL, MI, MN, WI).

- **3:** States with **low carbon fuel intensity policies** (IL, IA, MI).

- **3:** States offering financing for clean technology research and development financing (IA, MN, OH).

- **5:** States that offer **job training** for clean energy technology programs (IL, IA, KS, MI, OH).
Assessment of Regional Initiatives

In addition to the Energy and Climate Stewardship platform which laid out key energy policy objectives to be developed by states, the MGA stakeholders came together in two other forums that laid out critical infrastructure and jobs initiatives that required collaboration across the region in order for the region to capture their full economic benefit.

**SMART GRID**

The Midwest has tremendous wind power potential, but that resource cannot be fully utilized until there is way to transmit electricity generated at wind farms to homes and businesses across the region.

The Midwest states possess wind capacity in excess of 5.7 MWh, about half of the nation’s wind power potential. The problem is that many of the existing power lines don’t extend to areas with the greatest wind-power capacity.

New power lines are needed to distribute electricity generated by wind farms and other renewable energy sources across the region.

Those power lines would be part of a smart grid, a web of transmission lines, smart meters and other technology that make wind energy available to consumers, reduce overall energy use, make the existing transmission system more efficient, and create new business opportunities between the transportation and utility sectors in energy storage and the adoption of electric vehicle technology.

A smart-grid would allow the Midwest to extend the existing power transmission network, reduce the region’s dependence on foreign fuels, create jobs and reduce the environmental effects of fossil fuels.

The federal government in 2009 provided $3.4 billion nationwide for smart-grid projects. Those grants, awarded as part of the American Reinvestment and Recovery Act, were hailed as “the largest single energy-grid modernization investment in U.S. history.”

The Midwest received more than $350 million in smart-grid grants:

- Duke Energy, which is working on smart-grid projects in Illinois and Indiana, received $200 million.
- Detroit Edison received $84 million to install 600,000 smart energy meters.
- Indianapolis Power and Light Co. received $20 million to install more than 28,000 smart electric meters.
- Midwest Independent Transmission System Operator received $17 million to install devices across the Midwest

That improve energy dispatching, system reliability and planning capabilities for the electric grid.

- Weststar Energy in Kansas received $19 million to convert Topeka, Kansas, into a smart-grid city.
- Whirlpool Corp., in Benton Harbor, Mich., received $19 million to develop and produce smart appliances that allow consumers to defer or schedule their energy use, which can lower costs and reduce peak electricity demand.

How important is the smart-grid initiative? The smart-grid is to renewable energy what the Internet was to the Information Age. It will allow the dream of using renewable energy to power the Midwest economy to become reality on a massive scale.

**BIOFUELS**

The Midwest is well positioned to be the national leader in the production and use of biofuels.

The region is already the heart of the biofuel industry in the United States, with approximately 88 percent of the nation’s ethanol production capacity located within the 12 Midwestern states. Several Midwest states already have policies in place that stimulate development of the biofuel industry.

**CASE STUDY**

The recent announcement that Fiberight LLC will build the nation’s first commercial cellulose ethanol plant in Iowa—a facility that will use enzymatic conversion technology and industrial/municipal solid waste (MSW) as feedstock—highlighted the region’s importance in the biofuel industry.

Conventional ethanol is derived from soft starches, such as corn. Cellulosic ethanol can be extracted from the cell walls (cellulose) of a variety of plants, quick-growing trees and municipal solid waste.

Fiberight has developed a technology that could extract 9 billion gallons of renewable biofuel annually from the 103 million tons of non-recyclable municipal solid waste the company’s new facility can process.

The Fiberight facility will turn trash into biofuels. The company’s process will reduce the amount of garbage discarded in landfills and free up farmland for crops other than the corn that is currently used to make ethanol.
The recent introduction of new biofuel technologies, such as cellulosic ethanol, will further stimulate the advanced biofuels industry and promote a reliable, perennial biomass supply in the region.

This is an important component of the regional vision for a low-carbon transport system in the region.

The Energy Roadmap recommended that Midwest states work with stakeholders to develop regional low carbon fuel policies that will decrease the greenhouse gas (GHG) intensity of transportation fuels by 10 percent in 10 years from the start of the program.

Such initiatives will invigorate the regional manufacturing base, revitalize rural economies, reduce carbon emissions associated with the transportation sector and lessen our dependence on foreign sources of energy.

Iowa is already America’s largest ethanol producer and the second largest producer of biodiesel. It produces enough biofuels to replace gasoline use in the state, but exports most of those fuels to other states.

Adoption of low-carbon fuel policies across the Midwest would further increase the use of biofuels produced in the region, which would have the dual effect of improving the region’s economy and environment.

**HIGH-SPEED RAIL**

One way to achieve the goals of the MGA Jobs Platform would be the completion of high-speed rail systems in the eight Midwest states.

Building high-speed rail systems can create jobs while providing cleaner modes of transportation within Midwest states and across the region.

The Federal Rail Administration has been a strong supporter of high-speed rail in the Midwest, providing $2.9 billion over the past two years for development of new rail lines. That funding will help spur the next-generation of rail in eight states.

Still, there are political considerations that could interfere with efforts to develop high-speed rail in the region. While newly elected governors of Wisconsin and Ohio turned back federal high-speed rail grants early in 2011, at the end of the first quarter Wisconsin’s governor did in fact apply for new $150 million in high-speed rail funding.

To achieve the promise of high-speed rail, elected officials in Midwest states must experience how it can stimulate the economy while reducing greenhouse gas emissions.

Fully utilized Midwest rail systems, including high-speed rail lines, could increase ridership from the current level of 1.6 million rides annually to 15 million rides per year by 2030. That would give train travel a 50 percent share of all transportation modes in the region, which would be nothing short of revolutionary for the economy and the environment.

Building high-speed rail lines in the Midwest will transform the way millions of people travel, creating thousands of jobs in the process and reducing air pollution that contributes to global warming.

**CARBON PIPELINE**

Reducing carbon dioxide emissions from coal-fired power plants is a cornerstone of the Midwestern Governors Association’s clean energy platform.

Among the recommendations for achieving that involves a process called carbon capture and storage, or CCS. CCS captures carbon dioxide emissions at power plants or industrial facilities, compresses the waste into liquid form and injects it into geologic formations deep underground.

The liquid CO2 can be stored in porous geologic formations or used in a process called enhanced oil recovery. Enhanced oil recovery injects liquid CO2 into existing oil wells to force previously unrecoverable oil to the surface.

CCS can sequester large quantities of carbon dioxide, one of the main causes of global warming. Reducing CO2 emissions in the Midwest is particularly significant: The region gets 71 percent of its electricity from coal-fired power plants and is major source of CO2 emissions.

A critical element in the CCS strategy is construction of a pipeline that would transport liquid CO2 from power plants in the Midwest to underground storage site and oil fields here and in other parts of the country.

The MGA clean energy platform recommended that its member states adopt policies to support and incentivize deployment of carbon capture and storage technologies and support infrastructure to transport and store CO2 over the long term.

Several states—including Illinois, Indiana, Kansas, Michigan, Minnesota, North Dakota and Ohio—are developing or have approved legislation that provides financial incentives for deployment of advanced coal with CCS in their jurisdictions.

**CASE STUDY**

Plans to construct a carbon pipeline took a huge step forward in 2010. Texas-based oil and gas company Denbury Resources Inc. announced that it was studying the feasibility of building a 500-mile carbon pipeline that would link coal-fired power plants in the Midwest to the company’s oil fields in Mississippi.

Company officials have said Denbury could build the estimated $1 billion pipeline without government subsidies, and turn a profit, if at least three commercial-scale coal gasification plants in the region provided CO2.

Four proposed coal gasification facilities—two in Illinois and one each in Indiana and Kentucky—have signed conditional agreements to supply CO2 to the pipeline. Denbury officials told the New York Times that each of those facilities would capture between 50 percent and 90 percent of CO2 emissions and ship the waste to oil fields in Mississippi.
All but three MGA jurisdictions—Iowa, Minnesota and Wisconsin—possess oil and gas formations or deep saline formations that are suitable for commercial storage of CO2.

Given the geographic distribution of potential CO2 storage formations in the Midwest, and that transporting CO2 through pipelines is the best understood and least costly aspect of industrial-scale CCS systems, all MGA jurisdictions should be able to participate in and benefit from region-wide deployment of a CCS infrastructure.

The MGA’s goal is to have at least one interstate CO2 pipeline sited and approved for construction by 2012.

**JOBS COLLABORATION**

Job creation is paramount in the Midwest, which has lost 1.2 million manufacturing jobs since 2000.

Studies have found that the clean energy industry could create as many as 1.2 million new jobs over the next decade. But preparing for those new jobs will require workers, firms and communities to embrace new skills and new ways of doing business.

The Regional Jobs Platform recommends a series of policies to help states create and retain jobs in the clean energy economy. They include:

- Adopting and aligning energy, economic and workforce policies that position the region’s workers, firms and communities to compete with other regions of the United States—and other countries—in creating and retaining jobs in the new energy economy.
- Increasing and optimizing public-private sector investments in education, training, entrepreneurship, natural resources, manufacturing, agriculture, intellectual property and research to grow, retain and attract technologies and companies that support jobs and career opportunities in new energy industries.

Some Midwest states have already aligned economic development programs with clean energy initiatives in a bid to lure new companies and jobs to the region.

Many more states have created worker-training programs focused specifically on the skills needed to manufacture and operate equipment used by the clean energy industry.

In Iowa, for example, community colleges offer degree programs for people who plan to work in the wind energy sector.

Ohio has more than 75 programs and facilities that train workers for jobs in the clean energy economy.

Michigan created the No Worker Left Behind Green Jobs Initiative to accelerate workers’ transition into clean energy jobs.

Illinois established a green jobs training fund in 2009 and many of the state’s community colleges offer training for jobs in the clean energy industry.

Wisconsin, South Dakota and Kansas also have established programs to prepare dislocated workers for jobs in the clean energy sector.

Training young adults and retraining dislocated workers for jobs in clean energy industries should be a priority for Midwest states for the foreseeable future.

The clean energy economy is growing rapidly around the world, creating thousands of new jobs and economic opportunities that most of us never envisioned.

Communities across the Midwest must be prepared for the wave of economic opportunity that the clean energy economy will create. The region cannot afford to miss out on this golden opportunity for economic revival.
Region-wide Policy Recommendations

There are 7 new governors and hundreds of new state legislators in MGA states, and the need for expanding existing businesses and creating new jobs has never been more acute for the region. As plans are being developed for the 2011-2012 state legislative sessions, it is important to keep these policy recommendations at the forefront:

1. Establish or upgrade Renewable Energy Standards (RES) that require utilities to acquire at least 30 percent of their electric energy from renewable resources by 2030.

2. Address transmission issues, including inter-jurisdictional siting and cost and revenue allocation, which could hinder renewable energy development in the Midwest.

3. Establish statewide energy efficiency goals to meet at least 2 percent of regional annual retail sales of natural gas and electricity through energy efficiency improvements by 2015, and continue to achieve an additional 2 percent in efficiency improvements every year thereafter. Policies should require utilities to achieve these levels of efficiency and conservation or fund statewide programs that achieve them, or a combination of both.

4. Act to adopt the most recent residential and commercial building codes and automatically strengthen those codes to match the national model codes in the future.

5. Adopt Low Carbon Fuel Standards (LCFS) in each state in line with the regional LCFS developed as part of the Regional Roadmap process.

6. Improve transportation efficiency by setting goals to reduce vehicle-miles traveled, providing better mass transit and other green transportation choices, and to enable the offering of mileage-based auto insurance.
On a sweltering July day in 2010, a group of government and industry officials gathered at the former site of a Pullman rail car factory site on Chicago’s south side to usher in a new era of clean energy.

The christening of the Exelon solar farm was a historic occasion. The facility, which features 32,000 solar panels that track the movement of the sun, is the largest urban solar farm in North America and may be the largest facility of its kind in the world.

The facility produces 10 megawatts of electricity, enough to power about 1,500 homes in a city of 3 million people.

That one facility won’t replace conventional energy sources but it is a huge step toward producing more energy without generating greenhouse gas pollutants. And it showed that a Midwest city could use solar farms to generate significant quantities of clean energy.

Completion of the Exelon facility was one of several recent developments in Illinois’ effort to transition to a clean energy economy.

State legislators in 2010 passed legislation that would increase the state’s solar power supply each year, creating 5,000 clean energy jobs by 2014. The Legislature also established a renewable energy standard, which requires utilities to obtain 25 percent of electricity from renewable sources by 2025, and approved $425 million for energy-saving weatherization projects.

Illinois’s 2007 energy efficiency resource standard served as the best practice during the development of the MGA recommendations, and, according to the Midwest Energy Efficiency Alliance, requires investor-owned electric utilities to achieve 0.2 percent savings through efficiency of energy delivered in 2009 and ramps-up to 2.0 percent by 2015 and every year thereafter, and for investor-owned natural gas utilities, requires 0.2 percent savings through efficiency of energy delivered by 2012 and ramps-up to 1.5 percent savings by 2019 and every year thereafter.

Illinois has emerged as the national leader in putting shovels in the ground for high speed rail construction. The state also approved a pay as you drive insurance program for trucking fleets (which is not yet available for individual motorists) and lawmakers appropriated $5 million for plug-in vehicle infrastructure.
Indiana is something of a sleeping giant when it comes to the clean energy industry.

The Hoosier state has some of the nation’s best natural resources for clean energy, particularly wind and the raw materials for bio-fuels.

Recent studies have found that wind farms could produce enough electricity to power all homes and businesses in Indiana.

The state also has vast biomass resources, which could generate billions of kilowatt-hours of electricity, according to research by scientists at Purdue University.

Despite enormous potential for clean energy, Indiana has not moved as aggressively as other Midwest states to develop its clean energy economy. But the state is making progress.

Duke Energy’s coal gasification plant in Edwardsport could play an important role in efforts to develop commercial scale carbon capture and storage facilities. Such facilities could help the region reduce its greenhouse gas emissions and bolster efforts to slow global warming.

**RENEWABLE ENERGY AND EFFICIENCY**

In 2008, the state was the nation’s leader in the growth of wind energy. The National Renewable Energy Laboratory has estimated that Indiana has the potential to produce at least 40,000 megawatts of electricity from wind farms, more than double the amount of the state’s current power producing capacity.

**ENGAGEMENT IN REGIONAL JOBS AND INFRASTRUCTURE PARTNERSHIPS**

Indiana received a $71 million federal grant for high-speed rail. The money will be used to develop the Detroit-Pontiac to Chicago route, fund crossovers and related signal system improvements.

**RECENT CHALLENGES**

A proposed renewable energy standard recently died in the Legislature, which would help to ensure Indiana continues to capture the full economic development potential from its wind resource.

**PRIORITIES FOR 2011**

Adopt a renewable energy standard.
Iowa

The winds of positive change are blowing in Iowa, one of the nation’s leaders in the clean energy economy. Iowa is the second largest producer of wind energy in the U.S., behind Texas, and has the nation’s highest per capita rate of installed wind capacity.

The state’s focus on clean energy is already paying huge dividends.

There are at least seven wind turbine supply manufacturers in Iowa, building blades, towers, and nacelles. Those companies employed about 2,000 workers at the end of 2009 and discussions about expanding those manufacturing facilities were underway in 2010.

**RENEWABLE ENERGY AND EFFICIENCY**

In 2010, Iowa’s installed wind capacity reached 3,670 megawatts. Another 200 megawatts of wind energy was being developed and at least 1,000 more megawatts of wind energy capacity were planned for installation by 2012.

The state’s Alternate Energy Revolving Loan Fund received $10 million during the 2009-2010 legislative session to help fund smaller-scale wind, solar, biomass, and biogas projects.

Iowa’s governor in 2001 established a voluntary goal asking utilities to generate 2,015 megawatts of power by 2015, and obtain 25 percent of electricity from renewable sources by 2025. The challenge in 2011 is to ensure that utilities continue meeting those voluntary commitments under the new Branstad Administration.

**ENGAGEMENT IN REGIONAL JOBS AND INFRASTRUCTURE PARTNERSHIPS**

Iowa received about $17 million in federal funds for a study of passenger rail as part of the Midwest High-Speed Rail Network. This funding will install four remotely controlled powered crossovers, which will reduce travel times and improve on-time performance.

**TRANSPORTATION AND FUELS**

Iowa is America’s largest ethanol producer and second largest producer of biodiesel. It produces enough biofuels to replace gasoline use in the state, but exports most of those fuels to other states. The state is also a leader in the availability of E-85 gas pumps.

**RECENT CHALLENGES**

Governor Terry Branstad, elected in 2010, was a vocal critic of the Iowa Power Fund during the campaign. In his proposed 2012 budget he eliminates this successful economic development fund. The Iowa Power Fund would have provided $100 million over four years for clean technology research, development and commercialization. According to a study released in 2010 by the Iowa Office of Energy Independence, “Power Fund investments in 31 projects are generating more than $103 million annually in economic activity, creating more than 430 jobs with tax revenue and payroll benefits and generating projects totaling $368 million in early years. The cumulative long-range activities are projected to generate 8,500 to 22,000 jobs with potential economic output for Iowa ranging from $40 billion to $113.5 billion by 2033.”

**PRIORITIES FOR 2011**

Remove barriers for small-scale renewable energy producers.

Provide incentives that promote implementation of renewable energy and energy efficiency technologies.

Maintain the state renewable energy production tax incentive.

Continue to invest in Iowa’s rail transportation infrastructure.

Require utilities to achieve a 2 percent annual energy efficiency standard.

Lawmakers also need to overhaul the state’s obsolete renewable energy portfolio standard, which was adopted in 1983. That standard required utilities to generate 105 megawatts of wind power, which has been achieved.
The growth the clean energy economy in Kansas is being driven largely by a desire to save money through energy efficiency.

Studies have shown that most Kansas residents doubt scientific data that shows the planet is warming. That has made development of the state’s clean energy economy an uphill climb.

Kansas, for example, ranks second nationally in wind-power capacity. But the state gets less than 4 percent of its electricity from renewable sources.

The state ranked 28th nationally in 2007 in the number of clean energy jobs. And its 5 percent increase in clean energy jobs between 1998 and 2007 was among the lowest in the nation, according to a Pew Charitable Trust study.

But there are signs of progress.

Kansas has one of the region’s most aggressive renewable electricity standards, which requires utilities to obtain 20 percent of electricity from renewable sources by 2020. In October 2010, Gov. Mark Parkinson signed an executive order establishing a multi-agency group of state officials who will be charged with expanding wind energy production in Kansas.

Kansas has no statewide energy efficiency standards or codes for residential structures. Realtors and homebuilders are required to fill out an energy efficiency disclosure form and provide it to potential buyers.

In January 2007, former Governor Sebelius asked energy producers to promote a statewide consumer education and conservation effort to reduce energy consumption 5 percent by 2010 and by 10 percent by 2020.

Perhaps most encouraging was the recent news that Siemens would build a $50 million nacelle production facility in Hutchinson. The facility will create 400 jobs.

Energy efficiency programs also are gaining strength in parts of Kansas. The nonprofit Climate and Energy Project received a grant from the Kansas Energy Office to organize a competition among 16 Kansas cities to cut energy use in 2011.

In the meantime, the state continues to pursue voluntary energy efficiency codes for residential and commercial buildings and will continue to support programs to educate citizens on the benefits of energy efficiency.

The growth the clean energy economy in Kansas is being driven largely by a desire to save money through energy efficiency.

Studies have shown that most Kansas residents doubt scientific data that shows the planet is warming. That has made development of the state’s clean energy economy an uphill climb.

Kansas, for example, ranks second nationally in wind-power capacity. But the state gets less than 4 percent of its electricity from renewable sources.

The state ranked 28th nationally in 2007 in the number of clean energy jobs. And its 5 percent increase in clean energy jobs between 1998 and 2007 was among the lowest in the nation, according to a Pew Charitable Trust study.

But there are signs of progress.

Kansas has one of the region’s most aggressive renewable electricity standards, which requires utilities to obtain 20 percent of electricity from renewable sources by 2020. In October 2010, Gov. Mark Parkinson signed an executive order establishing a multi-agency group of state officials who will be charged with expanding wind energy production in Kansas.

Kansas has no statewide energy efficiency standards or codes for residential structures. Realtors and homebuilders are required to fill out an energy efficiency disclosure form and provide it to potential buyers.

In January 2007, former Governor Sebelius asked energy producers to promote a statewide consumer education and conservation effort to reduce energy consumption 5 percent by 2010 and by 10 percent by 2020.

Perhaps most encouraging was the recent news that Siemens would build a $50 million nacelle production facility in Hutchinson. The facility will create 400 jobs.

Energy efficiency programs also are gaining strength in parts of Kansas. The nonprofit Climate and Energy Project received a grant from the Kansas Energy Office to organize a competition among 16 Kansas cities to cut energy use in 2011.

In the meantime, the state continues to pursue voluntary energy efficiency codes for residential and commercial buildings and will continue to support programs to educate citizens on the benefits of energy efficiency.
The state historically known as the automotive capital of the world is shifting gears as it strives to keep pace with China and other countries investing heavily in the clean energy economy.

Although Michigan’s economy took a big hit during the Great Recession as automakers and their suppliers eliminated thousands of jobs, clean energy has been a bright spot.

There are more than 100 companies in Michigan that manufacture wind energy components or conduct research and development for the wind energy industry.

Since 2008, 47 clean energy companies have opened in Michigan. Those companies are expected to create nearly 90,000 new jobs and invest more than $9 billion in the state.

In addition, the federal government and the private sector have invested more than $5 billion to develop advanced battery and component manufacturing facilities in the state. Those facilities are expected to create more than 54,000 new jobs and help spur automotive recovery.

Although Michigan’s recently approved renewable portfolio standard fell short of the state’s budding electric vehicle industry, while the most effective way to grow the state’s budding electric vehicle industry, while also reducing carbon emissions and oil dependence.

RECENT CHALLENGES
The State of Michigan can create many new jobs by leveraging its $400 million in federal high speed rail construction grants— if it meets the challenge of finding state matching funds. Michigan’s recently approved renewable portfolio standard fell short of the MGA’s goals. It required utilities to obtain 10 percent of electricity from renewable sources by 2015, but stopped there.

PRIORITIES FOR 2011
Mandate greater energy efficiency and the use of low-carbon fuels. Energy efficiency is the quickest and least expensive way to reduce energy use and cut carbon emissions that contribute to global warming. Expanding the use of low carbon fuels would be the most effective way to grow the state’s budding electric vehicle industry, while also reducing carbon emissions and oil dependence.

RENEWABLE ENERGY AND EFFICIENCY
A 2008 Michigan law required utilities to reduce electricity use by 1 percent and natural gas use by .75 percent annually, which fell short of the MGA’s goals. The state requires utilities to obtain 10 percent of electricity from renewable sources by 2015, but stops there. The MGA Roadmap recommends that states enact policies to ensure that 30 percent of electricity consumed comes from renewable sources by 2030.

ENGAGEMENT IN REGIONAL JOBS AND INFRASTRUCTURE PARTNERSHIPS
Michigan received $161 million in federal funds for a high-speed rail line that would be part of the Detroit-Chicago corridor.

TRANSPORTATION AND FUELS
In the last legislative session, a low carbon fuel standard bill was introduced, but not passed. In addition, legislation was introduced, but not passed, that...
Minnesota is on the fast track of growing its clean energy economy, as evidenced by its aggressive efforts to promote energy efficiency and implement its Renewable Energy Standard. The state’s goals for reducing greenhouse gas emissions and using electricity from renewable sources are the strongest in the Midwest and rank among the most aggressive in the nation.

State agencies are also setting a good example for consumers by moving aggressively to increase the use of ethanol in state-owned vehicles.

There are financial incentives for consumers to buy solar power systems from manufacturers in Minnesota and a Renewable Development Fund that provides about $16 million per year for renewable energy projects and research. Minnesota ranked 10th nationally in 2007 in the number of clean energy jobs. Clean energy jobs in the state grew by 23 percent between 1998 and 2007, according to a Pew Charitable Trust study.

The state is requiring an emissions offset requirement for any proposed coal-fired power plants. Minnesota’s commitment to developing its clean energy economy has already reaped significant benefits. The state should be a model for others in the region, especially those stalled by skeptics who doubt the job-creating potential of clean energy.

---

**RENEWABLE ENERGY AND EFFICIENCY**

The state’s renewable energy standard calls for 25 percent of electricity to be obtained from clean sources by 2025. The state’s largest electric utility, Xcel Energy, must achieve a 30 percent target for renewable use by 2020.

**ENGAGEMENT IN REGIONAL JOBS AND INFRASTRUCTURE PARTNERSHIPS**

Minnesota has received more than $40 million in federal funds to develop a high-speed rail line between Minneapolis/St. Paul and Chicago.

**TRANSPORTATION AND FUELS**

Legislation was passed in 2009 to conduct a study of a Low-Carbons Fuel policy in the state. A final report to the legislature is pending.

---

**RECENT CHALLENGES**

Minnesota’s desire to build a high-speed rail line from the Twin Cities to Chicago could be derailed by Wisconsin’s Gov. Scott Walker’s opposition to a high-speed rail line between Madison and Milwaukee.

**PRIORITIES FOR 2011**

Greater investments in energy efficiency and renewable energy.

Incentives for new transportation and energy fuels that utilize Minnesota’s natural resources.

A regional system that rewards reduced emissions of global warming pollutants.

Community planning policies to encourage more clean energy transportation options.
Missouri

Missouri is trailing some Midwest states when it comes to developing its clean energy economy, but it’s not for a lack of effort by voters, businesses and some elected officials.

State voters in 2008 passed the Missouri Clean Energy Initiative by a greater than two-thirds majority. The initiative, among other things, required investor-owned utilities to obtain 15 percent of electricity from renewable sources by 2021.

That was an important step in growing the state’s clean energy economy. But the administrative rules that would govern implementation of the clean energy initiative were still bogged down by political bickering in 2010.

Steve Flick, chairman of the board of the Show Me Energy Cooperative in Missouri, the nation’s first farmer-owned biomass cooperative, said community leaders and elected officials must show a greater commitment to reducing the use of foreign fuels and increasing the use of renewable fuels.

“This doesn’t need to be a mandate, it needs to be a mindset,” Flick said.

Access to capital remains a major challenge for entrepreneurs eager to build renewable energy projects, Flick said.

Access to clean energy remains a major challenge for Missouri consumers.

Consumers in the so-called “Show Me State” are waiting for Missouri’s elected officials to show leadership on clean energy.

RENEWABLE ENERGY AND EFFICIENCY

According to federal data, just 3 percent of electricity used in the state comes from renewable sources—most of that comes from hydropower.

Missouri has tremendous potential for clean energy. The state has abundant wind energy potential, as well as vast biomass resources.

Missouri has already shown its ability to create clean energy jobs, even without strong state or federal policies promoting renewable energy.

A study by the Pew Charitable Trust found that the number of clean energy jobs in Missouri increased by 5.4 percent between 1998 and 2007—more than double the growth rate for overall jobs.

Another study found that the Missouri Clean Energy Initiative could create more than 22,000 new jobs and generate nearly $2 billion in new income.

TRANSPORTATION AND FUELS

State law required that by July 1, 2005, at least 75 percent of the Department of Transportation vehicle fleet and heavy equipment that use diesel fuel be fueled with B20 or higher biodiesel blends, if such fuel is commercially available. State law also requires that any state agency operating a fleet of more than 15 motor vehicles must ensure that 50 percent of new vehicles acquired by the fleet are capable of running on alternative fuels. Excess acquisitions of alternative fuel vehicles (AFV) may be credited towards future biennial goals.

RECENT CHALLENGES

The Legislature failed to adopt rules that would govern the Missouri Clean Energy Initiative.

PRIORITIES FOR 2011

Adopt the administrative rules necessary to permit the full implementation of the state’s Clean Energy Initiative.

ENGAGEMENT IN REGIONAL JOBS AND INFRASTRUCTURE PARTNERSHIPS

The state received $31 million in federal funds for high-speed rail projects, which will include the expansion of existing railroad bridges.
Frank Sinatra once crooned famously that, “If I can make it here, I’ll make it anywhere.”

Old’ Blue Eyes was referring, of course, to New York.

If making it in New York is a litmus test for success, an Ohio clean energy firm is clearly succeeding.

Flexible solar panels produced by Toledo-based Xunlight are providing electricity for the first solar-powered billboard in New York’s Times Square. Installed in June 2010, the solar powered billboard was a beacon of accomplishment for Ohio’s burgeoning clean energy economy.

Xunlight, which is helping Toledo transition from a city once known as the glass-making capital of the United States to a hub of solar power components, was the nation’s largest manufacturer of thin-film solar panels in 2010.

The company, which evolved from a laboratory at the University of Toledo, is just one of the glowing achievements of Ohio’s clean energy economy.

The Buckeye State ranked fourth nationally in 2007 for the number of clean energy jobs, and the number of clean energy jobs in the state increased by 31 percent between 1998 and 2007, according to a Pew Charitable Trust study.

In 2007, the state’s job stimulus fund provided $150 million for advanced energy product development and retooling.

The Ohio Third Frontier program has a research and development fund that provides grants for renewable-energy and energy-efficiency projects. The fund has provided nearly $77 million in incentives for clean energy and energy efficiency projects, leveraging a total investment of $307 million.

Ohio also is leading the way on development of the nation’s first freshwater wind farm, proposed for a site in Lake Erie.

Although Ohio continues to struggle with the loss of manufacturing jobs and high rates of unemployment, the state is making significant progress in creating jobs in the clean energy sector.

Proof of that can be seen 24 hours a day in New York City’s Times Square, where solar panels manufactured in Toledo light up the Ricoh Eco Board at the corner of 7th Avenue and 42nd Street.

Though Ohio relies heavily on coal-fired power plants for electricity and has a modest renewable energy standard—which requires utilities to obtain 12.4 percent of electricity from renewable sources by 2024—the state is investing heavily in clean energy technology.

A 2007 Executive Order directed state agencies to develop a numeric goal and timeline for acquiring alternative-fuel vehicles (including hybrid-electric). The Department of Administrative Services is directed to prepare plans to establish pumps for E85 fuel, and to develop and implement a plan to raise biodiesel fuel consumption to at least 25 percent of state diesel purchases by 2008. State law also requires that all new motor vehicles acquired by the state on and after July 1, 2006, for use by state agencies must be capable of using alternative fuels and must use that fuel if it is reasonably available at a reasonable price. By January 1, 2007, state flex-fuel vehicles must use at least 60,000 gallons of E85 per calendar year, increasing by 5,000 gallons per year thereafter. Vehicles that operate on diesel fuel must use at least one million gallons of biodiesel, increasing by 100,000 gallons per year thereafter.

The Ohio Rail Development Commission has been funded to provide grants and loans for upgrades and expansions of rail projects for economic development purposes. The new criteria for federal highway investment emphasized intermodal connections. The state had been awarded $400 million in federal funds for high-speed rail connecting Cleveland, Cincinnati and Columbus in 2009, but that award was rescinded.

Newly elected Gov. John Kasich has said he will reject federal funds for high-speed rail—and in fact U.S. Secretary of Transportation Ray LaHood in late 2010 redirected Ohio’s share to other states. Some investor-owned utilities in the state, including AEP and First Energy, have filed petitions to seek a waiver from meeting the renewable energy generating requirements of Ohio’s Alternative Energy Portfolio Standard. It remains to be seen how the Kasich-appointed members of the Public Utilities Commission will rule.

Enactment of a series of transportation, public policy, social service and environmental initiatives, called “Save Transit Now, Move Ohio Forward!” Proposals include dedicated funding for public transit and directing a portion of Ohio’s gas tax revenues for transit.

Adding energy efficiency and other renewable energy sources to the new Ohio law that opens up unique financial mechanisms for municipalities developing and deploying solar energy on a community-wide basis.

The Ohio Rail Development Commission has been funded to
A dramatic turn of events that occurred in South Dakota in 2009 will drive the development of the state’s clean energy economy.

The defeat of the controversial Ottertail coal-fired power plant bolstered efforts to develop wind energy, and change came quickly.

In 2010, the Crow Creek Lake Wind Project got underway. The project, funded by the nation’s largest co-operative owned electric company, will add 151 megawatts of generating capacity.

That project spurred plans by Clipper Windpower of Carpinteria, Calif., to erect enough turbines to generate up to 6,000 megawatts of electricity. As proposed, the project would be the world’s largest wind farm.

But there are substantial obstacles to overcome before the Clipper Windpower project becomes reality. It will only be built if more transmission lines are built to link the wind farm to the national electricity grid.

A study by the Pew Charitable Trust found that the number of clean energy jobs in South Dakota nearly doubled between 1998 and 2007. The 169 clean energy businesses in the state employed more than 1,600 people in 2007, according to that study.

South Dakota has a voluntary goal of utilities obtaining 10 percent of the electricity generated from renewable sources by 2015.

South Dakota is part of both the Midwestern Governors Association and the Western Governor’s Association (WGA). In June 2006 the WGA Governors signed resolutions to meet or exceed goals of 30,000 MW of clean energy by 2015 and a 20 percent increase in energy efficiency by 2020, to encourage adequate funding for state energy efficiency and renewable generation programs, and to facilitate development of regional energy markets. The state had indicated to create scenarios for reducing greenhouse gas emissions 80 percent by 2050, but have set no specific energy goals yet.

South Dakota is a leading ethanol-producing state, and in early 2011 was poised to establish a new 5-year plan to increase subsidies for production, distribution and business expansion.

South Dakota elected a new Governor in 2010, Dennis Daugaard. Governor Daugaard has proposed extending ethanol incentives and expanding the bonding capabilities of the state’s post-secondary technical training schools. The state is also concerned with extending federal funding to the Sanford Underground Laboratory, where state-of-the-art sequestration tests have been taking place.

Level the energy playing field by taxing the oil that Tar Sands pipelines would carry across South Dakota. The revenue from such a tax could be used to advance the state’s clean energy industry, creating even more jobs while contributing to regional efforts to combat global warming.

**Engage in regional jobs and infrastructure partnerships**

**Recent challenges**

**Priorities for 2011**

**Renewable energy and efficiency**

**Transportation and fuels**

**Unfinished business: What the Midwest needs to do to lead in the clean energy economy**

19
Wisconsin

Efforts to develop Wisconsin’s clean energy economy and create jobs suffered a setback in 2010, when the state Legislature rejected the Clean Energy Jobs Act.

That decision was a political defeat but there are other forces at work—market forces, to be precise—that are driving the development of Wisconsin’s clean energy economy.

That was evident in the results of a survey by Milwaukee-based Johnson Controls Inc., which found that most of the 1,400 companies polled were investing heavily in clean energy technologies or energy efficiency programs.

An article in the Wisconsin Technology Council’s newsletter said that nearly one-third of the companies surveyed increased spending on energy efficiency programs in 2009, despite the recession. Many of those companies reported double-digit returns on their energy efficiency investments.

That survey led Tom Still, president of the Wisconsin Technology Council to conclude that, “The immense market forces at work will continue to transform Wisconsin’s energy economy, even without more legislation right now to prod things along.”

Wisconsin has long required companies and utilities to report greenhouse gas emissions and the state has invested millions of dollars in research on renewable energy technologies. And the state’s clean energy economy is growing, just not as quickly as in other Midwest states.

In 2007, Wisconsin ranked 20th nationally in the creation of clean energy jobs in 2007, behind several other states in the region. Still, the number of clean energy jobs in the state increased by 47 percent between 1998 and 2007, according to a Pew Charitable Trust study.

The 10-year, $150 million Wisconsin Energy Independence Fund that former governor Jim Doyle established in 2008 created some of those jobs. In one year, $7 million in grants and loans from that fund leveraged more than $45 million in private sector investments in clean energy.

Wisconsin was one of the first states to adopt a Renewable Energy Standard. But the state’s standard, which requires utilities to obtain 10 percent of electricity from renewable sources by 2015, now lags behind several other states in the region. Wisconsin’s PSC recently issued an order requiring utilities to fund statewide energy efficiency programs at levels that would allow the state to reduce electric energy use by 1.5 percent by 2014, makes businesses more competitive and create thousands of jobs. Although the state has been a leader in achieving efficiency gains, this PSC action puts the state in the middle of the Midwest pack as far as policies, still trailing states such as Illinois and Indiana which have established electricity use reduction requirements of 2 percent by 2015.

Wisconsin is the only state in the country that used all of its ARRA State Energy Program (SEP) funding to make manufacturing facilities more competitive and efficient.

Wisconsin in 2010 formalized a its Green Tier Legacy Communities program, which aims to provide state assistance to localities using sound transportation and land use practices. It also passed enabling legislation to allow localities to better manage and fund transit, and it adopted a complete streets policy.

Low carbon fuel standard legislation was introduced as part of the Clean Energy Jobs Act, but was not passed.

Newly elected Gov. Scott Walker opposed a federally funded extension of passenger rail service between Milwaukee and Madison. As a result, the $810 million grant was withdrawn, leaving the future of a regional passenger line from Chicago to Minneapolis in doubt.

A stronger commitment to energy efficiency programs that lower energy bills for homeowners and businesses and create more clean energy jobs.

Programs that accelerate the transition away from dirty fossil fuels and toward the use of clean, renewable energy sources—such as wind, solar and bio-fuels.

Programs that promote energy independence by creating incentives for farmers to grow bio-fuels that would reduce Wisconsin’s dependence on foreign oil.

Investments in more passenger rail systems, which could put more state residents to work.
Endnotes

1 2009 MGA Jobs Platform cited the following:
   http://apolloalliance.org/downloads/perrymandataNAP.pdf

2 IBID


Great Lakes Regional Center
213 West Liberty Street, Suite 200
Ann Arbor, MI 48104-1398
www.nwf.org

Chaucer Bergstrom of IBEW 292 with a solar panel for the solar decathlon house.
Photo by BlueGreen Alliance.