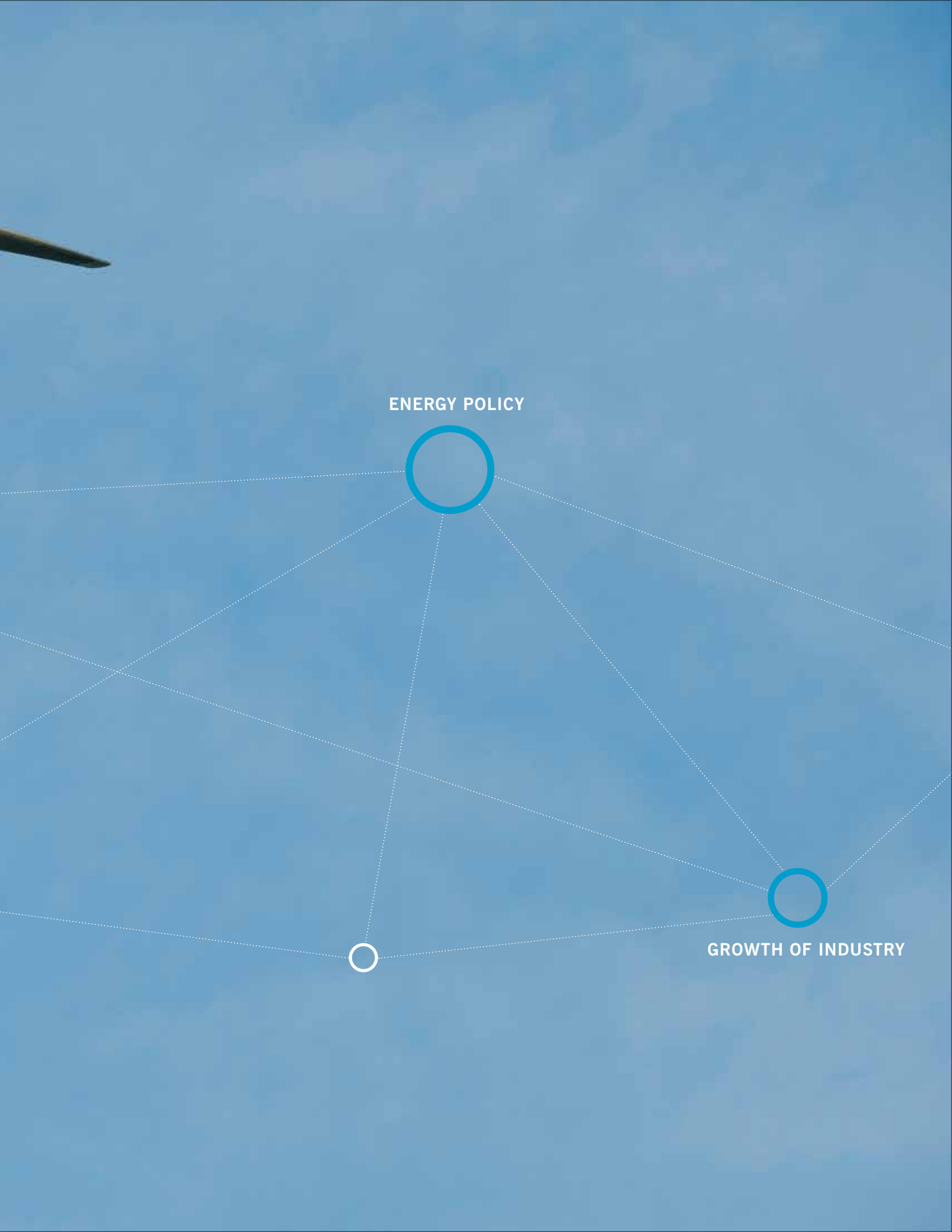
ENERGY FOUNDATION

**2012 ANNUAL REPORT**

# THE MIDWEST:

## A LEADER IN CLEAN ENERGY


POLITICAL SUPPORT
JOBS AND PROSPERITY


ENERGY POLICY
GROWTH OF INDUSTRY

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The Energy Foundation is a partnership of philanthropic investors promoting clean energy technology. Our goal is to build a new energy future by advancing energy efficiency and renewable energy.


**ENERGY FOUNDATION PARTNERS:** Bloomberg Philanthropies, ClimateWorks Foundation, Children's Investment Fund Foundation, David and Lucile Packard Foundation, Grantham Foundation, Lakeshore Foundation, McKnight Foundation, Oak Foundation, Pisces Foundation, Robertson Foundation, Schmidt Family Foundation, Tilia Fund, TomKat Trust, TOSA Foundation, William and Flora Hewlett Foundation

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# THE MIDWEST: A LEADER IN CLEAN ENERGY

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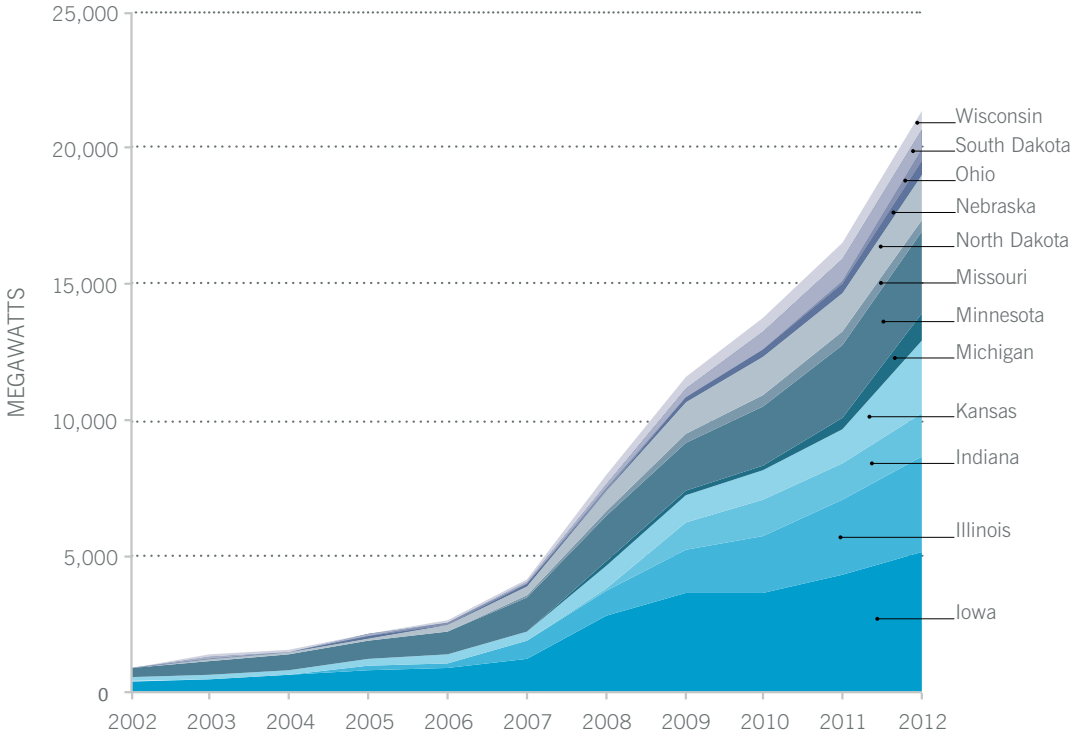
**A LONG-TERM COMMITMENT TO ENERGY POLICY IN THE MIDWEST** is transforming the region's energy system, economy, and environment. By tapping into its enormous renewable energy potential and manufacturing know-how, the Midwest is poised to become a world leader in renewable energy.

The Energy Foundation and its partners are proud to have supported clean energy in the region for more than 20 years. In 1993, the foundation funded *Powering the Midwest*, a Union of Concerned Scientists study that laid out a vision for significant growth in wind, biomass, and distributed electricity generation. At the time, three-quarters of global wind capacity was in California, with most of the rest in Denmark—and none in the Midwest.

## 12 STATES: WIND POWER GROWTH IN THE MIDWEST

Thanks largely to effective energy policies, Midwestern wind power capacity has surged in just 10 years.




Much of that vision has been realized, and with continued smart, stable policies the Midwest can lead the U.S.—and set a standard for other countries—in building huge clean energy markets.

## WIND PICKS UP SPEED

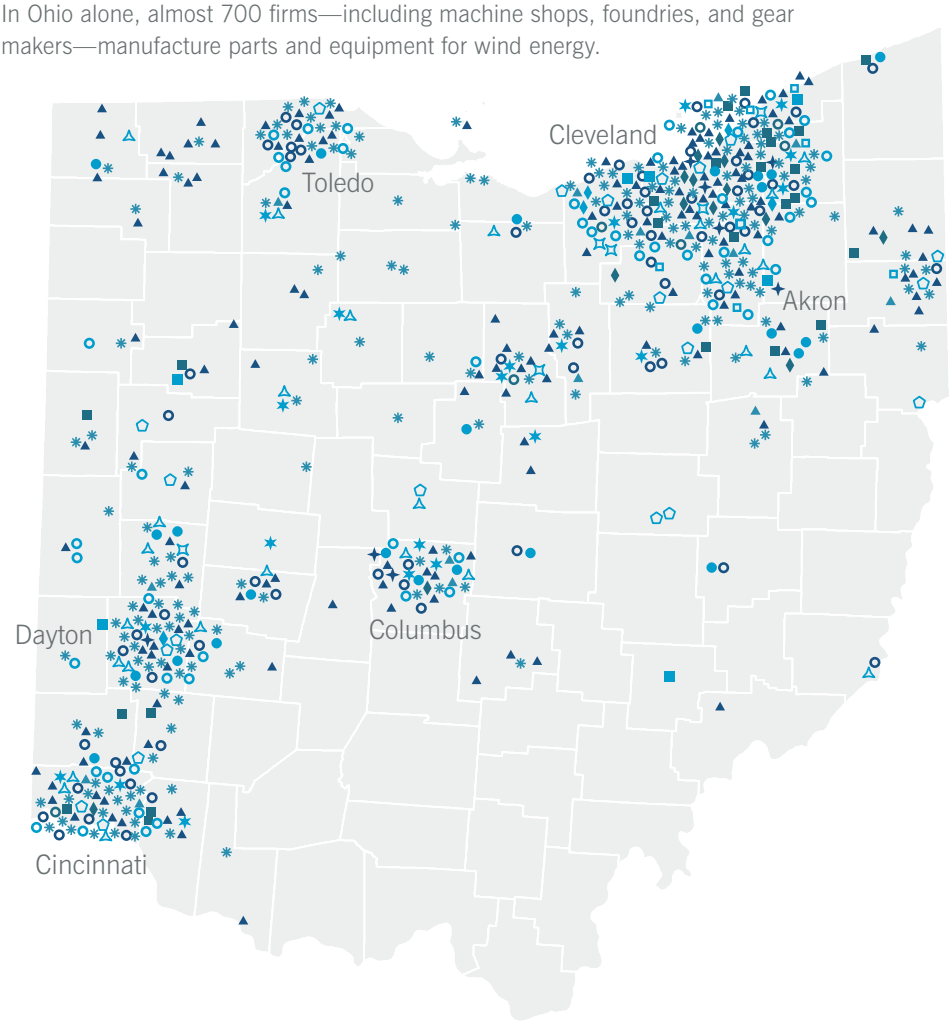
The first Midwestern wind farm was built in Minnesota in 1994. Since then, wind has expanded to 21,390 megawatts (MW) in the 12 Midwestern states stretching from North Dakota and Kansas in the west to Ohio and Michigan in the east. This capacity—enough to power 17 million homes—constitutes an investment of over $30 billion in the area's economy.

Wind now supplies as much as 25 percent of the power demand in Iowa and South Dakota. In fact, the five states with the highest wind market share are in the Midwest, with North Dakota, Minnesota, and Kansas all exceeding 11 percent.

This number keeps growing. MidAmerican Energy, owned in part by billionaire Warren Buffett, recently announced plans to add 1,000 MW of new wind power in Iowa, raising the share of wind energy in the company's portfolio to 39 percent. This $1.9 billion outlay "will be the largest economic development investment in the history of the state," according to Governor Terry Branstad. "As wind energy goes, so does Iowa's economy."

## OHIO'S WIND POWER SUPPLY CHAIN

In Ohio alone, almost 700 firms—including machine shops, foundries, and gear makers—manufacture parts and equipment for wind energy.




ACTIVE OR EMERGING COMPANIES IN THE OHIO WIND SUPPLY CHAIN

| | |
|---|---|
| Auxiliary | 29 |
| Bearings | 6 |
| Composites | 27 |
| Control systems | 8 |
| Electrical/electronics | 22 |
| Fabrication | 162 |
| Fasteners | 11 |
| Forge | 13 |
| Foundry | 19 |
| Gears | 6 |
| Hydraulics | 16 |
| Machine shops | 204 |
| Manufacturing services | 59 |
| Metal coatings | 25 |
| Power electronics | 6 |
| Sensors | 5 |
| Other services* | 47 |
| Total | 665 |

*Includes engineering, legal, design, communications, and other support services

*At right: Wind industry jobs include project planning, siting, development, construction, manufacturing, and operations.*


30
BILLION DOLLARS INVESTED
IN MIDWEST WIND CAPACITY

Companies have invested nearly $10 billion in Iowa wind, paying $16 million per year to landowners and providing the equivalent of more than 6,000 full-time jobs. At the end of 2012, the U.S. wind industry supported 80,700 such jobs, 30,000 of which were in the Midwest.[1] In fact, Iowa, Illinois, and Kansas are among the top five states in terms of wind-related employment.

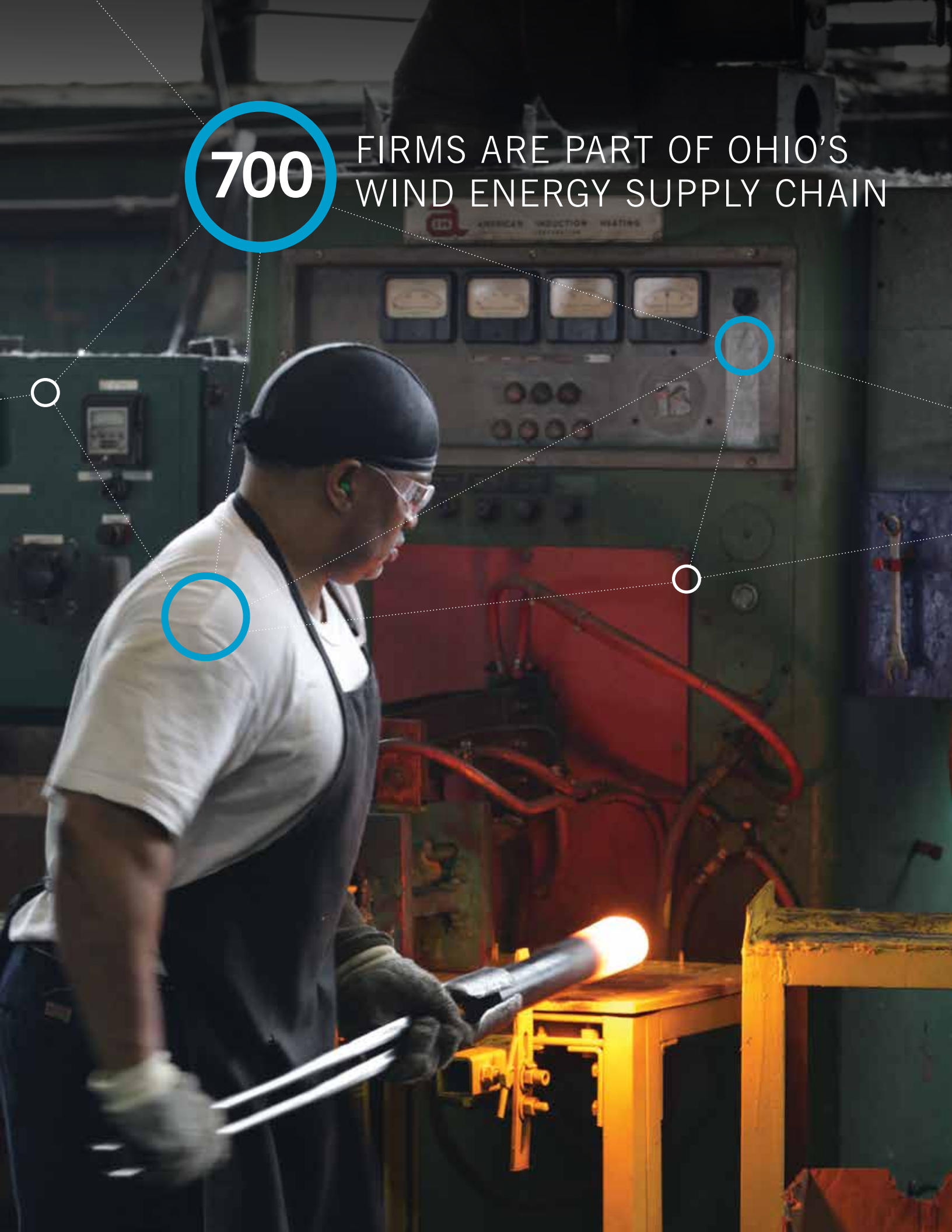
The massive deployment of wind has spurred a vibrant manufacturing sector throughout the component supply chain. Building on a traditional strength of the Great Lakes region, small manufacturers of mechanical equipment have retooled to supply wind components, from ball bearings to cables and towers. The Ohio Department of Development has cataloged over 600 firms in the wind energy supply chain, including machine shops, foundries, and gear makers. “Ohio’s long history of manufacturing excellence and the continued transformation of its industrial base,” the agency writes, “make Ohio the ideal location for global leadership in the wind energy industry.”

**800**

The wind power revolution has reinvigorated old-line manufacturing in the Midwest. Brad Foote Gear Works, in business since 1924, makes industrial-scale gears for mining, oil and gas, and now wind power. The company merged with a maker of wind turbine towers to create Broadwind Energy, the largest supplier of gears and towers in North America, capable of outfitting 5,000 MW of new turbines per year. It employs 800 people at locations in Illinois, Wisconsin, South Dakota, and Texas.

Notably, this growth has happened without a significant net cost to the region. In Iowa, wind went from zero to filling a quarter of demand, yet MidAmerican Energy, the state’s largest utility, hasn’t increased rates in 18 years. The next build-out of wind power, the company says, will help reduce rates by $10 million per year by 2017.[2] This is reinforced by reports from the Michigan utility commission, which determined last year that new wind power is one-third cheaper than new coal.[3] And more wind means more savings. Synapse Energy Economics analyzed the effect of adding an additional 20,000–50,000 MW of wind in the Midwest and concluded that the biggest increase would create the greatest net savings—as much as $4 billion a year.[4]

*At right: Cardinal Fastener in Ohio manufacturers bolts for wind turbines, making it part of the Midwest’s renewable-energy supply chain.*


700
FIRMS ARE PART OF OHIO'S
WIND ENERGY SUPPLY CHAIN

# THE PROMISE OF ELECTRIC VEHICLES

The Midwest is also playing a major role in electrifying transportation. American automakers are introducing myriad new technologies, from "mild" hybrids to plug-in hybrids and fully electric vehicles. Fourteen plug-in electric cars are already available, selling at double the rate of hybrids when they were first introduced.

These innovations are driven by policy. Regulations finalized by the Obama administration since 2010—equivalent to a fuel efficiency standard of 54.5 miles per gallon by 2025—will save consumers $1.7 trillion at the gas pump and reduce America's dependence on oil by more than 2 million barrels per day by 2025. It will also cut 6 billion metric tons of greenhouse gases over the lifetimes of the vehicles sold in model years 2012-2025.

As the auto industry retools for the 21st century, jobs are being created all along the supply chain. Since 2008, investments of more than $5.7 billion in advanced vehicle manufacturing have been announced. Ford has committed $1 billion to switch its Michigan assembly plant from SUV production to the Focus, the Focus Electric, and the C-Max Hybrid and Energi.

GM has bet heavily on the Chevy Volt, investing more than $700 million at eight manufacturing plants. In Brownstown Township, Michigan, for example, GM spent $43 million to convert an empty plant into a landfill-free assembly line for lithium-ion battery packs. Congressman John D. Dingell—formerly a fierce opponent of fuel-economy standards—said, "Making these vehicles in America is an all-around win, not only for the economy, but also for the environment, for the American auto worker, American families, and American industry."

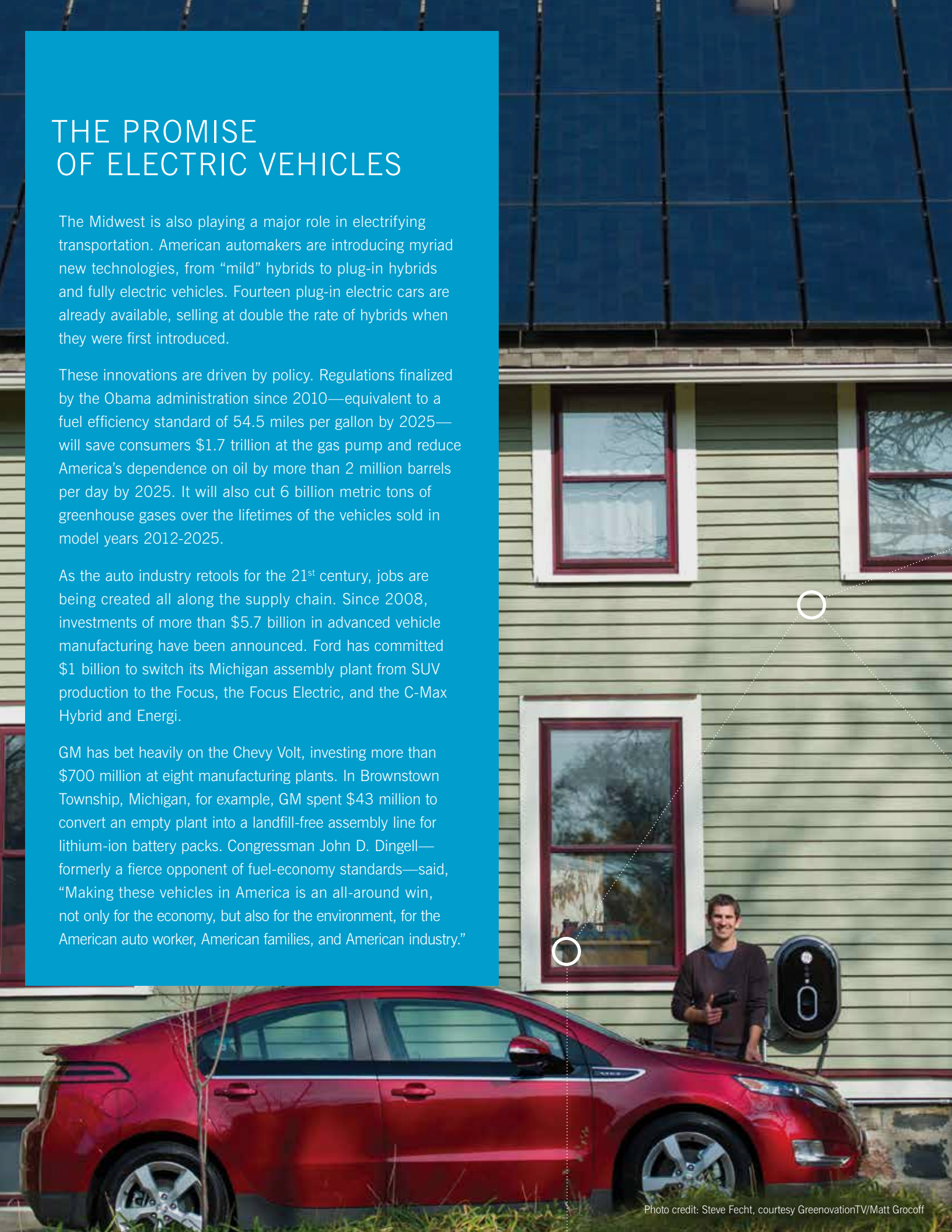


Photo credit: Steve Fecht, courtesy GreenovationTV/Matt Grocoff

## EFFECTIVE POLICY PAVES THE WAY

Strong energy policy has triggered and sustained this growth. Every state in the region has a renewable electricity standard (RES), which requires or encourages utility companies to produce a portion of their electricity from solar, wind, and other renewable resources. All but one were adopted with bipartisan support through legislation; Missouri's RES was approved by voters.

The Governors' Wind Energy Coalition, a bipartisan group of 23 governors working to promote wind power, has described the RES as "a market based policy, using competition to drive down technology prices and move technologies to maturity—all at the lowest cost. It motivates action by the private sector, by creating a market opportunity for project developers to pursue. The government's role is to set the standard that will be met by utilities and project developers."

More than 35 U.S. states have used a mandatory or voluntary RES to achieve a variety of policy goals:

- Diversify the energy supply, stabilizing prices and reducing risk to consumers
- Increase domestic U.S. energy production and develop production in states that lack fossil fuel resources
- Create jobs and economic development opportunities in manufacturing and deployment, especially in hard-hit rural areas
- Reduce air pollution and other environmental impacts

An RES sets a long-term direction for energy development, giving guidance to regulators, utilities, power plant developers, investors, manufacturers, and even training programs. The Ohio Department of Development acknowledges the benefits of these policies when it touts the state's "easy access to profitable markets," and its "proximity to 46,104 MW of new renewable energy capacity required by [RESs] in neighboring states," including 4,457 MW in the Ohio standard.[5]

Policy also enables long-term planning for infrastructure. The Midwestern grid operator, known as the Midcontinent Independent System Operator, approved $5.2 billion in new transmission projects in 2011, specifically to enable the fulfillment of RES targets in the region. This marriage of state energy policy with regional transmission planning was a breakthrough and became the basis for a national order from the Federal Energy Regulatory Commission, known as Order 1000. The order establishes regional utility planning to help integrate renewable energy into the system, expand the grid, and incorporate public policy goals such as RES laws.

The prosperity created by the burgeoning clean energy industry, in rural income and urban manufacturing jobs, has built support across the political spectrum, breaking down partisan divides related to energy and climate. Karl Rove, former deputy chief of staff and senior adviser to President George W. Bush, told a wind industry audience in 2012, "We need conservative Republicans who can say, 'This means jobs to my district,' ... and we need Democrats to say, 'This is a way to expand the range of options that we have in this country

*At left: Solar panels charge a Chevy Volt hybrid-electric car at this net-zero-energy home in Michigan.*

for energy.'"[6] According to the American Wind Energy Association, 76 percent of the members of Congress currently have operating wind projects, wind-related manufacturing facilities, or both in their districts.

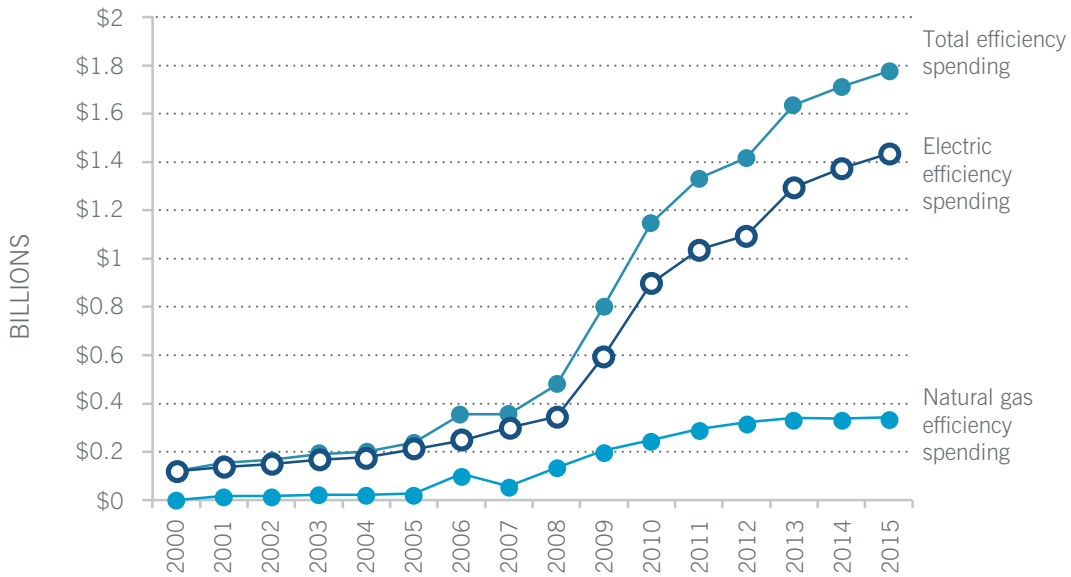
The Midwest is a national power base for this support. Some of the strongest national champions for renewable energy are from the Midwest, such as Senator Chuck Grassley of Iowa and Governor Sam Brownback of Kansas, both Republicans.

## HOW EFFICIENCY AND CLEAN ENERGY BUILD A RELIABLE FUTURE

Wind power isn't the only success story in the Midwest. Investments in energy efficiency are also soaring in the region. The Midwest Energy Efficiency Alliance projects $1.8 billion in annual funding for electric and natural-gas efficiency programs in 2015—a 15-fold increase

### MIDWEST UTILITY SPENDING ON EFFICIENCY PROGRAMS: ACTUAL AND PLANNED

Energy efficiency resource standards have helped to boost utilities' spending on efficiency programs in the Midwest, reducing energy use and saving consumers money.




over 2000 levels. State energy efficiency resource standards (EERS), comparable to an RES, have helped boost these improvements. EERS set long-term energy savings goals, creating long-term markets for companies that offer energy efficiency services. Seven Midwestern states have adopted EERS laws, out of 25 nationally.

*At right: Weatherizing homes and commercial buildings saves energy and money; state standards can promote such improvements.*

**1.8** BILLION DOLLARS WILL BE INVESTED ANNUALLY IN MIDWEST EFFICIENCY IMPROVEMENTS

Photo credit: Mark H. Nichols via Flickr Creative Commons

The region's power system is also undergoing a rapid transition away from coal. In the 12 Midwestern states, there are 499 coal units with a total capacity of 111,000 MW—and an average age of 46 years. As aging coal plants face new competition from cheaper alternatives like energy efficiency, wind, and natural gas—plus stricter environmental regulations—their owners are deciding the best option is to shut them down. Utilities have announced as much as 58,000 MW of coal retirements over the next three years, with potentially 18,000 MW of those in the Midwest.

Meanwhile, natural gas is growing rapidly. Hydraulic fracturing, known as "fracking," has driven down gas prices 60 percent since 2008, making natural gas power cheaper than coal. The gas revolution has been a mixed blessing for the cleanest power sources: While low-cost gas has helped push coal out of the market, it has made efficiency and renewables less competitive in many places. In Michigan, however, new wind energy costs 25 percent less than new natural-gas power generation.[7] And Michigan Public Service Commission Chair John Quackenbush and Energy Office Director Steve Bakkal say the state's utility companies should be able to triple Michigan's renewable energy use—to 30 percent—by 2035 with current resources.[8] Moreover, significant questions remain about the environmental impacts of fracking, such as water pollution and methane leakage.

All of these factors are contributing to a future power system that will be more diverse and less dependent on a single fuel. It will be more flexible, more reliable, and more efficient, saving consumers money, making industry more competitive, and reducing environmental damage.

Photo credit: *The Blade*/Dave Zapotosky

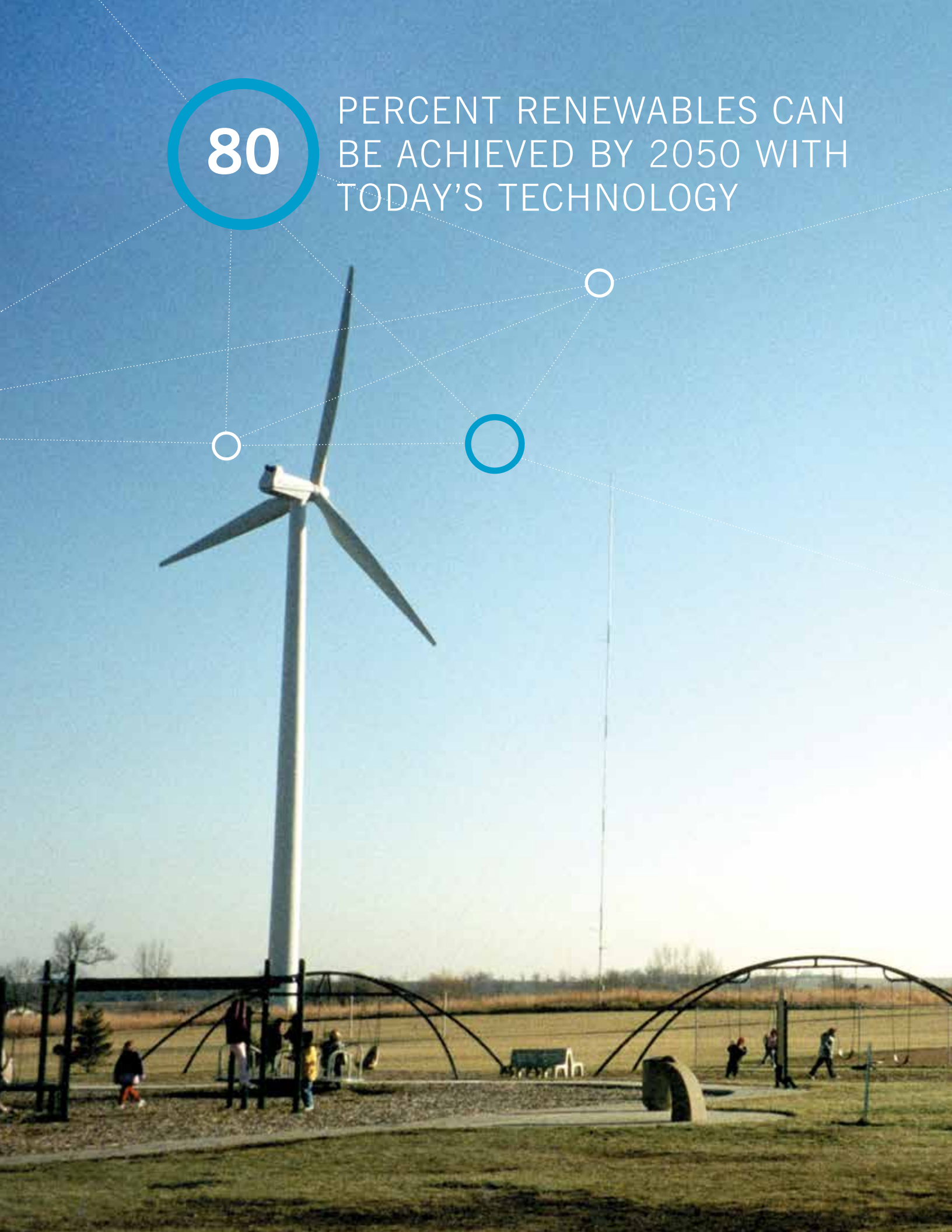
**500**

Energy efficiency policies also create jobs. Johnson Controls, headquartered in Milwaukee, Wisconsin, was based on efficiency: Founder Warren Johnson invented the thermostat in 1885. The company now provides energy efficiency services, building and refrigeration controls, and automobile components and advanced batteries, and has expanded to 500 branch offices in 150 countries. Last year Johnson Controls' building efficiency services earned revenues of $14.7 billion.

Every new wind turbine manufactured and every efficiency program successfully completed helps to build the political base for new energy as part of a continuing cycle of progress: Political support leads to energy policy, policy spurs the growth of industry, industry creates jobs and prosperity, and prosperity generates still more political support.

*At right: Spirit Lake Community Schools is the first wind-powered school district in Iowa.*

# 80 PERCENT RENEWABLES CAN BE ACHIEVED BY 2050 WITH TODAY'S TECHNOLOGY



## THE MIDWEST: LEADING THE NATION

Just as 1993's *Powering the Midwest* presaged the significant renewable energy generation of today, the National Renewable Energy Lab has described a future that takes clean energy to the next level. The *Renewable Electricity Futures* study lays out a number of scenarios in which the U.S. grid would be powered by up to 90 percent renewables by 2050. In a central 80 percent scenario, Midwestern states account for 8 of the top 10 spots for wind energy production, and 9 of the top 10 for biomass power.

But more must be done to realize this vision. The Energy Foundation is supporting a project called America's Power Plan, which taps over 100 experts to develop a policy roadmap for a clean power system.

America's Power Plan recommends that the U.S.:

- Develop new business models for utilities that reward renewables, efficiency, and innovation.
- Refine the rules for regional electricity markets to reward greater operational flexibility, allowing new technologies to blossom.
- Provide stable policies to expand energy efficiency and renewable energy markets. Financial policies must be predictable and affordable for public budgets and efficient for investors.
- Encourage customers who want to generate their own clean energy and compensate them fairly for it.
- Allow all options to compete to provide clean, affordable electricity services, including central and distributed generation, improved transmission, efficiency, and demand response services.
- Engage stakeholders early and often; be transparent and respect landowner rights and land conservation values.

"The moment is approaching when our nation must decide how it's going to power the future," says Kansas Governor Sam Brownback. "The importance of renewable energy to the nation becomes clear … as we examine the importance of true energy independence and security more closely, and as we continue our work on rebuilding the economy and job creation."

"We, as a nation," Brownback says, "have been waiting for the moment when a true balance between environmental concerns, economic benefits and energy needs is in view. I believe that moment has arrived."[9]

The Midwest is starting to achieve a vision of clean energy security: a domestic energy supply, local economic development, and low carbon emissions. The region can lead the transition to smart energy policies that benefit people, businesses, and communities across the nation.

*At right: Tim Hemphill—a lifelong corn, soybean, and hog farmer in Iowa—leases a portion of his land to a wind energy project.*

*Endnotes are on page 21.*

# 16 MILLION DOLLARS PAID ANNUALLY TO IOWA LANDOWNERS BY WIND COMPANIES


Photo credit: American Wind Energy Association

# PROGRAMS AND GRANTS

The Energy Foundation is a public charity that awards grants and takes direct initiatives to advance its strategic mission. In the U.S. we work in the power, transportation, buildings, and climate sectors. To help China meet its energy challenges, the foundation administers Energy Foundation China, which supports policy efforts in transportation, buildings, industry, electric utilities, renewable energy, low-carbon development, environmental management, and sustainable cities. To learn more about our programs, visit **ef.org/programs/**.

In 2012, the Energy Foundation made 578 grants to 346 groups, totaling $76,247,569. Grants were awarded to specific programs as follows:

| | GRANTS | GROUPS | MILLION |
|---|---|---|---|
| U.S. POWER | 167 | 121 | $20.5 |
| U.S. TRANSPORTATION | 39 | 33 | $4.7 |
| U.S. CLIMATE | 47 | 41 | $4.5 |
| U.S. BUILDINGS | 37 | 31 | $3.5 |
| CHINA INDUSTRY | 28 | 24 | $6.3 |

| | GRANTS | GROUPS | MILLION |
|---|---|---|---|
| CHINA SUSTAINABLE CITIES | 28 | 22 | $4.8 |
| CHINA ELECTRIC UTILITIES | 30 | 27 | $4.5 |
| CHINA BUILDINGS | 49 | 28 | $4.1 |
| CHINA LOW-CARBON DEVELOPMENT | 23 | 18 | $3.1 |
| CHINA ENVIRONMENTAL MANAGEMENT | 28 | 27 | $3.1 |
| CHINA RENEWABLE ENERGY | 19 | 11 | $3.0 |
| CHINA TRANSPORTATION | 24 | 17 | $2.6 |

A complete list of grants for each year can be found in the Form 990s on our website. The foundation's funding priorities are highly specialized. Grant applicants should carefully review the guidelines on our website. To learn more about our grantmaking, visit **ef.org/grants/**.

# FINANCIAL STATEMENTS

## STATEMENTS OF FINANCIAL POSITION

| DECEMBER 31, | 2012 | 2011 |
|---|---|---|
| ASSETS | | |
| Cash and cash equivalents | $ 17,517,297 | $ 16,954,170 |
| Contributions receivable, net | 11,274,843 | 11,298,781 |
| Prepaid expenses and other assets | 1,182,472 | 781,396 |
| Property and equipment: | | |
| Office furniture and equipment | 1,511,933 | 1,618,851 |
| Leasehold improvements | 3,851,355 | 3,879,690 |
| | 5,363,288 | 5,498,541 |
| Less accumulated depreciation and amortization | (3,125,167) | (2,617,208) |
| Property and equipment, net | 2,238,121 | 2,881,333 |
| TOTAL ASSETS | **$ 32,212,733** | **$ 31,915,680** |
| LIABILITIES AND NET ASSETS | | |
| Liabilities: | | |
| Grants payable | $ 4,482,261 | $ 3,366,010 |
| Accounts payable and accrued expenses | 1,550,021 | 1,226,121 |
| Deferred compensation | 131,493 | 0 |
| Deferred rent-improvement allowance, net | 667,458 | 788,814 |
| Deferred rent liability | 291,632 | 267,305 |
| TOTAL LIABILITIES | 7,122,865 | 5,648,250 |
| Net assets: | | |
| Unrestricted | 10,776,162 | 7,335,937 |
| Temporarily restricted | 14,313,706 | 18,931,493 |
| TOTAL NET ASSETS | 25,089,868 | 26,267,430 |
| TOTAL LIABILITIES AND NET ASSETS | **$ 32,212,733** | **$ 31,915,680** |

This condensed financial information was extracted from the Energy Foundation's audited financial statements, on which an independent public accounting firm expressed an unmodified opinion.

## STATEMENTS OF ACTIVITIES AND CHANGES IN NET ASSETS

| YEARS ENDED DECEMBER 31, | 2012 | 2011 |
|---|---|---|
| **CHANGES IN UNRESTRICTED NET ASSETS** | | |
| Support and revenues: | | |
| Contributions | $ 90,375,000 | $ 80,049,391 |
| Interest income | 41,396 | 27,923 |
| Net assets released from restrictions | 17,363,212 | 16,535,202 |
| | 107,779,608 | 96,612,516 |
| Expenses: | | |
| Grants | 76,247,569 | 76,201,513 |
| Foundation-initiated projects | 17,367,253 | 16,638,024 |
| General and administrative | 10,724,561 | 10,263,954 |
| | 104,339,383 | 103,103,491 |
| Increase (decrease) in unrestricted net assets | 3,440,225 | (6,490,975) |
| **CHANGES IN TEMPORARILY RESTRICTED NET ASSETS** | | |
| Support and revenues: | | |
| Contributions | 12,745,425 | 16,431,030 |
| Net assets released from restrictions | (17,363,212) | (16,535,202) |
| Increase (decrease) in temporarily restricted net assets | (4,617,787) | (104,172) |
| **CHANGE IN NET ASSETS** | (1,177,562) | (6,595,147) |
| **NET ASSETS, BEGINNING OF YEAR** | 26,267,430 | 32,862,577 |
| **NET ASSETS, END OF YEAR** | **$ 25,089,868** | **$ 26,267,430** |

## STATEMENTS OF CASH FLOWS

| YEARS ENDED DECEMBER 31, | 2012 | 2011 |
|---|---|---|
| **CASH FLOWS FROM OPERATING ACTIVITIES:** | | |
| Change in net assets | $ (1,177,562) | $ (6,595,147) |
| Adjustments to reconcile change in net assets to net cash used by operating activities: | | |
| Depreciation and amortization | 665,499 | 676,524 |
| Granted equipment | 98,281 | 0 |
| Improvement allowance amortization | (121,356) | (121,356) |
| Changes in assets and liabilities: | | |
| Contributions receivable | 23,938 | 5,319,270 |
| Prepaid expenses and other assets | (401,076) | 551,804 |
| Grants payable | 1,116,251 | (1,711,151) |
| Accounts payable and accrued expenses | 323,900 | 113,211 |
| Deferred compensation | 131,493 | 0 |
| Deferred rent liability | 24,327 | 47,145 |
| Net cash provided (used) by operating activities | 683,695 | (1,719,700) |
| **CASH FLOWS FROM INVESTING ACTIVITIES:** | | |
| Purchases of property and equipment | (120,568) | (247,608) |
| **NET CHANGE IN CASH AND CASH EQUIVALENTS** | 563,127 | (1,967,308) |
| **CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR** | 16,954,170 | 18,921,478 |
| **CASH AND CASH EQUIVALENTS, END OF YEAR** | **$ 17,517,297** | **$ 16,954,170** |

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Visit our new website to find out more about our programs, grantmaking, grantees, board members, and staff at **www.ef.org**.



ENDNOTES

1. Environmental and Energy Study Institute, *Jobs in Renewable Energy and Energy Efficiency*, June 2013.

2. "MidAmerican Energy Company Announces Details of 1,050 Megawatt Wind Expansion," August 12, 2013, *http://www.midamericanenergy.com/wind_news.aspx*.

3. Michigan Public Service Commission, Department of Licensing and Regulatory Affairs, *Report on the Implementation of the P.A. 295 Renewable Energy Standard and the Cost-effectiveness of the Energy Standards*, February 15, 2013.

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8. Michigan Public Service Commission and Michigan Energy Office, *Readying Michigan to Make Good Energy Decisions: Renewable Energy*, September 20, 2013.

9. Governor Sam Brownback, "Wind Offers Clean Path to Growth," *The Wichita Eagle*, September 11, 2011, *http://www.kansas.com/2011/09/11/2011116/gov-sam-brownback-wind-offers.html*.


DESIGN Karen Capraro, San Francisco PRINTING 100% post-consumer recycled paper with soy-based inks.

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