








Ohio's Clean Energy Economy: Key Facts and Resources

E2's state profile demonstrates how energy efficiency, renewable electricity and clean fuels are creating jobs and spurring economic growth. We also provide a list of local government resources and contacts working to grow the state's clean economy.

EMPLOYMENT

In 2012, businesses in Ohio announced nearly 2,000 clean energy jobs, including:

-  20 in Energy Efficiency
-  967 in Wind Energy
-  391 in Solar Energy
-  250 in Clean Vehicle Manufacturing
-  275 in Mass Transit¹

OTHER CLEAN JOB RESOURCES

- Brookings provides a two page fact sheet detailing clean job growth and wages in Ohio: [Sizing the Clean Economy in Ohio](#)
- The Ohio Environmental Council posts green jobs in the state: [OEC: Careers and Internships](#)

¹ From E2's Clean Energy Jobs Announced database, available at www.cleanenergyworksforus.org. E2 collects information on job announcements by tracking a wide variety of national, state and local media.

GENERATION

The Cheapest, Cleanest Form of Energy: None at All

The American Council for an Energy-Efficient Economy (ACEEE) estimates Ohio's investments in energy efficiency in 2011 saved the state 1,880,629 megawatt hours (MWh) – the equivalent of meeting the annual electricity needs of nearly 170,000 Ohio households.² At the average price of electricity \$91 per MWh, Ohio saved more than \$170,761,000 through energy efficiency programs.³

Existing Renewable Generation: What does Ohio have today?

U.S. Department of Energy: Annual Renewable Generation (MWh)⁴

	2010	2011	2012
Wind	13,000	198,000	988,000
Solar	13,000	15,000	38,000
Geothermal	N/A	N/A	N/A
Biomass	276,000	332,000	302,000
Total:	302,000	545,000	*1,328,000
<i>All Energy Sectors:</i>	143,598,000	135,586,000	129,748,000

In 2012, Ohio generated enough renewable energy to power over **120,000 homes.*

Planned Renewable Generation: What projects are in development in Ohio?

SNL Financial: Current Renewable Energy Projects in Place (MW)⁵

	Announced	Under Development	Under Construction	Total Projects in Place
Wind	1,071.2	1,923		1,071.2
Solar		54.9	3	57.9
Biomass			2.8	2.8
Total Renewables	1,071.2	1,977.9	5.8	1,131.9

²American Council for an Energy-Efficiency Economy "The 2013 State Energy Efficiency Scorecard" November 2013. Online. Accessible: <http://aceee.org/research-report/e13k>

³Energy Information Administration "How Much Electricity Does an American Home Use?" March 2013. Online. Accessible: <http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3>

⁴Energy Information Administration "Electricity Data Browser" August 2013. Online. Accessible: <http://www.eia.gov/electricity/data/browser/>

⁵SNL Financial provides business intelligence services such as data, analysis, and news. This information was sourced from a private subscription to SNL's Energy Unlimited Package.

Technical Potential: What could Ohio generate in the future?

The National Renewable Energy Laboratory (NREL) examined each state's geographic and agricultural resources to determine the maximum amount of renewable energy each state could feasibly produce.

NREL: Technical Renewable Potential in Ohio (MWh)⁶

Onshore Wind	129,143,000
Offshore Wind	170,561,000
Utility Scale Photovoltaic	3,712,677,000
Rooftop Photovoltaic	30,064,000
Concentrated Solar Power	0
Geothermal	495,922,000
Biopower (Solid and Gas)	14,372,000
Total	4,552,740,000*

*The net technical potential of clean, renewable energy can meet **35 times** Ohio's current electricity needs.

For more information on existing and planned renewable energy projects, visit NRDC's [renewable energy map](#), which shows specific developments and resource potential in each state.

For a full assessment of the energy sector in Ohio, including a map of resource potential, and energy projects and infrastructure, categorized by county and congressional district, please visit the Energy Information Administration: [Ohio State Profile](#)



⁶ National Renewable Energy Laboratory, "U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis" July 2012. Online. Accessible: <http://www.nrel.gov/docs/fy12osti/51946.pdf>

ECONOMY

CLEAN MANUFACTURING CAPACITY

- ELPC issued a report on the potential of the [Midwest High-Speed Rail Supply Chain](#), which included key contributions from Ohio.
- GLWN, a network of industry manufactures, provides a national map of suppliers in the wind industry: [Wind Industry Supply Chain Map](#)

STATE POLICY AND INVESTMENT

CleanEdge Ranking	N/A	ACEEE: Energy Efficiency Scorecard Ranking	18 th
Ernst and Young: State Energy Attractiveness	17 th	Freeing the Grid	A (Net Metering) C (Interconnection Standards)
Energy Efficiency Resource Standard	Yes	Renewable Energy Standard	12.5% by 2024

- The Database of State Renewable Incentives for Renewable Energy, DSIRE, details all state and municipal renewable energy policies for all fifty states: [DSIRE: Renewable Electricity and Energy Efficiency Incentives and Policies](#)
- The U.S. Department of Energy lists state policy supporting alternative fuels and energy efficient transportation: [DOE: Clean Fuel Incentives and Regulatory Policy](#)
- The Advanced Energy Economy Institute’s [Public Utility Commission Portal](#) provides a helpful overview and links to the key regional and state energy and utility policymaking institutions in Ohio.

FEDERAL POLICY AND INVESTMENT

Energy Type	2009 Federal Stimulus [Sec.1603]	USDA Grants	Loan Guarantees	Federal R&D Funding	Small Business Innovation Research
Wind	\$237,066,334	\$2,211,678	-	\$1,832,400	-
Solar	\$43,892,059	\$735,541	-	\$1,275,000	-
Geothermal	\$124,888	\$49,165	-	-	-
Biomass	-	\$22,587,408	-	-	-
Fuels	\$1,741,148	-	-	-	-

Energy Efficiency	-	\$3,848,198	-	-	-

Section 1603 of the 2009 American Recovery and Reinvestment Act (ARRA- commonly known as the Stimulus) offered payments in lieu of tax credits for the installation or construction of renewable energy systems. For the full list of projects awarded payments, click [here](#).

With the goal of effectively using agricultural resources to generate energy, the U.S. Department of Agriculture issues grants to American farmers to install renewable energy systems and efficient technology. For a list of grants, ranging from anaerobic digester facilities to photovoltaic systems, please click [here](#).

The Department of Energy’s Loan Programs Office provides loan guarantees to select businesses to accelerate the deployment of advanced clean energy technology. For a detailed list of loan guarantees recipients, please click [here](#).

To learn more about the federal government funds clean energy research, please visit of the [Office of Energy Efficiency and Renewable Technology](#)

For further information on Small Business Innovation Research Grant awardees, please visit the [Department of Energy’s Office of Science](#).



RESOURCES AND ADVOCACY

State Organizations

[Clean Fuels Ohio](#)

Clean Fuels Ohio is a statewide non-profit organization dedicated to promoting the use of cleaner, domestic fuels and efficient vehicles to the transportation industry, government, and the general public

[Green Energy Ohio](#)

Green Energy Ohio promotes renewable energy (solar, wind, biomass & low-impact hydro) statewide by acting as a clearinghouse to inform Ohioans on sustainable energy.

[Ohioans for Affordable Clean Energy](#)

Ohioans for Clean Affordable Energy (OCAE) is a statewide consumer coalition comprised of individuals and organizations working to promote the development and adoption of clean energy and energy efficiency to keep rates affordable and improve the environment for all residents.

[Eco-USA: List of Ohio's Environmental Organizations](#)

Eco-USA is a database of state environmental organizations.

National and Federal Organizations

[EERE – Clean Energy in My State](#)

Users can explore the Department of Energy's statistics and policy information related to renewables and energy efficiency.

[National Governor's Association: Profile of Your State's Green Economy](#)

NGA seeks to provide a detailed, empirical account of each state's existing assets across multiple green sectors and serve as a foundation for identifying future growth areas and related needs.

[Advanced Energy by State \(AEE\)](#)

AEE is a national association of businesses and business leaders who are making the global energy system more secure, clean, and affordable.

[American Council on Renewable Energy: Ohio Fact Sheet](#)

ACORE summarizes Ohio's solar and wind irradiance, as well as its current policies in place to promote renewable energy.

[American Wind Energy Association: Wind Energy in Your State](#)

The American Wind Energy Association's summary of jobs directly supported by the wind industry in Ohio.

[Solar Energy Industry Association : Policy in Your State](#)

SEIA compares Ohio's solar capacity and potential to other states, and details the impact of solar energy throughout the state.