

Renewable Energy in Ohio

Summary

Ohio is a key player in the Midwest wind supply chain due to its proximity to large wind energy markets, but the state's production of wind energy has not reached the scale of some of its neighbors. The state is one of the nation's top ten ethanol producers and has the largest amount of installed solar energy capacity in the Midwest. With significant renewable energy resources from wind power, solar power, and bioenergy, as well as a multifaceted renewable energy policy portfolio, the state has tremendous potential to expand its emerging renewable energy markets.

Installed Renewable Energy Capacity, 2012

Wind Power	428 MW	Marine Power	0 MW
Solar Photovoltaic	79.9 MW	Biomass & Waste	185.8 MW
Solar Thermal Electric	0 MW	Ethanol	538 mGy
Geothermal Power	0 MW	Biodiesel	132 mGy
Hydropower	128.6 MW	Totals	822 MW; 670 mGy

Sources: See User's Guide for details

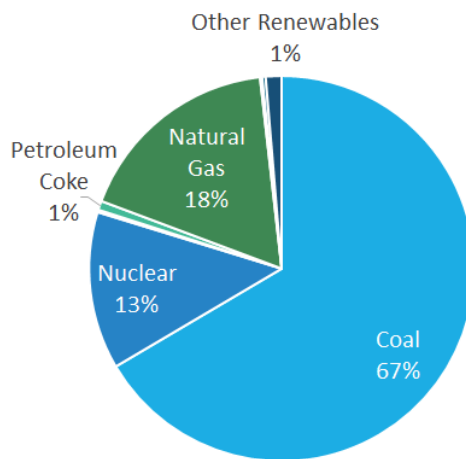
Market Spotlight

- ▶ Solar installations are on the rise in Ohio, with 25 MW of new capacity added in 2012. In April 2013, a 5 MW solar PV plant came online in Mercer County creating 108 construction jobs.
- ▶ A number of biogas plants throughout the state capture methane from landfills to produce energy. A new biogas facility at the Mahoning Landfill came online in 2013, which has a capacity of 4.8 MW.
- ▶ The U.S. Department of Agriculture awarded small rural and agricultural businesses in Ohio more than \$1.1 million in grants in August 2013 to help reduce the use of conventional energy and increase the use of renewable energy.
- ▶ Ohio State University researchers are evaluating the use of flax and camelina for biofuel, to help diversify Ohio farms and boost their sustainability.

Economic Development

Employment	2011	
Green Goods & Services Jobs	137,143	
Investment (Grossed-up)	2011	2012
Asset Finance	\$194.6m	\$71.4m
Venture Capital & Private Equity	\$6.1m	\$14.9m

Sources: Bureau of Labor Statistics (BLS); Bloomberg New Energy Finance (BNEF). See User's Guide for details.



Electricity Generation, 2012 (EIA)

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State Policy

Alternative Energy Portfolio Standard

- ▶ 12.5% by 2024 (renewable energy), 12.5% by 2025 (advanced energy)
- ▶ Investor-owned utilities (IOUs) and retail electric suppliers (representing 88.6% of state's electric load)
- ▶ Solar energy must account for 0.5% of the total electricity supply by 2024 (part of overall renewable energy requirement)
- ▶ Renewable energy requirement includes certain cogeneration and waste heat recovery system technologies as well as distributed generation
- ▶ Penalties imposed if standard not met
- ▶ Renewable energy credits (RECs) and solar RECs may be used to meet the standard

Net Metering

- ▶ IOUs
- ▶ Net excess generation credited to customer's next bill at unbundled generation rate; customer may be paid for excess credit at end of 12 months

Interconnection Standards

- ▶ IOUs
- ▶ System capacity limit of 20 MW

Tax Incentives

Energy Conversion and Thermal Efficiency Sales and Use Tax Exemption:

- ▶ For certain tangible personal property used in energy conversion, solid waste energy conversion, or thermal efficiency improvement facilities

Qualified Energy Property Tax Exemption:

- ▶ Qualified energy projects over 250 kW are subject to a payment in lieu of personal property taxes and real property taxes
- ▶ Qualified energy projects 250 kW or less are exempt from public utility tangible personal property taxes and real property taxes and are not subject to an extra payment in lieu of the taxes

Air Improvement Tax Incentives:

- ▶ May include a full tangible personal property tax exemption; real property tax exemption; corporate franchise tax reduction; and/or sales and use exemption
- ▶ Qualifying projects include renewable energy production, including biofuel

Ethanol Production Investment Tax Credit:

- ▶ Equal to 50% of an investment in a certified ethanol production plant against the state corporation franchise tax and income taxes, up to \$5,000 per taxpayer per plant

Loans

Energy Loan Fund:

- ▶ Small businesses, manufacturers, nonprofits, and public entities
- ▶ Interest rate equal to or less than market rate; \$250 application fee; 1% processing and commitment fee; 0.25% annual servicing fee
- ▶ Projects must reduce energy consumption by 15% and result in a return on investment in 15 years or less

Energy Conservation for Ohioans:

- ▶ Reduced rate financing for energy efficiency and renewable energy home upgrades
- ▶ 3% loan rate reduction through participating banks
- ▶ Maximum loan rate reduction of \$50,000 and for seven years of bank loan

More Info

- ▶ DSIRE Database: www.dsireusa.org/incentives/index.cfm?state=OH
- ▶ Public Utilities Commission (RPS): www.puco.ohio.gov/puco/index.cfm/industry-information/industry-topics/ohioe28099s-renewable-and-advanced-energy-portfolio-standard
- ▶ Development Services Agency (Energy): www.development.ohio.gov/bs/bs_renewenergy.htm
- ▶ Air Quality Development Authority (Energy): www.ohioairquality.org/energy