

Ohio Biomass Energy Program

Spring 2008

Promoting the development of renewable energy resources in Ohio, including wood and agricultural residues; ethanol and biodiesel biofuels; landfill gas to energy; and energy crops.

Ohio's New Law Sets Alternative Energy Standard

Gov. Strickland signed Substitute Senate Bill 221 into law on May 1, marking the one year anniversary of the date he outlined his "Energy, Jobs, and Progress Plan" to stabilize electricity prices, create jobs, and expand the green energy industry in Ohio.

The new law contains an alternative energy portfolio standard that requires that by 2025, 25 percent of electricity sold by Ohio's electric distribution utilities or electric services companies must be generated from alternative energy sources. At least half of this energy must come from renewable energy sources, such as solar, wind, biomass and hydro with a minimum of one-half percent coming from solar resources. One half of the renewable energy facilities must be located in Ohio.

In addition to the renewable sources requirement, the remainder of the alternative energy required to meet the standard may be generated from advanced energy resources, such as clean coal, nuclear, fuel cells, customer cogeneration, and solid waste.

The law sets annual benchmarks, or incremental percentage requirements for renewable energy, through 2025. Each utility and electric services company is subject to compliance payments if the annual benchmarks are not met. Utilities and electric services companies may purchase renewable energy credits to meet the renewable portion of the standard.

Other provisions of the bill include:

- ◆ 3 percent cap on costs associated with compliance with the alternative energy requirement
- ◆ Energy efficiency and peak demand reduction programs for electric distribution utilities
- ◆ Removal of the previous cap on net metering for customer generators
- ◆ Greenhouse gas emission reporting requirements and carbon dioxide control planning for utility generation facilities

In addition, the new law outlines a path for electric utilities to implement market-based pricing while still incorporating a system under which rates would be set by the Public Utilities Commission of Ohio (PUCO). Without this law, most electric utilities in Ohio would be able to charge market prices for power at the beginning of 2009.

With the signing of Sub. SB 221, the PUCO now begins the work of implementing this important legislation. More information regarding the law and the PUCO's role is available at www.PUCO.ohio.gov.

The Ohio Biomass Energy Program

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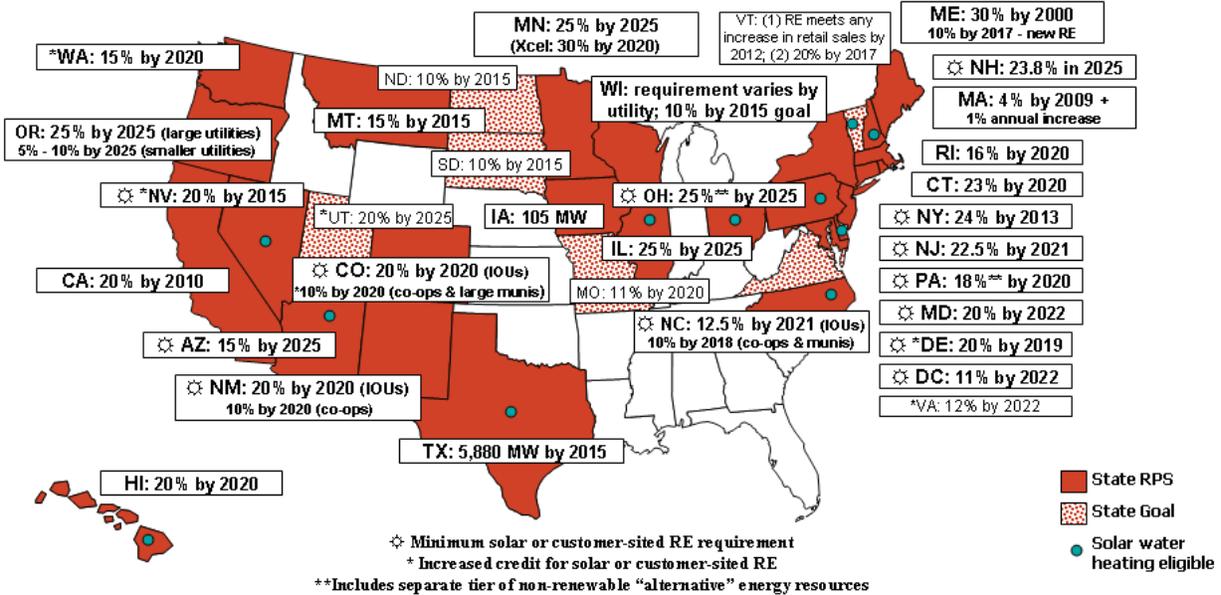


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- ◆ Overview of Ohio's Electric Generation Resources
- ◆ Save the Date: Upcoming Biomass Events

U. S. Energy Portfolio Standards

Ohio joins twenty-five states and the District of Columbia which have renewable or advanced energy portfolio standards. Vermont, Missouri, North Dakota, and Virginia have state goals.



Source: DSIRE, June 2008. <http://www.dsireusa.org>

Ohio's Electric Generation Providers

Ohio ranks fourth among states in the U.S. in total retail electric sales, and ranks sixth in net generation. As illustrated below, Ohio's electric distribution utilities (EDU's) continue to serve the majority of the state's electric load. Municipal utilities and rural cooperatives together serve approximately 11 percent of the state's electric demand.

| Provider Type | Sales | Share of Total |
|------------------------|---------|----------------|
| Investor-owned utility | 122,884 | 80.09% |
| Municipal | 9,879 | 6.44% |
| Cooperative | 7,496 | 4.89% |
| Other providers | 13,170 | 8.58% |

Source: Energy Information Administration State Electricity Profile, Table 9 (2006)

Each year, the PUCO requires that electric generation suppliers provide environmental disclosure labels which project the generation resource mix and environmental characteristics of the resources used. The table below shows the EDU projections for 2008.

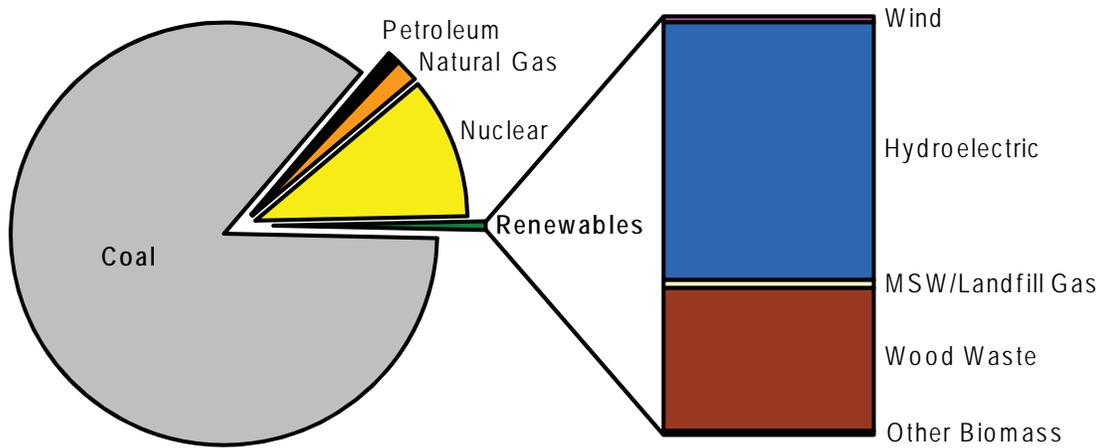
| Electric Utility | Coal | Nuclear | Hydroelectric | Natural Gas | Unknown Purchased |
|----------------------|------|---------|---------------|-------------|-------------------|
| AEP-Ohio | 86% | 12% | 1% | 1% | 0% |
| Dayton Power & Light | 90% | 0% | 0% | 0% | 9% |
| Duke Energy Ohio | 96% | 0% | 0% | 0% | 4% |
| First Energy | 56% | 35% | 1% | 0% | 8% |

Source: Environmental Disclosure labels, 2008

Ohio's Electric Generation Portfolio

Ohio's overall electric generation resource mix has historically been dominated by a reliance on coal-fired generation. The graph and table below highlight the significant role of coal-fired generation in Ohio's electricity portfolio, and the relatively minor contribution to date of renewable generation sources.

Ohio Electricity Generation by Energy Source, 2006



Ohio Electricity Generation by Energy Source, 2006 (Megawatt-hours)

| All Energy Sources | Electric Utilities | Independent Power Producers/CHP | TOTAL | Share of Total |
|-----------------------|--------------------|---------------------------------|-------------|----------------|
| Coal | 96,674,346 | 36,787,206 | 133,461,552 | 85.86% |
| Nuclear | - | 16,846,939 | 16,846,939 | 10.84% |
| Natural gas/other gas | 592,505 | 2,144,693 | 2,737,198 | 1.76% |
| Petroleum | 245,951 | 1,109,449 | 1,355,400 | 0.87% |
| Hydroelectric | 631,936 | - | 631,936 | 0.41% |
| Non-hydro renewables* | 14,401 | 384,494 | 398,895 | 0.26% |

*Includes wind, wood waste, municipal solid waste, landfill gas, and other biomass

- Data not available

Source: EIA State Electricity Profile, Table 5 (2006); EIA Renewable Energy Annual, Tables 1.18 & 1.19 (2006)

Snapshot of Renewable Energy Facilities in Ohio

- ◆ Four 1.8 megawatt (MW) wind turbines in Bowling Green operated by the municipal utility
- ◆ Biomass generation using waste residue to generate heat and power onsite in the wood manufacturing and paper industries
- ◆ 17 landfill gas projects of which seven generate electricity for a total capacity of 37 MW
- ◆ 130 MW of hydroelectric power (nameplate capacity), plus a 42 MW hydroelectric plant located in West Virginia on the Ohio River as a joint venture of 42 American Municipal Power-Ohio member communities
- ◆ Ohio's largest solar photovoltaic array of 159 kW, located on top of a parking pavilion adjacent to another array on the roof of the Adam Joseph Lewis Center for Environmental Studies at Oberlin College
- ◆ 42 solar panels erected last year at the Cleveland Indians Progressive Field provide 8.4 kW of solar power and a 225 kW wind turbine at the Great Lakes Science Center



Solar panels at Cleveland Indians Progressive Field
Source: Dan Mendlik, Cleveland Indians

Save the Date: Upcoming Biomass Events

2008 International Fuel Ethanol

Workshop and Expo

Presented by: BBI International
June 16-19, 2008
Nashville, Tenn.
www.fuelethanolworkshop.com

19th Annual Energy Fair

Presented by: Midwest Renewable Energy
Association
June 20-22, 2008
Custer, Wis.
www.the-mrea.org

Energy Efficiency in Industry, Bioenergy/Carbon Sequestration

Presented by: German American Chamber of Commerce of the
Midwest, Inc.
June 23, 2008
Cincinnati, Ohio
www.gaccomm.org

Biomass '08: Power, Fuel and Chemicals

Presented by: Energy & Environmental Research Center
July 15-16, 2008
Grand Forks, N.D.
www.undeere.org/Biomass08

Short Rotation Crops International Conference

Presented by: University of Minnesota
Aug. 18-22, 2008
Bloomington, Minn.
www.cinram.umn.edu

8th Annual Bio Cycle Conference on Renewable Energy from Organics Recycling

Oct. 6-8, 2008
Presented by: Bio Cycle
Madison, Wis.
www.jgpress.com

National Renewable Energy Marketing Conference 2008

Presented by: Center for Resource Solutions
Oct. 26-29, 2008
Denver, Colo.
www.renewableenergymarketing.net

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