

Picway Plant



Quick Facts

About Picway Plant

- **Location:** Along the Scioto River in Lockbourne, Ohio, approximately 12 miles from downtown Columbus
- **Capacity:** 100 megawatts
- **Stack height:** 288 feet
- **Average annual coal use:** More than 220,000 tons
- **Average daily coal consumption:** 630 tons at full capacity
- **Number of employees:** 25
- **Annual payroll:** \$2.0 million
- **Annual taxes (real estate, personal property):** \$65,000

How We Generate Electricity

Coal arrives by truck and is stored in the plant's coal yard. Conveyor belts carry the coal into the plant where pulverizers grind the coal into a fine, talcum powder-like consistency. The powdered coal is injected into the boilers where it burns at high temperatures, turning water that circulates in the boilers into steam.

The steam is directed into the turbine, where it turns blades (much like wind turning a windmill). The spinning turbine drives a generator that produces electricity. Because electricity cannot be stored, it is generated the instant a customer needs it (electricity moves at 186,000 miles per second). Picway's generator produces electricity at 14,000 volts. Transformers outside the plant step up the voltage to 138,000 volts so that power can be transmitted efficiently to customers' homes and businesses.

Picway Plant's net generating capacity is 100 megawatts. Picway Unit 5 began operating in 1955 and is the plant's only unit still in service. The unit can be fired with either coal or natural gas.

The first of Picway's five generating units began service in 1926. Units 1 through 4 all have been retired with the most recent retirement occurring in 1981.

Picway Plant earned the Electric Utility Group Award for least-cost operation in its size category 1992 through 1994.

We **power** life's possibilitiesSM

American Electric Power

American Electric Power is one of the largest electric utilities in the United States, delivering electricity to more than 5.3 million customers in 11 states. AEP ranks among the nation's largest generators of electricity, owning nearly 38,000 megawatts of generating capacity in the U.S. Picway Plant is owned by AEP Generation Resources Inc., AEP's competitive generation subsidiary. AEP Generation Resources owns or manages approximately 12,000 megawatts of generating capacity.

AEP also owns the nation's largest electricity transmission system, a 40,000-mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's headquarters are in Columbus, Ohio.

Protecting the Environment

Picway Plant meets or exceeds the environmental standards set by state and federal regulations.

Plant management and employees take great pride in providing electricity while protecting air and water quality, recycling materials and maintaining an exemplary record of public safety and health.

- Picway Plant's focus on process improvement has improved its overall efficiency, as well as lowered its opacity, nitrogen oxide (NO_x) emissions and lowered auxiliary power use. These and similar measures have reduced coal consumption by 3,500 tons and cut sulfur dioxide (SO₂) and carbon dioxide (CO₂) emissions by 225 tons and 9,000 tons respectively.
- Electrostatic precipitators remove more than 99 percent of all fly ash particles produced by coal combustion. In precipitators, fly ash from burning coal passes through electrically charged plates, which pull the ash particles out of the exhaust gas stream. Since early 1996, Picway has recycled some 54,000 tons of fly ash and bottom ash, which otherwise would be landfilled, for use in road repair and building construction and for ice and snow control on area roads
- Low-NO_x burners installed at the plant in 1995 at a cost of \$5.9 million reduce NO_x emissions by 40 to 50 percent. Low-NO_x burners control the way coal burns to reduce the formation of NO_x, a precursor to ozone.
- Picway Plant uses an automated continuous emission monitoring system (CEMS) to monitor stack gas emissions. This highly accurate system – installed in 1993 at a cost of nearly \$1.2 million – monitors SO₂, NO_x and CO₂ emissions and opacity.
- To help manage SO₂ emissions, Picway burns coal with annual average sulfur content of less than 3.2 percent.
- Picway Plant has been a site for testing the viability of blending

coal and wood chips – a renewable biomass fuel – as an alternative generating fuel. Plans are under way for Environmental Protection Agency permitting to allow this process as a permanent operating mode for Picway.

- Plant employees work to reduce the amount of discarded materials sent to landfills. Initiatives include reducing the volume of wastes generated. The plant recycles solvents, aluminum cans, cardboard, paper, scrap metal, incandescent and fluorescent light bulbs and lubricating oils.
- Employees continually monitor asbestos-containing materials on site. In 1991, a \$1.2 million asbestos abatement program on retired No. 7 and No. 8 boilers removed 9,200 linear feet of asbestos from piping and 39,500 square feet of asbestos-containing material from boilers, vessels and duct. AEP and the U.S. Air Force now use these abated boilers for rescue training.
- In 2008, the U.S. Environmental Protection Agency's National Partnership for Environmental Priorities recognized Picway Plant for its industry leadership in removing from service equipment containing polychlorinated biphenyls (PCBs).
- Other environmental efforts at Picway have included additional paving of plant service roads to control dust, abating lead and asbestos-containing paint from facilities and removing a retired underground fuel tank.
- Various wildlife – deer, raccoon, geese, ducks and a host of other birds – make their homes on or near Picway property. Fifteen bluebird houses, constructed from wooden shipping crates that held plant materials, are posted around the plant. In 2004, wild turkeys were released on plant grounds in a joint venture with Ohio Department of Natural Resources Division of Wildlife and the National Wild Turkey Federation.

Picway Plant Emission Control Systems

