

Marcus Hook Energy Center

Overview

- » Two power plants located south of Philadelphia in Marcus Hook, Pa., within the Sunoco Marcus Hook Refinery
- » Both owned and operated by a subsidiary of NextEra Energy Resources
- » A 744-megawatt combined-cycle, co-generation, natural-gas fired power plant that began commercial operation in 2004
- » An intermediate plant, meaning it is dispatched to operate approximately 16 hours a day
- » There is also a 50-megawatt natural gas-fired, co-generation unit that began operation in 1987 and was acquired by NextEra Energy Resources in 1999
- » When operating at full power, the plants generate enough electricity for almost 800,000 homes



About NextEra Energy Resources

- » A leading clean energy provider operating wind, natural gas, solar, hydroelectric and nuclear power plants across the nation
- » More than 18,000 megawatts of generating capacity in 26 states and Canada
- » The largest wind generator in North America with facilities in 17 states and Canada
- » A subsidiary of NextEra Energy, Inc., with headquarters in Juno Beach, Florida

Benefits

- » Plants employ a total of 31 people
- » Supports local organizations including Claimont Coalition, Environmental Advisory Committee and Delaware County Chamber of Commerce

How It Works

Marcus Hook is two power plants on the same site. Marcus Hook 750 is a combined cycle because it uses a gas and a steam turbine to make electricity. Marcus Hook 50 is a simple cycle because it uses only a gas turbine to make electricity. Both plants ignite fuel inside a combustion chamber. The hot combustion gases blow into a combustion turbine, spinning the turbine blades. The spinning turbine is connected by a shaft to a generator.

The shaft turns the generator and the generator makes electricity.

The hot gases are then used to heat water to steam. Marcus Hook 750 (above) pipes one million pounds of steam an hour to the Sunoco Refinery for industrial use. The remaining steam turns a steam turbine, generating additional electricity. Marcus Hook 50 (left) pipes all of its steam to the refinery.

