2008

American Electric Power

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AMERICAN ELECTRIC POWER (AEP) was founded in 1906, and served electric utilities in various parts of the United States for over 100 years. The company was originally formed from a utility holding-company in 1899, but began its electric utility service business in Albany, New York, on December 20, 1906, as American Gas and Electric (AG&E), acquiring its first utility properties on January 2, 1907. In 1917, AG&E operated the first super power plant on the Ohio River at Wheeling, Ohio, and named it the Windsor Plant. It was the first major steam plant built at the mouth of a coal mine, eliminating the need to haul coal over long distances. It provided a significant amount of power over the nations first long-distance 138,000-volt transmission line. The AG&E made the greatest expansion in its history 1922–27. It acquired a number of major properties such as Indiana Michigan Electric, American Electric Power Company in Philadelphia, and Appalachian Power Company in Virginia.

With the increasing demand for electricity in the 1920s, AG&E constructed three large generating stations: the Twin Branch plant in northern Indiana, the Philo plant in southeastern Ohio, and the Stanton plant in northeastern Pennsylvania. Even during the Great Depression, the company persevered and maintained its financial integrity through the stock market crash in 1929.

AG&E constructed 36 new generating units at 14 locations in five states 1941–61 with a total generating capacity of 6 million kilowatts (kW). At that time, many AG&E plants occupied the top of the list of America's most efficient electricity generating stations. After that, it added 11 new generating units for 2 million kilowatts capacity. It also managed a 390-mi. (628 km.), 345,000-volt transmission system for the Ohio Valley Electric Cooperative (OVEC), which had been formed to supply electrical power to the federal government's uranium enrichment plant at Piketon, Ohio. In 1958, AG&E changed its name to American Electric Power (AEP). AEP continued to grow 1961–75, adding 21 new generating units to bring the total system's generating capacity to 17.6 million kW

In 1967 AEP announced that it would build a nuclear generating station on the shores of Lake Michigan. The 1,020,000-kW Unit 1 of the Donald C. Cook Nuclear Plant went into commercial operation in 1975, and the 1,090,000-kW Unit 2 was completed in 1978.

New York City was AEP's headquarters for nearly three-quarters of a century, but it began moving its corporate offices to Columbus, Ohio, in 1980, and completed the move in 1983 with the completion of a new 31-story office facility at One Riverside Plaza. During 1996, AEP's sales of electricity to retail customers reached a record 100 billion kW hours. On December 22, 1997, AEP announced a definitive merger with Central and South West Corp. of Dallas, Texas. The merger was completed on June 15, 2000, and created a combined electricity sales amount of 200 million megawatt hours. As of 2007, AEP had more than 5 million U.S. customers and served parts of 11 states, including Arkansas, Indiana, Kentucky, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia, and West Virginia. It was one of the largest investor-owned utilities in United States.

AEP has undergone successful expansion to date; however, with increasing concern for the environment, and greater international and governmental policing of energy corporations, AEP must consider the environment a corporate responsibility. Climate change, attributed to increasing atmospheric concentrations of greenhouse gases (GHG), is a growing concern for AEP, because it is one of the largest consumers of coal in the United States. Therefore, reducing GHG emissions and supporting a reasonable approach to carbon controls is crucial to AEP.

AEP has been researching clean technologies. In August 2004, it announced plans to construct an Integrated Gasification Combined Cycle (IGCC) coal-fired power plant. IGCC technology is expected to reduce the atmospheric concentration of emissions, while providing additional electricity capacity to the customers served by AEP. IGCC is an innovative clean technology that turns coal into a gas, and then removes impurities from the coal gas before it is combusted. This results in lower emissions of sulfur dioxide, particulates, and mercury. It also results in improved efficiency compared to conventional pulverized coal.

IGCC technology is proven to work well with high-British thermal unit (Btu) coals such as the bituminous Appalachian coals readily available in AEP's eastern area. With this technology, AEP has concentrated research on developing technologies for carbon capture and storage. AEP became a founding member of the Chicago Climate Exchange (CCX), the first voluntary GHG credit trading system in the United States, and committed itself to reducing GHG emissions below baseline emission levels. The total cumulative CO_2 equivalent reduction requirement to meet the CCX commitment is approximately 46 million metric tons by 2010. AEP also committed to the recycling of its coal combustion products through the Coal Combustion Products Partnership in cooperation with the U.S. Environmental Protection Agency. Coal ash of the highest quality is dispensed to customers as products and unsuitable ash is identified and diverted for disposal. Examples of the utilization of coal ash include the construction of dams, plant roads, stacks, cooling towers, and buildings.

Approximately 73 percent of AEP's generating capacity is coal-fired plants, 16 percent natural gas, and 8 percent nuclear. The remaining 3 percent is wind, hydroelectric, and other sources. The company also operates its own inland barge line and owns major tracts of land throughout its service areas. In 2001, AEP acquired MEMCO Barge Line, Inc., and enhanced its coal transportation resources. As of 2007, AEP's transportation infrastructure consisted of approximately 7,500 rail cars, 1,800 barges, and 37 tugboats.

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http://dx.doi.org/10.4135/9781412963893.n22

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- Emissions, Baseline
- Energy
- Energy Efficiency
- Global Warming

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