



Fuel prices have a significant impact on the cost of electricity. In PJM's wholesale electricity market, fuel prices and demand for electricity are reflected in electricity prices, as would be expected in a well-functioning competitive market.

Fuel costs are a major component of electricity prices because the cost of generating electricity is the primary determinant of electricity prices. The cost of generation makes up about two-thirds of the retail price of electricity, according to the federal Department of Energy's Energy Information Administration (EIA). Fuel is the electricity industry's largest single expense.

EIA reported that between 2003 and 2007, the average cost of fossil fuels used to generate electricity rose almost 42 percent. In 2008, the impact of sharply higher fuel prices again was felt in the first half of the year. Oil prices topped \$120 a barrel; natural gas climbed more than 40 percent from its year-earlier price; and coal was up more than 50 percent from the previous year. Coal and natural gas are the fuels used to make about 70 percent of the electricity in the U.S.

With the impact of the financial crisis and recession in the second half of 2008, fuel prices declined, which had a similar impact on wholesale electricity prices in PJM's market.

The dynamic nature of locational marginal prices (LMP) in PJM's market over the past five years reflects the impact of fuel prices. From May 2005 through early 2006, the trend in fuel prices and LMP was up. During 2006, both fuel and electricity prices moved downward. In 2007, fuel prices were steady through September before trending upward, while LMPs were higher through most of the year. The higher LMP reflected a 4.6 percent increase in average load for the year.

Fuel prices and LMP increased rapidly from the fall of 2007 through the summer of 2008 before beginning to drop quickly in the fall of 2008 in reaction to the economic downturn.

In 2009, the average wholesale electricity price fell more than 45 percent. The 2009 average price was the lowest since 2003. The lower electricity price reflected the impact of the recession and milder weather, with both fuel prices and electricity demand down from 2008. The prices of all types of fuel used for electricity generation declined, including coal, down about 33 percent, and natural gas, down nearly 70 percent. At the same time, average load fell 4.4 percent in 2009.

With fuel prices making up such a large part of electricity industry costs, the higher costs of fuel inevitably affect the cost of electricity. Because wholesale electricity markets are more efficient, fuel-price changes are reflected in electricity prices more quickly than under regulation.