

Electricity Costs and Pricing in New England's Power Market

Fuel Costs and Lack of Fuel Diversity for Generation Cause Price Increases

Dramatic increases in the cost of natural gas and oil during the 2005/2006 winter period have caused wholesale and retail prices to rise sharply. In the face of these increases, some stakeholders and policymakers question the use of a competitive wholesale market to price electricity and may attribute the cost increases to the pricing method used to compensate power plants and other resources. Instead, it is New England's disproportionate reliance on gas and oil power plants for supply that is the cause of the problem.

Progress in New England's Electricity Marketplace

Since establishing a competitive wholesale market for electricity, New England has a more reliable, economical, and environmentally friendly power system:

- Wholesale electricity prices, after adjustment for fuel costs, have declined by 5.7 percent from 2000 to 2004;
- Nearly 10,000 megawatts of efficient, market-based power plants have been added to the region's supply;
- Four major transmission projects have been sited and are under construction; and,
- Generator availability has been increased from 81 to 88 percent.

ISO New England estimates annual wholesale market savings of \$700 million (from 2000-2004) attributable to these developments. Despite these savings, prices for electricity have increased. As policymakers consider steps to reduce retail prices, electricity cost drivers must be fully understood.

Cost Drivers in Electricity Markets

Fuel costs are the main driver of electricity prices. The combination of unprecedented increases in the cost of natural gas and oil and a power supply that is 60 percent reliant on these fuels has resulted in electricity price increases in New England. In addition to the recent escalation of fuel costs, an inadequate transmission infrastructure that requires the costly commitment of resources and insufficient conservation in response to high wholesale prices also drive the cost of power. Using competitive markets to accurately price power does not increase costs; rather, they are a mechanism to reveal where and when costs are highest so that solutions to problems can be achieved.

Uniform Clearing Auctions Minimize Costs and Environmental Emissions

ISO New England operates electricity markets with a uniform clearing price (UCP), as do all other wholesale electricity markets in the United States. A UCP auction is one in which each winning bidder (generator) receives the same unit price based on the price of the last unit needed to meet the demand for electricity by consumers, regardless of what the individual offer price was. These auctions are used where the product being sold is uniform, such as United States Treasury bonds with

the same terms and, in this case, electricity. Under a competitive market using a UCP, generators and capacity resources bid their marginal or going forward "operating costs."

ISO New England dispatches generators in the region starting from the lowest cost resource and progressing to higher cost resources until New England has enough generation to meet the daily demands of consumers. This keeps overall costs at a minimum and improves environmental quality because lower-cost units use fuel more efficiently, which reduces overall air emissions. If bids were not offered on an operating cost basis, more expensive less efficient units would run, incentives for power plants to become more efficient would be reduced, and the environment would suffer. A UCP ensures that clean energy sources with no fuel costs, such as wind, are dispatched and displace plants with higher operating costs and air emissions.

Revenues in Wholesale Energy Markets

When a UCP auction is used, the lowest cost provider of electricity gets the largest contribution to fixed costs. Therefore, those with low operating costs, such as those that use a less expensive fuel, are rewarded. Bidders that have high operating costs, such as those that use higher-cost fuels, receive a smaller contribution to fixed costs and, in turn, have a strong incentive to become more efficient. Day-to-day, the contribution to fixed costs varies for each power plant but over the long-term, resources must make a reasonable rate of return on investment, as with any market-based investment.

Because of national and global events, natural gas and oil costs have increased substantially in the current market. As a result, natural gas and oil plants are often the highest bidders and, therefore, receive the lowest contribution to fixed costs because of the small difference between their operating costs and the uniform price. When natural gas and oil plants had low fuel costs, they were among the lowest bidders and therefore could earn money to pay back their fixed costs. Assuming that nuclear, coal, and renewable resource units currently earn more than their respective operating costs, this is the product of a proper market price signal – correctly telling investors and stakeholders that non-gas and non-oil power plants, such as wind, renewables, nuclear power, and clean coal technology, should be built in New England.

Other Auction Formats Can Drive Up Consumer Prices

Pay-as-bid (PAB) auctions are used when products are not identical and pay each selected bidder the offer price. In these auctions, sellers bid above their operating costs because it is the only way to make a contribution to fixed costs. If used in electricity markets, consumers would pay a price above operating costs because generators would no longer bid their operating costs. Conversely, with a UCP auction, the bidder does not need to inflate an offer in order to obtain a contribution to fixed costs.

Tackling Electricity Cost Drivers Reduces Prices

Wholesale market incentives are already saving consumers in New England money today by reducing inefficiencies, and pricing transparency has led to significant progress on needed transmission and market improvements – but more can be done to address electricity cost drivers.

Policymakers in New England must take action now to reverse the trend of rising electricity costs in the region. Power plants that offer to diversify the fuel mix for generation in New England should be sited and built. Existing gas-only generators should be encouraged to become dual fuel capable, and air permits should allow fuel switching for economic and reliability purposes. Additional LNG supply

should be sited in the region to support winter peak demand and mitigate natural gas price volatility. Wholesale and retail restructuring policies currently in place that protect consumers from bearing the risk of inefficient and/or bad investment should be continued. Incentives should be offered to consumers to reduce power use when wholesale prices are highest.

Policymakers can achieve these solutions by adopting streamlined siting regulations and procedures, and by implementing dynamic pricing options at the retail level. Through the information and transparency offered by a competitive wholesale market, policymakers can identify those solutions in the best financial interest of consumers and reverse the trend in New England toward higher electricity prices.