



Natural Gas and the Competitive Power Industry

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Like all consumers, competitive power suppliers are concerned about rising natural gas prices, particularly heading into the upcoming winter heating season. Given the adverse impact that high natural gas prices have on the economy in general and on specific customers, including power generators, EPSA strongly supports public policies that facilitate additional natural gas supplies, promote the most efficient use of natural gas, and support a diverse mix of fuel sources to generate electricity. Competitive markets are an integral part of the answer to higher natural gas prices. Command and control approaches such as fuel use restrictions would be a mistake.

Additional natural gas supplies are critical to a comprehensive approach to rising natural gas prices. Higher prices for natural gas reflect underlying market fundamentals for supply and demand. While some of this is shorter term in causation and duration (e.g., the result of the recent hurricanes), there has been steady erosion in the balance between gas supply and gas demand in recent decades.

While public policies such as the Clean Air Act Amendments of 1990 had the effect of encouraging the use of natural gas for power generation and for other uses, other policies made it more difficult to develop new natural gas resources to meet this demand. Thus, the United States needs more access to additional domestic sources of natural gas and imports of LNG to relieve future price pressures.

With tighter natural gas supplies, it is more important than ever to conserve natural gas, including through operation of the most efficient natural gas-fueled power plants. Natural gas is conserved when the most efficient power plants run first, regardless of who owns the facilities. In many areas with vertically integrated utilities, the utility-owned gas-fueled generation may be used before a non-utility's generation, even if the non-utility-owned generation is much more efficient and would use less gas.

If markets were established (where they do not already exist), in which the most-efficient generation were deployed first, all energy customers would save and natural gas resources would be conserved. For example, from 1999 to 2003, the efficiency of natural gas used for power production in Texas – a competitive market – improved by 960 Btu/kWh, or about 10 percent. As a result, natural gas used in electricity production in Texas decreased by 50 Bcf from 1999 to 2003, while the electricity produced from this gas increased by 13,000 GWh. By contrast, over the same time period, the efficiency in Louisiana – an area that lacks a well-functioning competitive wholesale market – improved by only 120 Btu/kWh, or about 1 percent, despite the availability of more efficient gas-fueled plants operated by competitive suppliers.

The competitive power industry uses a diverse mix of fuels to operate its power plants and is able and willing to build the next generation of power plants, including coal, nuclear, renewable and natural gas technologies. Regional competitive electric markets promote this fuel diversity. Maximum consumer benefits and natural gas savings flow from competitively driven wholesale electric markets built with seamless regional transmission systems. Efficient, geographically large markets allow the least-expensive power to be deployed first, providing for the most effective use of large generation facilities. They also promote the development of innovative new facilities by providing access to the large number of customers necessary to support the new base load plants that will be needed to meet projected demand for electricity. The Energy Policy Act of 2005 encourages the use of a wide range of fuels in power generation. Congress should fully fund these programs and make sure that all types of electricity suppliers qualify.

Competition results in consumer savings even as the price of fuels used to generate electricity increases. In competitive markets operated by regional transmission organizations, power generators do not have an automatic pass-through of fuel price increases, as is the case where power generation is in the rate base of a vertically integrated utility. In regions with competitive wholesale markets, power generators and other competitive power suppliers have been bearing and managing much of the natural gas price increases because they provide fixed-price supply to utilities and other load-serving entities under supply auction programs. These auctions have prices that are often set for three years, and thus serve to moderate how the recent run-ups in natural gas prices are reflected in electricity rates. Higher costs are no longer simply passed along. In competitive markets, generators and marketers typically absorb 20 to 30 percent of fuel price increases.

Competitive markets drive technological innovation and efficient plant utilization to create significant savings in natural gas use. Competition has driven equipment vendors to fight for market share from competitive generators who value efficiency. Major technology and efficiency advances in power generation during the 1980s and 1990s occurred in natural gas turbine-generator applications, both combined-cycle and simple-cycle, and in cogeneration (or combined heat and power). Cogeneration plants were sited at industrial complexes (i.e., closer to major load centers with less impact on the transmission grid), and the efficiency of both the industrial process and power generation was dramatically improved. The improvement in overall thermal efficiency ranged from 50 to almost 100 percent, meaning that the lower heat rates associated with these facilities required much less gas to generate the same amount of electricity as comparably sized, but much less efficient, units. Further, on-site cogeneration benefited the critical energy infrastructure because of the ability of these industrial plants to supply their own electricity and maintain operations (or resume them earlier), even as natural disasters like the recent hurricanes otherwise required significant amounts of time to rebuild the grid. These improvements were not restricted to natural gas. A recent independent study by Global Energy Decisions documented significant operating efficiency improvements at coal and nuclear facilities due to competitive market forces.

Congress should not resort to long discarded and discredited command and control approaches such as fuel use restrictions. It would be a major mistake to resort to heavy-handed federal regulation of natural gas use, as occurred with the long since repealed Powerplant and Industrial Fuel Use Act of 1978. Natural gas-fueled power generation is important to providing reliable electricity in many regions, representing 17 percent of the nation's power supply. Restricting use of natural gas by these plants would merely shift energy price and supply effects from natural gas markets to electricity without really addressing them.

Important Facts and Figures

- The competitive power sector has a diverse portfolio of energy sources for its power plants: 36 percent coal; 30 percent natural gas; 24 percent nuclear; 6 percent hydroelectric and other renewables; and four percent petroleum (based on net generation).
- Between 2002 and 2004, the amount of natural gas consumed for power generation decreased more than 5 percent.
- From 1998 through 2003, the country saved 730 billion cubic feet of natural gas by building new, more efficient, gas-fueled power plants – most of which were built by competitive electric generators. This savings represented 14 percent of all gas consumed for power generation in 2003.
- If all of the gas-fueled power in 2003 had been produced by the latest, most efficient, state of the art natural gas facilities, natural gas usage in power production would actually have decreased by 7 percent.

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