

# Regulation vs. Competition:

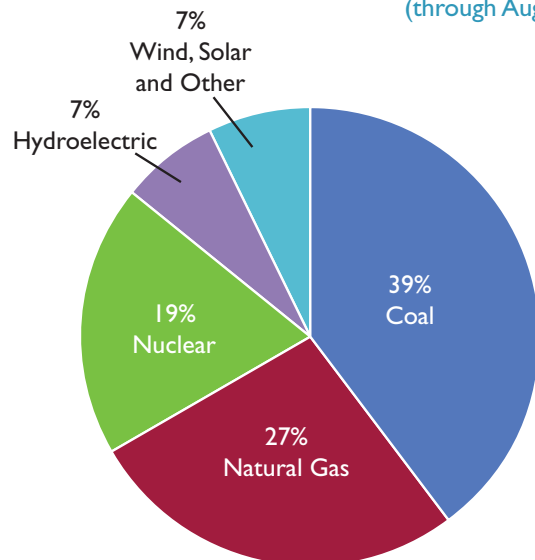
## Duke University Study Shows Regulation as Greatest Threat to Coal

**Detailed analysis of electricity markets** clearly shows that more than half of America's coal-fueled power plants are threatened by proposed U.S. Environmental Protection Agency regulations, while only 9 percent are threatened by competition from natural gas.

### America's Evolving Electricity Fuel Mix

America benefits from a diverse mix of fuels for its electricity generation. During 2012, 37 percent of our electricity came from coal, 30 percent from natural gas, 19 percent from nuclear, 7 percent from hydroelectric, and about 7 percent from wind, solar and all other energy sources combined.

**U.S. Electricity Generation by Fuel Source – 2013 (through August)**



SOURCE: U.S. Energy Information Administration

Coal's share of the electricity pie has been shrinking in recent years because of the prospect of increasing environmental regulations and competition from low cost natural gas that has become available from shale. However, recent economic research concludes that regulation is by far the dominant factor in disrupting the balance of American electricity supply.

### Independent Study Analyzes Electricity Markets

A recent scientific journal study<sup>1</sup> by three researchers from the Nicholas School of the Environment at Duke University examined the cost of electricity generation for 304 coal and 358 natural gas plants. (That's 95 percent of the current U.S. coal-fueled fleet capacity and 70 percent of the current natural gas-fueled fleet capacity.) It concluded that **"...the economic viability of 9 percent of current coal capacity is challenged by low natural gas prices, while another 56 percent would be challenged by the stricter emission regulations."**

The Duke study concludes that the differential between the price of natural gas and the price of coal determines how utilities choose to use the resources. But that competitive environment deteriorates drastically if coal plants are saddled with billions of dollars of requirements for increased emissions controls. The Duke researchers concluded that 56 percent of the U.S. coal-fueled fleet would be threatened if the Environmental Protection Agency fully implements its currently proposed stricter controls.

#### Recent events confirm the Duke study's conclusions:

Coal's share of the electricity generation mix is already rebounding from 2012 when natural gas prices were at historic lows. For the first four months of 2013, coal's share of the generation mix was back up to almost 40 percent while the natural gas share declined to less than 26 percent amid rising natural gas prices. That competitive dynamic would be drastically reduced with the implementation of increased environmental regulations.

<sup>1</sup>"Fuel Prices, Emission Standards, and Generation Costs for Coal vs. Natural Gas Power Plants," by Lincoln F. Pratson, Drew Haerer, and Dalia Patiño-Echeverri; Nicholas School of the Environment, Duke University, Durham, North Carolina; accepted in March 2013 for publication in the American Chemical Society journal *Environmental Science and Technology*