

# DOE-NETL: Opposition to Coal Will Reduce Electricity Reliability, Harm US Economy

In an April 2008 white paper entitled, "Natural Gas and Electricity Costs and Impacts on Industry", the U.S. Department of Energy's National Energy Technology Laboratory (NETL) reported that opposition to new coal-based power plants is leading to a generation capacity shortage in many areas of the country and endangering U.S. energy security. The opposition is also inducing a "dash to gas" and quickly causing a rise in natural gas prices at a time when federal climate change legislation could immediately lead to a doubling of natural gas consumption for power generation. This legislation would increase the country's dependence on foreign energy sources in the form of liquefied natural gas (LNG) causing both natural gas and electricity prices to increase dramatically.

NETL also describes how coal has protected consumers from even higher natural gas prices. Unfortunately, the current opposition to coal would allow natural gas prices to match the percentage increase in the price of oil. Such increases in the price of natural gas could cause trade-exposed sectors of U.S. industry to shut in production, especially against coal-powered competitors like China or regions like the Middle East, where cheap natural gas reserves supply power needs.

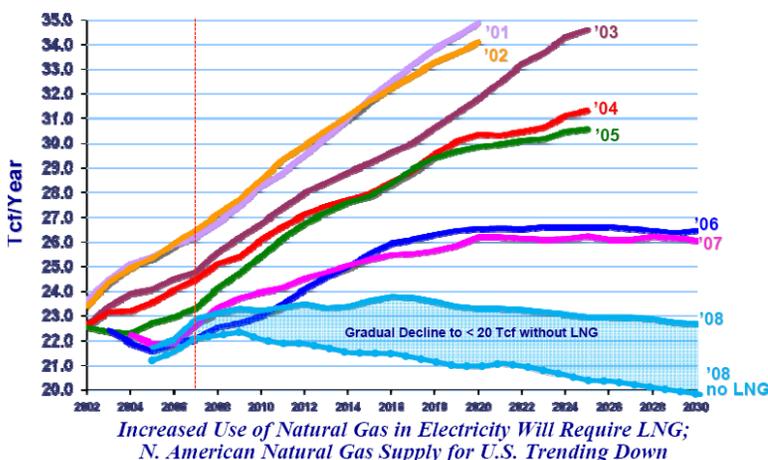
NETL estimates, by 2016, the absence of 18 GW of currently forecasted new coal-based power plants would mean additional natural gas demand of 1.4 Tcf/year, or almost all of the presently forecasted LNG growth. If electricity growth were higher, as it is in U.S. Energy Information Administration's latest Annual Energy Outlook (AEO), up to an additional 2.3 Tcf of natural gas for generation would be needed. In the event of climate change legislation with relatively strict cap and trade provisions, such as S.2191 – the Lieberman-Warner Climate Security Act, an additional 5.4 Tcf/year is required for even more coal-to-gas switching, and even more natural gas generating capacity would be necessary just to meet peak demand. **Since this approximate 9 Tcf increase in natural gas consumption would be occurring at high prices, the impact on the economy would be severe. Because both electric rates and heating prices would escalate, no sector would be exempt; although families and energy-intensive industry would certainly bear the heaviest burdens.**

NETL's major findings include:

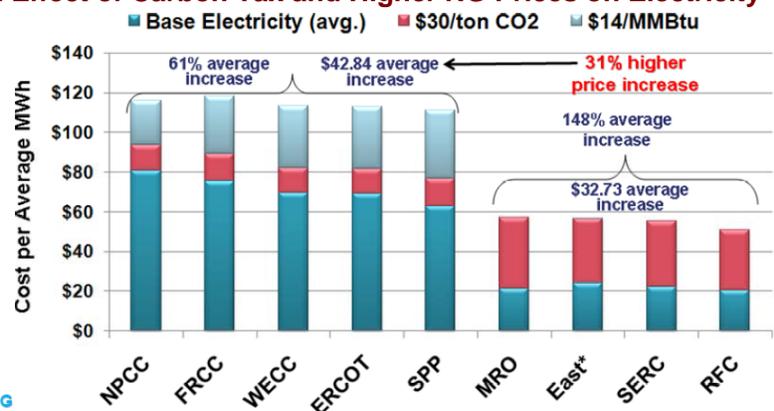
1. The extremely difficult natural gas supply situation facing the United States has not been fully recognized in recent energy analyses and proposed climate change legislation
2. Installation of a large amount of natural gas-fired capacity – combined cycle units and combustion turbines – has been the primary driver for higher natural gas demand across the U.S.
3. Disappointing U.S. production, declining Canadian imports, minimal LNG imports to date (see Figure 1 below), and the continued rise in the price of oil have caused natural gas prices to more than triple since 2002 and the worst may be yet to come.
4. As prices are pushed higher, the need for more LNG will create closer links to the world oil price; thus allowing the marginal price of U.S. electricity to be set by the whims of foreign oil/LNG suppliers, for the first time in U.S. history.
5. For natural-gas intensive industries, especially aluminum, fertilizer, glass and chemicals, the rise in natural gas prices, which in the first part of the decade was U.S.-centric, caused production to shut down or move offshore, resulting in substantial job losses.
6. The current push by certain special interest groups to stop the construction of coal-based power plants (similar to the opposition to nuclear power in the 1970s) threatens to: a) reduce already precarious reserve margins, raising the risk of blackouts, and b) significantly increase the demand for natural gas—resulting in a growing spiral in energy prices.
7. In order to attract foreign LNG away from competitors in Asia and Europe, the U.S. price of natural gas must rise substantially, the likely outcome if drastic climate change policy is implemented.
8. The North America Electric Reliability Corporation (NERC) has warned that most regions of the country are in dire need of new capacity to ensure safe reserve margins and avoid the high risk of power shortages or a South African-like, electricity supply deficit.
9. Climate bills target the electricity and natural gas-intensive industries, but most cap & trade bill analyses minimize the vicious cycle between the price of natural gas and carbon dioxide: *As the natural gas price rises, coal plants regain competitiveness, necessitating a further rise in the carbon dioxide allowance price, in order to meet the cap* (see Figure 2 below). Instead, most analyses assume cheap and plentiful natural gas, early nuclear or unlimited biomass --each a problematic assumption.

## Coal-fired generation has restrained the price of electricity and has constrained the price of natural gas from matching the rise in the price of oil.

### 1. EIA Annual Projections on U.S. NG Production



### 2. Effect of Carbon Tax and Higher NG Prices on Electricity



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