

Fact Sheet

White Paper: Financial Risks of Investments in Coal — Update

In June 2011, As You Sow released *White Paper: Financial Risks of Investments in Coal* that assessed three primary risks facing coal-based industries: cumulative regulatory risks, commodity risk, and construction risk.

The white paper was, if anything, conservative in its assessment of the cumulative impact on coal-burning utilities of environmental compliance costs and volatile coal prices at the same time that the price of natural gas, coal's biggest competitor, dropped to historic lows that drove down electric power prices.

This update to the *White Paper* provides a snapshot of the trends underlying five financial risks for investments in coal: for mining companies, they are driving shifts in generator demand away from coal; for electric utilities, they are making "cheap coal" costly compared to other generating options or increased efficiency.

Investors with holdings in coal-dependent electric utilities continue to face significant and increasing financial risks, arising from:

1. Increasing capital costs for environmental controls at existing coal plants and uncertainty about future regulatory compliance costs
2. Declining prices for natural gas, a driver of electric power prices in competitive markets
3. Upward price pressures and price volatility of coal
4. High construction costs for new coal plants and unknown costs to implement carbon capture and storage
5. Increasing competitiveness of renewable generation resources

1. Regulatory Risk

Analysts estimate that 75 GW of coal-fired capacity may be retired by 2030 due to the costs of environmental controls.¹

The *White Paper* highlighted several pending environmental regulations that were expected to adversely impact the profitability of coal as a generating source for electricity. And they have.

The passage of the Mercury Air Toxics Standard (MATS) requiring electric power generators to be equipped with the Maximum Achievable Control Technology for this air toxin has forced companies to mothball plants that are no longer profitable to operate.

Uncertainty about future regulations plagues coal plant operators who face the incremental imposition of more stringent standards over time.

A reduction in coal units is expected to



increase the utilization rate of gas-fired units.

U.S. Court of Appeals
unanimously upholds



EPA's Tailoring Rule limiting greenhouse gas emissions from power plants and other large stationary sources.

coal: 1,800 lb

natural gas: 995 lb

EPA proposed a national Carbon Pollution standard requiring new power plants to meet an output of

1,000^{lb} CO₂
per MWh

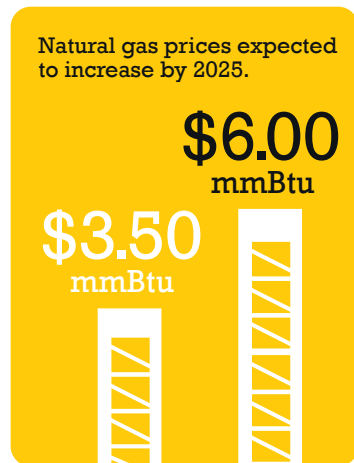
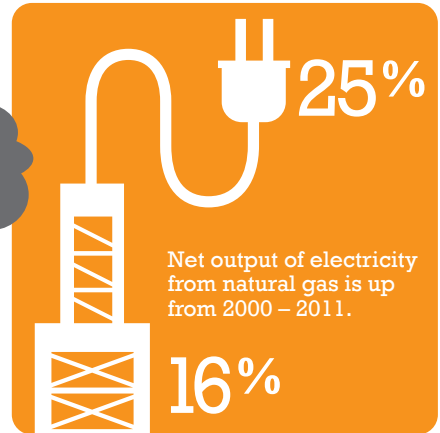
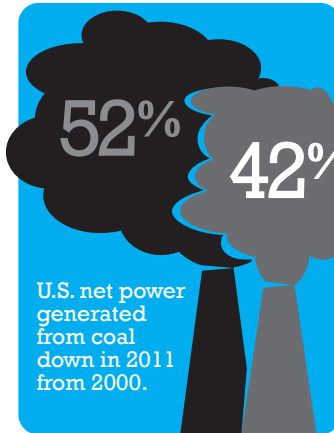
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2. Commodity Risk – Natural Gas

Currently, low-priced natural gas often makes it more economical to dispatch gas – rather than coal-fired generation – and in some markets, wind power undercuts gas as the price setter, pushing coal further down in the dispatch order.

As noted in the *White Paper*, at \$6.50/mmBtu gas is competitive with coal.²

Although the switch away from coal is financially and environmentally responsible, natural gas will – in time – face many of the same risks as coal: price increases and volatility as the easily recoverable resources are depleted, more stringent environmental regulations that will demand capital investments, and competition from wind, solar, and other forms of renewable energy.

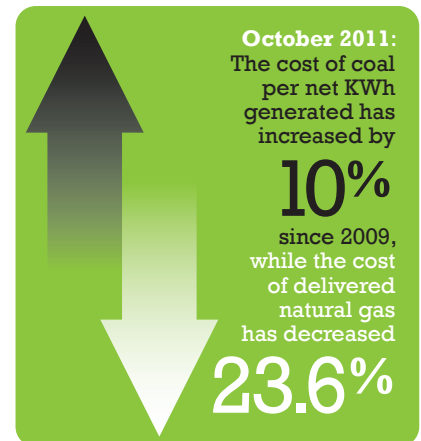
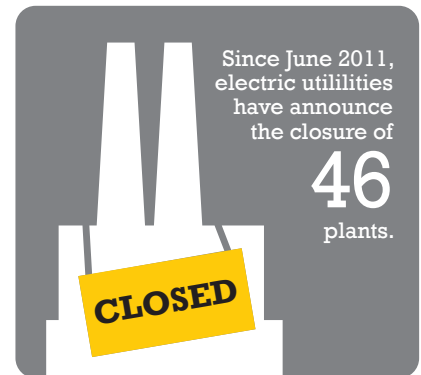


The impact of low natural gas prices and the efforts of environmentalists and investors have been significant. Since June 2011 electric utilities have announced the retirement of more than 6% of the total 2011 coal capacity. More retirements are expected if gas prices remain low, especially from merchant fleets that are more exposed to market forces.³

“According to industry experts, if coal loses out in utilities’ decisions on what to build, it would be because the economics of burning gas are simply better than burning coal.”⁴

According to the U.S. Energy Information Administration (EIA), it is not only the price of natural gas that is enhancing its competitiveness but also its efficiency: “natural gas combined-cycle units operate at higher

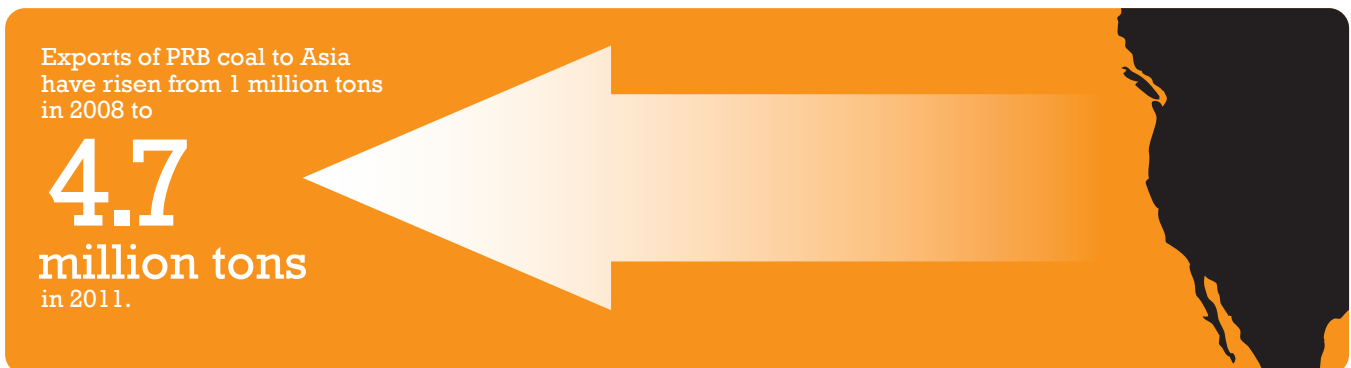
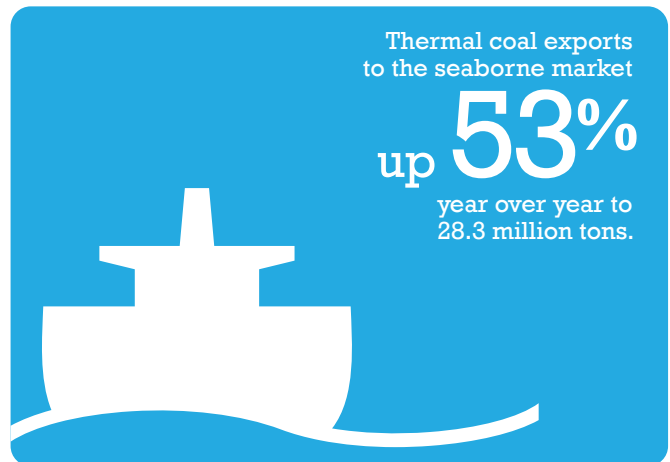
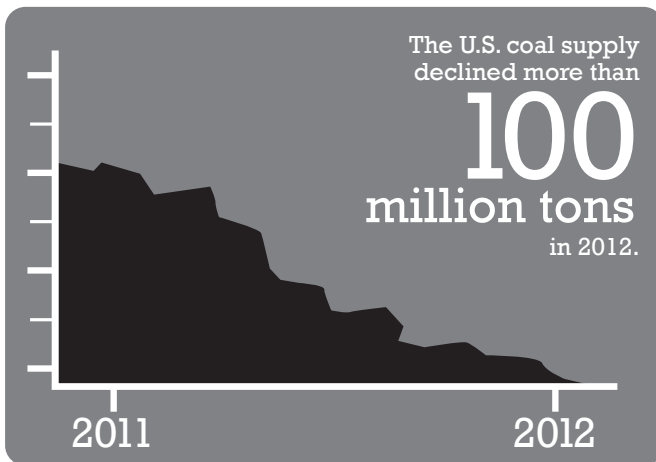
efficiency than do older, coal-fired units, which increases the competitiveness of natural gas relative to coal.”⁵ Aram Sogomonian, Vice President of Risk Management for Edison Mission Energy stated that “[i]t will be tough to build something other than natural gas plants, given the current environmental rules, capacity factors and low prices.”⁶



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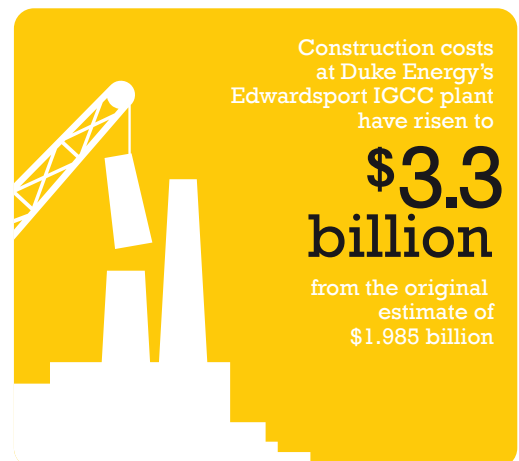
3. Commodity Risk: Price & Price Volatility of Coal

Three trends continue to affect the economic viability of coal as a generating fuel for electric power: increasing price and price volatility, a shift in production from Central Appalachia (CAPP) to the Powder River Basin (PRB), and increased export demand for PRB coal.



4. Construction

Costs for both construction of new coal-fired plants and upgrades to existing plants are increasing exponentially. In addition, the cost of improvements to maintain operations are increasing and implementing certain maintenance improvements trigger laws that mandate that plants invest in environmental upgrades as well.



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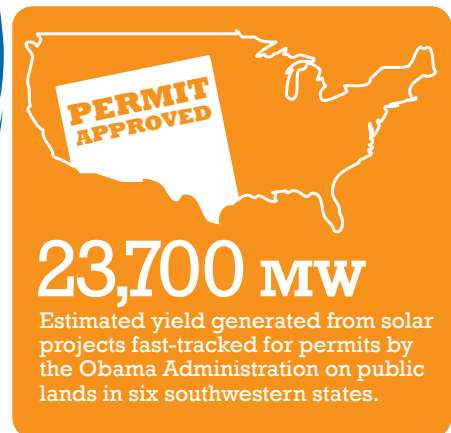
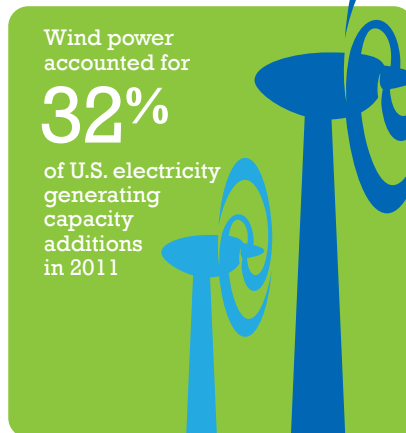
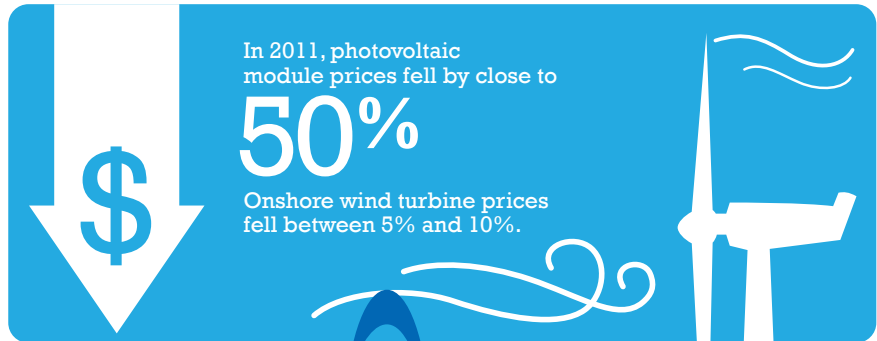
5. Alternatives

In many markets, wind is the most economical source of electricity and – if one includes impacts on water resources – wind energy has lower operating costs than both gas and coal. Lazard's *Levelized Cost of Energy Analysis* demonstrates that currently the levelized cost of electricity (LCOE) for wind is, in most cases, less than that for coal and thin-film solar, biomass, and geothermal are, in many cases, less than that for coal.⁷

Despite the lingering effects of the recession being felt in financial markets into 2010, competition from low natural gas prices and an increased reluctance for utilities to enter power purchase agreements with wind, renewable capacity expanded by 3%, or 4,019 MW in 2010.⁸

Conclusion

In the 16 months since the publication of *White Paper: Financial Risks of Investments in Coal* the prognosis for coal as a financially viable source from which to generate electricity continues to decline.



Download the **White Paper: Financial Risks of Investments in Coal – UPDATE** for the full report.

- 1 John P. Miller "US to cut 75 GW of coal-fired capacity by 2030: ICF International," Platts, October 4, 2010, <http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Coal/3032281>.
- 2 Leslie Lowe and Tom Sanzillo, White Paper: Financial Risks of Investments in Coal (As You Sow, June 2011), 4, http://www.asyousow.org/health_safety/coalwp.shtml.
- 3 Percentage calculated by the Sierra Club from Sierra Club database and from U.S. Energy Information Administration, "27 Gigawatts of Coal-Fired Capacity to Retire over Next Five Years," July 27, 2012, <http://www.eia.gov/todayinenergy/detail.cfm?id=7290>.
- 4 Mark Clayton, "EPA Issues New Rule on Greenhouse Gas Emissions: Where Does That Leave Coal?" *The Christian Science Monitor*, March 27, 2012, <http://www.csmonitor.com/USA/Politics/2012/0327/EPA-issues-new-rule-on-greenhouse-gas-emissions-Where-does-that-leave-coal>.
- 5 D. Lowrey, "Coal's Share of U.S. Electricity Generation Falls Below 40% at End of 2011," *Financial Times*, March 12, 2012.
- 6 Ken Silverstein, "Utilities are Scrubbing Their Generation Portfolios," *energybiz*, February 21, 2012, http://www.energybiz.com/article/12/02/utilities-are-scrubbing-their-generation-portfolios&utm_medium=eNL&utm_campaign=EB_DAILY2&utm_term=Original-Member.
- 7 Lazard, "Levelized Cost of Energy Analysis – Version 5.0," June 2011, 2. LCOE is a measure of the overall competitiveness of different electricity generating technologies.
- 8 *Renewable Energy Consumption and Electricity Preliminary Statistics*, (U.S. Energy Information Administration, June 2011), 2, <http://www.eia.gov/renewable/annual/preliminary/pdf/preliminary.pdf>.