Supporting Material for OMB Meeting with Members of the Clean Energy Group

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March 3, 2011

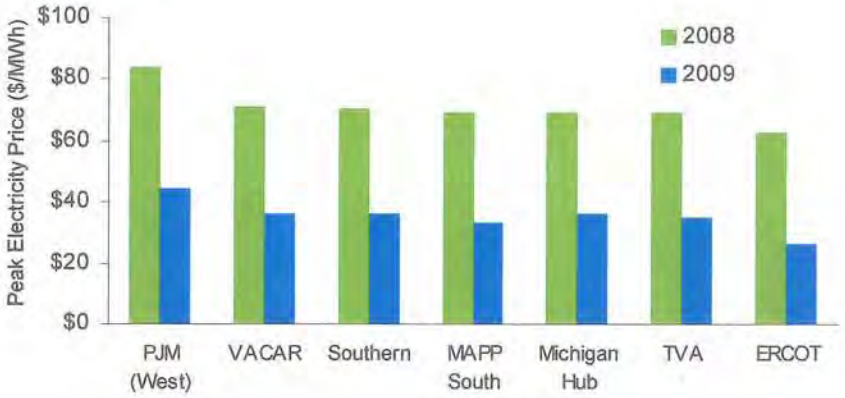
Fundamental economics, not EPA regulations, are already challenging many coal-fired power plants that are most likely to retire

Coal plant profits have declined with power prices

Coal plants, which often run in base-load mode, rely on electricity market clearing prices for profits

Electricity prices across the country have fallen, on average, 50 percent between 2008 and 2009

Electricity prices ($/MWh)

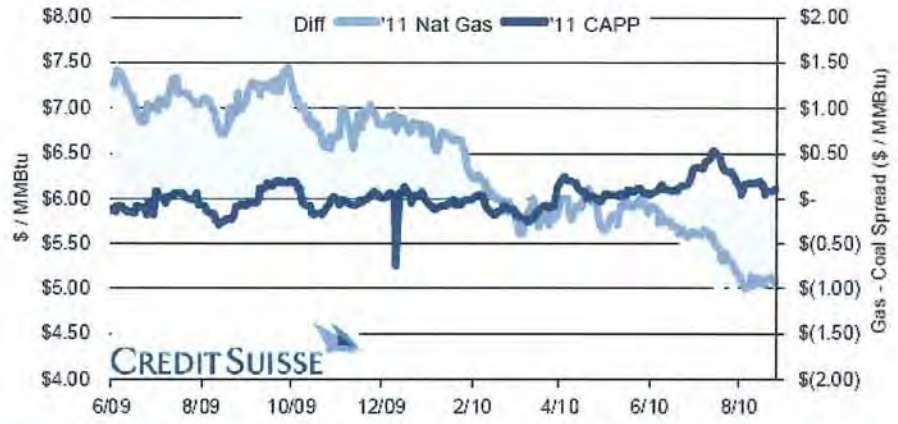


Sources: FERC Market Data, MJB&A Analysis

Coal is losing its price advantage over natural gas

Central Appalachian Coal (CAPP) futures are at a premium over natural gas on an electricity equivalent basis

Central Appalachian Coal (CAPP) v. Natural Gas Futures



Sources: Credit Suisse, Growth From Subtraction: Impact of EPA Rules on Power Markets, 2010

Coal plants most likely to retire are already facing troubling economics

- Many of the uncontrolled coal units, which are the most likely ones to retire, are smaller (250 MW and below) and are between 40 years and 60 years old. *(See table below.)*

- According to PJM's 2010 State of the Market Report, the ISO's independent market monitor finds over 11 GW of coal units at risk for retirement, since they "did not recover avoidable costs even with capacity revenues." Of these 11 GW most operated fewer than 1,000 of the 8,760 hours (capacity utilization rate of just over 10%) in 2009.
  - The same report found that of the 122 coal units in PJM with capacity less than or equal to 200 MW, 35 failed to recover their avoidable costs (variable costs), and another 52 were close to not recovering these costs.

Characteristics of U.S. Coal Plants

Unit Age	Units		Capacity		Avg. Unit Size (MW)	Pollution Control Installed (% of units)			
	Count	%	MW	%		SNCR	SCR	Scrubber	Uncontrolled
> 60 years	46	5%	1,762	1%	38	2%	4%	11%	87%
51 - 60 years	313	31%	39,787	13%	127	21%	9%	19%	64%
41 - 50 years	233	23%	58,078	20%	249	15%	19%	33%	53%
31 - 40 years	229	23%	114,090	38%	498	4%	43%	65%	27%
11 - 30 years	163	16%	80,165	27%	492	6%	29%	66%	31%
10 years or younger	7	1%	2,444	1%	349	43%	29%	57%	29%
Total	**1,004**		**297,639**			**13%**	**23%**	**41%**	**48%**

Small, old, and mostly uncontrolled units.

Data Sources: 2007/2008 EPA IPM, ARP, NBP Databases & Commercial Sources, MJB&A Analysis

Installing pollution controls economically and in a timely manner: Transition Assistance from Lowly Utilized Gas Units

Existing gas units have significant untapped power production potential, which can be expanded during off peak periods without constructing new generation. This lowly utilized capacity can assist in managing power plant outages required to install pollution control systems.

Estimated Utilization of U.S. Gas (CCGT) and Coal Plants by Region (2008)

NERC Region	Gas (Combined Cycle)			Coal		
	< 200 MW	200 – 500 MW	> 500 MW	< 200 MW	200 – 500 MW	> 500 MW
FRCC	20%	26%	46%	53%	64%	67%
MRO	10%	15%	15%	42%	59%	73%
NPCC	21%	36%	44%	47%	70%	79%
RFC	34%	13%	19%	48%	54%	61%
SERC	33%	29%	24%	36%	57%	66%
SPP	22%	37%	32%	44%	72%	71%
TRE	24%	36%	44%	-	82%	80%
WECC	49%	40%	47%	60%	78%	73%
U.S. Average	**30%**	**32%**	**35%**	**45%**	**60%**	**67%**

Source: MJB&A analysis based on U.S. Energy Information Administration's Form EIA-860 (2008) and EIA-923 (2008)

Accommodating Projected Retirements: All NERC reliability regions have excess capacity, totaling over 100 GW of excess capacity nationwide

Estimated Reserve Margins in NERC Regions

NERC Electric Reliability Region	Projected Reserve Margin[1] in 2013	Cushion Above NERC Target Reserve Margin [2] In 2013
TRE	23.9%	7.8 GW
FRCC	28.6%	6.1 GW
MRO	22.1%	3.2 GW
NPCC	24.4%	5.9 GW
RFC	24.3%	17.1 GW
SERC	26.3%	23.9 GW
SPP	30.3%	7.7 GW
WECC	42.6%	35.6 GW
Total		**107.3 GW**

1. Includes capacity defined by NERC as Adjusted Potential Reserve Margin, which is the sum of deliverable capacity resources, existing resources, confidence factor adjusted future resources and conceptual resources, and net provisional transactions minus all derates and net internal demand expressed as a percent of net internal demand.
2. Capacity in excess of what is required to maintain NERC Reference Margin or the regional target reserve levels.

Source: NERC, 2009 Long-Term Reliability Assessment: 2009-2018, October 2009.