



The Smart Grid's Importance to Power Markets, Today and in the Future

David J. Tudor
President & CEO

Today's Presentation

- Energy Markets
- Coal Retirement Effect on Supply
- Cost of Existing & New Generation
- Energy Consumption
- Demand Reduction Programs

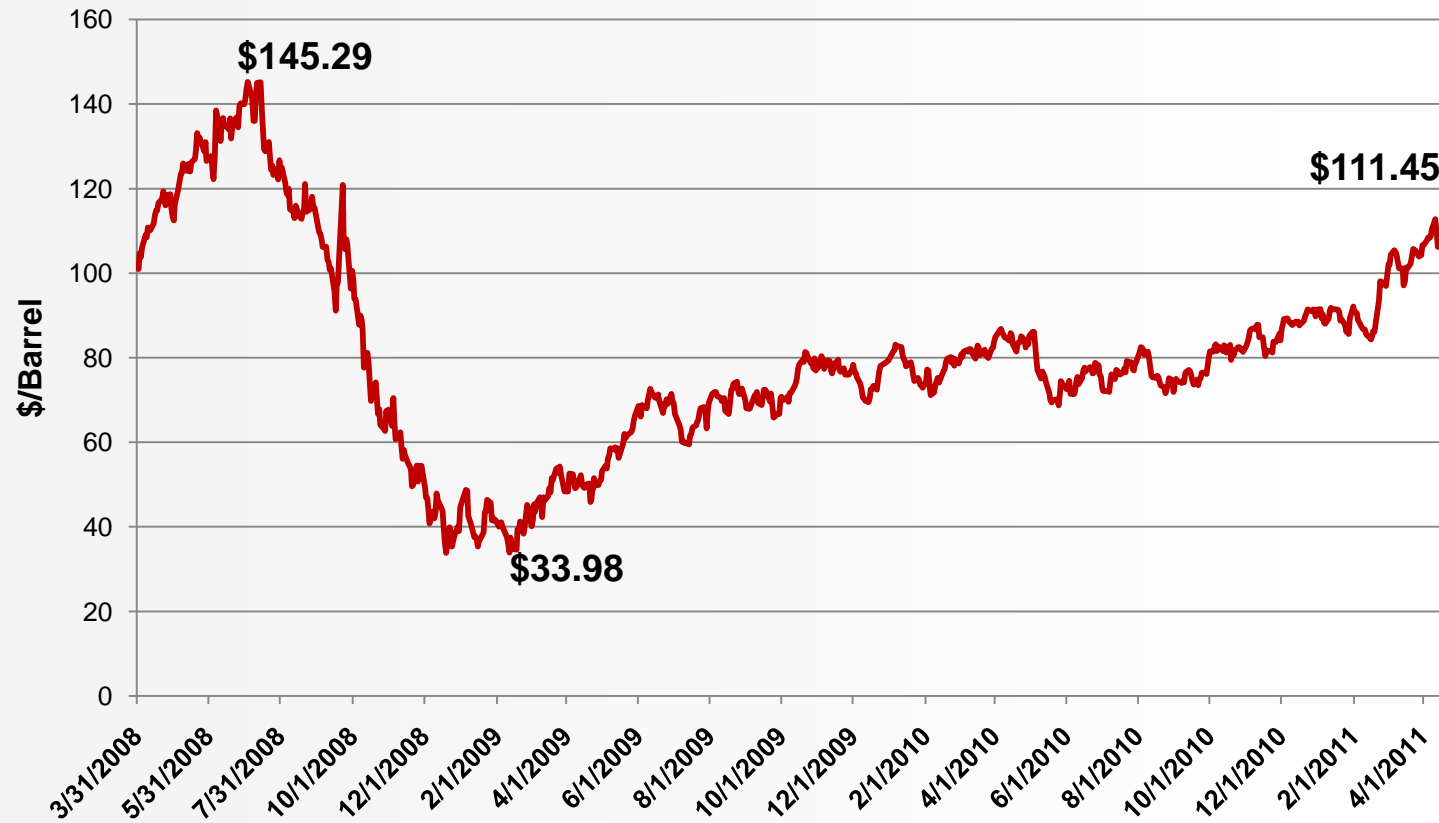
Energy Markets

- Development of Structured Electric Markets
- Economic Downturn Effect
 - Load
 - Financing
 - Liquidity
- Technology in Natural Gas Exploration (Shale)
- Lack of Climate Change Legislation
- Unknowns in EPA Regulation

Energy Markets

Historical Oil Prices

Crude Oil Prices in \$/Barrel



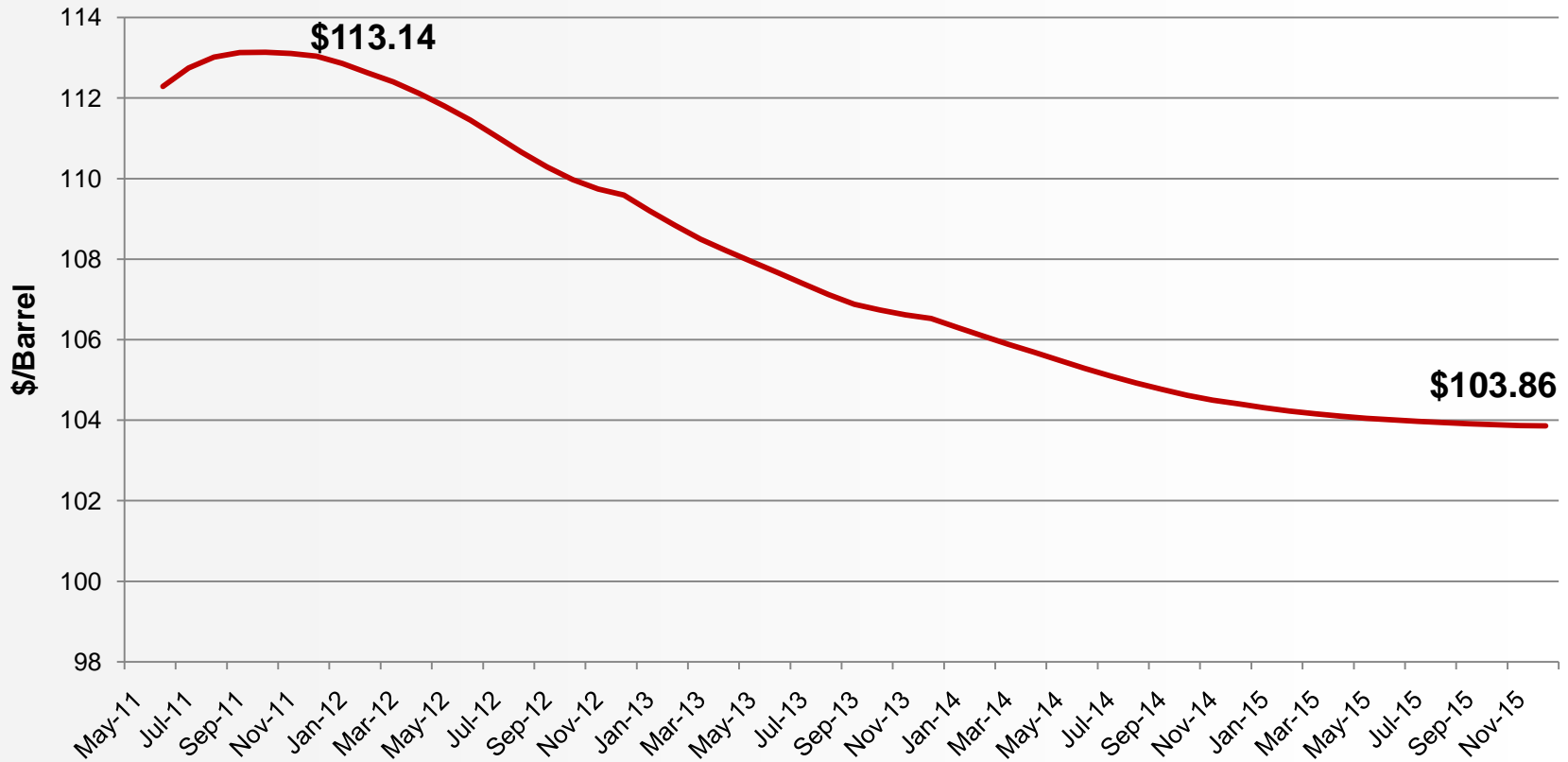
Prices as of April 22, 2011



Energy Markets

Forward Oil Prices

Crude Oil Prices in \$ / Barrel - Forward Nymex Curve



Prices as of April 22, 2011



Energy Market

Historical Coal Prices

CAPP & PRB Coal Prices in \$ / Ton



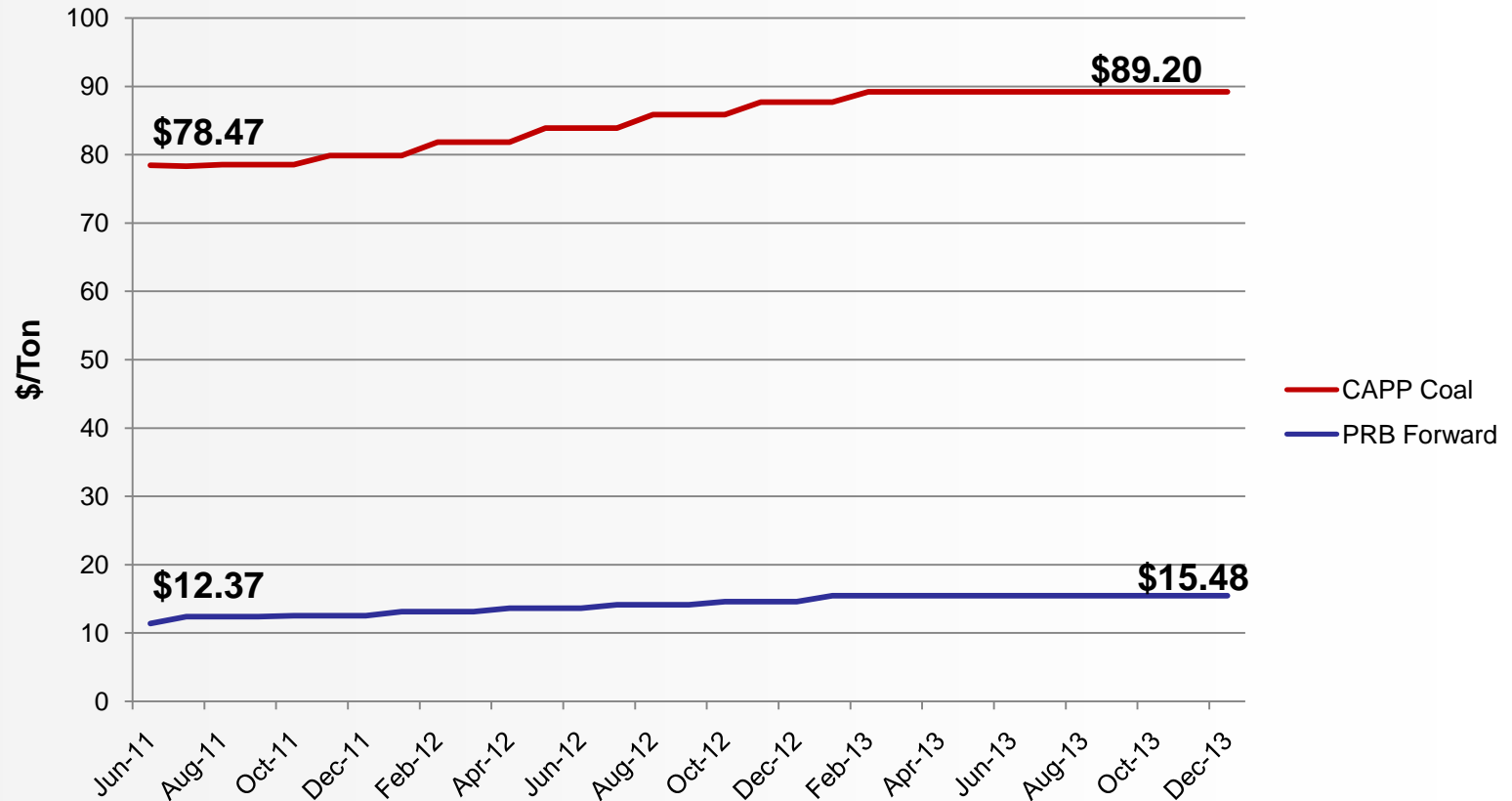
Prices as of April 22, 2011



Energy Market

Forward Coal Prices

CAPP & PRB Coal Prices in \$ / Ton



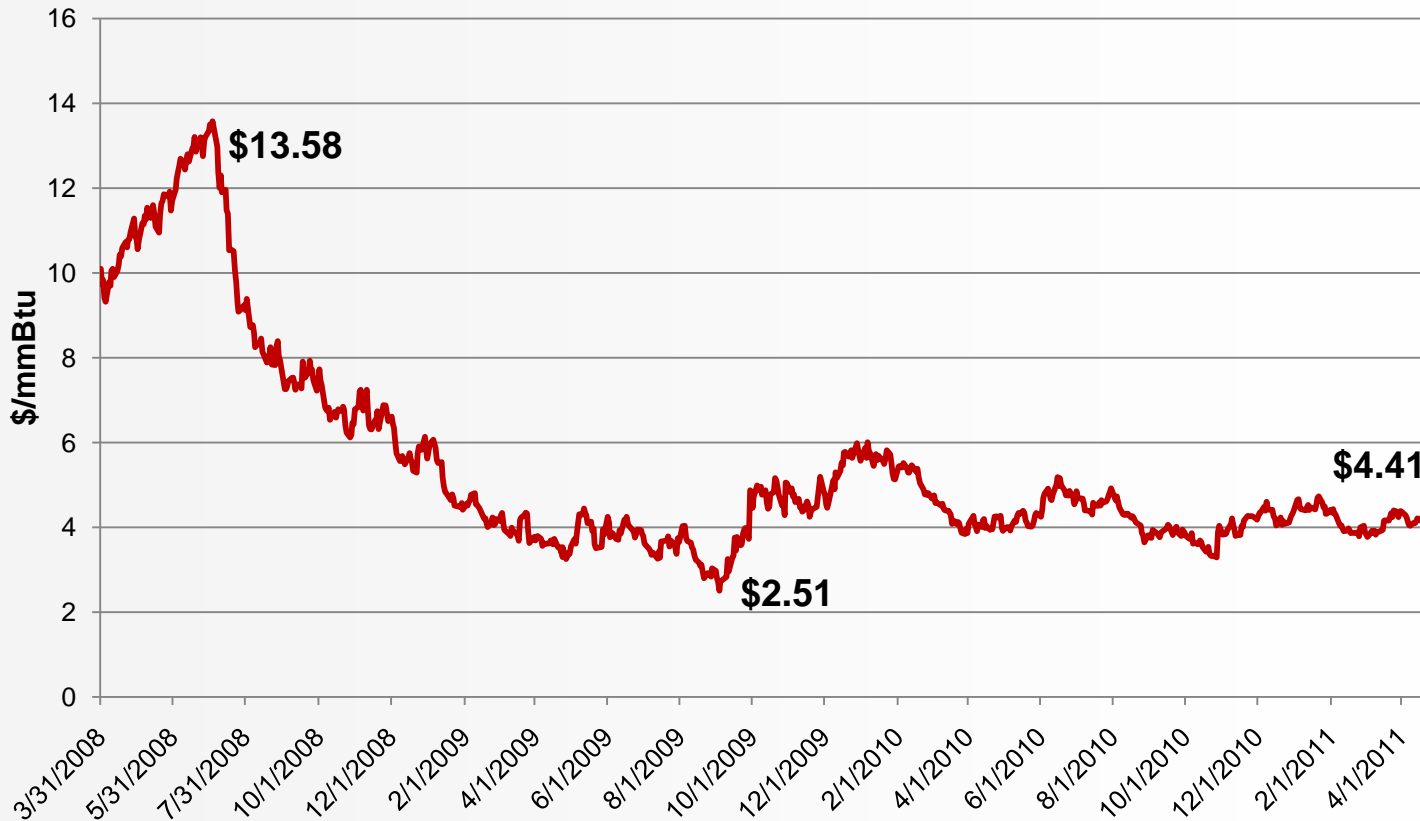
Prices as of April 22, 2011



Energy Markets

Historical Natural Gas Prices

Natural Gas in \$/mmBtu



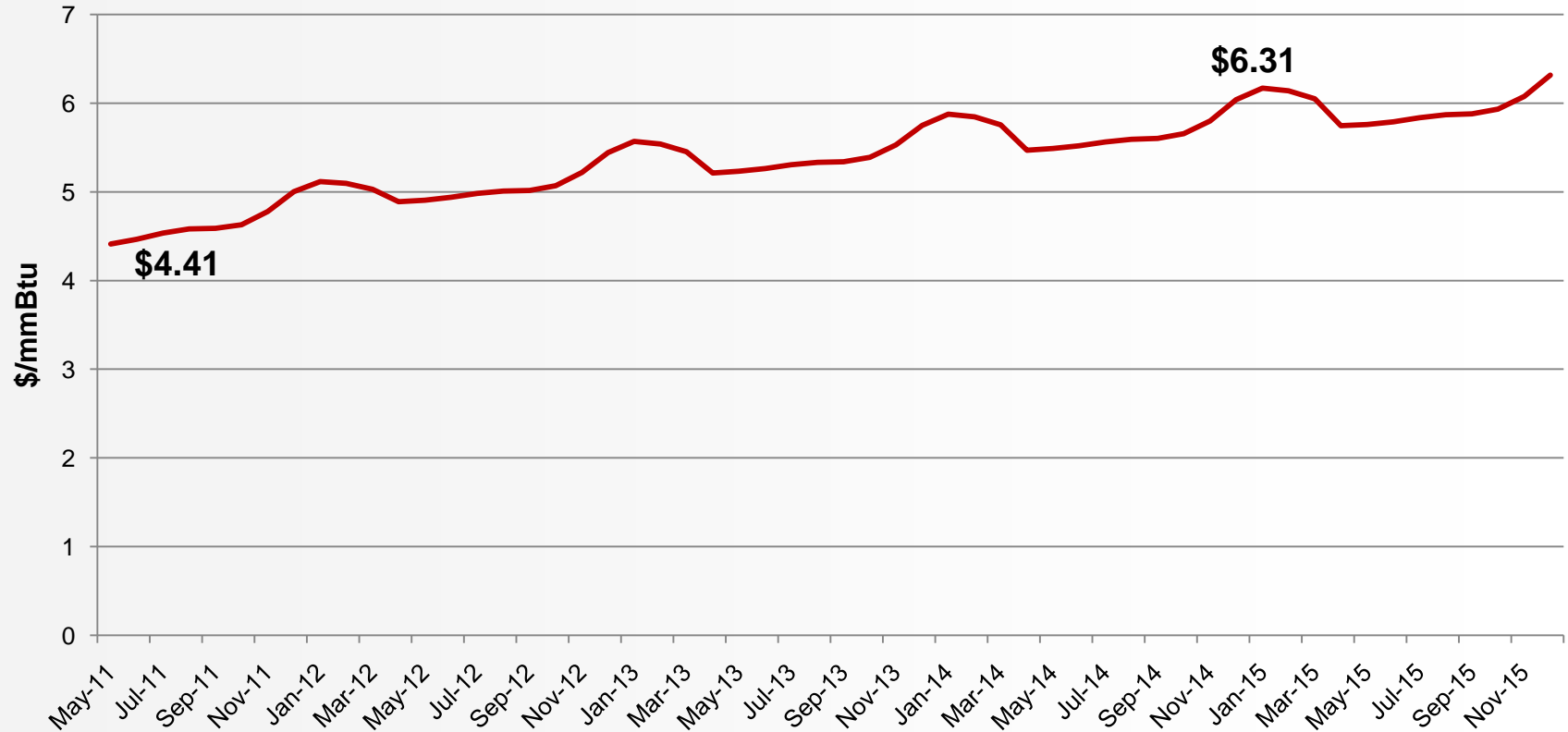
Prices as of April 22, 2011



Energy Markets

Forward Natural Gas Prices

Natural Gas in \$/mmBtu



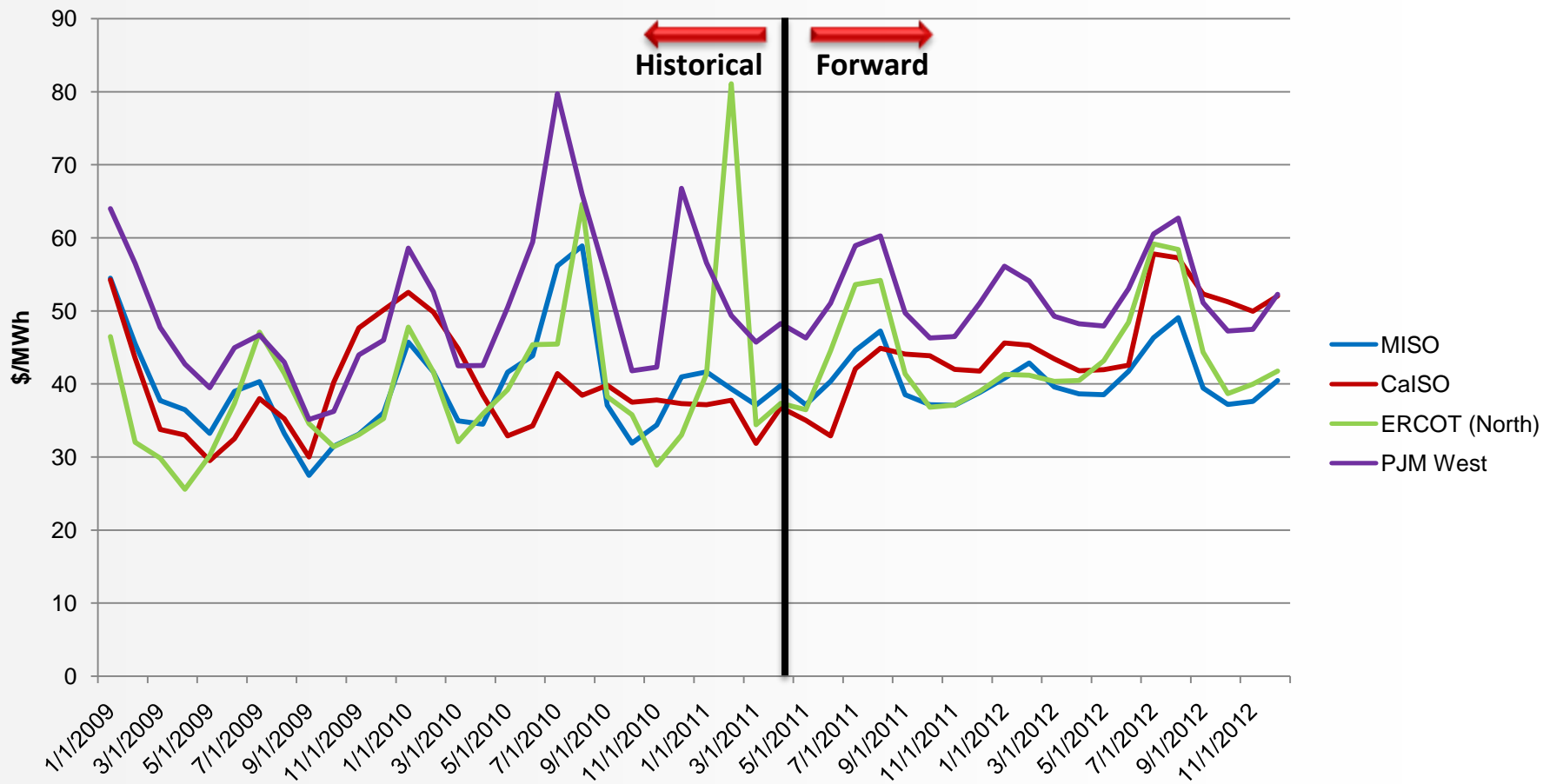
Prices as of April 22, 2011



Energy Markets

Power Prices

Power Prices in \$/MWh



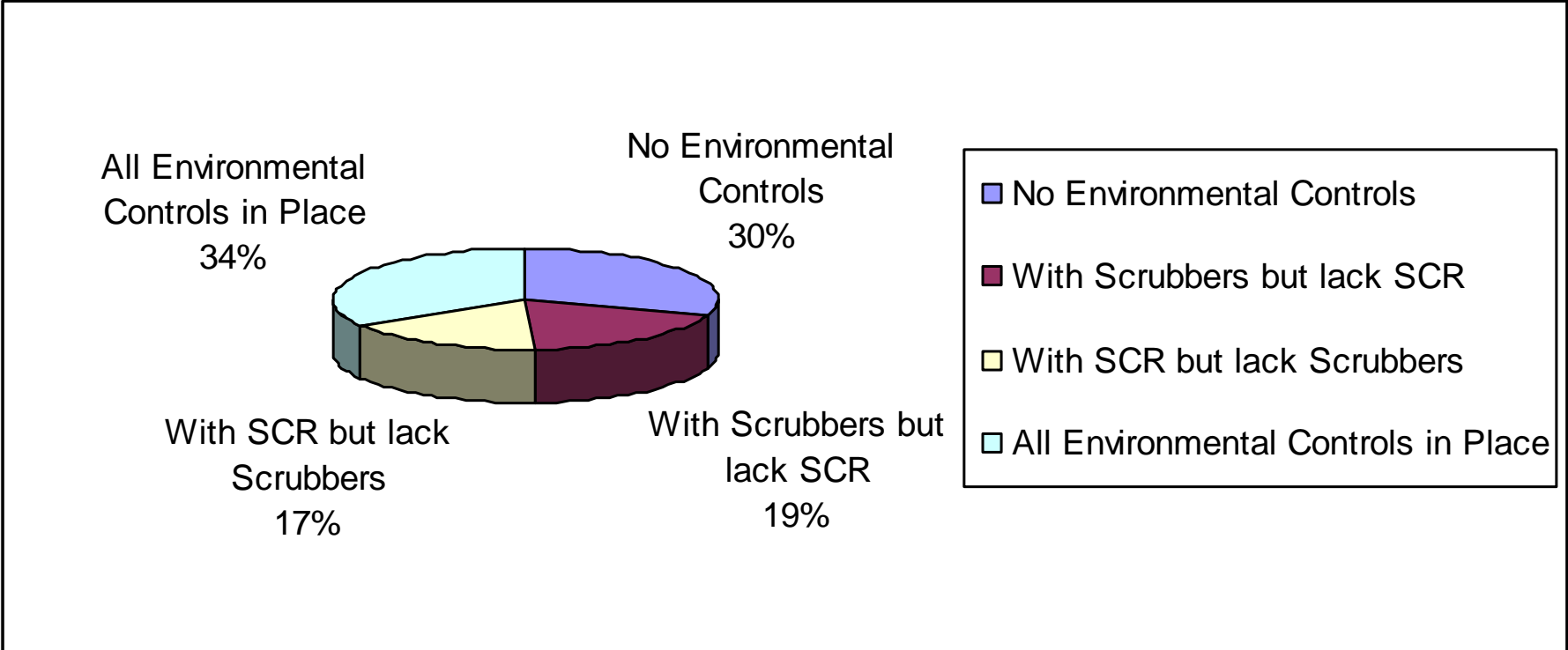
Prices as of May 10, 2011



Coal Retirement Effect on Supply

Utility-Level Asset Investment Impacts

U.S. Coal Plants with Environmental Controls as of 2010



Source: Credit Suisse

Estimated Coal Plant Retirements

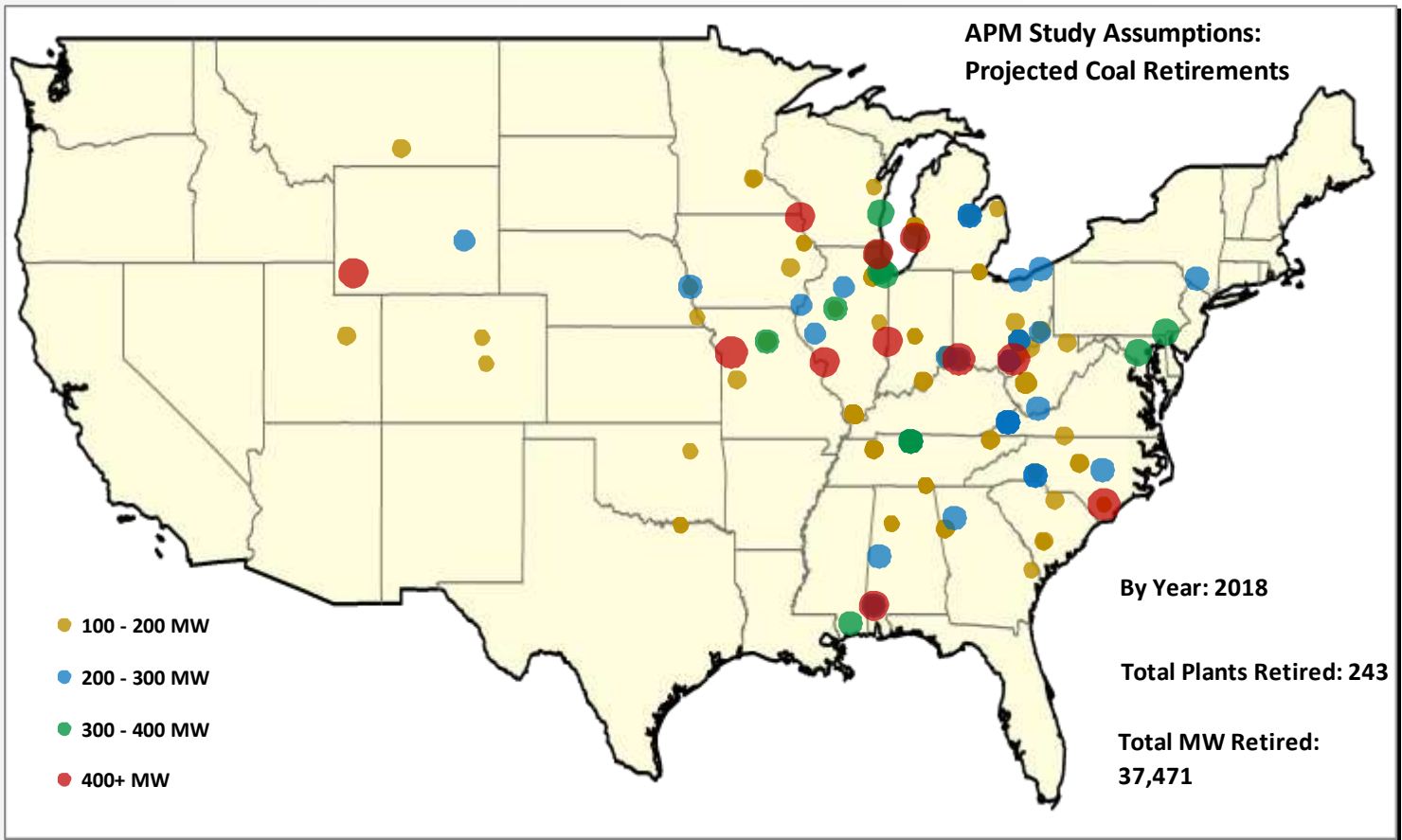
Forecast coal plant retirements (MW)

Region	2011-2018	2019-2027	Total
MISO	7,996	2,805	10,802
NYISO	279	0	279
PJM	12,937	778	13,715
SERC	13,607	5,767	19,374
SPP	1,338	1,827	3,165
Total in Original Study:	36,156	11,177	47,333
FRCC	0	882	882
NEPOOL	97	0	97
Total in Eastern Interconnect:	36,253	12,059	48,312
ERCOT	0	1,592	1,592
WECC	1,218	1,529	2,747
Total	37,471	15,180	52,651

Source: Wood Mackenzie, APM

Estimated Coal Plant Retirements

Map of Forecast Coal Plant Retirements



Cost of Existing Generation

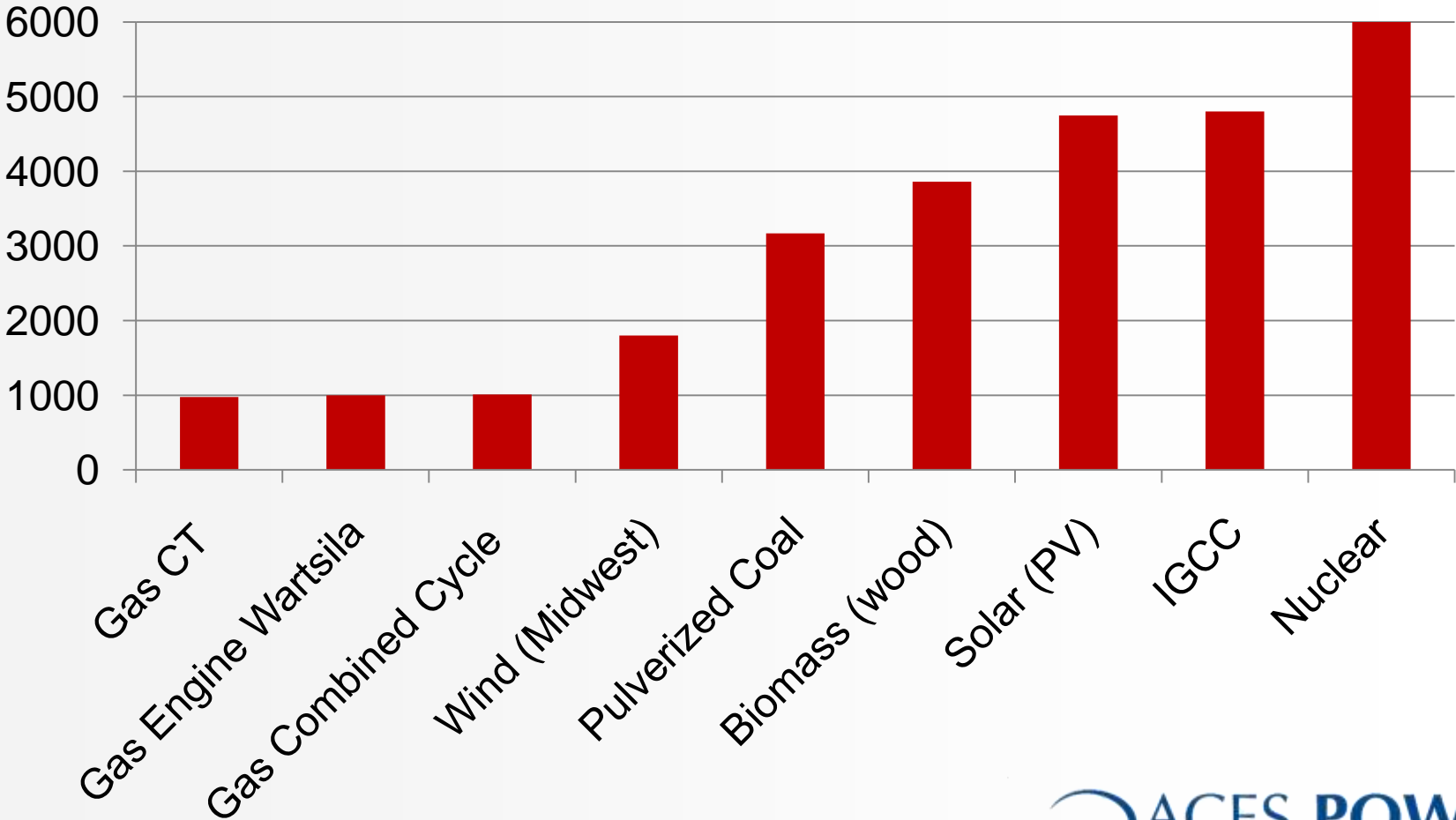
Cost of Existing Generation

Capital Acquisition Costs - \$/kW

Counter-parties/Facility	Date	Region	Type	MW	\$/ kW
TPF/Chesapeake Peaking/Tyr Energy	2/14/2008	PJM	CT	300	\$ 296.67
Calpine/Pepeco Holdings	4/20/2010	PJM	Gas Fleet	4490	\$ 367.48
Dynegy/Tenaska Power Fund	5/27/2008	PJM	CT	800	\$ 460.00
Tenaska Power Fund/International Power	5/12/2008	MISO/PJM	CT	1857	\$ 460.96
Kelson/OGE/ Redbud	9/29/2008	SPP	CCGT	1230	\$ 692.68
First Energy/AMP/ Freemont CCGT	3/15/2011	PJM	CCGT	685	\$ 708.03
Calpine/Excel/ Colorado Plants	4/5/2010	WECC	Gas Fleet	931	\$ 793.77

Costs of New Generation

Capital Installed Costs - \$/kW

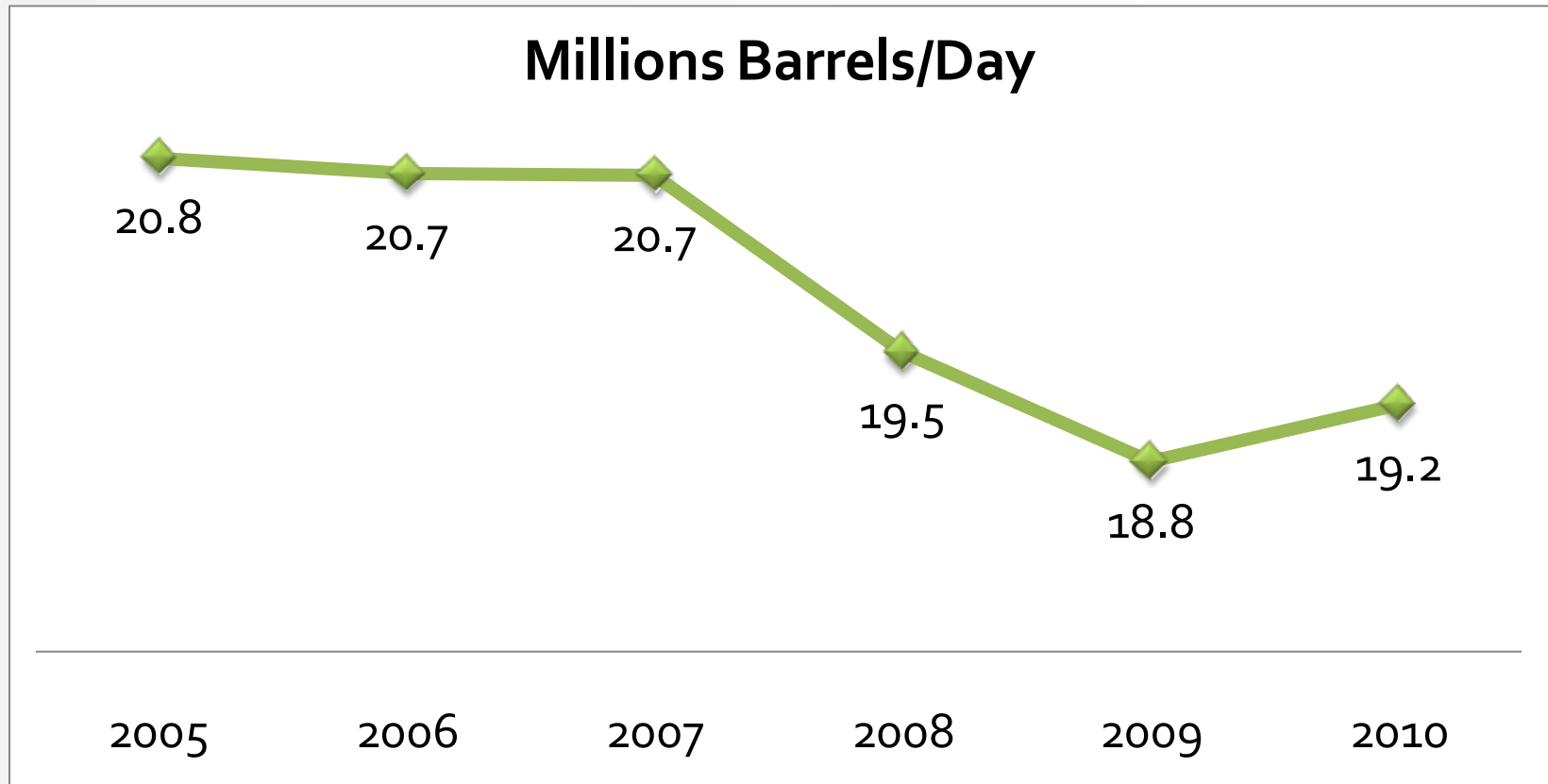


Developer sources, DOE/EIA Nov 2010, APM estimates

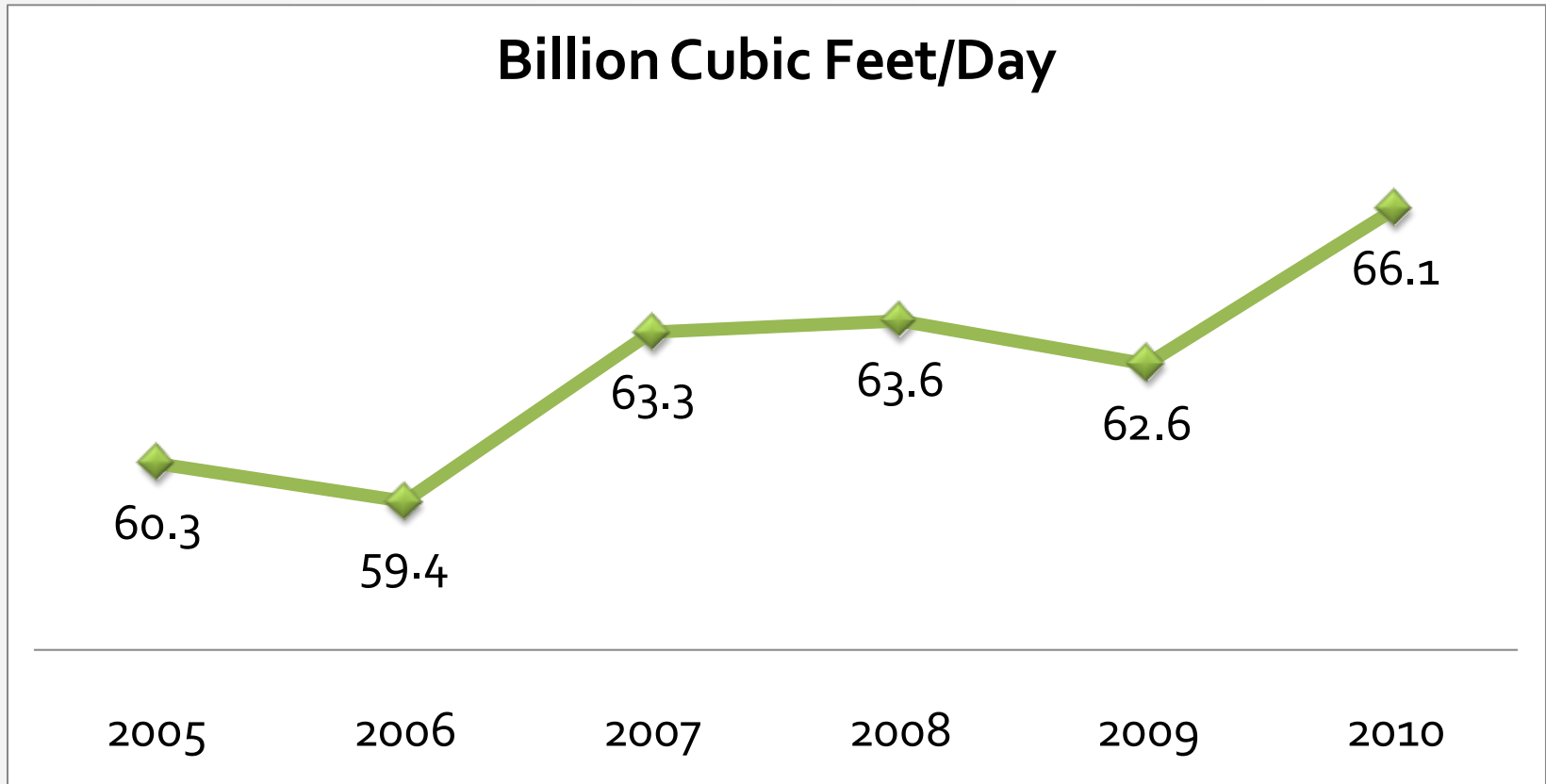


Energy Consumption

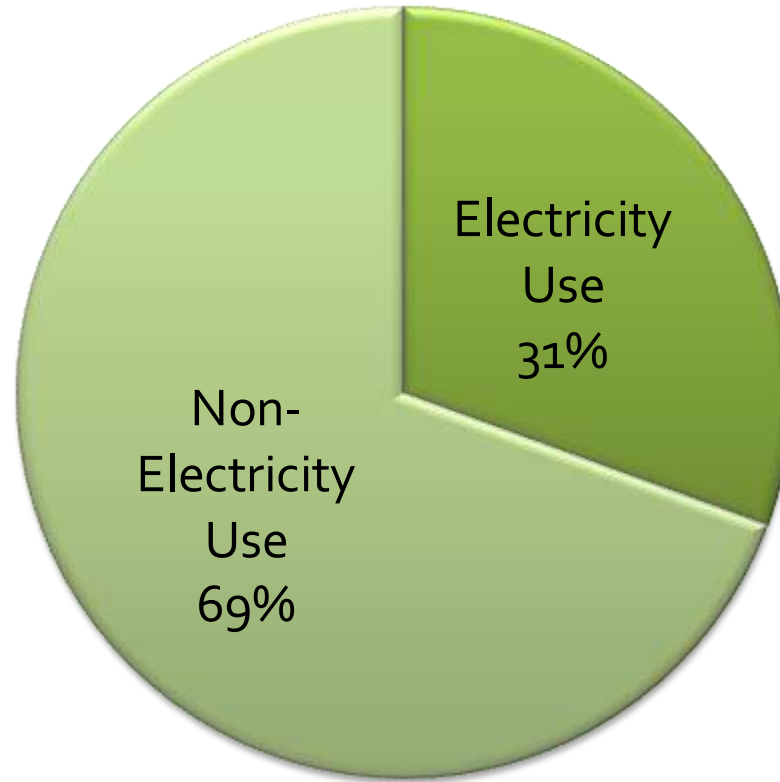
US Petroleum Consumption 2005 - 2010



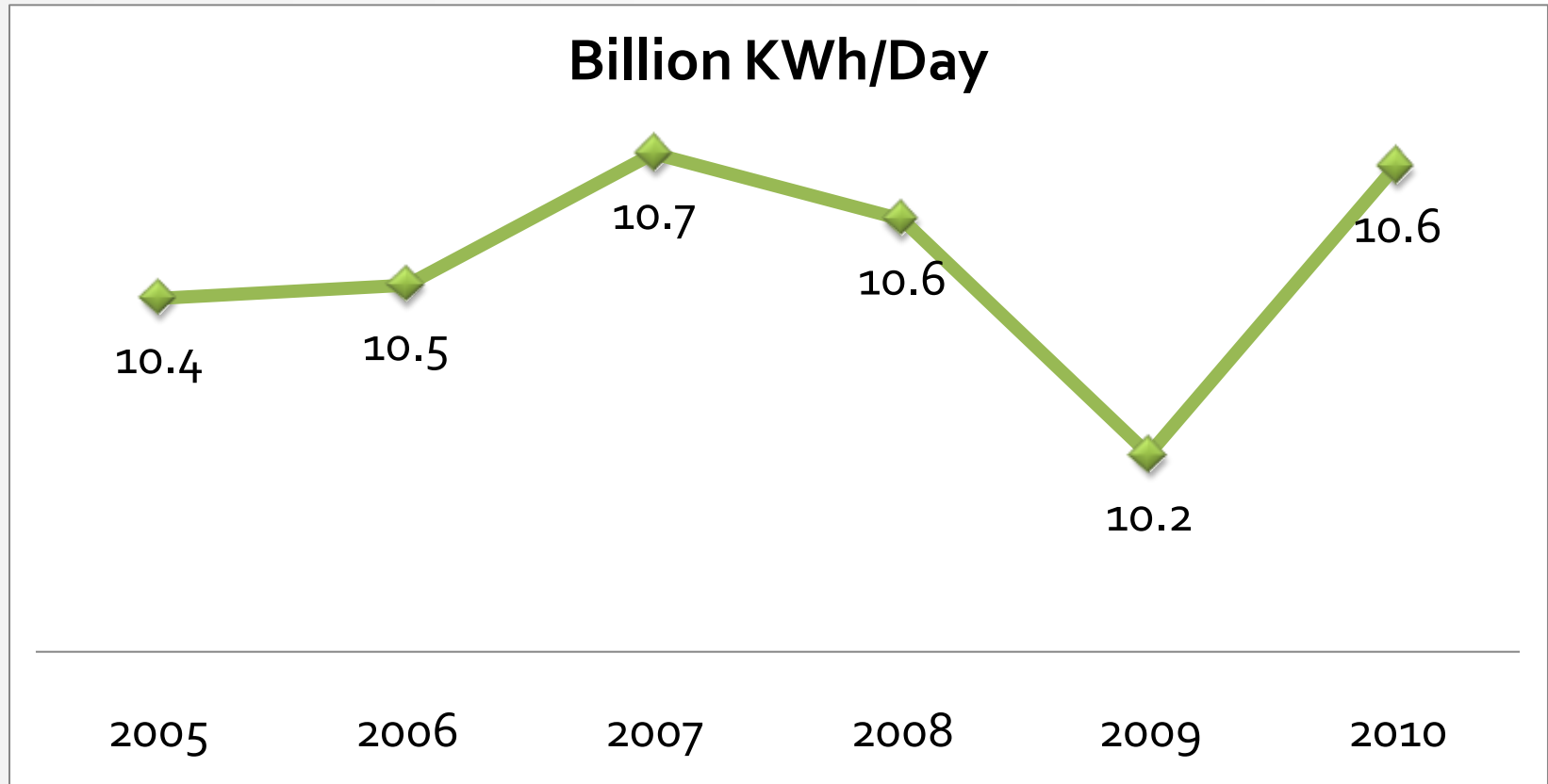
US Natural Gas Consumption 2005 - 2010



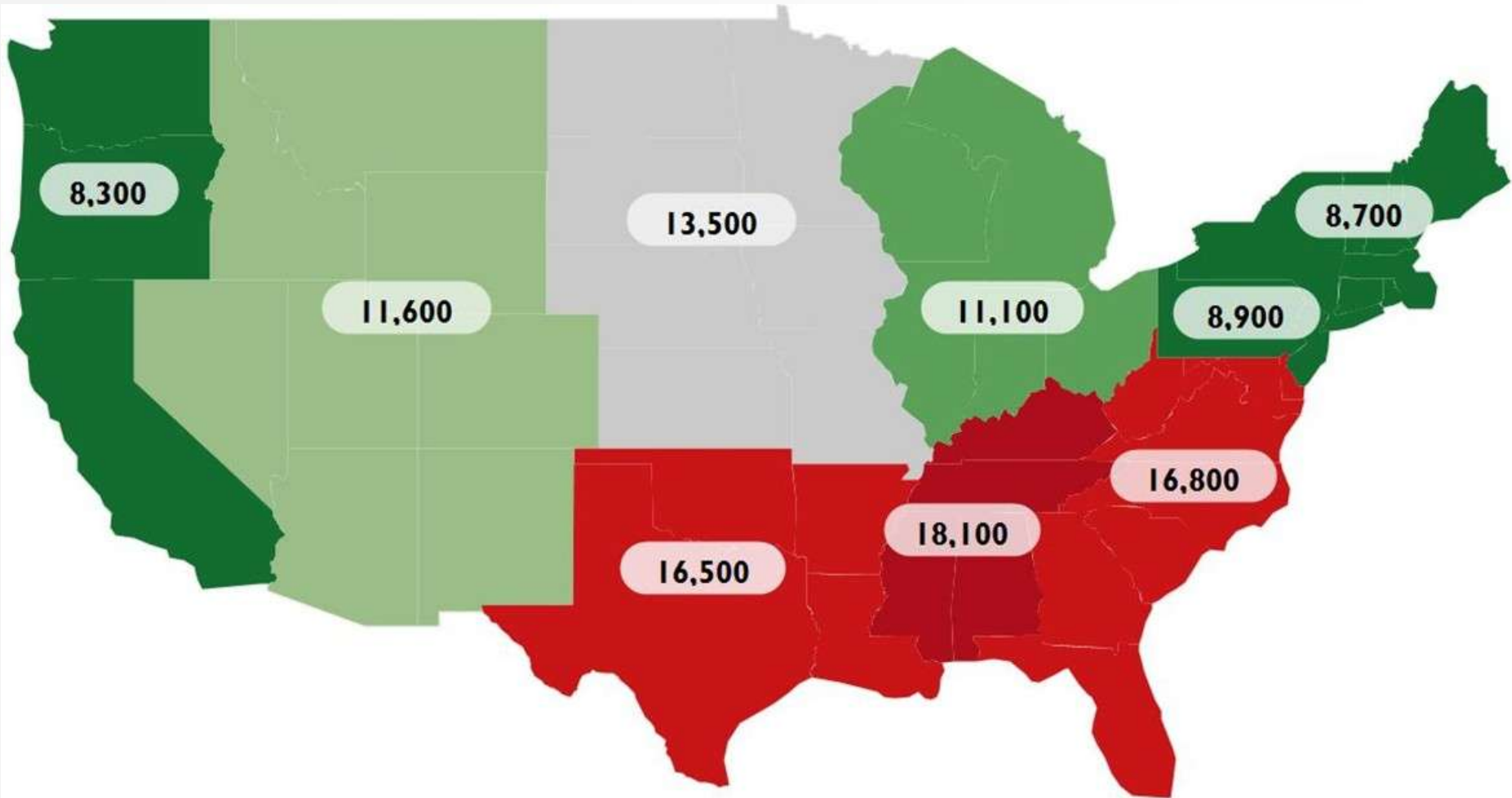
US Natural Gas Consumption 2010



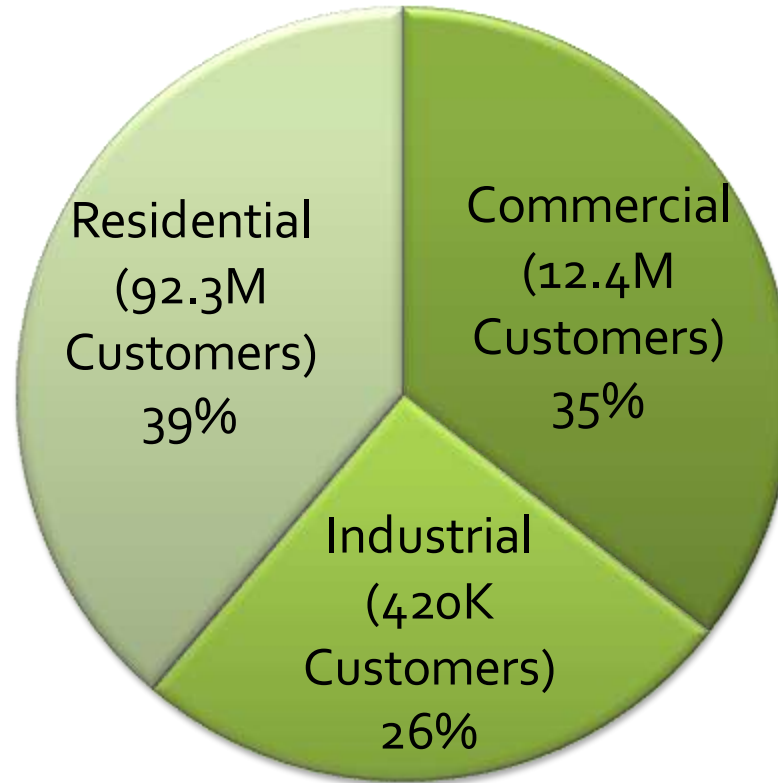
US Electric Consumption 2005 - 2010



Household Electricity Consumption KWh 2010



Electricity Consumption by End User 2010



NYC 50 Story Building Electricity Use



2500 Houses

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Demand Reduction Programs

- Great Potential and Value Versus New Generation
- Not Big Enough to Avoid New Generation
- Complicates Load Forecasting Initially
- Difficult to Implement...Requires "Change"
- Seems to be Developing Momentum

Smart Grid Development Companies



Company	Net Income (\$000's)			Stock Price		
	2010	2009	2008	Current	2009	2008
Enernoc	\$9,577	(\$6,829)	(\$36,662)	\$17.02	\$31.14	\$10.44
Itron	\$104,770	(\$2,249)	\$28,059	\$55.27	\$61.55	\$65.30
Comverge	(\$31,351)	(\$31,666)	(\$94,106)	\$4.16	\$9.82	\$4.59