
Presentation: Problems Facing Coal-Fired Generators in 2014 and Coming Years

Coal Finance 2014

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**THE INSTITUTE FOR
ENERGY ECONOMICS
& FINANCIAL ANALYSIS**

Types of Coal Plant Owners

- **Three main types of coal plant owners**
 - **Merchant Companies**
 - **Regulated Investor Owned Utilities**
 - **Public Power Utilities & Co-operatives**
- **Risk varies between ownership types.**
- **Merchant owners – risks of competitive markets borne by investors.**
- **Regulated utilities – reduced risks.**
 - **protected by state regulatory commissions**
 - **can pass through increased costs to ratepayers.**
- **Public power utilities & Co-ops – reduced risks.**
 - **can raise rates to pass through coal plant costs to ratepayers.**



Risks of Investing in Coal

- **Low natural gas prices.**
- **Flat or slow sales growth due to slow economic recovery and energy efficiency.**
- **Increased use of renewable resources (mainly wind and solar).**
- **Low capacity market prices**
- **Need for upgrades to meet new environmental rules and requirements.**
- **Increasing coal prices in some areas.**
- **Potential for comprehensive system of regulation of greenhouse gas (CO₂) emissions.**
- **Aging of nation's fleet of coal plants.**

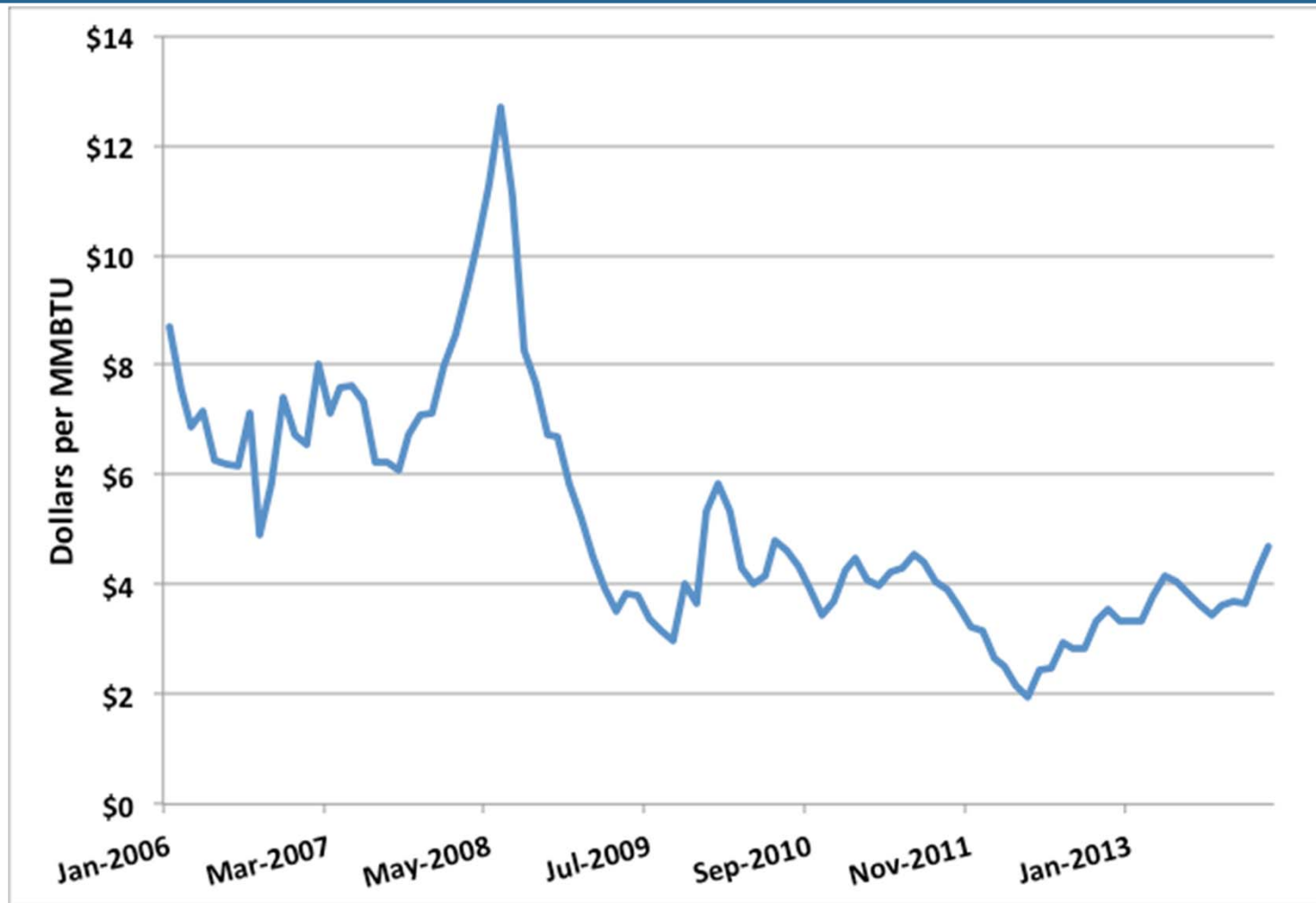


Natural Gas Prices Collapsed in 2008/2009

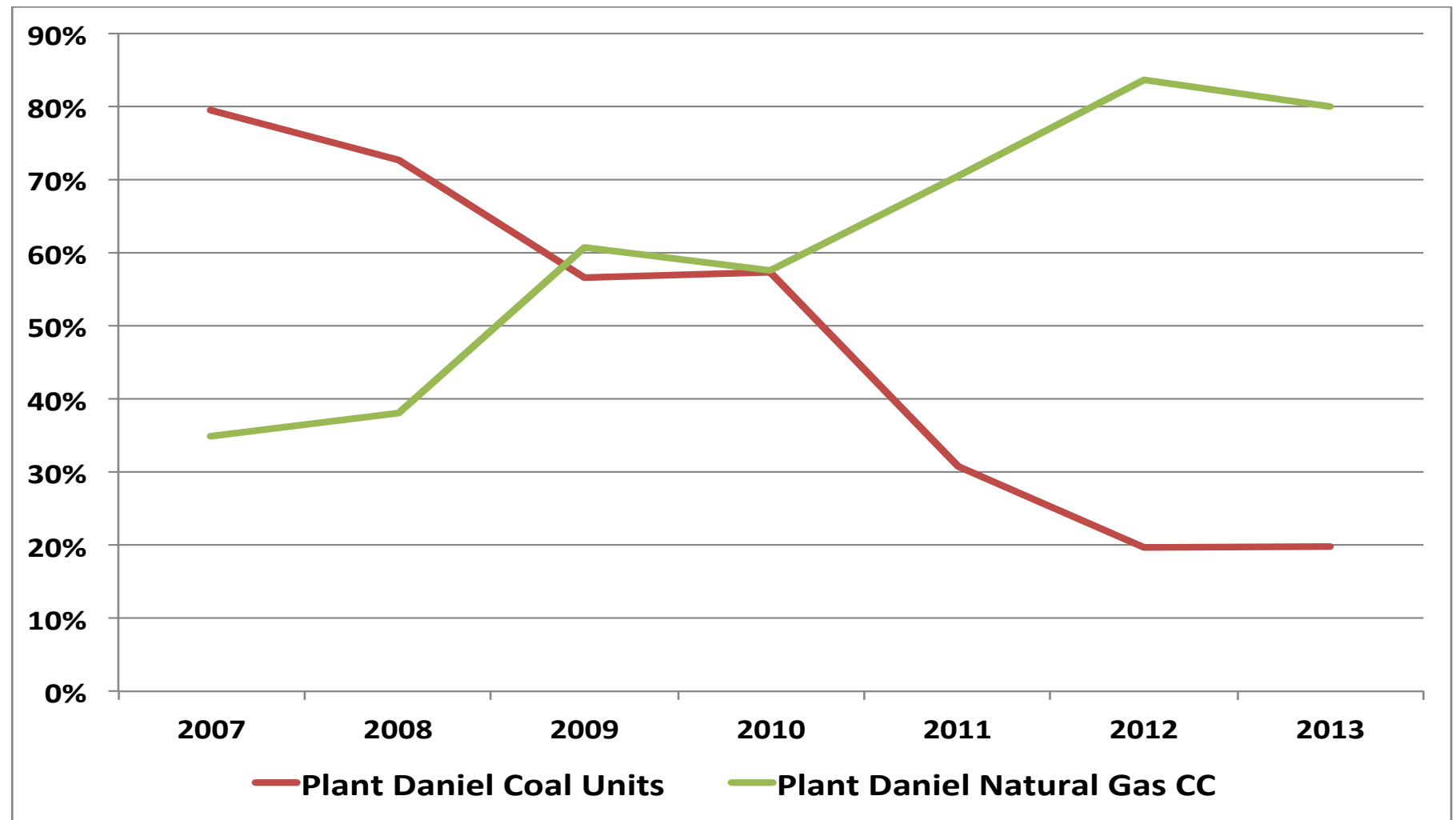
- **This has led to:**
 - **Increased generation at gas-fired units and lower generation at coal-fired units.**
 - **Lower energy market prices that, in turn, have led to less net revenue per MWh.**
 - **Pre-tax earnings for coal units and plant valuations have “fallen off a cliff.”**



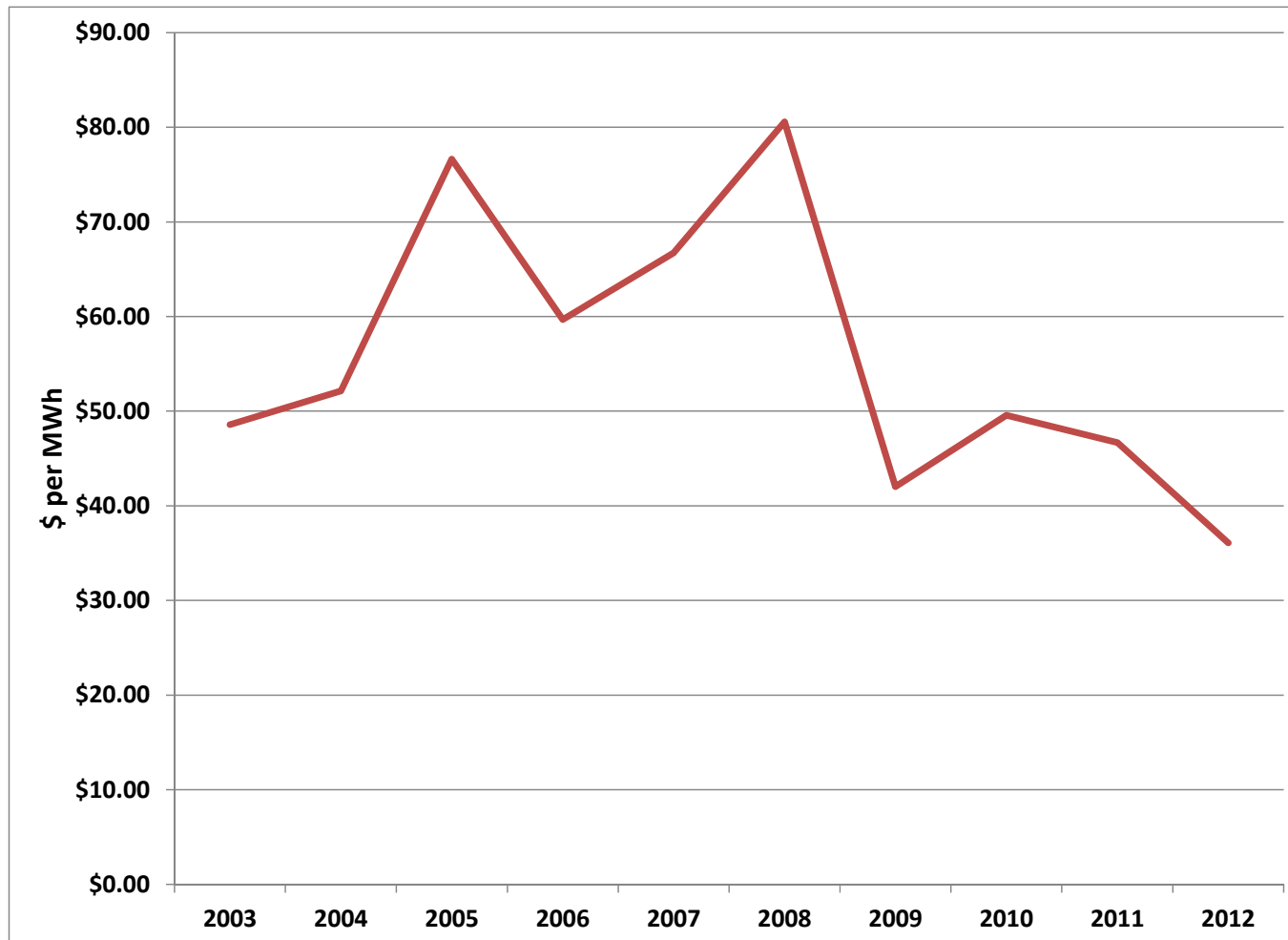
Natural Gas Prices Collapsed in 2008/09



2007 – 2013 Generation at Mississippi Power's Plant Daniel Coal and Gas Units

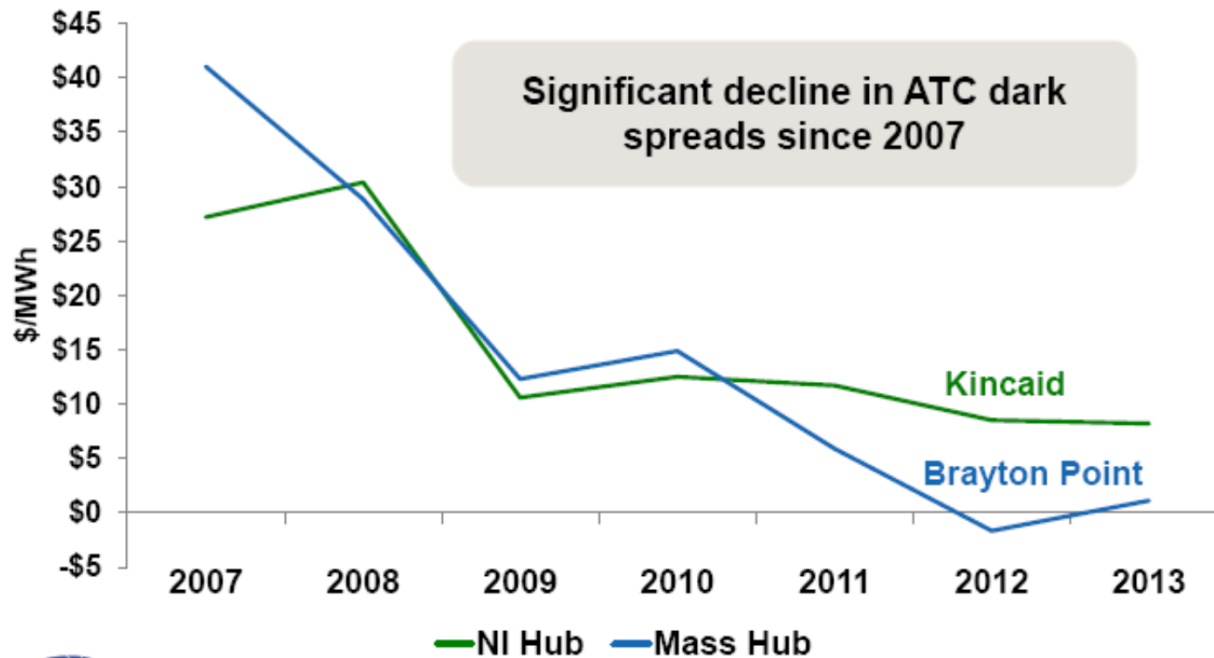


When Gas Prices Collapsed, Average Wholesale Electric Prices Went With Them – Example ISO-NE



Spread Between Market Prices and Variable Costs of Generation at Coal Units Decreased Precipitously

Change in Power Markets Dark Spreads



Dominion

Represents generic market dark spreads. Forward dark spreads as of 8/20/12.

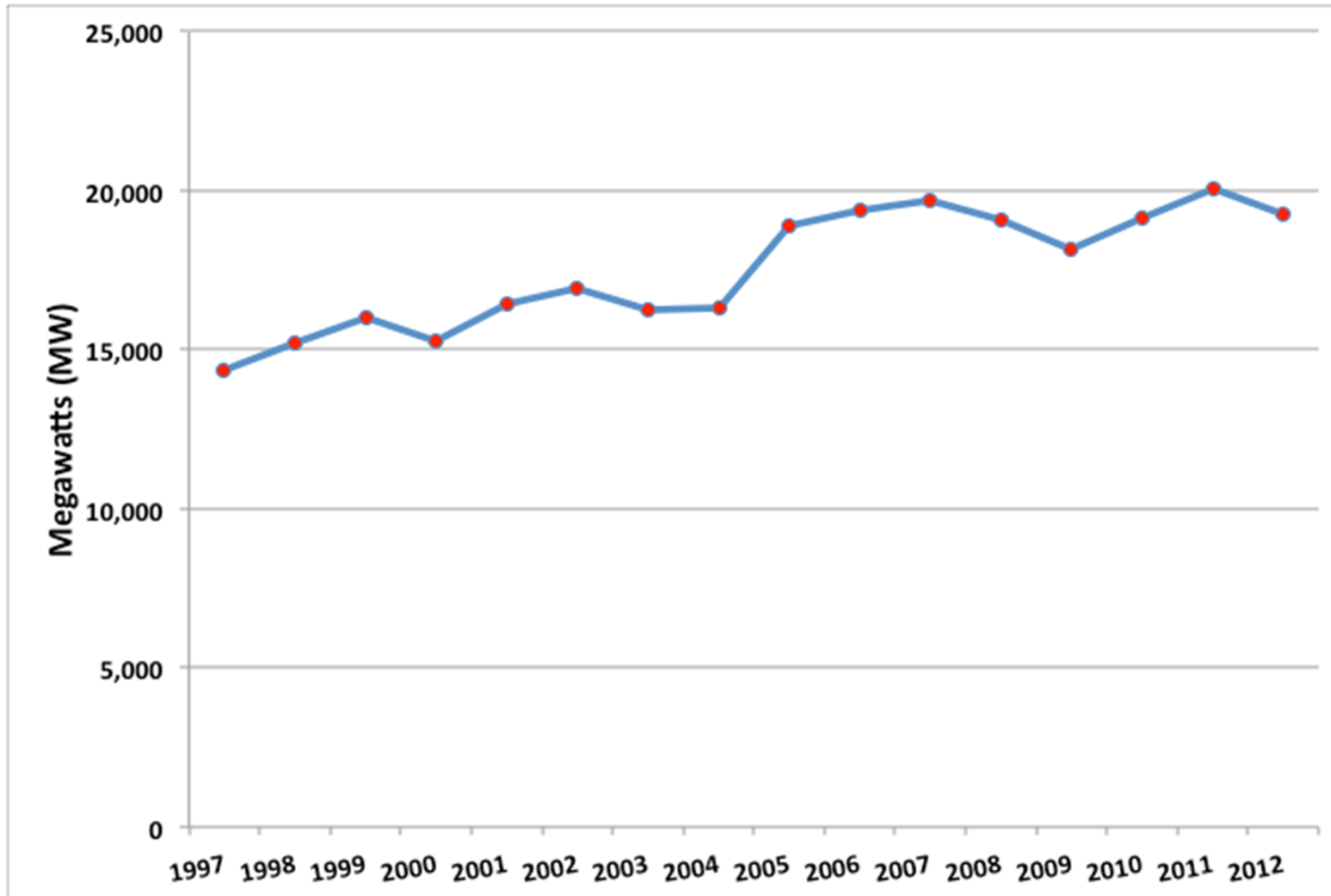
Please refer to page 2 for risks and uncertainties related to projections and forward looking statements.

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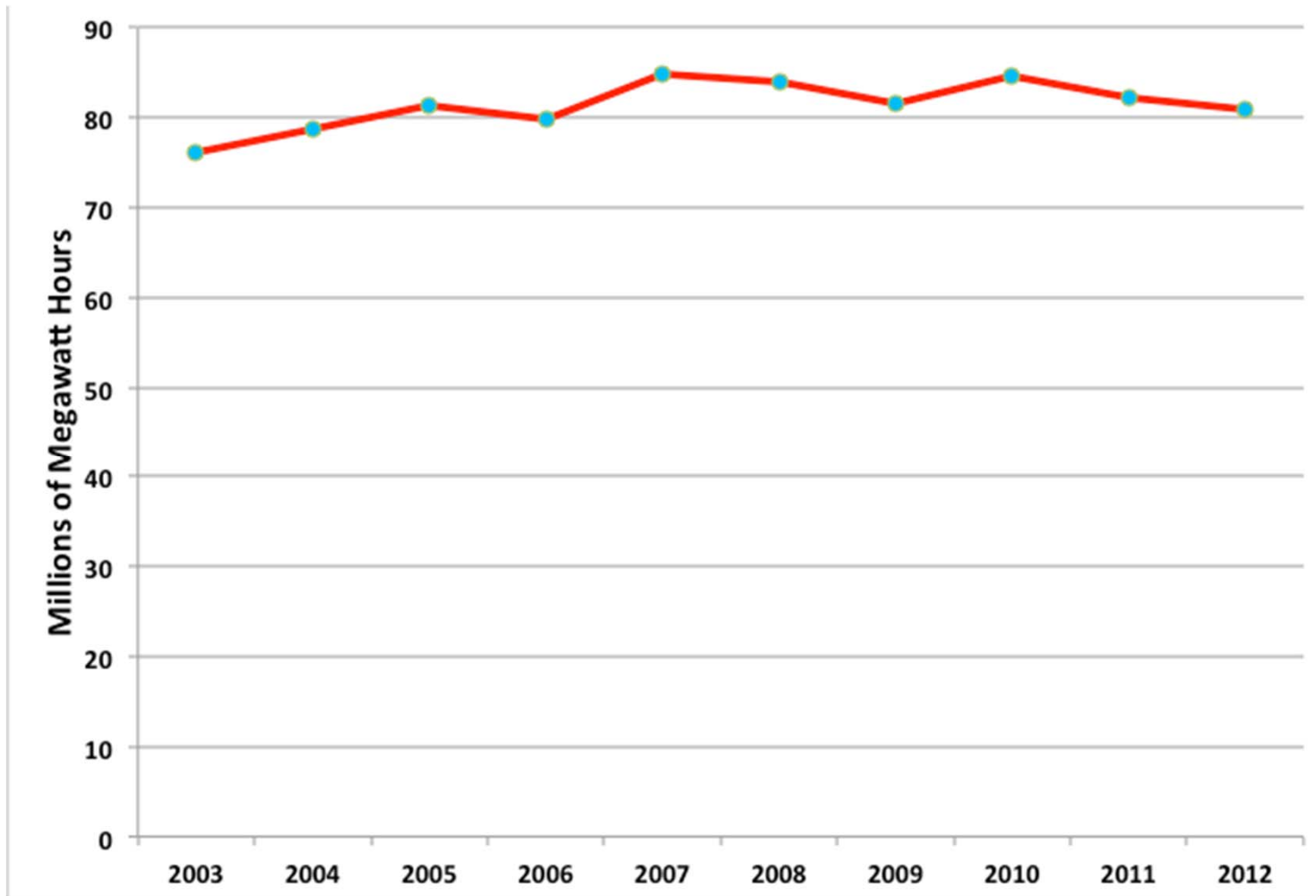


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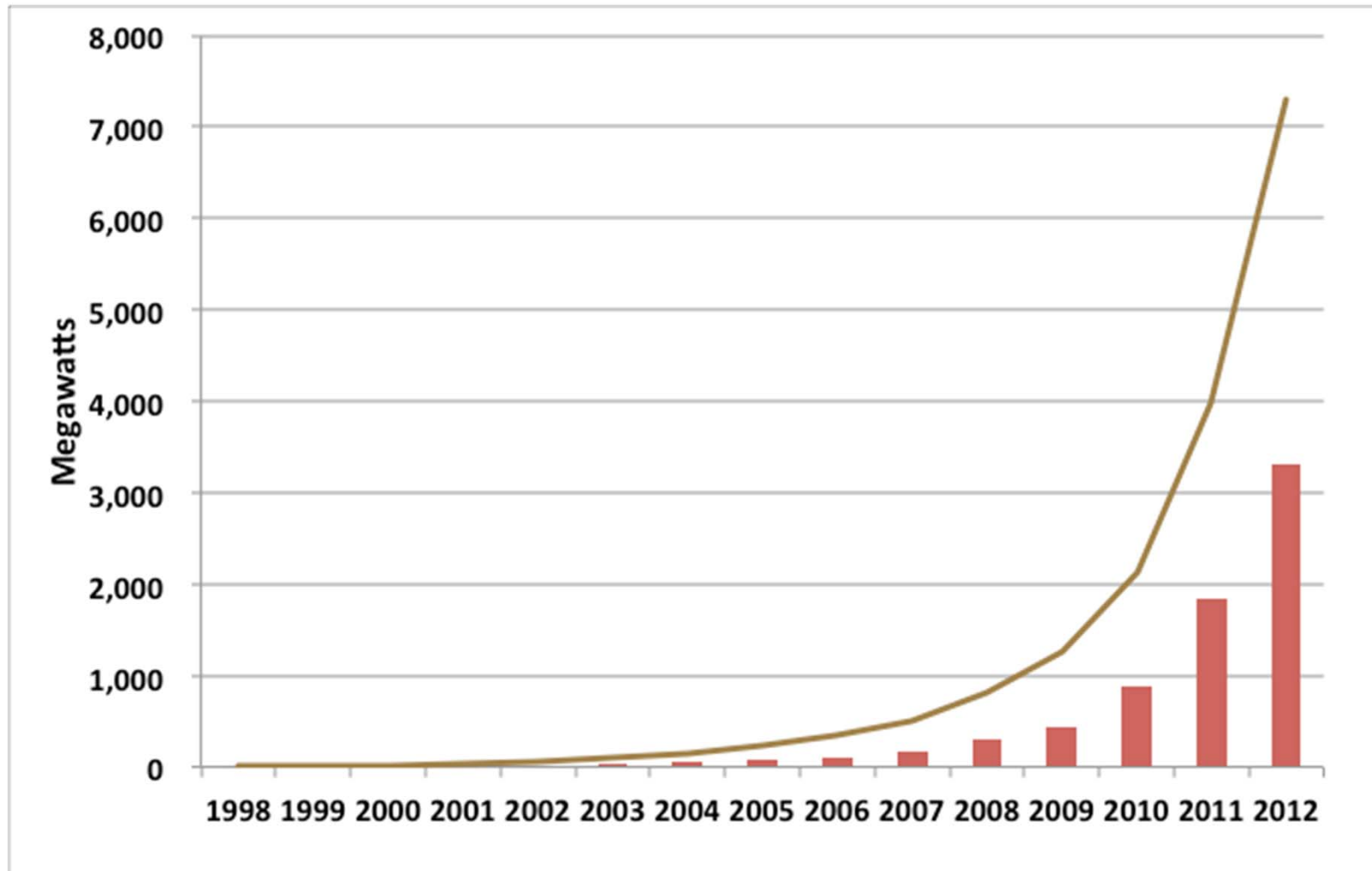
Lower Growth in Peak Demands – Example Dominion Virginia Power



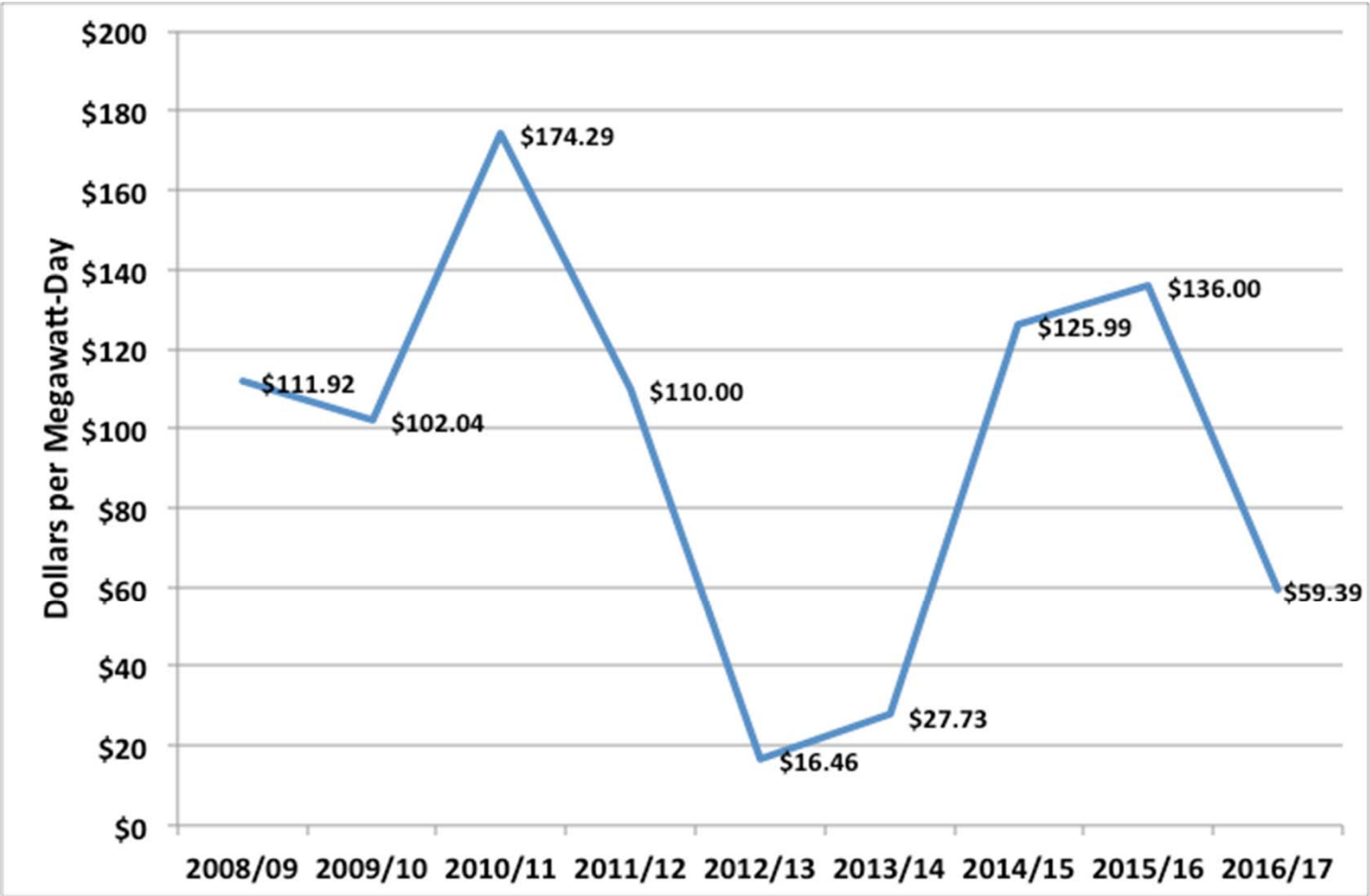
Flat Energy Sales – Example Dominion Virginia Power



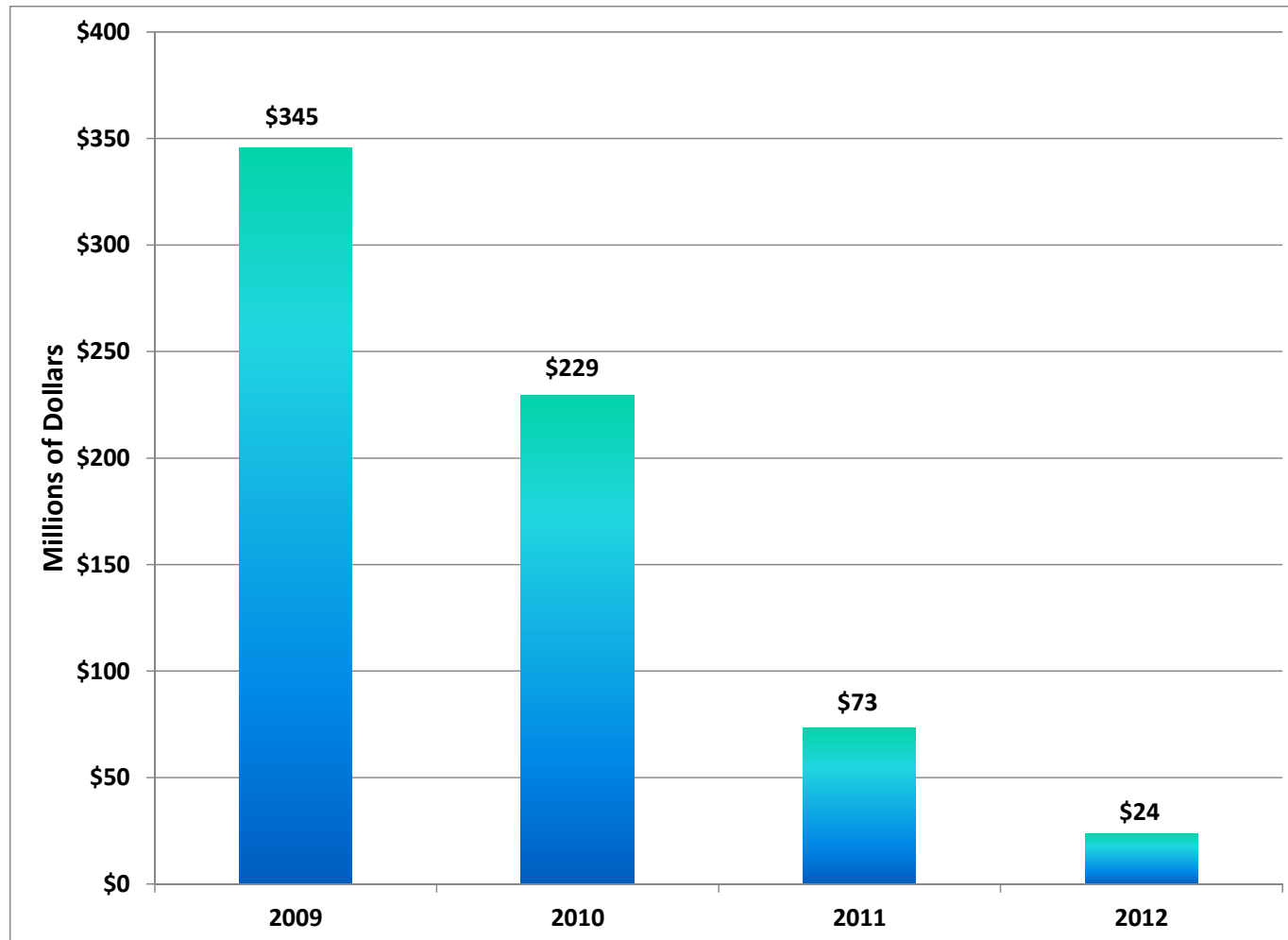
Increased Competition from Renewable Resources – Example Solar



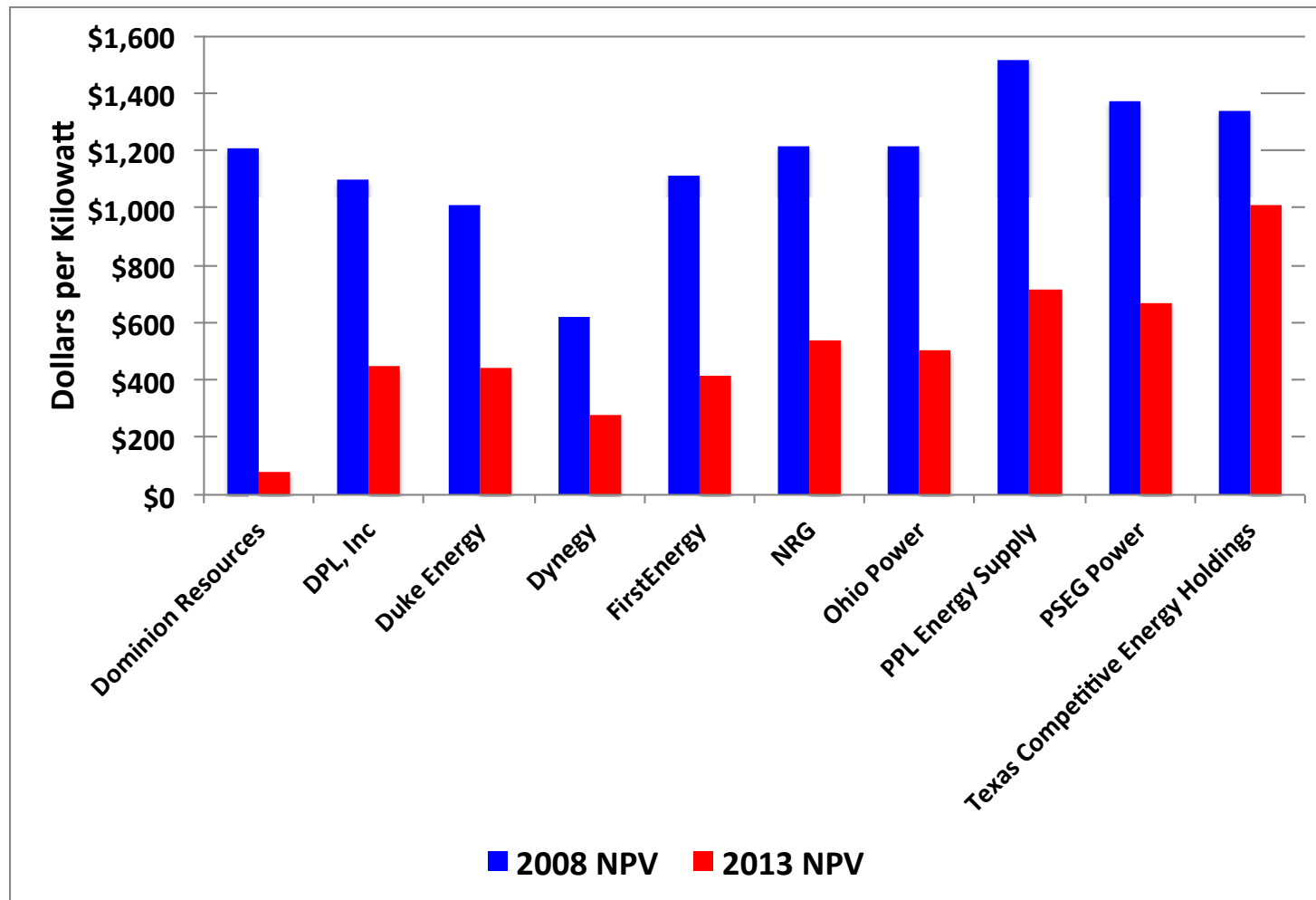
Capacity Market Prices Declined Too – Example PJM



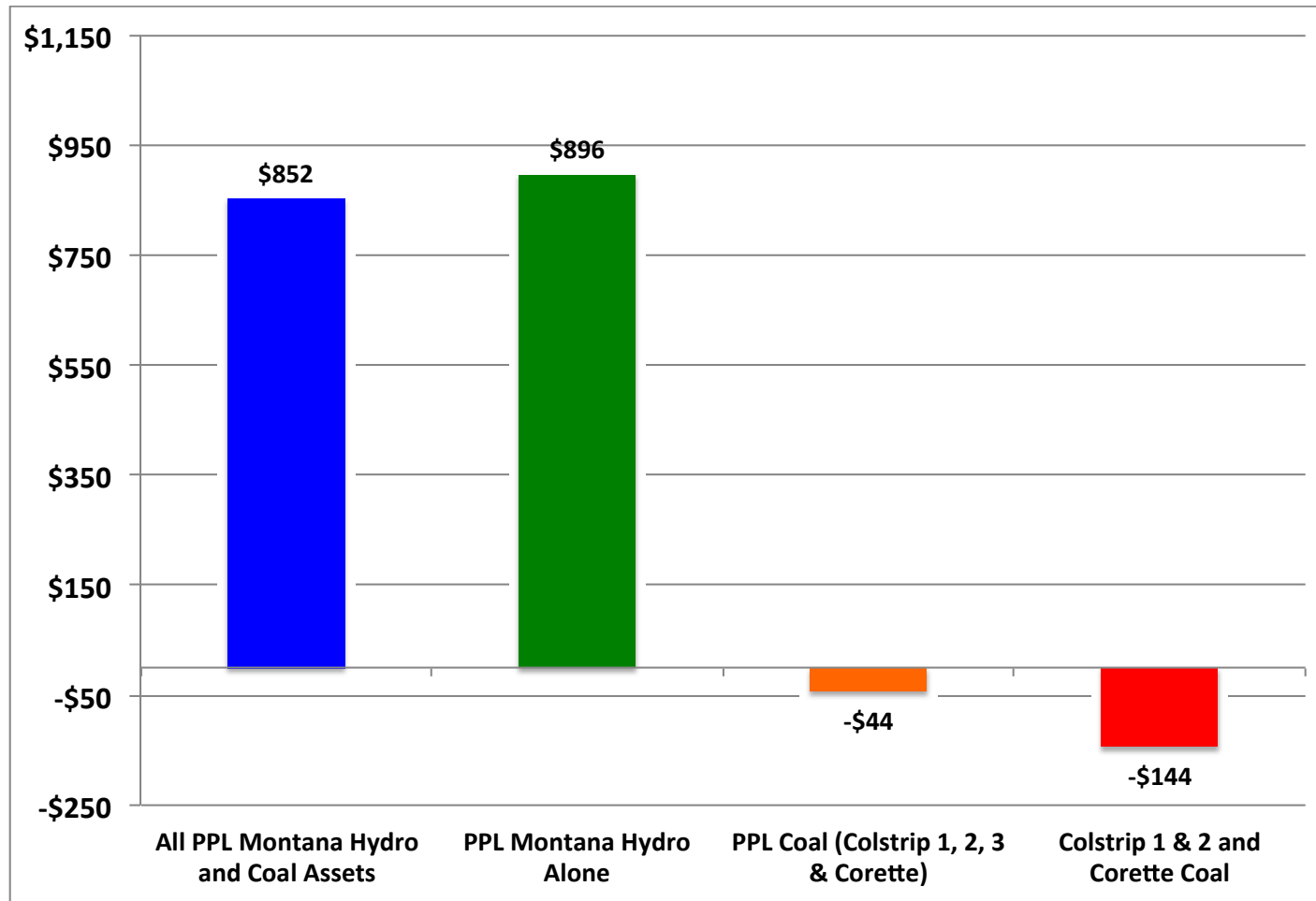
The EBITDA from the Brayton Point Coal Units Dropped Off the Cliff Since 2009



Declining Plant Valuations (Source – September 2013 Fitch Ratings Report)



PPL Montana Net Present Value Plant Valuations

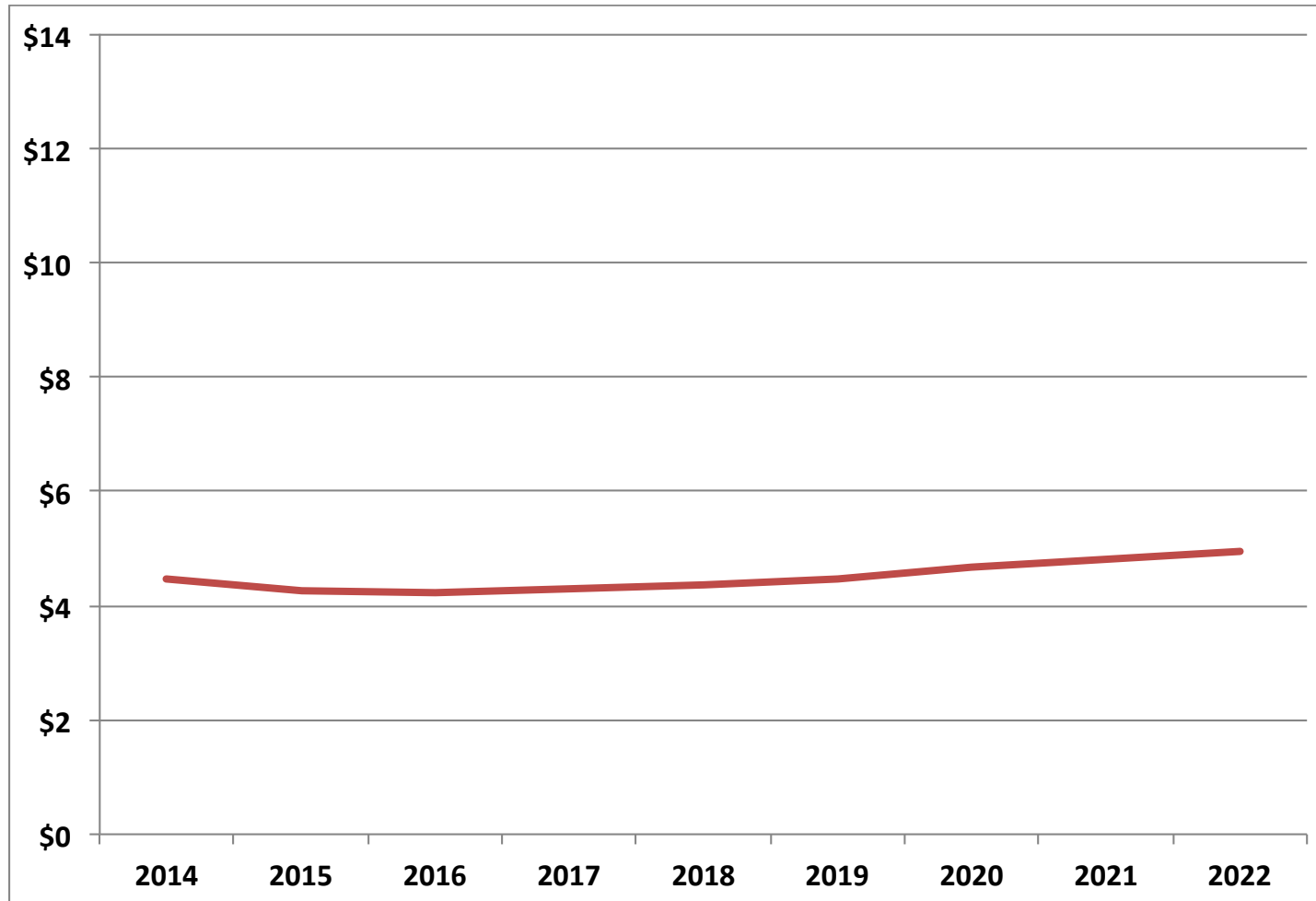


These Circumstances Unlikely to Go Away Anytime Soon

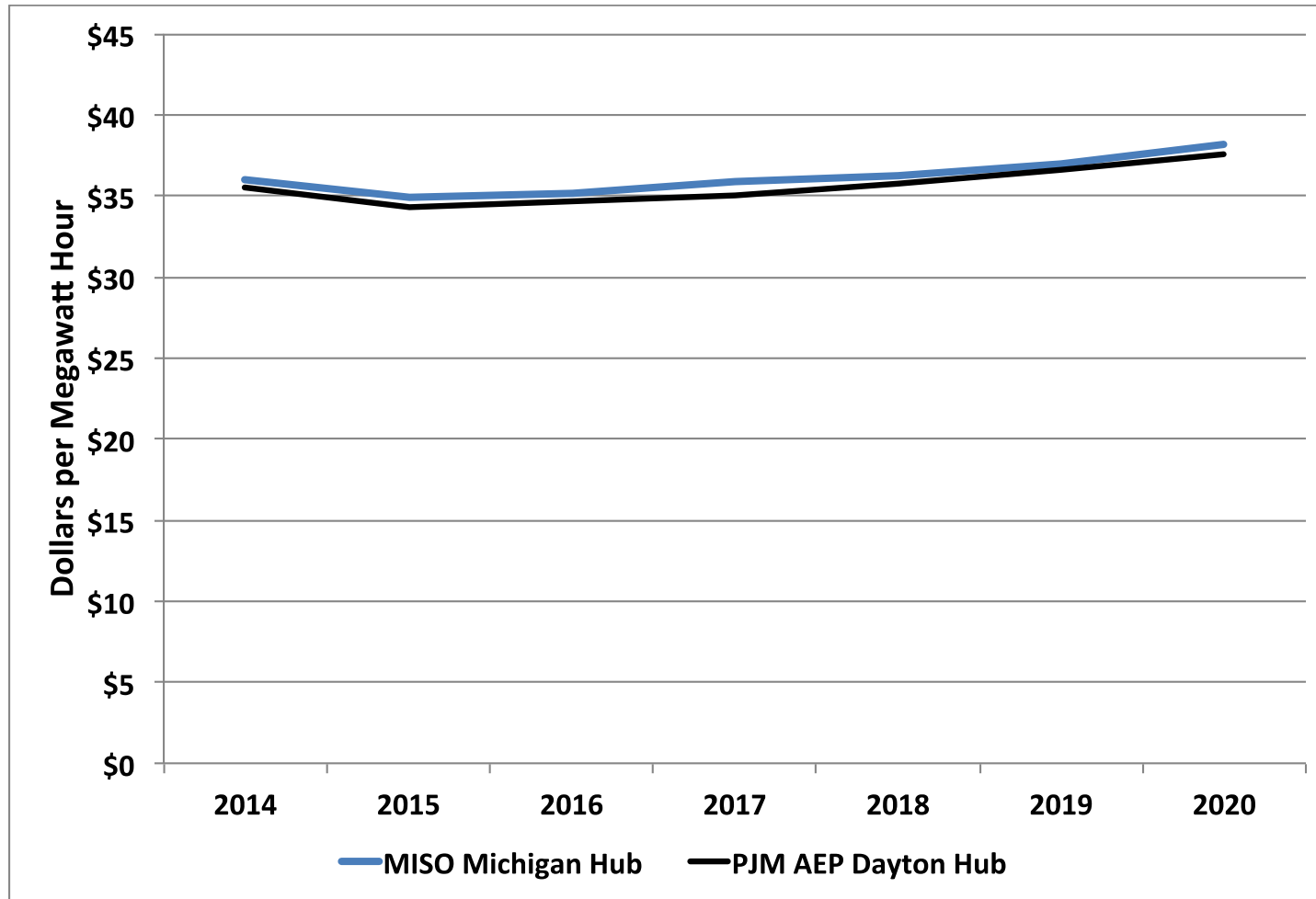
- **Natural gas prices and energy market prices expected to remain relatively low except in peak winter months.**
- **Uncertainty about future capacity market prices.**
- **Little growth projected in demand for power plus increased competition from energy efficiency and renewables.**
- **Potential for environmental upgrades.**
- **Potential for higher prices for CO₂ emissions.**



Henry Hub Natural Gas Price Futures Forwards as of Mid March 2014



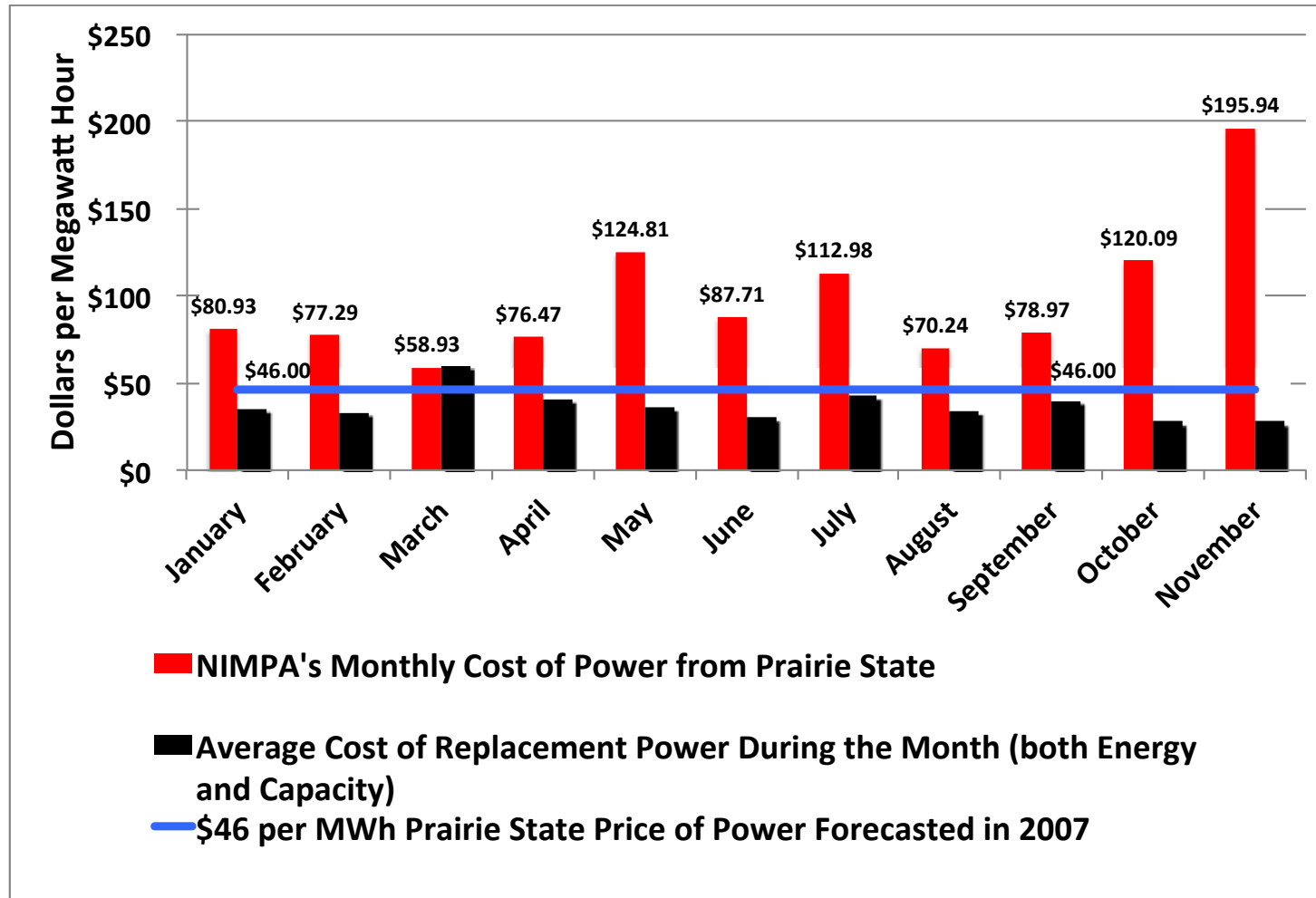
Example – Recent PJM and MISO Energy Market Price Forwards



What are Coal Plant Owners Doing in the Face of these Risks

- **Switching to lower cost Illinois Basin and PRB coal.**
- **Converting coal units to burn natural gas – inefficient idea for ratepayers as it pairs high heat rate of coal unit with the higher price of natural gas (as compared to coal price).**
- **Retiring some units – e.g., bye, bye Brayton.**
- **Selling units to other merchant generators.**
- **Using regulatory process to transfer risky coal units to regulated affiliates.**
 - **FirstEnergy and AEP proposals in West Virginia.**
 - **Very expensive and risky for ratepayers.**

Prairie State – Example of a Publicly Owned Coal Plant (1)



Prairie State – Example of a Publicly Owned Coal Plant (2)

