
Financial Risks of Coal Investments: Some Cautionary Tales

Stemming the Tide of Imprudent Investments

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

The Institute for Energy Economics and Financial Analysis (IEEFA)

- **What we do:**
 - **Evaluate and publish assessments of the financial viability of (1) the continued operation of existing coal plants and (2) new projects such as export terminals and generating unit upgrades.**
 - **Analyze developments in the world coal markets and trends in the price of coal.**
 - **Identify and expose coal industry financial malfeasance, misfeasance and nonfeasance**
 - **Look at the impact on investors, ratepayers and, at times, taxpayers.**
 - **Work is both domestic U.S. and international.**



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).**
 - **Need for upgrades to meet new environmental rules and requirements.**
 - **Increasing coal prices.**
 - **Potential for comprehensive system of regulation of greenhouse gas emissions – placing a cost on CO₂.**
 - **Aging of nation's fleet of coal plants.**
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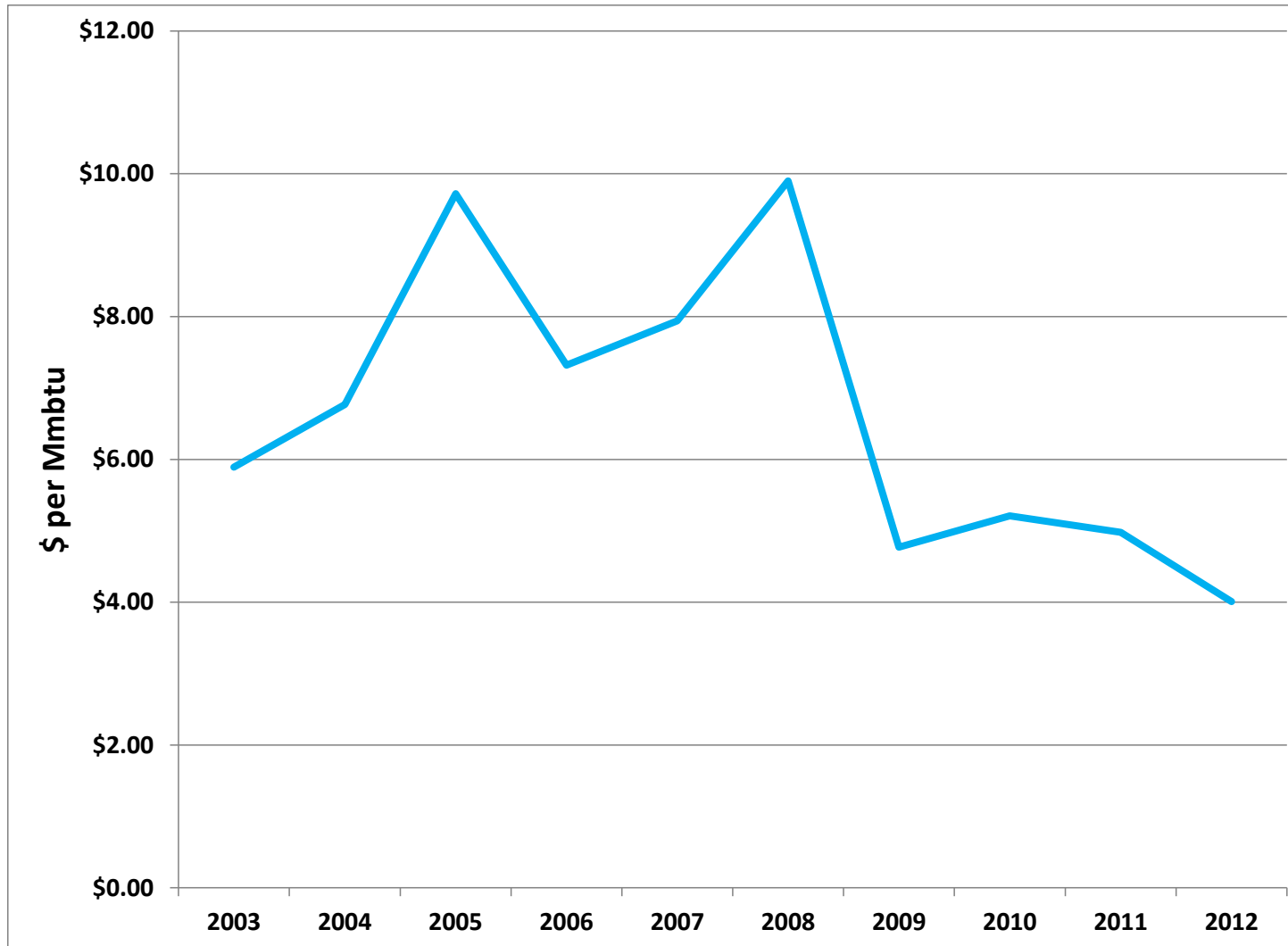
Natural Gas Prices Collapsed in 2008/2009

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

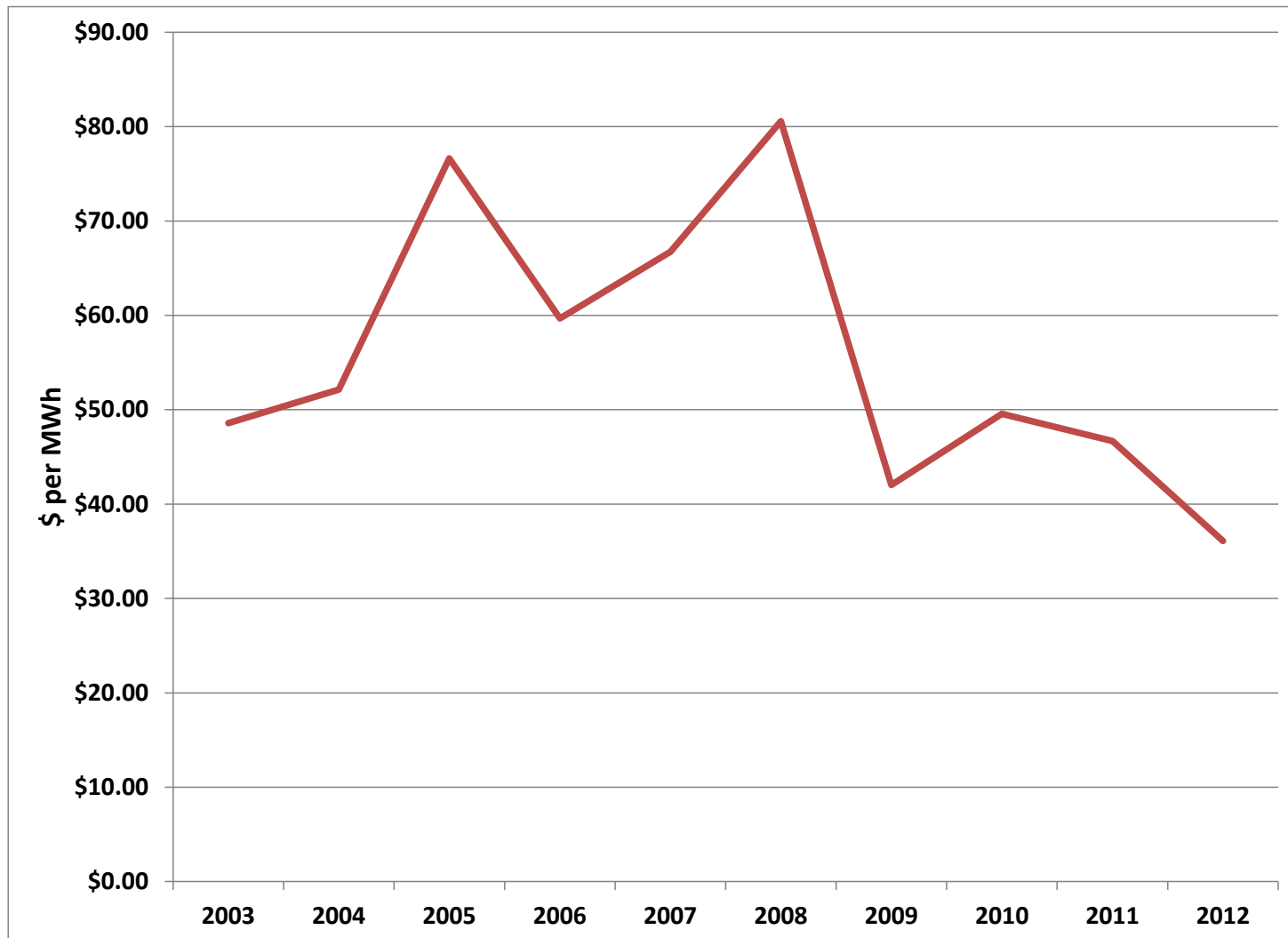
Example – Brayton Point

- **Life was Pretty Good Until 2009**
 - High annual capacity factors.
 - Selling output for substantially more than the cost of generation.
 - Making a lot of money.
 - No problem deciding to invest a billion dollars on new scrubber system and cooling towers in order to get environmentalists off back.
 - But now in 2013 Dominion has written off ~ \$700 million of its investment in the new scrubber and cooling towers and the new owner has announced that the unit will be retired in 2017.

NE Natural Gas Prices Collapsed in 2009

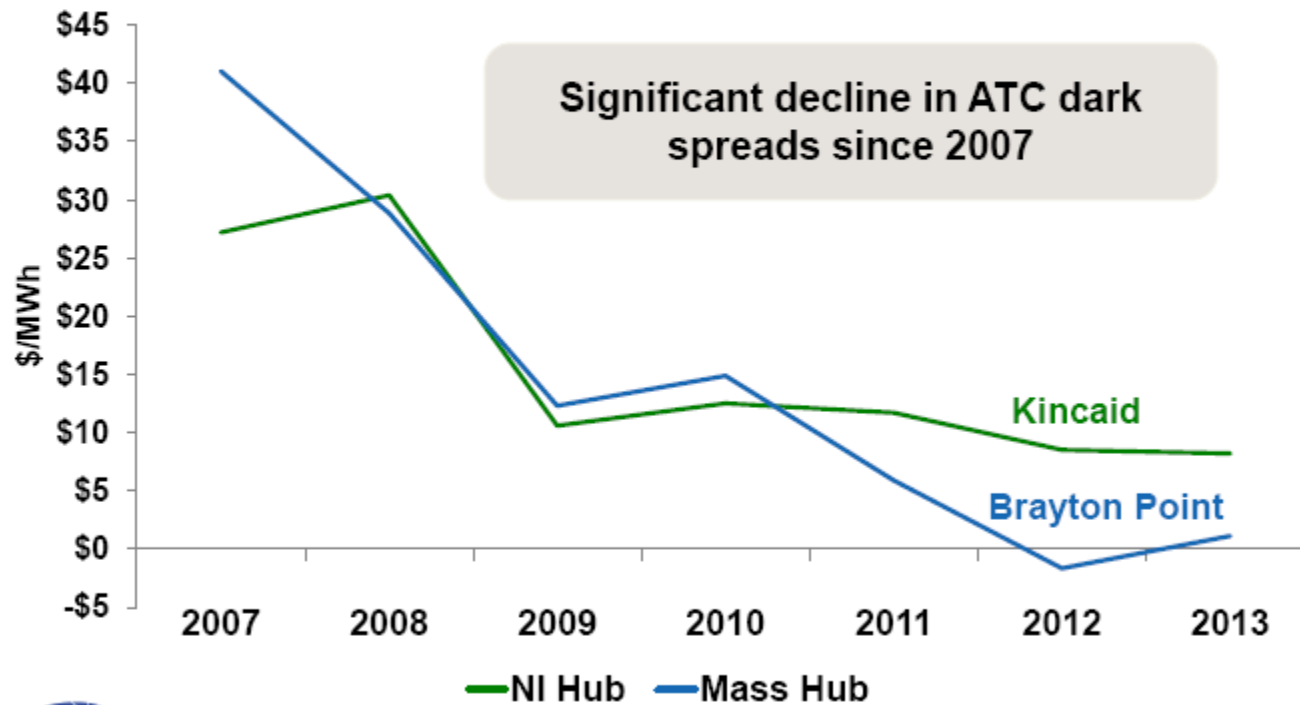


And Average NE Wholesale Electric Prices Went South With Them



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.

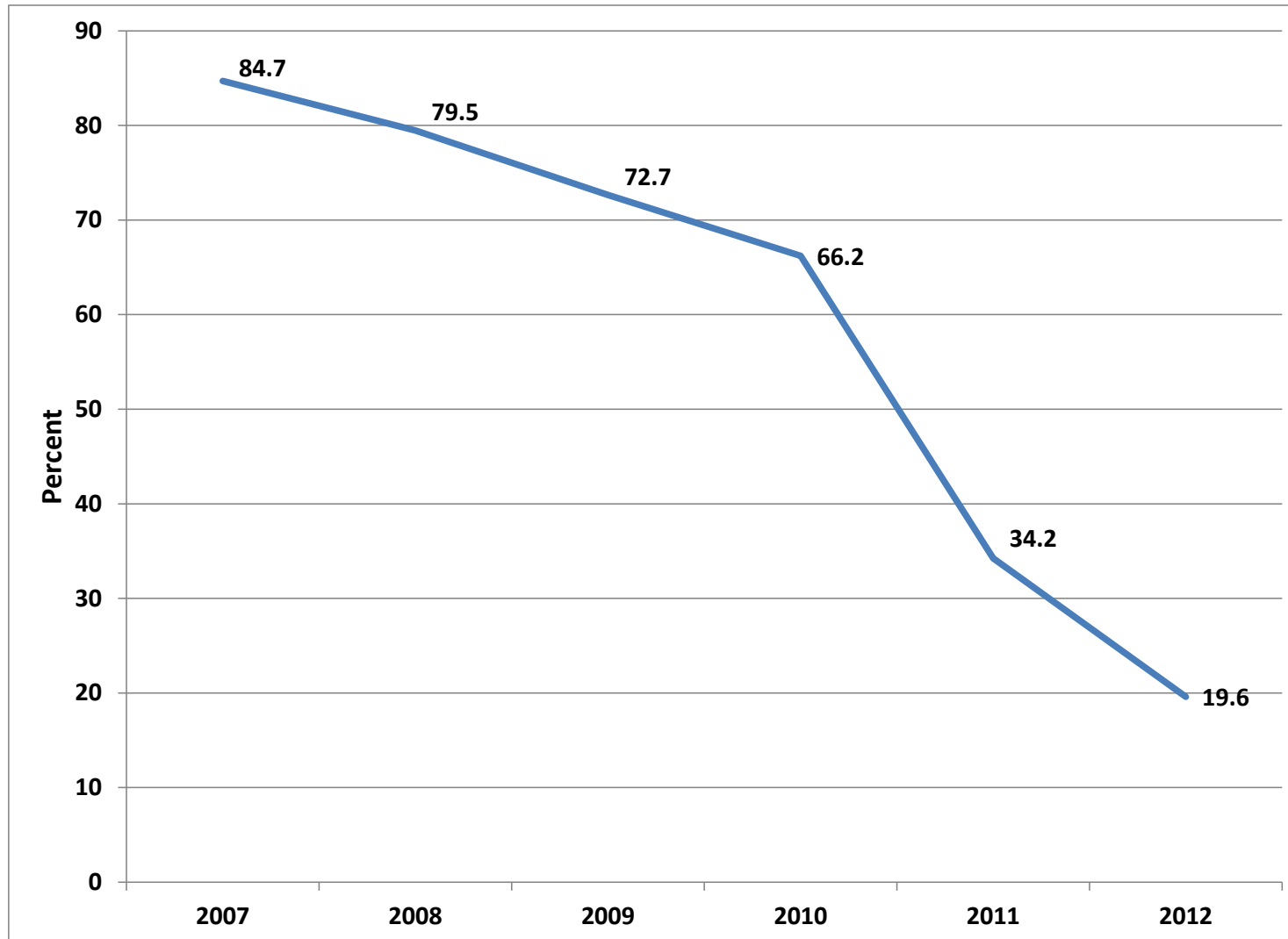
Please refer to page 2 for risks and uncertainties related to projections and forward looking statements.

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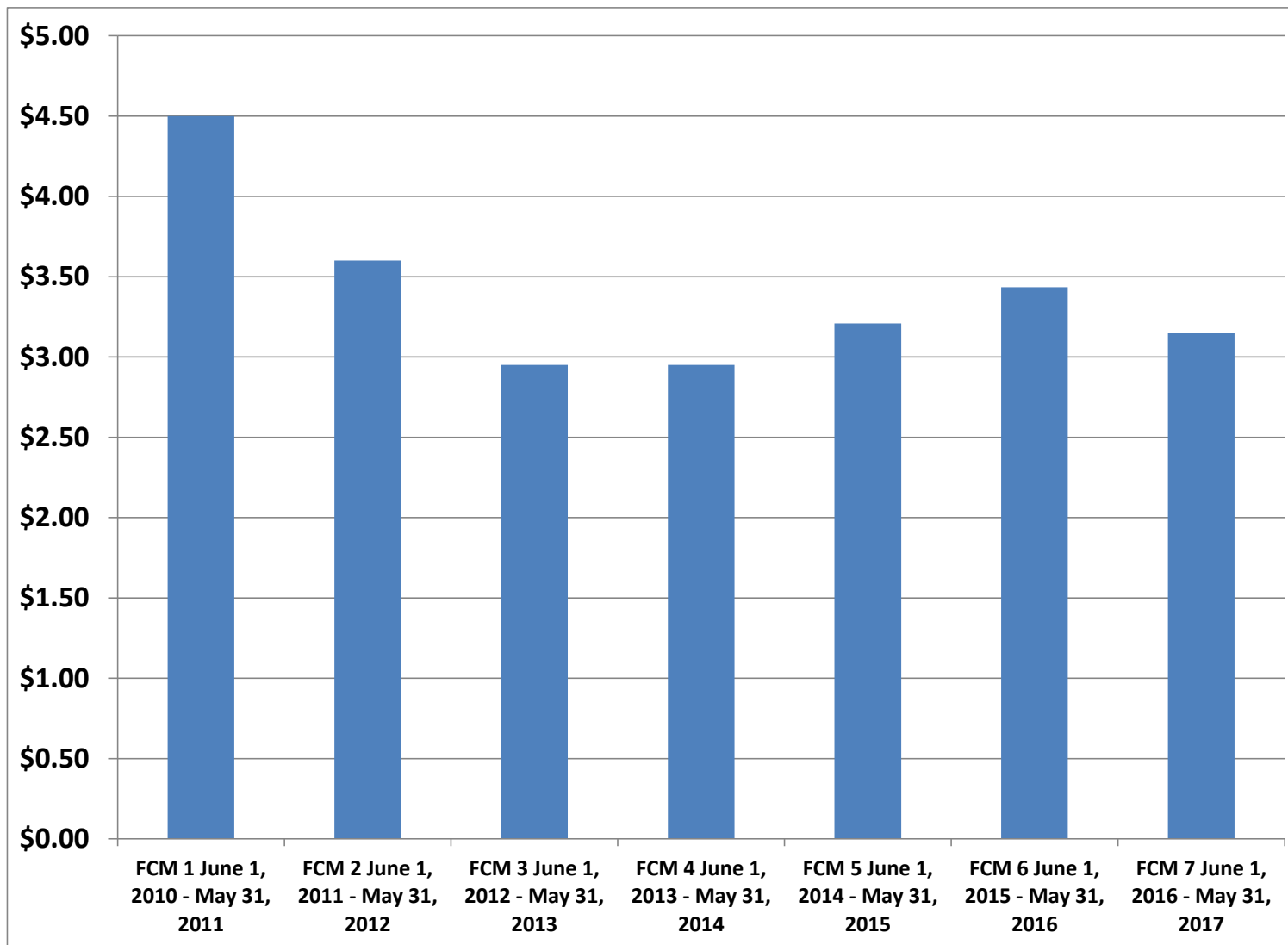


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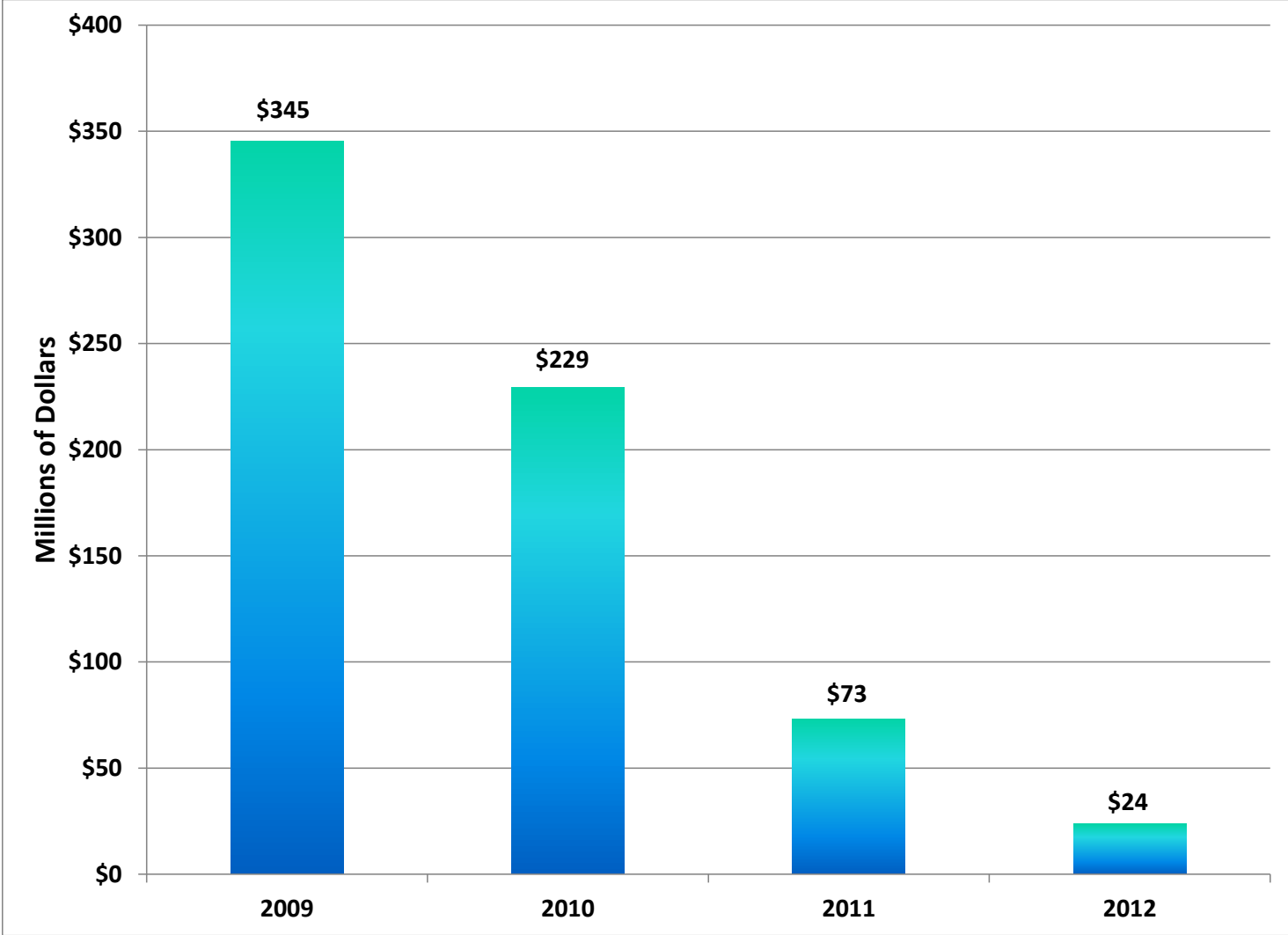
Annual Brayton Coal Unit Capacity Factors Crashed Too



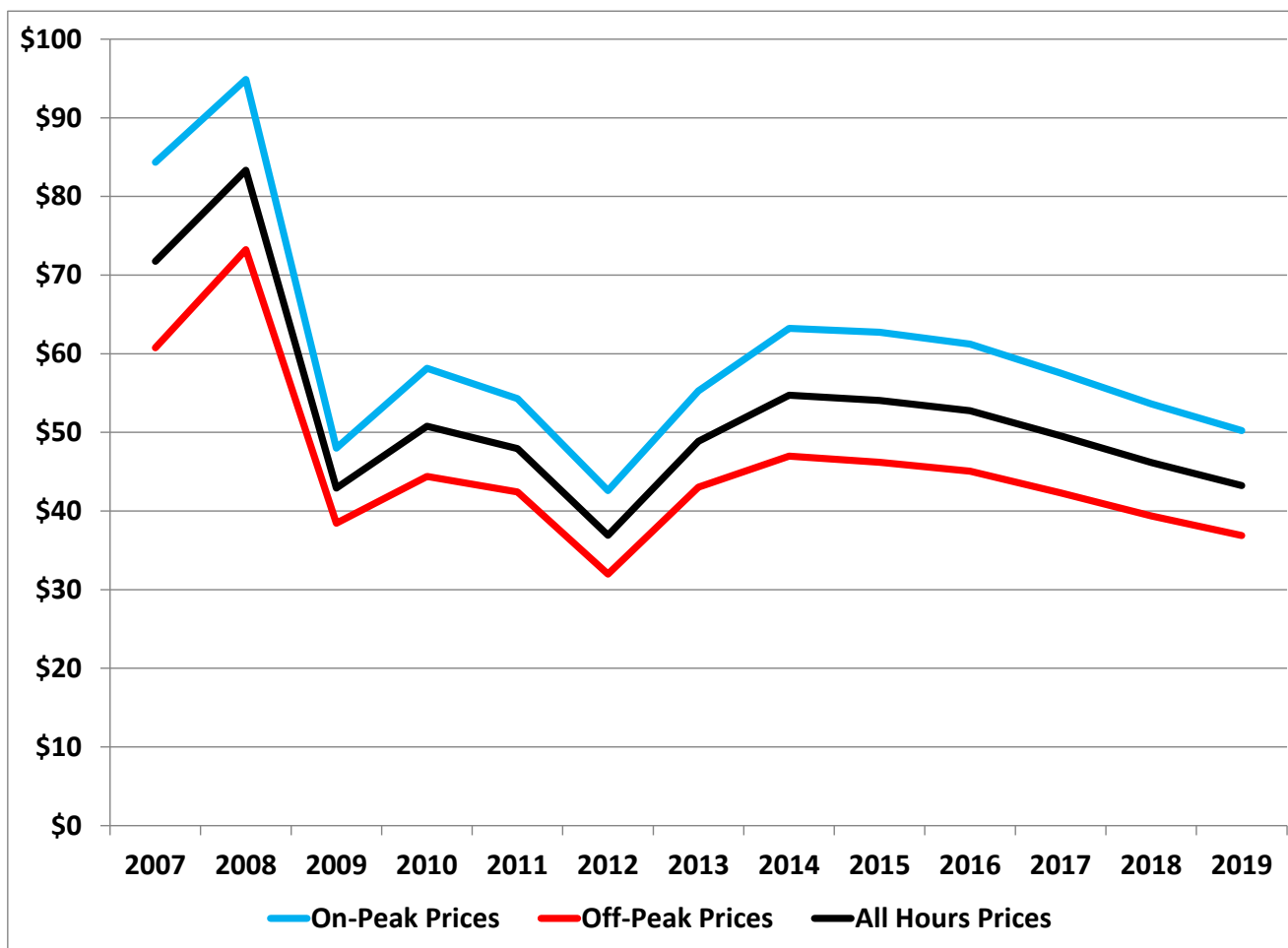
Capacity Market Prices Dropped Too



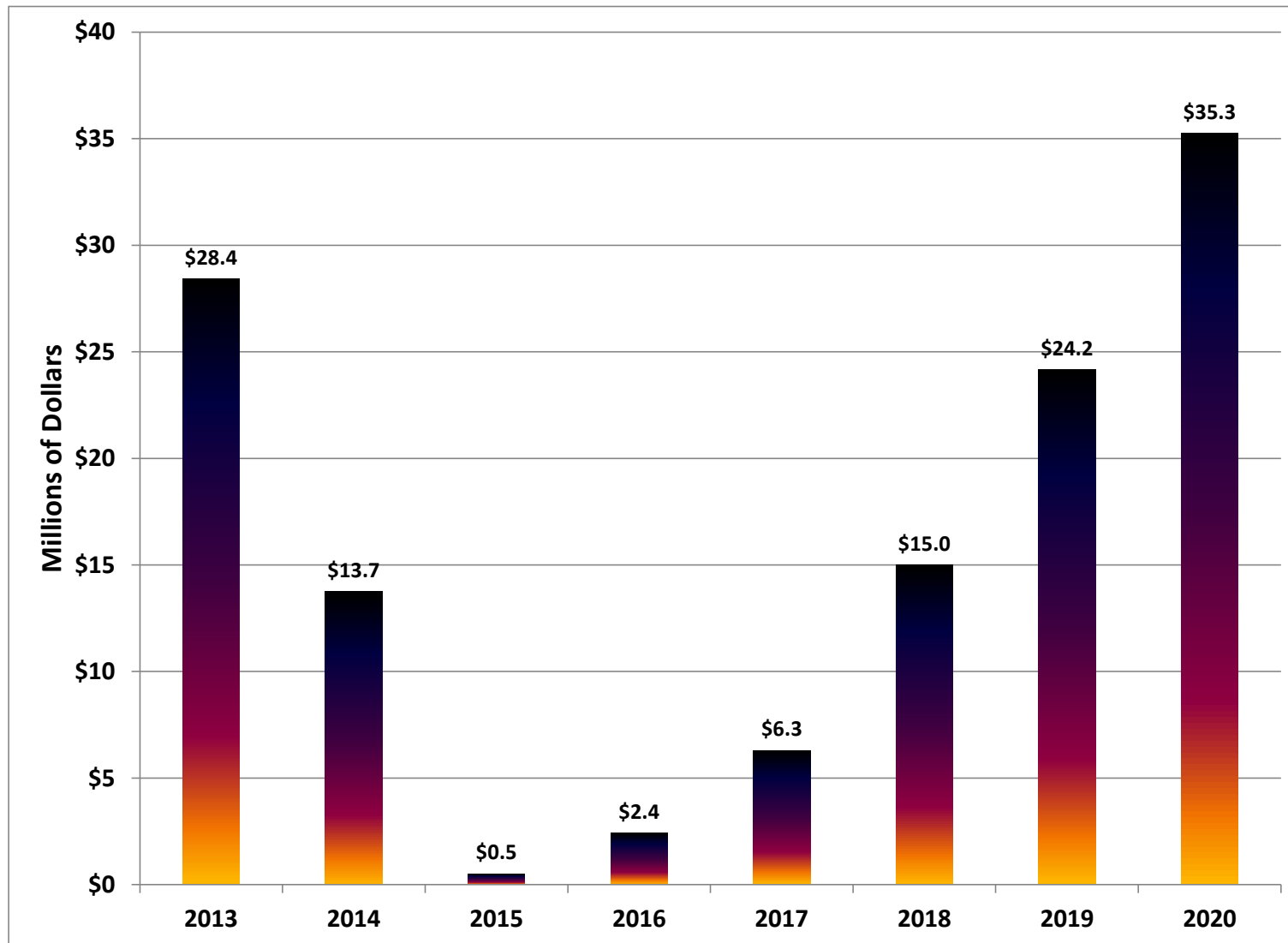
As a Result, the Pre-Tax Earnings from the Brayton Point Coal Units Dropped Off the Cliff



Circumstances that Led to Drop in EBITDAs Not Going Away Anytime Soon



Projected Brayton Coal Unit EBITDA 2013-2020 – Optimistic Scenario

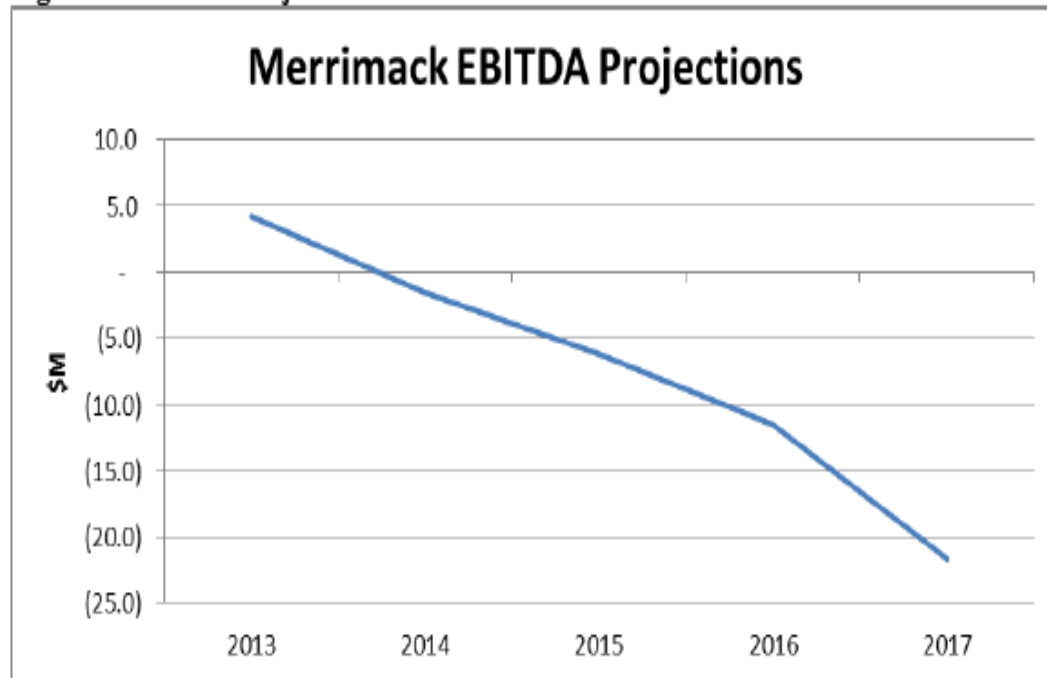


- **Whither natural gas and coal prices after 2020?**
- **Revised ISO-NE Capacity Market after 2017 prices will likely be lower and not favor slow reacting coal and oil units.**
- **Revised regional RGGI CO₂ prices will be higher by \$2-3 dollars per ton.**
- **Perhaps by early 2020s federal government will take meaningful action on regulating (pricing) greenhouse gas emissions from existing coal plants.**

Regulated Coal Units in Deregulated Wholesale Markets Face the Same Risks

PSNH's Merrimack Coal Plant

Figure 11: EBITDA Projections for Merrimack Station



Report Conclusion - From a market standpoint, the value of the Merrimack Plant is \$0. However, based on the recent sale of Brayton Point, upper limit of potential value might be \$15.4 million.

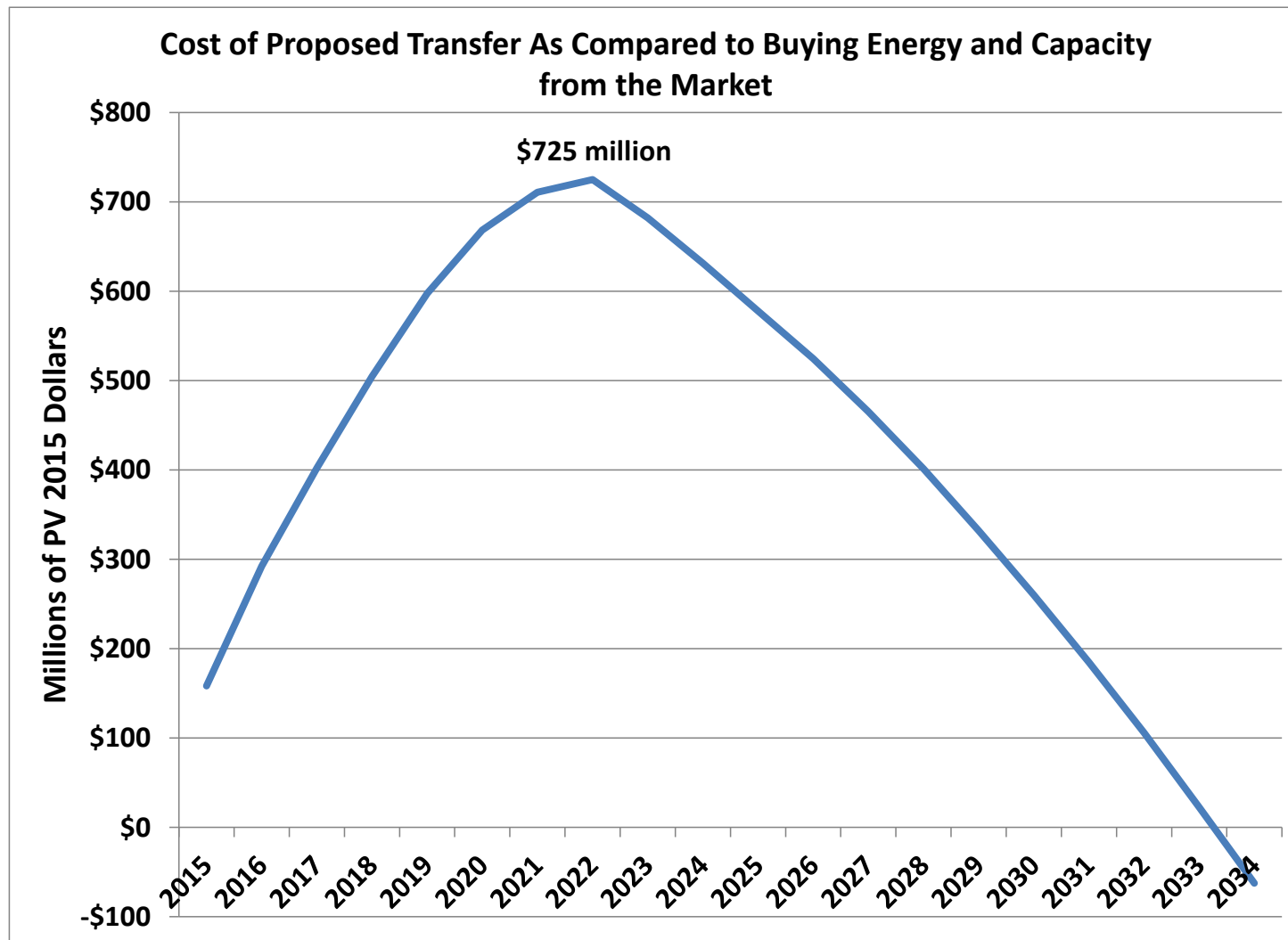
IEEFA Additional Observation - PSNH ratepayers are paying approximately \$50 million annually in a return on the recent investment of about \$450 million in a scrubber. This is for a plant with no value.

Source: *Report on Investigation into Market Conditions, Default Service Rate, Generation Ownership and Impacts on the Competitive Electricity Market*, June 2013, jointly prepared by the Staff of the NH PUC and the Liberty Consulting Group.

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.**

The Poor Economics for Ratepayers of FirstEnergy's Plan to Transfer the Harrison Coal Plant to WV Affiliate



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