

# Opportunity Cost Methodology

Cost Development  
Task Force  
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# Purpose

- **PJM's Example from 7/26/10 CDTF meeting showed the opportunity cost calculator worked "rationally"**
  - Calculator will work "rationally" with any input provided
- **Flaws in using the current methodology for short term opportunity costs**
  - Fuel intra month price movements are not captured
  - Electricity intra month price movements are not captured
  - Due to short-term price volatility opportunity costs change daily
- **Slides show price fluctuations can have a significant impact on opportunity cost component in short term**



# Proposed Short Term Methodology

- **Forward data**
  - **Use spot price of fuel from the last available trading day; and**
  - **Use peak and off-peak electricity spot price from the last available trading day.**
- **Do not use daily fuel volatility scalar**
  - **A daily fuel spot price is used directly**
  - **No reason for a daily scalar in addition**
- **Use peak/off-peak hourly volatility scalar**
  - **Hourly granularity in power prices is needed, rather than only on-peak / off-peak.**



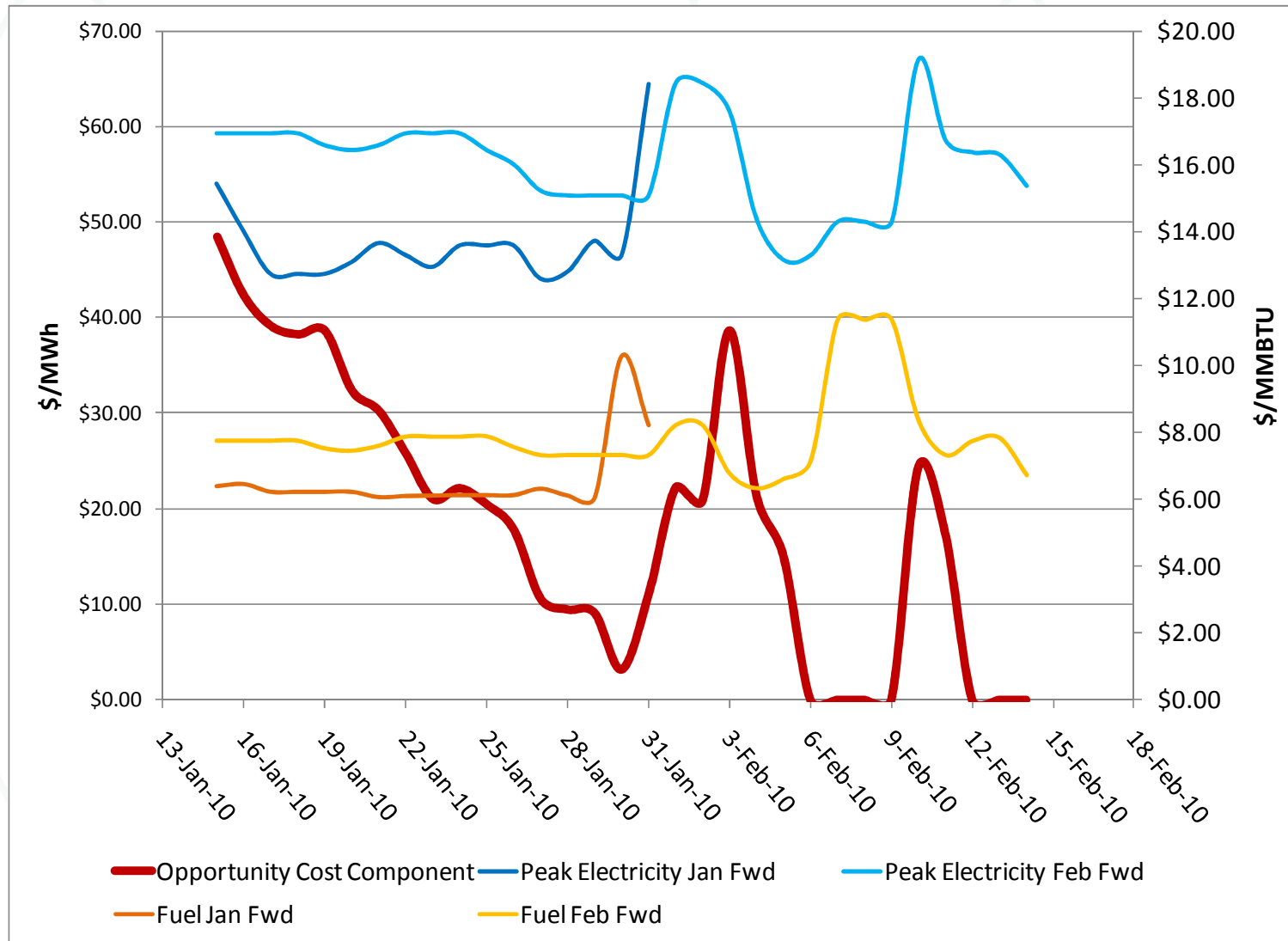
# Input Example Assumptions:

**Natural Gas CT has a limitation of 50 hours for January 15<sup>th</sup> through February 14<sup>th</sup>, 2010.**

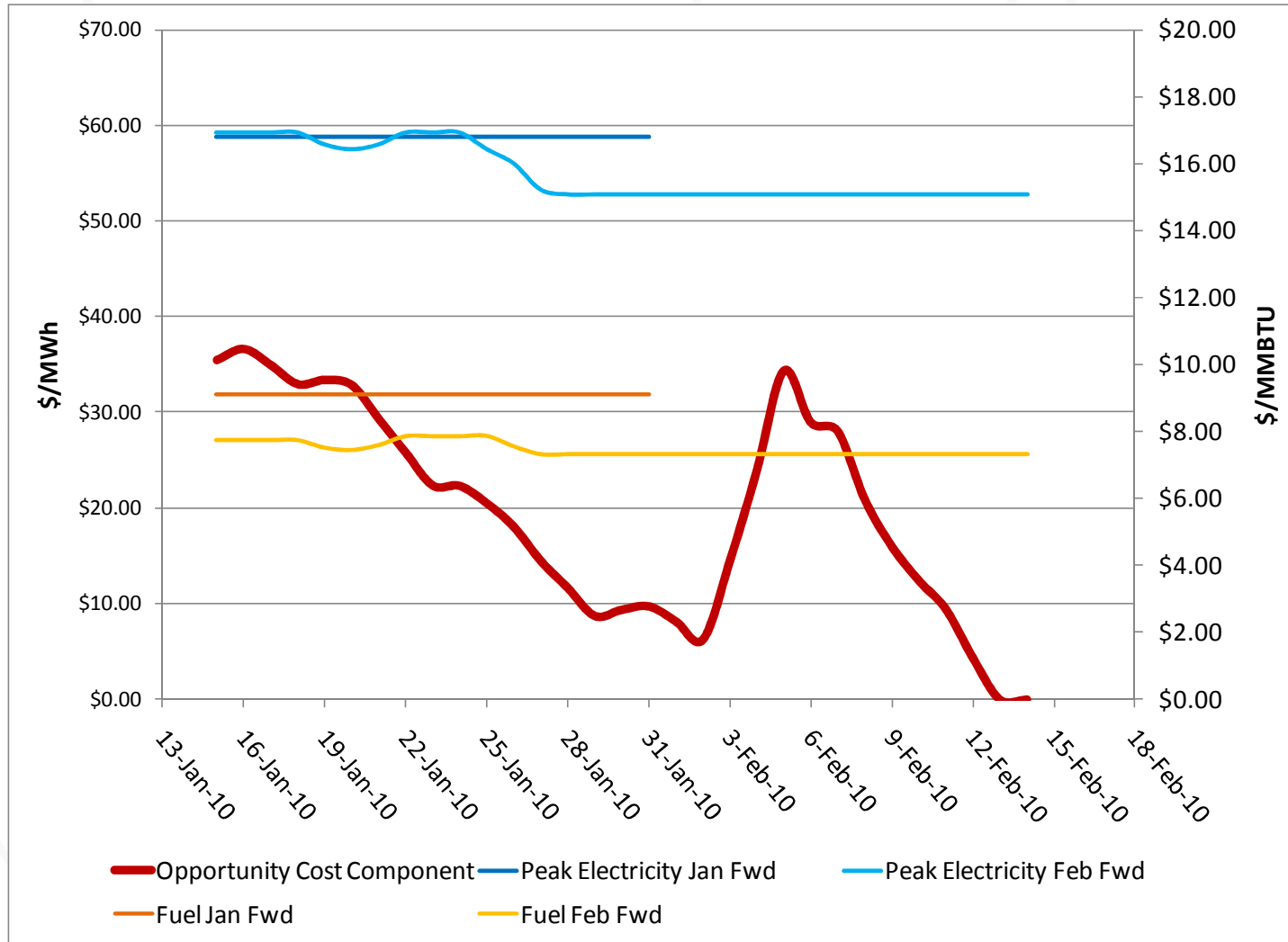
- **Forward Prices: from 01/15/2010 through 01/31/10**
- **Spot Prices: from 01/15/2010 through 02/13/2010**
- **CO2 Emission Rate: 337.6**
- **NOx Emission Rate: 1.7**
- **SO2 Emission Rate: 0.012**
- **Heat Rate: 10.3**
- **FMU Adder: \$0**
- **Fuel Type: Natural Gas - Transco Zone 6 NY**
- **VOM: \$0**
- **Use Percentage Adder: No**
- **Use Fuel Volatility: 0**
- **Start Cost: 0**
- **Minimum Run Time: 1**



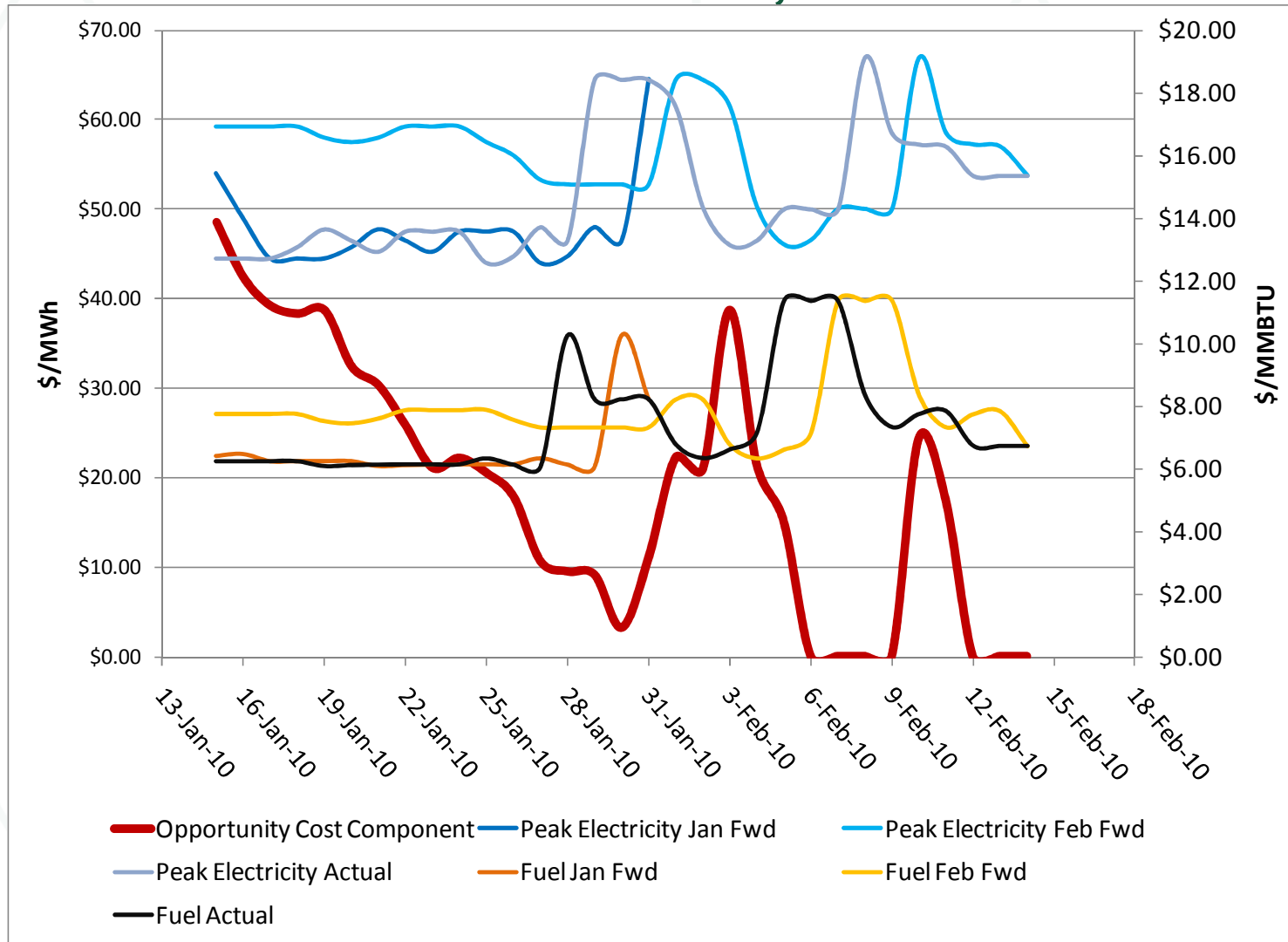
# Proposed Method, Short Term Opportunity Cost, Jan 15-Feb 14, 2010



# Long Term Method, Short Term Opportunity Cost, Jan 15-Feb 14, 2010



# Proposed Method with Actual Fuel and Electricity Prices, Short Term Opportunity Cost, Jan 15-Feb 14, 2010



## Conclusion for Short-Term Periods

- **Forward data from previous month can miss substantial variation in fuel prices.**
- **Solution:**
  - **Use the last available trading day's spot price for fuel; and**
  - **Use the last available trading day's "PJM west" peak and off-peak spot price.**
- **If short term opportunity cost is to be used, generation owners must be required to update opportunity cost component of offer daily due to fluctuating prices and changing opportunity cost component.**





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