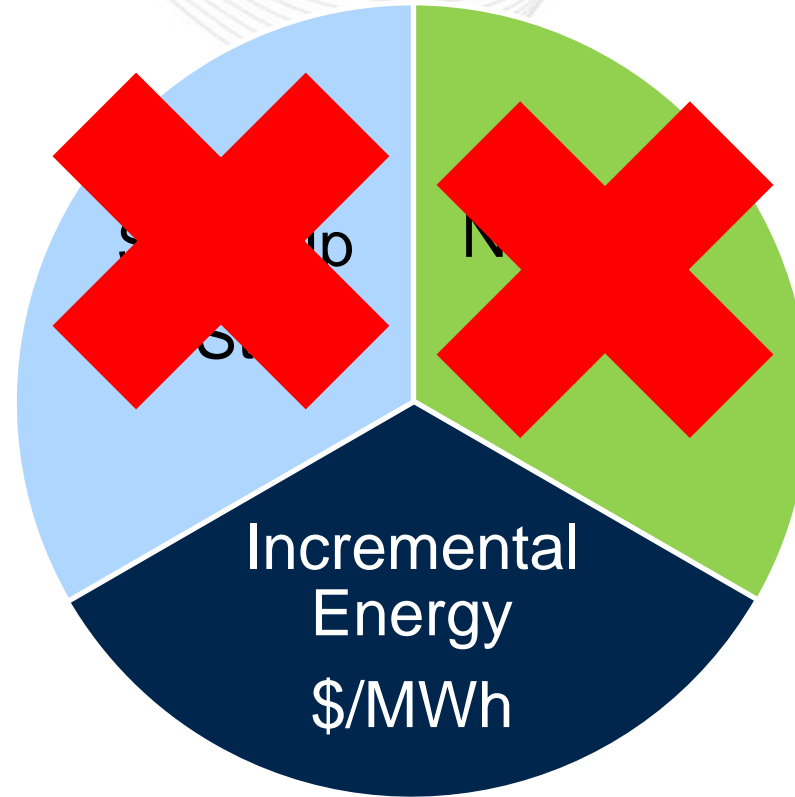


# Cost Offer Development (ESR)

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Operation Analysis and Compliance  
Market Implementation Committee  
April 17, 2019



# Total Fuel Related Costs

Fuel

~~Line Items~~

Maintenance

~~Other Fuel Related Costs~~

$$\begin{aligned}
 \text{Total Fuel Related Costs} = & \text{Fuel Costs} + \del{\text{Fuel Related Costs}} \\
 & \del{+ \text{SO}_2 \text{ Allowance Cost} + \text{CO}_2 \text{ Allowance Cost}} \\
 & \del{+ \text{NO}_x \text{ Allowance Cost}} + \text{Maintenance Adder}
 \end{aligned}$$

## Cost-Based Offer

### Total Fuel Related Costs

Fuel/Commodity Cost

Submitted to PJM: Fuel  
Cost Policy

\$/Fuel

Maintenance Adder

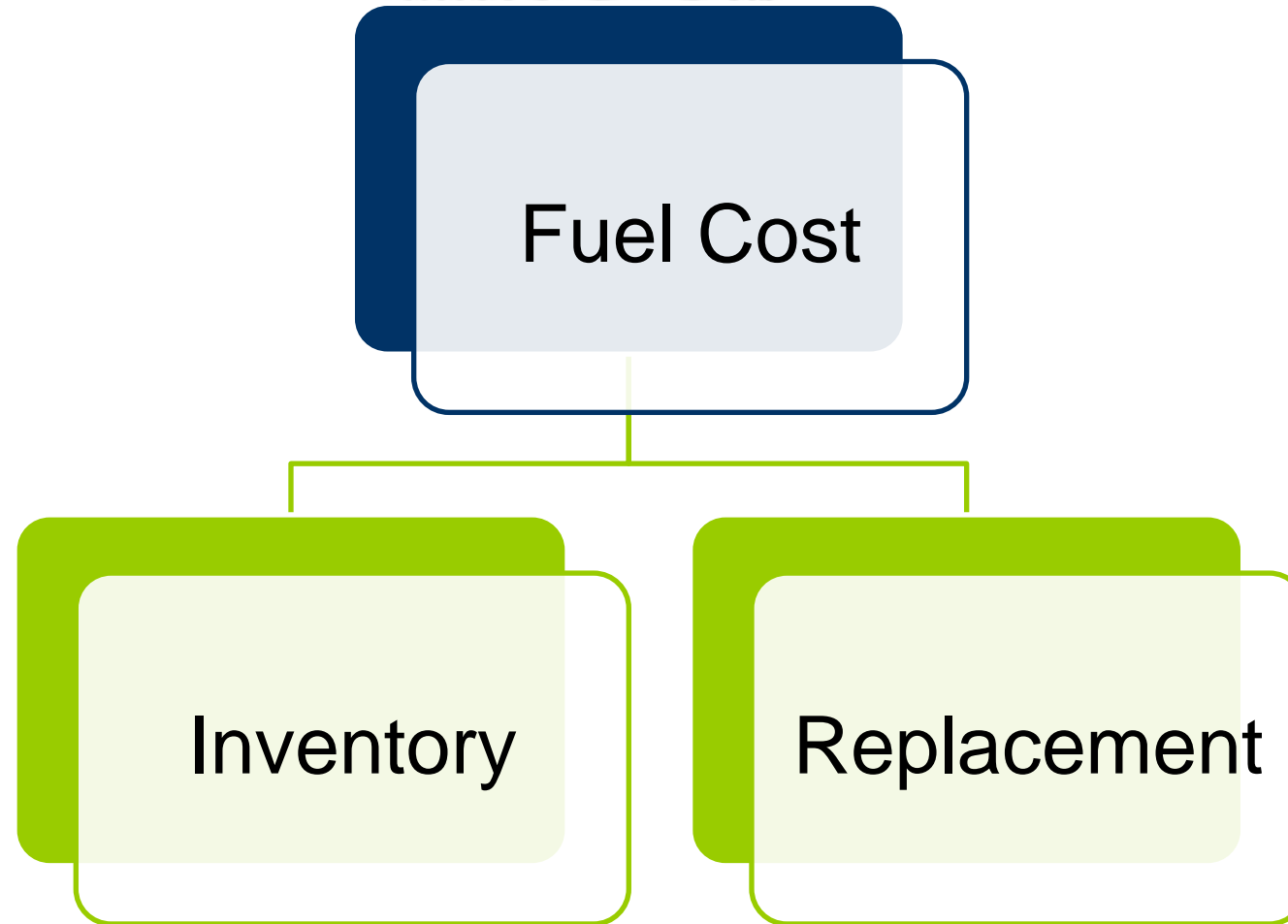
Submitted to PJM:  
Maintenance History

\$/Fuel

### Opportunity Cost

TBD

\$/MWh



- Hourly Average Basis
  - FIFO – First in first out
  - LIFO – Last in first out
- Average of Previous Day RT Charging LMP
- DA Committed Charging LMPs & MWs

- Rolling Last 1-7 Days RT LMPs
- PJM Western Hub Real-Time Peak/Off-Peak Daily
- DA Next Hour LMP
- Average of Last Hour 5 Minute RT LMPs

- Capacity Market
  - Fixed Maintenance Costs
  - Expenses incurred regardless if the resource runs during the delivery year
- Energy Market
  - Variable Operations and Maintenance Costs (VOM)
  - Includable per Manual 15: *Variable Maintenance cost is the parts and labor expenses of maintaining equipment and facilities in satisfactory operating condition. **Only expenses incurred as a result of electric production qualify for inclusion.***



<b>Fixed Maintenance</b>	<b>Variable Operations and Maintenance (VOM)</b>
Plant Straight Time Labor	Cell Repairs/Replacements
HVAC	Inverter Maintenance
Building Maintenance	Operating Costs: Acids, Lithium Ion, etc.
General Site Maintenance	Generation Owned GSU/ Interconnection Transmission Maintenance
Predictive Maintenance	Pump Repairs
Pond/Recreational Maintenance	Generator/Motor Repairs

# Appendix

- Basic Fuel Cost – The cost of commodity calculated as stated in the Market Sellers' Fuel Cost Policy
- A Fuel Cost Policy documents the methodology used by a Market Seller to calculate/estimate fuel related cost and whether other components used in the development of a cost-based offer are included such as:
  - Efficiency - method of development and update frequency
  - Performance Factor - method of development and update frequency
  - Maintenance adder (if used)
  - 10% adder (if used)
  - Any other incremental costs

- Regardless of fuel type, a fuel cost policy must include:
  - A description of the Market Seller's fuel procurement practices and how those practices are used to calculate fuel costs including:
    - Whether they are using inventory cost, replacement cost, or a combination
    - Applicable indices
    - A description of any other applicable adders
    - Any alternative measures to document fuel cost and how it is superior to the methods above
    - A numerical example

- Market Sellers can submit a Fuel Cost Policy for PJM and IMM review:
  - 45 Days prior to a new generation resource expected initial submittal of a cost-based offer
  - On an annual basis prior to June 15 for the annual review process
  - Any time outside the annual review period
- All Fuel Cost Policies must be submitted into MIRA for review
- PJM must approve a Market Seller's Fuel Cost policy prior to it being used in the development of cost-based offers.

- PJM conducts a separate review of maintenance adders. However, PJM requires Market Sellers to document in their Fuel Cost policy whether they use them or not.
  - All maintenance adders must be reviewed by PJM annually.
  - Market Sellers may not use a value in their cost-based offers that has not been approved by PJM.