



# Fuel Cost Policy Education

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- From the PJM Open Access Transmission Tariff Definitions:

## **Fuel Cost Policy:**

“Fuel Cost Policy” shall mean the document provided by a Market Seller to PJM and the Market Monitoring Unit in accordance with PJM Manual 15 and Operating Agreement, Schedule 2, which documents the Market Seller’s method used to price fuel for calculation of the Market Seller’s cost-based offers for a generation resource.

- Prior to 2017, Manual 15 required Market Sellers to submit Fuel Cost Policies to the PJM MMU for evaluation pursuant to the Cost and Methodology Approval Process.
- Given the Federal Energy Regulatory Commission's approval of PJM's Hourly Offers filing in [Docket No. ER16-372-002](#) on February 3, 2017, PJM required all Market Sellers participating in the Energy Market to have a PJM-approved Fuel Cost Policy for each fuel type by May 15, 2017.

## **2.1 Approved Fuel Cost Policy Requirement for Non-Zero Cost-based Offer.**

A Market Seller may only submit a non-zero cost-based offer into the PJM Interchange Energy Market for a generation resource if it has a PJM-approved Fuel Cost Policy consistent with each fuel type for such generation resource.

- A Fuel Cost Policy (FCP) 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:
  - Heat Input Curves - method of development and update frequency
  - Performance Factor - method of development and update frequency
  - No-Load Heat - method of development and update frequency
  - Start Heat - method of development and update frequency
  - Emissions adders (NO<sub>x</sub>, SO<sub>x</sub>, CO)
  - Maintenance adder
  - 10% adder
  - 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
  - Method used for handling and transportation costs
  - Applicable indices
  - How they handle illiquid conditions (natural gas)
- 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

- Generation resources using a fuel source other than natural gas:
  - Fuel costs for solar, Energy Storage Resources and run-of-river hydro resources shall be zero.
  - Fuel costs for nuclear resources shall not include in-service interest charges whether related to fuel that is leased or capitalized.
  - For Pumped Storage Hydro resources, fuel cost shall be determined based on the amount of energy necessary to pump from the lower reservoir to the upper reservoir.
  - For wind resources, the Market Seller shall identify how it accounts for renewable energy credits and production tax credits.
  - For solid waste, bio-mass and landfill gas resources, the Market Seller shall include the costs of such fuels even when the cost is negative.

- 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 (can be a provisional policy)
  - If a provisional policy was previously submitted a final updated policy must be submitted within 90 calendar days of the commercial operation date of the generating resource
  - 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 consults with the IMM and considers any timely input and advice provided in its determination of whether to approve a Fuel Cost Policy.
- The basis for the IMM's review is described in the PJM Tariff, Attachment M - Appendix.
- PJM's standard of review is described in the Operating Agreement, Schedule 2 at section 2.3 and in Manual 15.

- Market Sellers are required, annually, by June 15 to either:
  - Request an extension of existing Fuel Cost Policy, or
  - Submit a new Fuel Cost Policy for Review
- Review Period:
  - Market Monitor Review June 15- August 1
  - PJM Review August 1-November 1
- Market Sellers shall have 5 business days or the alternative deadline agreed to by PJM to provide additional documentation and information requested by PJM or the IMM.
- If the IMM makes a request directly to the Market seller, it shall inform PJM of the request within 1 business day.

- Market Sellers can submit a revised policy to PJM and the IMM any time outside of the Annual Review
  - PJM recommends Market Sellers send an email to [FuelCostPolicyAnalysis@pjm.com](mailto:FuelCostPolicyAnalysis@pjm.com)
- PJM and the IMM must conduct an initial review within 30 business days of the policy submission.
- Market Sellers shall have 5 business days or the alternative deadline agreed to by PJM to provide additional documentation and information requested by PJM or the IMM.
- If PJM rejects a Fuel Cost Policy, it shall include an explanation why it was rejected in its written notification.

- PJM can revoke an approved Fuel Cost Policy if PJM determines, with timely input and advice from the IMM, that a Market Seller's procurement practices or the method for determining other components of the cost-based offer is no longer consistent with the approved Fuel Cost Policy, Operating Agreement Schedule 2 or Manual 15.
- PJM must notify the Market Seller with a copy to the IMM in writing and include an explanation for the revocation.
- Upon revocation a fuel cost penalty shall apply beginning on the day of revocation.

- If upon review of a Market Sellers cost based offer:
  - PJM determines with IMM agreement that the offer is not compliant with the approved Fuel Cost Policy or Schedule 2,
  - Or the IMM determines with PJM agreement that the offer is not compliant with the approved Fuel Cost Policy,
  - Or the Market Seller does not have an approved Fuel Cost policy,
  - Or PJM determines that any portion of the cost-based offer is not compliant with Schedule 2,
- The Market Sellers shall be subject to the penalty described in the Operating Agreement, Schedule 2 at section 5.1

$$\sum \text{Penalty}_{dh} = \frac{\min(d, 15)}{20} \times \text{LMP}_h \times \text{MW}_h$$

d - is the greater of one and the number of days since PJM's notification. If PJM notification is after the non-compliant offer ceased d = 1.

h – is the applicable hour of the day for which the non-compliant offer applied. If PJM notification is after the offer ceased, h is the applicable hours for the last operating day the non-compliant offer was submitted.

LMP – is the real-time LMP at the applicable pricing location for the hour

MW – is the available capacity of the resource for the hour – The greater of the Power Meter MWs or ECO Max submitted for the hour.

- PJM conducts a separate review of emissions and maintenance adders. However, PJM requires Market Sellers to document in their Fuel Cost policy whether they use them or not.
  - All emissions and maintenance adders must be reviewed by PJM annually. Typically August 1<sup>st</sup> through December 31<sup>st</sup>
  - Market Sellers may not use a value in their cost based offers that has not been approved by PJM. This includes adder to start, no load or incremental energy offers.

## PJM FAQ

- <https://www.pjm.com/-/media/markets-ops/energy/fuel-cost-policy/fuel-cost-policy-faqs.ashx?la=en>

## OA Schedule 2

- <https://pjm.com/directory/etariff/MasterTariffs/23TariffSections/4739.pdf>

IMM Fuel Cost Policy templates (bottom right hand side of page)

- <http://www.monitoringanalytics.com/tools/tools.shtml>

# Other Slides

- Reflect the Market Seller's applicable commodity and/or transportation contracts (to the extent it holds such contracts) and the Market Seller's method of calculating delivered fossil fuel cost, limited to inventoried cost, replacement cost or a combination thereof, that reflect the way fuel is purchased or scheduled for purchase, and set forth all applicable indices as a measure that PJM can use to verify how anticipated spot market purchases are utilized in determining fuel costs;

- Account for illiquid situations – when indices and other market measures are not sufficient
  - Include alternative means actually used to price the fuel such as documented quotes

- Transportation Costs
  - Pipeline, barge, rail, etc.
- Other Fuel Related Costs (OFRC)
  - Fuel handling equipment leases, fuel additives
  - Some include water, chemicals, and consumables to operate unit\*

\*These costs can either be included in OFRC or VOM

- Operating modes\*
- Operating fuels
- Operating temperatures\*
- Incremental, no load and start heat requirements\*
- Method of developing Heat inputs
  - Heat input values\* to be included in numerical example and submitted to COA
- Frequency of updating heat inputs
- Performance factors and the method used to calculate
- Frequency of updating performance factors

\*included in the numerical example as opposed to the Fuel Cost Policy document

- Other incremental costs including, but not limited to:
  - Consumables used for operations
  - Marginal value of costs along with all descriptions and methodologies associated

- To the extent a Market Seller proposes alternative measures to document its fuel costs in its Fuel Cost Policy for a generation resource, the Market Seller shall explain how such alternative measures are consistent with or superior to the standard specified in section 2.3(a) above, accounting for the unique circumstances associated with procurement of fuel to supply the generation resource

- Documentation Section
  - Requires Market Seller to document and retain all components used to construct a Cost-Based Offer for up to 2 years
- Heat Input
  - Source of data and frequency of update
- Performance Factor
- Numerical Example
  - Sample calculation of a Cost-Based Offer
  - PJM utilizes this to confirm Start-Up and No-Load Calculations

- To be included in Fuel Cost Policies:
  - Emissions
    - Emissions allowance types (NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>)
    - Method for determining costs
    - Frequency of updates
  - Maintenance (VOM) Adder
    - If yes, include the following statement: VOM costs are calculated in accordance with Schedule 2 of the OA and Manual 15
- PJM conducts a separate review of Emissions and VOM Adders
  - Reviewed annually
  - Adders must be approved by PJM before included in offer

An FCP must indicate whether or not the following adders are included in the unit's Cost-Based Offer:

- Maintenance (VOM) Adder
  - If yes, include the following statement: VOM costs are calculated in accordance with Schedule 2 of the OA and Manual 15
- 10% Adder
- Emissions Adders
  - If yes, must include:
    - Emissions allowance types (NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>), source of pricing, frequency of updates

- Numerical example to include offer, no load, and start cost calculation
  - Provide example calculation of incremental offers
    - for all operating modes
  - No-Load calculation
  - Start Cost
    - Identify temperature state and starting fuel
    - Station Service (MWh)
    - Start Maintenance Adder (must be approved by PJM through the VOM review)
    - Any additional Start Labor Costs