# Cost Offers and Fuel Cost Policies Background for Generators

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# Goal of Market Power Mitigation

- **Goal: workably competitive market outcomes in the presence of local market power**
- **Price = Short Run Marginal Cost of Production**
- **SRMC = the incremental cost of producing one more MWh of energy in the short run**
- **Key market input: accurate reflection of SRMC in cost offer**

# Cost Recovery in PJM Markets

- **Energy Market**
  - **Short run marginal costs: variable fuel costs, emissions allowances, chemicals, water, lubricants, energy market opportunity cost**
- **Capacity Market**
  - **Avoidable Costs: labor, maintenance, insurance, fuel availability, administration**
  - **Non-sunk capital costs**
- **Ancillary Service Markets**
  - **Lost opportunity costs from energy market**
  - **Inefficiencies due to following regulation signal, energy storage losses, condensing load**

# Market Power Mitigation

- **If market power, mitigate to lowest of price offer and cost offers.**
- **PJM runs structural market power (TPS) test, determines lowest offer, and mitigates in commitment process.**
- **Reliance on market seller submitted cost offers, monitored by MMU.**
  - **Market rules governing cost offers: OA 6.4.2 and Schedule 2, Manual 15**
  - **Documentation of costs: MIRA, fuel cost policies**
  - **Parameter Limited Schedules**

# Three Pivotal Suppliers Test

- **Replace the price offer with the cost offer in the presence of local market power.**
- **Three Pivotal Suppliers (TPS) Test for market power**
- **TPS only results in a cost offer capping:**
  - **When there is a determination of structural market power (owner fails TPS test)**
  - **When unit price offer > unit cost offer**
  - **When the unit is actually dispatched for the constraint and would therefore affect the price**

# Schedule 2 and Manual 15

- **Schedule 2 of the PJM Operating Agreement describes costs includable in cost offers.**
- **PJM Manual 15: Cost Development Guidelines provides further details.**
- **Both documents are in need of revision to capture short run marginal costs and to include requirements for fuel cost policies.**
- **Fuel cost policy requirement was explicitly ordered by FERC in June 2016. Changes to Schedule 2 are pending a FERC order in docket ER16-372.**

# Fuel Cost Policy

- **Fuel Cost Policy: Document containing the methods used by Generation Owners to calculate their cost-based energy offers as defined in PJM OATT Schedule 2 and PJM Manual 15.**
- **Attachment M – Section IV. E-1**
  - **E-1. Market Monitoring Unit Market Power Review: "…The Market Monitoring Unit and market participants shall, in accordance with the applicable procedures and as set forth elsewhere in the Tariff, attempt to come to agreement about the level or value of offers or cost inputs..."**

# Fuel Cost Policy

- **Enable the MMU to verify that the cost-based offers submitted by Generation Owners to PJM systems are consistent with the methods previously defined by the Generation Owner and accepted by the MMU.**
  - **Fuel Cost Policies are submitted to the MMU using the MIRA tool in Monitoring Analytics website.**
  - **https://mira.monitoringanalytics.com/mira**

# Cost Offer Inputs

- **MIRA has fields that allows Generation Owners to submit cost-based offer component assumptions on a continuous basis:**
  - **Heat input curve**
  - **Startup heat input**
  - **VOM**
  - **Fuel indices**
  - **Emission rates**

# Fuel Cost Policy Content

- **The methods used by Generation Owners to calculate the fuel cost used in their cost-based offers must be detailed in a document (Fuel Cost Policy). The methods shall specify:**
  - **Verifiable contract or spot price**
  - **Verifiable hub/pricing point (index)**
  - **Verifiable fuel cost source (Platts, ICE, broker)**
  - **Verifiable delivery/transportation charge**
  - **Source and update frequency of cost offer input (e.g. heat input curve, emission rates, etc.)**
- **Fuel cost should be verifiable, algorithmic and systematic.**

# Opportunity Costs for Run Time Limitations

- **Pollution emissions limits, fuel supply limits, physical equipment limits**
- **Opportunity costs reflect value of running now instead of in a future hour that may have a higher price.**
- **Forecast future market prices and future fuel costs**
- **Optimization program for future run hours**
- **Opportunity cost is the value of the forgone net revenue at the margin of the restriction.**
- **MA can provide calculations**

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