Reflecting Gas and Dual Fuel Costs in PJM’s Energy and RPM Capacity Market

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Gas and Oil Cost Components

Commodity (variable)

Transportation and storage (fixed or variable)

Delivered Cost
Reflecting Costs in RPM
Avoidable Cost Rate (Attachment DD, Section 6.8)

• Avoidable costs are the costs of being a capacity resource and the **fixed annual operating expenses** that would not be incurred if a unit were *not* a capacity resource for a year.

• Generators can:
  – Provide unit specific ACR data to the Market Monitor
  – Choose to use a Default Unit ACR value

• Costs of FT are not explicitly mentioned, nor explicitly excluded
Avoidable Project Investment Recovery Rate = PI*CRF

- **PI** is the amount of project investment completed prior to June 1 of the Delivery Year, except for Mandatory Capital Expenditures ("CapEx") for which the project investment must be completed during the Delivery Year, *that is reasonably required to enable a Generation Capacity Resource that is the subject of a Sell Offer to continue operating or improve availability during Peak-Hour Periods during the Delivery Year.*

- **CRF** is the annual capital recovery factor
Where Can FT or Dual Fuel Capability Fit in ACR or APIR?

• Arguably FT is akin to a fixed O&M cost that would logically fit within ACR
  – It could even be argued that to the extent FT requires new pipeline investment it could be in APIR under the guise of improving availability

• Dual fuel capability initial investment seems to naturally fall into APIR
  – Ongoing associated fixed O&M into ACR
Reflecting Costs in the Energy Market
Reflecting Fuel Costs in Energy Offers

• Contract or spot price of fuel according to fuel cost policy:
  – Manual 15, Section 2.3
    • The contract price for fuel must include the locational cost of fuel for the generating unit. The source used for spot price for fuel must be publicly available and reflect the locational cost of fuel for the generating unit. The locational cost of fuel shall include specification of any additional incremental costs of delivery.
    • Excludes fixed, leased equipment
    • …the "charge per unit of fuel delivered" should be included in the Fuel on Board (FOB) delivered cost or in the calculation of the "other fuel related costs" as per the documented fuel pricing policy.
Implications for Gas and Oil Costs in Energy Offers

• Volumetric transportation charges can be included:
  – In the case of gas the cost of IT are naturally included as they are volumetric
  – Gas the is bundled by an asset manager or marketer with transportation of any kind can price the bundle volumetrically
  – Trucking, rail, or barge costs on a volumetric basis for oil

• Fixed charges must be reflected elsewhere
  – FT for gas or fixed trucking, rail or barge costs to reserve transportation
Implied Incentives and Market Outcomes for Fuel Procurement
Overarching Direct Incentives

• No direct incentive to secure FT on a standalone basis
  – No clear place to reflect it.
  – Can use third party to bundle with commodity to provide FT through volumetric charge
  – Generally will be implicit short-term or spot “purchase” of FT

• More transparent where the cost of dual fuel capability can be reflected
  – Fixed O&M and Investment in ACR and APIR
Indirect Incentives Regarding Availability

• Short-term reliance on securing FT through spot markets
  – Reduces risk of holding FT that may not be valuable...
  – …increases risk of being unavailable during Peak Hours Period and incurring penalties

• Reliance on dual fuel
  – Reduces availability risk during Peak Hour Period and receiving credits
  – …increases risk of making an investment that may not valuable
Potential Energy Market Outcomes

• Short-term reliance on securing “firming” through spot markets
  – Greater volatility during tight supply demand conditions
  – Volatility through reduced availability and higher fuel costs
  – Lower prices when conditions are not tight

• Reliance on fixed “firming”
  – Reduced volatility during tight supply demand conditions
  – …but reduced volatility is paid for in advance even if conditions are rarely tight