Market Seller Offer Cap Challenges

December 17, 2021

PRESENTED TO:
The PJM Resource Adequacy Senior Task Force

PRESENTED BY:
Starwood Energy Group, LS Power, Vistra, Exelon & Pine Gate Renewables

gabel associates

Gabel Associates, Inc.
Energy, Environmental and Public Utility Consulting
Highland Park, New Jersey
O: (732) 296-0770
www.gabelassociates.com

Introduction to Current Market Seller Offer Cap (“MSOC”)

Net Avoidable Cost Rate (“ACR”) Formulaic Capacity Sell Offer Price Ceiling

- MSOC sets capacity sell offer price ceiling for most market sellers that cleared a prior capacity auction
  - Does not apply to new entrants, energy efficiency and demand response resources
- Capacity Performance (“CP”) implemented a “safe harbor” MSOC equal to the Net Cost of New Entry (“Net CONE”) multiplied by a “balancing ratio” which approximated demand during historic emergency intervals
  - Equaled roughly $200/MW-day in prior auctions
  - Reflected value at which a supplier would be indifferent to making a capacity commitment versus being an energy-only resource
- In September 2021, FERC directed PJM to implement a new MSOC equal to a resource-specific Net Avoidable Cost Rate (“ACR”)
- Net ACR based on formula defined in PJM’s Tariff
  - Gross ACR equals historic annual fixed OPEX, avoidable future CAPEX and “Capacity Performance Quantifiable Risk” (“CPQR”)
  - Net ACR equals Gross ACR minus forecast net Energy and Ancillary Service (“E&AS” revenues)
- PJM publishes proxy Gross ACR values, but all market sellers use resource-specific E&AS
- Gross ACR values do *not* include CPQR

Key Take-Away:
- Current MSOC construct has significant market design and logistical flaws
- Imminent need to implement rational changes to resource-specific Net ACR calculations and adopt appropriate default MSOC structure for future auctions

Market Design Flaw: Many Market Participants Cannot Reflect Penalty Risk in Capacity Sell Offers

- Resources with Net Energy Revenues that significantly exceed Gross ACR have negative MSOC values
- CPQR is added to Gross ACR meaning these resources cannot reflect CP risk in sell offers if calculation is negative
- Capacity must offer obligation forces many resources to bid zero unless market seller demonstrates to PJM and IMM that the resource is physically unable to meet CP performance requirements or calculate a positive Net ACR
- IMM advocating that Resource Adequacy Senior Task Force apply must offer obligation to all renewable resources and energy storage

Resource Type	Default Gross ACR	Default Net E&AS Revenues (RTO)	Proxy Net ACR MSOC Values
Formula	*a*	*b*	*c = a - b*
Nuclear - dual	456.53	444.92	11.61
Coal	82.07	27.73	54.34
Combined Cycle	57.45	205.66	(148.21)
Combustion Turbine	51.30	54.66	(3.36)
Solar PV (Tracking)	41.04	160.44	(119.40)
Wind Onshore	85.15	210.72	(125.57)

Key Take-Away:

- Compulsory, unit-specific capacity commitments are not risk free. Sellers must be able to offer at least at the CP risk level.
- Penalties intended to make market sellers choose between taking on CP risk in exchange for capacity revenues
- No ability to reflect the “value” of the CP risk premium in sell offers

Market Design Flaw: Overly Proscriptive Net ACR Formula Unreasonably Excludes Many Commercially Reasonable Considerations

- Narrow interpretation of tariff limits CPQR to just CP insurance costs and Non-Performance Charge penalties
  - Capacity Market Sellers face other penalties that do not apply to energy-only resources (e.g., Capacity Resource Daily Deficiency Charge) excluded from CPQR
  - Insurance does not fully mitigate penalty risk due (e.g., no coverage for fuel disruptions)
  - Disagreement with IMM over appropriate “level” of Capacity Market Seller risk tolerance
- Net ACR fails to capture reasonable commercial considerations and costs
  - E.g., cost of capital, debt service, and operating expenses that are not otherwise reflected in cost-based energy market offers
- When IMM and Market Seller disagree, PJM interprets tariff limiting their role to just approval or rejection of Market Seller’s Net ACR request
  - Results in automatic use of IMM recommended sell offer even if PJM disagrees with IMM’s calculations
  - Creates significant challenges in cases where disagreements with IMM result from factors like adequacy of supporting data
  - If IMM-proposed offer caps are provided after IMM deadline, then seller must get FERC approval to accept IMM values
- Prevents sellers from representing their opportunity costs of being Capacity Resource vs. energy-only
- Unclear whether Market Sellers can include avoidable retirement costs in Gross ACR, even if units are considering deactivation

Key Take-Away:

- Overly-narrow Net ACR formula excludes factors that PJM and Market Sellers agree are legitimate costs
- Mandates that Capacity Market Sellers use incorrect offer caps
- Raises legitimate questions as to whether RPM can produce just and reasonable rates

Logistical Challenges: Unreasonably Burdensome and Confusing Compliance Process

- IMM, PJM and Market Participants universally faced substantial and unreasonable compliance challenges
  - IMM provided at least three different Net E&AS revenue projections, all of which were articulated as fully consistent with OATT, but were not independently audited or back tested
- Significant changes to IMM Net E&AS revenue projections after deadline to elect Default or resource-specific ACR MSOCs
- Significant confusion about the standard a seller's EAS revenue model must meet, and confusion about whether sellers can use their own Net EAS Revenue calculations if using default gross ACRs
- Many Market Participants found errors in IMM's Net E&AS revenue estimates
  - E.g., exclusion of reactive revenues, incorrect allocation of revenues to resources with multiple generating units
- No clear standard for reasonable level of supporting documentation
- Very little transparency into IMM methodology and basis for recommendations
  - IMM declined to provide meaningful insight into its numbers when rejecting Market Sellers' ACR requests
- Lack of clear accounting standards for differentiating between fixed and variable costs
  - Most operating costs are fixed for low capacity factor units
  - Reflecting these costs in capacity sell offers allows market prices to inform retirement decisions
- Costs rejected from ACR inclusion, must be includable in sellers' cost-based energy offers

Key Take-Away:
- Required Market Sellers to re-submit MSOC requests multiple times
- Increased potential for errors and confusion during compliance process
- IMM's failure to adhere to OATT deadlines impacted Market Seller's ability to make informed decisions about MSOC values

Need to Reform MSOC Construct For August 2022 Capacity Auction

- Adopt targeted reforms to Net ACR formula so sell offers can include Capacity Market Sellers' commercially reasonable risks and costs
  - CPQR should be added to zero value ACRs
  - Ensure that historic fixed costs are consistent with the run profile in Net E&AS forecasts
- Adopt rational "safe-harbor" default MSOC to avoid burden and confusion of overly expansive resource-specific ACR compliance process
  - Appropriately balance mitigation of market power concerns with need to ensure sellers can reflect varied commercial considerations in sell offers
  - Options could include CAPS and PJM proposals to FERC, mechanisms from other markets (e.g., ISO-NE), and other methodologies
- Must adopt common standards for supporting documentation
  - E.g., common ledger accounting records used for SEC compliance or similar
- Need to ensure all parties adhere to deadlines and enforce transparency for all parties

Key Take-Away:
- Changes necessary to ensure just and reasonable auction outcomes for all parties
- Must provide a rational compliance process for Capacity Market Sellers