Energy Market and Capacity Market

- PJM’s proposal would substantially increase energy market revenues and reserve market revenues.
- PJM’s proposal does not address resultant overpayment during the four delivery years for which capacity market has cleared: 2019/2020; 2020/2021; 2021/2022; 2022/2023 (will clear prior to offset)
- Result will be overpayment of at least $1.5 billion per year for four years or $6.0 billion total.
  - This is likely to be conservatively low estimate.
Energy Market and Capacity Market

- PJM’s proposal is to use simulation results to calculate net revenue offset for new capacity market auctions, beginning for the auction in 2020, for 2023/2024.
- This would mean that a PJM simulation process would set capacity market prices.
- It is not appropriate for a nontransparent, non explicitly rule based, and nonmarket calculation to set market prices.
- PJM has refused to share simulation output files with the IMM.
Energy Market and Capacity Market

• The proposed increase in energy and reserve market revenue to generators is a substitute for capacity market revenue.
  • Capacity market revenue is scarcity revenue.
• PJM has not stated that its goal is to increase total compensation for generation.
• PJM’s apparent goal is to shift revenue from the capacity market to the energy and reserve markets.
• The shift of revenue requires additional market design changes to ensure that the shift occurs effectively, equitably and efficiently.
Scarcity Pricing and the VRR Curve

• The impact on the capacity market demand (VRR) curve needs to be addressed because PJM’s proposal is changing the location of scarcity pricing to the energy market.

• The reason for the maximum price on the VRR curve is to incorporate scarcity pricing in the capacity market.
  • Higher of 1.5 * net CONE or gross CONE

• This will no longer be appropriate under PJM’s proposal.
Scarcity Pricing and the VRR Curve

• Existing shape would become almost vertical with maximum price equal to gross CONE under PJM’s proposal
  • Increases to the net energy and ancillary services offset would decrease net CONE to relatively low levels.
  • If net CONE is zero, existing VRR curve maximum price would equal gross CONE.
• The maximum price on the VRR curve should be set at net CONE.
• Capacity price could be zero under some conditions.
VRR Curves

- VRR curve 1: Actual 2021/2022 VRR
- VRR curve 2: IMM Quadrennial Review proposal
- VRR curve 3: PJM Quadrennial Review proposal
- VRR curve 4: IMM Quad Review; Net CONE = 0; Max price = Gross CONE
- VRR curve 5 IMM Quad Review; Net CONE = 0; Max price = Net CONE
RTO VRR Curve Comparison

2021/2022 BRA
IMM Quad Review
PJM Quad Review
IMM Quad Review, Net CONE=$0/MW-Day, VRR Cap Set at 1.0 Times Net CONE
IMM Quad Review, Net CONE=$0/MW-Day, VRR Cap Set at Max(Gross CONE, 1.5 Times Net CONE)
VRR Curves

• VRR curve 1: Actual 2021/2022 VRR
• VRR curve 2: IMM Quadrennial Review proposal
• VRR curve 3: PJM Quadrennial Review proposal
• VRR curve 4: IMM Quad Review; Net Revenue with 10 percent increase in LMP; Max price = Gross CONE
• VRR curve 5 IMM Quad Review; Net Revenue with 10 percent increase in LMP; Max price = Net CONE
RTO VRR Curve Comparison

- 2021/2022 BRA
- IMM Quad Review
- PJM Quad Review
- IMM Quad Review, Net Revenue with 10 Percent Increase in LMP, VRR Cap Set at 1.0 Times Net CONE
- IMM Quad Review, Net Revenue with 10 Percent Increase in LMP, VRR Cap Set at Max(Gross CONE, 1.5 Times Net CONE)
First Four Years Under PJM’s Proposal

- PJM’s proposal will result in an overpayment of at least $1.5 billion per year for four years or $6.0 billion total during the transition period.
- There needs to be a true up for the first four delivery years or a delay in implementation.
- The true up issues would be much smaller if the IMM’s proposal were adopted.
Forward Looking Offset

• If revenues are to be shifted from the capacity market to the energy market, there must be a clear and verifiable mechanism to ensure that the shift occurs effectively, equitably and efficiently.

• Without a forward looking energy and ancillary services offset in the capacity market, the capacity price and the energy price cannot reach an equilibrium.

• A forward looking energy and ancillary services offset is required for the modified ORDC approach to work efficiently.
Energy Market and Capacity Market

- The true up for the first four delivery years should return excess capacity revenues to customers.
- In the absence of a forward looking energy and ancillary services offset, the true up for the following years should also return scarcity revenues to customers unless a resource’s scarcity revenues exceed the scarcity revenues of the reference unit.
True Up Transition Mechanism

• Scarcity rents in energy and reserve markets are the portion of revenues directly attributable to the scarcity price adder to LMP.
• ORDC scarcity rents were not anticipated in previously cleared capacity auctions.
• Calculate scarcity rents for the reference CT using actual delivery year prices to determine what the accurate E&AS offset would have been.
  • Calculate cumulative scarcity rents each day and a final number at the end of the delivery year.
  • True up delivery year capacity payments by the calculated amount.