Quadrennial Review Potential Updates

Market Implementation Committee
July 21, 2025

Skyler Marzewski
Lead Market Design Specialist
Market Design

Gross CONE Comparison

The IMM calculated Gross CONE values for a CC resource are lower than the Brattle CONE values.	The IMM did not have BESS CONE values for each CONE area.

Drawdown of the capital spend is the outstanding difference in models, which results in Brattle having increased carrying costs and higher Gross CONE values.

	Combined Cycle		Combustion Turbine	
CONE Area	PJM Gross CONE* ($/MW-Day ICAP)	IMM Gross CONE ($/MW-Day ICAP)	PJM Gross CONE* ($/MW-Day ICAP)	IMM Gross CONE ($/MW-Day ICAP)
EMAAC: CONE Area 1	$816	$648	$670	$552
SWMAAC: CONE Area 2	$819	$594	$676	$529
Rest of RTO: CONE Area 3	$813	$591	$663	$505
WMAAC: CONE Area 4	$814	$581	$664	$496
COMED: CONE Area 5	$953	$743	$789	$592
RTO	$813	$631	$663	$535

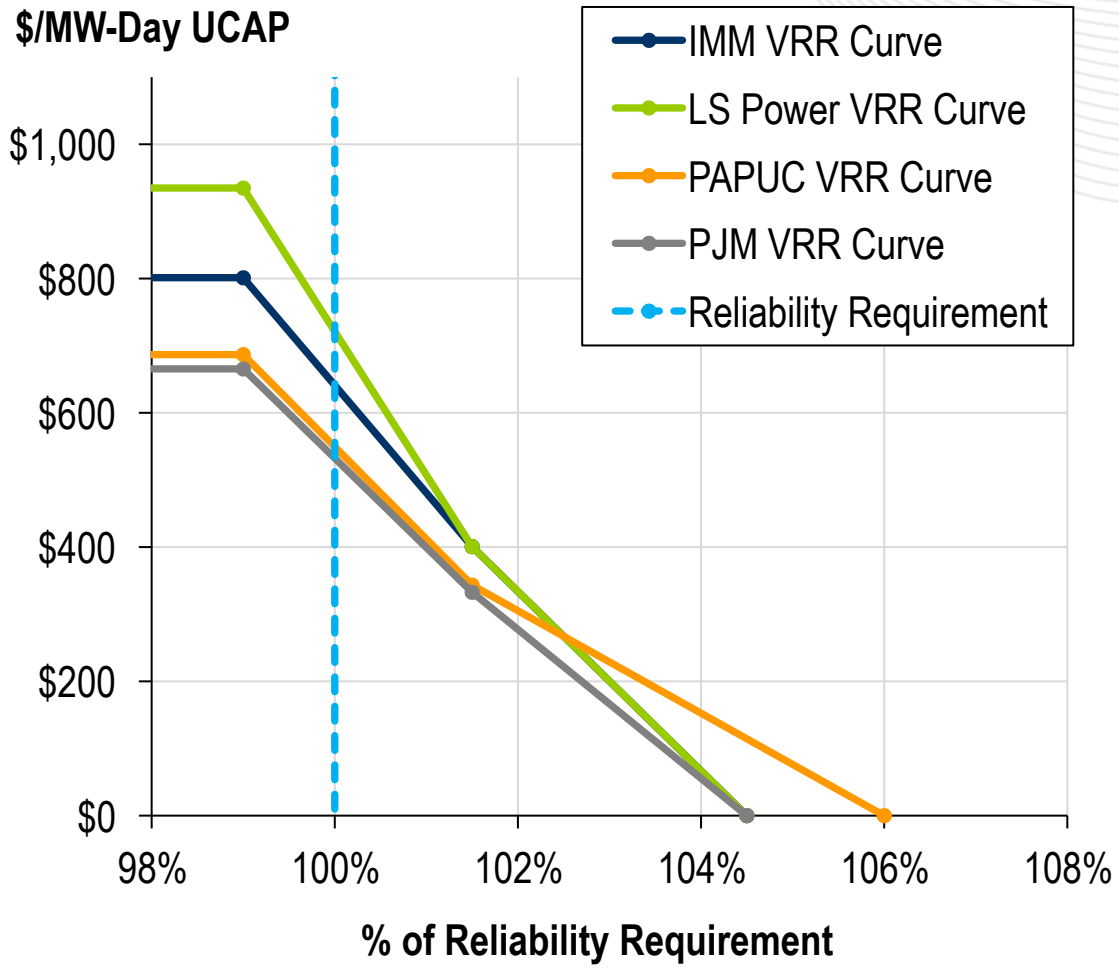
PJM values do not yet reflect updates for wet compression and inlet pressure.

Gross CONE Assumptions Calculations

There is an ongoing coordination with PJM, the IMM, Brattle, and Sargent & Lundy with respect to the calculation of Gross CONE values for a CC and CT

PJM, along with Brattle and S&L **agreed with two modeled technology assumptions**	PJM, along with Brattle and S&L **disagreed two modeled financial assumptions**
• **Wet Compression** technology which is a newer, but for a small capital cost increase, yields a sizable MW increase • **Adjust Inlet Pressure** assumption, which was overly conservative, and will increase total MW with $0 capital cost changes.	• **Drawdown Schedule/Capital Spend** this is the timeline in which GE receives the capital spend for the project. S&L verified with GE there are monthly payments throughout the process, while the IMM assumes large block payments near the end • **Construction Timeline** the IMM's project timeline post-permitting does not seem feasible. S&L accounts for currently supply chain constraints on turbines and major equipment, while the IMM does not
These changes will result in lowering Gross CONE for the CT by approximately ~$50–$60/MW-day and Gross CONE for the CC by approximately $60–$70/MW-day	**PJM does not believe the IMM CONE values represent the current costs to build a generator by June 2028**

VRR Curve Comparison



VRR Curve are calculated using the Brattle CONE and Net CONE values for CC or CT from the April CONE report

All proposed VRR curves maintain the 3-point VRR Curve design

IMM VRR Curve uses the 2018 QR VRR Curve with a CT, but eliminates the safeguard for Point A

- This means if Net CONE is calculated at $0, as observed with 26/27 BRA, there would be no demand curve for the capacity market
- Reliability outcomes require high degree of certainty around Net CONE, or else PJM would risk not maintaining the 1-in-10 LOLE standard

LS Power VRR Curve uses the 2022 QR VRR Curve, which results in the highest potential price cap

PA PUC VRR Curve applies separate conservative estimates on Gross CONE and Net E&AS which provides more stability to the VRR Curve

- Price Cap = 115% Gross CONE – 75% Net E&AS
- Reliability outcomes are slightly better than the PJM proposed demand curve, which makes this a viable candidate
- PA PUC Modeling Results

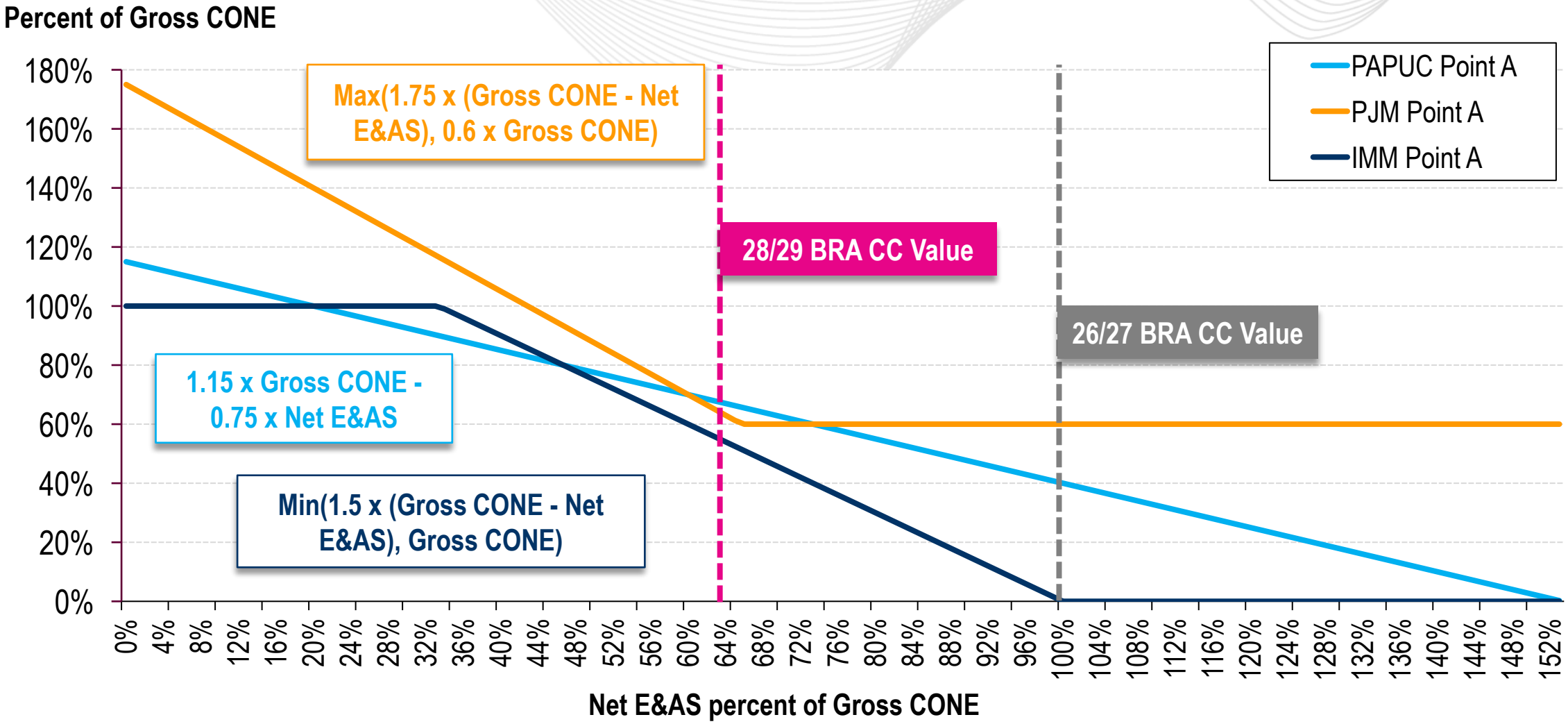
Price Cap Comparison

Accounting for 75% of Net E&AS decreases the price cap volatility and lowers the price cap in high Net CONE areas (EMAAC and COMED)	The PA PUC curve is less likely to have a calculated price cap of $0, even without a safeguard

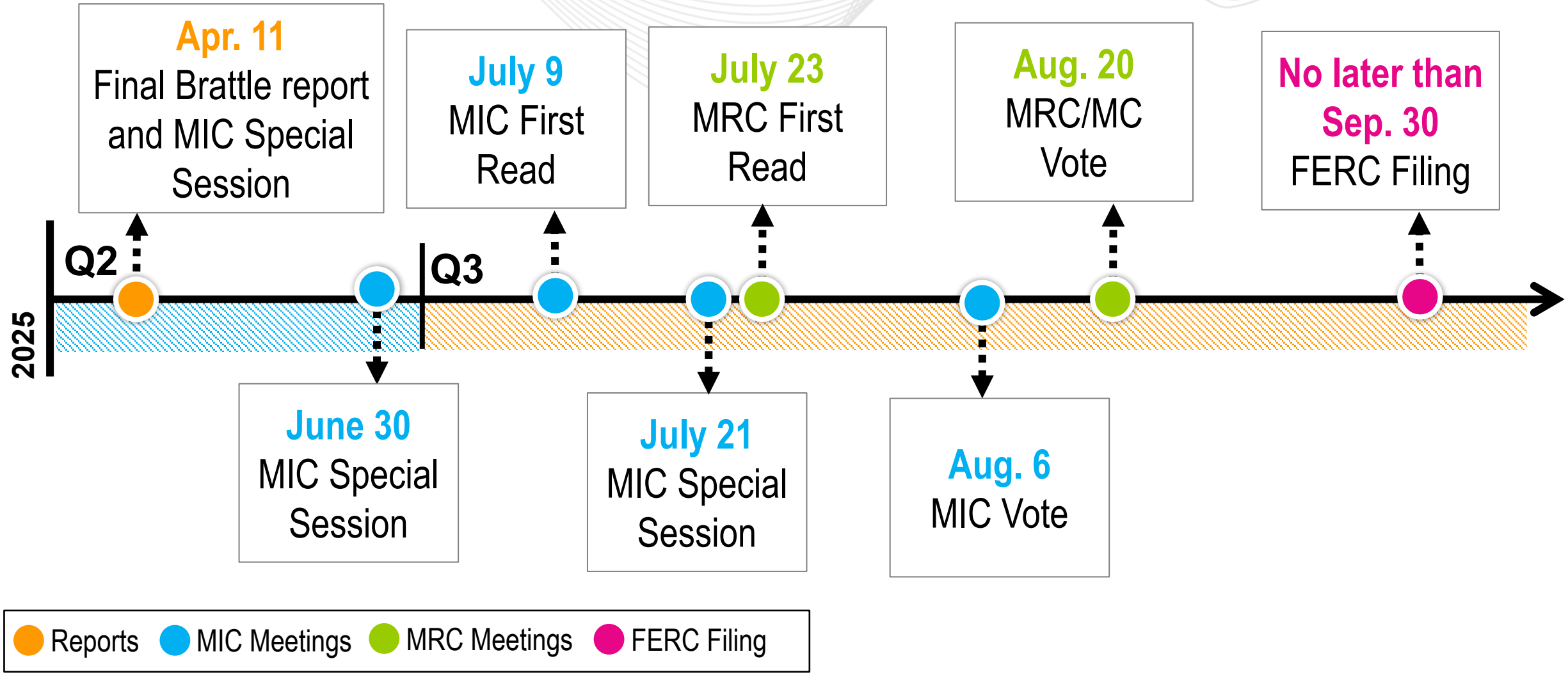
CONE Area	PJM Price Cap ($/MW-Day UCAP)	PA PUC Price Cap ($/MW-Day UCAP)
EMAAC: CONE Area 1	$1,177	$908
SWMAAC: CONE Area 2	$607	$657
Rest of RTO: CONE Area 3	$611	$664
WMAAC: CONE Area 4	$748	$722
COMED: CONE Area 5	$1,263	$988
RTO	$673	$693

PJM is considering adopting the PA PUC VRR Curve as part of our proposal

Estimated Price Cap as a function of Net E&AS
Relative to Gross CONE



Quadrennial Review Timeline



Contact

Chair:
Dave Anders,
David.Anders@pjm.com

Secretary:
Medha Pai,
Medha.Pai@pjm.com

SME/Presenter:
Skyler Marzewski,
Skyler.Marzewski@pjm.com

Quadrennial Review Potential Updates

Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

PROTECT THE POWER GRID

THINK BEFORE YOU CLICK!

pjm

BE ALERT TO MALICIOUS PHISHING EMAILS

Report suspicious email activity to PJM.

Call (610) 666-2244 or email it_ops_ctr_shift@pjm.com