

Impact of VRR Shape Proposals

MIC

Quadrennial Review

June 21, 2022

IMM



Monitoring Analytics

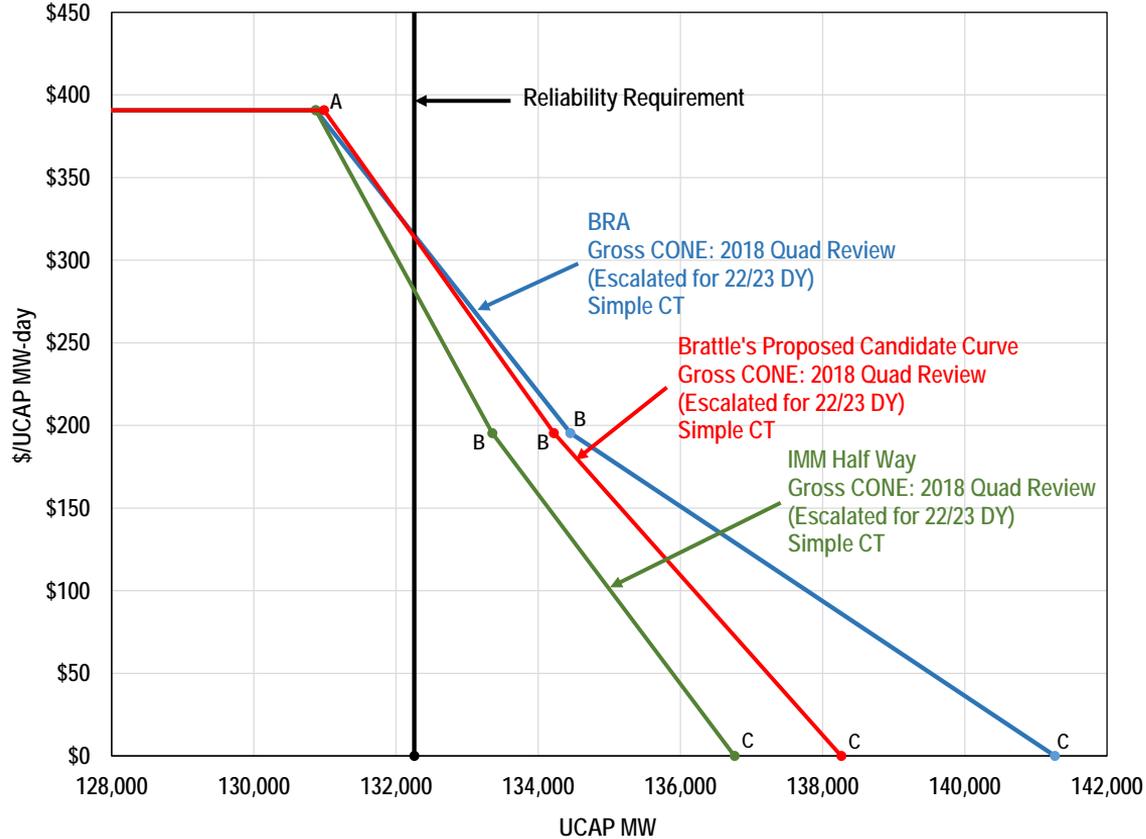
Overview

- **IMM conducted a scenario analysis to compare the impact of proposed VRR curve shapes on the clearing prices and load payments**
- **Capacity offered in 2022/2023 BRA was used for the scenario analysis**
- **Used VRR curve from 2022/2023 BRA as baseline**
- **Only UCAP level (X coordinates) of the VRR curve were varied across scenarios**
- **All other parameters were held constant at the values used in the 2022/2023 BRA**

Comparison of Scenarios

2022/2023 BRA	Brattle's Proposed Candidate Curve	IMM Half Way
2018 Quadrennial Review	2018 Quadrennial Review	2018 Quadrennial Review
Escalated for 2022/2023 DY	Escalated for 2022/2023 DY	Escalated for 2022/2023 DY
Gross CONE: Simple CT	Gross CONE: Simple CT	Gross CONE: Simple CT
Forward Net Revenue for CT	Forward Net Revenue for CT	Forward Net Revenue for CT
AS Offset: \$2,199 per MW-Year	AS Offset: \$2,199 per MW-Year	AS Offset: \$2,199 per MW-Year
Reliability Requirement: 2020 IRM Study	Reliability Requirement: 2020 IRM Study	Reliability Requirement: 2020 IRM Study
Point A: Q = 99 percent of RR (IRM - 1.2 %); P = Max {Gross CONE, 1.5 x Net CONE}	Point A: Q = 99.00 percent of RR (IRM - 1.1 %); P = Max {Gross CONE, 1.5 x Net CONE}	Point A: Q = 99 percent of RR (IRM - 1.2 %); P = Max {Gross CONE, 1.5 x Net CONE}
Point B: Q = 101.70 percent of RR (IRM +1.9 %); P = 0.75 * Net CONE	Point B: Q = 101.50 percent of RR (IRM +1.7 %); P = 0.75 * Net CONE	Point B: Q = 100.80 percent of RR (IRM +0.95 %); P = 0.75 * Net CONE
Point C: Q = 106.80 percent of RR (IRM + 7.8 %); P = 0.00	Point C: Q = 104.50 percent of RR (IRM + 5.2 %); P = 0.00	Point C: Q = 103.40 percent of RR (IRM + 3.9 %); P = 0.00

VRR Curve Shapes



Impact on Clearing Prices

LDA	BRA	Brattle Candidate Curve		IMM Half Way	
	Clearing Price (\$/MW-day)	Clearing Price (\$/MW-day)	Percent Change	Clearing Price (\$/MW-day)	Percent Change
RTO	\$50.00	\$45.00	(10.0%)	\$40.73	(18.5%)
ATSI	\$50.00	\$45.00	(10.0%)	\$40.73	(18.5%)
COMED	\$68.96	\$60.00	(13.0%)	\$55.24	(19.9%)
MAAC	\$95.79	\$89.53	(6.5%)	\$78.75	(17.8%)
ATSI-CLEVELAND	\$50.00	\$45.00	(10.0%)	\$40.73	(18.5%)
DAY	\$50.00	\$45.00	(10.0%)	\$40.73	(18.5%)
DEOK	\$71.69	\$63.75	(11.1%)	\$59.09	(17.6%)
EMAAC	\$97.86	\$94.96	(3.0%)	\$89.00	(9.1%)
PPL	\$95.79	\$89.53	(6.5%)	\$78.75	(17.8%)
SWMAAC	\$95.79	\$89.53	(6.5%)	\$78.75	(17.8%)
DPL-SOUTH	\$97.86	\$94.96	(3.0%)	\$89.00	(9.1%)
PSEG	\$97.86	\$94.96	(3.0%)	\$89.00	(9.1%)
BGE	\$126.50	\$126.50	0.0%	\$126.50	0.0%
PEPCO	\$95.79	\$89.53	(6.5%)	\$78.75	(17.8%)
PS-NORTH	\$97.86	\$94.96	(3.0%)	\$89.00	(9.1%)

Impact on Total Load Payments

	Total Load Payment (\$/Year)	Change (\$/Year)	Percent Change
BRA	\$3,916,990,303	NA	NA
Brattle Candidate Curve	\$3,584,290,896	(\$332,699,406)	(8.5%)
IMM Half Way	\$3,238,821,764	(\$678,168,539)	(17.3%)

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