EE Add Back Issue

MIC

August 11, 2021

IMM

Monitoring Analytics

Background

- PJM RPM rules allow Energy Efficiency (EE) resources to participate on the supply side in the capacity market.
- EE is intended to reduce demand.
- EE add back mechanism increases demand.
  - To ensure that EE does not decrease clearing prices.
  - The goal is price neutrality.
- PJM's current approach to the EE add back mechanism means that the inclusion of EE in the capacity market increases clearing prices.
  - Does not meet price neutrality goal.

History of EE Add Back

- EE add back mechanism has been used in four BRAs.
- PJM add back implementation uses planned EE MW rather than cleared EE MW.
- PJM mechanism significantly overstates EE addback MW.
  - Planned MW are greater than cleared MW.
- The result is to increase demand more than necessary to offset EE.
- The result is to increase capacity market prices.

EE Add Back and EE Cleared

LDA	2019/2020		2020/2021		2021/2022		2022/2023	
	EE Add back (UCAP MW)	EE Cleared (UCAP MW)	EE Add back (UCAP MW)	EE Cleared (UCAP MW)	EE Add back (UCAP MW)	EE Cleared (UCAP MW)	EE Add back (UCAP MW)	EE Cleared (UCAP MW)
RTO	1,891.4	1,515.1	2,432.8	1,659.1	3,912.9	2,728.2	5,205.0	4,694.1
MAAC	663.3	426.9	775.3	526.0	1,341.9	903.0	2,062.4	1,915.6
EMAAC	222.7	160.8	416.9	287.8	932.4	598.1	1,152.0	1,056.1
SWMAAC	334.7	100.7	273.0	119.0	231.2	103.6	481.1	199.2
PSEG	50.9	49.3	127.9	92.8	377.4	232.6	416.1	366.7
PS North	10.0	8.4	25.5	17.9	83.8	70.9	197.7	174.9
DPL South	1.3	1.0	11.0	8.6	17.2	13.6	49.8	49.6
PEPCO	132.2	79.0	95.0	60.8	119.1	96.4	277.5	254.1
ATSI	53.9	41.0	47.2	32.5	254.6	142.0	428.9	403.6
ATSI Cleveland	0.5	0.2	0.6	0.4	49.9	36.1	45.5	40.9
ComEd	725.1	724.8	830.3	671.1	843.1	714.0	932.7	656.8
BGE	202.5	100.7	178.0	119.0	112.1	103.6	203.7	199.2
PPL	61.6	50.9	49.1	34.0	104.0	65.8	244.0	227.1
DAY	NA	NA	47.1	32.7	110.7	59.1	93.1	90.8
DEOK	NA	NA	84.4	65.5	123.4	88.7	150.3	140.1

* Seasonal EE cleared MW quantity is shown in annual equivalent terms

Excess EE Add Back

	2019/2020		2020/2021		2021/2022		2022/2023	
	Excess Add Back (UCAP MW)	Percent	Excess Add Back (UCAP MW)	Percent	Excess Add Back (UCAP MW)	Percent	Excess Add Back (UCAP MW)	Percent
RTO	376.3	24.8%	773.7	46.6%	1184.7	43.4%	510.9	10.9%
MAAC	236.4	55.4%	249.3	47.4%	438.9	48.6%	146.8	7.7%
EMAAC	61.9	38.5%	129.1	44.8%	334.3	55.9%	95.9	9.1%
SWMAAC	234.0	232.4%	154.0	129.3%	127.6	123.2%	281.9	141.5%
PSEG	1.6	3.2%	35.1	37.8%	144.8	62.2%	49.4	13.5%
PS North	1.6	19.0%	7.6	42.5%	12.9	18.2%	22.8	13.0%
DPL South	0.3	30.0%	2.4	27.9%	3.6	26.5%	0.2	0.4%
PEPCO	53.2	67.3%	34.2	56.3%	22.7	23.5%	23.4	9.2%
ATSI	12.9	31.5%	14.7	45.4%	112.6	79.3%	25.3	6.3%
ATSI Cleveland	0.3	150.0%	0.2	50.0%	13.8	38.2%	4.6	11.2%
ComEd	0.3	0.0%	159.2	23.7%	129.1	18.1%	275.9	42.0%
BGE	101.8	101.1%	59.0	49.5%	8.5	8.2%	4.5	2.3%
PPL	10.7	21.0%	15.1	44.6%	38.2	58.1%	16.9	7.4%
DAY	NA	NA	14.4	44.0%	51.6	87.3%	2.3	2.5%
DEOK	NA	NA	18.9	29.0%	34.7	39.1%	10.2	7.3%

IMM Analysis

- For every RPM Base Residual Auction with the EE add back, the IMM calculated the impact of the inconsistency between cleared EE MW and add back EE MW.
- In the IMM solution, the aggregate add back EE MW for the RTO is equal to the total cleared EE MW.
- The result has been persistent overpayment by customers for capacity.
- The total overpayment has been $738,463,469 to date.

Impact of Inconsistency between EE Add Back MW and EE Cleared MW

BRA	Actual ($ per Yea)	EE Add Back equals EE Cleared ($ per Year)	Difference ($/Year)	Percent
2019/2020	$6,999,893,108	$6,983,867,441	($16,025,667)	(0.2%)
2020/2021	$6,964,679,748	$6,802,281,900	($162,397,848)	(2.3%)
2021/2022	$9,300,877,106	$8,797,549,143	($503,327,963)	(5.4%)
2022/2023	$3,916,990,303	$3,860,278,311	($56,711,991)	(1.4%)

IMM Proposed Solution

- **The manual language should be rewritten to permit PJM to calculate the EE add back in the capacity market clearing such that the total EE add back MW offsets the total cleared EE MW in the BRA.**
- **The calculation should be done for the RTO and for each LDA that price separates.**

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