

Proposed Modifications to Capacity Market Rules

MRC

4/26/2023

IMM



Monitoring Analytics

Proposed Modifications

- **LS proposal re penalty rate:**
 - Reduce penalty rate to $0.5 * \text{existing penalty rate (Net CONE/30)}$
 - Stop loss = $2.0 * \text{BRA clearing price.}$
- **LS proposal re PAI trigger:**
 - Emergency not triggered by DR
 - Reserve shortage
- **AMP proposal re PAI trigger:**
 - Reduce penalty rate to $\text{BRA clearing price (Price/30)}$
 - Stop loss = $1.5 * \text{BRA clearing price}$

Purpose of LS Modifications

- **LS asserts a disconnect between MSOC based on net ACR and penalty rate**
- **LS asserts that MSOC suppressed because CPQR was too low**
- **LS asserts the result was lower BRA prices**

IMM Response to LS

- **FERC decision to correct the MSOC to net ACR was appropriate.**
- **CPQR levels were appropriate.**
- **The MSOC did not suppress BRA clearing prices.**
- **A significant proportion of offers were below MSOCs.**
- **LS ignores the supply and demand fundamentals that resulted in competitive clearing prices**
- **LS ignores other market changes including MOPR rules, shift from coal to renewables and gas, EE offers.**
- **LS proposal does not meet definition of a quick fix.**

IMM Proposal

- **The IMM agrees that current penalty rates are excessive because they are defined by Net CONE.**
- **The solution is not to just multiply Net CONE by 0.5.**
- **The solution is to break the link between the penalty rate and Net CONE.**
- **The goal should be to link the penalty rate to BRA market clearing prices.**
- **There is no fixed relationship between Net CONE and BRA market clearing prices.**
- **Continued use of Net CONE as LS proposes is likely to have unintended consequences.**

IMM Proposal

- **Penalty rate = (BRA clearing price/30 PAH)**
- **Stop loss = 2 * BRA market revenue**
- **PAI triggered only when two conditions both met:**
 - **Regional emergency declaration by PJM**
 - **PJM is short primary reserves**

Next BRA: 2025/2026

- **The approach adopted in this process could also apply to the BRA for 2025/2026.**
- **This would permit the BRA for 2025/2026 to be run in the summer of 2023 rather than being on indefinite hold until an entirely new design is approved by FERC.**

Examples

- **Examples of the impact of LS, AMP and IMM proposals on penalties and stop loss calculations.**
 - **For a range of clearing prices.**

Example: \$30/MW-Day Capacity Price

PJM PAI penalty rate	Existing	.5 * Existing	Market Price
Penalty Rate (\$/MW-day)	\$254.80	\$127.40	\$30.00
Total (\$/MW-year)	\$93,002	\$46,501	\$10,950
30 hours	30	30	30
Hourly rate (\$/MWh)	\$3,100.07	\$1,550.03	\$365.00
Intervals (Elliott)	277	277	277
Hours (Elliott)	23.08	23.08	23.08
Max Elliott exposure per MW-year	\$71,560	\$35,780	\$8,425
500 MW: penalty max	\$35,779,936	\$17,889,968	\$4,212,708
Stop Loss	(1.5 * Net CONE)	(2 * Mkt Price)	(2 * Mkt Price)
Stop Loss Price (\$/MW-day)	\$254.80	\$30.00	\$30.00
Stop loss (\$/MW-day)	\$382.20	\$60.00	\$60.00
Per year (\$/MW-year))	\$139,503	\$21,900	\$21,900
500 MW (\$ per year)	\$69,751,500	\$10,950,000	\$10,950,000
Max Elliott share of stop loss	51.30%	163.38%	38.47%
Capacity market revenue			
\$/MW-day	\$30	\$30	\$30
500 MW annual revenue	\$5,475,000	\$5,475,000	\$5,475,000
Share of capacity market revenue	653.51%	326.76%	76.94%
Adjusted by B	0.85	0.85	0.85
Share of capacity market revenue	555.49%	277.74%	65.40%



Example: \$50/MW-Day Capacity Price

PJM PAI penalty rate	Existing	.5 * Existing	Market Price
Penalty Rate (\$/MW-day)	\$254.80	\$127.40	\$50.00
Total (\$/MW-year)	\$93,002	\$46,501	\$18,250
30 hours	30	30	30
Hourly rate (\$/MWh)	\$3,100.07	\$1,550.03	\$608.33
Intervals (Elliott)	277	277	277
Hours (Elliott)	23.08	23.08	23.08
Max Elliott exposure per MW-year	\$71,560	\$35,780	\$14,042
500 MW: penalty max	\$35,779,936	\$17,889,968	\$7,021,181
Stop Loss	(1.5 * Net CONE)	(2 * Mkt Price)	(2 * Mkt Price)
Stop Loss Price (\$/MW-day)	\$254.80	\$50.00	\$50.00
Stop loss (\$/MW-day)	\$382.20	\$100.00	\$100.00
Per year (\$/MW-year))	\$139,503	\$36,500	\$36,500
500 MW (\$ per year)	\$69,751,500	\$18,250,000	\$18,250,000
Max Elliott share of stop loss	51.30%	98.03%	38.47%
Capacity market revenue			
\$/MW-day	\$50	\$50	\$50
500 MW annual revenue	\$9,125,000	\$9,125,000	\$9,125,000
Share of capacity market revenue	392.11%	196.05%	76.94%
Adjusted by B	0.85	0.85	0.85
Share of capacity market revenue	333.29%	166.65%	65.40%



Example: \$100/MW-Day Capacity Price

PJM PAI penalty rate	Existing	.5 * Existing	Market Price
Penalty Rate (\$/MW-day)	\$254.80	\$127.40	\$100.00
Total (\$/MW-year)	\$93,002	\$46,501	\$36,500
30 hours	30	30	30
Hourly rate (\$/MWh)	\$3,100.07	\$1,550.03	\$1,216.67
Intervals (Elliott)	277	277	277
Hours (Elliott)	23.08	23.08	23.08
Max Elliott exposure per MW-year	\$71,560	\$35,780	\$28,085
500 MW: penalty max	\$35,779,936	\$17,889,968	\$14,042,361
Stop Loss	(1.5 * Net CONE)	(2 * Mkt Price)	(2 * Mkt Price)
Stop Loss Price (\$/MW-day)	\$254.80	\$100.00	\$100.00
Stop loss (\$/MW-day)	\$382.20	\$200.00	\$200.00
Per year (\$/MW-year))	\$139,503	\$73,000	\$73,000
500 MW (\$ per year)	\$69,751,500	\$36,500,000	\$36,500,000
Max Elliott share of stop loss	51.30%	49.01%	38.47%
Capacity market revenue			
\$/MW-day	\$100	\$100	\$100
500 MW annual revenue	\$18,250,000	\$18,250,000	\$18,250,000
Share of capacity market revenue	196.05%	98.03%	76.94%
Adjusted by B	0.85	0.85	0.85
Share of capacity market revenue	166.65%	83.32%	65.40%



Example: \$200/MW-Day Capacity Price

PJM PAI penalty rate	Existing	.5 * Existing	Market Price
Penalty Rate (\$/MW-day)	\$254.80	\$127.40	\$200.00
Total (\$/MW-year)	\$93,002	\$46,501	\$73,000
30 hours	30	30	30
Hourly rate (\$/MWh)	\$3,100.07	\$1,550.03	\$2,433.33
Intervals (Elliott)	277	277	277
Hours (Elliott)	23.08	23.08	23.08
Max Elliott exposure per MW-year	\$71,560	\$35,780	\$56,169
500 MW: penalty max	\$35,779,936	\$17,889,968	\$28,084,722
Stop Loss	(1.5 * Net CONE)	(2 * Mkt Price)	(2 * Mkt Price)
Stop Loss Price (\$/MW-day)	\$254.80	\$200.00	\$200.00
Stop loss (\$/MW-day)	\$382.20	\$400.00	\$400.00
Per year (\$/MW-year))	\$139,503	\$146,000	\$146,000
500 MW (\$ per year)	\$69,751,500	\$73,000,000	\$73,000,000
Max Elliott share of stop loss	51.30%	24.51%	38.47%
Capacity market revenue			
\$/MW-day	\$200	\$200	\$200
500 MW annual revenue	\$36,500,000	\$36,500,000	\$36,500,000
Share of capacity market revenue	98.03%	49.01%	76.94%
Adjusted by B	0.85	0.85	0.85
Share of capacity market revenue	83.32%	41.66%	65.40%



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