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