

BEN GRIFFITHS | NEPOOL MARKETS COMMITTEE | SEPTEMBER 9-10, 2025

Clarity Enhancement for CAR Tariff Provisions

Formula-based enhancements to Sections III.15 and III.A

Everything is vague to a degree you do not realize till you have tried to make it precise

Bertrand Russell, *The Philosophy of Logical Atomism* (1918–19)

Let formulas flow freely

- As we craft new tariff sections as part of the **Capacity Accreditation Reforms (CAR) process**, our goal should be to make it as clear and unambiguous as possible
- Words, unfortunately, can be vague. As relevant and feasible, we should rely on written formulas in the place of paragraphs of formula-like text
- This conceptual amendment proposes changes to the August redlines that either add formulas where none are currently included, or restore deleted formulas eliminated when moving language from the existing Section 13 to the new Section 15 or III.A.
- It is not the intent of this conceptual amendment to change the meaning of any tariff provision, just how it is articulated, with an eye towards enhancing the clarity and precision of the tariff

The tariff is already replete with formulas. Let's add more.

$$DRTP = P_{th}X-\frac{FPI_c}{FPI_h}$$

Corporate Liquidity Assessment Result: High Risk

$$\begin{aligned} \text{FCM Delivery Financial Assurance} = & [\text{DFAMW} \times \text{PE} \times \max[(\text{ABR} - \text{CWAP}), \\ & 0.1] \times \text{SF}] - \text{IMC} - \text{MCC} - \text{Peak Monthly Stop-loss} \times \max[(\text{ABR} - \text{CWAP}), 0.1] \\ & - \text{Second Largest Monthly Stop-loss} \times \max[(\text{ABR} - \text{CWAP}), 0.1] \end{aligned}$$

$$\text{Margin} = \$1/\text{kW-month} \times \left[\frac{\left(75\% \times \text{Net CONE}_{\text{upcoming FCA}} \right) - \text{DDBT}_{\text{preliminary}}}{\left(75\% \times \text{Net CONE}_{\text{upcoming FCA}} \right)} \right]$$

$$\text{Net Going Forward Costs} = \frac{\text{(Load + Reserve Requirement)} / \text{Total Capacity Supply Obligation}}{\text{(Load + Reserve Requirement)} / \text{Total Capacity Supply Obligation}}$$

$$\frac{(GFC - IMR) \times \text{InfIndex}}{(CQ_{\text{Summer, kw}}) \times (12 \text{ months})}$$

$$\text{performance factor} = \frac{\sum_{n=1}^{10} \left(\frac{\text{resource output or demand reduction at 10 or 30 minutes}_n \text{ (MW)}}{\text{resource target value}_n \text{ (MW)}} \times n \right)}{\sum_{n=1}^{10} n}$$

$$S(p) = \begin{cases} q_0, & \text{if } p > p_1, \\ q_1, & \text{if } p_2 < p \leq p_1, \\ q_2, & \text{if } p_3 < p \leq p_2, \\ \dots & \dots, \\ q_m, & \text{if } p \leq p_m. \end{cases}$$

Section III.A.22.2.1(c): COPT Margin Formula

(c) A margin value shall be calculated that is equal to \$1/kW-month multiplied by the ratio of (i) the difference between 75 percent of the Net CONE value for the upcoming Annual Capacity Auction and the preliminary Capacity Offer Price Threshold to (ii) 75 percent of the Net CONE value for the upcoming Annual Capacity Auction.

(c) A margin value shall be calculated using the following formula:

$$\text{COPT Margin} = \$1/\text{kW-month} \times [(75\% \times \text{Net_CONE}_{\text{upcoming FCA}} - \text{COPT_preliminary}) / (75\% \times \text{Net_CONE}_{\text{upcoming FCA}})]$$

N.b., This is the current language in III.13.1.2.3.1.A(c). Interestingly this can be simplified further!

(c) A margin value shall be calculated using the following formula:

$$\text{COPT Margin} = \$1/\text{kW-month} \times [1 - (\text{COPT_preliminary} / (75\% \times \text{Net_CONE}_{\text{upcoming FCA}}))]$$

Section III.15.4.2.2(h): Clearing of the Annual Capacity Auction

- (h) The Capacity Clearing Price for an import-constrained Capacity Zone shall be, subject to the other conditions in this Section III.15.4.2.2, the greater of (i) the sum of (1) the price specified by the Capacity Zone Demand Curve for the import-constrained Capacity Zone at the amount of capacity equal to the total amount that is awarded a Capacity Supply Obligation within the zone and (2) the Capacity Clearing Price for the Rest-of-Pool Capacity Zone; and (ii) the highest price of any Capacity Offer for a resource in the import-constrained Capacity Zone that is awarded a Capacity Supply Obligation. In no event, however, shall the Capacity Clearing Price in an import-constrained Capacity Zone be lower than the Capacity Clearing Price in the Rest-of-Pool Capacity Zone.

(h) Capacity Clearing Price for an import-constrained Capacity Zone shall be calculated using the following formula

$$= \max[(P_{\text{CZDC}} + \text{CCP}_{\text{ROP}}), P_{\text{highest}}]$$

Where:

P_{CZDC} = the price specified by the Capacity Zone Demand Curve for the import-constrained Capacity Zone at the amount of capacity equal to the total amount that is awarded a Capacity Supply Obligation within the zone

CCP_{ROP} = Capacity Clearing Price for the Rest-of-Pool Capacity Zone

P_{highest} = highest price of any Capacity Offer for a resource in the import-constrained Capacity Zone that is awarded a Capacity Supply Obligation

Next Steps

- Adding formulas enhances clarity and reduces future uncertainty. We should have more, not fewer, formulas in the tariff.
- For the October MC, LS will bring forward a set of specific redline changes to enhance various sections of the new Section III.15 by converting prose descriptions into clear mathematical formulas
- Initial screening suggests a number of candidates
 - III.15.1.1: Demand Curves (currently 100+ words that could be 3–4 lines)
 - III.15.4.2.2: Clearing Prices (nested max/min logic buried in paragraphs)
 - III.15.8.2.3: Capacity Balancing Ratio (already starts with a formula but then explains components in lengthy prose)
 - III.15.8.2.4: Capacity Performance Score (already does half of PfP in formula form, why not complete it?)
 - III.15.8.5.1.1: Annual Capacity Auction Charge (complex nested calculations)
 - III.A.22.2.1: Capacity Offer Price Threshold (COPT margin calculation)
- LS welcomes feedback on what sections, if any, stakeholders indicate would benefit from formula treatment