

Regulation Mileage Ratio Calculation

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- *Regulation Mileage* is the measurement of the amount of movement requested by the regulation control signal a resource is following.
 - It is a proxy metric for the amount of movement requested while following the regulation signal.
- *Regulation Pegging* describes times when PJM is deploying 95% or more of the available regulation (in either the raise or lower direction).
 - The signal controller under the 30-minute conditional neutrality is allowed to peg RegA more to help manage the neutrality of the RegD signal.
 - The accommodation of the energy capability limitations of RegD is analogous to the accommodation of ramp limitations characteristic of RegA.

$$\text{Mileage Ratio (RegA)} = \frac{\text{RegA Hourly Mileage}}{\text{RegA Hourly Mileage}}$$

$$\text{Mileage Ratio (RegD)} = \frac{\text{RegD Hourly Mileage}}{\text{RegA Hourly Mileage}}$$

If the RegA Hourly Mileage = 0, then Mileage Ratio for the hour cannot be calculated

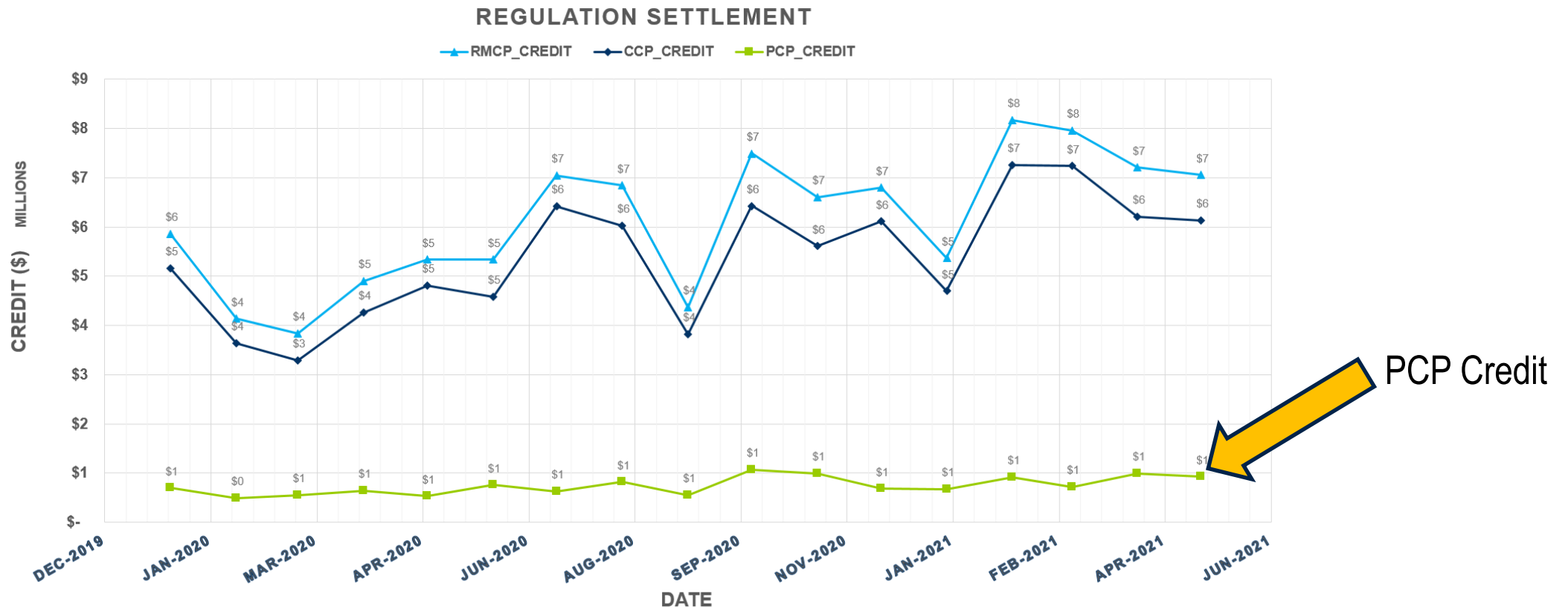
Regulation Market Performance Clearing Price (PCP) Credit =

5-min integrated Regulation MW x 5-min Actual Performance Score x **Mileage Ratio** x 5-min PCP /12



Regulation Market Clearing Price Credit: Key Takeaway

- Regulation Market Clearing Price Credit = Capability Clearing Price Credit + Performance Clearing Price Credit
 - PCP Credit = RegMW x Actual Perf Score x Mileage Ratio x PCP
 - PCP Credit on average is about 12% of the Regulation Market Clearing Price Credit

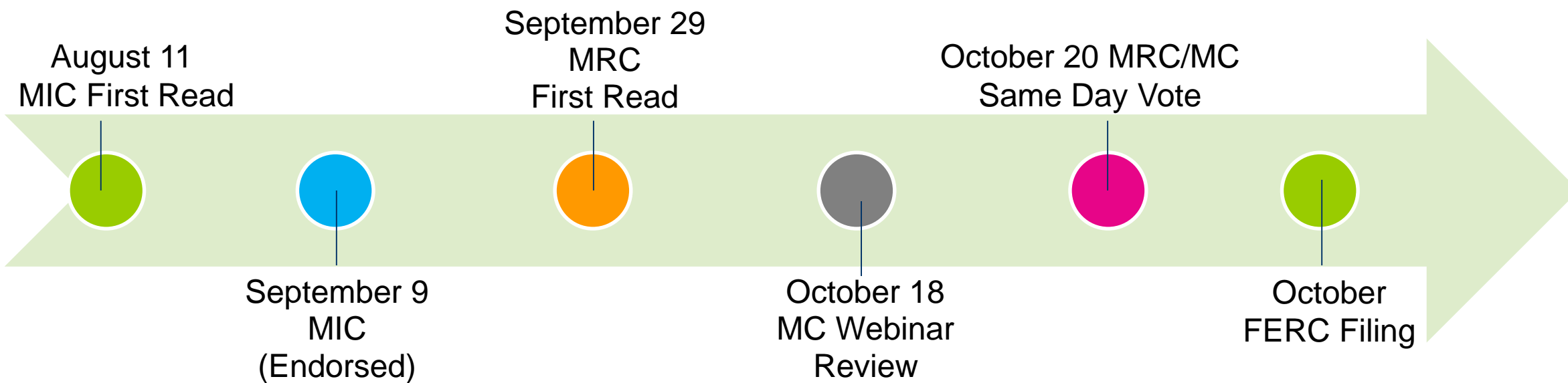


- Substitute 0.1 only when RegA Hourly Mileage is 0.
 - Allows valid solution for Mileage Ratio while maintaining compliance with FERC Order 755 and the original market design objective.
 - Applied only 1 hour since 2012 with no impact because PCP was \$0.
 - No impact to Regulation controller in Operations, Regulation Market Clearing, or Pricing.

- Operating Agreement, Schedule 1, Section 3.2.2 (g) and Tariff, Attachment K-Appendix, Section 3.2.2 (g)

The owner of each Regulation resource that actively follows the Office of the Interconnection's Regulation signals and instructions, will be credited for Regulation performance by multiplying the assigned MW(s) by the Regulation market performance-clearing price, by the ratio between the requested mileage for the Regulation dispatch signal assigned to the Regulation resource and the Regulation dispatch signal assigned to traditional resources, and by the Regulation resource's accuracy score calculated in accordance with subsection (k) of this section. For purposes of calculating the credit for Regulation performance, in determining the ratio between the requested mileage for the Regulation dispatch signal assigned to the Regulation resource and the Regulation dispatch signal assigned to traditional resources, if the hourly mileage for traditional resources equals zero, a value of 0.1 will be used in place of the value of zero for the hourly mileage for traditional resources.

- Similar proposed language for the Tariff and the Operating Agreement will be included Manual 28, Sections 4.2



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