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Noreva Research

Methodology Update – SPP & MISO Capacity Price Forecast

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Noreva Research updated its SPP & MISO Capacity merchant curve forecasts on June 23, 2025. This update was triggered by adjustments to the underlying modeling of capacity additions, as explained below.

As a result of the update, the shape of the merchant curves changed slightly, although the underlying shortage in capacity supply across the 25 years of the forecast period remains the primary driver of pricing. Base case pricing for most seasons in MISO was slightly lower and less volatile after the model update, while the spread between the tails for the end of the curve widened.

Overview of Change

As part of Noreva's continuous efforts to improve the robustness and transparency of our forecasting framework, we have implemented a key structural enhancement to the modeling of supply-side dynamics. Specifically, we have revised the methodology to ensure that capacity additions and retirements are modeled cumulatively across the forecast horizon. This change improves the consistency and realism of accredited capacity trajectories over time, allowing the model to better capture the compounding effect of new builds and phase-outs in the market.

Context and Previous Treatment

In prior iterations of our supply-side model, additions and retirements were evaluated on a year-over-year (YOY) basis without explicit carry-forward logic. That is, new supply entering in year t influenced the accredited capacity in that year, but the model did not mechanically ensure its presence in t+1 and beyond. Similarly, retirements were treated discreetly in the year of removal, but their downstream impact on the nameplate base was not fully embedded in future-year supply.

This approach provided a high-level directional understanding of annual supply shifts but had limitations when projecting multi-year market transformations, such as coal retirements or clean energy buildouts, which unfold over longer timescales and often overlap in impact.

Updated Framework

The revised approach introduces a recursive accumulation mechanism in the construction of supply. Beginning with a starting point of installed nameplate capacity and associated accreditation factors, the model now explicitly tracks the flow of capacity over time by embedding the following principles:

1. Cumulative Tracking of Nameplate Capacity

Nameplate capacity is no longer static or independently set each year. Instead, it evolves year-over-year according to the following structure:

$$\text{Nameplate}_{t+1} = \text{Nameplate}_{t} + \text{Additions}_{t} – \text{Retirements}_{t}$$

This means all additions in year t are automatically reflected in the baseline of year t+1, unless explicitly modeled as short-lived. Likewise, any retirements in year t are permanently removed from the nameplate baseline beginning in t+1.

2. Accreditation of Total Capacity

Once the nameplate base is formed for a given year, accreditation factors are applied to reflect the derated, effective capacity eligible to participate in the capacity market:

$$\text{Accredited Capacity}_{t} = \text{Nameplate}_{t} * \text{Accreditation Factor}_{t}$$

Accreditation factors may vary over time and by technology class, depending on evolving system operator methodologies (e.g., ELCC adjustments, performance-based scoring).

3. Additions and Retirements Adjusted at the Accredited Level

To maintain consistency and capture the deliverable supply, additions and retirements are modeled at the accredited level:

$$\text{Accredited Supply}_{t} = (\text{Nameplate}_{t} + \text{Additions} - \text{Retirements}\ ) * \text{Accreditation}\ _{t\ t\ t}$$

4. Rolling Historical Memory

This cumulative approach embeds a form of historical “memory” into the model. Supply added to the system remains active in the forecast until explicitly removed. This creates a more accurate and intuitive evolution of the market’s resource base and allows for more granular testing of phased additions, delayed retirements, or policy-driven capacity changes.

Justification and Benefits

This change is motivated by both methodological rigor and forecasting fidelity. The energy transition is creating a resource landscape that is increasingly dynamic, and modeling approaches must be capable of representing the compounding effects of overlapping build cycles and sequential retirements.

By shifting from a static year-over-year structure to a cumulative roll-forward model, we gain:

- Improved inter-year consistency, particularly in markets with significant queue movement and long asset life cycles.
- More realistic outer-year projections, especially when modeling scenarios with accelerated decarbonization or aging thermal fleets.
- Greater sensitivity to known capacity schedules, including large-scale nuclear retirements, repowerings, and offshore wind deployments.
- Better alignment with system operator practices, as market design increasingly emphasizes forward visibility and accreditation traceability.

Implications for Forecast Outputs

This enhancement directly impacts the shape and level of the forecasted supply stack and, consequently, the projected supply-demand balance in each modeled year. It is particularly important in regions where supply conditions are tight and marginal changes in accredited capacity can materially affect clearing prices. The cumulative logic ensures that pricing outcomes reflect not just annual additions or losses, but the net installed position of the system over time.

In sum, this revision strengthens the structural integrity of the model and enhances Noreva’s ability to deliver forward price forecasts that are analytically sound, transparent, and grounded in realistic assumptions about how capacity evolves in the real world.