



California ISO

WESTERN ENERGY MARKETS

Market performance update

Guillermo Bautista Alderete

Director, Market Performance and Advanced Analytics

ISO Board of Governors and WEM Governing Body

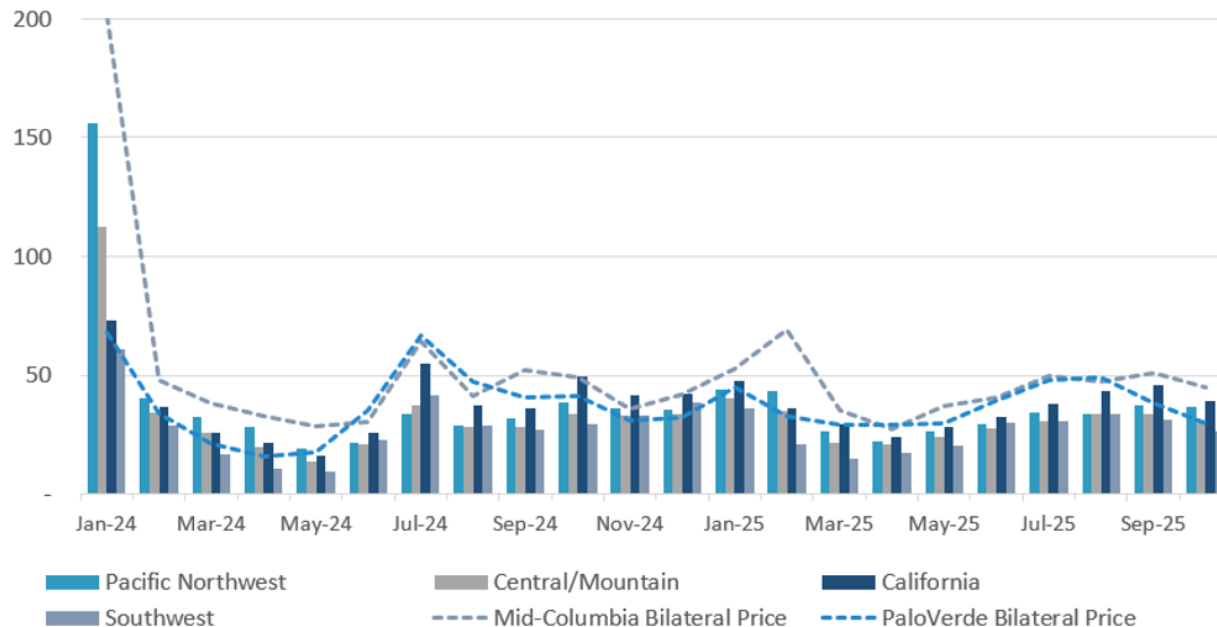
Joint General Session

December 17, 2025

Real-time prices in October declined due to milder post-summer conditions

Price signals in the West

Average real-time prices in the Western energy imbalance market areas, in dollar per Megawatts hours*



* For reference, external bilateral prices are shown with dotted lines

Real-time prices saw a modest decline as load conditions moderated following the summer season

Balancing areas in the California region recorded the highest prices within the market footprint, driven primarily by congestion caused by internal transmission constraints

These prices remained lower than the average prices of October 2024

External bilateral prices diverged in October, with MID-C prices remaining higher than WEIM prices, while Palo Verde prices tracked more closely with Southwest region WEIM prices

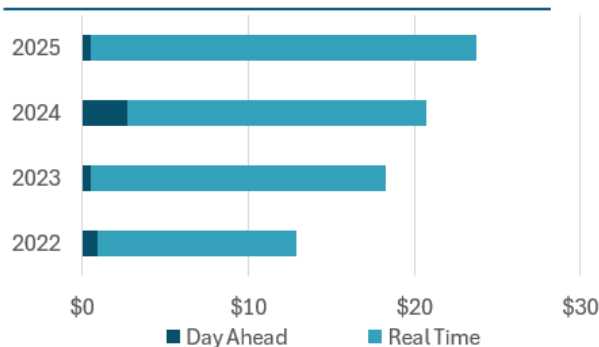
Bid cost recovery in the Western energy markets in 2025 is projected to be comparable to levels observed in 2024

Bid cost recovery in 2025 is about half of the levels observed in 2022 and 2023

The share of costs allocated to storage resources ranges from seven to eleven percent of the total, depending on the year. The share of costs for gas resources is approximately 80 percent

Uplift for storage resources

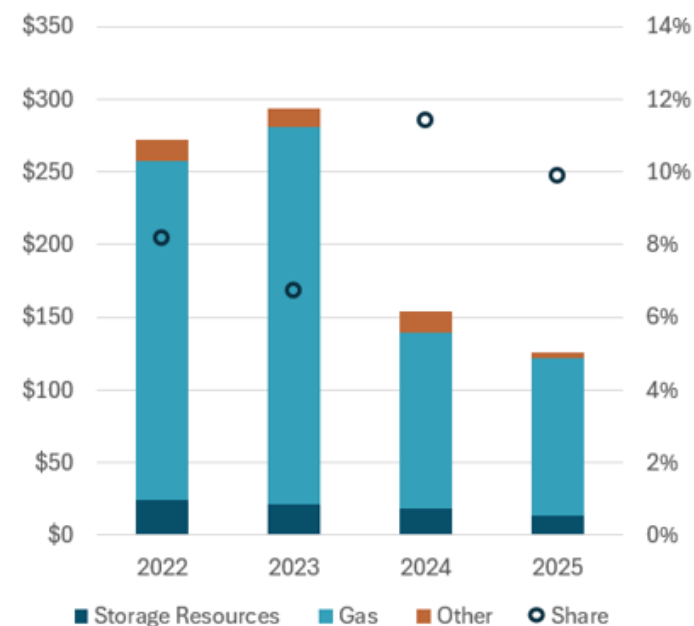
Bid cost recovery by market in millions of dollars



About 94 percent of the bid cost recovery for storage resources accrued in the real time market

Uplift in the market

Bid cost recovery in millions of dollars and share of cost from storage resources in percentage



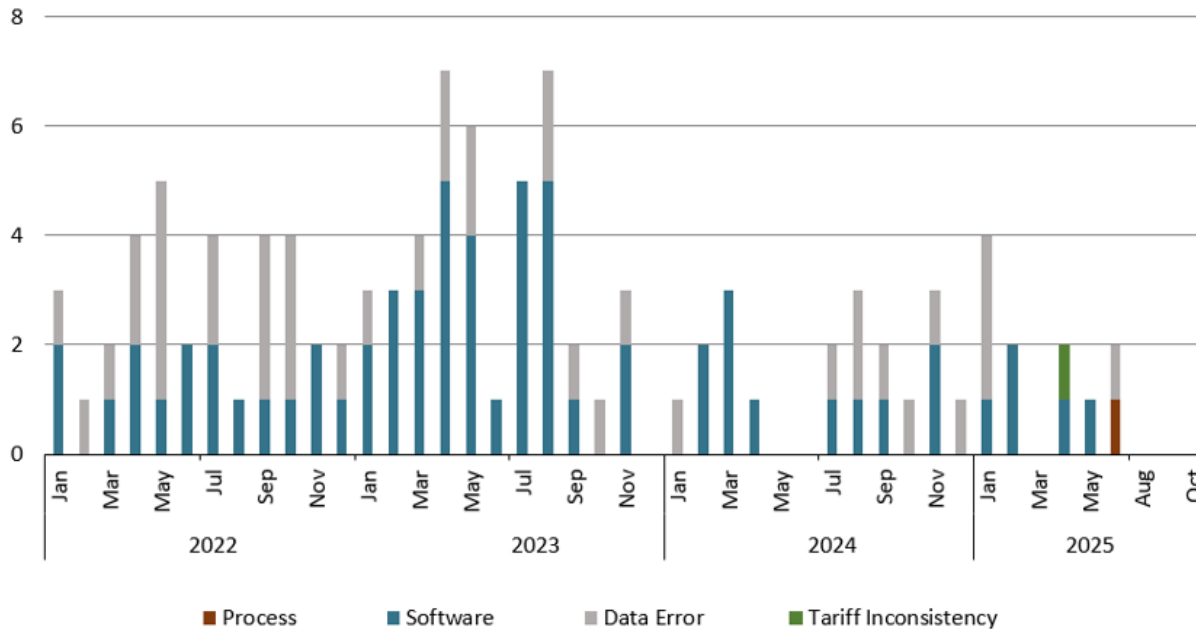
* Value for 2025 covers January through October

Stakeholders are currently exploring bid cost recovery for storage resources in a public stakeholder process. Information about this effort is available on its [site](#)

The number of issues requiring price corrections in the market has reached minimal levels

Price certainty in the market

Number of events leading to price corrections in the Western energy imbalance market



* An event is an identified issue that may impact multiple areas in the market

Price corrections ensure that market settlements are based on accurate price signals

Price corrections are completed within five business days to provide price certainty to the market

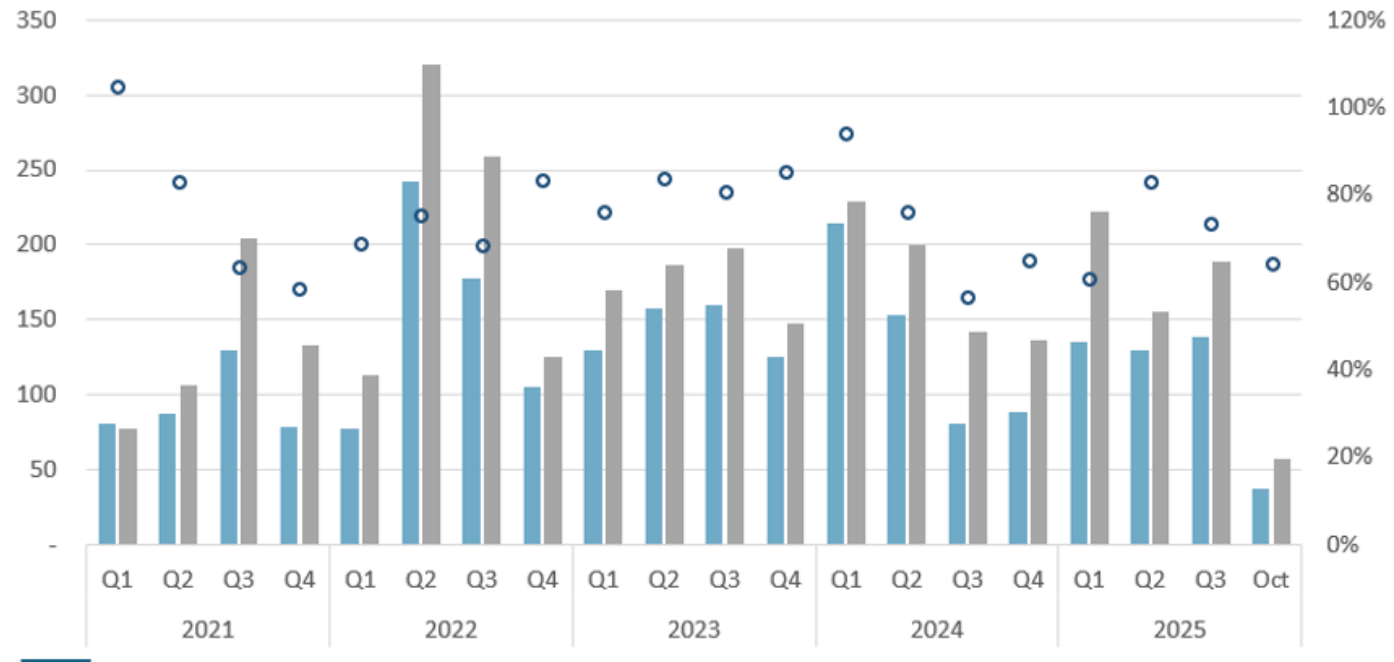
The number of events leading to corrections has reduced from an average of 3.2 in 2022 and 2023 to about 1.1 events in 2025, with no corrections in the last three months

About 59 percent of events in the reported period were driven by software related issues

Day-ahead market congestion in October was \$37 million, down from the monthly average of \$47 million in summer

■ The value of congestion in the day-ahead market

Congestion rents (blue), congestion revenue rights value (grey), and revenue adequacy (dots)



* Bars are in millions of dollars; revenue adequacy is a ratio in percent of rents to value

The surplus collected from congestion in the day-ahead market is the congestion revenues

These are used to fund payments to congestion revenue rights

Full value of congestion revenue rights was \$58 million in October, resulting in a revenue shortfall of \$20 million and reflecting a 64 percent adequacy rate.

Update on working group for configurable parameters for the day-ahead market enhancements

- Five configurable parameters working group sessions held so far, last one on November 20, 2025. The effort will be completed in March 2026.
- This effort is an open and transparent collaborative stakeholder effort to evaluate the impact of five configurable parameters in the day-ahead market enhancements and determine the appropriate values to be used at go-live in May 2026.
- The parameters in scope are i) set of enforced transmission constraints, ii) percent of imbalance reserves to deploy, iii) imbalance reserve bid cap, iv) default bid price for imbalance reserves, and v) envelope multipliers for storage resources.
- The bid cap and the envelope multipliers have been analyzed in the first two working group sessions. The envelope multipliers set the proportion of state of charge that a storage resource must hold to support imbalance reserve awards
- The analysis shows that the value of both these parameters present important trade-offs among imbalance reserve prices, level of procurement from storage resources and the level of reserves not procured.
- The next session scheduled for December 18 will focus on the deployed reserves factor and the set of enforced transmission constraints
- Additional information about this effort is available on the day-ahead market enhancement [site](#).