



California ISO

Price Formation Enhancements

Stakeholder Workshop

June 9, 2022

CAISO Price Formation Workshop

Price Formation Objectives

- Accurate prices are needed for the aggregate region to achieve maximum societal benefits:
 - **Efficiency**—encouraging the installation and use of the lowest-cost resources to achieve aggregate savings
 - **Reliability**—encouraging resources to be built and available when and where they are most needed
 - **Environmental goals**—promoting the “best fit” mix of non-emitting resources and storage
- Accurate prices are needed for individual participants, BAAs, and sub-regions to benefit from participating in a regional organized market
 - **Inaccurately high market prices will harm ratepayers** of entities that are net purchasers *in the applicable hours* (through inflated purchase costs)
 - **Inaccurately low market prices will harm ratepayers** of entities that are net sellers *in the applicable hours* (through suppressed surplus sales revenues)

Key Topics:

Fast Start Pricing

Scarcity Pricing

Market Power Mitigation

GHG Pricing

Fast-Start Pricing

- Bilateral markets: parties negotiate transaction price that reflects all short-term costs
 - Including the cost of starting and operating thermal units, or the costs avoided by the transaction
- In 2016, FERC issued a NOPR to require all organized markets to include peaking units in the calculation of market prices (“fast-start pricing”)
 - *“some current RTO/ISO practices may fail to accurately reflect the marginal cost of serving load because fast-start resources are inappropriately prevented from setting prices.”* FERC NOPR in Docket No. RM17-3, at P37
 - CAISO and the CAISO DMM strongly opposed FERC’s proposal
 - FERC terminated the NOPR, but opened proceedings requiring SPP, NYISO and PJM to adopt fast-start pricing
 - DMM intervened in the SPP, NYISO and PJM proceedings, opposing implementation of fast-start pricing
- As of 2022, **all** bilateral markets and **all** FERC-jurisdictional organized markets, **except those operated by the CAISO**, have implemented fast-start pricing, and include the cost of starting and operating gas peakers in the calculation of market prices
- Powerex and Public Power Council commissioned detailed data analysis by EnergyGPS in order to estimate the implications of fast-start pricing in the west from 2017 – 2020

EnergyGPS Study: Continuing to Exclude Gas Peakers From CAISO Market Clearing Prices Has Numerous Consequences

- Results in inter- and intra-regional cost shifts:
 - **Increases retail rates in the Northwest** by lowering compensation for sales to the CAISO BAA by **\$93M/year** to **\$185M/year**
 - **Increases retail rates in the Southwest** by lowering compensation for sales to the CAISO BAA by **\$95M/year** to **\$235M/year**
 - **Reduces wholesale costs for load-serving entities** in the CAISO BAA, by up to **\$900M** to **\$1.8B**, as these entities are collectively large wholesale purchasers – during the hours that gas peakers are operating – from in-state merchant generation and from the rest of the western region (forward, day-ahead, and real-time)
- Undermines carbon pricing programs, by excluding some of the highest emitting resources from market clearing prices, suppressing the incentives to displace these resources with clean supply
 - While also resulting in discriminatory side-payments to thermal resources

Powerex further analysis using EnergyGPS study results shows that:

- Excluding peakers suppresses the price signal for the installation and availability of resources that can efficiently displace gas peakers, harming aggregate societal benefits (from an economic, environmental and reliability perspective)
 - Reduces market compensation for battery resources by \$15/MWh or 34%
 - Reduces market compensation for wind resources by \$2.30/MWh or 9%
- Excluding peakers from EIM prices shifts value of EIM Transfers from NW and SW entities to the CAISO BAA
 - Impacts are limited by size of EIM and level of participation in this sub-hourly market
 - *Impacts would be **much greater*** in a day-ahead market without fast-start pricing

Estimated Impact of Excluding Peakers on EIM Transfers (2020)

BAA	Estimated Annual Impact	Total GWh of EIM Imports/Exports
CISO	\$ 23,449,970	2,853
SMUD/BANC	\$ 2,456,428	420
PACW	\$ 200,141	632
Powerex	\$ (63,778)	232
SCL	\$ (297,902)	114
PGE	\$ (583,574)	438
PSEI	\$ (644,183)	365
NEVP	\$ (784,223)	542
IPCO	\$ (1,944,442)	398
SRP	\$ (2,991,742)	827
AZPS	\$ (4,742,880)	775
PACE	\$ (12,315,352)	1,322

Note: Summarized study results do not include hours when the LMP was less than \$20/MWh



Thank You

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Next Steps

- All related information for the Price Formation Enhancements initiative is available at: <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Price-formation-enhancements>
- Post Issue Paper: 6/30



- The ISO is pleased to be hosting the Stakeholder Symposium in-person at the Safe Credit Union Convention Center in downtown Sacramento on Nov. 9 – 10, 2022
- Registration will be open in June
 - Public notice will be issued once the site is available
- Additional information is available on the Stakeholder Symposium page on ISO's website at:
<http://www.caiso.com/informed/Pages/MeetingsEvents/StakeholderSymposium/Default.aspx>
- Please direct questions to symposiumreg@caiso.com