



California ISO

# Price Formation Enhancements

Stakeholder Workshop

June 9, 2022



America's Premier Competitive Power Company  
... Creating Power for a Sustainable Future



## Efficient Market Prices During Tight Supply Conditions

*Scarcity Pricing Recommendations*

6/9/2022

# Efficient Market Prices During Tight Supply Conditions

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- RT Prices During Shortages Lead to Inefficient Outcomes
  - Operator intervention
  - Unclear operational signals to storage
  - Incentives to under-schedule load in DA
  - Ineffective supply performance incentives
  - Muted participation of Demand Response
  - Discourage imports and support exports

[Scarcity Pricing Background Discussion \(caiso.com\)](#)

# Efficient Market Prices During Tight Supply Conditions

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- Proposed principles for RT Scarcity Pricing
  - Consider a “soft-touch” to the optimization
  - Allow prices to rise before shortage, but when operators would normally begin to act
  - RT energy AND A/S prices should have a known potential to rise
  - RT prices should drive storage operations, rather than out-of-market actions
  - RT prices should encourage load to be bid DA
  - RT prices should reflect demand curtailment
  - RT prices should encourage availability of internal and import resources

# Initial Considerations and Recommendations

- Allow prices to rise as the CAISO *approaches* a reserve shortage (enhanced ORDC)
  - *Current market design only allow prices to rise after a shortage occurs*
- Price reserve shortages equal to the price of maintaining power balance
  - *Current reserve pricing does not recognize that when reserves are short, the CAISO will curtail load to maintain minimum reserves.*
- During compulsory demand curtailment, ensure system marginal energy price remains at the power balance constraint violation price
  - *The current market sees the demand reduction and clears at a lower price not reflecting the value of lost load*
- When DA market clears at or near the bid cap, allow the RT market penalty prices to rise higher than those used in the DA market
  - *Current market sets DA and RT penalty prices the same*
- Re-optimize and re-settle energy and ancillary services in real-time
  - *Current market only procures incremental ancillary services in the FMM*

Efficient Market Prices During Tight Supply Conditions:

Scarcity Pricing Market Design

Issues and Recommendations

A collaborative effort by  
GDS Associates and Calpine

## 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](mailto:symposiumreg@caiso.com)