

CAISO System Market Power Mitigation

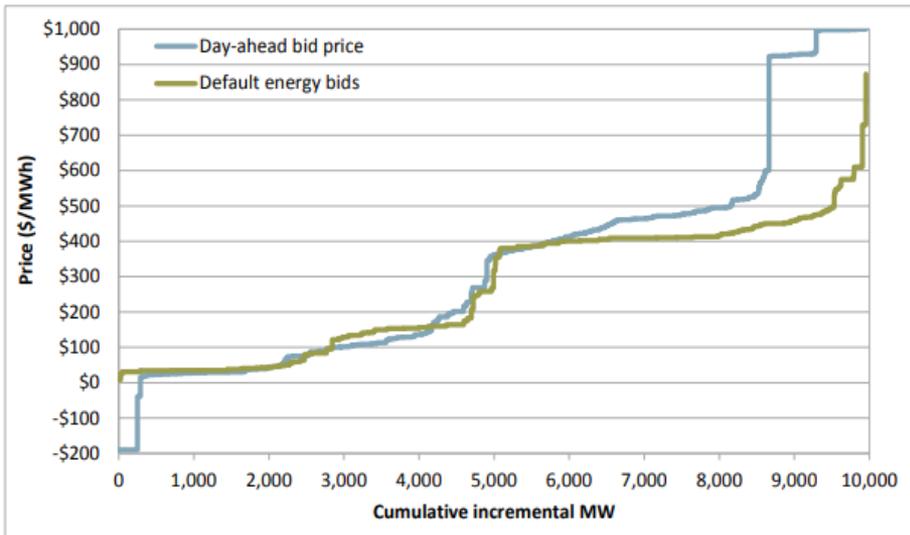


August 27, 2019



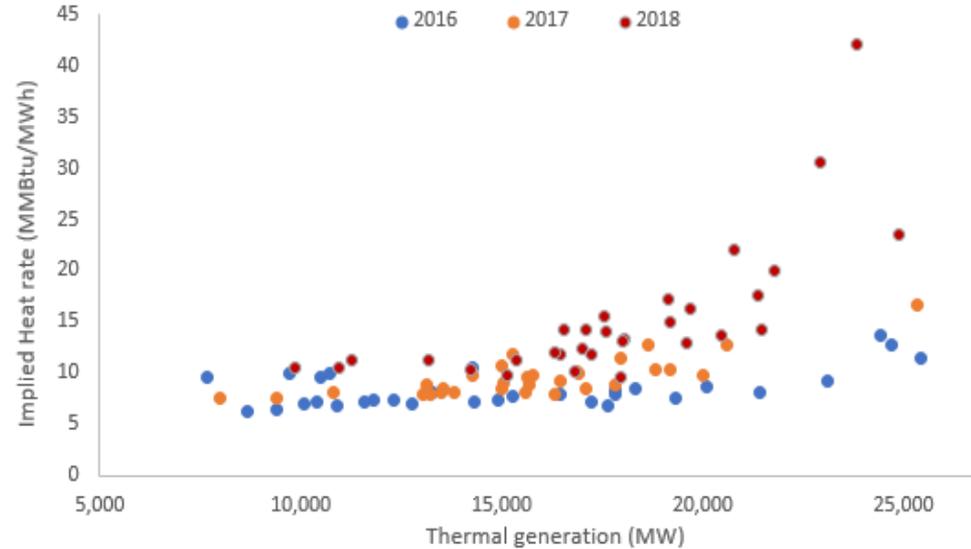
Market Conditions & Impact

Figure 7.2 Net sellers supply input bid and reference, July 24, 2018 hour 20



Source: DMM 2018 Annual Report

Peak Daily Implied Heat Rate vs. Thermal Generation in July



Source: CAISO OASIS Data

Table 1. Day Ahead Market System Costs due to non-competitive pricing in 2017 and 2018

Year	Number of Hours*	Weighted Avg Price (\$/MWh)	Average Implied Heat Rate	Calculated Competitive Price (\$/MWh)**	Load (MWh)	Excess Rent (\$M)
2017	42	\$230	33.28	\$142	1,651,646	\$145
2018	15	\$570	25.75	\$449	676,269	\$82

* Non-competitive hours were counted as day ahead intervals in which the implied heat rate was >20 and the amount of thermal generation was <25,000 MW

** The competitive price was calculated using a default implied heat rate of 20 multiplied by the greater of the PGE2 or SCE1 gas price

Source: CAISO OASIS Data



Need for System MPM Initiative

Principles of System MPM

- Maintain efficient dispatch
 - Default Energy Bid would not be below marginal + opportunity cost (Particularly relevant for Hydro)
 - Mitigation limited to hours when market power exists
- Just and reasonable prices
 - Energy prices reflect marginal costs of incremental energy

Proposed Objectives of this Initiative

1. Stakeholder-vetted metric for measuring the existence of market power
2. Evaluate different mitigation measures and select based on the risks and benefits of different options