



A New Approach to Procuring Demand Response Resources

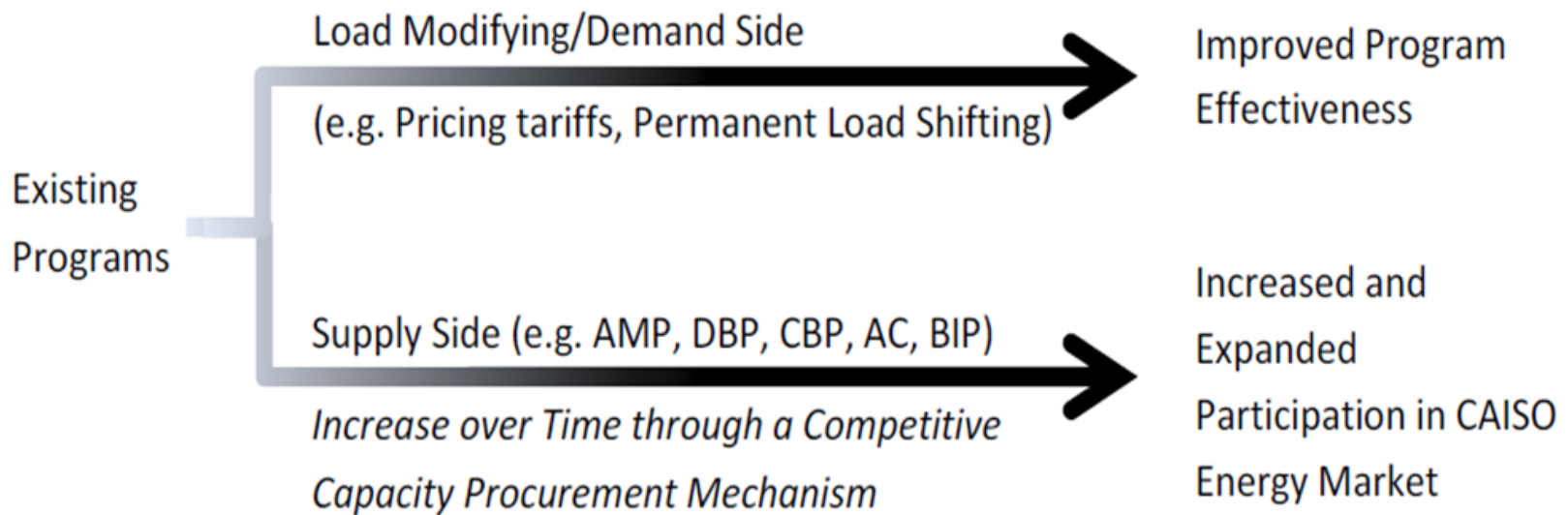


MADRI Working Group Meeting
September 13, 2016





Bifurcation of DR Programs





Rules 24 & 32

- Allows 3rd Party DR Providers to bid bundled utility customers directly into the CAISO wholesale energy market
- Details roles and responsibilities of DR Providers and Utilities
- Requirements of third parties:
 - Must register with the CPUC and the CAISO
 - Application fee; IOU service agreement; performance bond & customer notification letter for residential and small commercial.
- Once registration is completed, third party DR Providers listed on websites of CPUC, IOU and CAISO.





Demand Response Auction Mechanism – Overview

- Capacity procurement exclusively for third party DR resources.
- IOUs hold simultaneous RFOs with a common pro forma contract, protocols and evaluation criteria.
- IOUs purchase resource adequacy capacity **only**, and do not dispatch the resources. DRAM winners must participate in the wholesale market and are responsible for all aspects of that participation, incl. penalties.
- **Pricing:** reverse pay-as-bid auction. Bid & contract prices confidential.

- **Products**

	Economic	Reliability	System	Local	Flexible	Res?
2016	Yes	No	Yes	No	No	20% min
2017	Yes	Yes	Yes	Yes	Yes	20% min

- Two pilot auctions already held; a third will start development on 6/21/16, for deliveries starting January 1, 2018.
- **Technologies:** Fossil-fueled generation not allowed. Otherwise, DRAM is technology-agnostic. All bidders compete on same basis.
- 22 MW minimum/auction. Cap of budget or available registrations.





DRAM Pilot Results

2016 DRAM Results

	<u>MW min</u>	<u>MWs signed (Aug)</u>	<u>Res. %</u>	<u>Budget cap</u>	<u>Registrations</u>	<u># of counterparties</u>
SCE	10	20.32	41%	\$4M	≈ 14,000	9
PG&E	10	17.17	>20%	\$4M	≈ 10,000	6
SDG&E	2	3	66%	\$1M	3,752 (out of 7K)	5

2017 DRAM Results

IOU	<u>MW min</u>	<u>MWs signed (Aug)</u>	<u>Res. %</u>	<u>Budget cap</u>	<u>Registrations</u>	<u># of counterparties</u>
SCE	10	56.2	20.7%	\$6M	--	7
PG&E	10	21.4	>20%	\$6M	≈ 20,000	5
SDG&E	2	4	68%	\$1.5M	≈ 7,000	5

*A third pilot, for deliveries starting in 2018, was just submitted for approval on September 1, 2016. Budgets were doubled from the 2017 pilot. Budgets are double that of 2017.





Other Pilots: IRM2 & Supply Side Pilots

Intermittent Resource Management

- “Training wheels” for third party direct participation; C&I loads only.
- Olivine is CAISO DRP; PG&E is Scheduling Coordinator
- Participants nominate capacity with corresponding energy bids, in 3-hour blocks 24 days/month, or 6-hour blocks, 12 days/month.
- Participants earn capacity (fixed @ \$10/kW-month) and wholesale energy payments
- Day-ahead energy only.
- Nominations started in 2014.

Supply Side Pilot – Successor to IRM2

- Residential aggregations are eligible to participate
- Olivine is CAISO DRP; PG&E is Scheduling Coordinator
- Participants nominate capacity with corresponding energy bids, in 4-hour blocks/day, 18 days/month
- Participants earn capacity and wholesale energy payments
- Day-ahead energy, real-time energy, and A/S opportunity
- Nominations started in February 2016, along with XSP.





Other Pilots: Excess Supply Pilot

- Participants make monthly nominations; 4 hours minimum
- Participants not integrated into the market; PG&E conducts “shadow” dispatch; 3rd party DRP
- Settlement mirrors CAISO tariff – 10/10 with +/- 20%
- Capacity payment only, based on availability:

# of days	Events/month	\$/kW-month
2	2	\$5
3	3	\$6
4	4	\$7
5	5	\$8
7	7	\$10





Rachel McMahon
Energy Division, CPUC
415-703-1606
rcl@cpuc.ca.gov

