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2021 IEPR Commissioner Workshop on Grid Interactive Efficient Buildings - Load Flexibility

Demand Response Policies, Programs, and Initiatives

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California Public Utilities Commission
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California Public Utilities Commission

Agenda

- Overview & Background
- Current Proceedings & New Initiatives

Overview:

- This presentation includes an overview of the California Public Utilities Commission's (CPUC) role in setting policies, programs and initiatives that enable demand flexibility in response to Price Signals, Grid Conditions or Other Incentives.

- This presentation only includes Demand Response (DR) policies and programs under CPUC jurisdiction and does not include DR policies and programs administered or overseen by local publicly owned utilities, other state agencies or other Non-IOU Load Serving Entities.

Demand Response (DR) vs. Energy Efficiency (EE)

- **Energy Efficiency**

  Permanent One Time Change in Energy Consumption

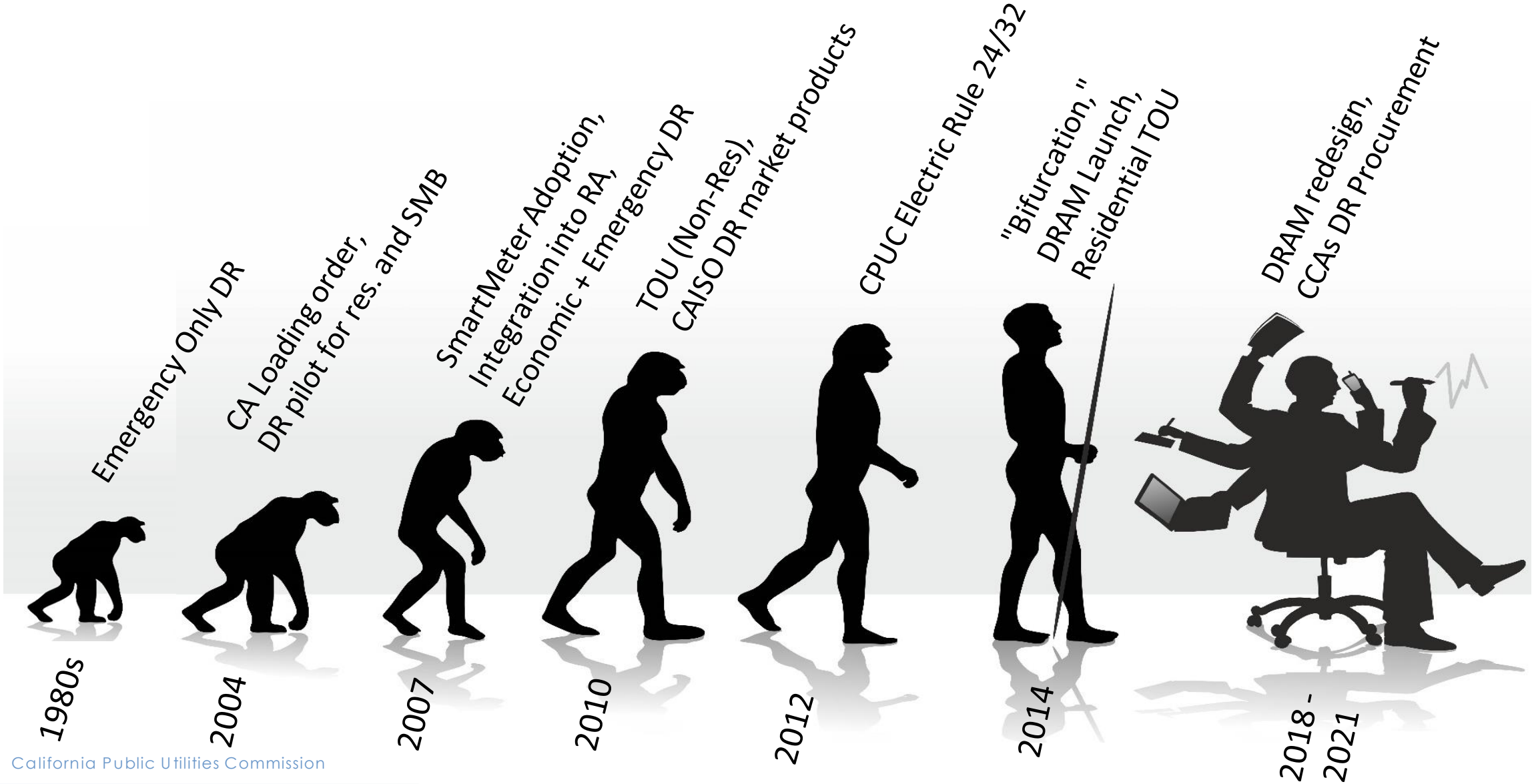
  Using less energy to deliver same or equivalent function

- **Demand Response**

  Temporary and Recurring Change in Demand in Response to Price Signals, Grid Conditions or other Incentives.

  Changes could lead to some or no loss of function

Evolution of DR



Bifurcation of DR Programs

2014 and 2015

Event Based -> Supply Side

Time Variant Rates -> Load Modifying

- **Supply Side DR:**
  - Event based dispatchable DR resources integrated into CAISO
  - Resource is offered to the CAISO market; gets dispatched based on grid needs
  - Resource is compensated for Capacity by the Load Serving Entity (LSE)
  - Resource is compensated for Energy by CAISO if dispatched

- **Load Modifying DR:**
  - Driven by time-variant rates
  - Resource is compensated via bill reduction

Current Proceedings and New Initiatives

- Demand Response Rulemaking (Closed)
- Summer Reliability Rulemaking
- Investor-Owned Utility (IOU) DR Applications (2023-2027)
- Resource Adequacy Rulemaking
- Load Flexibility Rulemaking (TBD)

Current DR Portfolio (2021)

Supply Side DR	Load Modifying DR

• **IOU managed DR:**
  ○ Emergency
  ○ Base Interruptible Program (BIP)
  ○ Agricultural Pumping program (API)
  ○ Economic
  ○ Capacity Bidding Program (CBP)
  ○ AC Cycling
  ○ Local Capacity Requirement Contracts (LCR)
• **3rd Party managed DR:**
  ○ Demand Response Auction Mechanism (DRAM)
  ○ Community Choice Aggregator RA-DR Contracts
	• **IOU managed DR:**
	  ○ Permanent Load Shifting (PLS)
	  ○ Time of Use (TOU)
	  ○ Critical Peak Pricing (CPP)
	  ○ Real Time Pricing (RTP)

Demand Response Auction Mechanism (DRAM)

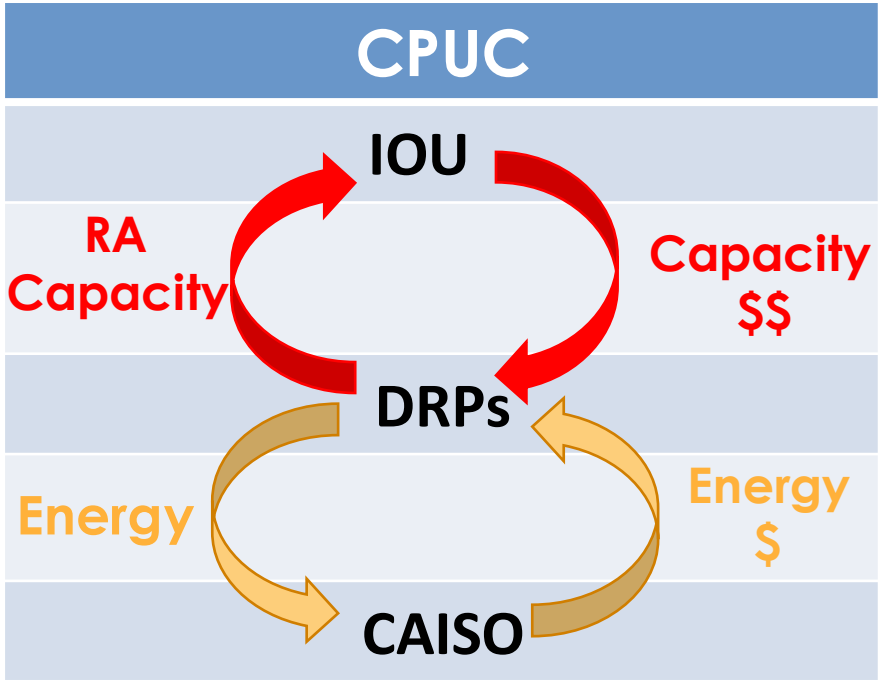
IOUs hold annual capacity auctions procuring DR from 3rd party DR providers

IOUs pay DRPs for the aggregated Capacity

Capacity is counted towards IOU's RA obligations

DR providers are required to bid their Capacity into the CAISO energy markets

CAISO compensates the DRPs for energy when resources are dispatched



DRAM History– Capacity Procurement & Budgets

		I	II	III-A	III-B	IV	V	VI	VII
Delivery Year		**2016**	**2017**	**2018**	**2019**	**2019**	**2020**	**2021**	**2022**
Capacity (Aug) MWs	SCE	20	56	88	99	73	95	100	98
	PG&E	17	56	80	90	73	99	83	75
	SDG&E	3	12	14	16	17	22	23	28
	Total	**40**	**124**	**182**	**205**	**163**	**216**	**206**	**201**

Delivery Year		**2016**	**2017**	**2018**	**2019**	**2019**	**2020**	**2021**	**2022**
Budget ($ Millions)	SCE	4	6	6	6	6	5.2	6	6
	PG&E	4	6	6	6	6	5.7	6	6
	SDG&E	1	1.5	1.5	1.5	1.5	1.9	2	2
	Total	**$9.0**	**$13.5**	**$13.5**	**$13.5**	**$13.5**	**$12.8**	**$14.0**	**$14.0**

Summer Reliability Rulemaking

- Phase 1 Decision:
  - Adopted changes to existing DR programs for incremental RA capacity
  - Established the Emergency Load Reduction Program (ELRP):
    - A voluntary pay-for-performance program with no CAISO market obligations
    - Compensation for Incremental Load Reduction (ILR) at $1/kWh
    - ELRP load reduction is excluded from the RA and CEC's load forecasting framework

Virtual Power Plants (VPP)

- An aggregator managed BTM hybrid resource consisting of storage paired with Net Energy Metered (NEM) solar
- Resource cannot be part of a market integrated DR program (or enrolled in CPP/RTP[1])
- Minimum VPP Size threshold is set at 500 kW
- Resource will be compensated for the net export at the customer site

1. Critical Peak Pricing / Real Time Pricing

2023-2027 IOU DR Applications

- IOU DR portfolio (budgets and programs) will be reviewed and updated

Resource Adequacy Rulemaking

- QC Methodology for Demand Response
- Other DR related topics (MCC[1] Buckets, Slice of the day proposal, CPE[2] and multi-year procurement,…)

1. Maximum Cumulative Capacity
2. Central Procurement Entity

Load Flexibility Rulemaking

Distributed Energy Resources (DER) Action Plan 2.0 Update for 2021-2026

Track One: Load Flexibility and Rates
Track Two: Grid Infrastructure
Track Three: Market Integration
Track Four: DER Customer Programs

- Track 1: Staff White Paper -> Load Flexibility Rulemaking
- Track 3 : Address barriers to efficient integration of Behind-the-Meter (BTM) and Front-of-the-Meter (FTM) DERs into wholesale markets

California Public Utilities Commission

Thank you!

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