East Bay Community Energy

Local Development Business Plan

Demand Response Assessment

Overview of Draft Deliverable

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Making Clean Local Energy Accessible Now

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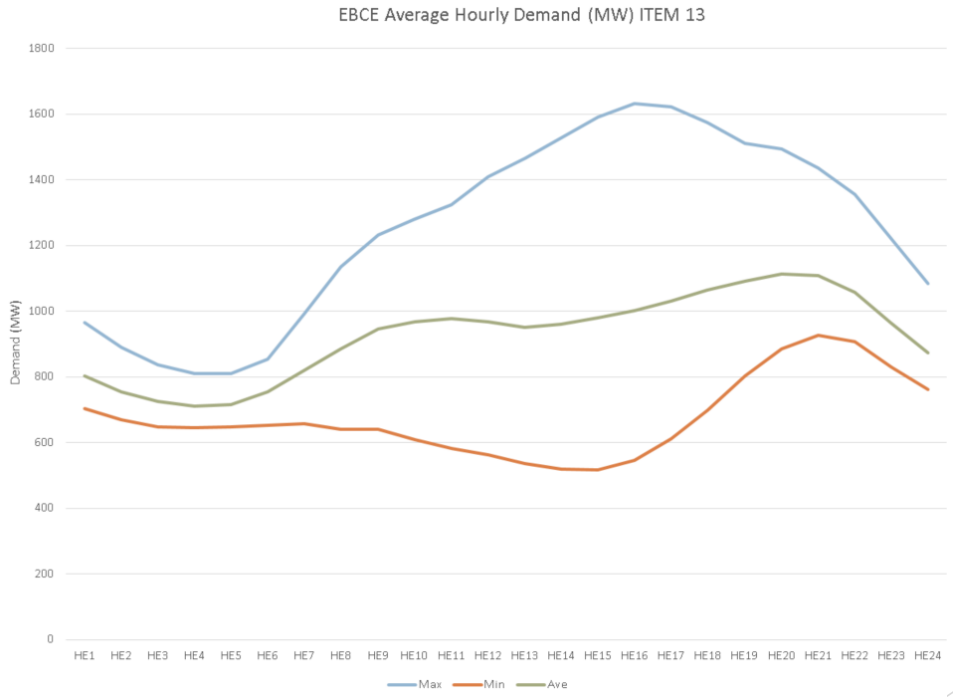
The Need for Demand Response

Aggregate Demand in Alameda County:

- Ranges from <600 MW to >1600 MW
- Rises throughout the day, peaking around 8pm
- Meanwhile NEM generation peaks around 1pm and drops to near zero by 8pm



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Opportunity for Demand Response

Alameda County has many large facilities that are good candidates:

- Demand ratio = (peak demand) / (average demand)
- Of the 479 largest power users in Alameda County:
  - Around 20% have demand ratios >2
  - Around 4% have demand ratios >3
- There are many municipal facilities, industrial plants, and small colleges with large power peaks

Residential Market:

- High rates of EV ownership
- Many with "early adopter" mentality

Month	Demand Ratio >=1	Demand Ratio >=2	Demand Ratio >=3	Average Ratio
1	100.0%	20.4%	4.6%	1.68
2	100.0%	18.9%	4.3%	2.29
3	100.0%	23.3%	5.1%	1.74
4	100.0%	23.3%	3.8%	1.84
5	100.0%	24.9%	4.5%	1.85
6	100.0%	19.8%	4.2%	1.84
7	100.0%	18.7%	4.0%	1.74
8	100.0%	17.5%	4.0%	2.12
9	100.0%	19.1%	5.0%	1.94
10	100.0%	23.0%	4.0%	1.87
11	100.0%	19.5%	3.5%	1.72
12	100.0%	22.0%	4.7%	1.73

Demand ratio by month for the largest electricity users in Alameda County

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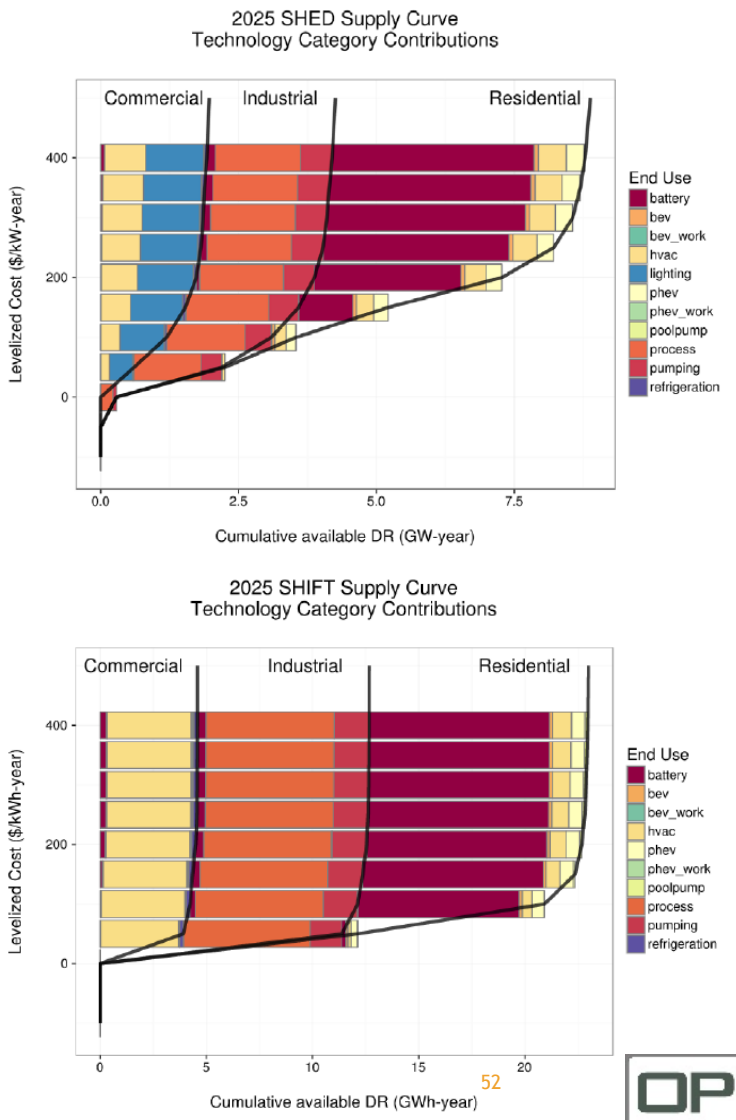
DR Technologies

Types of DR:

- "Shed"
  - Load curtailment to reduce peak demand
- "Shift"
  - Moving load toward times of high renewable generation (or other re-shaping as desired)

Most cost effective sources available in quantity:

- Industrial process loads (including pumping)
- Commercial HVAC and lighting
- Residential behind-the-meter batteries



From LBNL's "2025 California Demand Response Potential Study"

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Recommended DR Strategy

Proceed in stages:

- **In early years, mirror PG&E's existing offerings**
  - Base interruptible program, capacity bidding program, scheduled load reduction program, and others
- **Add on customized offerings**
  - Partner with established providers to ease transition
  - Third party can handle enrollment, customer experience, software platform, etc
- **Eventually, a suite of in-house programs**
  - Offerings designed to provide both long term load reshaping and shorter term load shifting
  - Tailored to EBCE's load profile and needs (not same as PG&E)
  - Leverage customer data obtained during initial years of operation

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Recommended DR Strategy *(continued)*

Types of demand response programs to offer:

- **Price based programs via base rate structures**
  - Encourages long term "re-shaping" of customer load
  - Example: TOU base rates
- **Price based programs via tariff riders**
  - Encourages more active "shifting" of load to combat seasonal or daily peaks
  - Example: Peak day pricing programs
- **Quantity based programs**
  - Highly dispatchable in specific quantities to provide "shimmy" type DR
  - Combat minute-to-minute fluctuations
  - Example: Direct load control programs

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Benefits of Demand Response

DR programs offer several revenue / cost saving paths for EBCE :

- **Participate in the wholesale market**
  - EBCE acts as a Demand Response Provider and bids into CAISO market
- **Help meet CA resource adequacy requirements**
  - DR programs can be cost effective alternatives to procured capacity needed to comply with CA resource adequacy requirements
  - County's capacity requirement (including reserve requirement) estimated to be around 1600 MW
  - Weighted average price for recent RA capacity contracts at $3.10/kW-month
  - Set a goal to provide 5% of capacity requirements with DR
- **Reduce energy procurement costs**
  - DR will lower costs by shaping and shifting load away from peak energy times

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