



California Customer Choice in 2020



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Why California 2020?

- California customers have lots of choices today - more are coming
- Compare to lessons learned from other markets
- Anticipate major load shift and load growth
- We construct a baseline to compare California customer choice with the other markets absent any other intervention

Where Does
CA End Up?

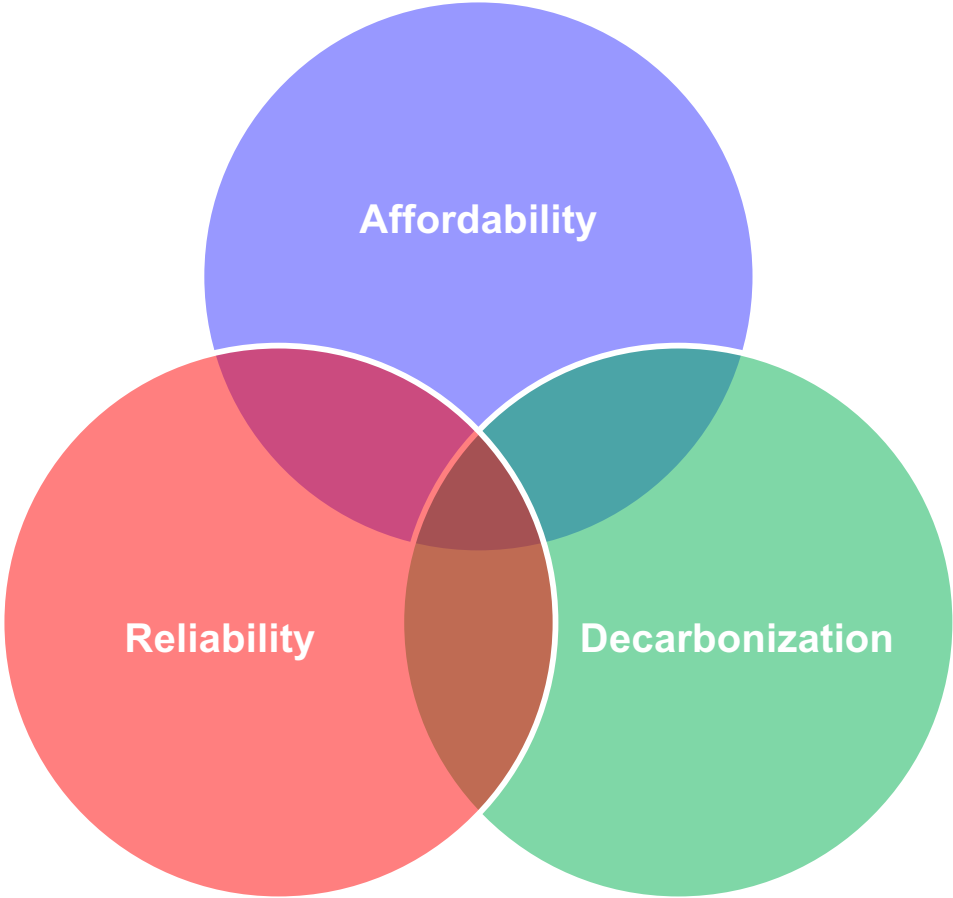


Is That
Where CA
Wants to Be?





Principles Behind Customer Choice



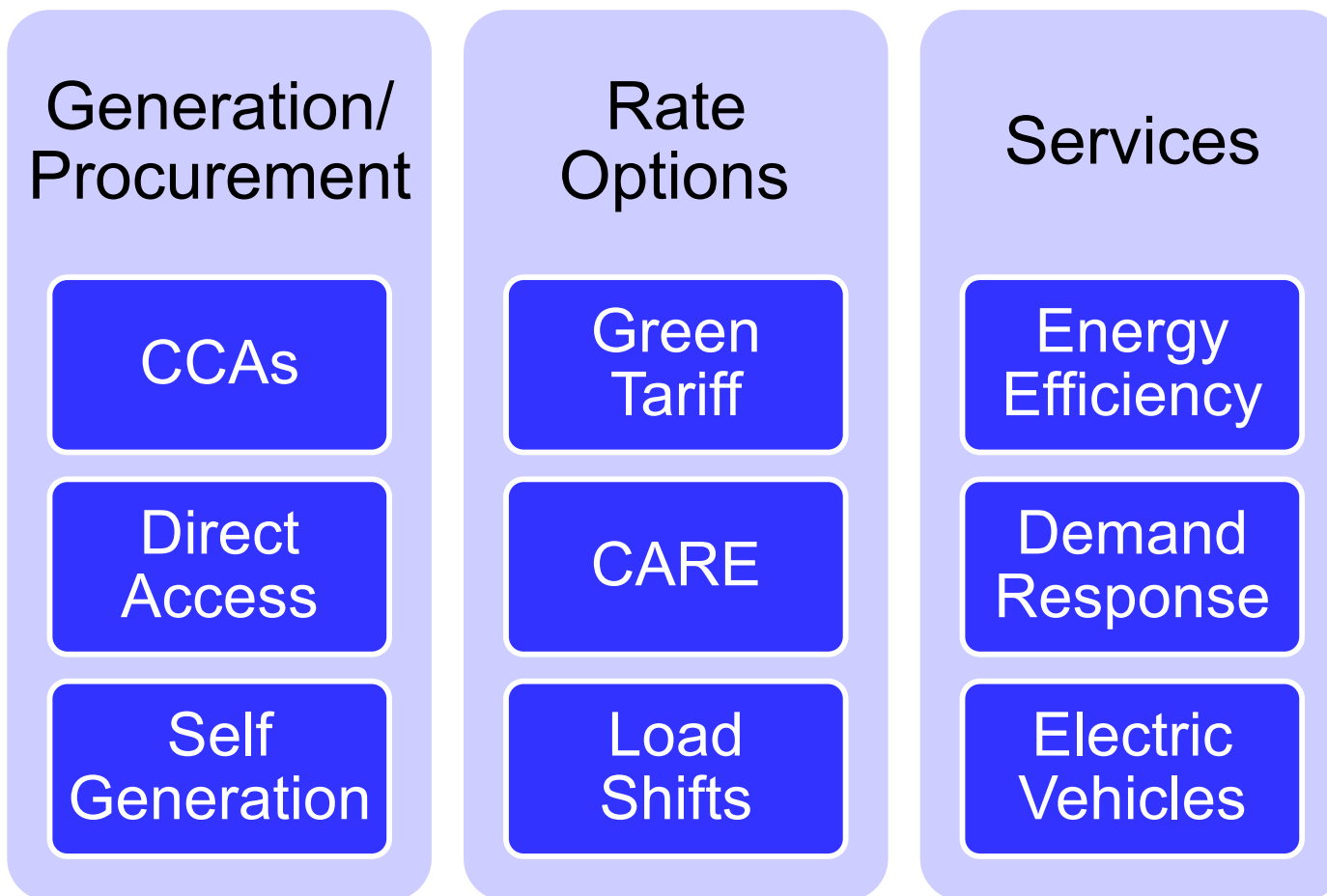


Motivations Behind Customer Choice in California





Choices Available to California's Electric Customers





California in 2020

Generation/ Procurement

CCAs

Direct
Access

Self
Generation

Generation/Procurement

- IRP yields more transparency in both decarbonization and load growth
- Resource Adequacy clarity on timing and obligations

CCAs

- More customers and load shifts
- Load growth
- New contracts – focus on renewables, relatively small MW
- Resolution of bonding and PCIA issues

DA

- No new load growth or load shifts – cap at 10% remains

Self Generation

- NEM 3.0 tariff will be developed
- New efforts specific for disadvantaged communities
- Targeted energy storage technology for distribution customers





California in 2020

Rate Options

Green Tariff

CARE

Load Shifts

Rates

- TOU transition is complete
- More “optional tariffs” will be proposed

Green Tariff

- Will not be fully subscribed
- Price differential declines as solar costs comes down

CARE/Economic Development Rates

- New enrollment and outreach methods
- New disadvantaged communities requirements

Load

- Load “shifting and shedding” especially in C&I sector





California in 2020

Services

Services

- More customer engagement strategies through segmentation

Energy Efficiency

EE

- Proposed business plans approved (both IOU and CCA)
- Additional non-utility administration

Demand Response

DR

- New DR providers and aggregators
- More connections with EE

Electric Vehicles

Electric Vehicles

- EV pilots results will be available
- New car models with longer battery range
- Different “charging” profiles e.g. quick charge vs. home/workplace charging





Factors for Consideration

- How do customers confront trade-offs between choices?
 - Customer wants to purchase an EV and enroll in the Green Tariff?
 - Customer wants to support local procurement and also have rooftop solar?
 - Should EE administrators target DA customers to make more “load” available under the cap?
- Decision makers will need to consider how choices interact with each other

Where Does
CA End Up?



Is That
Where CA
Wants to Be?



Thank You!

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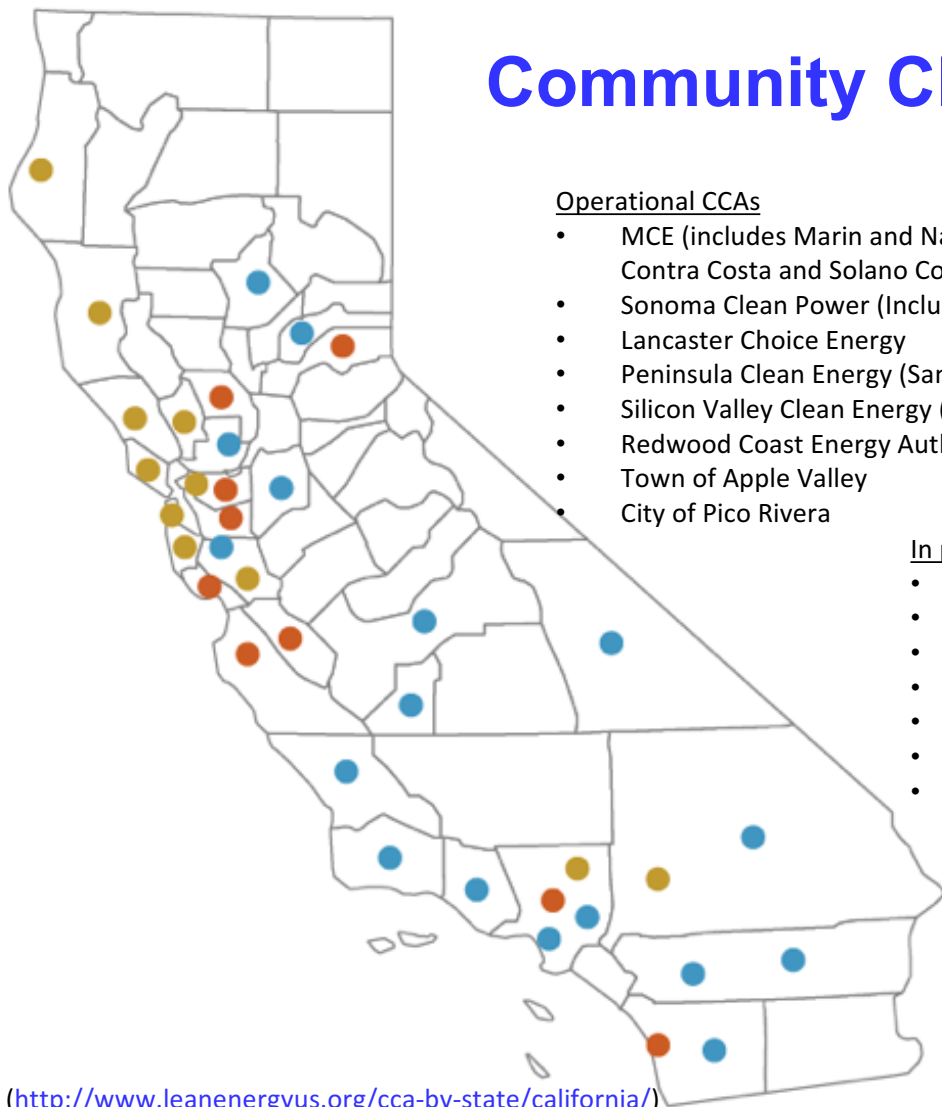


Appendix Slides





Community Choice Aggregation



Operational CCAs

- MCE (includes Marin and Napa Counties, parts of Contra Costa and Solano Counties)
- Sonoma Clean Power (Includes Mendocino County)
- Lancaster Choice Energy
- Peninsula Clean Energy (San Mateo County)
- Silicon Valley Clean Energy (Santa Clara County)
- Redwood Coast Energy Authority (Humboldt County)
- Town of Apple Valley
- City of Pico Rivera

In progress / Exploring

- City of Solana Beach
- San Diego County
- Kings County
- Butte County
- San Luis Obispo
- Santa Barbara County
- Ventura County

Received CCA Plans/Anticipated 2018 Launch

- East Bay Community Energy (Alameda County)
- Los Angeles Community Choice Energy (Los Angeles County)
- Monterey Bay Community Power (Monterey, Santa Cruz, and San Benito Counties)
- Pioneer Energy (Placer County)
- Contra Costa County (as part of MCE)
- Valley Clean Energy Alliance (Cities of Davis and Woodland and the unincorporated areas of Yolo County)
- City of Rancho Mirage

CCAs that Submitted Implementation Plans but are Delayed or on Hold

- City of Hermosa Beach (May join LACCE)
- City of San Jacinto

(<http://www.leanenergyus.org/cca-by-state/california/>)

By end of 2020, the Power Charge Indifference Amount methodology (R.17-06-026) and updated CCA bond requirements (R.03-10-003) should be resolved





Direct Access

- Public Utilities Code Section 365.1(b) requires the Commission to allow individual retail nonresidential end-use customers to acquire electric service from other providers in each electrical corporation's distribution service territory, up to a maximum allowable total annual limit.
- Currently there are 21 registered non-utility based Electric Service Providers registered, primarily servicing commercial and large non-residential customers
- The limit established by SB 695 has been reached and there are customers on "waiting lists" to be served if room becomes available

By end of 2020, absent any further legislative change, there are no current plans to modify the cap on Direct Access





Self Generation

- Customers who install self-generation technologies are eligible for “net energy metering”
- The program provides customer-generators full retail rate credits for energy exported to the grid and requires them to pay a few charges that align NEM customer costs more closely with non-NEM customer costs.
- Self-Generation Incentive Program (SGIP) – buy down upfront costs
 - Energy storage projects receive an estimated \$55 million through 2020
 - Provide incentives for customer-sited energy storage in disadvantaged communities and low-income communities

*By end of 2020, an “updated” NEM tariff should be in effect
(R.14-07-002)*





Tariff Options

- Transition to default “time of use” for residential customers by 2019. Several other tariffs are available on a voluntary basis, including:
 - Green Tariff Shared Renewables
 - Electric Vehicles
 - Economic Development Rates
 - CARE (Low Income Discounts)
 - Load shedding tariffs



By end of 2020, transition to “default” TOU will be complete and potential other optional tariff offerings (R.12-06-013)



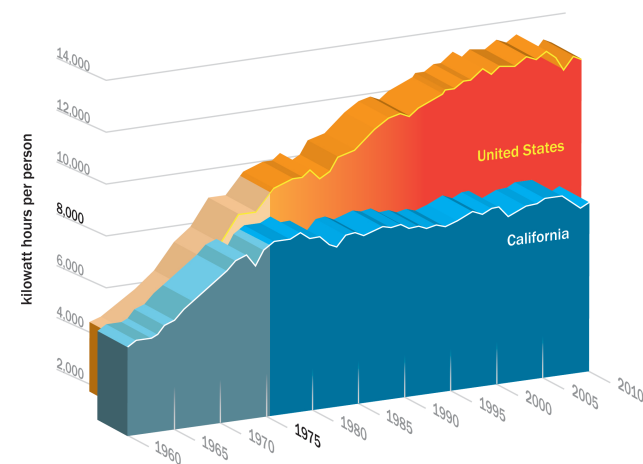


Energy Efficiency

- Lots of “delivery pathways” some of which customers may “choose”
 - Downstream, Midstream, Upstream
 - Title 20 and Title 24
- New combination of statewide programs and local regional offerings
- New program administrators include CCAs
- Move to “rolling portfolio” underway

“The Rosenfeld Effect”

Total per capita electricity use has stayed relatively flat in California in the last four decades while it has risen sharply in the country as a whole. This is often credited in part to Berkeley Lab physicist Art Rosenfeld’s influence on California energy policy. Rosenfeld started championing energy efficiency in the early 1970s as a cost-effective strategy to save energy resources and reduce customer energy bills.



17-PA-3263

Credit: Lawrence Berkeley National Laboratory

*By end of 2020, program administrators rolling portfolio “business plans” will be in place for each utility and other applicants
(R.13-11-005 and A.17-01-013 et al.)*





Demand Response

- Customers may participate in Demand Response offerings made by either utilities or third party “aggregators”
 - Approximately 15 non-utility aggregators serve the market
- Historical focus on day ahead and hour ahead
- New focus on “automated” where customers enroll and then action occurs without additional input



By end of 2020, we will be halfway through the utilities 2018-2022 Demand Response Portfolios (A.17-01-012 et al.)





Electric Vehicles

- California has a goal of 1.5 million ZEVs on the roads by 2025
- EV rates to incent charging at specific times
- Mixture of public and private charging infrastructure
- Level 1, Level 2 and DC fast charging
- Rebates & infrastructure pilots available from local utility (in addition to other state and Federal incentives)
- SB 350 Priority Review Projects and longer term projects under review



By end of 2020, we anticipate lessons learned from infrastructure pilots and more total EVs on the road (R.13-11-007, A.17-01-020 et al., A.17-06-031 et al.)

