San Diego Regional Community Choice Energy Authority

Energy Briefing

November 16, 2019
9:00 am - 1:00 pm
Call to Order
Welcome

CODY HOOVEN
Chief Sustainability Officer, City of San Diego and Interim Executive Officer, San Diego Regional Community Choice Energy Authority
9:50 The Electric Industry: Basics and Trends
Scott Anders, Director, Energy Policy Initiatives Center (EPIC), USD School of Law

11:15 Community Choice Energy Overview
Beth Vaughan, Executive Director, CalCCA

11:45 Working Lunch

12:00 Informational Exchange: Community Choice Energy – Here and Beyond
Moderator: Cody Hooven
Matt Langer, Chief Operating Officer, Clean Power Alliance, Los Angeles
Greg Wade, City Manager, City of Solana Beach
Ty Tosdal, Attorney, Tosdal Law
Beth Vaughan, Executive Director, CalCCA
Scott Anders, Director, EPIC, USD School of Law

12:50 Closing Remarks
Cody Hooven, Chief Sustainability Officer, City of San Diego

1:00 Meeting Adjourns
The Electric Industry
Basics and Trends

SCOTT ANDERS
Director, Energy Policy Initiatives Center (EPIC)
at University of San Diego School of Law
The Electric Industry: Basics and Trends

San Diego Regional Community Choice Energy Authority
Energy Briefing
November 16, 2019
About EPIC

• Research Center
  – University of San Diego
  – Launched in 2005

• Mission
  – Conduct Research and Analysis
  – Educate Decision Makers and Students

• Funding
  – Endowment
  – Grants and Contracts
Alphabet Soup

OMG!

ISO  CPUC  RPS  GHG
POLR  CEC  FERC
TOU  RA  NEM  MW  PCIA
Presentation Overview

• Section 1: Energy 101
  – Electricity Basics
  – CA Regulatory Agencies
  – The Electric Power System

• Section 2: Rates

• Section 3: General Trends

• Section 4: Regional Trends
Section 1: Energy 101
Electricity Basics
### Electricity Units

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Name</th>
<th>Value</th>
<th>Example</th>
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<tr>
<td>K</td>
<td>Kilo</td>
<td>1,000</td>
<td>1 kW</td>
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<tr>
<td>M</td>
<td>Mega</td>
<td>1,000,000</td>
<td>1,000 kW</td>
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<td>G</td>
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# Electricity Terms

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<th>kiloWatt (kW)</th>
<th>kiloWatt-hour (kWh)</th>
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<tr>
<td><strong>Generation</strong></td>
<td>capacity</td>
<td>production</td>
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<tr>
<td><strong>End-Use</strong></td>
<td>demand</td>
<td>consumption</td>
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<tr>
<td><strong>Analogy</strong></td>
<td>diameter of pipe</td>
<td>water flowing</td>
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</tbody>
</table>
Energy Production and Consumption

- **Generation**: $1 \text{ kW} \times 1 \text{ hour} = 1 \text{ kWh}$ produced

- **End-Use**: $1 \text{ kW} \times 1 \text{ hour} = 1 \text{ kWh}$ consumed
Not all MW are Created Equal

Annual Electricity Production from 1 MW of Generation Capacity

- **Natural Gas**
  - CF = 50%
  - MWh = 4,500

- **Wind**
  - CF = 30%
  - MWh = 2,500

- **Solar**
  - CF = 20%
  - MWh = 1,000

CF = Capacity Factor
California’s Energy Agencies and Organizations
California Public Utilities Commission (CPUC)

- **Areas of Regulation**
  - Energy
    - Electricity
    - Natural Gas
  - Water
  - Telecommunications
  - Transportation

- **Commissioners**
  - 5 Commissioners
  - Appointed by Governor
  - President Appointed by Governor
  - 5-year Staggered Terms
CPUC Commissioners

Marybel Batjer, President
Jul 2019

Liane Randolph
Commissioner
Jan 2015

Martha Guzman Aceves
Commissioner
Dec 2016

Clifford Rechtschaffen
Commissioner
Jan 2017

Genevieve Shiroma
Commissioner
Jan 2019
California Public Utilities Commission (CPUC)

- **Main Regulatory Authority**
  - Transmission Siting
  - Rates
  - Procurement Plans and Contracts
  - Resource Adequacy

- **Other Functions**
  - Energy Storage
  - Energy Efficiency Programs
  - Distributed Generation Programs
    - California Solar Initiative
    - Self-Generation Incentive Program
CCA Obligations Before the CPUC*

- **Resource Adequacy (RA) requirements (PU Code Section 380)**
  - System, Local, and Flexible RA
    - Annual Filings
    - Monthly Filings

- **Renewables Portfolio Standard (RPS)**
  - CCAs are subject to the same RPS requirements as IOUs
  - CPUC “accepts” CCAs’ RPS plans

- **Integrated Resource Planning (IRP) (PU Code Section 452.52)**
  - CCAs must submit IRP proposal for CPUC certification

- **Energy Storage requirements (AB 2514)**
  - Storage projects to meet 1% of the peak load

*This list is curated for the purposes of the En Banc discussion and is not exhaustive of all CCA obligations before the CPUC.
California Energy Commission (CEC)

• Main Regulatory Authority
  – Licenses thermal Power Plants >50MW
  – Building Energy Standards Title 24
  – Appliance Standards Title 20

• Other Activities
  – Energy Planning
    ○ Energy demand forecasting
  – Research and Development
    ○ Electric Power Investment Charge (EPIC)
  – Power Source Disclosure
California Energy Commission (CEC)

- **Interaction with CCAs**
  - Collect Power Source Disclosure Information
  - Performs Long-term Forecasting
  - Collects Data

- **Commissioners**
  - 5 Commissioners
    - Law, Environment, Economic, Science/Engineering, Public at Large
  - Appointed by Governor
  - 5-year Staggered Terms
California Independent System Operator (ISO)

- Operates wholesale electric transmission system
- Interconnects generators to the transmission system
- Operates wholesale power markets
- Regulated by Federal Energy Regulatory Commission (FERC)
- “Conductor” of the transmission system
The Electric Power System
The Electric Power System
The Electric Power System – CCA Role

Procure Energy and Capacity

Monitor Costs

Set Rates
Collect Payments
Provide Customer Service
Manage Programs
Electricity Generation
Electric Supply Sources – Total

- California 2018:
  - 3% Other
  - 9% Coal
  - 11% Nuclear
  - 11% Unspecified
  - 31% Large Hydro
  - 35% Renewables

- SDG&E 2017:
  - 17% Other
  - 44% Coal
  - 39% Nuclear
  - 0% Unspecified
  - 0% Large Hydro
  - 0% Renewables

Legend:
- Other
- Coal
- Nuclear
- Unspecified
- Large Hydro
- Renewables
- Natural Gas
Electric Supply Sources – Renewables Only

- California 2018:
  - Small Hydro: 5%
  - Biomass/Biowaste: 7%
  - Geothermal: 14%
  - Solar: 36%
  - Wind: 37%

- SDG&E 2017:
  - Small Hydro: 5%
  - Biomass/Biowaste: 48%
  - Geothermal: 48%
  - Solar: 48%
  - Wind: 48%
California Electricity Supply by Technology

- **68% in-state**
- **32% import**
### Characteristics of Electricity Generation Technologies

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<th>Technology</th>
<th>GHG Performance</th>
<th>Operating Characteristics</th>
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<td>Eligible Renewable</td>
<td>Carbon Free</td>
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<tr>
<td>Natural Gas</td>
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<tr>
<td>Coal</td>
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<td>Large Hydro</td>
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<td>Nuclear</td>
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<td>Biomass</td>
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<td>Geothermal</td>
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<tr>
<td>Small Hydro</td>
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<td>Solar</td>
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<td>x</td>
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<tr>
<td>Wind</td>
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</table>

**Other Considerations**
- Cost to build
- Cost to operate and maintain
- Time to permit and construct
- Area required
- Generation Capacity
- Other Emissions
Characteristics of Electricity Generation Technologies

Source: California Independent System Operator (CAISO)
Characteristics of Electricity Generation Technologies

Source: California Independent System Operator (CAISO)
The Infamous Duck Curve

Net demand trend

\[ \text{net demand} = [\text{total demand} - \text{solar and wind}] \]

Source: California Independent System Operator (CAISO)
Energy Supply Sources - Scale

Distributed

Several KW to Several MW

Utility Scale

10s to 100s of MW
Renewable Energy Supply in the San Diego Region

Location of Renewable Energy Sources Serving SDG&E, 2018
Net MWh Procured by Technology

Source: California Energy Commission, Power Source Disclosure Program
Electric Generation Players

- Investor-owned Utilities
- Publicly-owned Utilities
- Community Choice Aggregation Programs
- Independent Power Producers
- Direct Access Providers
Transmission and Distribution (T&D)
Transmission and Distribution System

• Transmission
  – Owned and Maintained by IOU or POU
  – Operated and Planned for by ISO or POU
  – Transmits electricity long distances
  – Analogous to freeway system

• Distribution
  – Owned, Operated, and Maintained by IOU or POU
  – Delivers electricity to homes and businesses
  – Analogous to surface and neighborhood streets
Transmission and Distribution System

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<tr>
<th>Concept</th>
<th>Road System</th>
<th>T&amp;D System</th>
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<tr>
<td>Capacity</td>
<td>Number of lanes</td>
<td>Size of the wires/equipment</td>
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<tr>
<td>Flow</td>
<td>Number of vehicles moving</td>
<td>Amount of electricity delivered</td>
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<tr>
<td>Congestion</td>
<td>Inability to get to your destination (traffic)</td>
<td>Inability to deliver electricity</td>
</tr>
<tr>
<td>Peak</td>
<td>Highest rate of vehicle travel</td>
<td>Highest rate of electricity use</td>
</tr>
</tbody>
</table>

- **Limitation of analogy**
  - ISO as conductor of electricity flows – supply must equal demand 24/7 x 365
Energy End Use
End-Use Sectors

SDG&E Service Territory Electricity Consumption (GWh), 2018

Local government operations are in the commercial sector.
End Use

• Key Terms
  – Consumption (kWh) – total amount of electricity consumed
  – Demand (kW) – size of the “pipe” needed to serve load
    o Industrial customer vs. residential customer
  – Peak Demand (kW) – maximum use in a given periods

• Level of Analysis
  – Customer
  – Utility
  – Total System
End Use

• Different Load Profiles
  – Sector
  – Customer Class
  – Appliance
  – Location
  – Building Type
  – Season

• Other Factors
  – Energy Efficiency
  – Distributed Generation
Section 2: Rates
Electric Rate Components

- Electric Rates
  - Utility Distribution Company (UDC) Costs
  - Electric Energy Commodity (EECC) Costs
    - Transmission
    - Distribution
    - Public Purpose Programs
    - Other Fees/Charges
Overview of Utility Ratemaking Process

**Step 1**
Determine Revenue Requirement
Total Cost to Operate

**Step 2**
Conduct Cost of Service Study
Functionize/Classify Costs

**Step 3**
Allocate Costs
$/Customer Class

**Step 4**
Design Rates
$/kWh
$/kW

What level of income is needed?
How to categorize cost?
Who causes costs?
How to collect revenue from customers?

RR = Operating Expenses + 
[(Value of Assets) x Regulated Rate of Return)]

rate base
Decoupling

• What Happens if Energy Use Declines?
  – The utility would not be able to collect its revenue requirement
  – Could be a disincentive for efficiency
  – Could be incentive to increase consumption

• Enter Decoupling
  – Provides a mechanism to allow utilities to adjust rates between rate cases
  – Guarantees revenue requirement
  – Removes disincentive for efficiency
  – Does not create an incentive to do efficiency
Key Concepts

• Cost Causation
  – Allocate costs to those who cause them

• Baseline Allocation
  – Minimal level of usage
  – Varies by geography

• Seasonality
  – Winter and Summer
  – Reflects change in energy use and costs

• Rate Structures
  – Time of Use
  – Block
  – Flat
Block Rates - Residential

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<th>Tier 1</th>
<th>Tier 2</th>
<th>High Usage Charge</th>
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<td>$0.29</td>
<td>$0.39</td>
<td>$0.55</td>
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<tr>
<td>130% of baseline</td>
<td>131% - 400% of baseline</td>
<td>&gt;400% of baseline</td>
</tr>
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</table>

**Inland Summer Example**
- 412 kWh $119
- 588 kWh $230
- 1,000 kWh $349

**Coastal Summer Example**
- 357 kWh $103
- 243 kWh $95
- 600 kWh $198
Time of Use – Residential and Commercial

Commercial and Industrial Customers also pay demand charge ($/kW)
Net Energy Metering

• Net Energy Metering (or Net Metering)
  – Retail credit for energy sent to the electric grid
  – Credits calculated on a monthly basis
  – Retail credit for excess energy each month
  – Energy deposits and withdrawals netted annually
    o NOTE: This is different from net annual surplus credits
      ▪ This is the amount of energy sent to the grid beyond needs on an annual basis
      ▪ Compensated at the “wholesale” rate
Net Energy Metering Example

From Solar 8,000
From SDG&E 900
Total 8,900
Section 3: Trends in the Electric Industry
Central Role of Electricity in California’s Climate Policy

**California’s Climate Policy Portfolio**

- Double building efficiency
- 60% renewable power
- More clean, renewable fuels
- Cleaner zero or near-zero emission cars, trucks, and buses
- Walkable/Bikeable communities with transit
- Cleaner freight and goods movement
- Slash potent "super-pollutants" from dairies, landfills and refrigerants
- Cap emissions from transportation, industry, natural gas, and electricity
- Invest in communities to reduce emissions

Source: California’s 2017 Climate Change Scoping Plan, California Air Resources Board.
Electrification and Natural Gas Ordinances

Berkeley bans natural gas in new buildings, the first U.S. city to do so

San Jose Approves Ban Of Natural Gas In New Construction Projects

San Jose NATURAL GAS BAN

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OUR NEWSLETTER

MOST VIEWED

 Grass Fire Burns Over 500 Acres In American Canyon Hills, 30% Contained
 Warm Fall Weather Sparks Tomato Harvest Across Bay Area
Wildfires

• Likelihood of Future Fires
• Public Safety Power Shut Off
  – Will affect CCA customers
  – Operations challenges for CCA
• SDG&E Advanced Fire Mitigation
• Resiliency Challenge
  – Outages due to fires or PSPS
  – Bay Area CCAs seeking distributed solution
    o Also resource adequacy solution
Energy Storage

POWERWALL
TESLA HOME BATTERY

EPIC
ENERGY POLICY INITIATIVES CENTER
UNIVERSITY OF SAN DIEGO SCHOOL OF LAW
Energy System of the Future
Section 4: Trends in San Diego Region
Renewable energy targets
Opportunity to coordinate energy and land use roles
Future Role of SDG&E

How SDG&E Plans to Quit the Electricity Procurement Business

With San Diego and neighboring cities poised to adopt community-choice energy, SDG&E says it wants a “glide path out of the energy procurement space.”

Source: Greentech Media
Rooftop Solar


Totals for San Diego County

>150,000 projects
Renewable Energy Supply from SDG&E

| Table 1: Actual 2018 Large Investor-Owned Utilities’ RPS Procurement Percentages |
|---------------------------------|-----------------|
| Pacific Gas and Electric        | 39%             |
| Southern California Edison      | 36%             |
| San Diego Gas & Electric        | 44%             |

Data Source: IOUs’ Annual RPS Compliance Reports, August 2019
Thank You!

Scott Anders
scottanders@sandiego.edu
Community Choice Energy Overview

BETH VAUGHAN
Executive Director, CalCCA
San Diego Regional Community Choice Energy Authority
Energy Briefing

November 16, 2019

Dempsey Holder Center
950 Ocean Lane
Imperial Beach, CA 91932
Presentation Outline

1. CalCCA Role and Structure
2. Regulatory Proceedings
3. Legislative Affairs
4. Programs and Best Practices
   - Business Models
   - Compliance Requirements
5. Outreach and Communications
CalCCA’s Role is to:

• Coordinate and lead policy development among members
• Develop a vision of California’s energy future and create a pathway to implement that vision
• Be the voice of CCAs at the legislature and the regulatory agencies
• Facilitate sharing of best practices among CCAs to accelerate adoption of programs
• Support developing/emerging community choice programs
• Communicate and Educate
  • Advocate policy positions and platform
  • Elevate and amplify the energy procurement and programs of CCAs that collectively advance the goals of decarbonization, reliability, affordability and social equity.
• Provide the venues to educate, advocate and network
Transitioning to a democratized and decentralized system is complex...

- Load shifting, stranded costs, exit fees
- Tensions between centralized and decentralized oversight, planning and delivery
- Market impacts and market design
- Implications of “wires only” utilities
- Rate of change (new entities, procurement, programs, etc.)
Key 2019 Proceedings:

- **Power Charge Indifference Adjustment (CPUC):** PCIA Phase 2 includes several critical CCA regulatory policies, including benchmarking, portfolio optimization and management, and pre-payment.

- **Resource Adequacy (CPUC):** The RA Proceeding includes issues of RA compliance, multi-year RA procurement, central RA procurement, and other key CCA issues.

- **Integrated Resource Planning (CPUC):** IRP now serves as the central coordinating venue for statewide long-term energy planning, including new procurement.

- **Direct Access Re-Opening / SB 237 (CPUC):** The DA proceeding established the process for a limited, new DA load to depart from IOUs/CCAs and will report to the legislature on further DA expansion in 2020.

- **De-Energization (CPUC):** The De-Energization proceeding explores issues associated with the IOUs Public Safety Power Shutoff (PSPS) programs intended to reduce utility wildfire risk.

- **CAISO Stakeholder Initiatives:** RA Enhancements, DER participation in wholesale markets, Hybrid Resources, etc.

- **Other Proceedings:** Other key regulatory proceedings include: Power Content Label (CEC), Affordability (CPUC), Disconnections (CPUC), PG&E Safety Culture (CPUC), Microgrids (CPUC), etc.

CalCCA’s Regulatory Committee:

- Tracks and analyzes proceedings impacting CCA across CPUC, CEC, CAISO, CARB
- Recommends Board action
- Develops policy position, files comments, and advocates for positive regulatory outcomes
- Educates policymakers and regulatory staff on CCA activities and CCA issues
- Works with regulatory stakeholders to build coalitions supportive of CCA-positive outcomes
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<th>Case Name/Number</th>
<th>Tier Designation</th>
<th>CalCCA Role</th>
<th>Status</th>
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<td>Sam</td>
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<td>Other FERC Proceedings</td>
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<td>Lead</td>
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<td>Low Carbon Fuel Standards</td>
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<td>Scoping Plan 2030 Update</td>
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<td>Data Collection from LSEs (16-OIR-03)</td>
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<td>Lead</td>
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<td>Disaggregated Data/Access to Consumer Usage Data [NEW]</td>
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<td>Lead</td>
<td>Active</td>
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<tr>
<td>All 1110 Implementation (16-OIR-05)</td>
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<td>Monitor</td>
<td>Active</td>
<td>CC Song</td>
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<tr>
<td>EE Policy Work (IERP / 3B 350)</td>
<td>C</td>
<td>Monitor</td>
<td>Active</td>
<td>CC Song</td>
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</table>
Key 2019 Legislation:

- **Assembly Bill 56 (Garcia) – Oppose:** Would establish a central procurement mechanism with sweeping authority to procure resources on behalf of (and allocate costs to) CCA customers.

- **Assembly Bill 1362 (O'Donnell) – Oppose:** Would have re-opened cornerstone policies protecting CCAs from unfair IOU interference during CCA formation process; several problematic provisions removed through CalCCA lobbying.

- **Senate Bill 155 (Bradford) – Oppose:** Would have established significant additional state authority over CCA Integrated Resource Plans; several problematic provisions removed through CalCCA lobbying.

- **Senate Bill 350 (Hertzberg) – Concerns:** Would authorize the CPUC to establish a multi-year resource adequacy procurement mechanism.

- **Senate Bill 520 (Hertzberg) – Concerns:** Would establish statutory guidance on Provider of Last Resort, including pathway for non-utility entity to serve as Provider of Last Resort.

- **Senate Bill 772 (Bradford) – Concerns:** Would require CAISO to procure 2,000MW of long-duration energy storage projects by 2022.

- **Senate Bill 774 (Stern) – Support if Amended:** Would require IOUs to identify locations for improved distribution grid resiliency and back-up power; requesting amendments to incorporate CCAs into planning process.

---

**CalCCA’s Legislative Committee:**

- Tracks and analyzes bills impacting CCA.
- Recommends Board action
- Develops positions, negotiates amendments, and advocates for bill passage / defeat
- Educates legislators and legislative / administration staff on CCA activities and CCA issues
- Works with legislative stakeholders to build coalitions supportive of CCA–positive outcomes
Key 2020 Legislation

Assembly Bill 56 (Garcia) and Senate Bills 350 (Hertzberg), & 772 (Bradford): All of these bills were either defeated or stalled due to the lack of support, however each bill is still active and expected to have a new hearing in 2020 as legislative sessions run in 2-year cycles.

Assembly Bill 235 (Mayes): Creates the Wildfire Victims Recovery Fund by allowing the state to issue tax exempt bonds to pay back the victims as well as cover other wildfire related costs. The bonds would be paid back through a surcharge on the customer’s bill that, in theory, is then credited back to the customer by PG&E though a corporate revenue reduction approved by the CPUC.

Senate Bill 378 (Wiener): Establishes ratepayer protections related to Public Safety Power Shutoff incidents. Protections include transparency over IOU infrastructure maintenance records, cost reimbursements for customers and local governments, IOU fines for shutoffs, and anti-municipalization marketing restrictions.

Senate Bill 592 (Hueso): Would require the development of a 500 MW pumped hydro project in Southern California. The project would be required to be at least 8 hours of capacity located on a surface water reservoir of at least 200,000 acre feet that is in existence on January 1, 2019 that is also owned, substantially or fully, by one or more public agencies.
Likely 2020 Legislative Proposals

- **Public Safety Power Shutoffs (PSPS):** Rules and parameters for designating PSPS events, mitigation of impacts (microgrids, DERs), and customer protections.

- **Wildfire Resiliency, Response, and Recovery:** Grid infrastructure hardening, forest health, building fireproofing, and homeowners insurance.

- **PG&E bankruptcy:** Competing PG&E reorganization plans from debtors, bondholder, and others (AB 235).

- **Grid restructuring:** IOU exit from retail, municipalization, customer–owned cooperatives, central buyer and provider of last resort.

- **Preventing another energy crisis:** Reliability deficiency and IRP compliance.
Best Practices
### CCA Compliance Requirements (partial list)

<table>
<thead>
<tr>
<th>Report</th>
<th>Frequency</th>
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<tr>
<td>Resource Adequacy (Load Forecast-Year Ahead)</td>
<td>Annual</td>
<td>CEC/CPUC</td>
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<td>Resource Adequacy (Compliance Demonstration: System, Local, Flexible)</td>
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<td>CPUC</td>
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<tr>
<td>Resource Adequacy (Year Ahead Compliance Demonstration Local/System)</td>
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<td>CEC/CPUC</td>
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<td>Resource Adequacy (Historical Load Data)</td>
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<td>CEC</td>
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<tr>
<td>Resource Adequacy (Price Data Request)</td>
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<td>CPUC</td>
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<tr>
<td>Resource Adequacy (Load Forecast Updates)</td>
<td>As Needed</td>
<td>CEC</td>
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<td>Flexible Capacity Needs Report</td>
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<td>CAISO</td>
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<td>IEPR-Demand Forecast and Resource Plans</td>
<td>Biennial</td>
<td>CEC</td>
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<td>IEPR-Resource Plans Updates</td>
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<td>CEC</td>
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<td>Power Source Disclosure</td>
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<td>CEC</td>
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<td>QFER 1306B</td>
<td>Quarterly</td>
<td>CEC</td>
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<td>Officer Certification</td>
<td>Annual</td>
<td>CAISO</td>
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<td>Annual Retail Sales Report</td>
<td>Annual</td>
<td>CARB</td>
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<td>Wind Power Purchases-Form 1386</td>
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<td>RPS Closing Report</td>
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<td>EIA 861M</td>
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<td>DOE</td>
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<td>EIA 861</td>
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<td>Triennial</td>
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<td>AMI Data Privacy Report</td>
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<td>Energy Storage Tier 2 Advice Letter</td>
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<td>GHG Emission Performance Standard Advice Letter</td>
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<tr>
<td>Integrated Resource Plans</td>
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<td>CPUC</td>
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</table>

*This table intended to serve as a sample of CCA compliance obligations*
New IRP Compliance Requirements (11-7-19)

**Quantity:** 3,300MW, allocated proportionally* to all LSEs

**Product:** Incremental System Resource Adequacy (with some resource limitations)

**Timeline:** 50% by 8/1/2021, 75% by 8/1/2022, 100% by 8/1/2023

**Accounting:** Based on September ELCC / QC values

**Self-Procurement Election:** Non-IOU LSEs may elect not to self-procure by February 15, 2020

**Backstop:** LSEs electing not to / failing to procure will be backstopped by IOUs as central buyers

*Allocates the obligation to all LSEs using a two-step formula (first by LSE class by peak demand, second within LSE class by load)
Compliance Requirements (Cont’d)

Resource Limitations:

- Resources must be *incremental* to the 2017-2018 IRP Baseline List (most CCA resources under contract should be considered incremental)
- Imports are limited to 20% for any LSE
- September ELCC accounting (significant reduction in compliance value of solar and wind)
- Greenfield fossil is excluded
- Minimum terms of 10 years (new resources), 5 years (energy efficiency), or 3 years (imports and existing resources)

Key Milestones:

- 11/7/2019: Decision Adopted
- 12/2/2019: Baseline Resource list to be posted
- 2/15/2020: LSEs Progress Reports; CCAs and ESPs must notify the CPUC if they choose not to self-procure
- 8/1/2021: Compliance deadline (50%)
- 8/1/2022: Compliance deadline (75%)
- 8/1/2023: Compliance deadline (100%)
- Annual progress reports due in February/May
Compliance Timeline

**January 2020**
Cost allocation mechanism workshop

**February 15, 2020**
Informational progress report summarizing efforts undertaken in response to Decision CCAs include declaration whether they intend to self-provide “all or none” of the capacity required

**May 1, 2020 (IRP Filing)**
- Self-Procurement Election
- Senior Executive Attestation
- Detailed List of Projects, Capacities & Dates
- Demonstration of Incrementality
- Compliance with §454.52 (DACs)

**May 1, 2021 & 2022 & IRP Filings**
Data response detailing contract and resource information
## Comparison: CCAs, POUs, IOUs and ESPs

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Community Choice Aggregators (CCAs)</th>
<th>Publicly Owned Utilities (POUs)</th>
<th>Investor Owned Utilities (IOUs)</th>
<th>Energy Service Providers (ESPs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>A local government body or joint powers authority (JPA) board made up of elected officials.</td>
<td>A local government body and/or customers/members of the utility in the case of a coop.</td>
<td>Shareholders or investors.</td>
<td>Shareholders, investors or other forms of private ownership.</td>
</tr>
<tr>
<td>Structure/Management/Regulation</td>
<td>Non-profit public entity managed by locally elected or government-appointed officials. CCA's offer generation service to customers located within the service territory of an IOU and are required to have their implementation plans certified by the CPUC.</td>
<td>Non-profit public entity managed by locally elected officials/public employees.</td>
<td>Private company. Shareholder-elected board appoints management team of private sector employees. Regulated by California Public Utilities Commission (CPUC).</td>
<td>ESPs offer “direct access” electric service to non-residential customers located within the service territory of an IOU and are required to register with the CPUC.</td>
</tr>
<tr>
<td>Rate Setting and Regulation</td>
<td>Customer rates are set by each CCA’s governing body-board or city council in a public forum. CPUC and CEC provide oversight of compliance with applicable state energy policies.</td>
<td>Customer rates are set by each POU’s governing body-board or city council in a public forum. California Energy Commission (CEC) provides oversight of compliance with applicable state energy policies.</td>
<td>Customer rates are set and regulated by the CPUC through a public process that includes some customer participation.</td>
<td>CPUC provides oversight of compliance with applicable state energy policies.</td>
</tr>
<tr>
<td>Mission/Goals</td>
<td>Optimize benefits for communities/customers, usually in the form of lower energy rates, cleaner energy options, local programs/projects, and economic development.</td>
<td>Optimize benefits for local customer owners, usually in the form of lower energy rates.</td>
<td>Optimize return on investment for shareholders.</td>
<td>Optimize return on investment for shareholders/investors.</td>
</tr>
<tr>
<td>Financing</td>
<td>CCAs have access to low-interest loans from member communities and financing institutions (banks).</td>
<td>Public utilities have access to tax-free bonds and co-ops have access to low-interest loans usually at the local level.</td>
<td>Stockholders (investors), the sale of bonds and bank borrowing help finance the utility’s operations.</td>
<td>Investor and bank financing.</td>
</tr>
<tr>
<td>Power Generation</td>
<td>Purchase power through contracts or operate their own generation facilities.</td>
<td>Operate their own generation facilities or purchase power through contracts.</td>
<td>Purchase power through contracts and operate their own generation facilities.</td>
<td>Purchase power through contracts.</td>
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<tr>
<td>Profit/Net Revenue</td>
<td>Rates are set to recover costs and earn additional return to invest in new facilities and fund local projects and programs.</td>
<td>Rates are set to recover costs and earn additional return to maintain bond ratings and invest in new facilities.</td>
<td>Utility rates are set to recover costs and earn a reasonable return as profits for investors in return for the risk they bear for investing in new facilities.</td>
<td>ESPs earn a return through the contracts they sign with non-residential customers.</td>
</tr>
<tr>
<td>Number in California</td>
<td>19 operational CCAs.</td>
<td>More than 40 POUs.</td>
<td>Six: the main three are PG&amp;E, SCE, and SDG&amp;E.</td>
<td>21 ESPs registered with the CPUC.</td>
</tr>
</tbody>
</table>

CCAs, POUs, IOUs and ESPs refer to different types of energy providers: Community Choice Aggregators, Publicly Owned Utilities, Investor Owned Utilities, and Energy Service Providers, respectively.
Sample JPA CCA Organizational Chart

Silicon Valley Clean Energy
Sample JPA CCA Organizational Chart
"CCAs tend to offer their customers innovative and tailored programs that suit their communities’ preferences and interests. These types of local programs, sometimes known as distributed energy resources, can provide a multitude of grid benefits."

– UCLA Luskin Center for Innovation Study
<table>
<thead>
<tr>
<th>Programs</th>
<th>Allco, Valley Clean Energy</th>
<th>CleanPowerSF</th>
<th>Clean Power Alliance</th>
<th>East Bay Power</th>
<th>King City Power</th>
<th>Lancaster Power Authority</th>
<th>Marin Clean Energy</th>
<th>Monterey Bay Power</th>
<th>Pacific Gas &amp; Electric</th>
<th>PG&amp;E</th>
<th>Solano Energy Authority</th>
<th>Solano Clean Power Authority</th>
<th>St. Johns Power</th>
<th>St. Luis Power</th>
<th>Valley Clean Power Authority</th>
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<td>Solar/Storage on Critical Facilities</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Advancing Reach Codes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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<td>Yes</td>
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<td>Advanced Energy Rebuild</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
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<td>UI/Rates</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Customer C&amp;I Clean Power Offerings</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
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</tr>
</tbody>
</table>

**Range of CCA Customer Programs**
CalCCA’s Role is to:

• Coordinate and lead policy development among members
• Develop a vision of California’s energy future and create a pathway to implement that vision
• Be the voice of CCAs at the legislature and the regulatory agencies
• Facilitate sharing of best practices among CCAs to accelerate adoption of programs
• Support developing/emerging community choice programs

• Communicate and Educate
  • Advocate policy positions and platform
  • Elevate and amplify the energy procurement and programs of CCAs that collectively advance the goals of decarbonization, reliability, affordability and social equity.
  • Provide the venues to educate, advocate and network
Working Lunch
Information Exchange
Community Choice Energy – Here and Beyond

CODY HOOVEN, Moderator
MATT LANGER, Chief Operating Officer, Clean Power Alliance, Los Angeles
GREG WADE, City Manager, City of Solana Beach
TY TOSDAL, Attorney, Tosdal Law
BETH VAUGHN, Executive Director, CalCCA
SCOTT ANDERS, Director, Energy Policy Initiatives Center
Who is Clean Power Alliance

- A Joint Powers Authority, CPA has 31 member jurisdictions within Los Angeles and Ventura counties.
- CPA launched service to customers in February 2018.
- CPA serves over 1 million customer accounts and is the largest CCA in the state.
Who does Clean Power Alliance serve?

Communities Served:
Unincorporated Los Angeles County, unincorporated Ventura County and the cities of: Agoura Hills, Alhambra, Arcadia, Beverly Hills, Calabasas, Camarillo, Claremont, Carson, Culver City, Downey, Hawaiian Gardens, Hawthorne, Malibu, Manhattan Beach, Moorpark, Ojai, Oxnard, Paramount, Redondo Beach, Rolling Hills Estates, Santa Monica, Sierra Madre, Simi Valley, South Pasadena, Temple City, Thousand Oaks, Ventura, West Hollywood, and Whittier
Clean Power Alliance offers choices

**Lean Power** provides 36% renewable energy content at the lowest possible cost, with the added benefit of local management and control.

**Clean Power** provides 50% renewable energy content and the opportunity to support building a cleaner future, all at cost-competitive rates.

**100% Green Power** provides 100% renewable energy content and allows customers to support the environment—leading the way to a greener future.
Default Tier Selections

- Each participating jurisdiction decides its own renewable energy default – 36%, 50% or 100%

- Defaults are extremely important. Behavioral studies demonstrate that a vast majority of people stick with the default status

- For those communities with a 100% default, CARE, FERA, and Medical Baseline customers will have the plan benefit at no additional cost. This provision protects the most financially vulnerable customers
## CPA Power Sources

<table>
<thead>
<tr>
<th>Electric Power Generation Mix*</th>
<th>Lean Power 36% renewable</th>
<th>Clean Power 50% renewable</th>
<th>100% Green Power 100% renewable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent of Total Retail Sales (kWh)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Specific Purchases</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewable</td>
<td>36%</td>
<td>61%</td>
<td>100%</td>
</tr>
<tr>
<td>Biomass &amp;Biowaste</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Geothermal</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Small Hydroelectric</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Solar Electric</td>
<td>0%</td>
<td>38%</td>
<td>0%</td>
</tr>
<tr>
<td>Wind</td>
<td>36%</td>
<td>23%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Non-Renewable</strong></td>
<td>64%</td>
<td>39%</td>
<td>0%</td>
</tr>
<tr>
<td>Coal</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Large Hydroelectric</td>
<td>45%</td>
<td>27%</td>
<td>0%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Nuclear</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Unspecified Sources**</td>
<td>19%</td>
<td>13%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Clean Power Alliance generation data represents final 2018 data provided through the California Energy Commission's Power Source Disclosure Program.

**Unspecified sources of power mean electricity from transactions that are not traceable to specific generation sources.
2019 Long-term RFOs

- CPA launched two long-term RFO processes in October:

1. 2019 Reliability RFO
2. 2019 Clean Energy RFO

- Utility-Scale Track
- Distributed Track
Evaluation Criteria

Individual projects will receive a rank for each of the following criteria:

- REC Value ($/MWh)
- Environmental Stewardship
- Workforce Development
- Development Risk
- Project Location
- Benefits to DACs
Local Programs

- Evaluating Local Program Goals and Priorities
- Distributed Energy Resources (DER) Pilot
- Peak Management Program for load shifting
- Disadvantaged Communities (DAC) Green Tariff and DAC Community Solar programs
- Considering new programs for local resiliency
Working with SCE

The CCA-IOU relationship covers a variety of topics

- Billing and data
- Enrollment
- Customer service
- Procurement
- Rates
- Regulatory
Panel Discussion

CODY HOOVEN, Moderator
MATT LANGER, Chief Operating Officer, Clean Power Alliance, Los Angeles
GREG WADE, City Manager, City of Solana Beach
TY TOSDAL, Attorney
BETH VAUGHAN, Executive Director, CalCCA
SCOTT ANDERS, Director, Energy Policy Initiatives Center
Closing Remarks

CODY HOOVEN
Chief Sustainability Officer, City of San Diego and Interim Executive Officer, San Diego Regional Community Choice Energy Authority
Meeting Adjourned