



RICAPS

Regionally Integrated Climate Action Planning Suite

Multi-city Working Group
March 23, 2021

RICAPS technical assistance is available through the San Mateo County Energy Watch program, which is funded by California utility customers, administered by Pacific Gas and Electric Company (PG&E) under the auspices of the California Public Utilities Commission and with matching funds provided by C/CAG.

Agenda

- Residential Reach Codes
- Commercial/Industrial Benchmarking
- CPUC 101
- City Roundtable
- Final Announcements

Please
introduce
yourself in chat!

City of Piedmont

Amendments to Building Standards Code ("Reach Codes")

To Reduce Greenhouse Gas Emissions
and Increase Resiliency



Reach Codes

“Reach Codes” – local amendments to California Building Standards. Local amendments to:

- Title 24, Part 2.5: Residential Code
- Part 3: Electrical Code
- Part 6: Building Energy Efficiency Standards



Background

- Must reduce natural gas use in buildings to meet Climate Action Plan 2.0 goals
- First reading of Ordinances 750 and 751 N.S. on July 20, 2020
- Second reading on February 1, 2021
- Along the way, 2 public opinion surveys, 5 focus groups, a virtual town hall, posting of FAQs, and more



Building Code Amendments



Ordinance 750 N.S. (part I)

- Newly constructed low-rise residential (LRR) buildings, including new detached accessory dwelling units (ADUs), must use all electric appliances
- LRR buildings getting a new upper level, or increasing total roof area 30% or more, required to install solar panels on the roof
- LRR building renovations of \$25,000 or more required to include one item from a list of insulation/electrification improvements
 - Renovations of \$100,000 or more must include two items



List – Insulation and efficiency items

- A package of attic insulation, air sealing, and duct sealing
- Floor insulation
- A package of low-flow fixtures and water heater/water piping insulation
- Switch out existing lights for high efficacy lights with motion sensors
- Submit a report from a Home Energy Score or Home Energy Audit completed in the last five years. Follow one recommendation from the report.



List – Electrification items

- Switch out gas furnace for heat pump (or other energy efficient electric space heating system)
- Switch out gas water heater for heat pump (or other energy efficient electric water heating system)



Exceptions

Circumstances allowing an exception by the Building Official:

- A Home Energy Score Report for the LRR building, completed within 5 years, demonstrating that the building already has a **minimum Home Energy Score of 7**
 - Modification to only the energy efficiency upgrade requirement
- If the unique features of the construction of the LRR building, including existing heating and/or cooling systems, are **not configured for conversion** to forced air systems
- If the installation of the measures is **not commensurate** with project's scope and budget, because the cost of those measures would exceed 20% of total project cost or require substantial construction in areas otherwise not part of project



Ordinance 750 N.S. (part II)

- An electrical panel upgrade must include capacity to accommodate future electrification of all appliances
- Kitchen renovation must include electrical outlets at the location of all major appliances
- Laundry area renovation must include outlet for a future electric clothes dryer
- Home Energy Score cannot be used as an exemption to these projects



Ordinance 751 N.S.

Requires submission of a Home Energy Score or Home Energy Audit report (homeowner's choice), completed within the past five years:

- At point of listing for sale of property, unless the home was constructed within the last 10 years

Purpose: to inform homeowners and potential buyers of opportunities for energy savings in their home



Ordinance 751 N.S.

Each person who sells or transfers an interest in real property located in the City of Piedmont must provide the following information to a prospective buyer:

1. A property records search
2. A disclosure statement
3. Home Energy Score or a Home Energy Audit prepared no more than five years prior to the date the property is advertised or listed for sale, unless the home was constructed within ten years prior to the date of such advertising or listing.



Next Steps:

- Ordinance 751 N.S. effective as of March 3, 2021
- Ordinance 750 N.S. submitted to CEC and becomes effective June 1, 2021 or later upon CEC approval



Lessons Learned

- Reach out to real estate agents and contractors
- Trigger points as a determinant
- Cost will always be a concern
- Clear messaging to avoid misinformation



Best Practices

- Early and ongoing communication
- Incorporate feedback into draft ordinances
- Suite of menu options
- Provide rebate and financial incentive opportunities



Questions?



Contacts

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Adrienne Etherton, Sustainability Manager, City of Brisbane
Marc Costa, Director of Policy & Planning, The Energy Coalition

March 23, 2021

Agenda

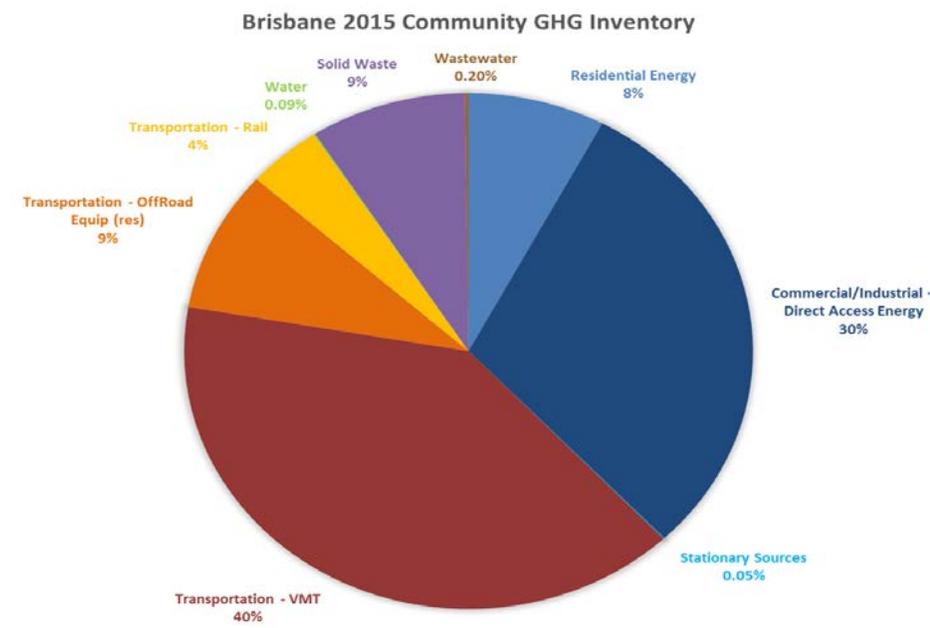
- Background and Goals
- Developing our Program
 - Market analysis
 - Stakeholder engagement
 - Innovations
- Compliance Requirements & Expected Impacts
- Implementation
- Toolkit
- Unlocking Future Opportunities
- Q&A

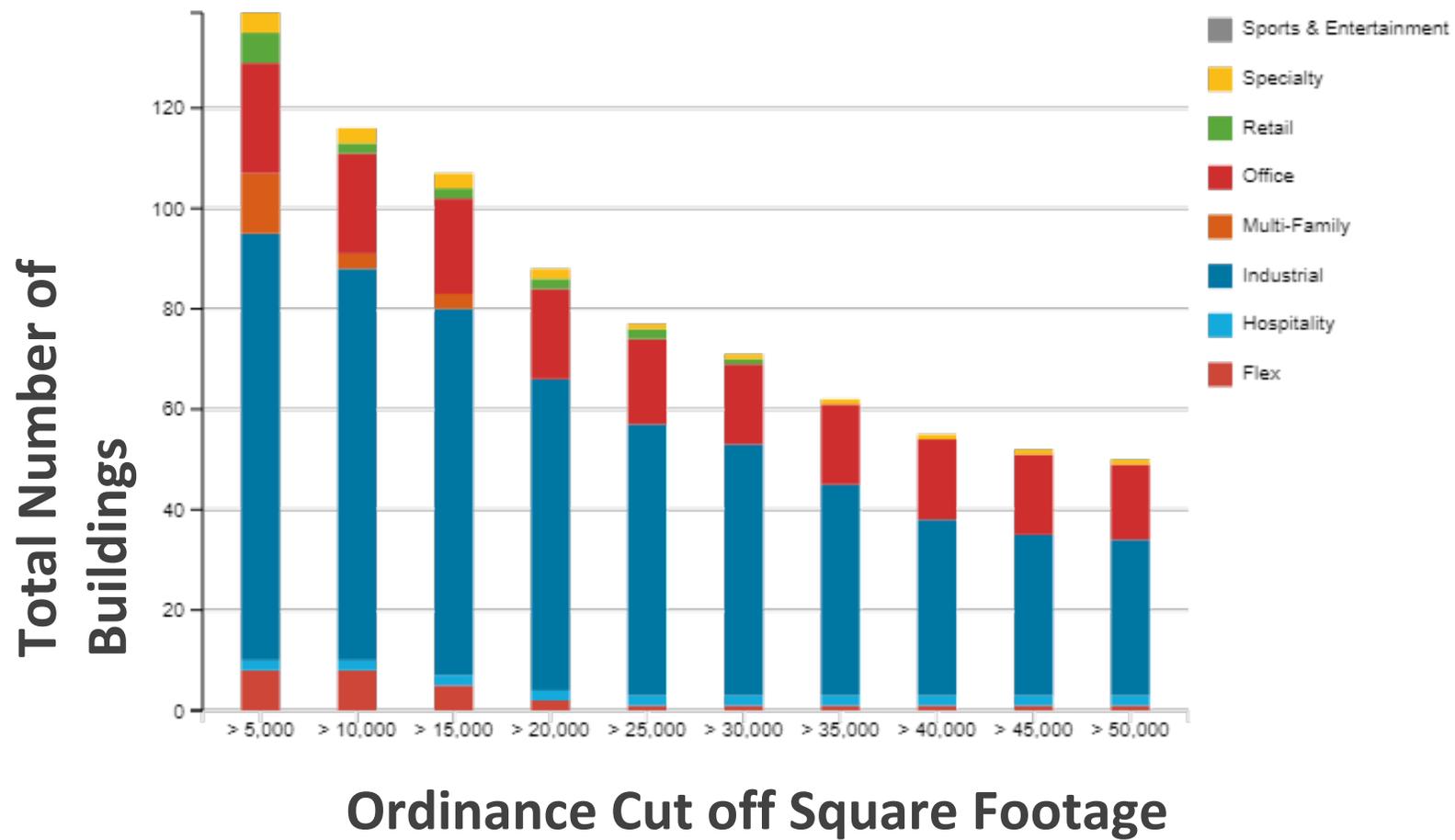




Background and Goals

- CA AB 802 + Brisbane CAP + BAAQMD grant → BBEP
- Reduce environmental impact (GHG emissions, energy & water use) of built environment to meet climate goals
- Co-benefits:
 - Increased comfort, safety & health for building occupants
 - Improved resiliency & value of buildings
 - Decision makers informed of improvement opportunities
 - Support clean energy, decarbonization & green jobs
 - Data transparency and market transformation



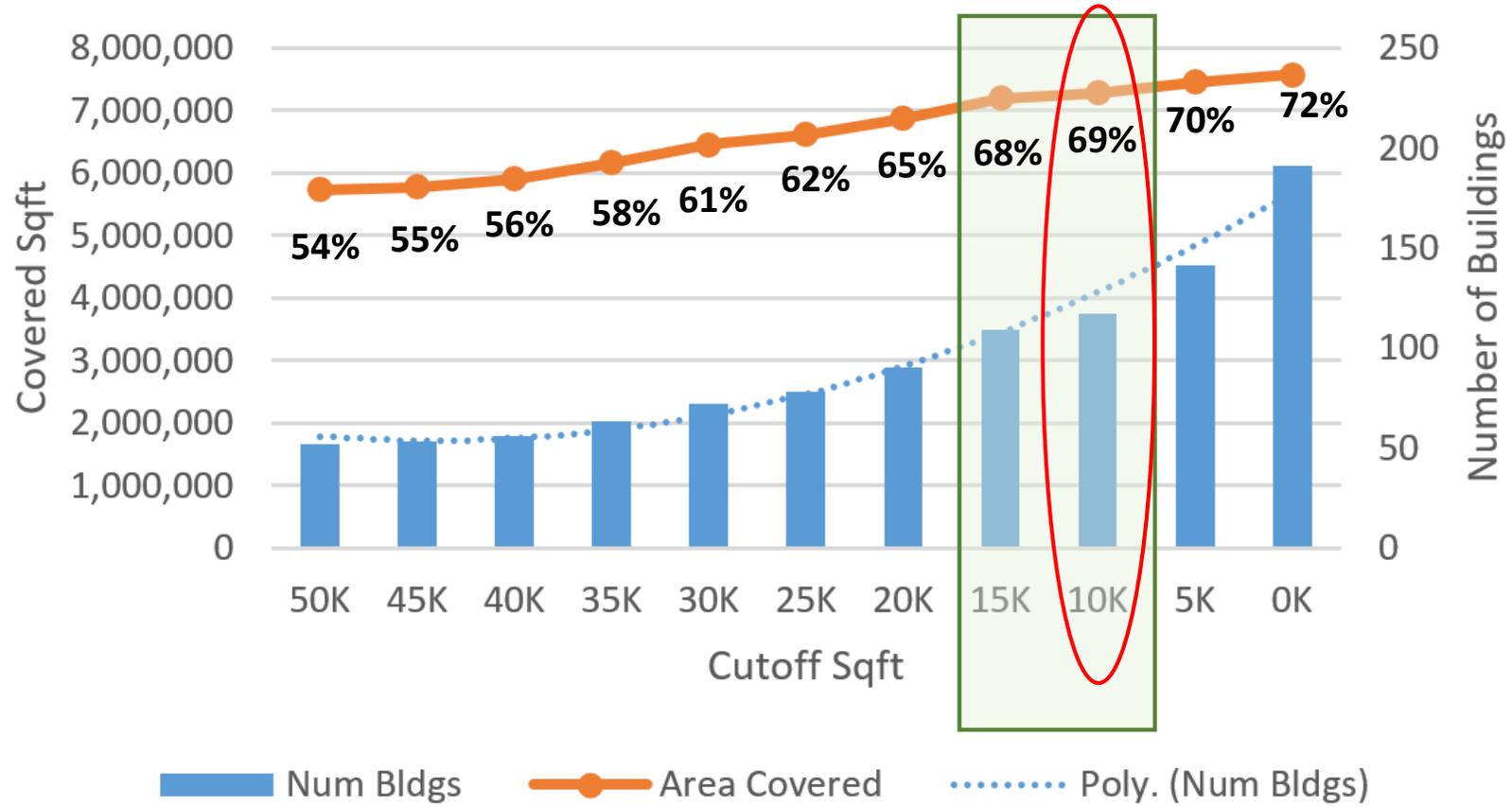


What type of buildings are in Brisbane?





Number of Buildings vs Covered Sqft



Benchmarking Requirement Cutoff



Stakeholder Engagement Efforts

- 2 Workshops + 2 Webinars
- Online: website, email, surveys
- Staff 1-on-1 meetings with:
 - Prologis
 - UPC
 - Bi-Rite
 - FW Spencer
 - Phase 3
- Study Session with Economic Development Subcommittee and OSEC CAP Subcommittee
 - Follow-up meeting with each subcommittee separately
- Planning Commission
- Open Space and Ecology Committee





Innovating to address concerns

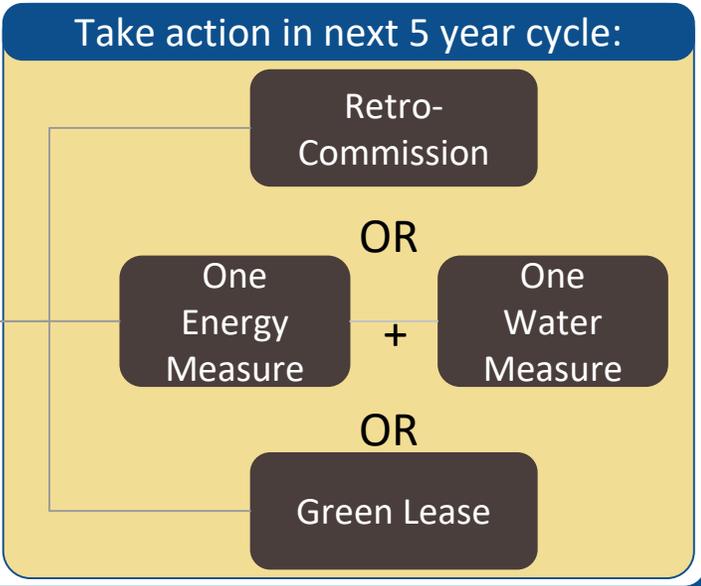
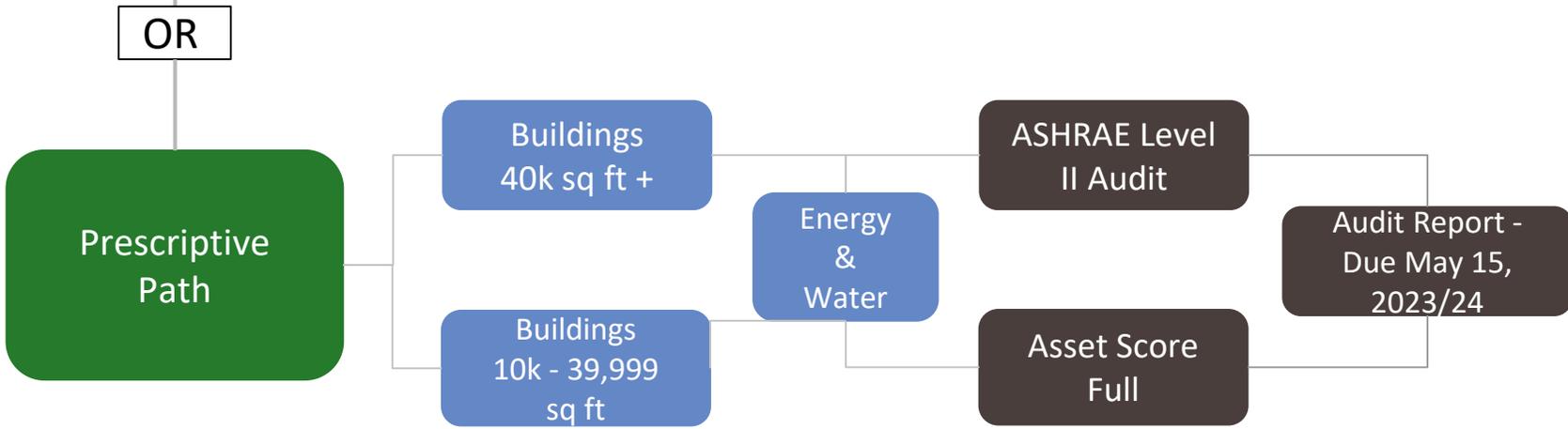
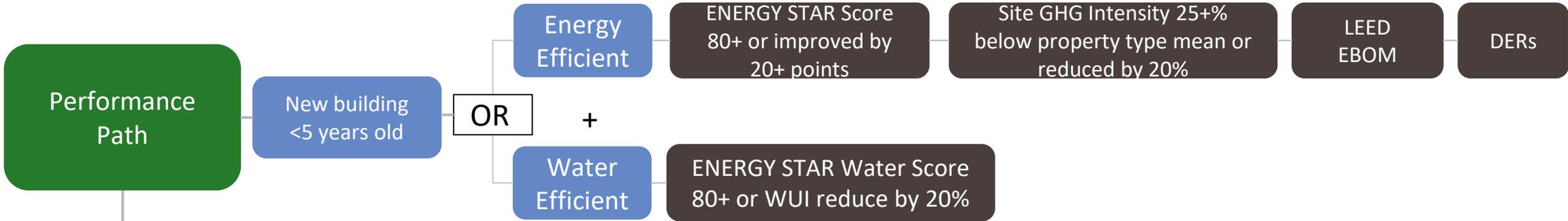
- Industrial buildings included
- Extends requirements to tenants in some cases
 - Eases concerns of owners with rental agreements that provide control to lessees
 - Provides both tenants and owners recourse through exemptions, extensions, hardships and appeals
 - Washington D.C. example
- Green Lease compliance option
- Report on current or planned distributed energy resources



Compliance Pathways

Annual Benchmarking beginning 2021 - 10,000 sq ft or more

Beyond Benchmarking - every 5 years beginning: 2023 for commercial, 2024 industrial + residential





Expected Impacts

- **Buildings affected**
 - Benchmarking: 109 / 6.6M sqft
 - ASHRAE Level 2 Audits: 48 / 5.3M sqft
 - Asset Score - Full: 61 / 1.3M sqft
- **GHG Impacts**
 - ~2700 MTCO₂e reduction within 5 years of ordinance effective date
 - ~ 14.4% reduction from sector / ~4% citywide



Where are we now?

BAAQMD Grant Phase 2: Implementation

- Benchmark city buildings
- Voluntary compliance pilot
- Develop administrative systems
 - Compliance management database - Maalka
 - Master buildings list, notification letter
 - Forms: water data access, exemptions
- Develop website with details on ordinance, how to comply and efficiency resources
- Outreach, education and training
 - Webinars
 - How-to videos
 - Small business compliance support
- Toolkit for other jurisdictions to replicate the program
- Determine ongoing (post-grant) resource needs

Highlighted items are in progress, other items complete!



What's in the Toolkit?



- Comprehensive guide from concept to implementation and beyond
- Considerations for drafting the ordinance:
 - Timelines, flowcharts and decision points
 - Guidance on market analysis
 - Engaging peers, state and national resources
 - Community input and council consideration
- Implementation & compliance preparation:
 - Schedules and pilots
 - Back-end infrastructure & ESPM
- Samples & templates:
 - Final ordinance in editable Word document
 - Notification letters, forms, training & compliance guides, FAQs
 - Outreach materials: language for emails, articles, template slide decks
- Program notes: what we learned or wish we had done differently
- Other resources and guides



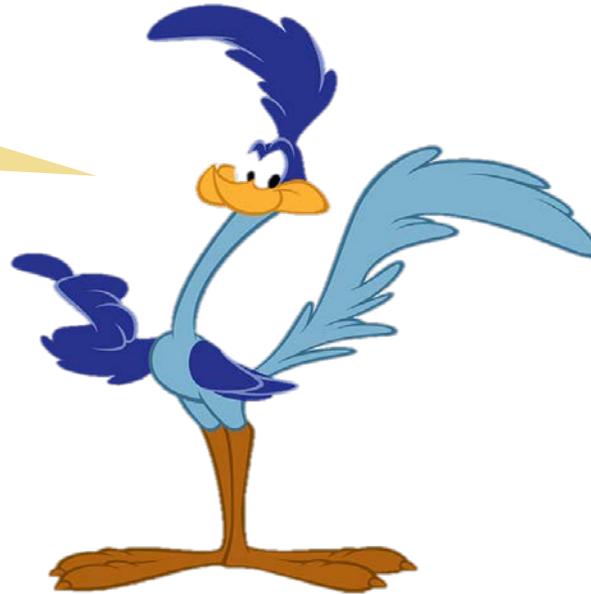
Unlocking future opportunities

- Planning for decarbonization in your jurisdiction
 - ACEEE Paper [Next Generation Benchmarking: Leveraging Benchmarking Ordinances for Decarbonization Planning](#)
- Helping understand monthly energy and water usage to advocate for local, PG&E, BayREN and/or PCE incentive programs
- Beyond Benchmarking - understanding hourly energy consumption and energy end-use profiles to estimate impacts of:
 - Electrification ordinances
 - Local Grid Capacity issues and solutions (community solar, virtual power plants)
 - Reach Codes - Building Emissions Performance Standards (BEPS) can establish a baseline GHG intensity and target by using the disclosed data, and cities can propose energy and GHG intensity targets to reach ZNE or Zero Net Carbon standards for existing buildings



Questions?

B-BEP!



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SUPPLEMENTAL SLIDES



Average Audit Savings and Costs

- **Asset Score**
 - PNNL [technical report](#) states data collection takes 6 - 20 hours
 - ~ \$600 - \$2,000 at \$100/hr
 - Asset Score [reference](#) report
- **Savings**
 - Utility costs in U.S. office buildings average \$2.20/sq. ft.
 - 20% reduction in energy use = savings of \$0.44/sq. ft. (DOE EERE 2011c)

Building Size	ASHRAE Level 2 Audit Cost Estimate	RCx Report Cost Estimate*
40,000 sq. ft.	\$6,000	\$12,000
100,000 sq. ft.	\$15,000	\$30,000

*RCx typically has low cost measures

	\$ / Sq. Ft.
Audit Cost	\$0.10 - 0.15
RCx Cost	\$0.20 - 0.30
Total Cost	\$0.30 - 0.45
Estimated Utility Savings	\$0.44

Costs recouped in ~1 year; savings continue



Exemptions

- No Certificate of Occupancy for half or more of the year
- Building vacant for half or more of the year
 - Beyond Benchmarking, 50+% vacant = Asset Score Full
- The building did not receive energy or water services for half or more of the year
 - Beyond Benchmarking = Asset Score Full
- A demolition permit for the entire building has been issued, or a schedule for demolition can be reasonably documented
- Beyond Benchmarking adds:
 - Intended for sale with real estate appraisal within 1 year of reporting deadline
 - Recently constructed and received Certificate of Occupancy within last 5 years; report next cycle



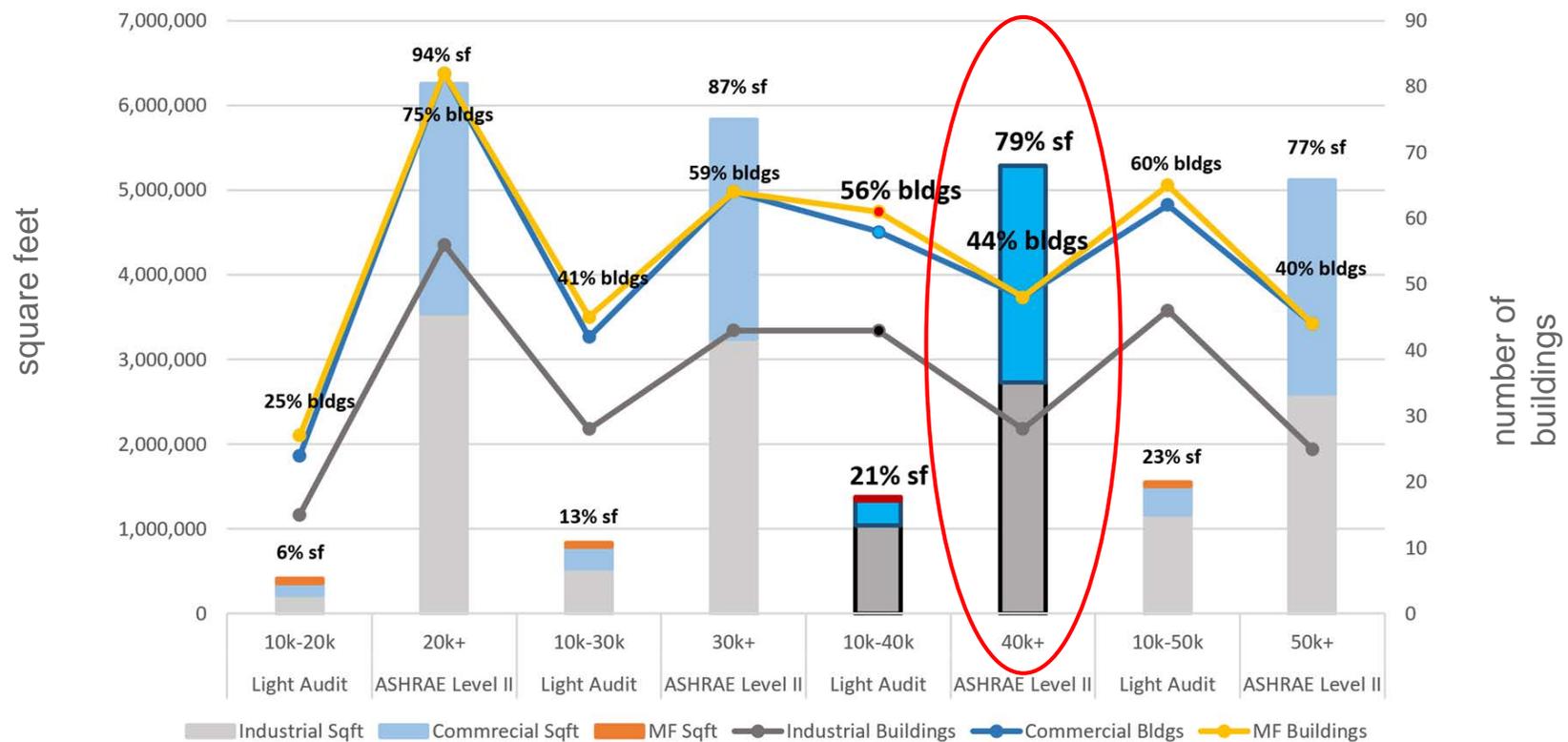


Penalties, Fees, and Appeals

- Penalties:
 - The violation of any provisions of this Chapter shall constitute an infraction punishable by the fines, penalties and enforcement provisions set forth in Chapters 1.14, 1.16 and 1.18 of this Code
- Fees:
 - None currently set
 - May be imposed by Council Resolution
- Appeals:
 - To the PW Director within 15 days
 - To the City Manager within 10 days



Beyond Benchmarking Cutoff Scenarios



Audit Requirement Cutoff



Energy Efficiency Improvement Options

- Lighting meeting current CA Building Code
- Replace all gas water heaters with electric heat pump or tankless water heaters
- Replace all refrigerators with Energy Star models
- Replace all gas stoves with electric induction
- Install smart thermostats
- Install solar thermal heating/cooling
- Install a cool roof
- Building envelope measures such as insulation, air sealing and window upgrades
- Participate in approved utility retrofit program
- Upon request – other measures identified by audit/RCx



DER Improvement Options

- Solar Photovoltaic
- Stationary Electric Storage
- Grid-interactive Efficient Building
- Electric Vehicle (EV) Charging Infrastructure
- Decarbonized Building (produces onsite or procures carbon-free renewable energy in an amount sufficient to offset the annual carbon emissions associate with operations)



Water Efficiency Improvement Options

- All plumbing systems meeting current CA Building Code
- Outdoor landscaping and irrigation in compliance with current Brisbane Water Conservation in Landscaping code
- Install greywater system following CA code
- Insulate all hot water pipes in accessible locations
- Participate in approved water utility retrofit program
- Upon request – other measures identified by audit/RCx





Introduction to the California Public Utilities Commission



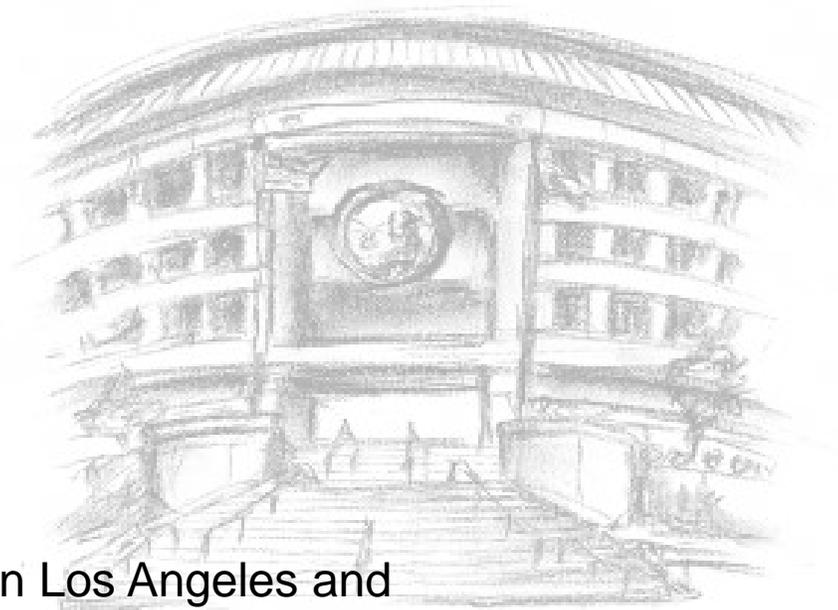
Presented by John Baker, CPUC Local Government Liaison, March 23, 2021





About the CPUC

- The CPUC is the California state agency that regulates essential (intrastate, non-governmental) services including:
 - Electricity
 - Natural Gas
 - Telecommunications
 - Water
 - Rail and Transportation
- Founded as Railroad Commission in 1879. Headquartered in San Francisco with offices in Los Angeles and Sacramento. Took on other utilities by 1911; became CPUC in late 1940s.
- Five Governor-appointed, Senate-confirmed Commissioners serve staggered six-year terms
- Meet publicly at least once a month to decide on important policies, such as energy rates and procurement, renewable energy goals, and improvements to infrastructure





Utility Regulation

Californians spend more than \$50 billion annually for services from industries regulated by the CPUC.

Our regulation includes:

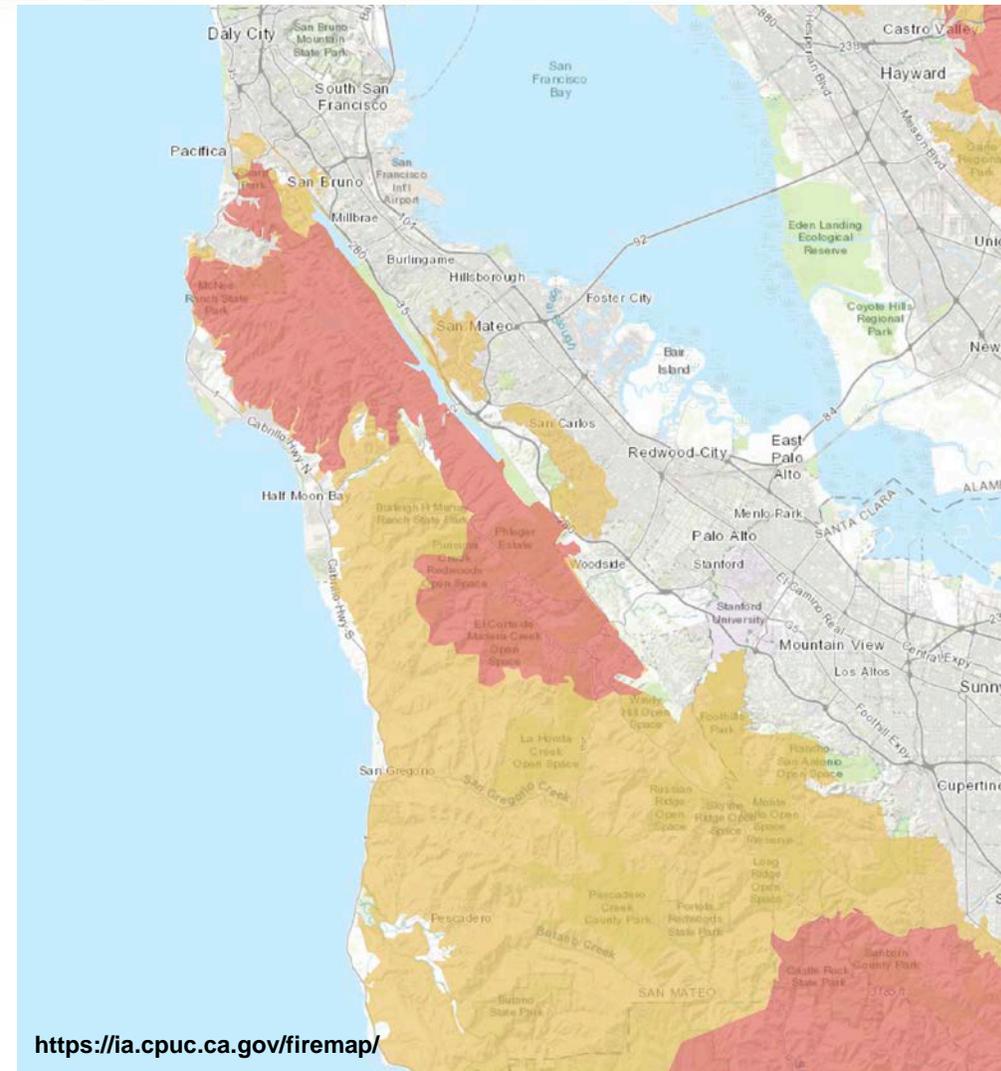
- Rates and services of *private* **energy** companies like PG&E, Edison, and SoCalGas (allow “reasonable” return, but also concentrate on conservation/fixed costs so utilities’ income is less-dependent on consumption)
- Rates and services of *private* **water** companies
- Consumer protection and public programs for **telecommunication** companies such as AT&T and Frontier. But *not* mobile or broadband.
- Safety regarding in-state **rail** companies such as Muni light rail, Caltrain, and BART, and independent transportation companies like movers, limousines, shuttles, ferries, etc.
 - “TNCs” regulation still evolving
 - Rail crossings





Safety Focus

- New Wildfire Safety Division
 - PSPS
 - Line hardening
- Special rules for Tier II and Tier III high-fire threat zones (designated with CALFIRE)
 - Relaxing Rule 20 undergrounding criteria
 - Mandating battery backup for VoIP and wireless providers [which we don't normally regulate]
 - Explicitly allowing safety as a factor in approving infrastructure grants
- More engineers/inspectors to do more spot checks
- Operation Lifesaver (railroads)





CPUC vs. CEC/CDWR/DMV, etc.

- CPUC concentrates on rates, safety, and equity
- Other agencies concentrate on supply and its makeup in terms of sources and quality
- Lots of overlap





Policies & Programs that Impact Your Community

Key CPUC Policies

- Energy Efficiency
- Demand Response
- Renewable Energy
- Dynamic Pricing / Time Varying Rates
- Electric Vehicles
- Smart Grid
- Transmission Planning and Permitting
- Energy Generation and Infrastructure Safety

Public Programs & Assistance

- California Alternate Rates for Energy
- California Lifeline
- Deaf and Disabled Telecommunications Program
- Low Income Energy Efficiency Program
- Telecommunications scam and fraud protection
- Assistance with formal consumer complaints
- Safety inspection





Proceedings

- CPUC is both an executive and a “quasi-judicial” agency
- We both implement and interpret the Public Utilities Code
- Can apply fines and legal sanctions for violations
- Means process can be very legalistic, bureaucratic

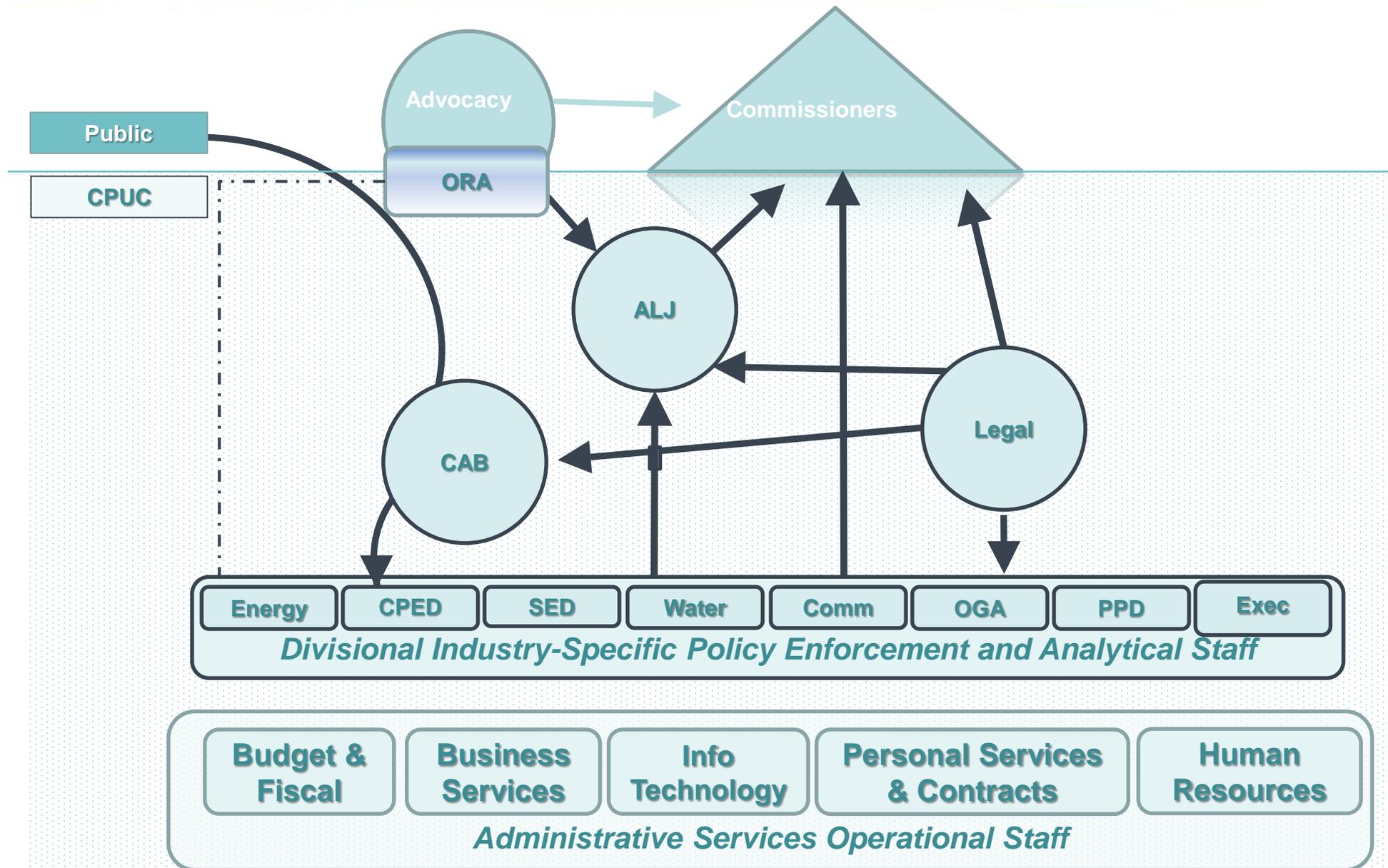




Successful CPUC/Local Government Coordination

- **Community Choice Aggregation**
 - Local governments joined together in 2003-2005 to participate in early proceedings to establish CCA rules
 - CPUC agreed with local governments that utilities did not need to approve CCA business plans
 - Recent growth of CCAs has led to formation of CalCCA advocacy group, which engages with CPUC on exit fees, reliability requirements, and other topics that directly affect CCAs
- **Local Government Energy Efficiency Partnerships**
 - In wake of energy crisis, local governments started requesting authority to run their own energy efficiency programs using ratepayer funds; CPUC agreed
 - Over \$1 billion directed to local governments for energy efficiency programs since local governments began advocacy
- **Regional Energy Networks**
 - Local Government Sustainable Energy Coalition (LGSEC) successfully advocated for creation of RENs in 2012
 - The BayREN and SoCalREN budgets were authorized in 2017 for \$193 million and \$173.5 million, respectively, for 2018-2025.







Decision-Making

Formal

Informal

**Quasi-judicial
(In front of
a judge)**

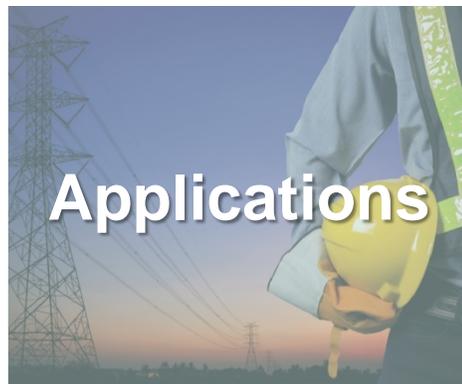
- Staff review of the commission decision
- Implementation by utilities and/or staff





Formal Proceeding Types

**Utility asks
for authority**



**Anyone
charges
utility with
violation**

**CPUC charges
utility with
violation**



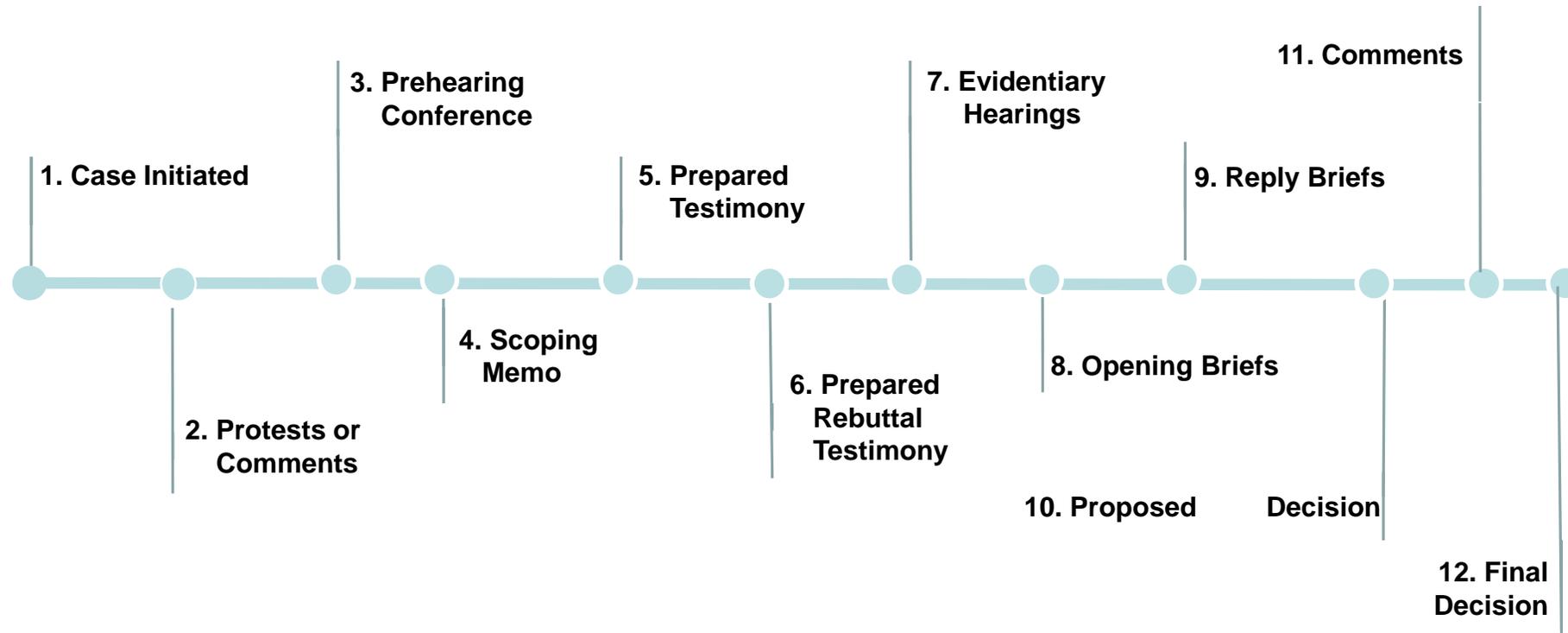
**CPUC
develops
policy or
program**

**CPUC looks
into practices**





Formal Procedural Steps





Info Gathering opportunities

- **Public Participation Hearings** – “open mic” opportunity to hear from the public (usually on a utility proposal)
- **En Banc** – legislative-style hearings; witnesses may represent parties or be invited by Commission
- **Workshops** – informal; no “record,” but discussions or results may be summarized in report that is submitted on the record.
- **Oral Testimony at hearings** – opportunities for parties to present oral summation of its case
- **Ex Parte Communications** – oral or written communications with decision makers.





Formal Participation in Proceedings

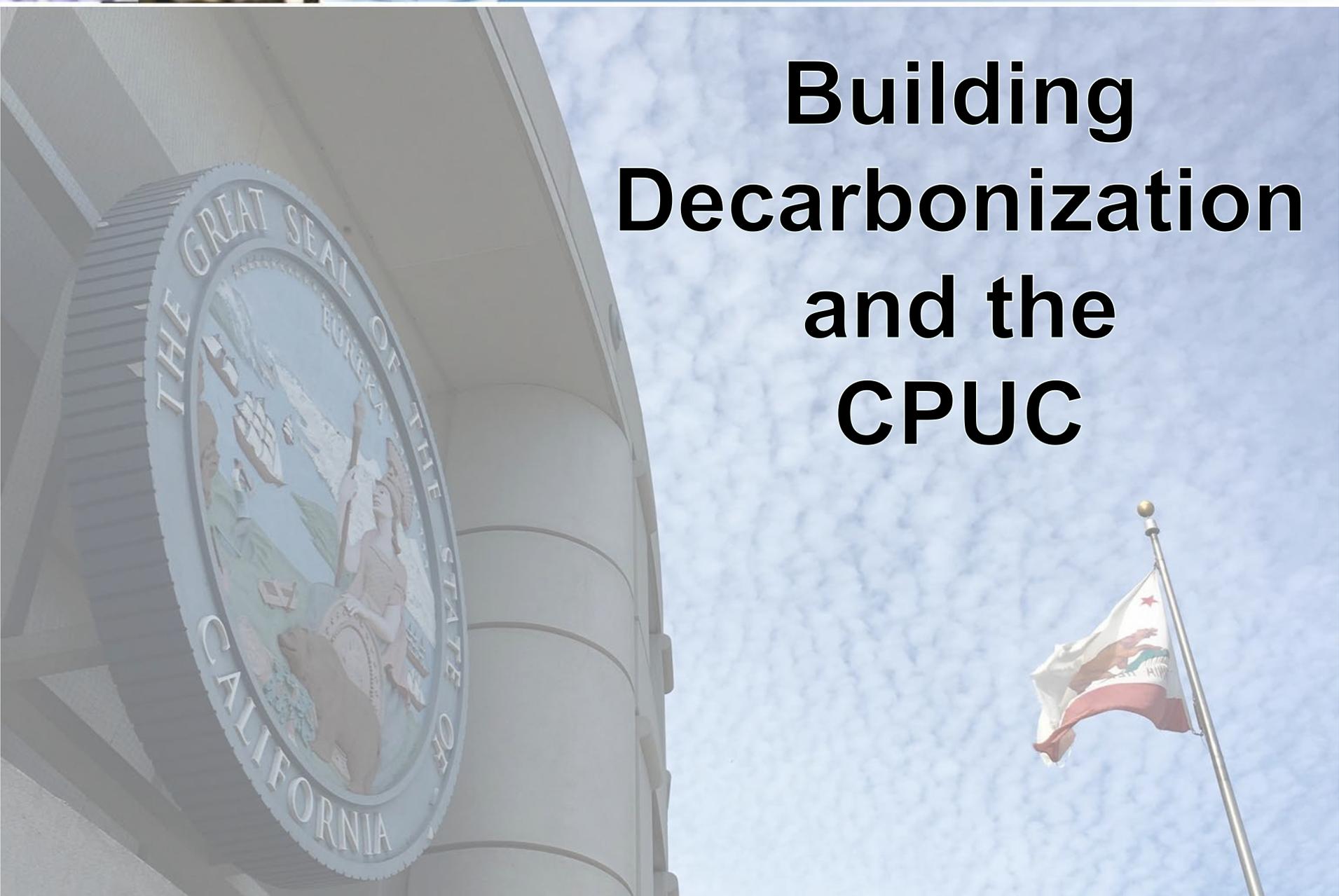
- Become a Party by filing application, petition or complaint; filing protest, response or comments; appear at prehearing conference; file a motion
- Requirements:
 - Fully disclose persons and entities you will be representing and their interests
 - Show contentions are pertinent to proceeding
 - Must adhere to schedule and follow rules regarding document submission as well as “ex parte” rules.
- Rule of thumb: Later in the proceeding process you are, the more you want to be a party; but also the more restricted you are

Link: https://www.cpuc.ca.gov/party_to_a_proceeding/



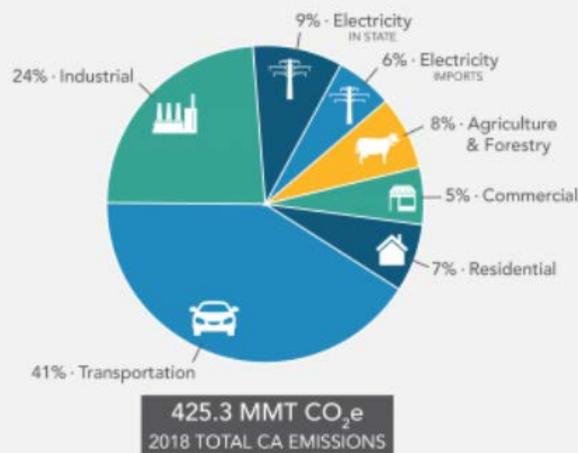


Building Decarbonization and the CPUC



Building Sector = 13% of Greenhouse Gas Emissions

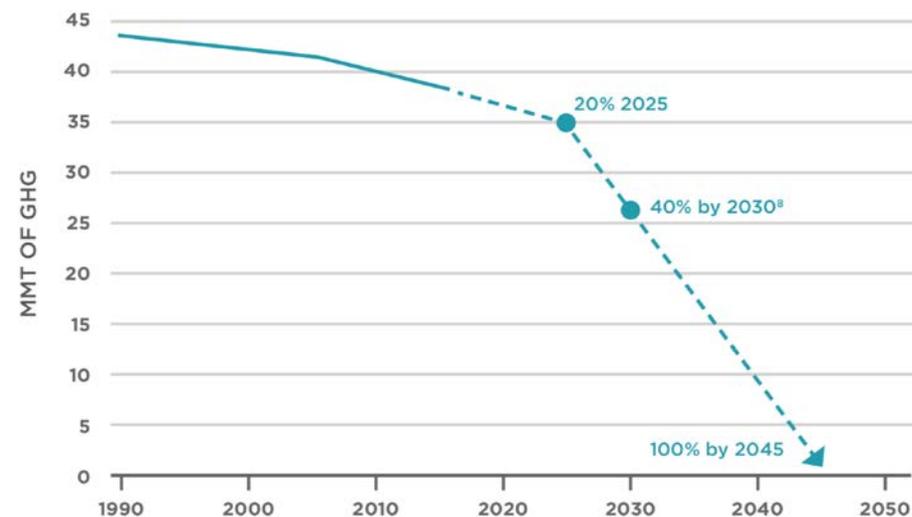
Emissions by Economic Sector



Source: CARB's 2018 GHG inventory

Graph: Building Decarbonization Coalition

DECARBONIZATION OF THE BUILDING SECTOR?



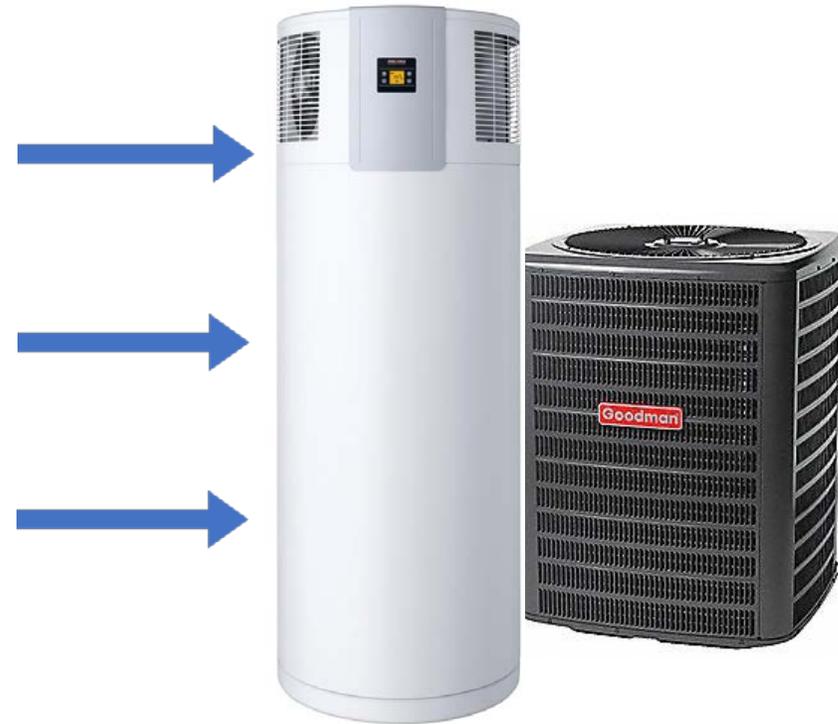
- **AB 3232** – requires CEC to develop plan for **40 percent GHG reduction by 2030**
- **SB 100** – requires 100 percent zero-carbon electricity by 2045





CPUC Programs Incentivizing Heat Pumps

- Building Decarbonization/SB 1477 - \$200 million
 - Self Generation Incentive Program - \$44 million
 - Low Income/DACA - \$136 million
 - Energy Efficiency - \$TBD
- Total - \$380 million +
- (Numbers are approximations)





SB 1477 Programs



BUILD

- Building Initiative for Low-Emissions Development
- 75 percent of BUILD funding (\$80 million) must go to new low-income, residential housing
- **Administered by the CEC**

Photo: Contra Costa County



TECH

- Technology and Equipment for Clean Heating
- Market Transformation for heat pumps
- Implemented by Energy Solutions with CPUC Energy Division oversight

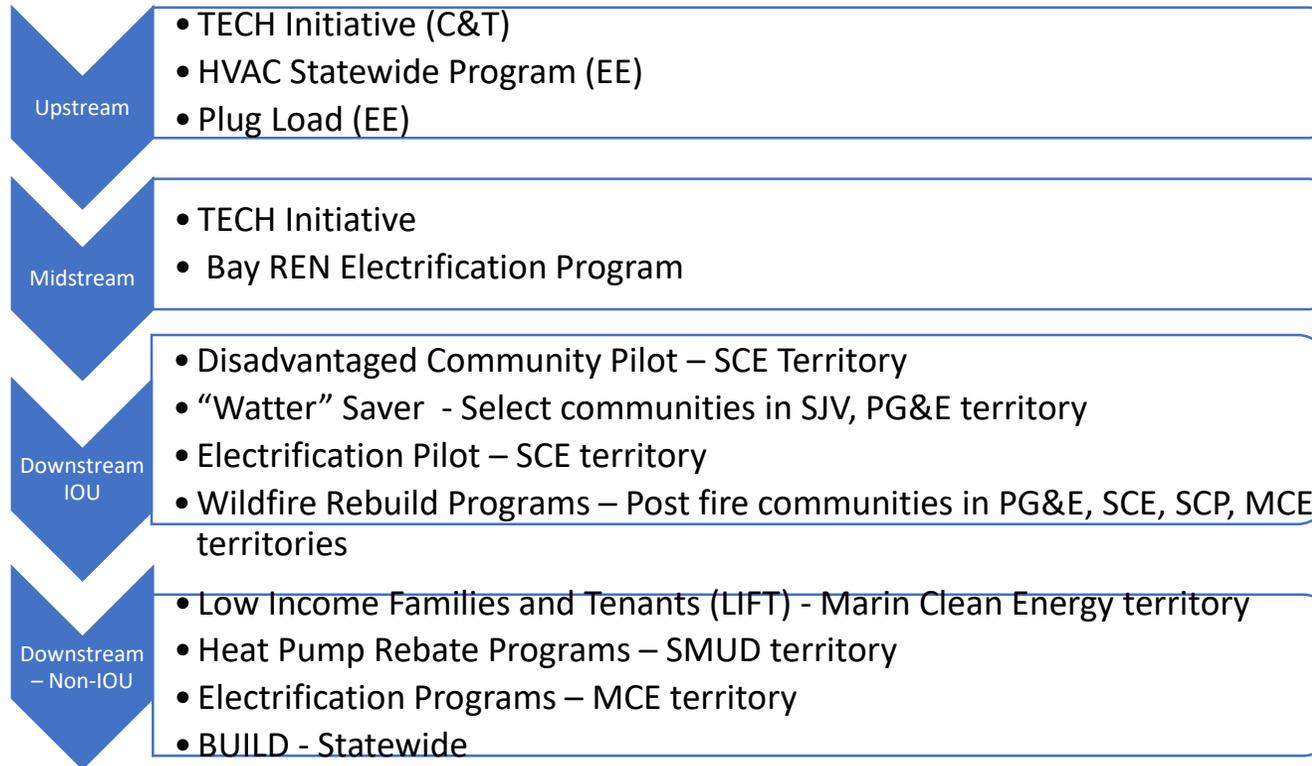
Photo: ECVV.com

www.cpuc.ca.gov/BuildingDecarb





Incentivizing all Parts of the Supply Chain





Common Issues for BUILD and TECH

Required Metrics

- Cost per metric ton of avoided GHG emissions
- Projected Bill Savings
- Number of low emissions systems installed
- Market Share for eligible technologies (TECH Only)
- Evaluator should also calculate participant bill savings.

Other “sub-metrics” listed in Decision, to be determined by implementer and Evaluator





BUILD Program



Low Income Focus

- Administered by CEC
- Will be 100% low income/DACA residential new construction
- Funds unspent after two years of end of program may be repurposed
- CEC shall develop a tool to estimate program-driven bill savings
- Incentives for either sub-division or single-family home





BUILD Program



All-Electric Focus

- Buildings must be built...
 - A) All electric, no gas-line extensions
 - B) Show modeled GHG savings above standards of equivalent mixed-fuel building
- May incentivize any combination of measures, including energy efficiency, demand response, electric batteries, or beyond-code solar.
- CEC has flexibility to adjust incentive level based on participation rates, market activity, costs, complementary programs

Local note for RICAPS: Eligible for incentive even if there's a local reach code!





TECH Initiative



Activities

- Supply chain engagement
- Customer Education
- Data Collection and Public Reporting
- Incentive Matching with other programs
- Quick Start Grants and Regional Pilot
- Workforce Training

Local note for RICAPS: One goal of implementor is to coordinate and be a state resource for local CCAs and RENs with similar programs





TECH Implementation Team



ARDENA



SwitchIsOn.org





Summary: CPUC's Roles & Responsibilities

- Ensuring that regulated services (water, energy, telecommunications, and transportation, in particular) are delivered in a safe, reliable manner, including conducting investigations, inspections, and audits
- In coordination with the utilities and providers, administer public purpose programs to ensure access for underserved communities, people with disabilities, and low-income individuals and families
- Implementing aggressive renewable energy and energy efficiency goals and advancing climate strategies.





CPUC BCO Liaison Territories

Thank You!

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 Business & Community Outreach,
 CPUC
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 Email: john.baker@cpuc.ca.gov





CITY ROUNDTABLE



FINAL INFORMATION

RICAPS City Check-In Meetings

With Susan, Denise, and Alexandria



- Climate action plan implementation priorities for 2021
- "Plug-and-play" programs to promote to the community
- Tapping in to coordinated support for municipal facilities

Fill in the **Doodle poll** to schedule your meeting now!



BAY AREA AIR QUALITY MANAGEMENT DISTRICT

- Survey for local government staff
- Due **Friday, April 2**
- Takes less than 10 minutes

Link to [BAAQMD survey](#)

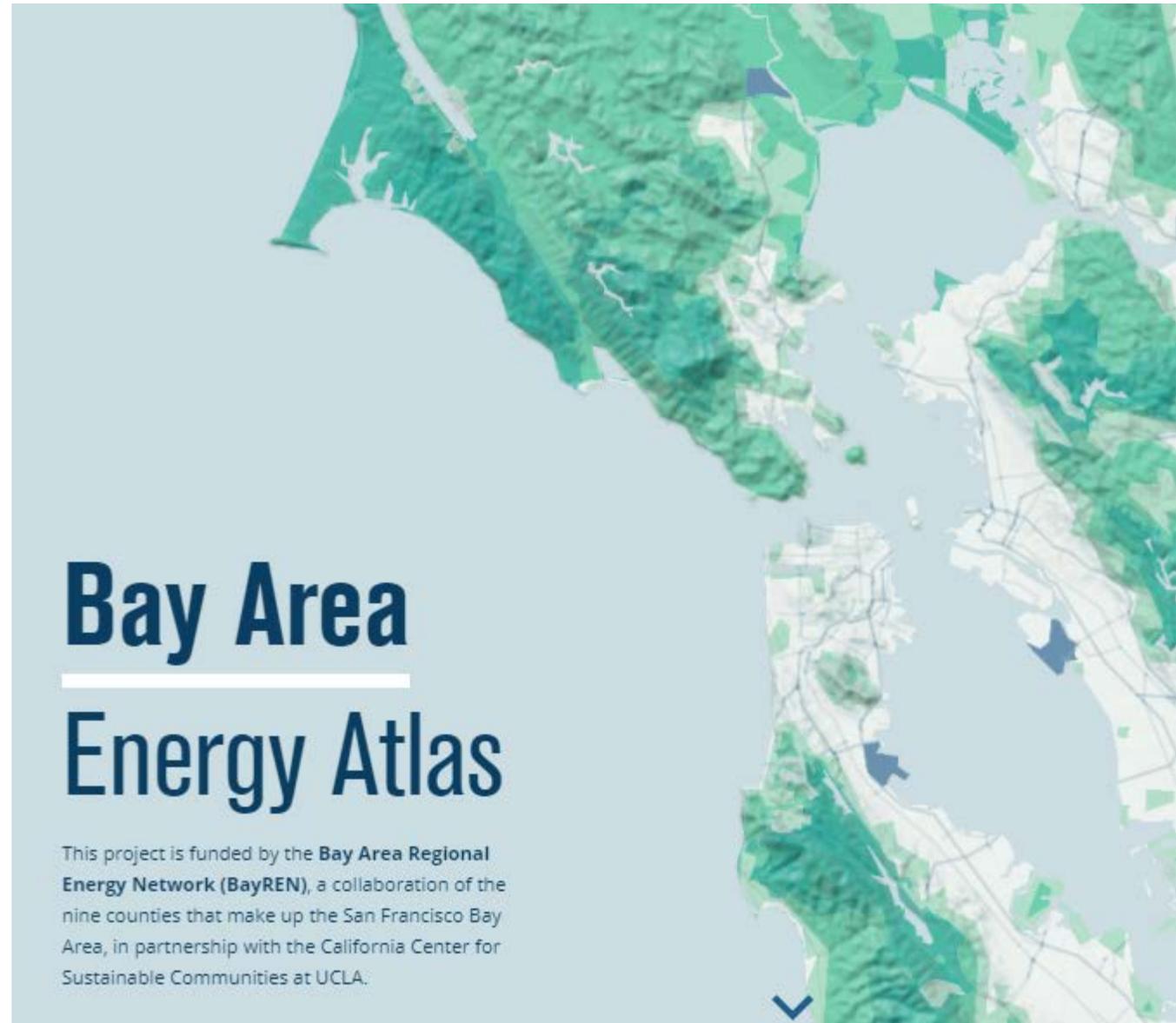


Local Governments Empowering Our Communities

Request for input on EE energy dashboard

- What energy data gaps do you have?
- What comparisons, data would you like to see?

[Link to Energy Atlas survey](#)





RICAPS

Regionally Integrated Climate Action Planning Suite

Next Webinar – Tuesday, April 27 1:30-3pm

Theme: Water

Tom Francis, BAWSCA

Drought and water supply report

Results of water demand study

Chris Cone, BayREN Water Upgrades \$ave Program

Terry Nagel, Sustainable San Mateo County

Sustainability Dashboard Updates

Water Resources in the Sustainability Ideas Bank

Farewell to Kim!



OFFICE OF
SUSTAINABILITY
COUNTY OF SAN MATEO

Thank you! Let's stay in touch...

John Allan, jallan@smcgov.org (inventories, stormwater)

Alexandria Gallizioli, agallizioli@smcgov.org (municipal, special district, and school facilities; small businesses)

Denise Lin, dlin@smcgov.org (residential, reach codes, trainings, EVs)

Susan Wright, swright@smcgov.org (climate action planning, collaboration on CAP implementation, electrification strategy)

Kim Springer, kspringer@smcgov.org (all of these things and everything else!)

