DOCKETED	
Docket Number:	21-BUSMTG-01
Project Title:	Business Meeting Agendas, Transcripts, Minutes, and Public Comments
TN #:	238979
Document Title:	Presentation - May 12, 2021 Business Meeting
Description:	*** THIS DOCUMENT SUPERSEDES TN 237781 ***
Filer:	Dorothy Murimi
Organization:	California Energy Commission
Submitter Role:	Public Advisor
Submission Date:	7/23/2021 12:47:13 PM
Docketed Date:	7/23/2021

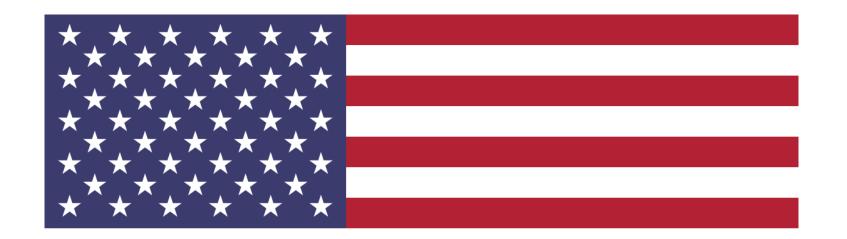


California Energy Commission Business Meeting May 12, 2021 10:00 a.m.





Pledge of Allegiance





CALIFORNIA IS SET TO FULLY REOPEN

JUNE



GET VACCINATED





Sign up to get notified when it's your turn to get the COVID-19 vaccine.

California Energy Commission's





Nominations due by:

June 25



Remote Compliance

Business Meeting held remotely, consistent with Executive Orders N-25-20 and N-29-20 and the recommendations from California Department of Public Health to encourage physical distancing to slow spread of COVID-19.

For remote participation instructions visit **CEC's Business Meetings** webpage:

https://www.energy.ca.gov/proceeding s/business-meetings If Zoom's toll-free phone numbers don't work:

- Dial: (669) 900-6833
- Meeting ID: 938-6923-0237

If Zoom shuts down, Business Meeting will continue via Verizon.

- Dial: (888) 823-5065
- Passcode: business meeting

Public Comment Instructions

- Pursuant to California Code of Regulations Title 20 §1104(e), any person may make oral comment on any agenda item.
- Comments may be limited:
 - to 3 minutes or less
 - 1 representative per organization
- Any person wishing to comment on information items or reports (non-voting items) shall reserve their comment for the general public comment portion of the meeting agenda.

To comment, dial (888) 823-5065.

Passcode: business meeting

- 1) Tell Operator: <u>name</u>, <u>organization</u> and <u>item number</u>.
- 2) Tell Operator if you represent:
 - federal or state legislature;
 - tribal nation or California tribal government;
 - state agency; or
 - county/city government.
- 3) Spell your first and last name.
- 4) Do not use speaker phone when talking.
- 5) Mute Zoom while calling to comment.



- a. School Bus Replacement for California Public School Districts, County Offices of Education, and Joint Power Authorities – GFO-17-607. Contact: Ian Baird
- b. Subpoena for Provision of Data. Contact: Christopher McLean
- c. Reappoint Two Members to the Disadvantaged Communities Advisory Group (DACAG). Contact: Noemí Gallardo
- d. Electricity Demand Forecasts. Contact: Kelvin Ke
- e. Electricity Resource Plans. Contact: Robert Kennedy

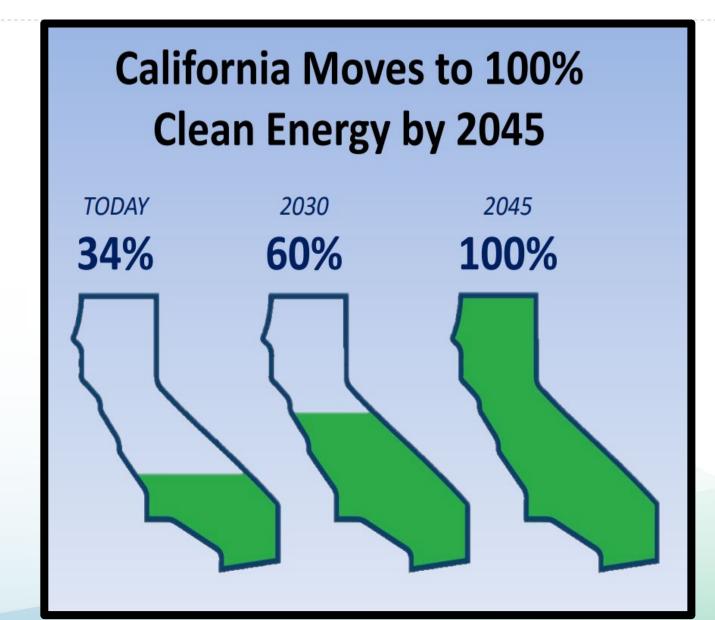


Item 2: 2020 Diversity Report

May 12, 2021 Business Meeting

Noemí Otilia Osuna Gallardo, Public Advisor







"...to optimize fair and equal opportunities for

small businesses, and women-, disabled veteran-, minority-and LGBT-owned businesses,

as well as economically disadvantaged and underserved communities,

to participate in and benefit from [CEC] programs ... "

2015 Resolution





\$23 Million

Tribal Projects



\$996 Million

Spent in Disadvantaged Communities

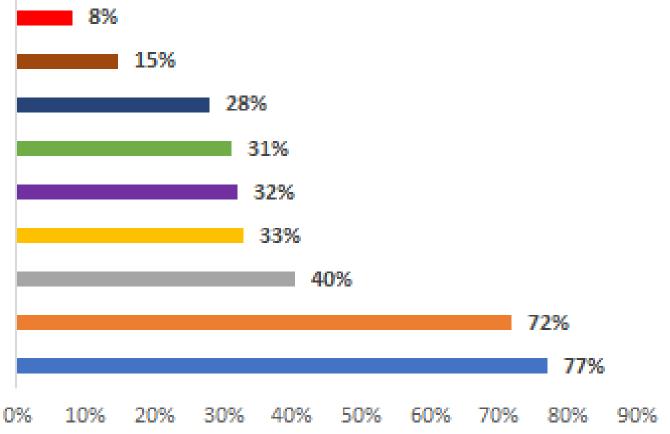
Per CalEnviroScreen 3.0

- 9 programs
- Active last 5 years
- Established 1980-2018

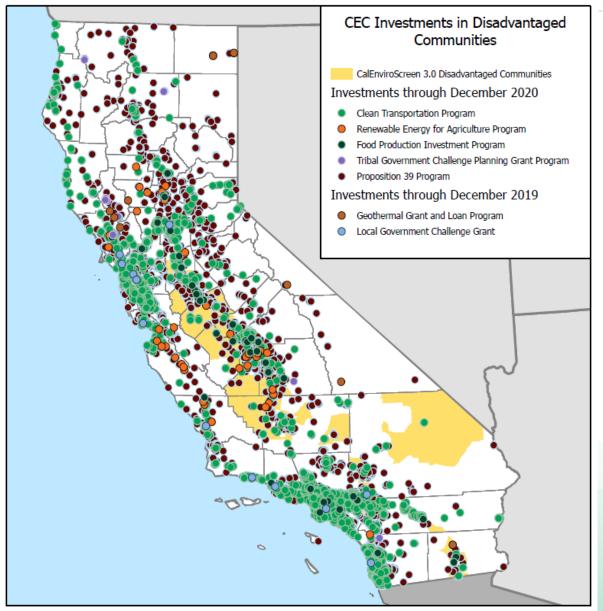


Percentage of Funds Spent in Projects Located in DACs

Geothermal Grant & Loan Program New Solar Homes Partnership (NSHP) Clean Energy Jobs Act, K-12 (Prop 39) Renewable Energy for Agriculture Program (REAP) Clean Transportation Program (CTP) Electric Program Investment Charge Program (EPIC) Natural Gas Research & Development Program Food Production Investment Program (FPIP) Local Government Challenge (LGC)



Investments Across California



15



Daniel Johnson

Associate Energy Specialist Efficiency Division



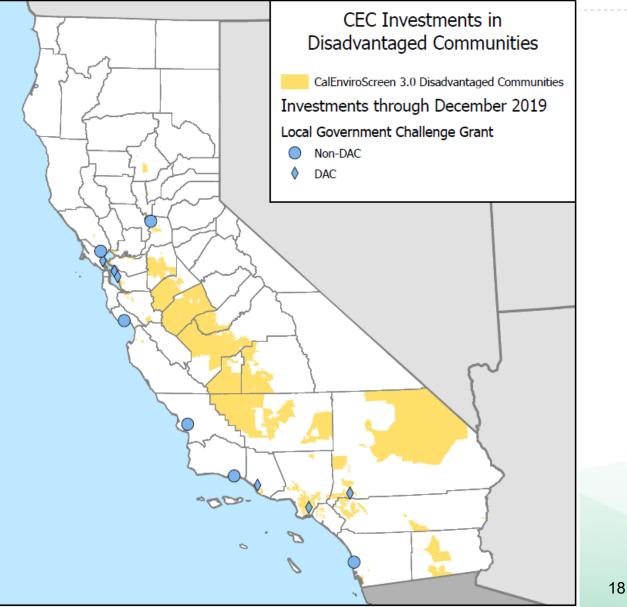


Investment in DACs

- 77% of funds
- \$7.9 Million
- 7 projects





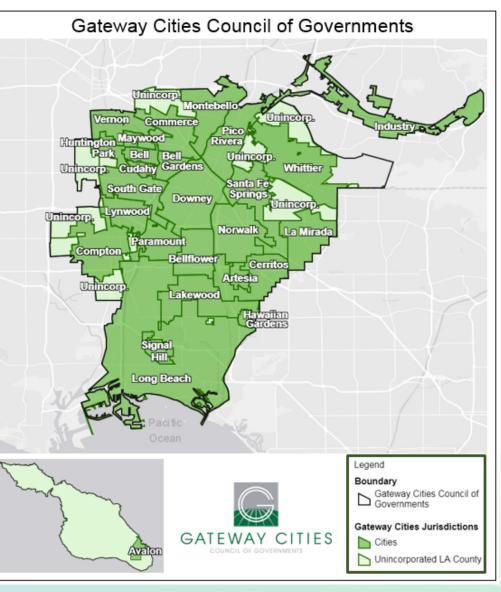






Climate Action Planning Framework







energy.ca.gov/programs-andtopics/programs/local-governmentchallenge

Local Government Challenge

Connection 3 Programs and Topics 2 All Programs 3 Tanal Committeent Challenge

The Local Government Challenge is a partnership between the California Energy Commission (CEC) and local governments to develop innovative solutions that will improve energy performance in California's communities. The CEC has awarded more than \$10 million in two competitive grant programs.

CONTACTS Daniel Johnson SROWCASE: w

916-652-3746

The Local Government Challenge is an example of how the CEC is helping local governments achieve energy planning and take action to reach targets and goals to ensure a resilient and sustainable future. In 2017, the Local Government Challenge awarded \$7.2 million for Energy Innovation Challenge grants and \$3 million for Small Government Leadership Challenge grants. SUBSCRIBE

Efficiency

First Name *



Katrina Leni-Konig

Supervisor, Technology Scale-up and Outreach Energy Research and Development Division, Assistant Tribal Liaison

Food Production Investment Program (FPIP) Natural Gas Research and Development Program Electric Program Investment Charge (EPIC) Tribal Funding

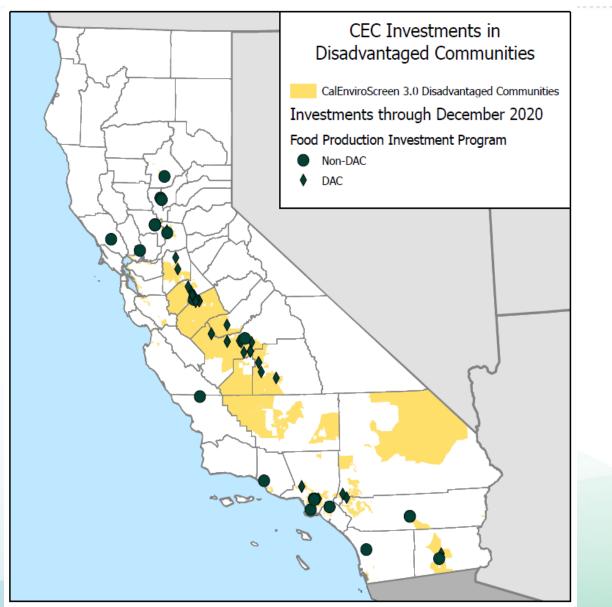


Investment in DACs

- 72% of funds
- \$80 Million
- 36 project sites











- Fire destroyed facility in 2016, requiring reconstruction
- Fire left 120 employees without jobs
- Modernizing with energy efficiency upgrades







Investment in DACs

- **40%** of demonstration, deployment, and manufacturing funding
- **\$19** Million for demonstration, deployment, and manufacturing grants
- 27 demonstration sites





Natural Gas R&D Program Project Sites



26

Natural Gas R&D Program Impact

The Washington Post

Climate and Environment

Deadly air pollutant 'disproportionately and systematically' harms Americans of color, study finds

Black, Latino and Asian Americans face higher levels of exposure to fine particulate matter from traffic, construction and other sources

By Juliet Eilperin and Darryl Fears

April 28, 2021 at 11:00 a.m. PDT



Transitioning from Natural Gas Engines to Zero Emissions for Medium to Heavy-Duty Vehicles

Current Project: Assessing On-Road, In-Use Emissions and Fuel Usage

Provide real-world emissions data

Ensure NG engines operate as clean as possible during transition

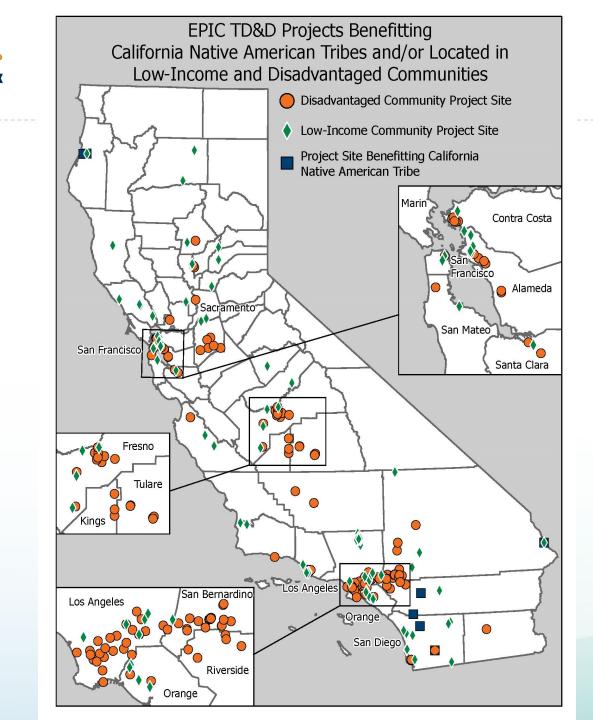
Inform placement of charging infrastructure and hydrogen fueling stations



Investments in DACs

- 33% of demonstration funding
- **\$112** Million for demonstration grants
- 136 demonstration sites





EPIC Project Sites



C OhmConnect



Kim McDermott earned \$13,400 in 4 years through energy savings and referrals

"That is life changing and it came at a time when we really needed it" - Kim McDermott

TIME

U.S. • CALIFORNIA

Californians Avoids Major Blackouts After Dramatically Cutting Electricity Use During Record Heatwave





Tribal Government Challenge

- \$1.9 Million invested
- 8 projects funded

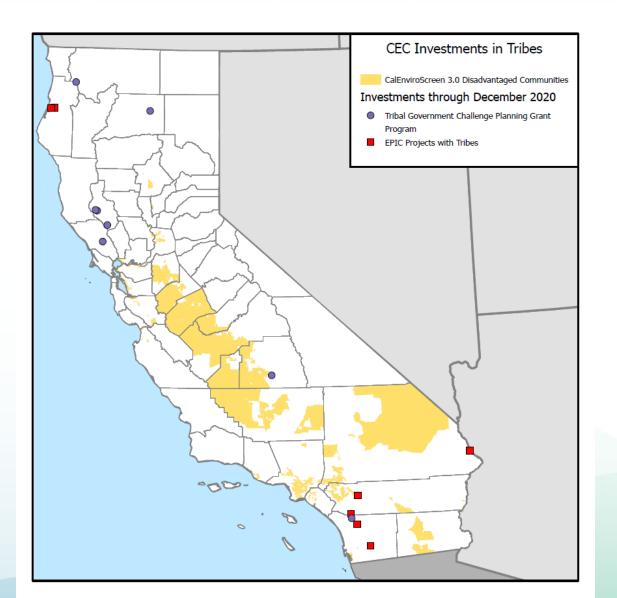
EPIC Tribal Grants

- \$21 Million invested
- 7 projects funded





Tribal Government Challenge Grants and EPIC Project Sites



32



Energy Planning for Kashia Tribal Facilities



Renewable generation and energy efficiency at the "Kashia Abalone Center"

Biomass fuel supply and energy production



Renewable generation and energy efficiency at the Stewarts Point Rancheria

Establish Tribal Energy Utility for energy sovereignty



Solar array and Hydroturbine powering Atlantic Abalone facility (images from https://thefishsite.com/articles/renewables-power-south-african-abalone-boom)



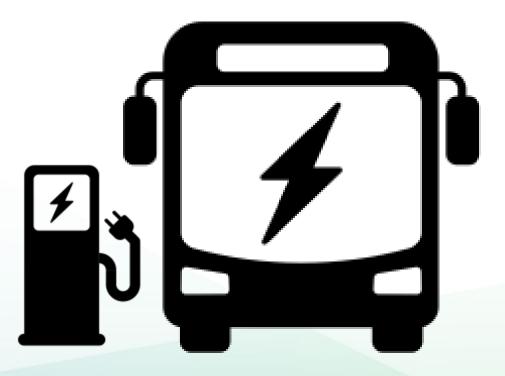
Larry Rillera Fuels and Transportation Division



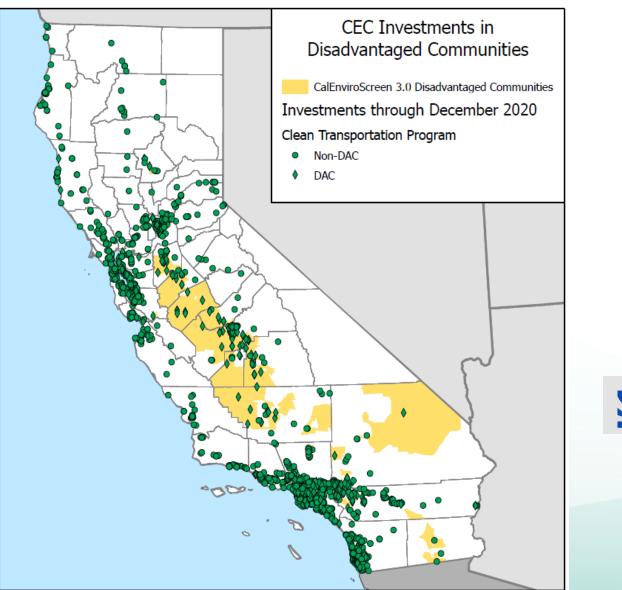


Investment in DACs

- 32% of funds
- \$485 million
- 1,338 projects



Clean Transportation Program Project Sites











Clean Transportation Program Impact







IDEAL Communities *Partnership*

Certifying Agencies

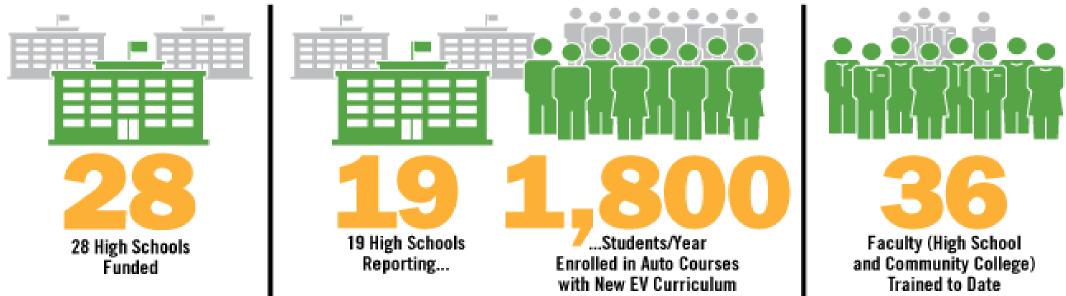
Sustainable Freight Foundations Certificate





Zero Emissions Vehicle High School Pilot Program \$2 Million Total Funding

(with augmentation)



Clean Transportation Program Impact







9,000+ Jobs

20,000+ Trainees

39



Hally Cahssai Supervisor Renewable Energy Division

New Solar Homes Program (NSHP) Geothermal Grant and Loans Program Renewable Energy for Agriculture Program (REAP)



Investment in DACs

- 15% of funds
- \$34 Million
- 11,755 projects



* Data as of 12/31/2020



Variable Incentive Types

- Market Rate: \$0.75
- Affordable Housing Rate: \$1.85

Program Contributions

- Expanding Solar Adoption
- Solar Resources
- Sector Development





Investment in DAC

- 8% of funds
- 1 project



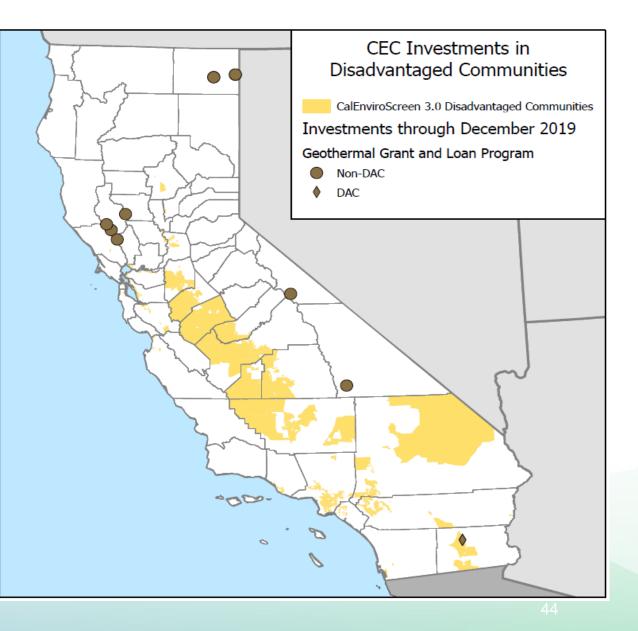
Source: Dr Thomas Borrmann (2019)



Geothermal Grant and Loan Project Sites

Highlights

- Salton Sea Geothermal power plant
- \$2.5 million Budget and \$2.53 Match Budget
- Lithium extraction from geothermal brine





- California has the most geothermal electricity capacity worldwide
- Lithium extraction from geothermal brine efforts in Salton Sea Area



Source: Janet C. Harvey

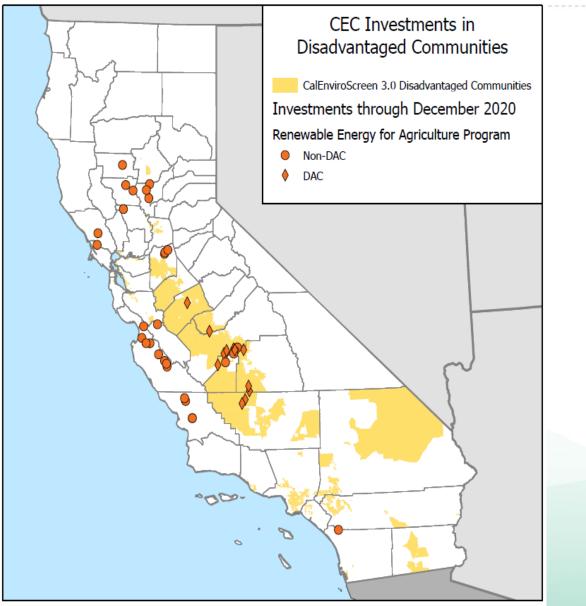
Renewable Energy for Agriculture Program (REAP)

Investment in DACs

- 39% of funds
- \$3.7 Million
- 16 projects









<u>Clean Energy Opportunities in</u> <u>Agriculture</u>

- Invested in highly agricultural counties
- Opportunities supporting low-income communities and individuals
- Experience gained for future program designs





David Velazquez Energy Commission Specialist Local Assistance and Financing Office

California Clean Energy Jobs Act: Prop39-K-12 Program Energy Conservation Assistance Act (ECAA) Energy Conservation Assistance Act-Education Subaccount (ECAA-ED)



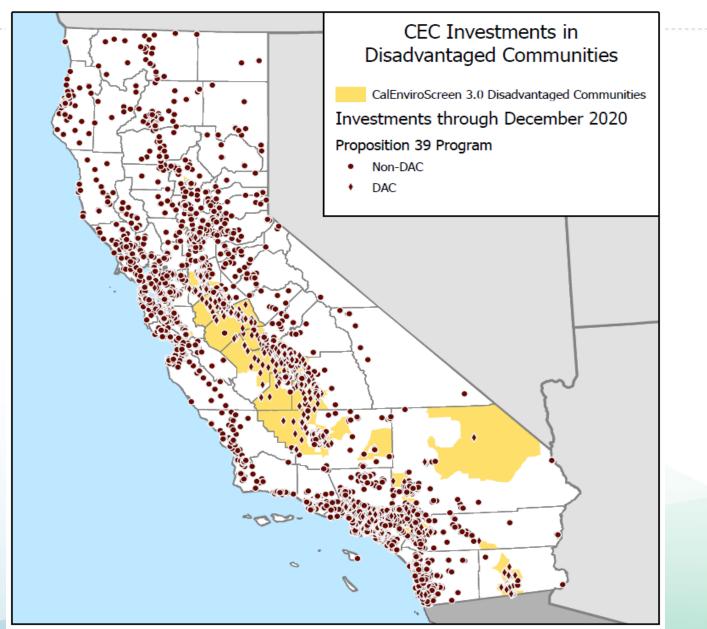
Investment in DACs

- 28% of funds
- \$419 Million
- 1,684 projects





Prop-39 K-12 Project Sites



51

Prop-39 K-12 Program Impact

- \$1.7 billion for energy projects in 7,131 sites
- Save nearly \$105 million in annual energy costs.
- Improved learning environment with better lighting and cleaner air.
- Energy efficiency and generation projects in all 58 counties.





Energy Conservation Assistance Act (ECAA)

Zero-interest loans for schools

- 56 total loans
- \$73 Million in loans
- Provided to schools throughout CA

Low-interest loans

- 922 total loans
- \$472 Million loaned to cities, counties, and other public entities.
- Issued throughout CA





- Provide much-needed lowinterest loans to communities and schools.
- Cities, counties and schools are prime candidates for implementing energy-efficiency measures that can provide significant cost-savings.



2020 Diversity Report Takeaways

Lessons Learned

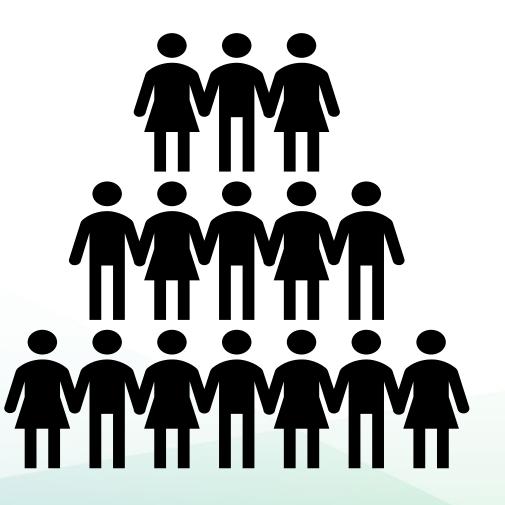
- Respond well to current context
- Need more standardized metrics
- Intentionality makes bigger impact

Opportunities to Advance Equity

- Transition to in-person engagement
- Collaborate with peers/stakeholders
- Create task forces for gaps and goals



- Daniel, Katrina, Larry, Hally, David
- Tom Gates
- Travis David, Gabriel Blossom
- Dorothy Murimi, Karina Camacho
- Armand Angulo, Heather Bird





Item 3: Appointment of Committee for CA3 (Vantage) Backup Generating Facility (21-SPPE-01)

May 12, 2021 Business Meeting

Eric Knight, Manager, Siting and Environmental Office Siting, Transmission, and Environmental Protection Division



Data Center: 1 building (469,482 sq. ft.)

Backup Generating Facility:

- 44 2.75-megawatt diesel-fired generators
- 1 generation yard

Purpose: Generate 96 megawatts (maximum) of backup electricity *if* prolonged lack of primary electricity supply from Silicon Valley Power exceeds storage capacity of uninterruptable power supply systems.





Approve proposed order establishing committee to oversee CA3 (Vantage) Backup Generating Facility SPPE proceeding.



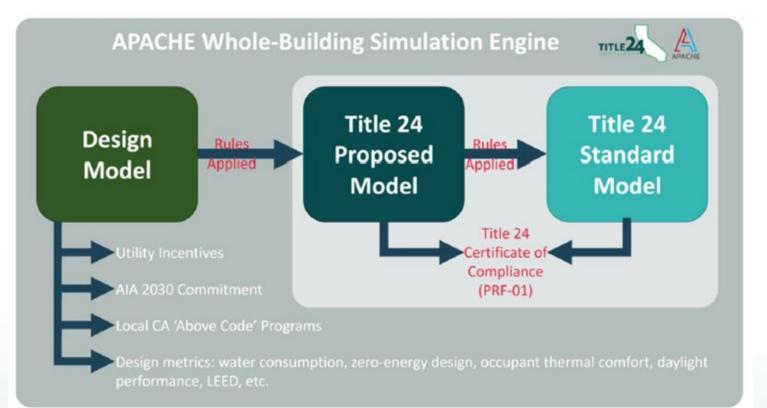
Item 4: Integrated Environmental Solutions Virtual Environment Approved Computer Compliance Program for 2019 Title 24, Part 6 Nonresidential, Version 1.0.

May 12, 2021 Business Meeting

RJ Wichert, Mechanical Engineer Efficiency Division, Building Standards Office

Benefits to Californians

- Expands list of approved nonresidential compliance software
- Simplifies building design and compliance steps





Alternative simulation engine

Meets compliance requirements of ACM manual



 Approve IES VE Title 24 2019 Version 1.0 as nonresidential alternative calculation method for 2019 Energy Code



Item 5: ECAA Funded Loans for the City of Ferndale and County of Mariposa & One ECAA-Ed Funded Loan for the Ravenswood City School District

May 12, 2021 Business Meeting

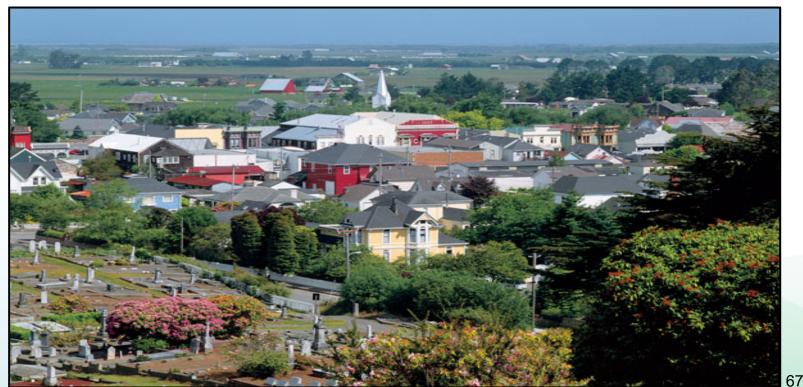
Matt Jones Renewable Energy Division, Local Assistance and Finance Office

Benefits of the ECAA Loans to Californians





- \$203,200 loan
- 1% interest
- LED lighting at 1 city facility
- Rooftop PV at 2 city-owned sites



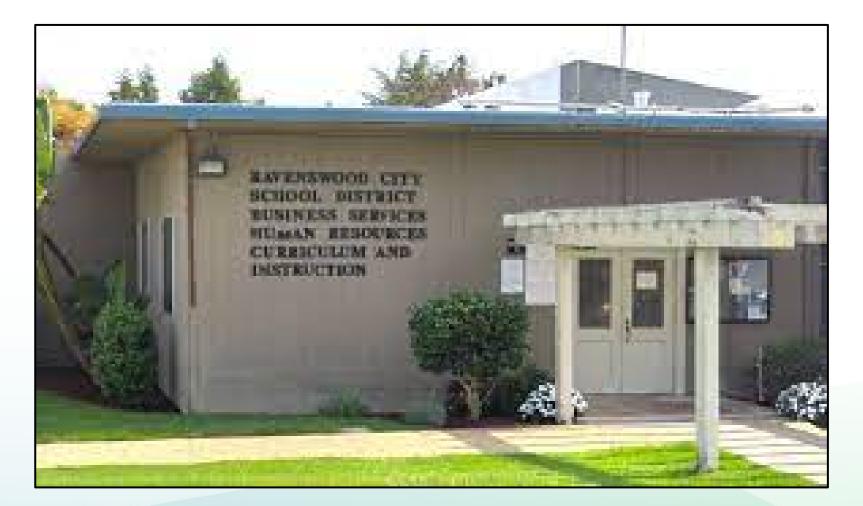
Mariposa County Project Overview

- \$2,838,826 loan
- 1% interest
- LED lighting at 8 county sites
- Carport PV installation at 4 county facilities



Ravenswood Project Overview

- \$2,925,948 loan
- 0% interest
- LED at 2 schools
- PV systems at 4 schools





Loan Recipient	Annual Energy Savings	Loan Amount	Annual Cost Savings
City of Ferndale	77,760 kWh	\$203,200	\$14,827
County of Mariposa	919,257 kWh	\$2,838,826	\$190,823
Ravenswood City School District	823,564 kWh	\$2,935,948	\$158,279



- Approve agreements
- Adopt staff's determinations that actions are exempt from CEQA



Item 6: Agreement 600-20-009 with UC Davis for a \$125,000 Contract

May 12, 2021 Business Meeting

Miki Crowell, Air Pollution Specialist Fuels and Transportation Division, Advanced Vehicle Infrastructure Office



Contribute to Study of Future Hydrogen System



California Energy Commission COMMISSION REPORT

vember 2020 | CEC-600-2

2020–2023 Investment Plan Update for the Clean Transportation Program Help Shape Future Policies, Solicitations, and Projects





Advance State towards Air Quality and Climate Change Goals



- Scope is Role of Vehicles and Infrastructure in a California Hydrogen Transition
 - Vehicle Scenarios
 - Location of Hydrogen Demand and Supply
 - Station Investment Behavior
 - Impact of Demand from Transportation Sector





- Approve agreement
- Adopt staff's recommendation that action is exempt from CEQA



Item 7: Zero-Emission Transit Fleet Infrastructure Deployment (GFO-20-602)

May 12, 2021 Business Meeting

Esther Odufuwa, Energy Commission Specialist I Fuels and Transportation Division Advanced Fuels & Vehicle Technologies Office, Freight & Transit Unit



Enables:

- Reduced emissions
- Large-scale infrastructure demonstrations
- Lessons learned for replicability
- Accelerated process to meet regulations





North County Transit District (ARV-20-013)

- Construct hydrogen fueling station
- Will support up to 50 fuel cell buses







Sunline Transit (ARV-20-014)

- Construct new stand-alone liquid hydrogen station
- Will support up to 96 fuel cell buses







Approve

Both agreements

Adopt

 Staff's determination that action is exempt from CEQA

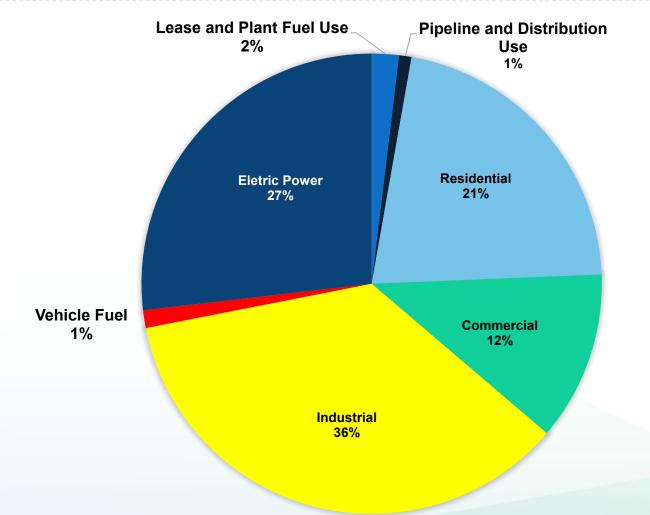


Item 8: Solar Heating, Cooling and Power for Industrial and Commercial Applications (GFO-20-502)

May 12, 2021 Business Meeting

Baldomero Lasam, Mechanical Engineer Energy Research and Development Division Energy Generation Research Office

California Natural Gas Consumption By End Use



Source: U.S. Energy Information Administration. 2019.

https://www.eia.gov/dnav/ng/NG_CONS_SUM_DCU_SCA_A .htm



- Reduce natural gas consumption
- Reduce greenhouse gas emissions
- Inform future deployment strategies



Low Cost, High Concentration System for Industrial Cogeneration

- Develop and demonstrate low-cost, reliable and high efficiency system
- Innovative design increases annual power and heat generation
- Reduces dependence on natural gas and power sourced from grid



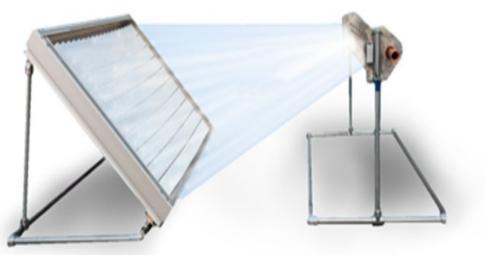


Figure: Intelligent Mirror Array collector



- Approve grant agreement
- Adopt staff's determination that project is exempt from CEQA



Item 9: Load Shifting During Critical Summer Hours via Programmable Irrigation (EPC-20-036)

May 12, 2021 Business Meeting

Anish Gautam Energy Research and Development Division Energy Efficiency Research Office





Smart-meter data Big data analytics

Lower electricity costs

- Increase grid reliability
- Reduce greenhouse gas emissions

87



- Enhance technology demonstrated under previous EPIC grant
- Permanently shift peak irrigation loads (5-8PM) into non-peak hours
- Deploy on at least **10,000 acres** (PG&E and SCE)
- Shift 7MW
- \$87,368 in match funds



Source: AgMonitor Inc.

Food





- Approve grant agreement
- Adopt staff's determination that action is exempt from CEQA



Item 10: Bringing Rapid Innovation Development to Green Energy (BRIDGE) 2020 (GFO-20-301)

May 2021 Business Meeting

Michael Ferreira Energy Deployment & Market Facilitation Office Energy Research & Development Division

Benefits to California Ratepayers

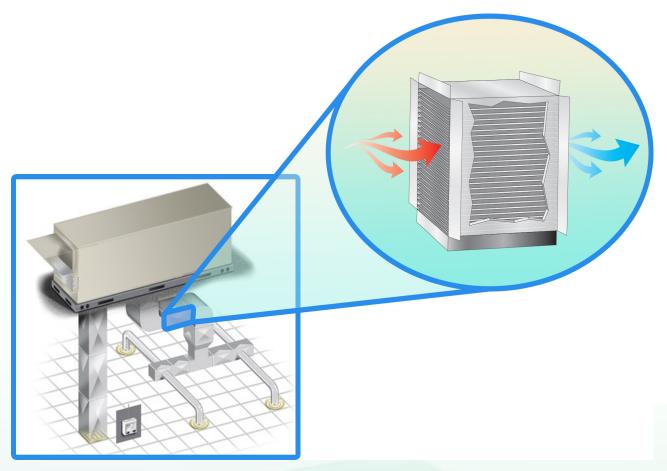
- Advances clean energy economy
 - Supports clean energy entrepreneurs
 - Speeds up transition from fossil fuels
- Improves grid resilience and reliability





Thermal Energy Storage System for Packaged HVAC Systems

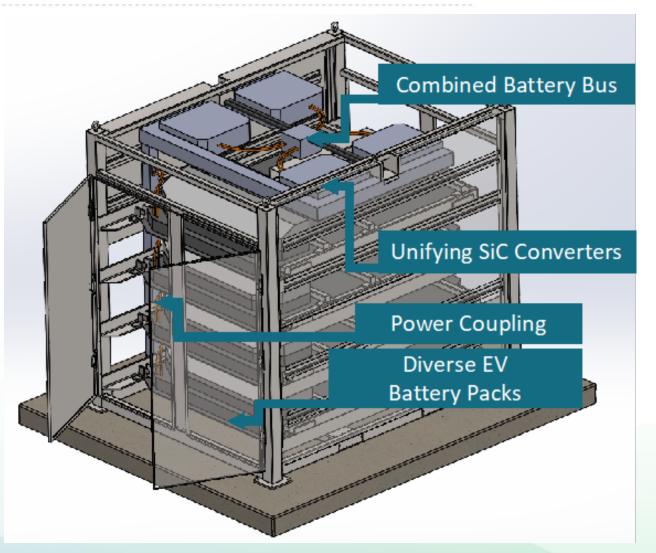
- Bio-based phase change material
- 60-75% reduction in peak period energy use
- Demonstrations at 10
 commercial buildings





Solid-State DC-DC Power Electronics for Grid-Scale Lithium EV Battery Pack Integration

- 2nd life EV batteries used for grid storage
- Can adapt to increasing number of EV models and volumes
- 1 MW demonstration to show energy savings and potential demand charge cost reduction





Approve and adopt staff's findings that projects are exempt from CEQA.



Item 11: Evaluating Bi-Directional Energy Transfers and Distributed Energy Resource Integration for Medium- and Heavy-Duty Fleet Electrification

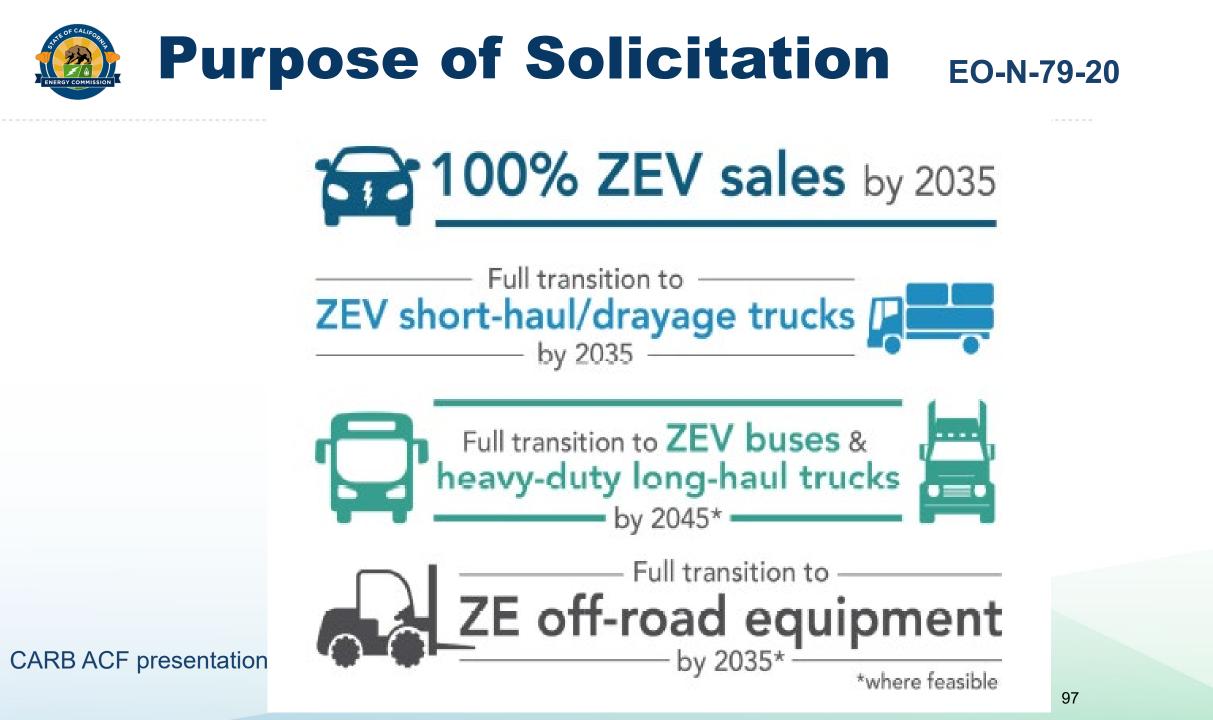
May 12, 2021 Business Meeting

Ben Wender Electric Generation System Specialist Research and Development Division

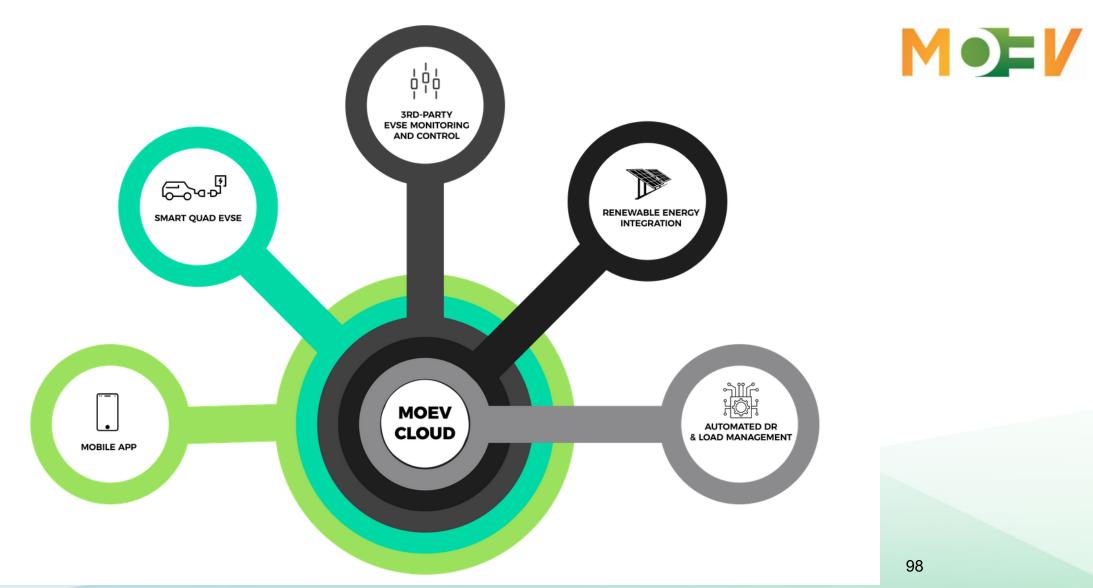


- Reduce stress on grid
- Increase use of distributed energy resources
- Reduce charging costs
- Provide site and community resilience
- Maximize emissions reductions





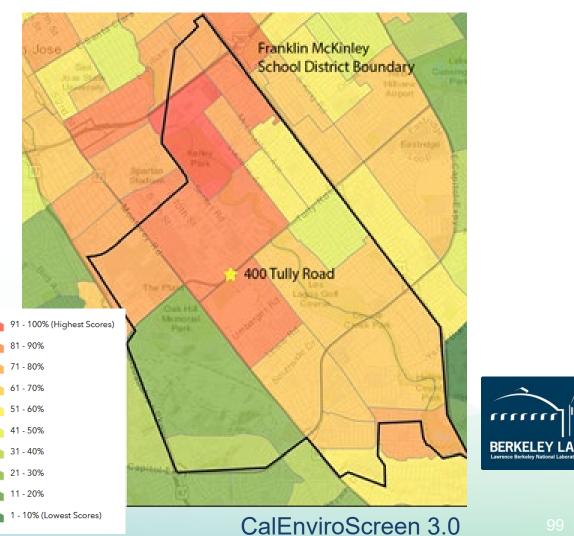
MOEV, Inc., Artificial Intelligence Based Heavy-Duty Fleet Charging







Innovative School Bus Charging for Resilient Communities





- Approve grant agreements
- Adopt staff's determination that projects are exempt from CEQA





Item 12: Food Production Investment Program (GFO-20-307)

May 12, 2021 Business Meeting

Cyrus Ghandi, Electric Generation System Specialist Energy Research and Development Division Energy Efficiency Research Office





164,000 MT CO2E* **PROJECTED ANNUAL EMISSIONS REDUCTION 51 PROJECTS** \$116M AWARDED 85% IN DISADVANTAGED/ LOW-INCOME COMMUNITIES

*Preliminary staff estimate – actual results will be quantified during project measurement & verification 102



FPIP Created by Collaboration

Food Processor's Working Group

Government: California Air Resources Board California Department of Food and Agriculture California Energy Commission California Public Utilities Commission Office of the Governor of California San Joaquin Valley Air Pollution Control District South Coast Air Quality Management District Utilities: Modesto Irrigation District Pacific Gas and Electric Sempra Utilities Southern California Edison Southern California Gas Company Turlock Irrigation District Food Producers: Campbell Soup Supply Company California Dairies Foster Farms E&J Gallo Hilmar Cheese Land O Lakes Morning Star Company Pacific Coast Producers Stanislaus Food Products Company The Wonderful Company

Researchers:

California Polytechnic State University, San Luis Obispo Lawrence Berkeley National Laboratory University of California, Davis Trade Organizations: California Cotton Ginners and Growers Association Agricultural Council of California California League of Food Producers West Coast Advisors







Install high-efficiency compressed air system upgrades at almond processing facility.

- Variable frequency drive
- Advanced controls



Workers inspecting almonds at a Blue Diamond facility. *Photo credit: Blue Diamond Growers*

14.b Pacific Coast Producers, Woodland



Upgrade compressed air system at tomato processing facility.

- High-efficiency air compressor
- Air dryer
- Receiver tank
- Variable frequency drives
- New control system



Flumes conveying tomatoes at Pacific Coast Producers in Woodland. *Photo credit: Pacific Coast Producers*





Install energy efficient equipment at industrial baking facility boiler economizer.

- Steam traps
- Insulation
- New burners and controls for baking oven
- Low-global warming potential refrigeration system



Jessie Lord Bakery produces a variety of fruit, cream, and seasonal pies. *Photo credit: Jessie Lord Bakery*





Install steam system upgrades at animal feed and biofuels production facility.

- High efficiency boilers
- Insulation on 2 large holding tanks to conserve heat



Baker Commodities produces animal feed supplements, fertilizer, and biodiesel *Photo credit: Baker Commodities, Inc.*

14.e WWF Operating Company, City of Industry



Install over 200 steam traps at dairy processing facility.

- Capture and drain condensate from steam lines
- Vital part of steam distribution network.



WWF Operating Co. produces various dairy and plant-based food and beverage products for Danone *Photo Credit: Danone North America*

14.f Campbell Soup Supply Company, Dixon



Retrofit double effect to high efficiency triple effect evaporator at tomato processing facility.

- Increase evaporation capacity
- Increase process efficiency



Tomato harvesting operation Photo credit: Campbell Soup Company



14.g E&J Gallo Winery, Livingston and St. Helena

Install energy efficient equipment at two large wineries.

- New compressor system at Livingston winery
- New low-GWP refrigeration system at St. Helena winery



Wine, juice, and concentrate is stored in over 260 insulated tanks at the Livingston winery *Photo credit: E&J Gallo Winery*











- Approve grant agreements
- Adopt staff's determination that actions are exempt from CEQA.



Item 13: Local Ordinance Applications (19-BSTD-06)

May 12, 2021 Business Meeting

Danuta Drozdowicz, Efficiency Specialist Efficiency Division, Building Standards Office



Jurisdictions that adopt local ordinances:

- Are live laboratories for clean energy future
- Reduce greenhouse gas emissions
- Lead from the grassroots

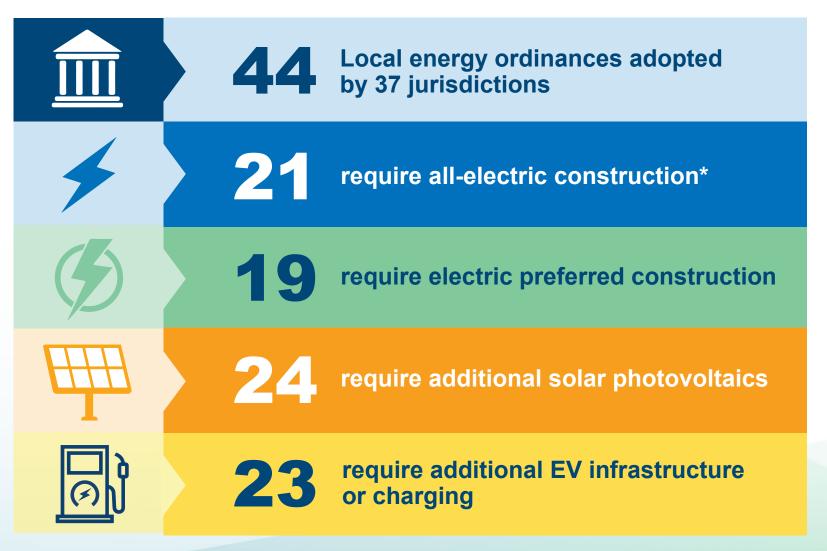


lives in a community with an energy code exceeding state standards



- 1. File application with CEC showing standards are costeffective
- 2. CEC finds standards reduce energy consumption compared to current statewide Energy Code
- 3. Staff confirms criteria are met; makes recommendation based on findings

Local Ordinances Exceeding 2019 Building Energy Efficiency Standards





Local Ordinances

	Jurisdiction	Cost Effective	Energy Reduction	Energy Efficiency or All-Electric Provisions	Exceptions
CUNDED UN	City of Piedmont	yes	yes	Energy efficiency requirements for low-rise residential retrofits; all- electric for new low-rise residential construction	Retrofit projects with a value less than \$25,000
URBRO UILLAGE BY THE BRY	City of Albany	yes	yes	Newly constructed buildings meet or exceed Energy Design Ratings or Compliance Margins more stringent that Energy Code	Accessory Dwelling Units
CALIFOR NUL	City of San Carlos	yes	yes	Requirements for all- electric new construction and for solar on new nonresidential buildings	Accessory Dwelling Units and applications such as cooking and fireplaces



Approve jurisdictions to enforce local ordinances