

APRIL 24, 2023

EBCCE Local Development Update

PRESENTED BY:

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VP LOCAL DEVELOPMENT, ELECTRIFICATION AND INNOVATION



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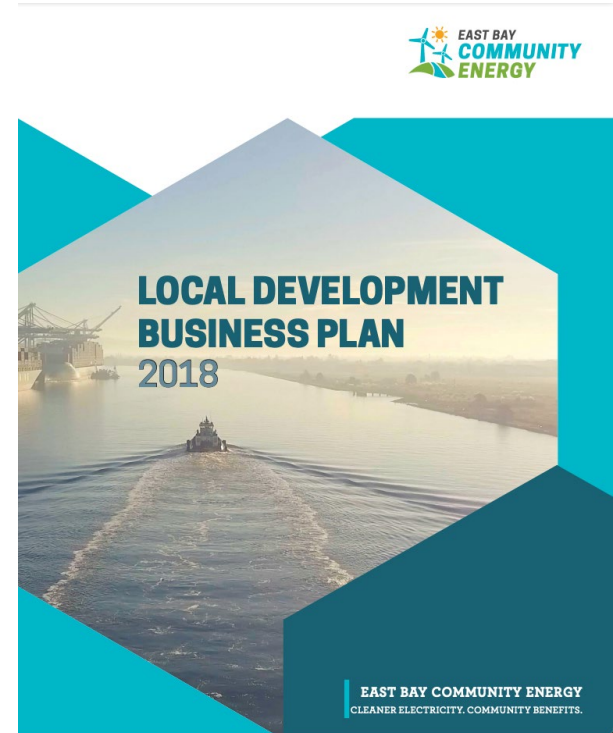


Zac Thompson
Senior Associate,
Transportation
Electrification

Local Development Business Plan

- The Local Development Business Plan ([LDBP](#)) was developed through multi-stakeholder process
- Local Programs have emerged from the LDBP in the following categories

Building Electrification	Grid Services
Transportation Electrification	Resilience
Energy Efficiency	Community Investment



Innovating on Delivery Models

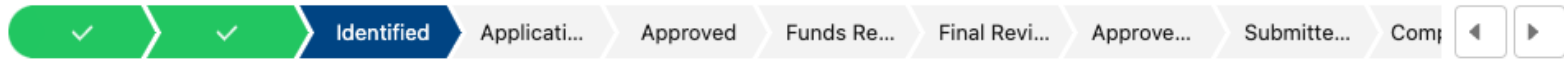
Developing new models to provide clean energy services to our customers

- EBCE leading as “procurement agent” for cities to deliver Climate Action Plan goals
 - Solar + Storage for municipal facilities
 - Public Fast Charging for passenger electric vehicles
 - Municipal fleet electrification
- Innovating on ways to leverage EBCE capital
 - Health-e Homes Low/Moderate Income electrification program
 - Forum Mobility zero-emission drayage truck fast charging plaza
 - Securing NEM 2.0 for Resilient Critical Facilities Program
 - Municipal Electrification loans
- Providing frontline communities with debt relief and bills savings
 - CAPP, AMP, Solar Discount / Community Solar Discount

Metrics & Customer Impacts

Salesforce provides customer level tracking for program enrollments

- Dashboards and reports will provide insights into enrollment rates
- Allows EBCE to track CARE/Disadvantaged Community participation



Status: Identified

✓ Mark Status as Complete

LDBP established metrics and a model (IMPLAN) to track program benefits

- EBCE adapting the model to evaluate current programs

Category	Performance Metric (Units)
Direct Annual Jobs Created	Full-time Equivalents (FTE's)
Labor Wage Impacts	Direct Job Wages (\$'s/hour)
Fiscal Impacts	Costs (\$'s spent), Cost Savings (\$'s saved), Surplus Revenue (\$'s/year)
Customer Cost Savings	\$'s saved (Total and by Customer Class)
Local Energy Generation	GWh's Generated per Year
GHG Emission Reductions	Metric Tons of CO ₂ e (MTCO ₂ e) reduced, GHG Intensity (MTCO ₂ e/MWh)
Criteria Air Pollution Reductions	Metric Tons (MT) of Criteria Pollutants reduced

Supporting Low Income Communities

- Targeted programs specifically on frontline communities
 - Health-e Homes LMI electrification and efficiency with BlocPower
 - Electric vehicle charging infrastructure incentives
 - EBCEs EV fast charging infrastructure investment strategy
 - Zero-emission medium- and heavy-duty goods movement strategy
 - Medical Baseline backup battery program
- Tracking program enrollments in Salesforce to build a baseline of participation metrics

Transportation Electrification (TE)

TE: Setting the Stage

Light-Duty Passenger EVs & Micromobility

- 50% of residents are renters in multifamily housing
- 90% of multifamily buildings 50+ yr old
- Little adoption of EVs by renters + significant gaps in access to charging
- Help cities lead by example
 - Publicly accessible EV fast charging
 - Municipal fleet electrification
- Encourage mode shift to safe, fun, economical electric mobility
- Accelerate EV adoption

Medium- and Heavy-Duty (M/HD) Goods Movement Vehicles

- Service area among most strategic trade locations in the U.S.
- EBCE serves all commercial / industrial load outside of Port boundaries

Strategic Priorities

1. Provide incentives for publicly available EV charging
2. Develop EBCE owned DC fast charge network
3. Accelerate municipal fleet electrification via TA & EBCE Charging-as-a-Service product
4. Launch Ride Electric E-bike incentive / lending program
5. Establish service area as 1st mover market for zero-emission M/HD Goods Movement trucks & vans

Alameda County Incentive Project (CALeVIP)

Overview:

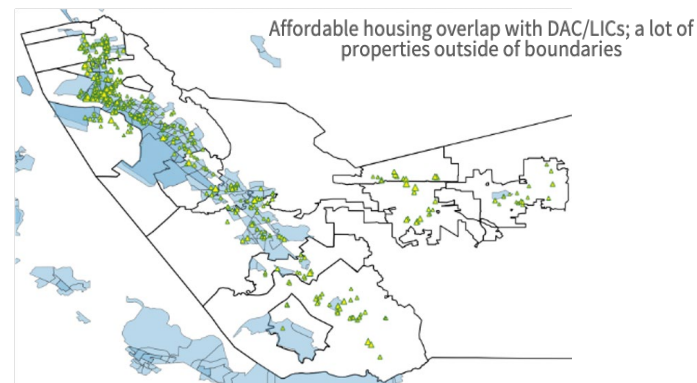
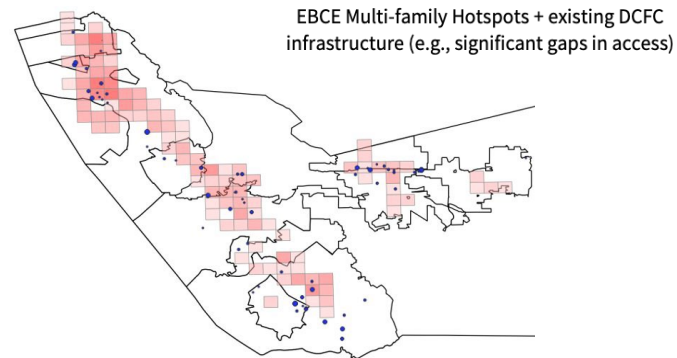
Incentives for public EV chargers Level 2 & Direct Current Fast Chargers (DCFC)

Total budget: \$17.3M

- CA Energy Commission: \$14.5M (L2 & DCFC)
- EBCE: \$3M (L2 & DCFC)
- 12/2021 (launch) - July 2023 (closeout)

Program priority: Equity

- 50% total budget for projects in DAC/LICs
- 50% total DCFC budget (\$8.5M) for projects in EBCE's multifamily (MF) hotspots
- L2 incentive adder for affordable MF properties
 - Free technical assistance
 - 50 affordable MF properties



Alameda County Incentive Project: Results

of total sites w/reserved funds: 132

- L2: 92
- DCFC: 40 (more on waitlist)

DAC/LIC projects

- 54% L2 funding
- 63% DCFC funding

DCFCs to be installed: 140

- **44% increase** from existing network
- MF Hotspot Requirement: **287% of target**

L2 to be installed: 170

- **49% increase** from existing network

Every city in Alameda County (except Piedmont) has EV chargers being installed



Workplace charging. Photo: Chargepoint



Affordable MF charging. Photo: Chargepoint

EBCCE's Equitable EV Fast Charging Network

Scope

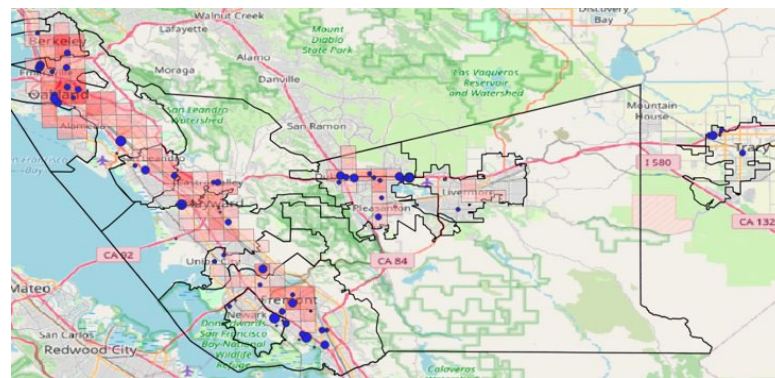
- 40-50 DCFC "hubs" by 2030
- Standard design: min. 10 DCFCs
- Site hosts: Phase I - municipal parking lots/garages/ROW stalls
- Site priorities: In MF hotspots & adjacent to driver amenities
- Contracting with private developers to build and operate sites with availability requirement

Funding

- EBCE BoD approved budget
 - \$30M 2023 - 2033
 - external grant support
- EBCE will provide discounted customer charging compared to private sector



DCFC Hub Example



Existing DCFCs + MF Hotspots: BIG gaps

EV Fast Charge Network: Results/Impact

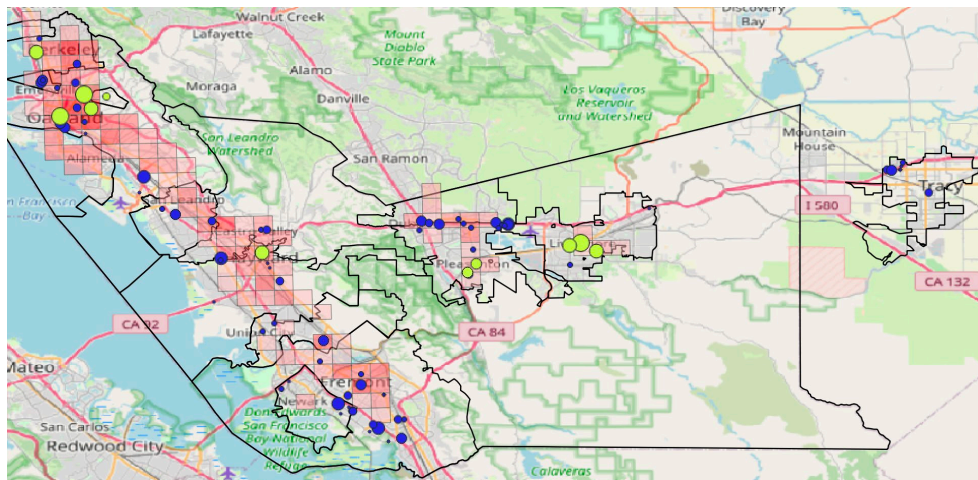
of Site License Agreements w/cities

- **11 SLA/MSLAs** across **8 cities** (signed or in-progress)
 - Represents 1,000+ parking stalls

Phase I Project Portfolio

- 11 sites
- 114 DCFCs, 214 EV-only stalls
- PG&E Service Planning
 - Conceptual design phase: 4 sites
 - Assessment phase: 2 sites
 - Design phase: 2 sites
 - Contract signed: 1 site

First light-duty hub Operational Date: Q2 2024



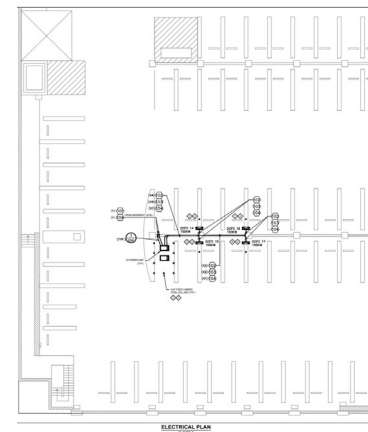
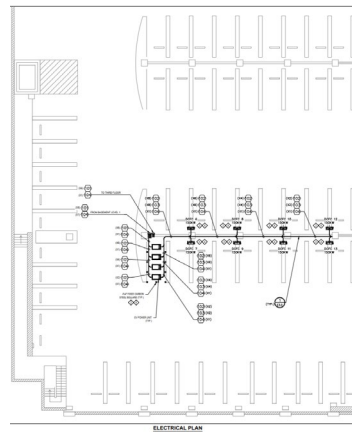
EBCE Proprietary Siting tool to prioritize
Phase I Project Portfolio
(filling gaps!)

EV Fast Charge Network: Project Example

Oakland City Center West Garage (CCWG)
(1,461 total parking stalls)

- 17 DCFCs
- 32 EV-only spaces (on 3-floors)
- Garage will be accessible 24/7
- No fee for entering parking garage (validation up to 60 min.)
- Within 1-mile:
 - 526 multifamily properties
 - 18,474 multifamily units

- CCWG
- Multifamily Properties



Municipal Fleet Electrification: Results

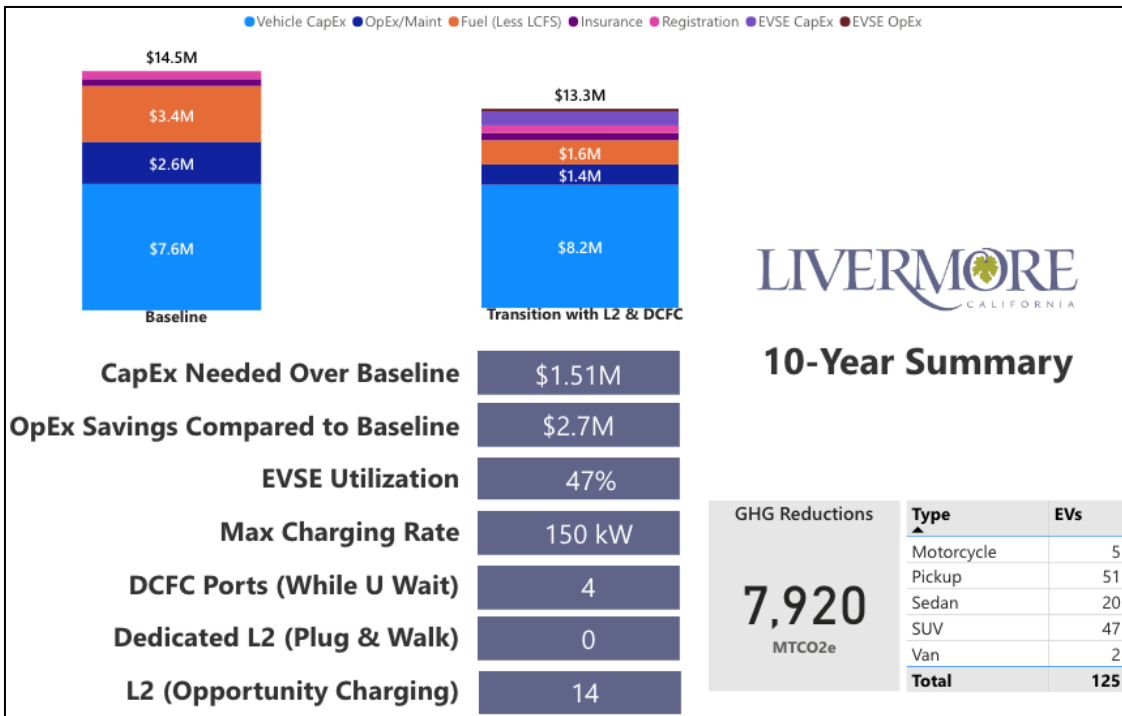
EBCE provided free fleet electrification technical assistance to member jurisdictions

Plans Completed (1-transit bus fleet) (12-light-duty fleets)	EVs Recommended	Fleet Facilities Assessed	Level 2 Chargers Recommended	DCFCs Recommended	Annual kWh Needed	Investment Required
13	2,297	109	995	41	2,339,971	\$84,617,197

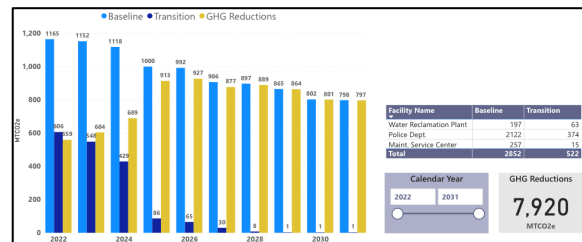
Cities leveraged plans/took action:

- Berkeley approved budget for fleet charging infrastructure
- Oakland purchased some EVs & is using plan to request additional budget
- Dublin applied for EBCE's CALeVIP incentives for charging infrastructure
- Hayward approved \$3M annual budget for vehicle replacement
- Pleasanton making Council budget request (vehicle replacement & charging infrastructure)
- Tracy is working plan into Council budget request
- Union City Transit placed order for electric buses, working w/EBCE on CaaS Agreement

Fleet Electrification Plan Example



Facility Name	L2 EVSE	DCFC	EVSE CapEx	EVSE OpEx
Fire Station #1	1	0	\$119,400	\$6,000
Library	1	0	\$50,160	\$6,000
Maint. Service Center	2	0	\$137,160	\$12,000
Police Dept.	1	2	\$560,210	\$126,000
Water Reclamation Plant	2	0	\$81,720	\$12,000
Total	7	2	\$948,650	\$162,000



Municipal Fleet Electrification: Next Steps

EBCE to support cities by offering a Charging-as-a-Service product

- Agreement between EBCE/City
- EBCE responsible for upfront cost, procurement, installation, O&M of charging infrastructure
- City pays EBCE annual fee to recover costs over 10-year period
- Enables cities to focus limited budget on vehicle transition

Explore collaborative EV procurement options that enable rapid EV deployment

Offer additional free technical assistance Fleet electrification plans for M/HD vehicles

- Applies to jurisdictions that must comply with CARB's pending ACF regulation
- 50+ M/HD on-road vehicles
- Alameda County, Berkeley, Oakland, Hayward, Fremont, Livermore, Tracy
- Meet with Stockton

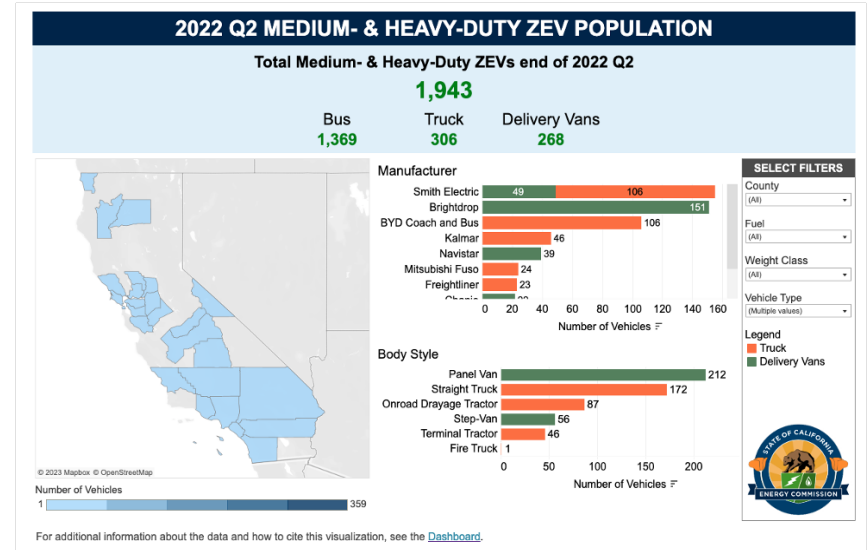
Zero-Emission (ZE) M/HD Goods Movement

Setting the Stage: Regulations

- Advanced Clean Trucks:
- Requires manufacturers to sell an increasing percentage of ZE HD trucks into the market starting 2024.
- Advanced Clean Fleets:
 - Fleet purchase requirements starting 2024: Drayage, High Priority and Public w/50+ M/HD vehicles
 - M/HD manufacturer 100% ZE vehicle sales starting 2036 (Class 2b-8)

Purpose

- Expand public health benefits
- Provide emission reductions to meet GHG/climate targets
- Accelerate market for ZE trucks and vans



ZE M/HD Goods Movement: ZE Blueprint

What: CA Energy Commission grant

Purpose: Develop plan for EBCE's service area, informed by data and multi-agency/stakeholder consensus, that serves as the guide on how we support vehicle operators transition to ZE M/HD trucks & vans

Goals:

1. Establish baseline: ecosystem of vehicles/operators
 - DMV data analysis: ~40K total M/HD vs ~16K goods movement vocations)
 - Internal mapping
2. Assess solution readiness & forecast needs
 - Vocations w/market ready vehicle options
 - 2,800+ vehicle operators (1,595 single truck)
 - ~9,000+ vehicles; establish priority Tiers
 - + infrastructure, financing, workforce
3. Evaluate stakeholder & community benefits
4. Priority actions in 5 areas: **vehicles** (ex. Technical Assistance), **infrastructure**, **financing** (ex. Forum Mobility loan), **workforce**, **community benefits**

Outcomes:

- 1st mover market for ZE Class 3-6 (MD) by 2028
- 100% ZE drayage trucks (Class 7-8) by 2035
- 100% ZE for all other Class 7-8 by 2040
- Unlock funding opportunities



EBCE's Ride Electric E-Bike Program

Increasing access to electric bikes with at least 40% of the benefits going to EBCE CARE customers

- Marketing, Education, & Outreach
- Short-term lending
- Ownership

3-year, \$10 Million program

- \$6M EBCE net revenue and \$4M Alameda County Transportation Commission (ACTC)
- 20% for lending and 80% for ownership

Coordination and alignment with peer e-mobility programs: City of Oakland, City of Berkeley, CARB

Draft Timeline: Contracting in May, Soft Launch by September, & Full Launch by EOY

Ride Electric Interventions: Try and Buy

Short-Term Lending

- 5-7 Physical locations across our service area
- 1-2 week experience
- Training (e-bike & road safety) and helmet & lock provided
- 4,000 - 6,000 sessions/year

Ownership

- Point-of-sale incentive with higher incentive for CARE customers
- Priority for local bike shop purchasing and an on-line marketplace to supplement.
- ~7,000+ expected bike purchases

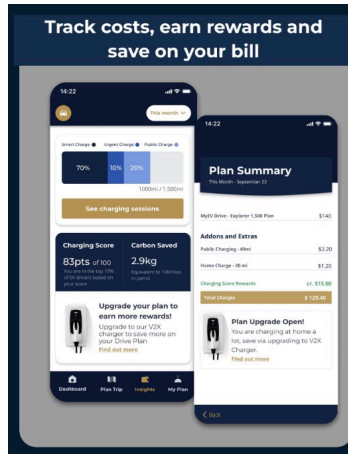


Grid Services Energy Efficiency

Advancing Grid Reliability via DR

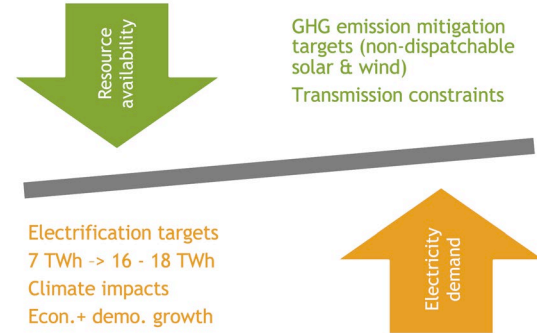
Via existing programs + pilots:

- OhmConnect Resource Adequacy
- Critical Municipal Facilities LMA
- Resilient Home LMK
- Smart EV Charging Pilot



By examining future

Why Grid Services?



Working Group to:

- Interview DR providers
- Review other CCA programs
- Examine DR platform options
- Develop recommendations for a demand response strategy

Energy Efficiency Program

Program Objectives: 1) Deliver cost-effective energy savings, 2) Cross-promote demand response to maximize peak load reductions, and 3) Encourage electrification of existing gas end uses

Program Design

- Strategic Energy Management (SEM)
- Targets 34 high usage C&I customers across ~100+ sites
- Technology agnostic (includes building optimization + capital projects)
- Incentives paid directly to customers

Program Benefits

- High cost-effectiveness
- High customer touchpoint (brand recognition and relationship development)
- Opportunity to test strategies for electrification

Three Year Program Goals

Energy Efficiency

Incentive budget	\$3 M
kWh Savings	29,000,000

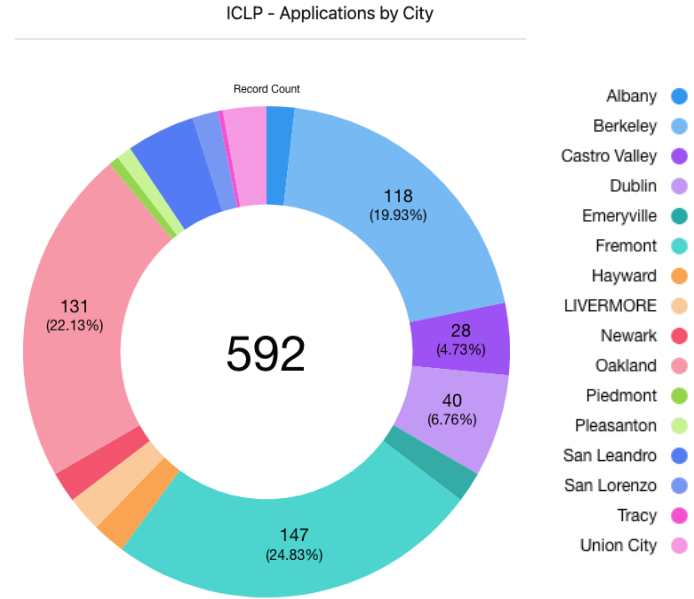
Electrification

Incentive Budget	\$5 M
Net kWh savings	14,000,000
Therm savings	700,000
No. of projects	12-20

Building Electrification / Grants

Induction Cooktop Lending Program

- Launched May 2022, over 590 applications have been submitted, with 261 completed lending sessions
- across all EBCE Cities
- 11 distribution locations throughout
- Working through longer lead times by adding more kits and distribution hubs
- Developing parallel content development campaign to generate awareness
- EBCE pre and post participation surveys indicate strong increase in desire to transition to induction technology



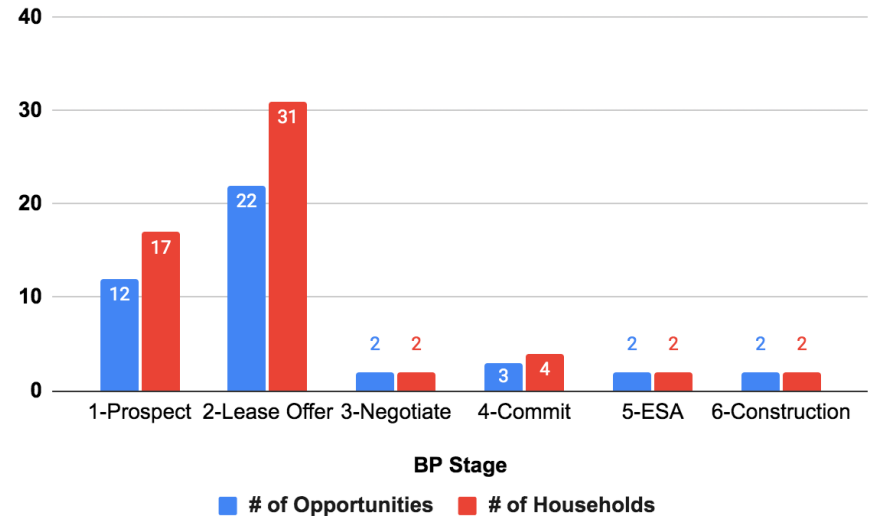
Induction Related Marketing and Outreach

- [Videos](#) featuring well-known local chefs trying or promoting induction
 - More than 80,000 views
- Induction cooking classes and demonstrations
- Social media campaigns to boost brand awareness and engagement while promoting induction
 - [Clean Cooking Contest](#)



Health-e Home Low/Moderate Income Program

- Partnership with BlocPower to deliver electrification and energy efficiency to Low (CARE) and Moderate Income (<120% of area median income) EBCE customers
- EBCE providing incentives (\$400k) and low-cost financing (\$1M) to BlocPower to fund project development and increase customer eligibility for financing
- Target of 60 homes by end of 2023, 30 sales by July



Community Investment Grants

- FY'23 budget approval for 3 year, \$4.2M Community Grant fund
- Board directed staff to consider fewer, larger grants that are multi-year, to invest in CBO engagement and capacity building (\$100k/year)
- Grants will be focused on promoting EBCE Programs and raising awareness
- Setting up community feedback session with CAC in June

Funding Category	Transportation Electrification	Building Electrification	Community Resilience	Energy Efficiency
Program Enrollment				
Workforce Development				
Education / Awareness				

Resilience

Resilient Home

Residential Solar and Storage

Partnership with Sunrun for 5MW of Load Reduction via 2,000+ residential systems in Virtual Power Plant (VPP)

- Single and multi-family residents
- All systems provide backup power
- Since 2020 launch:
 - 1,600+ EBCE leads
 - ~1,200 participating customers
 - 1.8 MW/ac load reduction capability
 - 7 MW solar PV installed
 - 55 MWh to grid in 9/22 heat storm
 - Additional sales to continue to build the portfolio planned for 2023



East Bay Community Energy

December 21, 2022 at 6:30 PM · 🌐

Don't get caught in the dark. EBCE's Resilient Home program makes it easy to see your options for switching to solar energy. Apply now and get \$500 back after installation. Learn more here: <http://ow.ly/2tty50M1z2W>

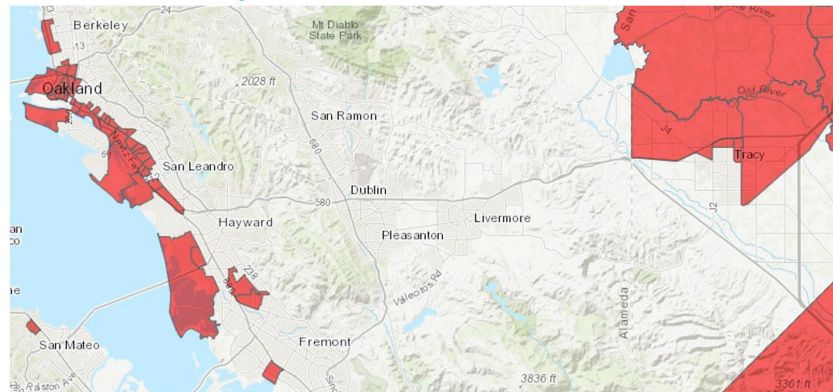


Community Solar

Developing renewable energy in underserved communities:

- CPUC-funded programs administered by EBCE
 - Disadvantaged Communities Green Tariff (“DAC-GT”) @5.7MW / ~1,700 customers
 - Community Solar Green Tariff (“CSGT”) @1.6MW / ~450 customers
- Low-income customers in DACs receive 20% discount on bill w/ 100% solar energy
- CSGT projects require a sponsor and site within five miles of the community served
- RFO 12/22, offer review in progress

Snapshot of DACs in EBCE’s service



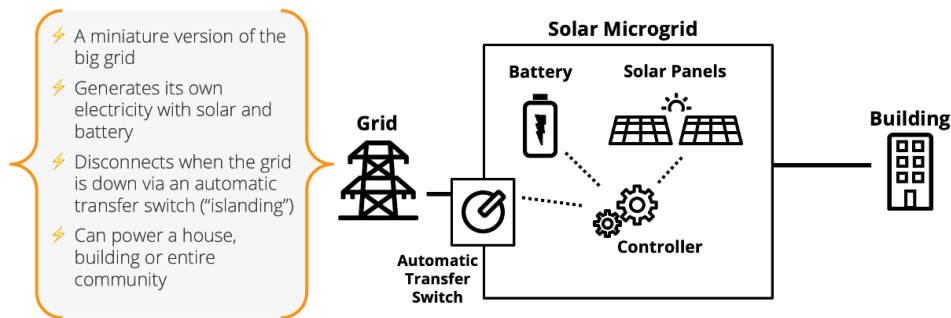
EBCE cities with CES 3.0 and 4.0 DAC census tracts include: Oakland, Tracy, San Leandro, Hayward, Union City, Emeryville, Berkeley, and Newark.

Resilient Critical Municipal Facilities I

Solar + Battery Energy Storage for Public Services

All Cities contacted to participate in ongoing program to provide clean energy for critical municipal facilities to advance energy resilience and climate action

- Phase I: Berkeley, Hayward, Fremont, San Leandro
 - RFO: Summer 22, assessed Fall 22, vendor selected Winter 22/23
 - EBCE-paid NEM 2.0 applications + competed for \$2M in fed. Funds
 - Contract by May 2023 for 3 MW solar + 6 MW storage across 30 sites ranging from fire stations to senior centers
 - Largest procurement of its kind to date
 - Microgrids will be complete in 1 year from construction start



EBCE's Critical Municipal Resilience Program: Phase 1 Portfolio



Participants

Berkeley
Fremont
Hayward
San Leandro



Facility Types

Fire Stations
Police Stations
Corp Yards
Libraries
Aviation Facilities
Recreational Facilities
Water Treatment Plants
Community/Senior Centers
Emergency Operations Centers



Operational Goals

Backup power for 3 days for critical loads*

Resilient Critical Municipal Facilities II

Solar + Battery Energy Storage for Public Services

Next phases build on proven approaches to engineering, funding and procurement and piloted in Phase 1.

- Phase II: Emeryville, Livermore, Oakland, Pleasanton
 - EBCE-paid applications for NEM 2.0 + pursuing earmarks
- Phase III: Albany and Piedmont passed participation resolutions; Stockton planning to participate upon joining
 - Open call for more participants!
- Aiming to scale up and out via EBCE pursuit of \$35M from DOE to support battery purchase, facility repair, electrification and VPP as a part of \$10.5B in federal grid and community resilience funding via 2022 IIJA



SYSTEM INFO	
SYSTEM SIZE	: 53.9 kW DC; 45.6 kW AC
PV MODULE	: (110) HANWHA Q CELLS, Q.PEAK DUO XL-G10.2 490
INVERTER TYPE	: (4) SOLAREEDGE TECHNOLOGIES LTD. SE11400H-US [240V][S11-JUN20] INVERTER
BATTERY TYPE	: (1) ENERGPORT L3077 (309.6 KWH TOTAL)
BATTERY INVERTER	: (1) SHENZEN SINEXCEL ELECTRIC CO., LTD. SINEXCEL PWS2-30K-NA (30KW)

THANK YOU

ADDITIONAL PROGRAM ACTIVITIES

M/HD Fleet Electrification Technical Assistance

Blueprint Actions: Vehicles, infrastructure, financing

2022 Pilot Project: EBCE 1st to offer comprehensive TA

- 3 private sector goods movement operators + 1 transit bus fleet (Union City)
 - Fleet & charging assessments w/TCO analysis
 - Transition Plan + ongoing incentive/grant application support
 - Union City Transit procured buses; working w/EBCE on deploying fast charging through CaaS offer
 - Other fleets working through current lease barriers / budget considerations

Next Steps: Scale Technical Assistance Pilot - 2023-2024 Program

- Eligibility:
 - Fleets (5+ vehicles) subject to ACF and have:
 - Class 3-6 vehicles in vocations w/commercially available ZE vehicles today
 - Class 7-8 vehicles running short-haul or regional drayage
 - And/or any Class 3-8 fleet w/commercially available ZE vehicle located in DAC/LIC/Justice 40
 - No Fortune 500 companies that already have support



Outcomes

- 4 large fleets: 50-100 vehicles
- 10 medium sized fleets: 25-49 vehicles
- 9 small fleets (5-24 vehicles)
- 5 ACF compliance only
- At least 5 fleets apply for incentives/grants
- Secure 2 anchor tenants to potential EBCE fast charging hub
- NOTE: EBCE to revisit Program scope per pending PG&E TA program available Q2 2024; aim to fill gaps

Heavy-Duty Drayage Truck Charging Loan

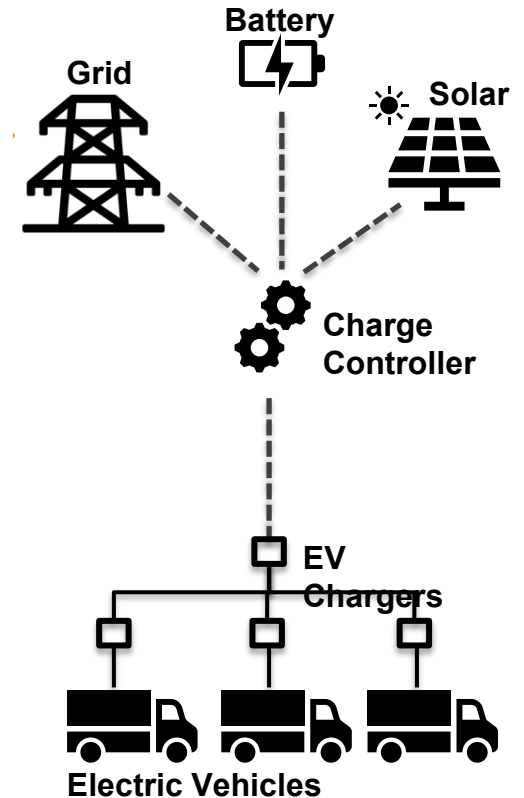
Related Blueprint Actions: Financing, Infrastructure, Vehicles

Overview

- Forum Mobility (FM) will develop the Greenville Charging Depot (Livermore)
- Capable of charging 100 HD drayage trucks/day
- Total cost: \$14.3M; EBCE loan to FM: \$4.5M
- Plans to include solar + battery storage after initial deployment
- Construction will be completed with prevailing wage labor
- Project will use RE100 as a zero-carbon intensity transportation fuel; reducing emissions / improving human health outcomes
- Forum earns revenue via leasing drivers' electric trucks and fee for recharging
- Revenue will payback EBCE loan

Loan Details

- EBCE providing 10-year \$4.5 million loan at 5% to Forum Mobility, generating \$1.25M in interest income
- Loan will be funded after project completion and is secured by deed of trust and parent guarantee



Heat Pump Water Heater Incentive for

- **Regional program provides incentives to contractors who replace gas water heaters with heat pump water heaters (HPWHs) in eligible customers' homes in six of the nine Bay Area counties + Santa Clara and Tracy**
 - Administered by StopWaste, funds for incentives from local energy providers/CCAs
 - \$1000/HPWH to contractor (midstream incentive)
- **352 HPWH installations in EBCE territory (Sept 2020-March 2023)**
- **Key lessons learned:**
 - High volume and emergency replacements are more challenging
 - Homeowner education/awareness of HPWHs is key to build demand
 - High contractor workload already, can be slow to respond to interested customers
 - **Opportunity for workforce development**
- **Additional \$300,000 in funding for a total of \$660,000**
 - These funds to bridge gap until state funds from TECH initiative/SGIP become available late summer 2023

Strategic Natural Gas Decommissioning

- A key challenge facing CA: How to equitably decarbonize buildings in a way that supports and meets the needs of communities while reducing greenhouse gas emissions?
- One hypothesis: targeted electrification combined with strategic decommissioning of gas infrastructure can reduce gas system costs and help mitigate future rate impacts for remaining gas customers
- This project: will develop critical data and information to inform and evaluate the gas decommissioning hypothesis and will develop a deployment plan for three pilot sites to test this hypothesis
- Project Team: EBCE, Energy and Environmental Economics (E3), and Gridworks
- EBCE's Role:
 - Inform evaluative criteria and actionable deployment plans based on community perspectives.
 - Gain insight on community specific input on propensity to electrify and understand specific community issues
 - Refine recommendations for pilot selection criteria based on learning outcomes
 - Develop deployment plans for zonal electrification at three pilot locations
 - This research project positions EBCE well for pursuing funding from the CEC for deployment of this project at a later date

Medical Baseline Pilot Program

Free Portable Backup Batteries

- 50 Goal Zero Yeti 3000X purchased by EBCE (retail \$3,399)
- Targeted outreach conducted to EBCE's low-income MB customers
- Partnered with CBO Community Resources for Independent Living (warehouse & delivery)
- All batteries distributed
- Battery recipients: Albany, Berkeley, Fremont, Hayward, Livermore, Oakland, San Leandro, San Lorenzo, Sunol, Union City

MB \$1,000 Rebate (Goal Zero Yeti 3000X)

- Outreach ongoing to all MB customers in service area
- Specific outreach message to residents in High Fire Threat Districts
 - EBCE + PG&E rebates = \$2K off cost
- 30 rebates paid to date; ~80 remaining

