

Clean Energy for Healthy Affordable Housing

October 20, 2020

ELPN

EMERGING
LEADERS
PEER
NETWORK

Learn together.
Spark action!

Affordable housing careers start
with amazing networks.

NPH
NORTHERN
CALIFORNIA

Housekeeping

- Audio and video for all attendees are disabled.
- We are recording this session.
- We are collecting audience questions only through the Q&A chat box.
 - Dial-in participants do not have access to the Q&A chat box.
- Make sure your Zoom name displays your name and employer.

Partners



**California
Housing
Partnership**

*California's Experts on Affordable
Housing Finance, Advocacy & Policy*



Northern California
Rising Leaders
Committee

SPEAKERS



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SPEAKERS



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SPEAKERS



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AGENDA

- Policy Landscape + Q&A
- Clean Energy Programs Overview and Co-Leveraging + Q&A
- *Stretch Break*
- USGBC, Housing and Sustainability
- Design Considerations for Clean Energy Transition
- Q&A

TAKEAWAYS

By the end of this webinar, you will have:

- An overview of the main clean energy programs specific to existing affordable housing in the Bay Area
- An understanding of how clean energy can benefit residents in affordable housing communities, increase community health, and lower operating costs for property owners/managers
- The basic knowledge you need to apply to programs and secure funding to shift to clean energy in multi-family properties
- Resources and strategies for deepening your organization's sustainability work



POLICY LANDSCAPE

CALIFORNIA'S ENERGY GOALS

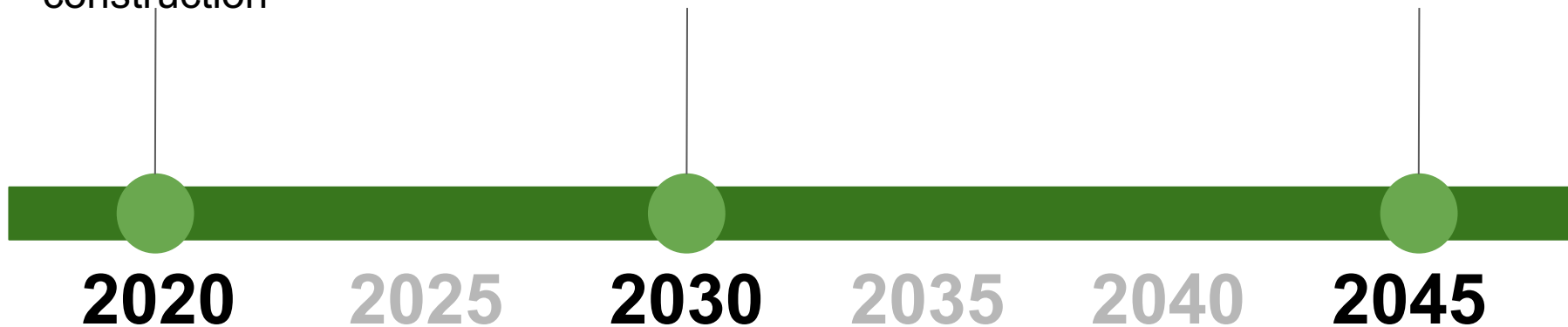
- California has adopted aggressive greenhouse gas emission targets

35+ reach codes

favoring or requiring
all-electric new
construction

50% of electricity
must be generated
by renewable energy

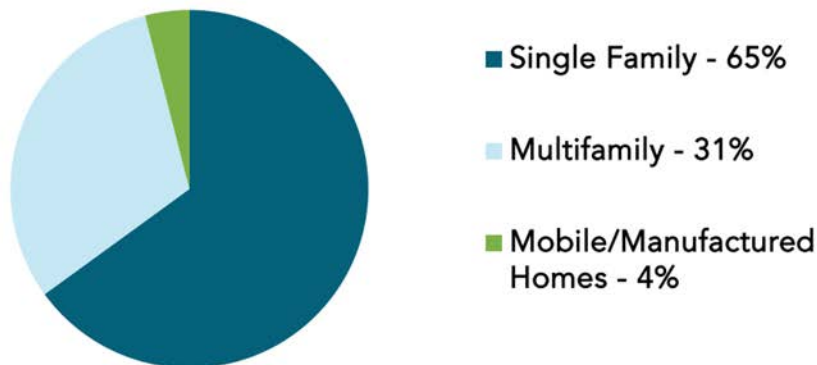
100% net-zero
carbon electricity



WHY DOES THIS MATTER?

California Housing Stock by Type
2011-2015 Average: Multifamily, Single-Family, and Mobile/Manufactured Homes/Other

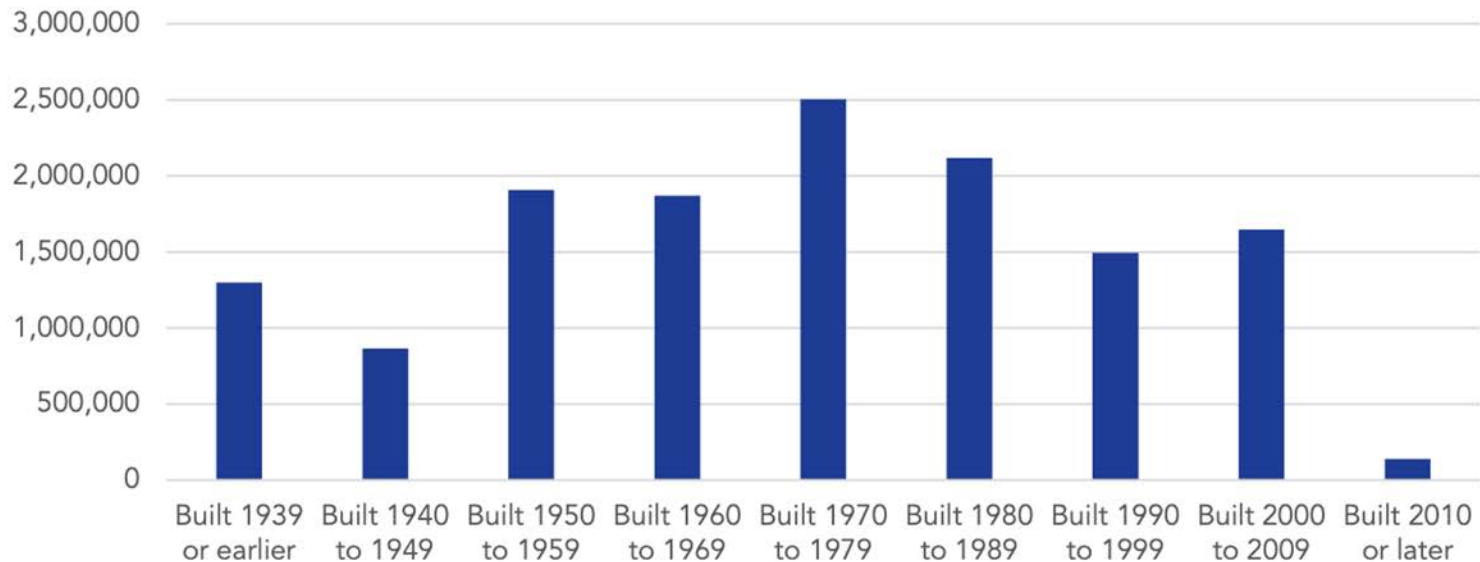
Housing Type	Total Number of Homes (million)
Single-Family (1 unit detached or attached)	9.00
Multifamily (2 or more units)	4.32
Mobilehomes/Manufactured Homes/Other	0.53
Total	13.85



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, DP04 Selected Housing Characteristics. Graphic by HCD.

WHY DOES THIS MATTER?

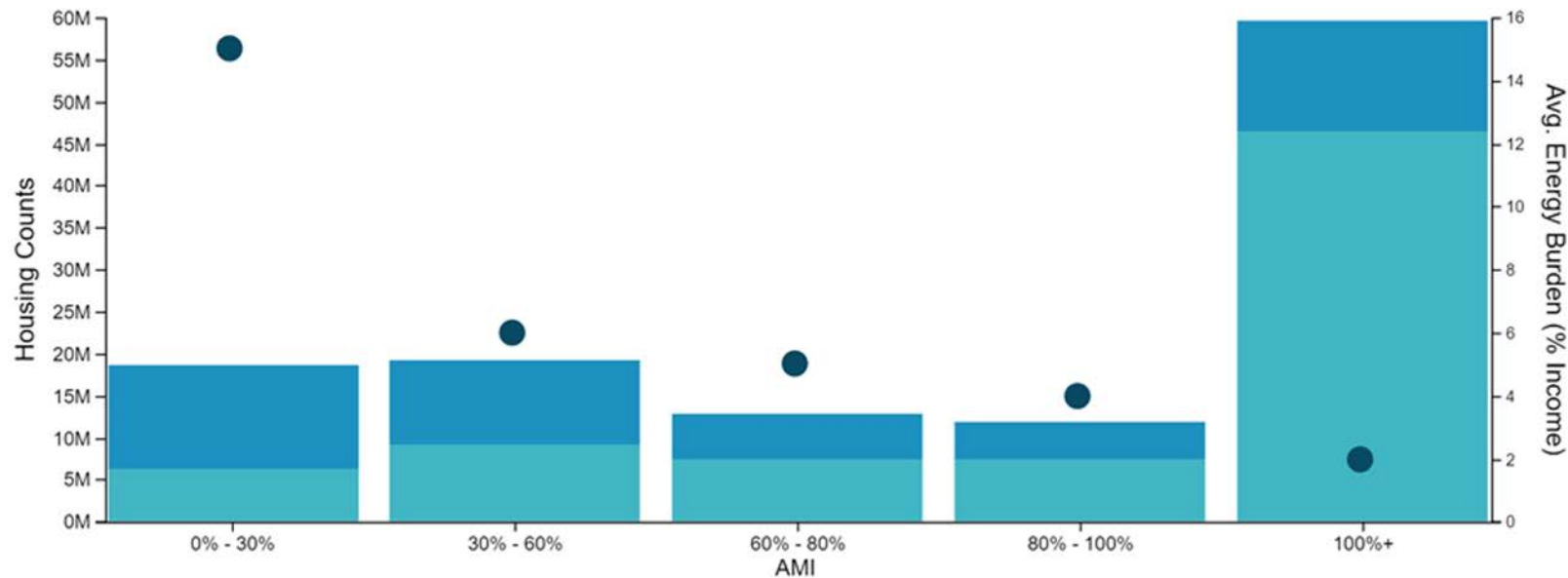
Majority of California Housing More Than 35 Years Old
Age of Housing in California 2011-2015 Average



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, DP04. Graphic by HCD.

WHY DOES THIS MATTER?

Housing Counts for the United States



The United States

- Renter-occupied
- Owner-occupied
- Avg. Energy Burden (% Income)

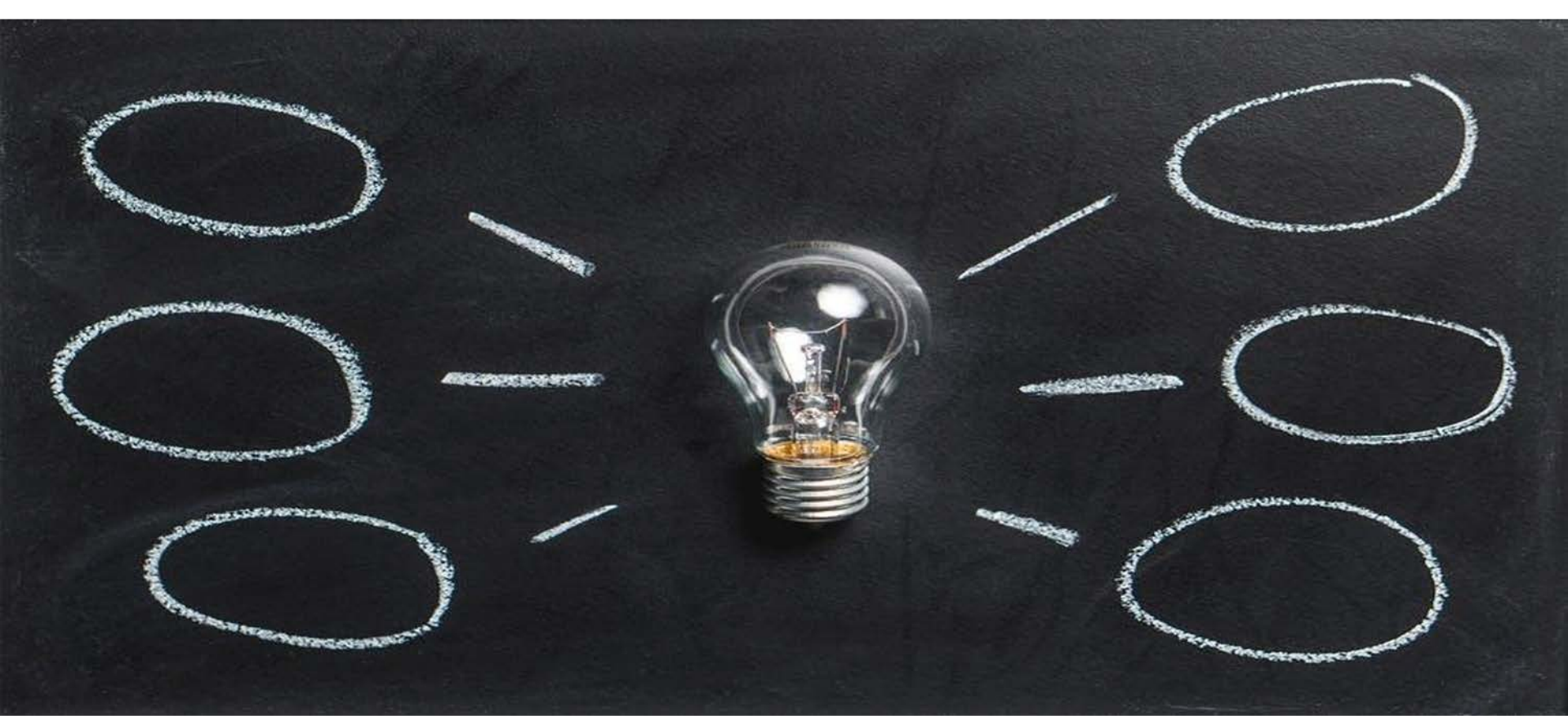
WHY DOES THIS MATTER?

- To achieve CA's energy goals, multifamily housing cannot be ignored
- Policies like **AB693** lay a foundation for multifamily participation in clean energy programs



POLICY: LOOKING AHEAD

- Recommendations:
 - Prioritize the distribution of clean energy infrastructure to historically underserved communities
 - Balance the integration of clean energy in both retrofits and new construction
 - Continue to focus on building resiliency and providing a pathway to participate in building electrification and clean energy benefits for low-income communities



CLEAN ENERGY PROGRAMS

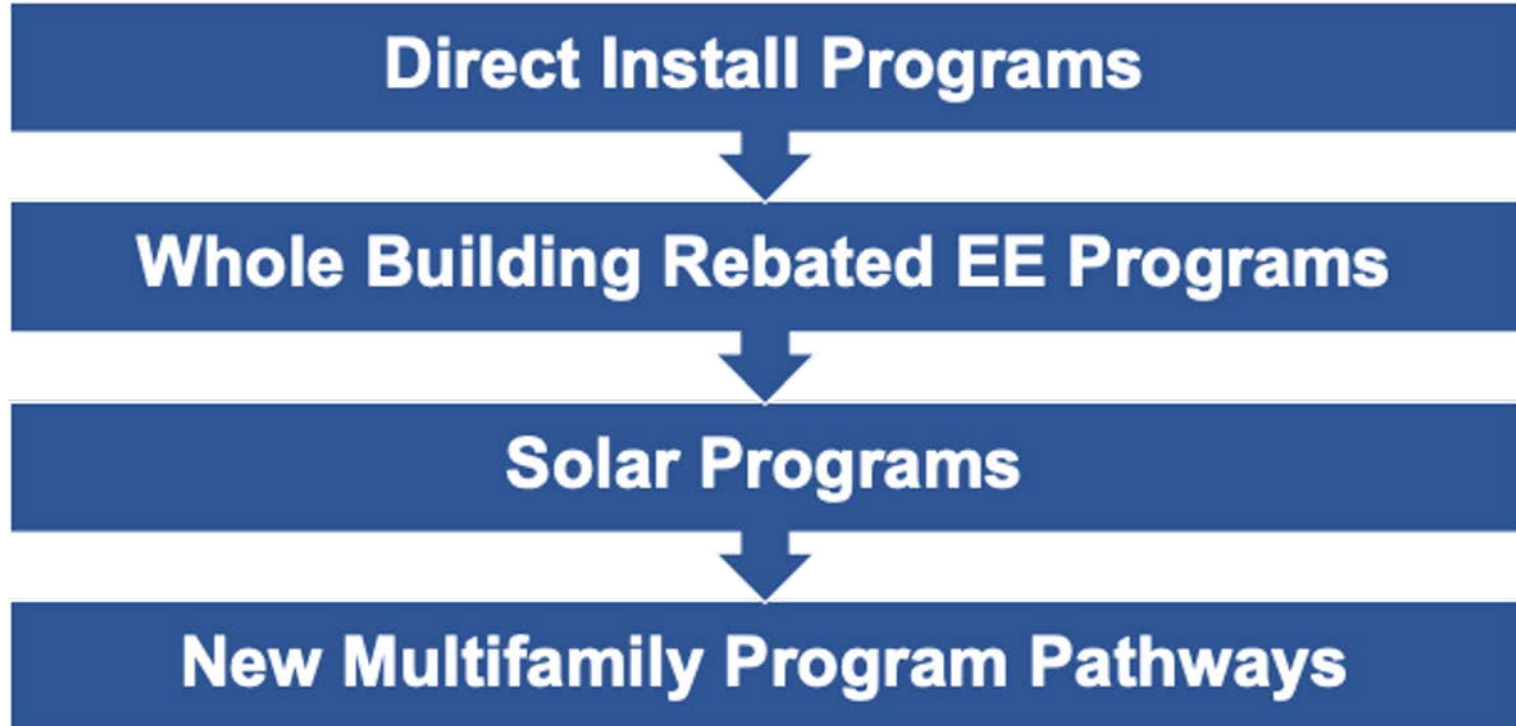
WHY INVEST IN CLEAN ENERGY PROGRAMS?

Investment in clean energy programs can have wide-reaching benefits for affordable housing owners and their tenants, including:

- Lowered operating costs and increased cash flow
- Improved resident health and wellbeing
- Enhanced building resilience
- Support investments in deeper energy-savings measures



TYPES OF CLEAN ENERGY PROGRAMS



DIRECT INSTALL (DI) PROGRAMS

- Materials and installation services are provided at no cost
 - No upfront costs for property owners or residents to enroll
 - Fixtures and equipment typically selected by program
 - Specific measures depending on program
 - Utilities may have various DI programs for different measures
 - Can often enroll in multiple programs if needed
 - Program typically selects contractors

ENERGY SAVINGS ASSISTANCE PROGRAM

ESA In-Unit

- No cost weatherization services to low-income residents
- In-Unit measures include:
 - Attic insulation, energy efficient appliances, low-flow devices, building envelope repairs

ESA Common Area Measures (ESA-CAM)

- Properties must be deed restricted and must certify that tenant households meet ESA income guidelines
- Measures covered by ESA CAM will be evaluated on a

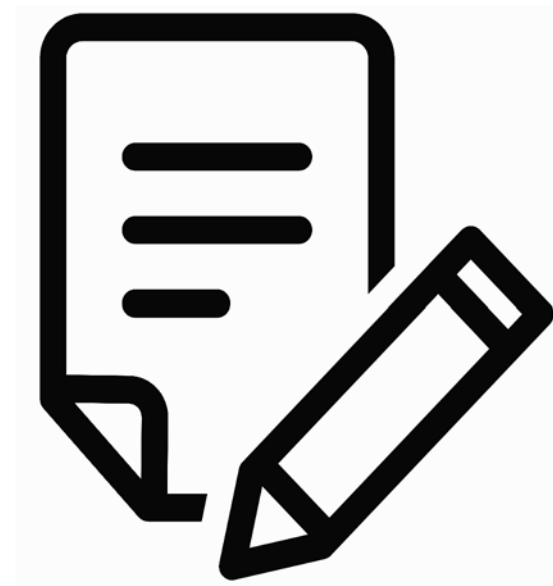


ENERGY SAVINGS ASSISTANCE PROGRAM

COMMON AREA MEASURES

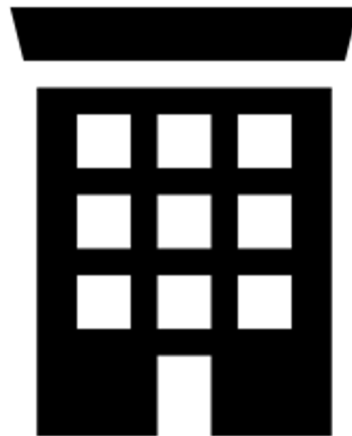
Here's how to get started:

- **Energy Savings Assistance In-Unit**
 - Learn more about the [eligibility requirements](#)
 - Have residents complete the [resident application](#)
- **Energy Savings Assistance Common Area Measures (ESA-CAM)**
 - Learn more about the ESA-CAM property [eligibility requirements](#)
 - Submit an [interest form](#)
- **Contact:** multifamily@trcsolutions.com or 1-800-933-9555



WHOLE BUILDING REBATED EE PROGRAMS

- Often provide free audit and/or technical assistance
 - Single Point of Contact
- More comprehensive energy savings
 - Minimum energy savings to enroll
 - Assess whole building energy usage
 - More measures often eligible than DI programs
- Flexibility and choices
 - Fixtures, finishes, and contractors can be selected
- Rebates: only partial cost coverage
 - Paid at end of project
 - Upfront capital needed



WHOLE BUILDING REBATED EE PROGRAMS

- **Statewide**

- Low-Income Weatherization Program for Multifamily (LIWP-MF)
- IOU Whole Building Programs (in development, 2021)

- **Regional**

- Regional Energy Networks - BayREN
- Programs offered by CCAs



LIWP-MF OVERVIEW

- Single program that offers whole building energy efficiency, solar thermal, and solar PV for existing multifamily properties
- All measures that result in greenhouse gas (GHG) reductions are eligible



Energy Efficiency



Solar Photovoltaics



Solar Thermal



LIWP-MF UPGRADES AND PROGRAM COORDINATION

- Aims to install cost-effective energy improvements that create **at least 15% savings** above existing conditions
 - Incentives can be used in conjunction with other major funding sources
- Eligible energy efficiency upgrades include:
 - Heating and cooling systems
 - Water heating systems
 - Lighting and appliances
 - Building sealing & insulation
 - Solar PV and solar thermal



LIWP-MF NEXT STEPS

- Thinking of applying? **Submit an [interest form](#)!**

5 SIMPLE STEPS TO PARTICIPATE

(1)

Complete an
interest form or
contact us

(2)

Receive free
technical support

(3)

Reserve financial
incentives

(4)

Install upgrades
at your property

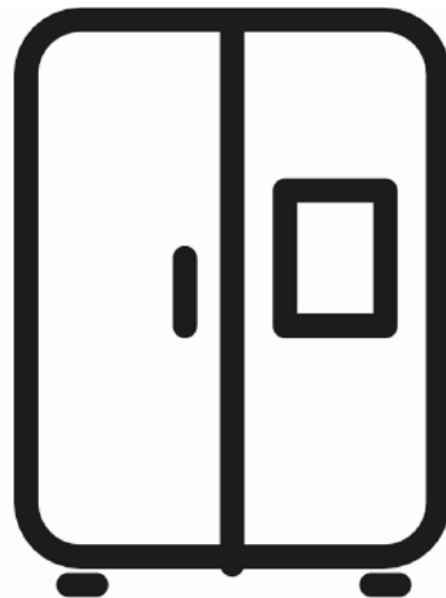
(5)

Claim your
financial
incentives

BAYREN BAY AREA REGIONAL ENERGY NETWORK

Bay Area Multifamily Building Enhancement Program

- Assists with planning energy saving improvements designed to save 15% or more of a building's energy and water usage
 - Provides \$750 per unit
- Improvements can include:
 - Heating and cooling systems
 - Water heating systems
 - Gas to electric conversions
 - Lighting and appliances
 - Electrification Measures
 - & More!



SOLAR PROGRAMS

- **Investor Owned Utility (IOU) Specific Programs**
 - Low-Income Weatherization Program Multifamily Program (LIWP-MF)
 - Solar on Multifamily Affordable Housing (SOMAH) Program
 - Multifamily Affordable Solar Housing (MASH) Program
- **Regional Programs**
 - CCA Solar Programs



PROGRAM OVERVIEW



- Solar access for tenants of qualifying existing affordable housing properties
- Up to \$100 million annually through 2030
 - **\$37,310,501 available for projects in the PG&E territory**
- Solar financial benefits to reduce tenant energy cost burden and owner operating costs
- One stop-shop program model



INCENTIVES & BENEFITS



- Incentive rates are determined by the tenant/common area allocation
- Incentives are reduced annually (July 1st)

- Benefits of SOMAH include:
 - Savings on energy costs
 - Provides financial benefits to your tenants
 - Supports economic growth
 - Supports a healthy California

ITC	LIH TC	Tenant	Common
No	No	\$3.04	\$1.04
Yes	No	\$2.14	\$0.76
No	Yes	\$2.14	\$0.76
Yes	Yes	\$1.52	\$0.57

TWO PARTICIPATION TRACKS



Upfront TA (Track A): Projects selecting upfront technical assistance - **21 months**



Reservation (Track B): Projects not selecting upfront technical assistance - **18 months**



SOLAR PROJECT EXAMPLES

(NO TAX CREDITS APPLIED)



EXAMPLE 1:

Tenant share: **55%**
Common area: 45%

System size: 27.3 kW

Tenant load: 15 kW
Incentive: **\$45,600**
(15,000 watts x \$3.20)

Common area load: 12.3 kW
Incentive: **\$12,792**
(12,300 watts x \$1.10)

Total incentive: \$58,392

EXAMPLE 2:

Tenant share: **85%**
Common area: 15%

System size: 27.3 kW

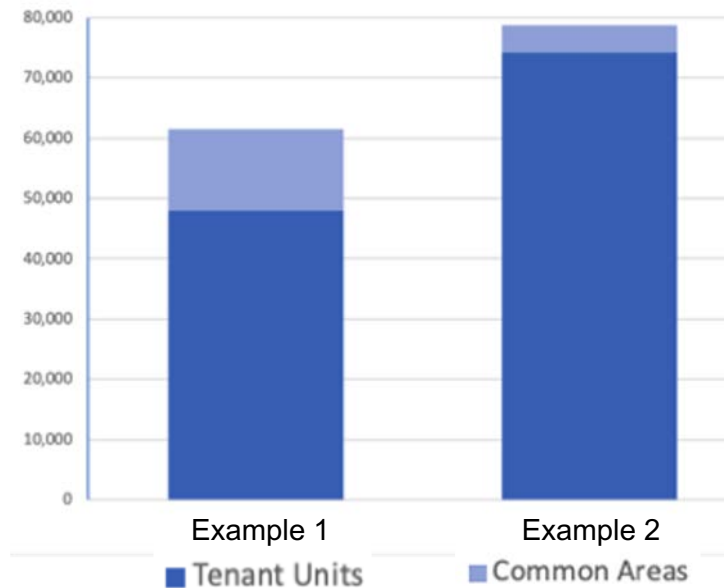
Tenant load: 23.2 kW
Incentive: **\$70,543.20**
(23,205 watts x \$3.04)

Common area load: 4.1 kW
Incentive: **\$4,258.80**
(4,095 watts x \$1.04)

Total incentive: \$74,802

TAX CREDITS		\$ PER AC WATT INCENTIVE	
ITC	LIHTC	TENANT	COMMON AREAS
No	No	\$3.20	\$1.10

Total Incentive by Tenant-Owner Split (\$)



SOLAR PROJECT EXAMPLES

(LIHTC & ITC APPLIED)



EXAMPLE 3:

Tenant share: **55%**
Common area: 45%

System size: 27.3 kW

Tenant load: 15 kW
Incentive: **\$22,800**
(15,000 watts x \$1.52)

Common area load: 12.3 kW
Incentive: **\$7,011**
(12,300 watts x \$.57)

Total incentive: \$29,811

EXAMPLE 4:

Tenant share: **85%**
Common area: 15%

System size: 27.3 kW

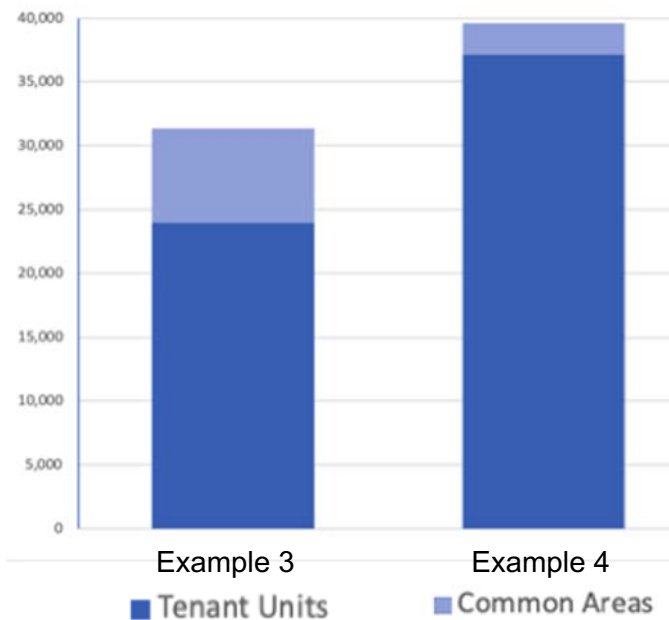
Tenant load: 23.2 kW
Incentive: **\$35,271.60**
(23,205 watts x \$1.52)

Common area load: 4.1 kW
Incentive: **\$2,334.15**
(4,095 watts x \$.57)

Total incentive: \$37,605.75

TAX CREDITS		\$ PER AC WATT INCENTIVE	
ITC	LIHTC	TENANT	COMMON AREAS
Yes	Yes	\$1.60	\$0.60

Total Incentive by Tenant-Owner Split (\$)





FUNDING AVAILABILITY

\$37,310,501 available for projects in the Pacific Gas & Electric (PG&E) territory for 2020

How to get started?

- Contact Rachael Diaz at rdiaz@chpc.net for an interest call
- Visit CalSOMAH.org for [email signup](#) to receive program news
- Submit [Upfront Technical Assistance](#) request form

SOLAR PROGRAM SUMMARY

Program	LIWP	SOMAH	MASH
Eligibility	≥ 66% of units at 80% AMI and in DACs, available to all utilities (not just IOUs)	≥ 80% of units at 60% AMI <u>or</u> in DAC (IOUs & CCAs only)	≥20% of units are low-income and In IOUs (PG&E, SCE, SDG&E only)
Tenant PV incentive *	\$3.50/W-DC	\$3.04/W-AC	\$1.80/W-AC
Common areas PV incentive *	\$1.10/W-DC	\$1.04/W-AC	\$1.10/W-AC
Tenant PV share	0 – 100%	≥ 51% required	0-100%
Tenant solar benefits	100% required	100% required	≥50% required
		(of the ≥ 51% required)	(for higher incentive)
Utility allowance (UA) & rent adjustments	Must exclude solar & EE benefits to avoid recapture and/or diminishment of tenant benefits	Must exclude solar benefits to avoid recapture and/or diminishment of tenant benefits	Owner may not adjust UA by more than 50% of tenant benefit

SOLAR PROGRAM SUMMARY

Program	LIWP	SOMAH	MASH
No-cost TA	Deep, free TA	Deep, free TA	None
EE incentive	~50% - 80% of costs	None	None
EE Compliance	≥ 15% energy savings & free whole building audit	ASHRAE I audit <u>or</u> EE program participation, and ESA referral and solar sizing	ASHRAE I audit and ESA referral
Other EE programs	Optional EE program referrals	ESAP unit list required & optional EE referrals	ESAP unit list required & optional EE referrals
Tenant education & engagement	Program provides educational materials to residents explaining energy upgrades	Owner must notify tenants of project and rate changes; hotline; technical assistance	Owner must post ESA program flyers onsite to notify tenants



NEW MULTIFAMILY PROGRAM PATHWAYS

SELF GENERATION INCENTIVE PROGRAM (SGIP)

- Provides cash incentives that can cover up to the full cost of a battery and installation
- **Benefits of SGIP:**
 - SGIP-eligible equipment such as storage can improve building resiliency during a Public Safety Power Shut Off (PSPS)
 - Provides properties with the ability to store excess solar power



SELF GENERATION INCENTIVE PROGRAM (SGIP)

- Two new equity related budget carve outs:
 - **Equity Resiliency Budget**
 - Base offering: \$1.00/Wh*
 - **Equity Budget**
 - Base offering: \$0.85/Wh*
- Both Equity Resiliency and Equity budgets are fully subscribed
 - Funding announcements can be found on the [SGIP website](#)



Clean Mobility Options Voucher Program

www.cleanmobilityoptions.org



What are the goals of the CMO program?

- Improve access to clean mobility options that are **safe, reliable, convenient**, and **affordable** to communities throughout California
- Increase mobility options in disadvantaged communities
- Reduce **greenhouse gases** and pollutants from transportation
- Fund **place-based** and **community-driven** mobility solutions



Clean Mobility Options

What kind of projects are eligible?

- Carsharing
- Bike and Scooter sharing
- Carpooling/Vanpooling
- Innovative Transit Service
- Other transportation enhancements (like transit subsidies)



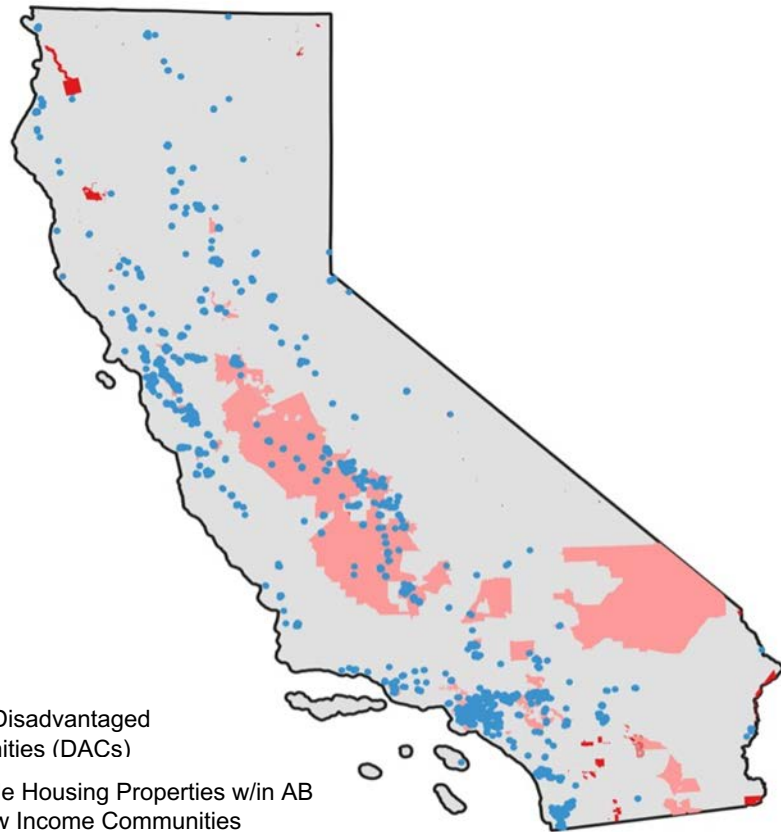
Clean Mobility Options

Eligible Project Areas

- CalEnviroScreen 3.0
Disadvantaged Communities
(top 25%)
- Deed restricted affordable
housing within AB 1550 Low-
Income Communities or DACs
- Tribal Lands within AB 1550
Low-Income Communities or
DACs

Legend

- SB 535 Disadvantaged Communities (DACs)
- Affordable Housing Properties w/in AB 1550 Low Income Communities
- Tribal Lands w/in AB 1550 or SB 535 areas



Eligible Applicants

Lead Applicants

- Public agencies
- Nonprofit Organizations
- Native American Tribes

Partners (Sub-applicants)

- Any entity with lead applicant eligibility
- Public, private or nonprofit organizations
 - Can include providers of mobility services, charging infrastructure, related infrastructure, community outreach, and technical services



Two Types of Vouchers

Mobility Project Vouchers (MPV) fund planning, development, and implementation of eligible clean mobility options projects and project-related costs.

Fall 2020: \$20 million available with \$2 million tribal set-aside

Community Transportation Needs Assessment Vouchers (CTNA) support communities in identifying their transportation needs and evaluating transportation gaps through a community transportation needs assessment process.

June 2020, \$1.15 million awarded to 24 communities



Clean Mobility Options

CMO is a voucher-based, first-come, first-served model

- Voucher is a contract that serves as “promise of payment”
- Payments are issued when set project milestones are reached, on a reimbursement basis
- Vouchers expire and funds are given up if milestones are not reached within a certain timeframe
- First-come, first-served means applications are reviewed, evaluated, and awarded in the order they are received, until funds are exhausted



Eligible Costs

- **Planning** – partner contracting, infrastructure siting, environmental compliance, permitting
- **Capital** – vehicles and associated hardware, reservation software, EV charging equipment, infrastructure installation
- **Operations and maintenance** - vehicle leases, subsidies, insurance, repairs
- **Outreach and marketing** – community outreach & input, service promotion
- **Administration** – payment requests, meetings with Administrator, data collection for reporting and evaluation



Funding for Solar PV Systems in CMO:

Applicants may receive funding for solar PV systems that power EVSE or electric bike/scooter charging infrastructure.

- PV system must be co-located with EVSE
- Rooftop, ground-mounted, and carport solar PV systems are all eligible



What is the Needs Assessment Requirement?

- An evaluation of transportation access gaps that **identifies mobility needs, preferences, and priorities** of local residents through **meaningful and representative *community engagement***.
- **For the CMO Program, a Needs Assessment includes:**
 - Transportation Data Access Analysis - Resident Survey + **three** additional existing data/indicators
 - Community Engagement - at least **two** events
 - Summary Report



Financial Sustainability Plan Requirement includes:

- Describe strategies for financial sustainability and risk management beyond 4 years of operation
- Submit at least five resource contribution documentation
- Plan to ensure vehicles and equipment continue to service community if operation ceases after 4 years



Project Example: Our Community Car Share

1. Free, membership car sharing program available to low-income City of Sacramento affordable housing communities
2. AQMD administers, and partners include Zipcar, SHRA, Mutual Housing of California, Breathe California, SMUD
3. Zipcar maintains zero-emission car fleet, serving 7 affordable housing sites and 4 additional sites planned
4. Residents may reserve vehicle for up to 3 hours at a time, monthly transportation vouchers available to non-driving residents



Clean Mobility Options

Technical Assistance

Submit questions to CMO Technical Assistance team via:

1. **Website** - www.cleanmobilityoptions.org - fill out form linked in 'Assistance' Tab
2. **Webinars** - upcoming and previous webinars available on 'events' tab
3. **Hot Line** - 626-744-5670, Available M-F 9am-5pm Pacific
4. **Email** - info@cleanmobilityoptions.org



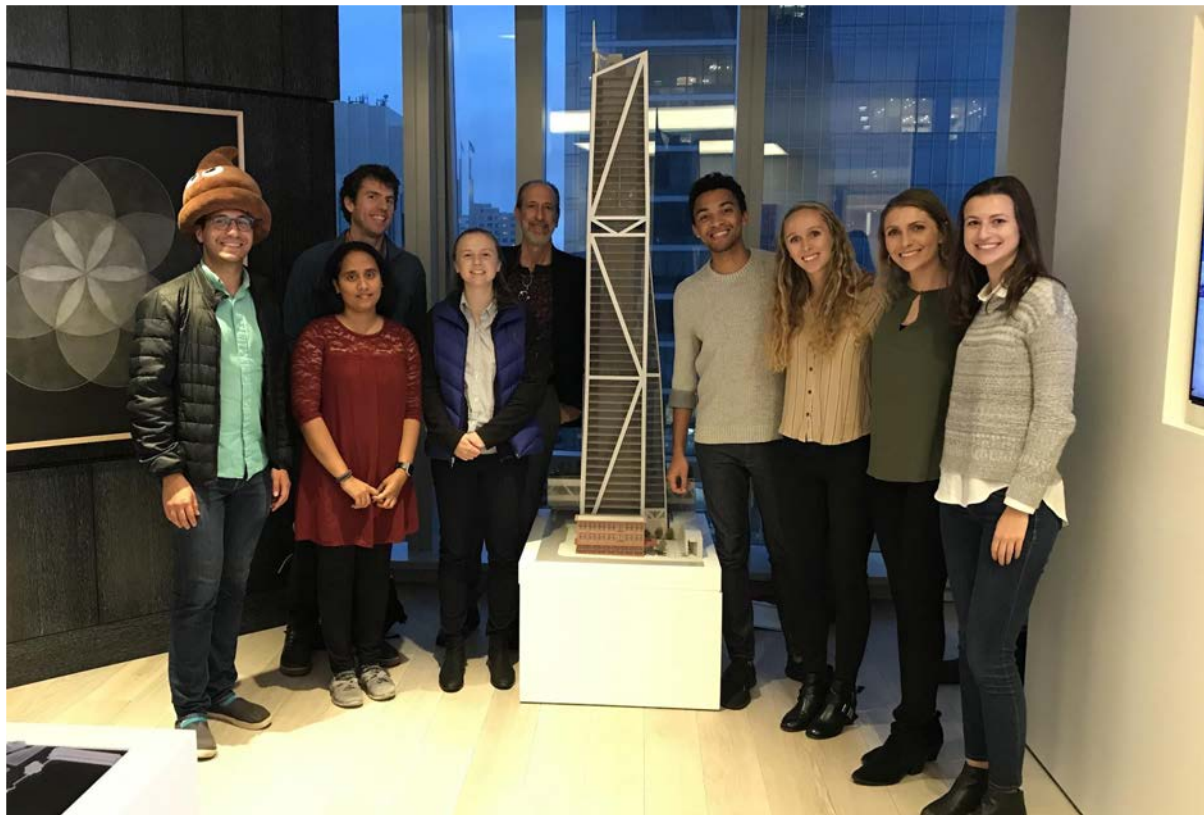
Clean Mobility Options



NORTHERN CALIFORNIA

SUSTAINABILITY CONSIDERATIONS

USGBC NC Rising Leaders



Committee Members Today:

Doug Fowler

Project Manager

Habitat for Humanity Greater SF

dfowler@habitatgsf.org

Ruchi Shah

Senior Sustainability Manager

Tenderloin Neighborhood Dev. Corp.

rshah@tndc.org

Find us:

usgbc.org/chapters/usgbc-northern-california

USGBC NC Rising Leaders



Terminology:

USGBC

US Green Building Council
National/Local Non-Profit

LEED

Green Building Rating System
Nearly any building can be LEED

Find us:

usgbc.org/chapters/usgbc-northern-california

Sustainability is high performing new buildings



222 Taylor

Tenderloin Neighborhood Dev. Corp.
David Baker Architects
LEED Gold
San Francisco, CA

LEED is more than new buildings

LEED v4.1 O+M: Existing Buildings Scorecard

LOCATION AND TRANSPORTATION

14

Prerequisite Transportation Performance

14

SUSTAINABLE SITES

4

Credit Rainwater Management

1

Credit Heat Island Reduction

1

Credit Light Pollution Reduction

1

Credit Site Management

1

WATER EFFICIENCY

15

Prerequisite Water Performance

15

ENERGY AND ATMOSPHERE

35

Prerequisite Energy Efficiency Best Management Practices

Required

Prerequisite Fundamental Refrigerant Management

Required

Prerequisite Energy Performance

33

Credit Enhanced Refrigerant Management

1

Credit Grid Harmonization

1

MATERIALS AND RESOURCES

9

Prerequisite Purchasing Policy

Required

Prerequisite Facility Maintenance and Renovations Policy

Required

Prerequisite Waste Performance

8



April 2020

Sustainable Operations of Buildings

Zero Carbon & Zero Energy Certification

The Industry must be more than just buildings



USGBC Living Standard Research

New USGBC Equity initiative will advance social equity in our communities



Taryn Holowka
Nov 19, 2019

5 minute read

Share on [Twitter](#) [Facebook](#) [LinkedIn](#) [Email](#) [Print](#)

The initiative will highlight the work that USGBC and its community members are doing to advance social equity goals.

Social equity is the foundation upon which USGBC's mission was built. For more than a quarter century, USGBC has been working to encourage sustainable building practices that create an environmentally and socially responsible, healthy and prosperous environment that improves quality of life for all.

Green building and social equity go hand in hand, and we know that addressing and emphasizing sustainability through green building can provide communities with resources and access to opportunities that can help them reach their full potential. That is why a sustainable future for all must also reflect a more socially equitable future too.

USGBC Equity is a new initiative that will highlight and bring attention to the broad spectrum of work that USGBC and its community members are doing around social equity and will help elevate the organization's equity activities in the future. This initiative will take the pulse of USGBC members and our community and will answer the following questions:

- What are you as an individual doing to help advance social equity in your work and home life?
- What are you as a USGBC member doing to help advance social equity?
- How are LEED buildings contributing to social equity?
- How are LEED cities and communities furthering social equity?

Local & National Equity Initiative

100% Electric Affordable Housing Is Radical and Crucial



Enhance Efficiency

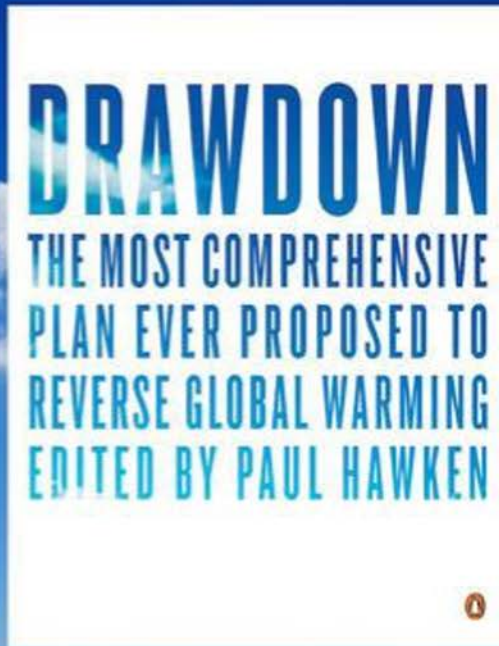
Electricity efficiency solutions include technologies and practices that reduce demand for electricity generation, literally lightening the load. The **two biggest end-users** of electricity are buildings and industry, in roughly equal measure. While a home or factory may be the location of efficiency measures, these emissions get counted at the power plant where they are created or avoided, as part of the electricity sector. (See further exploration of buildings and industry below.)

Shift Production

Production of electricity must move away from fossil fuels, as quickly as possible. A spectrum of solutions can help, from small-scale/distributed to large-scale/centralized. Some solutions harvest photons from the sun. Others tap nature's generous kinetic energy—the movement of wind and water. Still others use an alternate source of heat, such as geothermal or nuclear, for the same basic steam-turbine process.

Improve the System

To enable the transition to renewable electricity production and use, the broader electricity system also needs to evolve and upgrade. Flexible grids for transmission and effective energy storage make it possible to better balance electricity supply with demand.



100% Electric Affordable Housing Is Radical and Crucial



“Oil and gas are natural resources. They are finite. Electricity is a technology. It can be created and it can improve.”

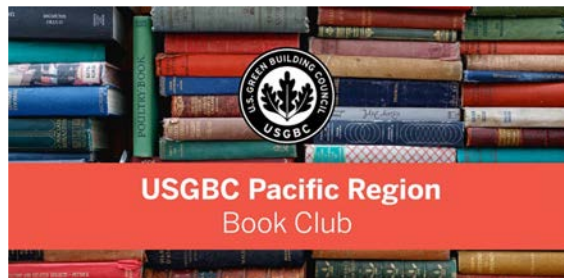
Get Involved



- **More Info:** usgbc.org/chapters/usgbc-northern-california
- **Promote Housing:** Nearly half of LEED certified projects qualify as affordable housing; use the USGBC as a way to brag!
- **Help build better buildings:** Affordable Housing professionals are sustainability professionals.
- **Learn, Teach, Mentor:** Join the USGBC & Rising Leaders at future events



Pacific Region Equity Series



Ongoing Book Club (Color of Law)



Dec 1: Liz Ogbu with the Rising Leaders



DESIGN CONSIDERATIONS

TNDC: AT A GLANCE



AT TNDC, WE BELIEVE HOUSING IS A HUMAN RIGHT.

Every day we provide people who are struggling to make ends meet in San Francisco with permanently affordable homes. Because when a person has a place to call home, they have the foundation for a better life.



56,000+ HOURS

Our onsite social workers dedicate 56,000+ hours a year to helping residents feel welcome and supported in their home

BUILDING HOMES AND COMMUNITY IN SAN FRANCISCO FOR OVER 35 YEARS

Our work began with a need for permanent affordable housing in the Tenderloin. As the need for more permanent affordable housing has grown, so have we.



43
BUILDINGS



11
BUILDINGS IN
DEVELOPMENT



8 SF
NEIGHBORHOODS

HOUSING COMES FIRST, IT'S NOT WHERE OUR WORK ENDS

Our work is grounded in our community's needs and leads to programs such as:



TENDERLOIN AFTER-SCHOOL PROGRAM

240 kids (ages 7-18) learn and grow with free tutoring, cultural activities, and an annual College Tour program

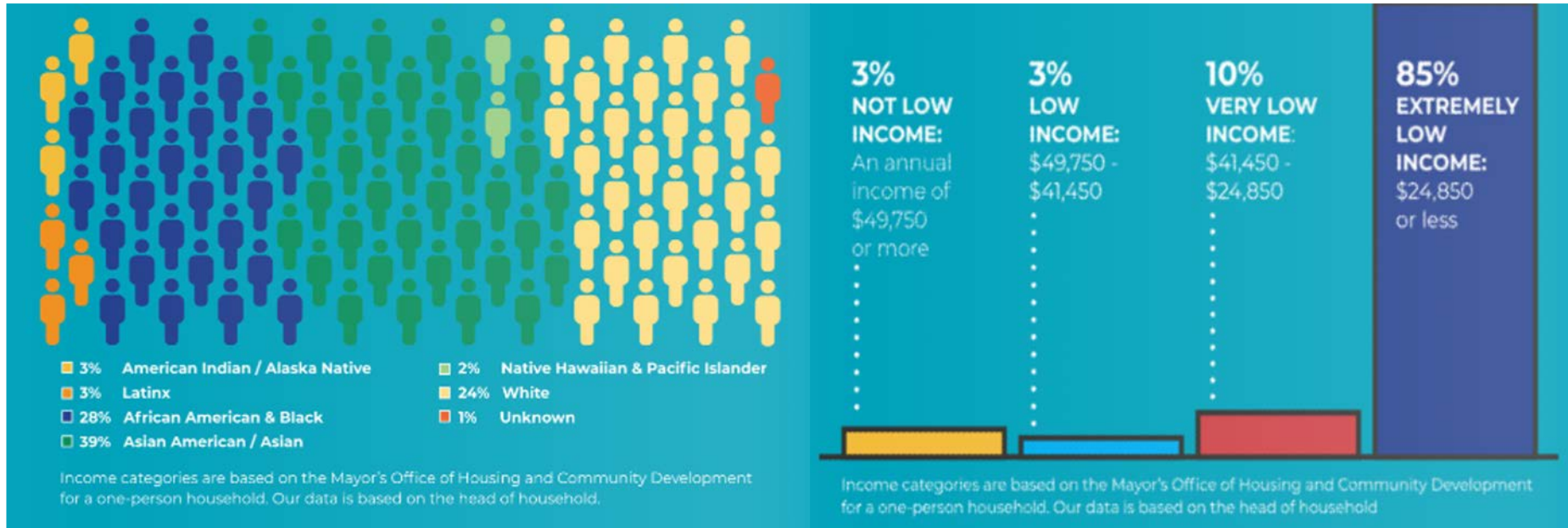


TENDERLOIN PEOPLE'S GARDEN

3,000 lbs of free produce are distributed to Tenderloin residents every year to lessen the burden of food costs

WHO LIVES AT OUR HOMES

- Over 5,800 people live in our buildings
- Demographic breakdown:



477 O'Farrell Street
Photo by Luke
Thomas



TNDC SUSTAINABILITY GOALS

1

ENERGY & WATER

Reduce 20% of energy and water use by 2029 as part of the national Better Buildings Challenge compared to a 2019 baseline.

2

WASTE

Increase waste diversion to 60% by volume by 2029 to a 2019 baseline.

3

OPERATIONAL CARBON

Reduce combined Scope 1 & 2 emissions by 50% by 2029 compared to a 2019 baseline.

4

ON-SITE RENEWABLES

Every new **TNDC development will have Solar PV**, unless not feasible due to shading issues.

5

GREEN CERTIFICATION

Every new **TNDC development will have a nationally recognized Green Certification** - at least **GreenPoint Rated Platinum** or **LEED Gold** and will consider occupant health-based design approaches such as FitWel and WELL.

TNDC SUSTAINABILITY AMBITIONS

1

HEALTHY BUILDING MATERIALS

TNDC is a HomeFree partner - a national initiative supporting affordable housing developers and committed to improving health by using **less toxic, and healthy building materials**.

2

EMBODIED CARBON

TNDC is actively looking for ways to **reduce embodied carbon emissions** and piloting approaches in new construction developments. Key focus areas for impact reduction are **concrete, steel, wood, and insulation**.



PROGRAM IMPACTS: 2018-2021



BAYREN

LOW INCOME
WEATHERIZATION
PROGRAM

Program	Rebates Incentives Reserved/Received	Units Served
ESA CAM	~ \$400 K	~750 Units
BayREN	~\$1.2 Million	~ 1700 units
LIWP	~\$1.4 Million	~ 750 units

Looking Ahead:



ENERGY AND CARBON REDUCTION: A CASE STUDY

SOMA Studio & Family Apartments

1190 Howard St, San Francisco, CA



- 3 buildings
- Built in 2003
- 88 SRO Studios, 74 Family Units; 162 units
- 5 floors (1st floor commercial)
- Boiler Room on ground floor

ENERGY AND CARBON REDUCTION: A CASE STUDY

SCOPE OF WORK

- Low-flow aerators and showerheads
- In-unit LED lighting
- Common area and exterior LED lighting and controls
- High-efficiency washing machines
- Heat pump domestic water heaters
- Condensing hydronic heating boilers
- Heat exchanger for backup domestic hot water
- Variable-speed heating and domestic hot water pumps
- Hydronic and domestic hot water heating pipe insulation
- Replacement make-up air systems for common area corridors
- Variable speed rooftop exhaust fans
- Garage exhaust retro-commissioning

PROJECTED TOTAL ANNUAL SAVINGS



26.9%
Estimated Annual
Cost Savings
\$48,115



40.9%
Estimated Site
Energy Savings
3,178,326 kBTU

PROJECTED GHG SAVINGS & EQUIVALENCIES



186
Metric tons of CO₂
(projected reduction)

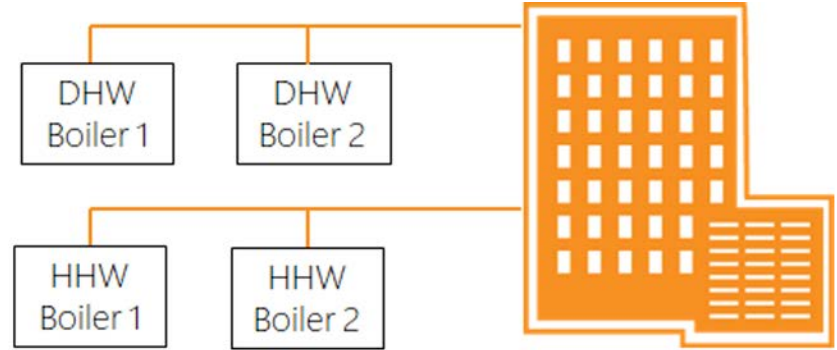


219
Acres of U.S. forest

PARTIAL ELECTRIFICATION: AIR-SOURCE HEAT PUMP WATER HEATER

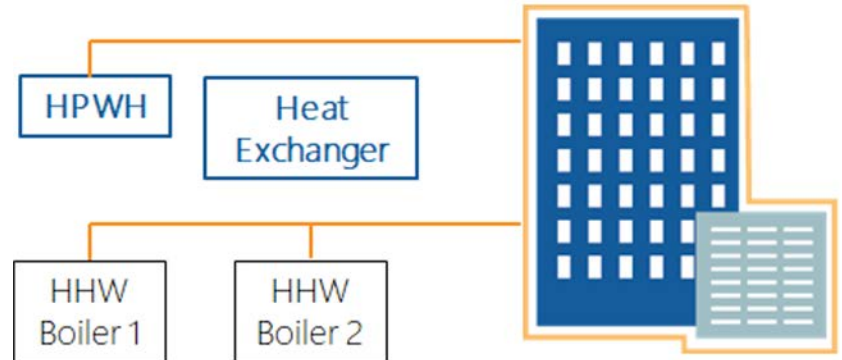
I. Existing Central Plant

- 2 independent systems
- non-condensing equipment



II. New Combination Central Plant

- 1 combination system
- 2 new high efficiency HHW Gas Boilers
- 1 HPWH to cover 80% DHW load
- 1 heat exchanger
- fully redundant in DHW and HHW



PARTIAL ELECTRIFICATION: AIR-SOURCE HEAT PUMP WATER HEATER



Gas Boilers Pre-Retrofit



ENERGY AND CARBON REDUCTION: A CASE STUDY

PROGRAMS LEVERAGED



PROJECT COST

Total Project Cost for EE*	\$959,421
BAMBE+BAAQMD	\$258,000
LIWP EE Incentive	\$562,980
Owner out-of-pocket costs	\$138,441

**ESA measures are free and are not part of the project costs.*

Total Project Cost for PV	\$236,120
GoSolar SF	\$50,000
LIWP PV Incentive	\$67,410
Owner out-of-pocket costs	\$118,710

REAL SUCCESS!



BayREN Supports Housing Affordability: Tenderloin Neighborhood Development Corporation Case Study

BAYREN



QUESTIONS & ANSWERS

CONTACTS

Organization	Contact Name	Contact Email
Association for Energy Affordability (AEA)	Sarah Hill	shill@aea.us.org
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California Housing Partnership	Rachael Diaz	rdiaz@chpc.net
	Michael Claproth	mclaproth@chpc.net
Tenderloin Neighborhood Development Corporation (TNDC) & USGBC NC Rising Leaders	Ruchi Shah	rshah@tndc.org
Habitat for Humanity GSF & USGBC NC Rising Leaders	Doug Fowler	dfowler@habitatgsf.org

PROGRAM WEBSITES

- [ESA Common Area Measures](#)
- [ESA In-Unit](#)
- [Low Income Weatherization Program \(LIWP\)](#)
- [BAYREN](#)
- [Solar on Multifamily Affordable Housing \(SOMAH\) program](#)
- [Self Generation Incentive Program \(SGIP\)](#)
- [Clean Mobility Options Voucher Program](#)