

Welcome! The Webinar will begin shortly



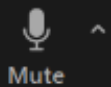
Sustainability and Climate Action Plan Ad Hoc Committee

February 10, 2022

cityofpaloalto.org/ClimateAction

Acting Now for a Resilient Future

Click on Q&A anytime during the presentation to ask questions



Mute



Chat



Raise Hand



Q&A

Leave

- **Recap of January 2021 S/CAP Ad Hoc Meeting**
- **Funding and Financing**
 - *Inclusive Financial Solutions for Building Energy Upgrades* – Dr. Holmes Hummel, Founder and Executive Director of Clean Energy Works
 - *GoGreen Financing: State-Run Private Capital Financing Program* – Miriam Joffe-Block, Senior Manager, California Hub for Energy Efficiency Financing (CHEEF)
 - *Funding and Financing the 2022-2024 S/CAP Work Plan and Full-Scale Transition*; Jonathan Abendschein & Shiva Swaminathan, City of Palo Alto
- **Discussion**

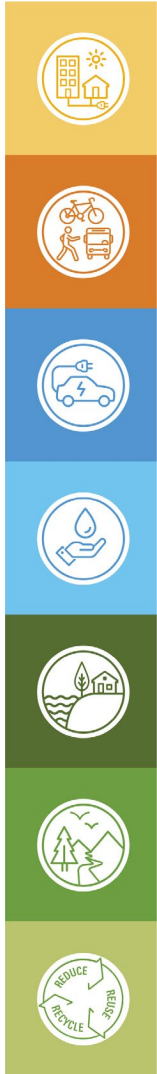


- 110 Participants, plus 7 watching on YouTube Live Stream
- 32 Questions, covering the following themes:
 - How Palo Alto’s urban forest is being considered with relation to wildfire protection programs
 - The relationship between wildfire protection and building electrification
 - Sources of Sea Level Rise, including groundwater impacts
 - Flood zones and FEMA flood zone designations
- 13 Comments, covering the following themes:
 - Air filtration, especially in older homes
 - Social Cost of Carbon
 - Building electrification



- Asking several questions today:
 - What approaches are available to finance individual electrification projects?
 - What funding sources are available for the FY 2022-2024 work plan? What is the most efficient way to deploy them?
 - What ideas should we explore for funding a community-scale S/CAP effort?
- Though the focus is on residential and non-residential electrification, we touch on all S/CAP climate change areas: Energy (Buildings), EVs, and Mobility
- Two presentations by industry experts
- One staff presentation – represents results of our research to-date and current understanding of the field. Looking for your ideas and insights!

Inclusive Financial Solutions for Building Energy Upgrades
Dr. Holmes Hummel, Founder and Executive
Clean Energy Works

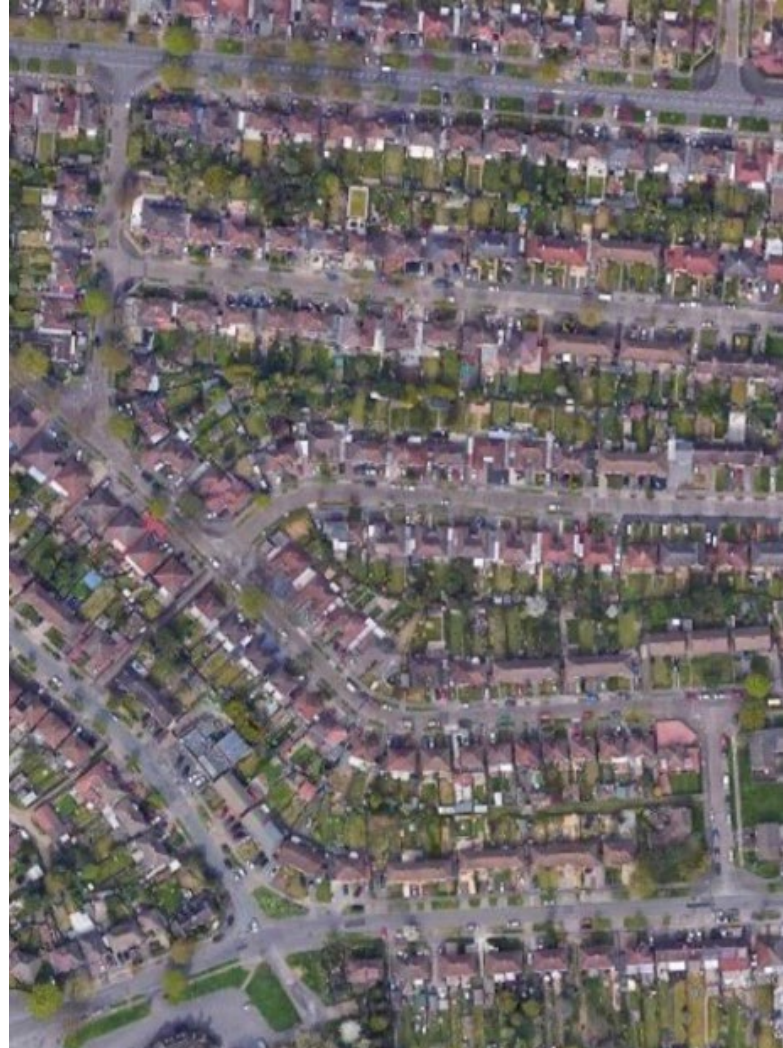





Inclusive Financial Solutions for Building Energy Upgrades

Holmes Hummel, PhD
holmes.hummel@cleanenergyworks.org

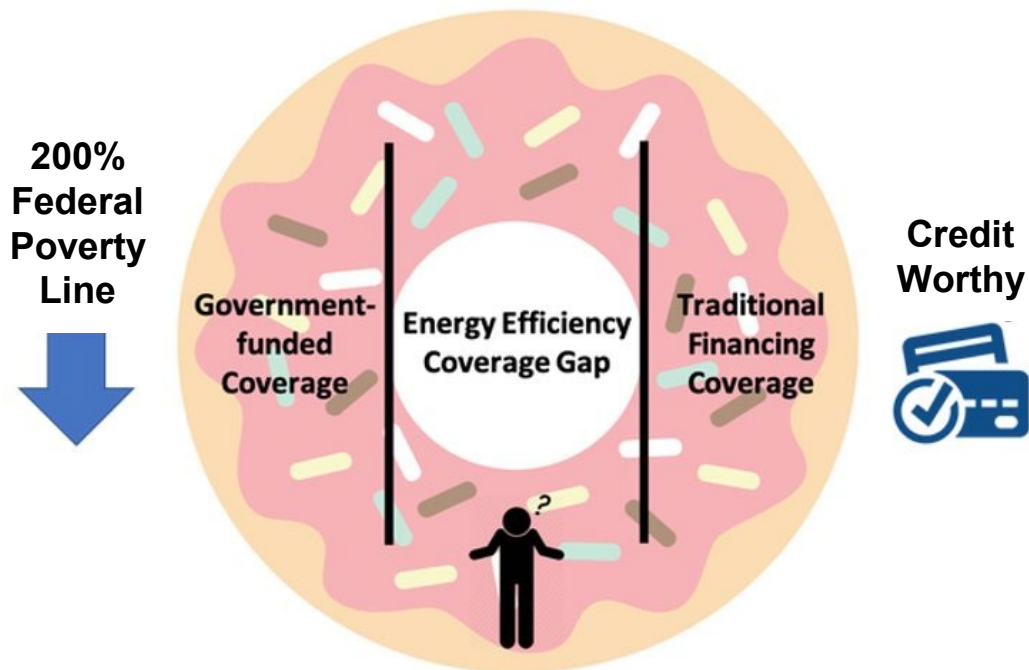
February 10, 2022





The most familiar financial solutions
for essential building energy upgrades
have not been inclusive, fiscally sustainable, or scalable.

Tens of millions of households don't qualify for either energy assistance or bank loans.

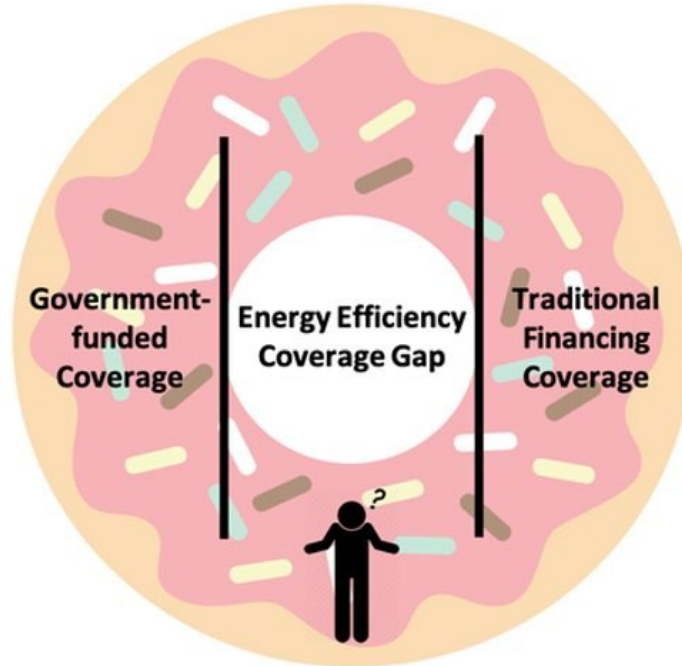


Source: Forrester and Reames. 2020. Understanding the residential energy efficiency financing coverage gap and market potential. Applied Energy.

● Even among those who *can* qualify for funding or financing, only a fraction are served

Funding levels are chronically too low to meet the need

200%
Federal
Poverty
Line
↓



Credit
Worthy

Anemic response to a debt-based value proposition, *even when subsidized*

Source: Forrester and Reames. 2020. Understanding the residential energy efficiency financing coverage gap and market potential. Applied Energy.

● Policies to finance energy upgrades rely on some tacit assumptions:

Building owners will **volunteer to take on debt** to pay for the building energy upgrades.

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And if they don't... a government agency will set up **special financial programs** to make debt for building energy upgrades even more attractive.

● Policies to finance energy upgrades rely on some tacit assumptions:

Building owners will **volunteer to take on debt** to pay for the building energy upgrades.

And if they don't... a government agency will set up **special financial programs** to make debt for building energy upgrades even more attractive.

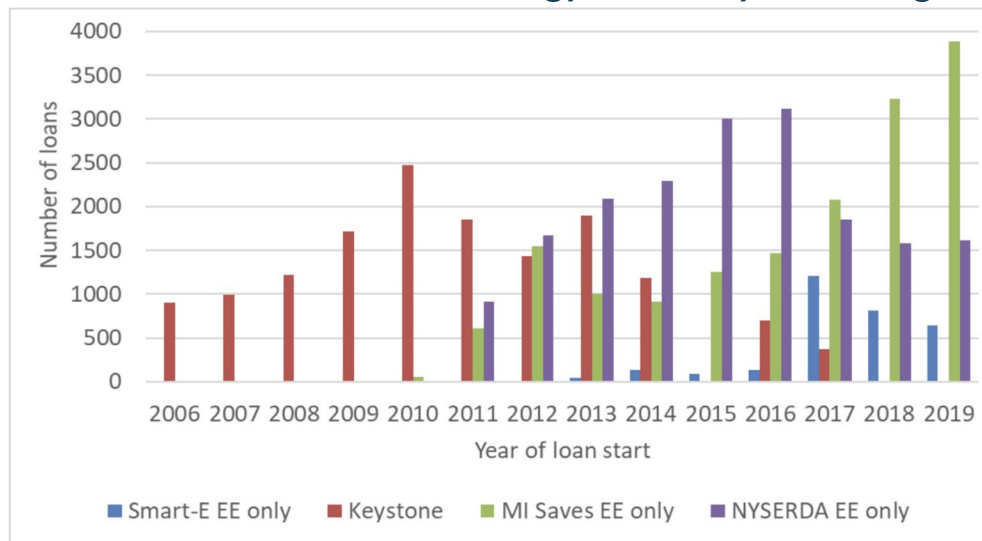
For those who *can* qualify for special programs, examples include:

- Buy-downs to 0% interest rate (Minneapolis et al)
- Higher debt-to-income limits (FHA Energy Efficient Mortgages)
- Credit enhancements (California's GoGreen; New York's Good Jobs / Green NY)
- Loans with debt collection by utilities (Energy Trust of Oregon)
- Government-backed loan funds (PA's Keystone; NY Smart Energy Loan)
- Property Assessed Clean Energy (PACE) loans for residential (CA, FL, MO)

● Leading loan programs for residential energy upgrades have reached **max 0.1%** in any year

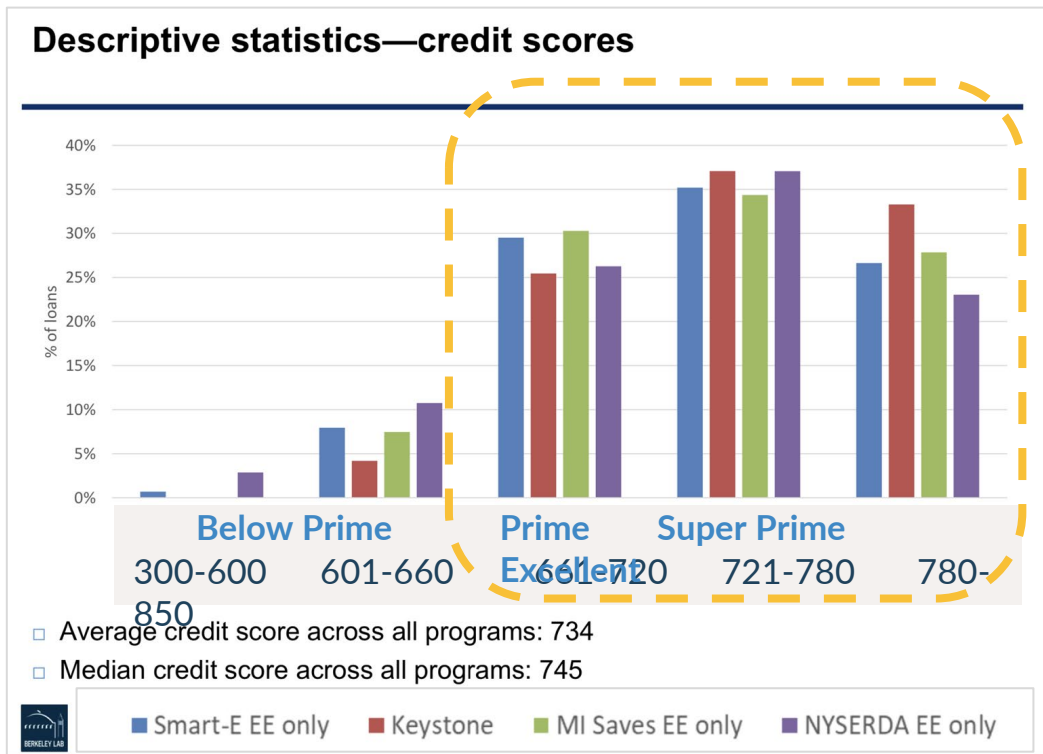
4 states with 17M households have had leading statewide energy efficiency loan programs. **Max** peak market penetration in any of the programs in any year studied is **~0.1%** households . . .

Loan Volume for Residential Energy Efficiency Loan Programs




Source: Leventis, G. 2021. *SEE Action Loan Performance - Findings*. LBNL briefing to ACEEE Finance Forum.

Leading loan programs for residential energy upgrades have reached bankable people



90% of the loan volume is accounted for by households with prime credit or higher, a segment well served by the financial services sector.

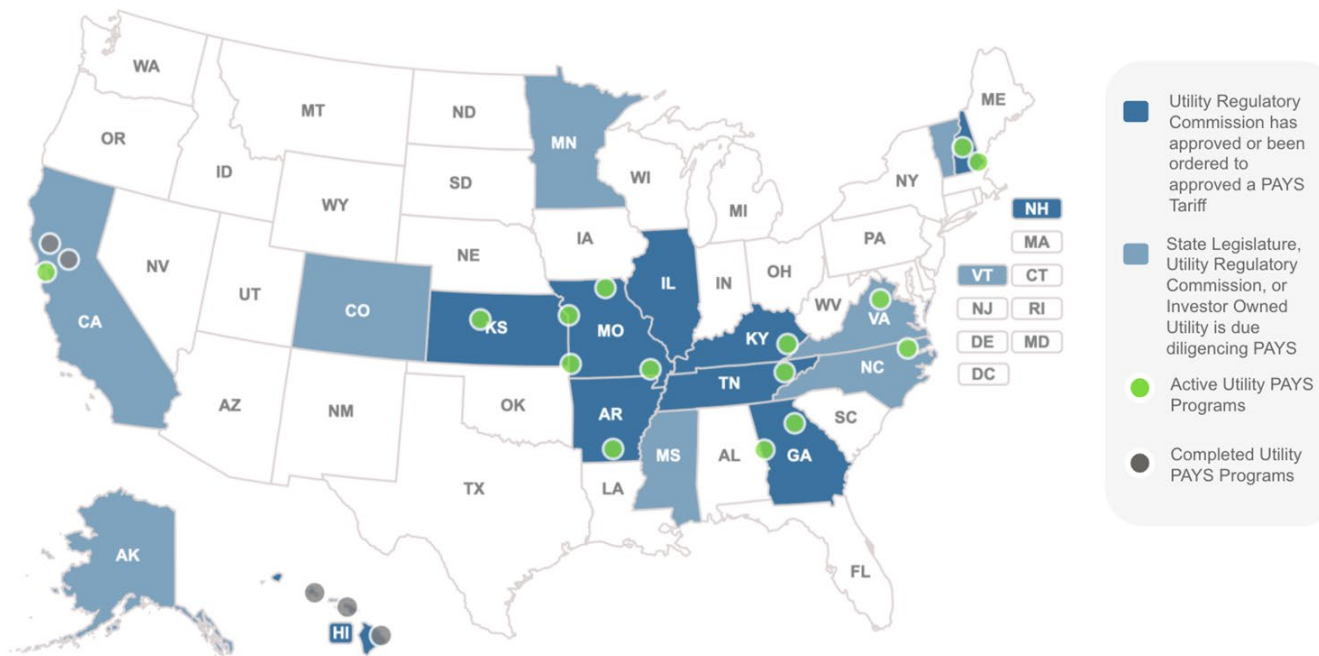
Source: Leventis, G. 2021. SEE Action Loan Performance - Findings. LBNL briefing to ACEEE Finance Forum.

The background is a solid blue color with several white, stylized circuit-like lines. These lines are composed of horizontal and vertical segments connected by right-angle turns. Some lines end in small solid black circles, resembling nodes or components in a circuit. The lines are scattered across the slide, with some being more prominent than others.

Field experience with
inclusive utility investment
is compelling

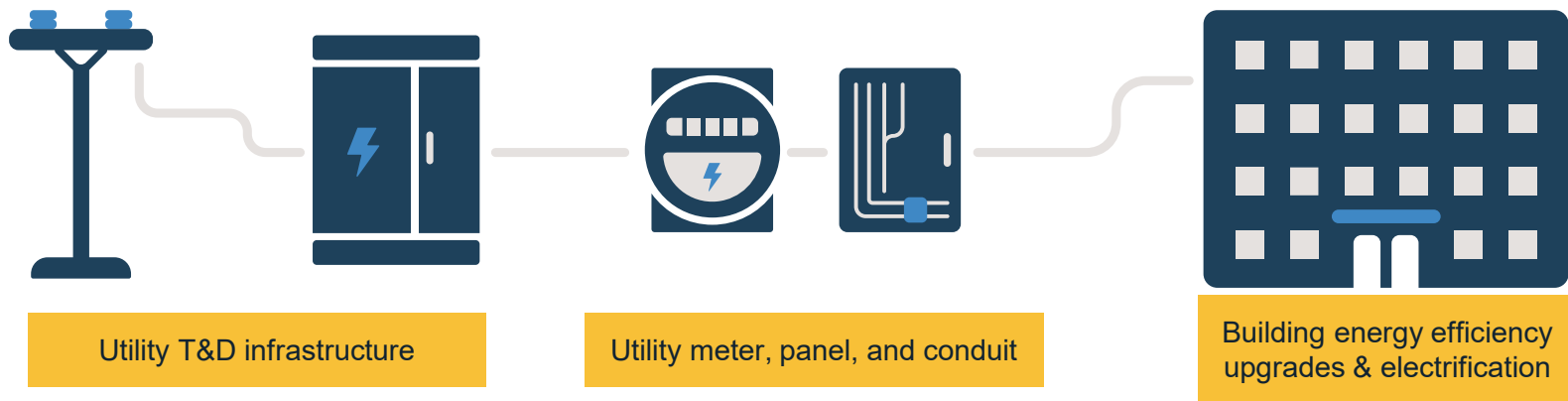
Where is exploration and opportunity for inclusive utility investment expanding?

Inclusive Utility Investment via Pay As You Save[®] as of 2022



How does inclusive utility investment work?

A utility can adopt a **tariff** for site-specific investment and cost recovery, regardless of the income, credit score, or renter status of the bill payer.



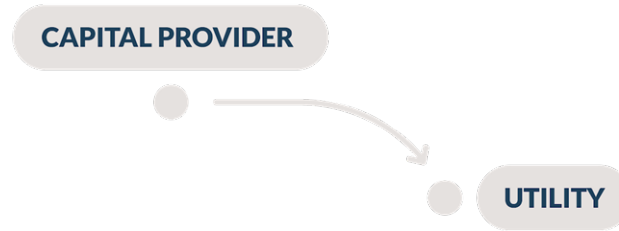
The tariff enables a utility to capitalize all **cost-effective** energy upgrades at a site and recover those costs with a **site-specific charge** on the utility bill that is **less than the estimated savings** from the upgrades.

● A majority of people receiving this offer choose to accept it

- “Energy upgrades that save money are installed in your building and you pay nothing upfront.
- Your utility pays for the installation. The utility recovers its cost with a charge added to your bill that is less than the estimated savings.
- You have no loan, no lien, and no debt with this transaction.
- When the utility recovers its costs, the charges end. And the charges also end if an upgrade fails and is not repaired, or if you move, provided that you have maintained the upgrades.”

● Pay As You Save[®] is the most common system used for inclusive utility investments

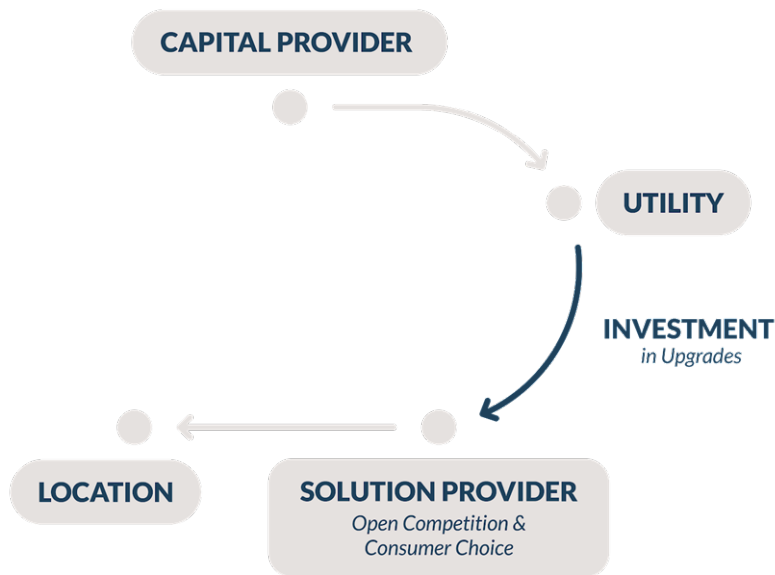
All utility customers have the option to access cost effective energy upgrades using a proven model for investment and cost recovery that benefits both the customer and utility.



Pay As You Save[®] and PAYS[®] are trademarks of Energy Efficiency Institute, Inc., which does not charge for its use.

● Pay As You Save[®] is the most common system used for inclusive utility investments

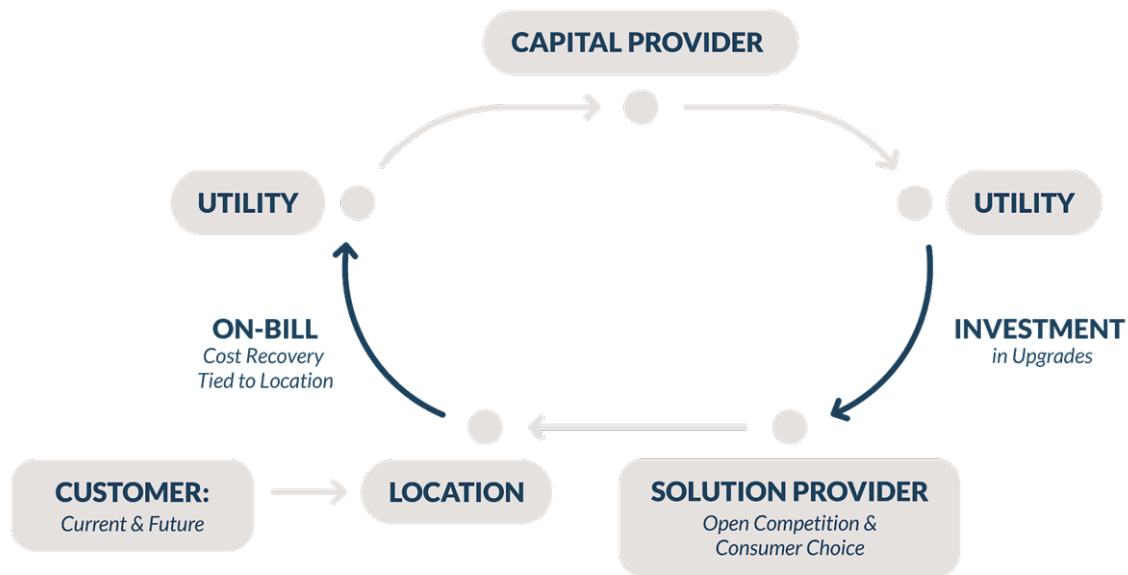
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Attributes	On-Bill Loan	PAYS® Tariff
• No upfront participant cost	✓	✓
• No credit or income qualification required		✓
• Renters are eligible		✓
• Estimated savings <u>must exceed</u> cost recovery charges		✓
• Participant accepts an opt-in utility tariff <u>tied to the location</u>		✓
• Cost recovery is through a fixed charge on the utility bill	✓	✓
• Participant agrees to disconnection for not paying utility bills		✓
• Payments end if upgrade fails and is not repaired		✓
• Cost recovery runs with the location and remains in effect for subsequent customers at that site until cost recovery is complete		✓

Example transaction:



Single story home, upgraded with insulation, air sealing, and heat pump

- **Investment:** \$10,000
- **Cost Recovery Period:** 15 years
- **Cost of Capital:** 3%
- **Estimated Savings:** \$100 / month
- **Charge:** -\$70 / month
- **Net Savings to Customer:** \$30 / month, ~30% of savings
- **Energy Savings:** 8,000 kWh / year

Source: Briefing by Mountain Association, the program operator for the How\$martKY program. This sample has conveniently round numbers; residential efficiency upgrades are typically ~\$7500.

Loan and site-specific tariffed investments have consistently produced different results

Comparison for Building Energy Upgrades




Investment acceleration is a product of these multiples.

- ✓ No consumer loan, lien, or debt
- ✓ Reaches renters and low-income
- ✓ Higher uptake rates
- ✓ Deeper energy & carbon savings

Figure 1: Key Differences Between On-bill Loan Model and On-bill Tariff Model

	On-bill Loan	On-bill Tariff
What is the charge on the monthly utility bill?	Debt payment	Cost recovery fee
What does a successor homeowner or occupant pay?	Some programs allow voluntary loan transfers but not automatic	Cost recovery automatically applies to successor occupants
Is utility disconnection possible for non-payment?	Yes, depending on legislative or gubernatorial policy and/or regulatory approval	Yes, depending on restrictions due to time of year
Consumer credit underwriting criteria	Necessary for many loan programs	Not applicable
Renters allowed to participate	Yes, but few do ⁶	Yes



Issue Brief: Low-income Energy Efficiency Financing through On-Bill Tariff Programs

CLEAN ENERGY FOR LOW INCOME COMMUNITIES ACCELERATOR

Decreasing the energy burden faced by low-income populations is a priority for many state and local governments. Traditional residential financing programs and incentives are often inaccessible for low-income and moderate-income families who may be credit-challenged and unlikely to have sufficient savings to provide the required upfront payment. Programs often are particularly inaccessible to those living in rental units, further reducing access for low-income households that live in such units. Partners in the Clean Energy for Low Income Communities Accelerator (CELICA) were interested in the tariffed on-bill renewable energy benefits to customers . . . bill tariffs do not depend on consumer well-known barrier to rental home . . . it repays the project costs on their utility . . .

income energy upgrades while also . . . because the transaction does not involve there may still be consequences for non-tariffs, while not designed solely for low-income improvements in Kansas, Kentucky, and California as well as other states where . . .


On-bill financing for home energy . . . on-bill financing, and what the benefits governments that want to support on-bill to further explore . . .

owned utilities (i.e., municipal and rural . . . of on-bill financing.² Utilities vary greatly in . . . are offered and what energy measures . . . customers who may be required to pass . . . third party. On-bill loans give consumers a . . . providing a mechanism to pay off the . . . sale of the home, the borrower usually . . . the next occupant if they are able and . . . debt burden of on-bill financing programs . . . participating.

bill tariffs), utility customers are able to . . . and solar photovoltaic generation to their . . . their monthly utility bill. Repayment refers . . .

's protocols for unpaid bills apply. See section on Differences in . . .

es with On-Bill Financing Programs. Retrieved from . . . [programs](#)



Accelerating the utility's path through diligence to implementation



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Overview

Preliminary Assessment and Program Design

Program Evaluation

Success Stories

Frequently Asked Questions

Acknowledgements



Source: https://www.seealliance.org/wp-content/uploads/SEEA_TOBGuide_FINAL_UPDATED_2020_04_13.pdf

Building Decarbonization Coalition

Accessible Financing Roadmap for California:

- Executive Summary
- Introduction
- Combining Multiple Value Streams
- Intro to Site-Specific Investments and Cost Recovery
- General Provisions
- Sourcing Capital and Managing Portfolio Risk
- Other Implementation Topics
- Scalability and Market Potential
- Implementation Metrics
- Conclusions and Recommendations
- Appendix A. Model Tariff Language

Towards an Accessible Financing Solution

A POLICY ROADMAP WITH PROGRAM
IMPLEMENTATION CONSIDERATIONS FOR
TARIFFED ON-BILL PROGRAMS IN CALIFORNIA

<https://tinyurl.com/BDC-AccessibleFinancing>

JULY 2020

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Building Decarbonization Coalition

REPORT AUTHORS:

Bruce Mast, Ardena Energy, LLC
Holmes Hummel, Clean Energy Works
Jeanne Clinton



CLEANENERGYWORKS

Clean Energy Works accelerates inclusive investments that open the clean energy economy to all.

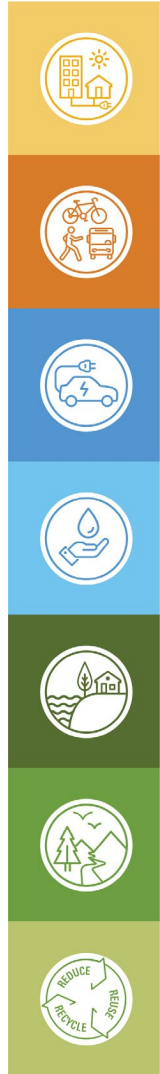
Inclusive utility investment with a strong consumer protections is proving to be a fiscally sustainable and scalable option - yet more utilities will need to adopt to achieve 100% goals.



Thank You

www.cleanenergyworks.org

[@cleanenergywrks](https://twitter.com/cleanenergywrks)



GoGreen Financing: State-Run Private Capital Financing Program

Miriam Joffe-Block, Senior Manager

California Hub for Energy Efficiency Financing (CHEEF)

GoGreen Financing

State-Run Private Capital Financing Programs

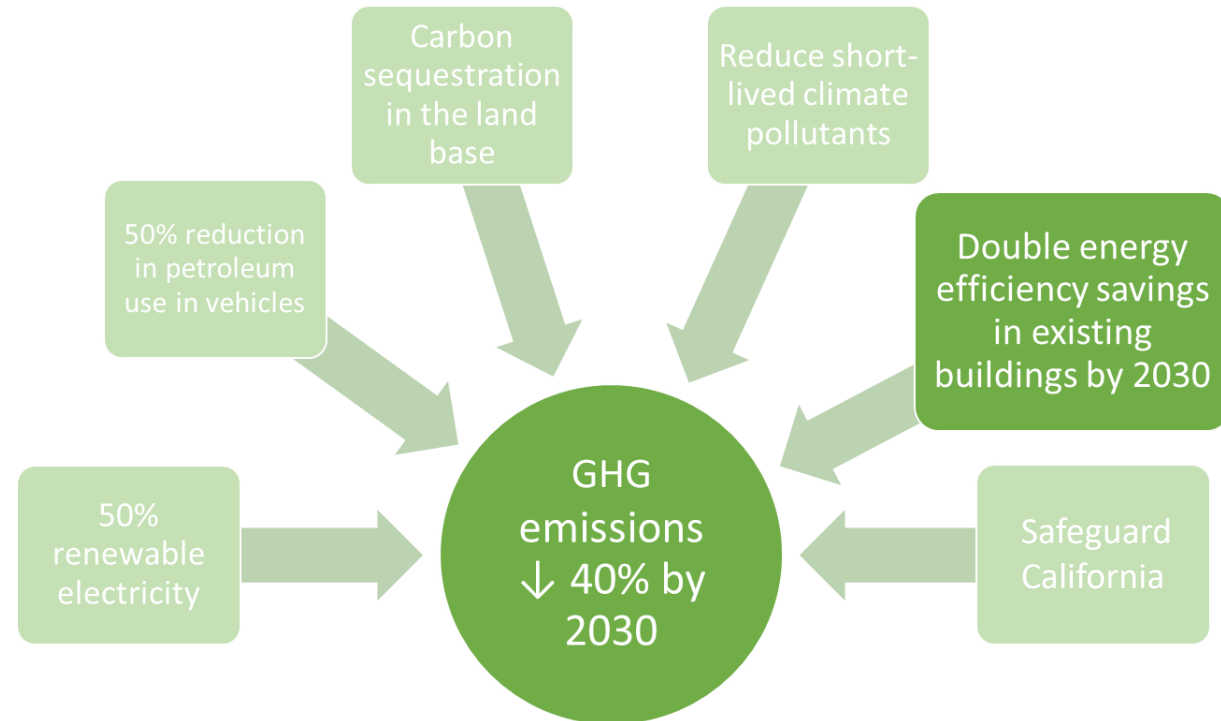
Palo Alto Sustainability and
Climate Action Plan Ad Hoc Committee

February 10, 2022



The California Hub for Energy Efficiency Financing (CHEEF) supports statewide energy goals

- Facilitates attractive financing options by **leveraging private capital**
- **Supports efficiency measures in existing buildings** via behind-the-meter customer investments
 - Residential, small business, and affordable multifamily sectors
- Works to **remove the upfront cost barrier** preventing customers from making energy efficiency retrofits
- **Contributes toward the State's climate and energy savings goals**



Programs available through GoGreen Financing



GoGreen Home



GoGreen Business



GoGreen Multifamily

Customers	Owners or renters of single-family residences (including mobile homes, condos, and multiplexes)	Small businesses and nonprofits (building owners or tenants)	Affordable multifamily properties where at least 50% of units are restricted to LMI households
Key Features	<ul style="list-style-type: none"> • Rates range between 2.95%-8.12%, compared to national average of 12.3% • Loans available up to \$50,000 and terms up to 15 years 	<ul style="list-style-type: none"> • On-bill repayment option will launch in Q1 2022 • Currently piloting an interest rate buy-down promotion 	<ul style="list-style-type: none"> • Interest rate buy-down promotion launching in Q1 2022

All financing options are:

- Unsecured or equipment secured – no property liens
- Able to be used in combination with utility rebates, incentives, and programs



California State Treasurer's Office houses CAEATFA and over 15 other financing authorities and commissions



California Alternative Energy & Advanced Transportation Financing Authority (**CAEATFA**) administers the CHEEF

- *Uses a regulatory process with public input to establish Program rules*



California Hub for Energy Efficiency Financing (CHEEF)

- *GoGreen Home, GoGreen Business, and GoGreen Multifamily*



Public facing platform



California Public Utilities Commission authorized the CHEEF to bring private capital into the energy efficiency marketplace and asked CAEATFA to be administrator

CPUC considered financing an important strategy to reach energy reduction goals

- **There is not enough utility ratepayer or public funds** to pay for needed building investments to reach the State's ambitious building energy savings and GHG reduction goals
- In 2013, CPUC authorized Investor-Owned Utility (IOU) ratepayer funds for **administration** and **credit enhancements** to establish financing pilot programs to address this issue

The pilots are designed to:

- **Test if financing can achieve energy savings** on par with traditional rebate/incentive programs
- Allow customers to pay for energy investments, as credit enhancement funds can be **revolved rather than expensed**
- Use a **credit enhancement** as the vehicle to leverage private capital for energy efficiency upgrades
- Support **customer choice** via front-end transactions between lender and customer vs. a single originator model

From pilot to program and on to statewide eligibility...

2013

CPUC authorizes the CHEEF, asks CAEATFA to administer pilot financing programs

2019

GoGreen Business and GoGreen Multifamily launch

2021

CPUC authorizes continuation of CHEEF Programs through FY 2026 and expansion to non-IOU customers

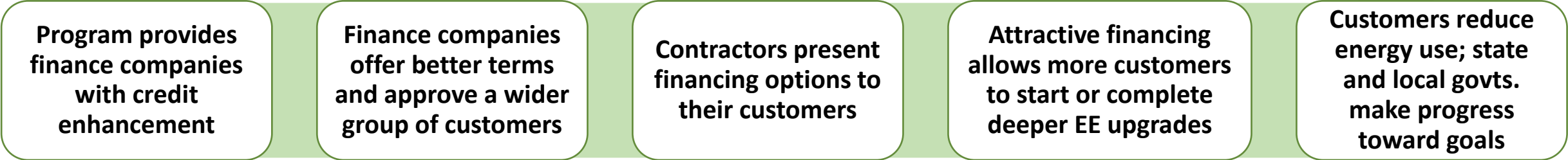
2016

GoGreen Home launches

2020

CPUC approves transition of GoGreen Home from pilot to full-scale Program

Credit enhancement leverages private capital for energy efficiency



What Finance Companies Offer in Exchange for the Credit Enhancement

	<i>Market-Rate Product</i>	<i>GoGreen Home Loan</i>
Lower rates:	As high as 21%	2.95% - 8.12%
Longer repayment terms:	Often limited to 5 years	Up to 15 years
Larger amounts of financing:	Typical maximum of \$25,000-\$35,000	Up to \$50,000 per loan
Broader approval criteria:	640 minimum credit score	580 minimum credit score

Lenders receive a loan loss reserve contribution on every loan enrolled, and are able to claim up to 90% of any charged-off amount

Project eligibility is designed to balance simplicity with likelihood of energy savings



GoGreen Home eligible measures list:

<https://gogreenfinancing.com/residentialcontractors/about#tab-9>

GoGreen Business & Multifamily eligible measures list:

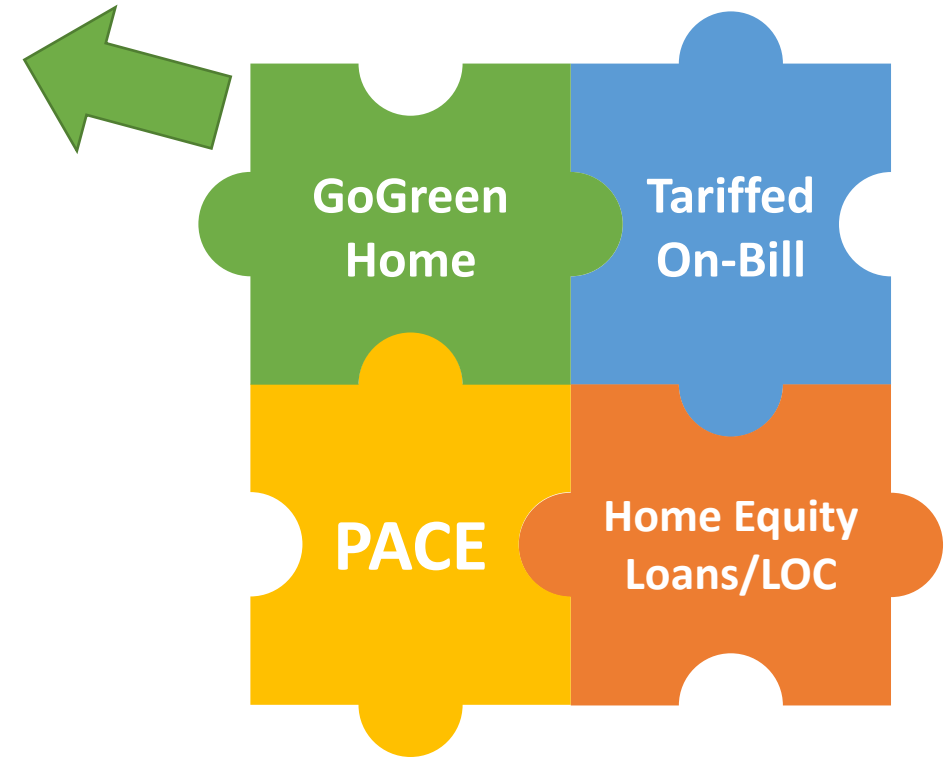
<https://gogreenfinancing.com/smallbusinesscontractors/energy-saving-measures>

- Prequalified list of eligible energy efficiency measures
 - List is developed through public rulemaking; allows for measures that are predicted to save energy in vast majority of cases
 - Engineering review/audit not required
- GoGreen Business also includes an easy custom pathway
- Any measure that is part of an IOU, REN or CCA energy efficiency program is eligible to be financed
- “To code” measures and projects eligible
 - Flexibility offered here because customers themselves are making the investment
- Legal and practical measures included (e.g. electrical panel upgrades for heat pumps)
- 30% of credit-enhanced financed amount can be spent on non-energy measures, like remodeling or landscaping
- **Distributed generation and storage can be included at lenders’ discretion, but isn’t credit-enhanced**

Where GoGreen Home fits in the landscape of EE financing options

Private Capital Loans via GoGreen Home work for:

- Borrowers who don't want to place a lien on their property or don't own their property
- Transactions too small for PACE
- LMI borrowers who have the cash flow to repay their loan
- Borrowers with lower credit scores who may not qualify for traditional financing products at affordable rates
- Borrowers who need an extended term beyond what traditional unsecured loans provide (which helps reduce the monthly payment)



Where GoGreen Business fits in the landscape of EE financing options



Private Capital Financing via GoGreen Business works for:

- Borrowers who don't own their property
- Borrowers with projects too small for C-PACE transactions
- Borrowers seeking access to a variety of financing structures, including leases, energy service agreements, and savings-based payment agreements
- Borrowers seeking fast approval who can't wait for the lengthy OBF approval process
- Borrowers who don't qualify for OBF, such as newer businesses or projects with measures that don't meet payback requirements

GoGreen Home Standard Loan Outcomes Q3 2016 – 2021

1,709
loans enrolled

\$28.9MM
total amount
financed

106 months
average term length

\$16,891
average loan size

4.6%
average interest rate

\$6.54
private capital leverage
ratio

500+
participating
contractors

9
participating
finance companies

Top Measures Installed:



HVAC

Equipment and ductwork



Building envelope

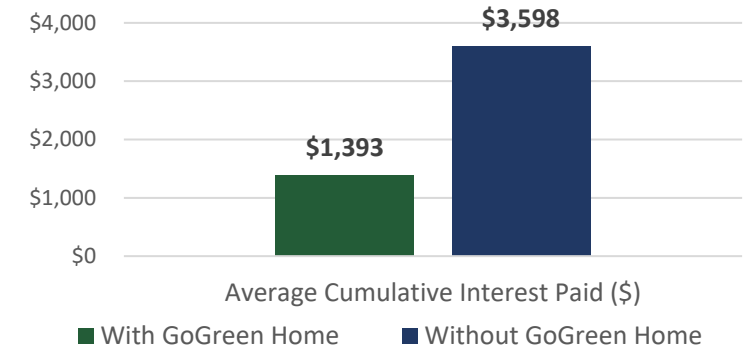
*Air sealing, insulation,
cool roofs, windows*



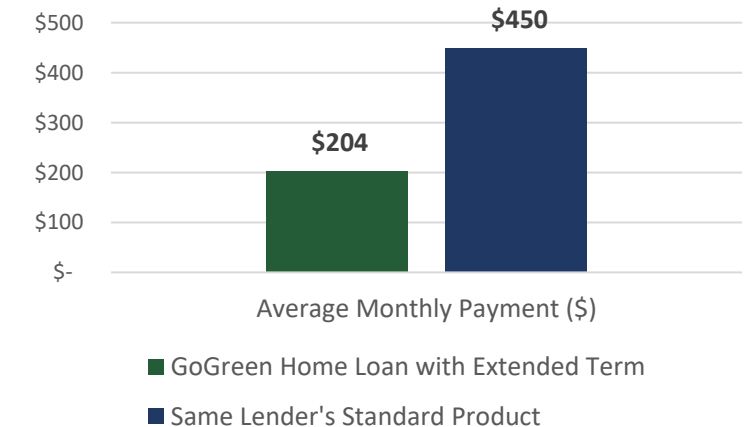
Water heating

*Water heaters, low-flow
fixtures*

Average Cumulative Interest Paid for loans with terms up to and including 60 months



Average Monthly Payment Reduction Due to Extended Terms for GoGreen Home loans with terms >60 months



Energy efficiency upgrades are challenging for small businesses

- Small businesses are still feeling the impacts of COVID
- IOU programs – a key driver of demand for financing – transitioned to third-party implementers between 2019-2021, and re-starting them has been slow and difficult
- Forthcoming **On-Bill Repayment feature** may help facilitate new projects through GoGreen Business

GoGreen Business metrics as of 12/31/21:

10 projects enrolled	\$1.69MM total amount financed	5 participating finance companies	80+ participating contractors
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Bakery Project in Los Angeles County



- \$145,000 financed
- Equipment Finance Agreement
- HVAC duct sealing, oven ventilation, and more
- Extensive remodeling included in financing

Pushing the limits of a debt-based program...

- Debt-based financing can work for LMI borrowers, so long as they **have the cash flow to repay loans**
 - Program offers lenders a higher (20% versus 11%) credit enhancement contribution for credit-challenged and LMI borrowers
 - Open to renters, residents of manufactured homes
- GoGreen Home lenders report approving about 50% of applicants
 - Most denials are due to too high debt-to-income ratio
 - A non-debt solution, like Tariffed On-Bill Financing, is also needed
- Utilities may wish to dedicate subsidy \$ to income-qualified customers and **make affordable financing available for customers who can take on debt**

GoGreen Home metrics as of
12/31/21:

56%

loans to upgrade properties
in LMI census tracts

25%

loans made to borrowers with
<700 credit score

Consumer Protections:

- Lenders have “skin in the game” on every loan
- Maximum 55% debt-to-income ratio
- Minimum 580 credit score

What's next? Moving toward a simple, statewide program

**West Sac:
PG&E Service**
*Heat pumps
encouraged!*



**Sacramento:
PG&E/SMUD
Service**
No heat pumps!

- **Geographic expansion** will resolve complexity for financing projects in joint IOU/POU territories and allow for easier financing of heat pump technologies
 - Partnership with statewide TECH initiative will support financing for electric and decarbonization measures for joint IOU/POU customers
 - POU's will be able to join and fund their participation in the Programs under latest CPUC Decision

What's next? Scaling and decarbonization


- **Recruitment of specialty lenders** to give contractors more options and more control over financing process
- **IT investments** to streamline processes for contractors and lenders, reduce overhead costs
- **Increasing private capital leverage ratio**
 - Average credit enhancement contribution is 15% of loan value, but default rate is less than 2%
 - Shifting average contribution to 10% would leverage \$10 for every \$1 of credit enhancement
- **Comprehensive clean energy projects** that include on-site generation, storage and EV charging
 - CAEATFA currently advocating for CPUC to allow use of credit enhancement (or allow us to incorporate other sources of funding) to support these measures



Opportunity for City of Palo Alto to join CHEEF and the GoGreen Financing Programs


- **Join existing State-administered programs** and leverage infrastructure that has already been built
 - Programs have established lender and contractor network, website, measure list, regulations, and more
- **Offer customers a choice of lender and variety of financing products**
- **Save subsidy dollars for income-qualified customers** and make affordable financing available to those who can take on debt
 - \$1 million in credit enhancement investment can leverage ~\$6.5 million in private capital or ~400 loans at \$16,500 each
 - Credit enhancement dollars are recaptured as loans are paid off and can be redeployed over time
- Participation in GoGreen Financing would also require covering administrative costs related to Palo Alto customers

35+
GoGreen Home contractors already serving Santa Clara County



The box contains four logos: sandium (orange square), ARKAY ENERGY SOLUTIONS (green leaf and house icon), American Vision WINDOWS (blue house icon), and SUPREME COMFORT HVAC, INC. (blue square with white text).

2
GoGreen Home lenders currently serving Santa Clara county



The box contains two logos: Matadors Community Credit Union (red stylized 'M') and CALIFORNIA COAST CREDIT UNION (blue wave icon).

Opportunity to recruit local lender(s)

Thank You

Miriam Joffe-Block
Senior Manager

mjblock@treasurer.ca.gov




For more information, please visit:

- GoGreenFinancing.com
- treasurer.ca.gov/caeatfa/cheef
- treasurer.ca.gov/caeatfa/cheef/cheef-reports-and-additional-materials.asp



✓ **No closing costs or annual fees** ✓ **No collateral required** ✓ **Terms up to 15 years** **Start today! GoGreenFinancing.com**

	Lending Area	APR ¹ (12/29/2021)	Loan Size	Minimum Credit Score	Pre-Approval	Contact Info
STATEWIDE LENDERS Available to borrowers in:						
	Anywhere in California	2.98% - 6.38% 2.98% rate limited to \$30,000 and 30-month term	\$2,500 - \$50,000	600	Instant pre-approval for qualified borrowers (up to \$25,000)	(858) 495-1637 CCCU Energy Group: Ray, Zak, Bill & Katya energy@calcoastcu.org
	Anywhere in California	3.49% - 5.49%	\$2,500 - \$50,000	580	Within one business day	(818) 993-6328, option 4 MCCU Consumer Lending energy@matadors.org
REGIONAL LENDERS Available to borrowers in:						
	Indian Wells Valleys, Searles Valley, Kern River Valley, Bishop, Barstow, and parts of Kern and Inyo counties	4.00% - 8.00%	\$2,500 - \$50,000	580	Within one business day	(866) 743-6497 Eric Bruen RFEI@desertvalleys.org
	Orange County	3.95% - 7.95%	\$2,500 - \$50,000	580	Within one business day	(949) 639-7996 Federico Soto energy@eaglecu.org
	Sacramento, Placer, Nevada, El Dorado, Amador, Yuba, Yolo, Sutter, San Joaquin, Solano, Sierra, and Contra Costa counties ²	2.95% - 7.49% 2.95% rate limited to 36-month term	\$2,500 - \$50,000	580	Within one business day	(800) 556-6768 x2009 First US Consumer Lending energy@firstus.org
	Pasadena, Covina, Vernon, and the greater San Gabriel Valley	4.99% - 8.10%	\$2,500 - \$30,000	600	Within one business day	(626) 351-9651 PSFCU Lending lending@mypsfcu.org
	Alameda, Colusa, Contra Costa, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, and Yolo counties ³	3.99% - 7.99%	\$1,000 - \$50,000	600	Instant pre-approval for qualified borrowers	(707) 392-9277 Carla Eaton ceaton@traviscu.org
	Tulare County and Madera County ⁴	5.62% - 8.12%	\$1,500 - \$50,000	580	Within one business day	(559) 688-5996 x2315 Kiersty Vaughan kvaughan@valleyoak.org

¹ APR = Annual percentage rate. May include .5% auto-pay discount. Rates are subject to change at any time. Check with lender for the most up-to-date rate information. ² Existing and retired federal employees throughout the State of California are also eligible. ³ Available to homeowners who receive gas and electric service from PG&E. ⁴ Valley Oak can lend to select employee groups in Kings and Fresno counties. Please see Valley Oak's website for membership details.



Equipment finance agreements

Equipment leases, service agreements¹, and loans

Equipment leases

Efficiency service agreements

Contact

James Miller
(713) 634-4819
jamesmiller@ascentiumcapital.com

Gillianne Daum
(267) 637-9924
gdaum@leasedirect.com

David Goldstein
(714) 450-1026
dgoldstein@alliancefunds.com

Michael Savage
(888) 938-6256 x703
msavage@renewep.com

Amount available

\$10,000 - \$2,000,000

\$5,000 - \$5,000,000

\$10,000 - \$5,000,000

\$250,000 - \$5,000,000

Term

12 - 60 months
Up to 84 months if required for project cash flow

12 - 84 months
Up to 120 months if required for project cash flow

12 - 120 months

60 - 120 months

FEATURES

Contractor prefunding

Prefunding up to 95% of financed amount ²

Progress payments up to 50%, escrow funding up to 90% ²

Progress payments up to 50%: 30% prior to delivery and 20% upon delivery

Prefunding up to 50%, milestone payments also negotiable

Generation and storage measures financeable



Credit approval process

Approved within 2 business hours and no financials required (up to \$250,000)

Approval within 24 business hours (up to \$250,000) and no financials required (up to \$125,000)

Approval within 24 hours and no financials required (up to \$300,000)

Full underwrite required

Other features

- Payments as low as \$29 / month for the first 3 or 6 months of the term

- DLL can bill for and collect regular service and maintenance charges for contractor

- Cannabis operations may qualify
- Lease reamortization option after 5 years

- Monthly payment is less than the savings, so project results in positive cash flow from day one
- Ongoing service and maintenance included

On-bill repayment (coming soon)

CUSTOMER ELIGIBILITY

Tenant occupants permitted



Minimum months in business

12 months (up to \$100,000)
Greater amounts require 18+ months in business

18 months

12 months (up to \$300,000)
Greater amounts require 36+ months in business

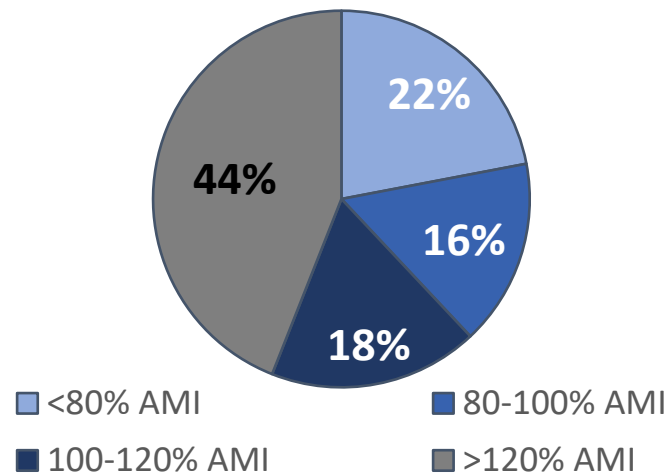
36 months

¹ Service agreements require a minimum of \$50,000 and at least a 36-month term. ² Contractors must pass credit check. ³ If financing term is less than or equal to time remaining on occupancy lease. ⁴ Limited to measures not affixed to property.

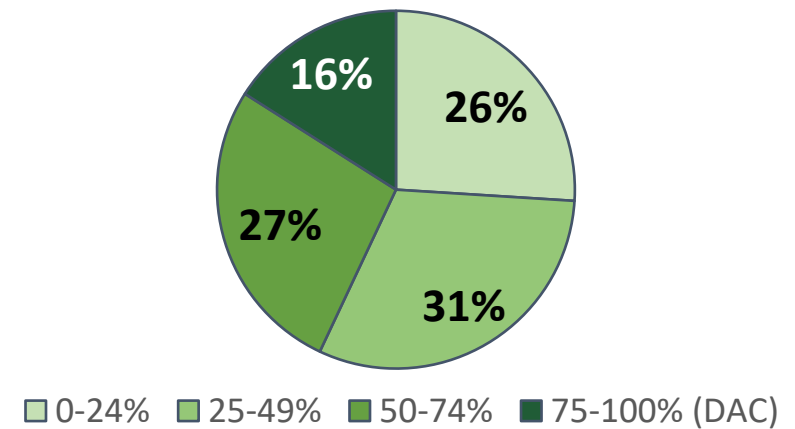
Appendix: How GoGreen Home Serves Underserved Borrowers

GoGreen Home
metrics as of
12/31/21

Percentage of Loans Made to Upgrade Properties by **Census Tract Income**



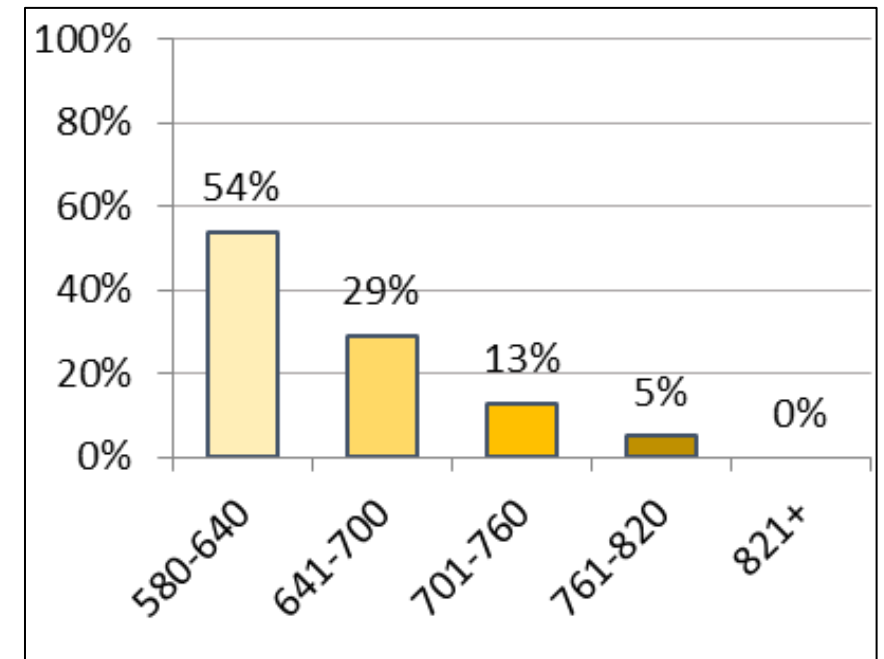
Percentage of Loans Made to Upgrade Properties by **CalEnviroScreen Score**



Appendix: Marketplace microloans for efficient appliances are reaching underserved borrowers

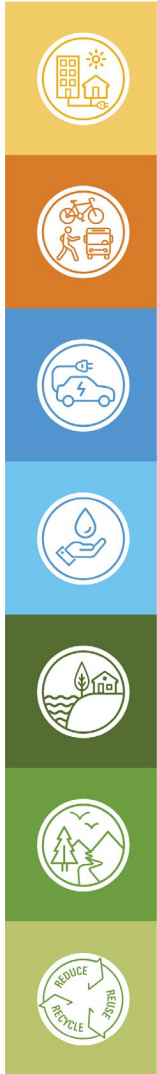
- Starting in Q3 2021, GoGreen Home finances appliances purchased via online IOU marketplaces
 - Currently available in SoCalGas territory, SoCal Edison to launch in Q2 2022
- Early outcomes show significant interest from property renters and credit-challenged borrowers

Percentage of Microloans Enrolled by Borrower Credit Score
through 12/31/21



288 microloans enrolled	\$1,372 average microloan size	30% microloans made to property renters	72% microloans made to properties in LMI census tracts
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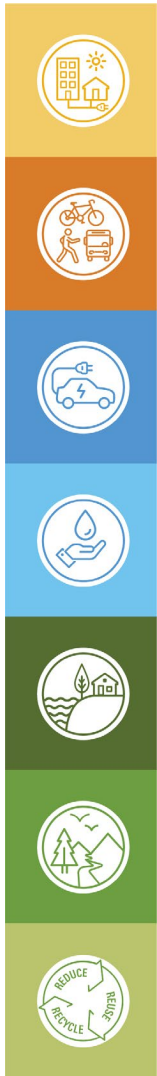


Funding and Financing the 2022-2024 S/CAP Work Plan & Full-Scale Transition
Jonathan Abendschein & Shiva Swaminathan, City of Palo Alto



- Three topics for today's presentation
 - 2022-2024 work plan funding sources
 - ideas to explore for funding the entire S/CAP
 - project financing and how it can contribute
- S/CAP community cost - very preliminary, continuing to evaluate
- Preliminary costs, 2022-24 work plan: \$56M (\$35M in funding identified)
- Most effective way to use funding for electrification: finance up-front costs with private capital, provide repayment assistance using available funding sources

2022-2024 Work Plan: Potential Funding Sources



- Estimated 2022-2024 Work Plan cost = \$56M. Immediately available funding sources:

Source	Available Thru 2024 (10/21 Forecast)	Limitations
Electric Cap&Trade	\$5.2M	Must use for GHG-reducing activity benefitting electric ratepayers
Gas Cap&Trade	\$11.4M	Must use for GHG-reducing activity benefitting gas ratepayers
Low Carbon Fuel Standard	\$10.5M	Must be used to promote EVs via incentives, direct investments, bill credits, or marketing and outreach
Public Benefits	\$5.7M	Use for energy efficiency, low-income, R&D, or renewable energy
Grants	\$2.3M	Spend in accordance with grant terms
TOTAL	\$35.1M	

- Other funding sources to explore:

<ul style="list-style-type: none"> Electric or gas ratepayer funding PaloAltoGreen voluntary funding 	<ul style="list-style-type: none"> Philanthropy
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- Project financing enables City to make best use of limited funds
- Other ideas?



- What to fund? Design of program matters:
 - City pays full up front cost of EV charging / electrification improvements
 - OR – City encourages project loans, assists with repayment incentives
 - Could have different designs for low-income programs
- Long-term financing options to explore
 - Tax measure for climate action (carbon tax, parcel tax, other taxes?), leverage the revenue stream to issue bonds to fund up-front costs
 - Obtain private financing for up-front costs, tax to help with repayment. Allows for distribution of cost burden across different sectors.
- Both approaches are novel uses of municipal taxing and bonding authority, need to explore legal issues
- Other ideas?



- Financing avenues available for various elements of the plan:
 - Vehicles – traditional auto financing
 - Mobility measures – traditional municipal revenue and financing applies (e.g. muni bonds), explore new funding sources like parking fees, tax measures to cover repayment of bonds
 - Utility improvements – traditional utility bond issuances
 - Building electrification/EV charging – traditional financing exists, innovation may bring benefits
- Potential benefits, innovative financing of electrification/EV charging:







Homeowners	Landlords / Business Owners
<ul style="list-style-type: none"> • Lower interest rates • Access to credit for borrowers with less access to traditional avenues • Ability to transfer loan from property owner to property owner • Streamlined project execution 	<ul style="list-style-type: none"> • Lower interest rates • If repayment can be an operational cost (e.g. if tied to utility meter) it could minimize use of shareholder / investor funds or corporate debt capacity • Ability to deal with landlord / tenant split incentive issues – both residential and non-residential

Financing Model Overview



Financing Model	Description
Property-Assessed Clean Energy (PACE)	<ul style="list-style-type: none"> • Loan based on lien on property, debt repaid through property taxes • Currently available in Palo Alto
On-Bill Repayment	<ul style="list-style-type: none"> • Private capital provider makes loan to customer, utility collects payments • Repayment cost may exceed energy savings
On-Bill Financing	<ul style="list-style-type: none"> • Utility makes loan to customer to install equipment, may or may not install it • Not tied to utility meter, does not transfer from customer to customer
Tariffed On-Bill / Inclusive Utility Investment *	<ul style="list-style-type: none"> • Utility pays for and owns equipment until it recovers its cost with charge • Utility responsible for repairs, if needed, until its costs are recovered • Estimated energy savings must exceed utility’s cost recovery charge • Cost recovery period less than 80% of the useful life of the upgrades • Cost recovery tied to utility service at a specific meter, and applies automatically to successor customers at that metered location • Open to renters with landlord approval
Other Public-Private Financing Models	<ul style="list-style-type: none"> • No involvement with utility bill, but utility or agency may partner with financing provider to lower interest rates through loan loss reserve or other features.

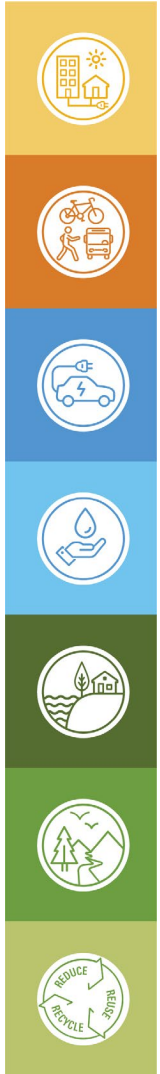
Financing Model Overview

	Financing Model	Lower interest or cost of capital	Successor resident may be obligated to pay	Upgrade costs may be passed to renters ^(A)	Off balance sheet for commercial owners	No credit check	Savings must exceed repayment charge ^(B)	Other Notes
	Property-Assessed Clean Energy (PACE)	?	✓	✓	✓	✓	?	Encumbers the property
	On-Bill Repayment	✓		✓				
	On-Bill Financing	✓		✓				May lower default rate
	Tariffed On-Bill / Pay as you Save (PAYS [®])	✓	✓	✓	✓	✓	✓	Up-front processing costs may be higher
	Other Public-Private Financing Models	✓		?				

Note that this slide represents staff’s best understanding from research to date, but more research is needed and feedback is welcome. As program choices are narrowed, legal review will be needed to determine individual program rules and requirements.

** Note A: depends on landlord-tenant contractual relationships, may differ for residential and non-residential tenants*

** Note B: where repayment charge exceeds savings risk of default increases, may affect feasibility of programs*



- Number of financing programs for building efficiency and electrification projects are being offered by electric, natural gas, and water utilities to their customers
- **Water Upgrade \$ave** – tariffed-on-bill (TOB) water program promoted by BayREN/ABAG ★
- **GoGreen Financing** - State administered loan program ★
- **Technology & Equipment for Clean Heat (TECH)** – TOB pilot program, IOU rate-payer funded
- **Sonoma Clean Power (SCP)** - On-Bill Financing Program, funded by SCP
- **East Bay Clean Energy (EBCE)** - private capital financed efficiency/electrification program
- **Marin Clean Energy (MCE)** - third-party loan, using MCE capital, energy storage projects
- **Silicon Valley Clean Energy (SVCE)** – exploratory stage
- **Property Assessed Clean Energy (PACE)** private capital financed loan program ★



Could be made available to Palo Alto community



Available to Palo Alto community

Landscape of Customer Project Financing Programs



Program Name (Program Type)	Project Capital Provider	Loan or Capital Investment Processor	Loan Servicer or Charge on bill	Loan Loss Reserve? Provider?	Interest rate or cost of capital	Max Loan Amount per customer	Customer Segment served	Program loans or # of sites upgraded	Capital deployed	Project developer	Program manager
WU\$ave (PAYS/TOB)	ABAG	BayREN	Water utilities/ TOB	Not applicable	3% to 5% program fee	Not applicable	SFR, MFR, commercial	Post-pilot: 40	\$26k	BAYREN; primary	Sonoma County RCPA
GoGreen (PCL)	credit unions, other	credit unions, other	credit unions, other	Yes, IOU ratepayers	3 to 8%	\$50k Res) \$5M(Com)	SFR, MFR, Com; renters	1709 (R) 10 (C)	\$29M (R) \$1.7M(C)	Approved Contractors	CAEATFA
TECH (PAYS/TOB)	TBD	TBD	IOU/ TOB	Yes, rate-payer funded	TBD	64% of lifecycle bill savings	residential	Yet to launch	Goal is \$4M	TBD	CPUC/ Energy solutions
SCP (OBF)	SCP, \$1M pilot	SCP	SCP	None, not applicable	0%	10,000	residential	50 loans in 6 months	~\$0.2M, average \$5.5k	Contractors, mostly HPWH	SCP/ Frontier Energy
EBCE (PCL)	BlocPower Goldman	BlocPower/ Goldman	BlocPower	EBCE	Depends on lease	none	SFR, MFR in Low Income communities	Early stage	Early stages	BlocPower	BlocPower
MCE (PCL)	MCE, up to \$4M	NEIF	NEIF	None, not applicable	0% (LI), 2.5% and 5.5%	\$1.5k (min) \$50k (max)	SFR, up to 5 unit MFR; homeowners	Early stages	Early stages	contractors	MCE
Ithaca (PCL)	BlocPower, Goldman Sachs	BlocPower/ Goldman Sachs	BlocPower	TBD	Depends on lease	none	all	-	-	BlocPower	BlocPower

LMI – low and moderate Income; SFR, MFR – Single/multi-family residence; PCL - private capital loan



- [BAYREN Water Upgrade \\$ave Program](#)



- [GoGreen Business Financing Options Chart](#)



- [GoGreen Residential Loan Options Chart](#)



- [California Hub for Energy Efficiency Financing \(CHEEF\) - March 2021 Update](#)



- [Technology and Equipment for Clean Heat \(TECH\) Program: TOB Financing Pilot](#)



- [Sonoma Clean Power Home Owner Loan: 0% interest up to \\$10,000; 5-10 yr repayment](#)

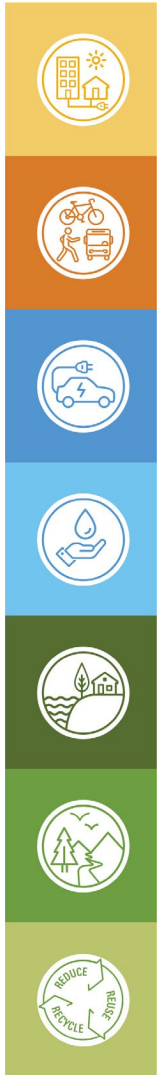


- [East Bay Community Energy \(EBCE\) Loan Agreement with BlocPower Energy Services 3, LLC](#)

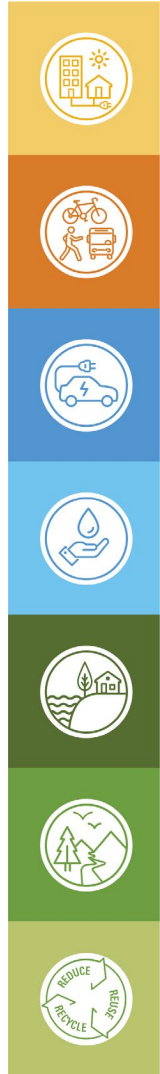


- [MCE-Zero-Interest-Home-Battery-Loans](#)

- [Property Assessed Clean Energy \(PACE\) Project Loan Programs in California](#)



- Project financing questions and areas of investigation
 1. Actively promote PACE offered by CaliforniaFIRST?
 2. Type(s) of new Palo Alto program(s)?
 - Offer an inclusive utility investment program based on PAYS[®] model
 - Offer private capital loan like EBCE or MCE
 - Join an existing loan program like GoGreen?
 3. Understand extent of community interest; interested community segments
 4. Source(s) of capital – City, private, or hybrid?
 5. How to reduce interest rate to customer – loan loss reserve? Additional rate buy-down?
 6. Loan origination and servicing function: out-sourced or in-house?
 7. Other questions to consider?
- Funding the 2022-2024 S/CAP Work Plan
 8. Priority areas for funding? Approach? Additional revenue sources?
- Funding community scale S/CAP implementation
 9. Which funding / financing ideas are a priority to explore?





March 10, 2022

- **Working Session**

- Working Group Teams Work Plans



April 14, 2022

- **Carbon Reduction / Capture**

- Carbon Neutrality, low-carbon construction materials, new climate goal for after 80 x 30





SUSTAINABILITY & CLIMATE ACTION PLAN

Thank You!

Please submit questions or comments to
sustainability@cityofpaloalto.org

Acting Now for a Resilient Future



CITY OF
**PALO
ALTO**