



Criteria for a Comparative Assessment of Energy Efficiency Financing Programs



PUBLIC WORKSHOP

**TUESDAY, MARCH 29, 2016
9:30 AM**

**STATE TREASURER'S OFFICE, ROOM 587
915 CAPITOL MALL
SACRAMENTO, CA 95814**

Or via Webinar

**Live captioning is available at:
<https://www.streamtext.net/player?event=caeatfa>**

**Slides and webinar information is available at:
<http://www.treasurer.ca.gov/caeatfa/workinggroup/index.asp>**

Welcome



- In person attendees:
 - Please sign in or leave a business card
 - Come to the microphone for questions and comments
 - Bathrooms:
 - Men: 3-4-1
 - Women: 3-2-5
 - In case of emergency please walk down the stairs and meet in Capitol Park across 10th street
- Webinar attendees:
 - Please submit questions through the webinar by “raising” hand

This webinar is being recorded and will become a part of the public record

Agenda



- Welcome & Background Information (9:30-9:45)
- Overview of PACE Programs (9:45-10:45)
 - Sonoma County Energy Independence Program (Jane Elias)
 - CSCDA Open PACE Program (James Hamill)
 - Ygrene Works Program (Mike Lemyre)
 - WRCOG & California HERO Program (Barbara Spoonhour)
 - HERO Program – Renovate America (Jewel James)
 - mPOWER Placer & mPOWER Folsom (Jenine Windeshausen)
- Case Study of HERO Program (10:45-11:15)
 - Pat McGuckin & Laura James, Cadmus
- Public Comment (11:15-12:00)

Background



Supplemental Report of the 2015-16 Budget Package, Item 0971-001-0528:

“CAEATFA, in consultation with the CPUC, shall also create a working group that will include key stakeholders to develop criteria for a comparative assessment of energy efficiency financing programs available in California, including Property Assessed Clean Energy financing and legacy utility on bill financing for short-term lending. CAEATFA shall publish summaries of the issues discussed with and recommendations made by the working group. Relevant Senate and Assembly policy committee staff shall be invited to observe meetings of the working group.”

Overview of Workshop Series



Public process to encourage stakeholder participation and input in developing the criteria

CAEATFA will be hosting a series of educational workshops featuring presentations from stakeholders on various metrics for evaluating energy efficiency financing programs.

The process will culminate with a meeting of a working group that will discuss a proposal of potential criteria for a comparative assessment of energy efficiency programs.

- Establish a common vocabulary.
- Learn how administrators evaluate their programs—discuss program goals, structures, and methodologies for evaluating EE financing programs.
- Discuss the pros and cons of criteria.
- Proposal will be drafted based on previous workshop discussion and written comments received.
- Working group will lead discussion on the proposal, making recommendations on the criteria.

CAEATFA will summarize and publish materials, discussions, and any recommendations from the workshops and working group.

Timeline



February 10, 2016	<p>First public workshop with presentation from LBNL on <i>Making it Count</i>. The public may submit written comments on topics/criteria that should be discussed for 7 business days (Feb 22nd).</p> <p>CAEATFA will accept general written comments throughout the process on a rolling basis.</p>
March 15, 2016	<p>CAEATFA Board approved working group participants.</p>
March 22, 2016	<p>Second public workshop with a presentation on CHEEF and OBF.</p>
March 29, 2016	<p>Third public workshop with presentations on PACE.</p>
April 13, 2016	<p>Proposed comparative criteria noticed for public comment. The Public may submit written comments for 7 business days (April 22nd)</p>
April 27, 2016	<p>Meeting of the working group to discuss proposal of criteria for a comparative assessment of energy efficiency programs.</p>

Public Comment



Reminder: Written public comment on comparative criteria will be accepted on a rolling basis:

By Email: ashley.bonnett@treasurer.ca.gov

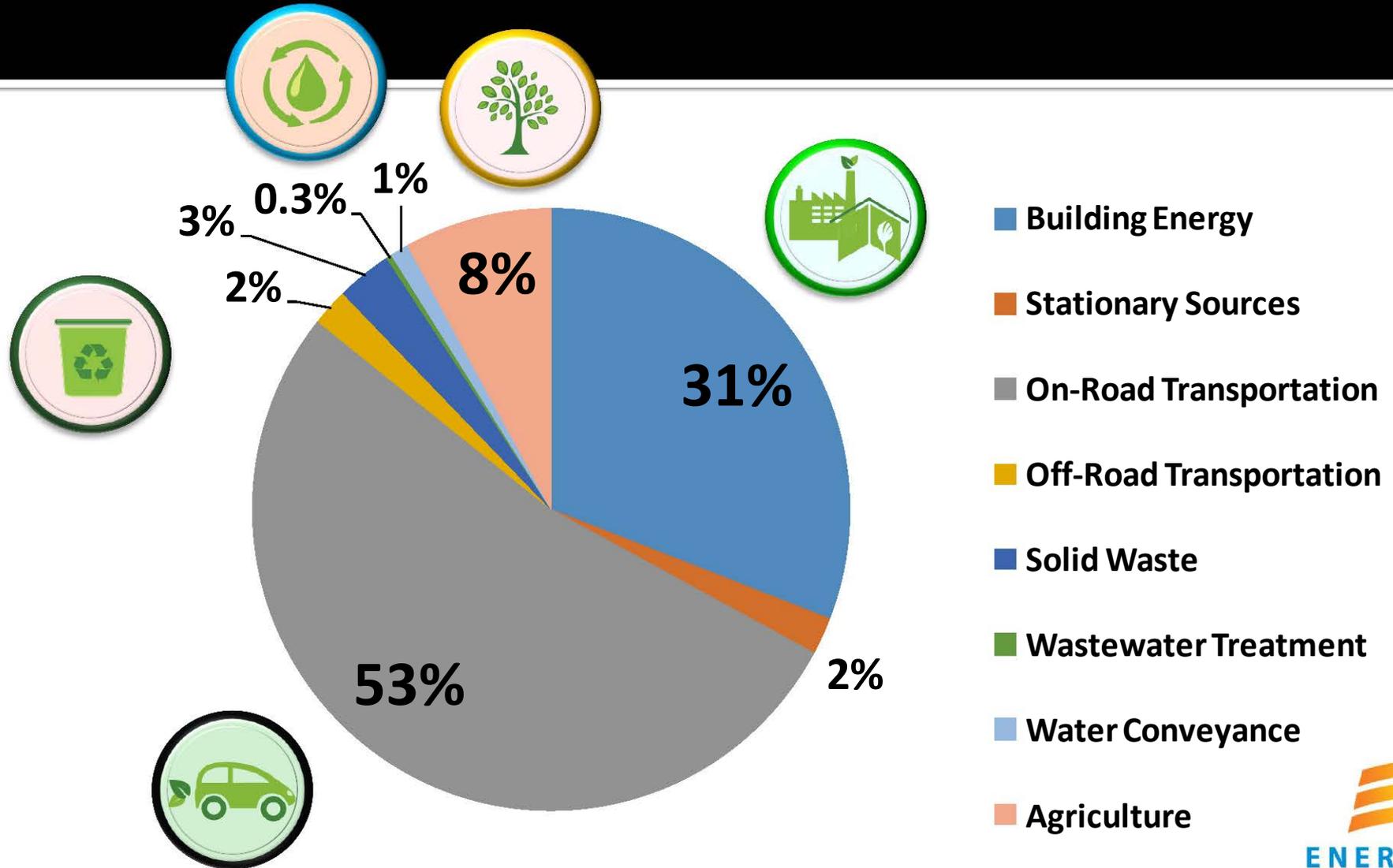
By Mail: Ashley Bonnett, Analyst
CAEATFA
915 Capitol Mall, Room 457
Sacramento, CA 95814

Sonoma PACE Update

CAEATFA Working Group – Sacramento
March 29, 2016



Why PACE in Sonoma?

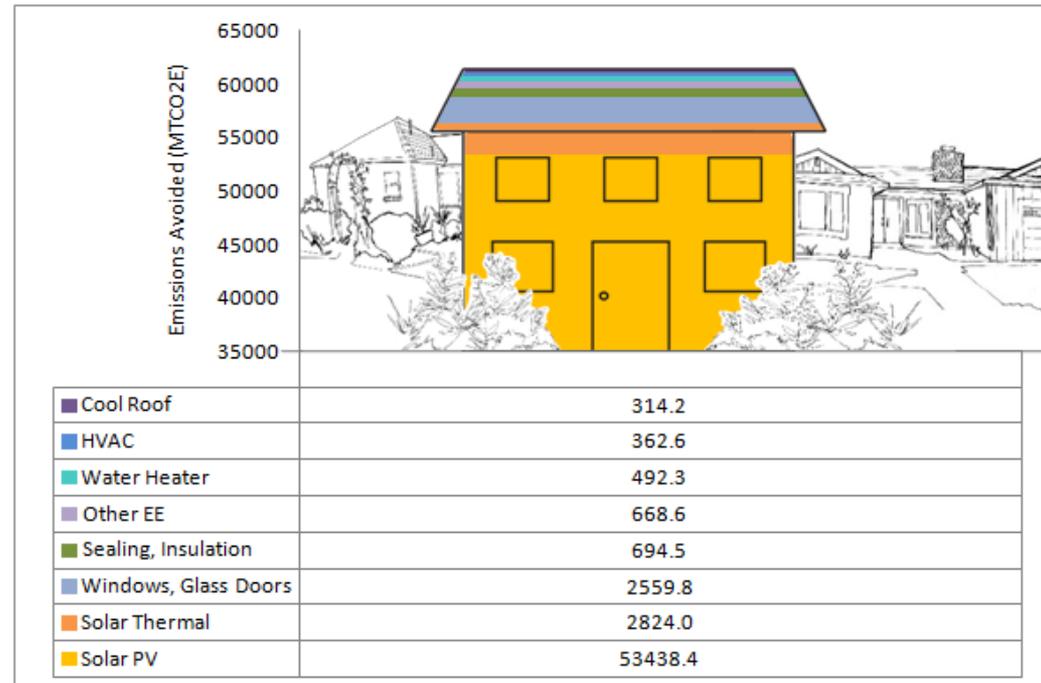


Sonoma County Energy Independence Program

PACE by the Numbers

March 2009 – January 2016

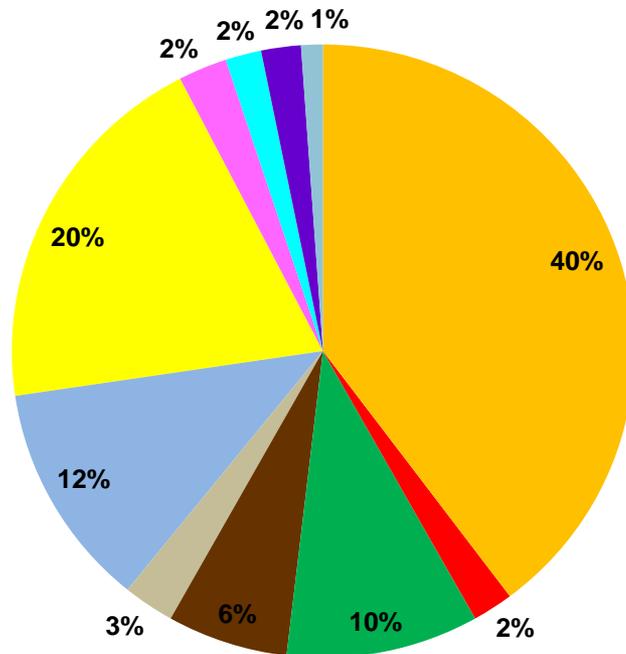
33,653	PACE financing inquiries
\$73 M	Amount funded
\$20.4 M	Funding available
3,140	Applications received
2,272	Applications funded
0.35%	Tax delinquency rate
0.00%	Default rate
1,460	Jobs created (ACEEE formula)
157	Participating contractors
>88%	Jobs done by local contractors



Total of 61,354 MTCO₂E Reduced Over SCEIP History

Sonoma County Energy Independence Program

89% of All Projects are Completed by Local Contractors



- Solar PV
- Solar Thermal
- HVAC
- Cool Roof
- Water Heater
- Sealing & Insulation
- Windows & Doors
- Lighting
- Ventilation
- Water Cons.
- Other Energy Efficiency

2,150
Efficiency
Improvements!

Generation:
40%

Energy Efficiency:
58%

Water Conservation:
2%

Unlocking Financing Barriers: Advantages of PACE

- No income qualifications
- Easy application process
- Disclosures and schedules provided



Unlocking Financing Barriers: Advantages of PACE

- Permits pulled and finaled for the work
- Improvements have specifications equal to or greater than code
- Reasonable or average cost for each improvement



Unlocking Financing Barriers: Advantages of PACE

- Contractors must be licensed and in good standing
- Provide additional insurance
- Program standards



Unlocking Financing Barriers: Advantages of PACE

- Disbursement does not happen until the work is completed
- Customer satisfaction and survey
- Ability to transfer to the new owner



Sonoma County Energy Independence Program



For us, it was about
thermostat wars.

For us, it was about
doing it right the first time.



For us,
it's all about the kids.

Sonoma County Energy Independence Program

Storefront open 8-5 Monday – Friday

- ✓ Local contractor bid requirement
- ✓ Neutral, third party, not-for-profit PACE operator

EDUCATION:

- ✓ Contractor Programs: includes forums, sales training, workshops and classes
- ✓ Homeowner workshops throughout the County
- ✓ Local Energy Action Forums in each city
- ✓ Collaborative Agreement with other PACE providers
- ✓ Collaboration with agencies, cities, other programs, departments, etc.

Contact Information

Jane Elias

Community Program Coordinator-Sonoma County

707-565-6470

Jane.elias@sonoma-county.org

SONOMACOUNTYENERGY.ORG





CSCDA

CALIFORNIA STATEWIDE COMMUNITIES
DEVELOPMENT AUTHORITY



California State Association of Counties



CSCDA's Open PACE Program

www.cscda.org

Overview

- Open PACE provides California Statewide Communities Development Authority (CSCDA) member cities and counties a turn-key PACE solution that gives property owners a choice among multiple pre-qualified PACE financing providers based on their rates, experience and capital commitment to the California PACE market.
- Through the adoption of a one-time resolution, cities and counties provide their residential and commercial property owners competitive PACE program options, administered by CSCDA's five pre-qualified program administrators:



- Open PACE also offers cities and counties relief from the future burden of vetting and approving new Programs as the PACE market changes; future administrators can be managed by CSCDA.

Goals of Open PACE Program

- ✓ **Energy Conservation.** Through energy efficiency measures and renewable energy products CSCDA wants to address issues associated with global climate change and the reduction in greenhouse gases.
- ✓ **Water Conservation.** With the ongoing water shortages in California water conservation CSCDA wants to address ways in preserving this valuable resource.
- ✓ **Electric Vehicle Infrastructure.** By increasing electric vehicle charging stations throughout California the use of electric vehicles will also increase, and contribute to the reduction in greenhouse gases.
- ✓ **Seismic Strengthening.** The need to address seismic safety in California is an ongoing issue that the Open PACE program can assist to finance such upgrades.
- ✓ **Competition is Good.** Only CSCDA offers multiple programs to compete for residential and commercial owners business. The goal is through a competitive marketplace property owners have access to the best financing possible.
- ✓ **Highest Standards.** In December, 2015 CSCDA adopted a PACE Consumer Protection Policy containing the highest standards of protection for property owners. Cities and counties that participate in Open PACE can be assured its participating residents are being protected by these policies.

	2014	2015
Cumulative Fundings	\$3.4M	\$83M
	150	3,400
GHG Reduction (metric tons)	603	7,640
Energy Saved (kWh)	471,876	5,253,530
Water Conserved (gallons)	89,134	7,026,576

- ✓ **Qualifications/Review.** Administrator must have the capability (individually or as a team) to provide all services necessary to launch and operate a successful PACE program.
 - Origination
 - Servicing
 - Assessment/Special Tax Expertise (coordination with County Assessor, collections and delinquency monitoring and management)
 - General Program Administration
 - Financing

- ✓ **Trustee.** Administrator must identify as part of its team a trustee that (a) is acceptable to CSCDA and (b) demonstrates a willingness and ability to act as trustee for a PACE program.

- ✓ **Capital Commitment.** Administrator must have committed access to at least \$25M in financing to purchase or warehouse PACE bonds.

- ✓ **Post-Issuance Responsibilities.** Administrator will take full responsibility for all post issuance compliance matters including continuing disclosure and required filings with CDIAC, State Controller and other State agencies.

For CSCDA Open PACE related questions, please contact:



James Hamill

Direct: (925) 476-5644

Cell: (925) 708-0271

jhamill@cscda.org

Jon Penkower

Direct: (925) 476-5887

Cell: (415) 939-8484

jpenkower@cscda.org

GSFA & Ygrene Works Program Update 03/29/16

Contact:

Mike Lemyre
Ygrene Energy Fund
707.236.6608
mike.lemyre@ygrene.us





CAEATFA
Working Group on Energy
Efficiency

Financing Programs

March 29, 2016

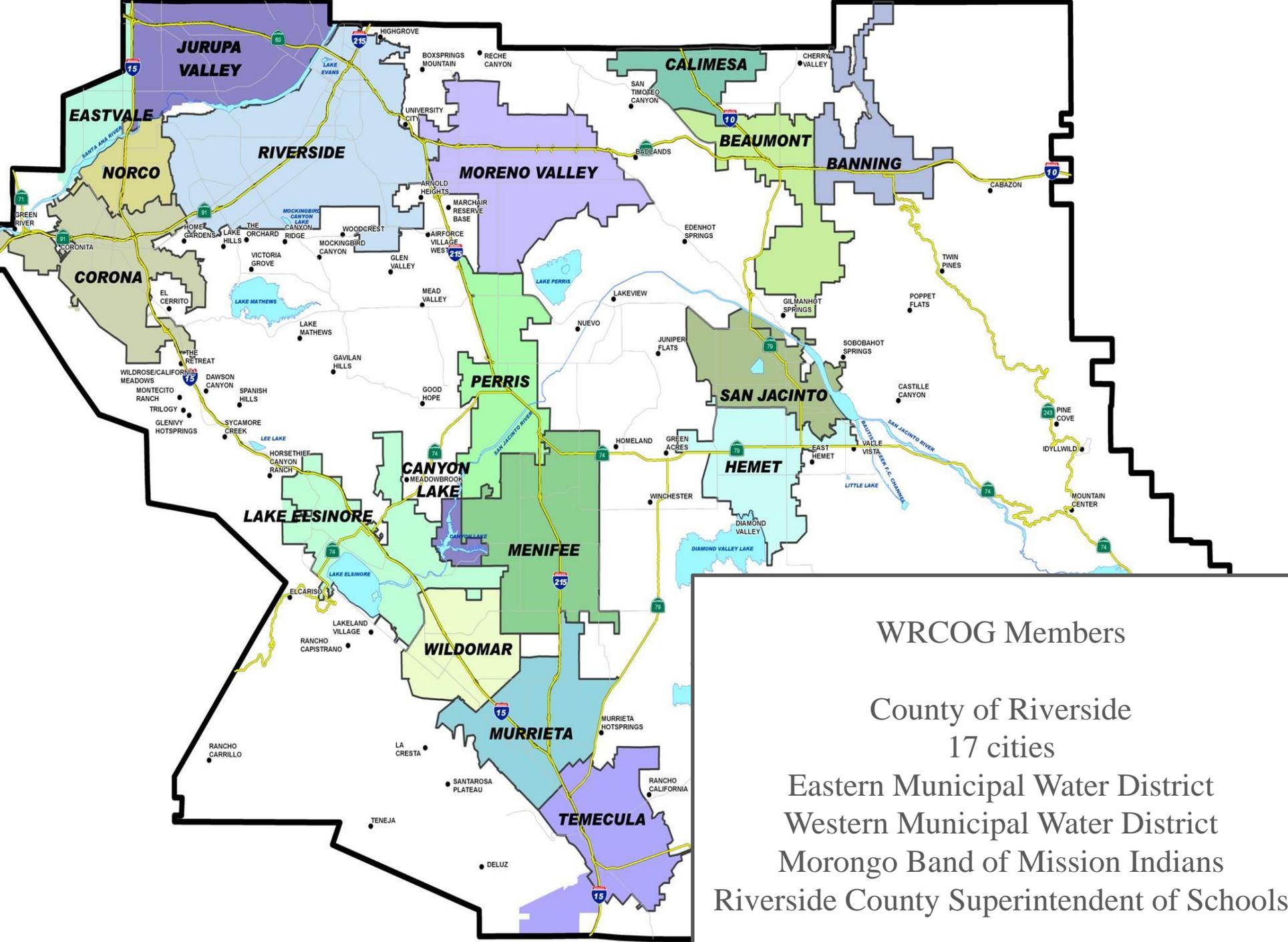


About the Western Riverside Council of Governments (WRCOG)

- Established in 1991
- Include 18 jurisdictions
- Focus areas include:
 - Air Quality
 - Energy / Environment
 - Economy
 - Growth
 - Housing
 - Transportation
 - Water



Issues ... transcend political boundaries



WRCOG Members

County of Riverside
17 cities

- Eastern Municipal Water District
- Western Municipal Water District
- Morongo Band of Mission Indians
- Riverside County Superintendent of Schools

Program background

- WRCOG administers a residential and commercial Property Assessed Clean Energy (PACE) Program
 - Residential: HERO Program
 - Commercial: Samas Commercial
- Authorized by state law (AB 811 and AB 474)
- Launched in Western Riverside County in 2011
- California HERO launched in 2014
 - 311 jurisdictions participating outside the WRCOG subregion



3. Why a regional Program?

- Economies of scale (1 program vs. 18 individual programs)
- Consistent regional messaging and marketing
- Consistent program design and implementation
- Ability to leverage and coordinate funding sources



Program goals

- Assist property owners of improved real property with making significant investments in the long-term health of the local, state, and national economy and global environment
- Create/retain construction jobs
- Retrofit 10% of pre-2000 constructed homes
- Save the region approximately 464 billion Btu's or 45 million kWhs
- Assist non-residential property owners with the construction of renewable energy improvements, such as solar photovoltaic systems, that allow the generation of electricity by alternative and renewable resources.



Program costs

- One-time Administration Fee: 4.99% (Similar to closing costs)
- Annual Administrative Fee: \$35 Residential and \$385 Commercial
- Terms: 5, 10, 15, 20, 25 years
- Interest rates: 6.75%, 7.69%, 8.15%, and 8.35% - Residential
5.95% to 6.85% - Commercial
- Minimum assessment amount: \$5,000
- Residential maximum is 15% of property value up to \$700k, 10% after
- Commercial maximum is 20% of property value
- No prepayment penalties for residential



Adopted HERO Consumer Protection Policies

The Policy sections include:

1. Risk
2. Disclosures & Documentation
3. Funding
4. Operations
5. Post-funding Homeowner Support
6. Data Security
7. Privacy
8. Marketing & Communications
9. Protected Classes
10. Contractor Requirements
11. Eligible Products
12. Maximum Financing Amount
13. Reporting
14. Closing & Funding
15. Examination



Examples of eligible improvements

- Heating and air conditioning
- Cool roofs
- Natural gas storage water heater
- Tankless water heater
- Windows and glass doors
- Outside irrigation
- Insulation
- Window filming
- Home sealing
- Lighting control systems
- Solar thermal systems (hot water)
- Solar thermal systems for pool heating
- Photovoltaic systems
- Low flush toilets

All products must meet Title 24, Energy Star, and/or Water Sense requirements



CAEATFA
Working Group on Energy Efficiency
Financing Programs
March 29, 2016



WRCOG Commercial Program Results

- Capital provider: Samas Capital,
- Overview:

Funded:	27 projects = \$3+ million
Construction:	10 projects = \$5+ million
Investor review:	19 projects = \$10.8+ million
Lender acknowledgment:	51 projects = \$7+ million
Application:	29 projects = \$4.1+ million
Pre-construction:	14 projects = \$1.8+ million
Grand total:	149 projects = \$31.7+ million

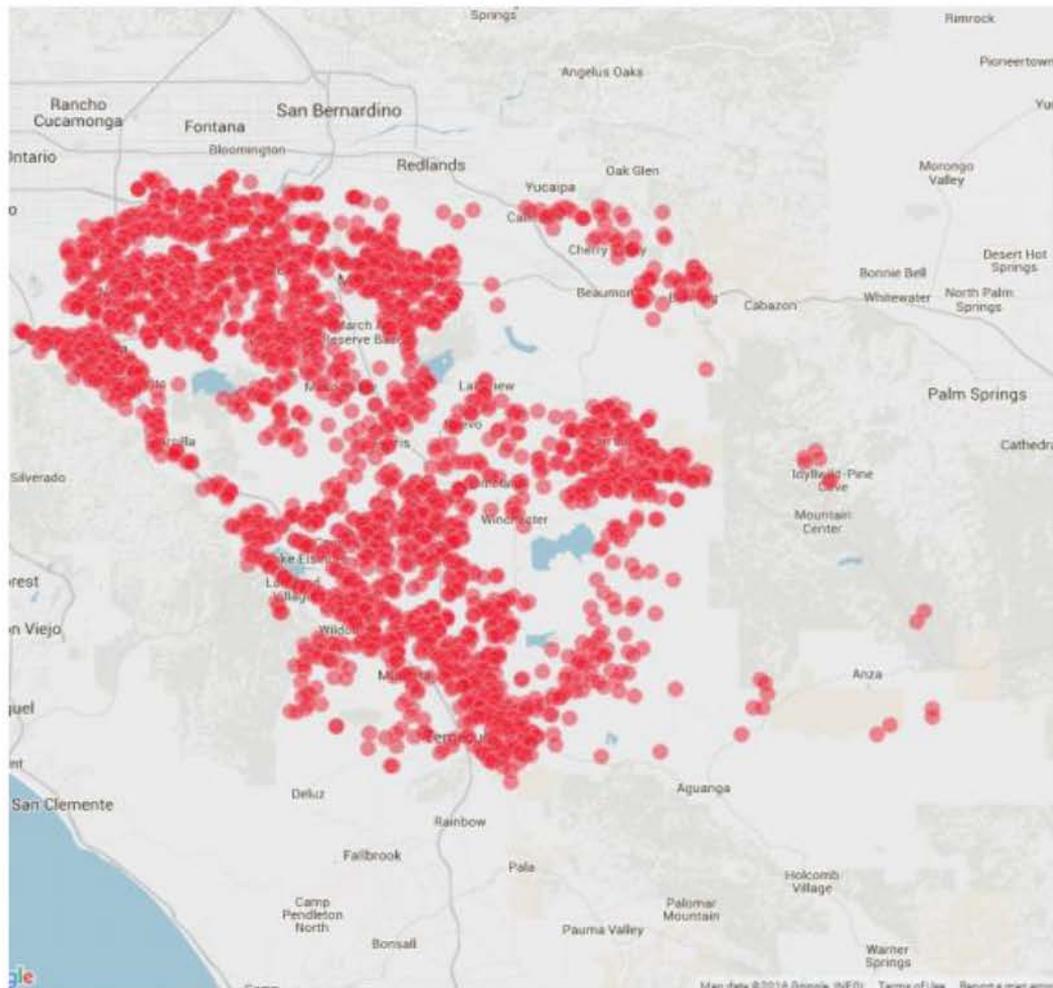


16,042 Homes Improved

12/14/2011
HERO Launch Date

460,358
Housing Count

01/01/2011 - 03/23/2016
Report Range



Improvements

Type	Total Installed	Bill Savings
Energy	21.0K	\$244M
Solar	10.8K	\$455M
Water	983	\$6.34M

Lifetime Impact

Applications Submitted	44.0K
Applications Approved	29.6K
Funded Amount	\$353M
Economic Stimulus	\$611M
Jobs Created	2,996
Energy Saved	2.66B kWh
Emissions Reduced	725K tons
Water Saved	718M gal

Learn how these numbers are calculated at <https://www.herogov.com/faq>

CAEATFA

Working Group on Energy Efficiency

Financing Programs

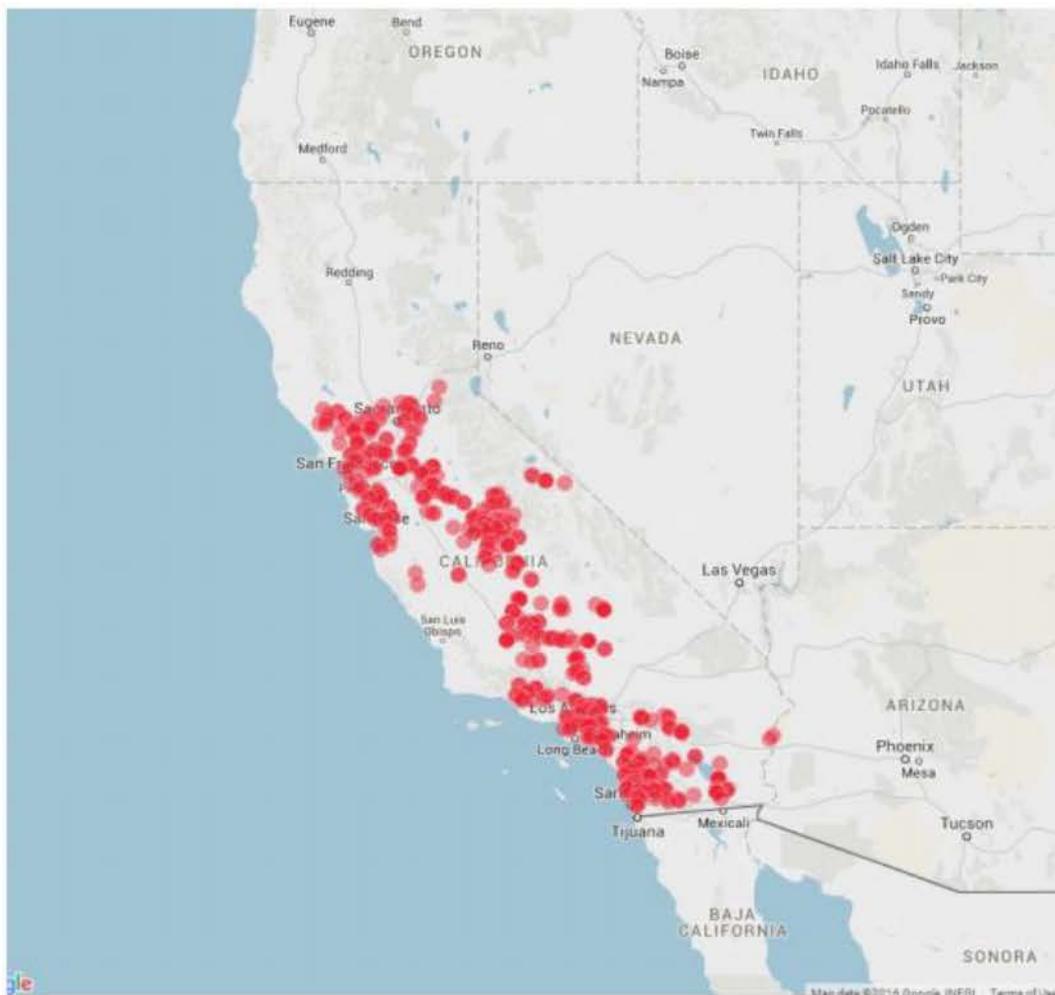
March 29, 2016

22,178 Homes Improved

02/10/2014
HERO Launch Date

5,037,436
Housing Count

01/01/2011 - 03/23/2016
Report Range



Improvements

Type	Total Installed	Bill Savings
Energy	29.7K	\$341M
Solar	14.4K	\$660M
Water	2,021	\$13.7M

Lifetime Impact

Applications Submitted	64.0K
Applications Approved	46.6K
Funded Amount	\$541M
Economic Stimulus	\$937M
Jobs Created	4,594
Energy Saved	3.37B kWh
Emissions Reduced	909K tons
Water Saved	1.54B gal

Learn how these numbers are calculated at <https://www.herogov.com/faq>

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How are the numbers calculated?

- Energy, water, and greenhouse gas savings estimates are based on third-party calculation models and other technical references from reputable sources including:
 - U.S. Department of Energy
 - U.S. Environmental Protection Agency
 - National Renewable Energy Laboratories
 - California Energy Commission
 - California Public Utilities Commission
 - California Department of Water Resources
 - Public Policy Institute of California

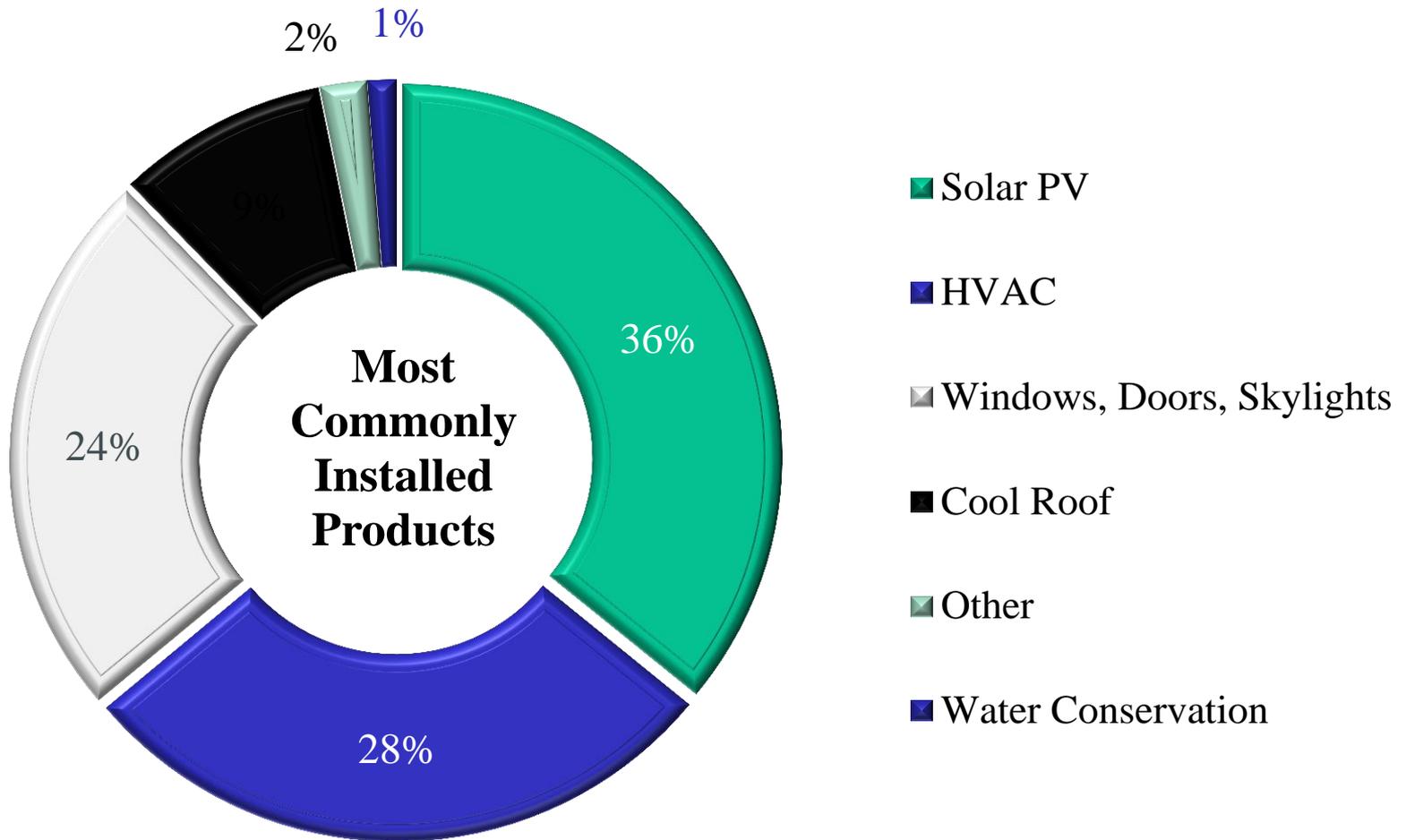


How are the numbers calculated?

- Savings estimates are customized to each household based on:
 - Type of improvement
 - Housing characteristics
 - Regional climate, and other factors
 - Total savings are multiplied by local utility rates to forecast the bill savings over the life of the product.
- Economic impact and job creation estimates are based on an academically-accredited economic analysis performed by Dr. Qisheng Pan, Professor and Chair of the Department of Urban Planning and Environmental Policy at Texas Southern University.
 - The economic analysis considers comprehensive upstream and downstream impacts (i.e. manufacturing, wholesale/supply/distribution, and installation) for the various industries supporting the energy and water-efficient products available through the HERO Program.



Types of residential projects



Customer satisfaction

- Beginning June 2014, implemented customer survey of all funded projects
- 8,000+ people have completed the survey



Said that HERO Program **Representatives are friendly, knowledgeable and professional.**



Said that they would **recommend the HERO Program** to a friend or relative.



Said that they would **recommend their HERO Registered Contractor** to a friend or relative.

Questions ?

1

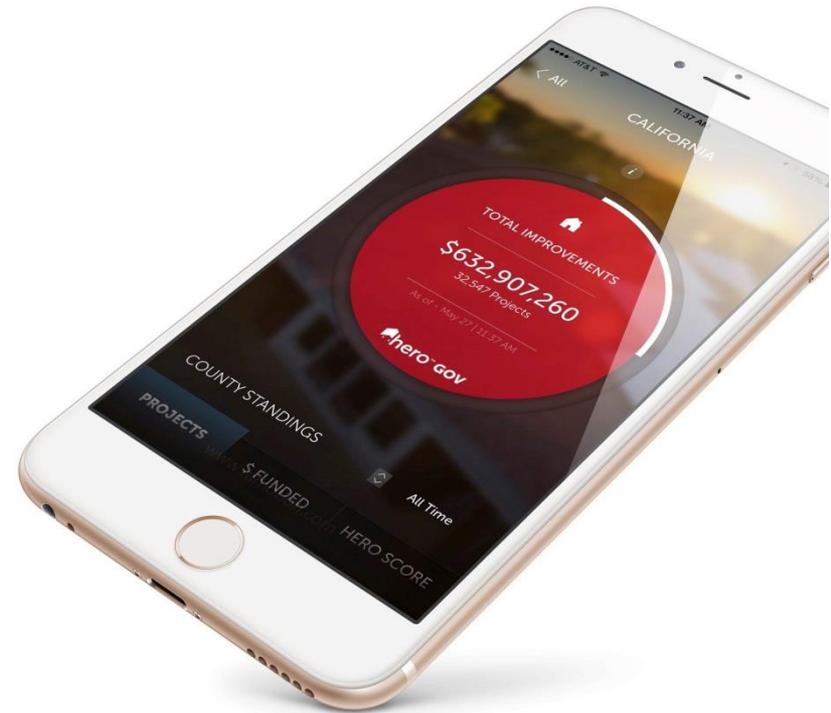
www.heroprogram.com

2

Contact Information:

Barbara Spoonhour
Western Riverside Council of Governments
(951) 955-8313 or email spoonhour@wrcog.cog.ca.us

Crystal Adams
Western Riverside Council of Governments
(951) 955-8312 or e-mail adams@wrcog.cog.ca.us



RENOVATE AMERICA™

Building a Better Future, Together

HERO in California

~**86%** California households can participate in the Program –
32 Counties, ~10.3 Million households

65,285 completed residential projects

\$1.36 Billion funded in upgrades

11,533 local jobs created

\$2.3 Billion in annual economic impact

2.3 Million tons of abated CO₂ emissions

3.5 Billion gallons of water saved



Said that HERO Program **Representatives are friendly**, knowledgeable and professional.



Said that they would recommend their **HERO Registered Contractor** to a friend or relative.

Bringing PACE to Scale



Impact of PACE Assessment on Home Value

Results of Study Recently Published in the Journal of Structured Finance:

PACE Homes Sold at a Premium of \$199-\$8,882 over Comparable non-PACE Homes Even After Taking Into Account the Financing Costs of the Project: Every methodology and data point in the analysis showed a positive PACE premium at resale, ranging from \$199 to \$8,882. The home price index methodology showed PACE premiums of \$199-\$8,882. The methodology comparing PACE to a random sample of similarly-situated non-PACE homes showed a PACE premium of \$5,010. The multivariate regression methodology showed a PACE premium of \$4,042.

Nearly \$7,000 PACE Premium for Homes Purchased from Foreclosure: Distressed sales that subsequently got a PACE improvement actually produced a higher home value premium (sample showed a \$6,824 PACE premium).

PACE Home Energy Renovations Recover More than 100% of Cost, while Other Home Improvements Do Not Come Close to Recovering Their Investment Costs: Analysis from the RemodelMax and the National Association of Realtors has shown that investments in other home improvements such as kitchen and bathroom modeling on average recovered at resale 58-62.2% of their investment cost.

Rigorous Program and Underwriting Standards Lead to Strong Performance

- Contractor, product, pricing and permitting requirements
- Term \leq useful life of asset
- All assessments are fully amortizing
- Maximum 90% loan-to-value ratio
- Current on property taxes (and no more than one late over last 3 years)
- Current on mortgage (and no more than one 30 day late for last 12 months)
- No bankruptcy for last 7 years
- No involuntary liens on property
- \$5,000 minimum financing; maximum financing is 15% of property value
- Clear disclosures on terms and fees



- No bond delinquencies
- Average FICO = 710
- Average LTV < 70%

Our Consumer Protections

Unparalleled Consumer Protections

- We are working with other PACE providers and government partners to make these **industry-wide** – and confirmed by independent audits
- Banks and credit card providers don't offer the same consumer protections.
- Our consumer protections and service even extend beyond installation ...
 - ✓ **Selling and refinancing**
 - ✓ Even to **homeowners who are *not* our customers**

CONSUMER PROTECTION	HERO	OTHER FINANCING
Contractor Training	✓	✗
Pay Upon Project Completion	✓	✗
Customer Identity Verification	✓	✗
Terms Confirmation	✓	✗
Permit Verification	✓	✗
CA CSLB Confirmation	✓	✗
Product Eligibility Check	✓	✗
Fair Pricing Check	✓	✗

RENOVATEAMERICA™

Building a Better Future, Together



CAEATFA Workshop

Evaluation Efforts for PACE Financing Programs

March 28, 2016



mPOWER Background

Launched March 2010

Suspended residential in July 2010

Plaintiff in FHFA lawsuit

Lifted residential suspension in August 2013

Initial member of CAEATFA PACE Loss Reserve

Operate in Placer County, City of Folsom



mPOWER Goals

Create jobs

Conserve energy

Save property owners money

Reduce greenhouse gas emissions

(mPOWER utilizes municipal lien status and municipal bonding authority to achieve public policy goals. Since direct benefits are provided, the program aims to be unsubsidized and self-supporting and is therefore cost recovery based and not profit driven.)



mPOWER & Jobs

Investing local tax dollars in Main Street

Move local tax dollars historically invested in Wall Street to invest in Main Street

Over 900 construction jobs created in the past 30 months*

*Americans for an Energy Efficient Economy Job Creation Methodology



mPOWER & the Environment

2,570 tons or the equivalent of 496 cars off the road annually*

Environmental benefits remain a local asset/are not sold out of state;

- Renewable Energy Credits (RECs) can be used for local government AB 32 compliance and/or economic development purposes

Utility bill (meter based) data tracking and analysis for environmental impact reporting

*Calculations derived from PG&E Greenhouse Gas Emission Factors: Guidance for PG&E Customers, November 2015

*Data for funded projects through December 2015



Protection

Consumer Protection is a cornerstone of the program

Consumer Education and Communication

- Seminar Requirement
- Direct contact with property owners throughout the process

Disclosures and property owner rights; Terms are simple, clear and fully disclosed

- 6% flat rate
- \$500 residential and \$1,300 non-residential processing fee
- Max financing amount limited to lesser of 10% of value or equity balance
- Recording fees, appraisal fees and other fees estimated and disclosed
- No hidden fees such as contractor fees which are passed on to property owner
- TILA/RESPA format, methodology, standards
- Three day right of rescission

Contract reviewed by Program Specialists with building trades experience, California Title 24 and Green Building Code

Other measures:

- No value or equity information is disclosed to contractors without property owner consent



mPOWER Seminar

Informed consumers make good choices

Review application process funding

Review financing terms, capitalized interest, timing for property tax bill

Consideration of other finance options

Advise FHFA issue and potential refinancing and sale impacts of Fannie Mae/ Freddie Mac restrictions

Advise participants to consult a tax advisor for interest deduction

Energy Efficiency vs. generation “Reduce before you produce.”

Contractor selection, references, licensing



mPOWER – Contract Signing

Procedures & process ensure consistency & clarity of disclosures & information

Detailed contract review/script ensures key points are not missed prior to signing

Review TILA and financing schedules

Review disclaimers including FHFA pay-off possibility



Disclosure and on going communication are key

- Professional staff with building trades background engaged in the process
- Consistent policies and procedures
- Bridge between property owner and contractor
- No contractor executed contracts

No equity information provided to contractors without property owner consent

- Contractors bid the job, not the equity

No pre qualification

- No marketing tactics that cut underwriting requirements
 - Complete underwriting prior to notice to proceed protects property owners and contractors
 - No “pre-qualification”, “pre-approval”, or “15 minute iPad approval”

Property tax records checked timely (Dec & April) for all assessments, including those not yet on the roll

- Delinquencies promptly pursued
- Lender notified early in the default
- Strip from roll for separate collection



mPOWER Placer

2976 Richardson Dr.

Auburn, CA 95603

(877) 396-7693

mpower@placer.ca.gov



CADMUS



Cadmus' HERO Case Study

Status Report for CAEATFA Working Group on Comparative Analysis Criteria

Workshop 3

March 29, 2016



Background

- Case study of residential HERO Program
- Funded by PG&E, SDG&E, SCE, and SoCalGas
 - Prior Cadmus work: process evaluation of OBF and best practices review of leading financing programs
- Purpose: inform development of IOU pilots
 - Test new attribution methods: rebates / financing
- Cooperation of WRCOG and Renovate America



Researchable Issues

- Program design
 - Customer experience, contractor role, etc.
- Implementation and management
 - Contractor and measure eligibility, etc.
- Marketing
 - Channels, messaging, segments, etc.
- Attribution
 - When rebates and financing overlap, how would you split the credit for the energy savings



Tasks

- Completed to date
 - Local government interviews
 - Renovate America interviews
 - Contractor interviews
 - Survey and attribution design
- To be completed by August, 2016
 - Additional contractor interviews
 - Field survey
 - Issue report on all tasks except attribution
 - Issue separate report on attribution



Key Tentative Findings...

- PACE is only partly responsible for HERO's success
 - PACE transferability, eligibility, tenor are plusses, but...
 - Customer experience is key: easy, fast, compelling
 - Contractors are also key: trained and equipped to market and help deliver that experience
 - Implications for comparative analysis:
 - Intangibles can be hard to measure (e.g., ease of use)
 - Tangibles may be difficult to compare (e.g., rates, fees, tenors)
 - Contractors are key influencers and crucial to analysis



Key Tentative Findings continued...

- PACE is well-suited to many homeowners, projects, and contractors
- PACE may not be best for:
 - Smaller projects < \$5,000
 - Larger projects > 10%-15% of property value
 - Lower home equity <10% of property value
 - HERO favors larger contractors



Key Tentative Findings continued...

- HERO's success requires significant staffing
 - Renovate America has hundreds of employees
 - Large call center
 - Reps in the field training and supporting contractors
 - IT staff to develop tools to support customer experience and contractors



Key Tentative Findings continued...

- Surveys – obtaining PACE participants' contact information may be a challenge
 - Programs have privacy policies with participants
 - Programs could send out surveys or emails, but long surveys don't fit “easy” brand positioning
 - Getting contact info from CAEATFA's parcel #s is a challenge
 - Implications for comparative analysis:
 - Don't wait; figure this out now



Key Tentative Findings continued...

- Eligible measures may be tough to compare
 - IOU eligibility is tighter than PACE
 - Survey participants are unlikely to know details of measures
 - Implications for comparative analysis
 - Need project details from PACE programs
 - LA County precedence



Key Tentative Findings continued

- Attribution may be expensive
 - Discrete choice modeling may require very large sample sizes
 - Significant incentives may be needed for long surveys



For More Information

- OBF Process Evaluation
 - [http://www.calmac.org/publications/On Bill Financing Process Evaluation Report 2010-2012.pdf](http://www.calmac.org/publications/On_Bill_Financing_Process_Evaluation_Report_2010-2012.pdf)
- Best Practices Review of Leading Programs
 - [http://www.calmac.org/publications/Existing Programs Review FINAL.pdf](http://www.calmac.org/publications/Existing_Programs_Review_FINAL.pdf)
- Pat McGuckin 303.634.2916
 - patrick.mcguckin@cadmusgroup.com
- Laura James 503.467.7176
 - laura.james@cadmusgroup.com