

Draft Criteria for a Comparative Assessment of Energy Efficiency Financing Programs Available in California

CAEATFA Working Group
Wednesday, April 27, 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>



CALIFORNIA ALTERNATIVE ENERGY AND ADVANCED
TRANSPORTATION FINANCING AUTHORITY

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

- Introduction (9:30–9:45)
- Presentation on Proposed Criteria (9:45–10:30)
 - Background and Perspective
 - Proposed Criteria
 - Issues
 - Prospective Future Criteria: Market Transformation
 - Diagnostic Information
- Open for Clarifying Questions (10:30–11:00)
- Break (11:00–11:15)
- Comments on Proposed Criteria (11:15–1:15)

Introduction

- Legislative Directive: 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.”

- Over the past several months, CAEATFA hosted a series of educational workshop featuring presentations from stakeholders on various metrics for evaluating energy efficiency financing Programs.

Introduction

Today's Workshop: Meeting of the Working Group to discuss proposed comparative criteria drafted based on previous workshop discussions.

Questions to think about:

- Did the draft proposal miss any potential comparative criteria?
- Should any of the proposed criteria not have been included?
- Are there any additional issues or challenges that should be raised regarding the implementation of the proposed comparative criteria?

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Background and Perspective

- Enable consistency and comparison
 - Focus on criteria that are meaningful for all financing programs/products studied, irrespective of individual program goals
- Objectives:
 - Not just to compare performance across programs
 - Also to understand whether and how programs may complement each other
 - E.g.: different market segments, project types, customer preferences/profiles
- Focus is on criteria, not methodologies for evaluating them
 - EM&V for financing is under development and may evolve rapidly in the next few years
 - California financing programs are in different stages of development
 - Some have no program data to inform any type of evaluation
 - Criteria intended to lead a discussion about future evaluation

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Criteria/Prospective Criteria/Diagnostics

- *Proposed criteria* are those we suggest using to compare and evaluate program performance.
- *Prospective criteria* are logically appropriate as criteria but more work is necessary before a comparative assessment of financing programs can include them.
- *Diagnostics* yield helpful information for understanding programs and evaluation results, but aren't appropriate to directly compare performance.

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Proposed Criteria

1. Energy savings attributable to program financing: The reduction in energy usage brought about specifically by the financing offered under each program, but not including savings that would have occurred in the absence of the offered financing.

2. Cost-effectiveness: A comparison of a program's benefits to its costs.

Total net benefits: The dollar value of the energy savings attributable to the financing less the cost of providing those savings.

Benefit-cost ratio: The dollar value of the energy savings attributable to the financing divided by the costs of providing those savings.

3. Savings, cost-effectiveness, and market penetration by market segment and project type

Impacts by market segment/sub-segment

- **Segments/sub-segments reached**
 - **Attributable savings and cost-effectiveness by market segment**
-

Measure and project characteristics

- **Measure mix by program**
 - **Number of measures installed per project**
 - **Savings per project**
-

4. Customer experience

Customer satisfaction: Whether customers got what they expected out of the program and were happy with the experience.

Consumer protection: Whether the program adequately protected participants' financial interests.

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Issues: Energy Savings Attributable to Financing

- **Importance of Attribution:**

- Indicates how much each financing product is actually “growing the pie” (i.e., contributing toward energy savings goals)
- Key questions:
 1. Would it have happened anyway?
 2. At the same time?
 3. With the same efficiency level?
- Is there is a tradeoff between high project volume and attributable savings per project?

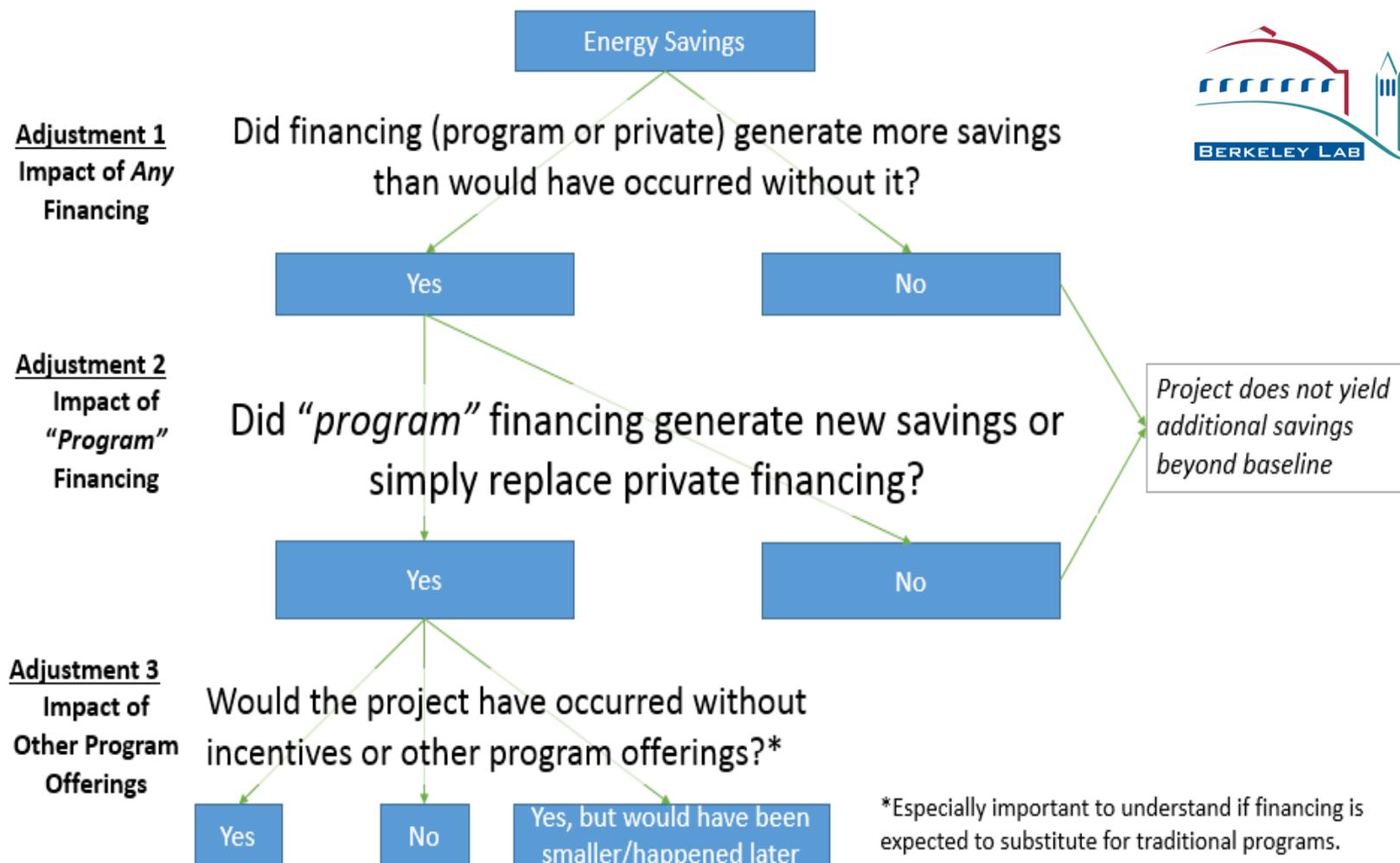
- **Challenges:**

- Methods still under discussion
- Financing “programs” aren’t just financing (marketing, customer service, etc.)
- Access to data (e.g., measures installed, billing data, customer surveys) may create issues

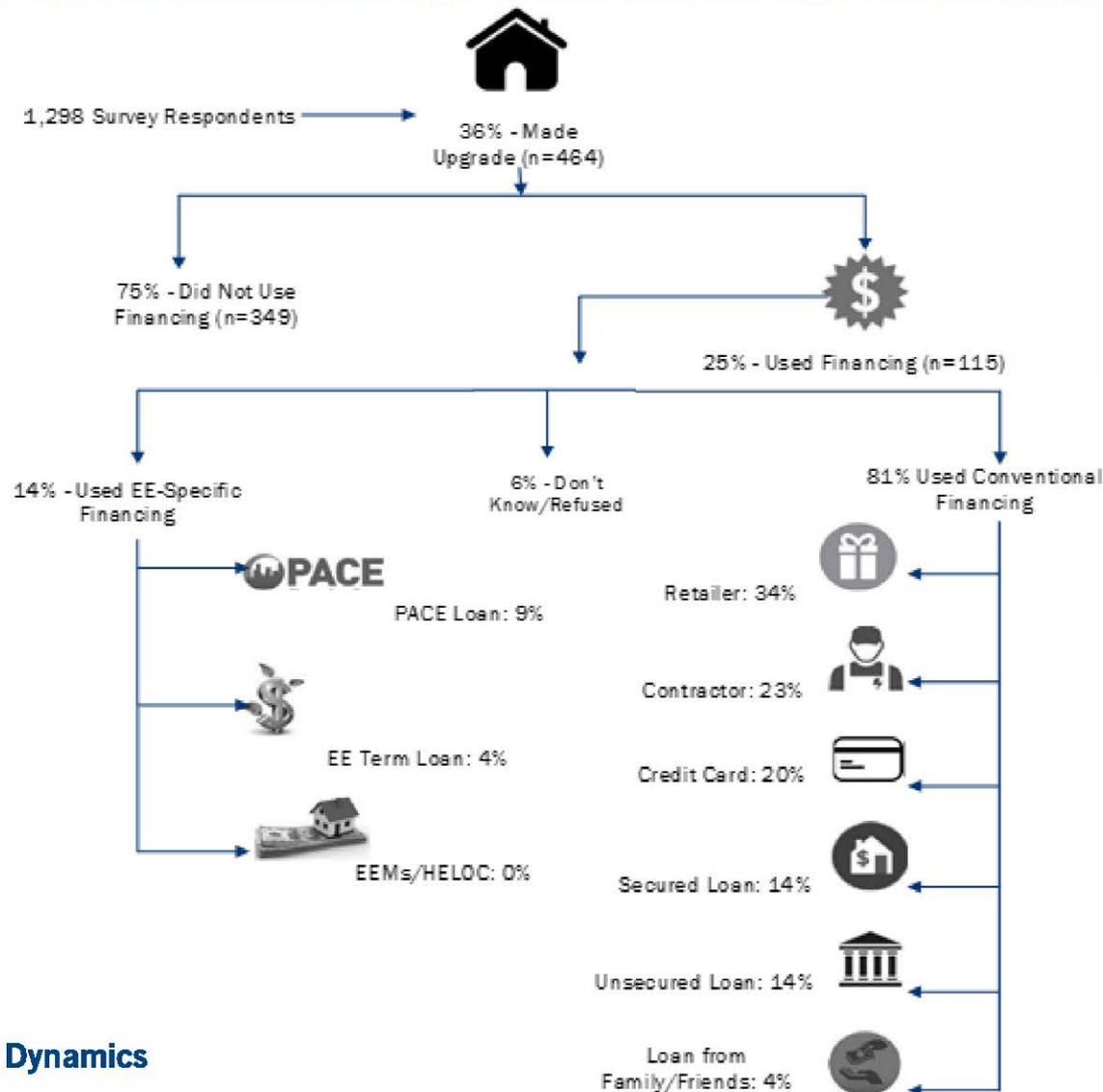
- **Need consistent data and third party verification:**

- Data should be reported consistently and reliably across programs
- Different types of data or reporting methods may make a comparative assessment less meaningful
- Independent verification of reported savings is the program evaluation industry standard

Savings Attribution and EE Financing



Attribution in CA Residential EE Financing



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Issues: Cost-effectiveness

Total Net Benefits vs. Benefit-Cost Ratios:

- Total net benefits represent the value of energy efficiency achieved minus the cost
- Total net benefits provide a better sense of overall program value than benefit-cost ratios. As you maximize total net benefits and move beyond early adopters, B/C ratio may go down, but you're still better off.
- Example: Program B can have higher net benefits but a lower benefit-cost ratio than program A:

	Program A	Program B
Program Administrator Costs	\$800,000	\$1,500,000
Benefits	\$2,000,000	\$3,000,000
Program Administrator Test (B/C Ratio)	2.5	2.0
Total Net Benefits	\$1,200,000	\$1,500,000

- BCRs do provide a sense of the average amount of value produced in a program per dollar invested, which is also a useful metric.

Issues: Cost-effectiveness

Perspectives and existing benefit/cost (B/C) tests:

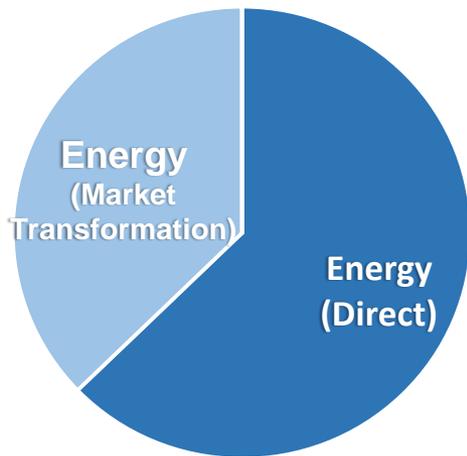
- Holistic (regardless of who is paying), to determine whether a program is a good investment overall (Total Resource Cost test)
- Program administrator perspective, to determine whether program resources are procuring energy savings efficiently (PAC)

Adapting TRC/PAC to programs not funded by utility customers (e.g., PACE) requires care (for example, what is the appropriate discount rate?)

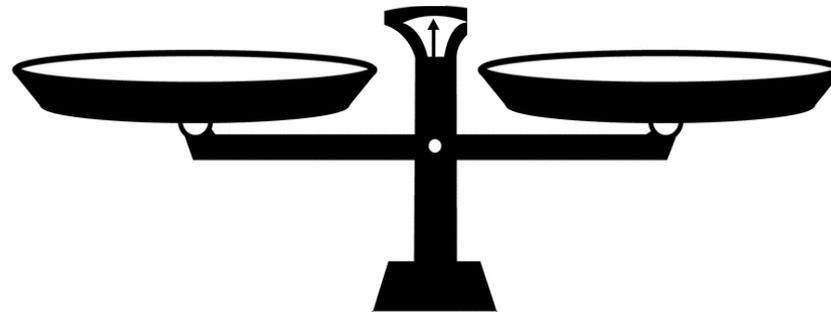
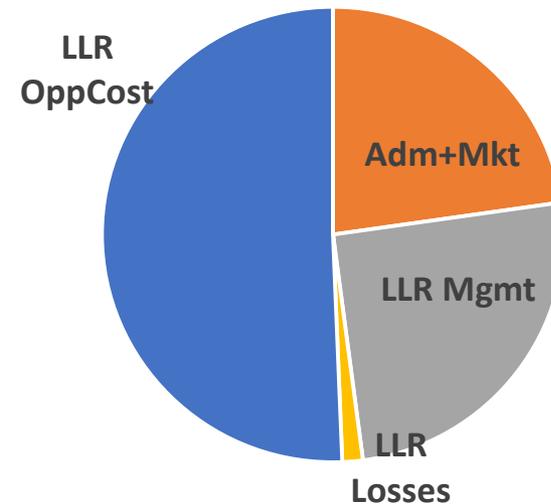
Non-Energy Benefits: A holistic method should theoretically include both energy and non-energy-related benefits. In practice, valuation of non-energy benefits is a complex and evolving topic.

Conceptual Accounting for Costs and Benefits (1)

Program Administrator Cost:
Benefits

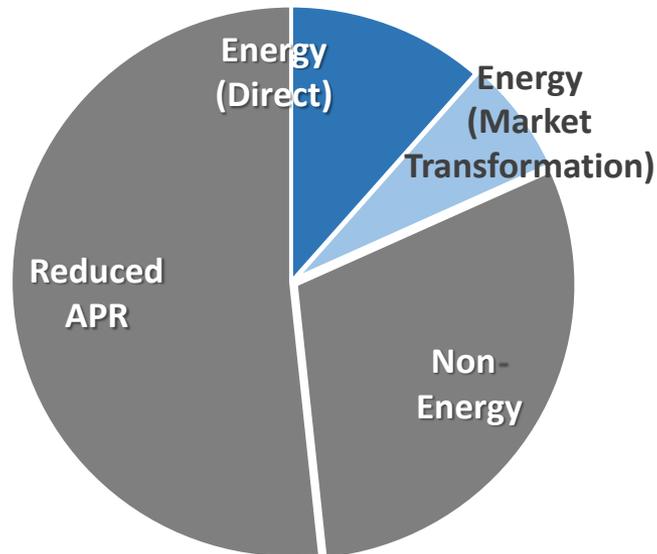


Program Administrator Cost:
Costs

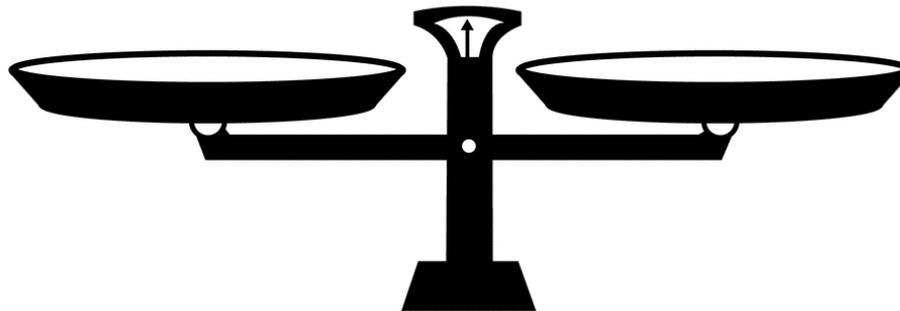
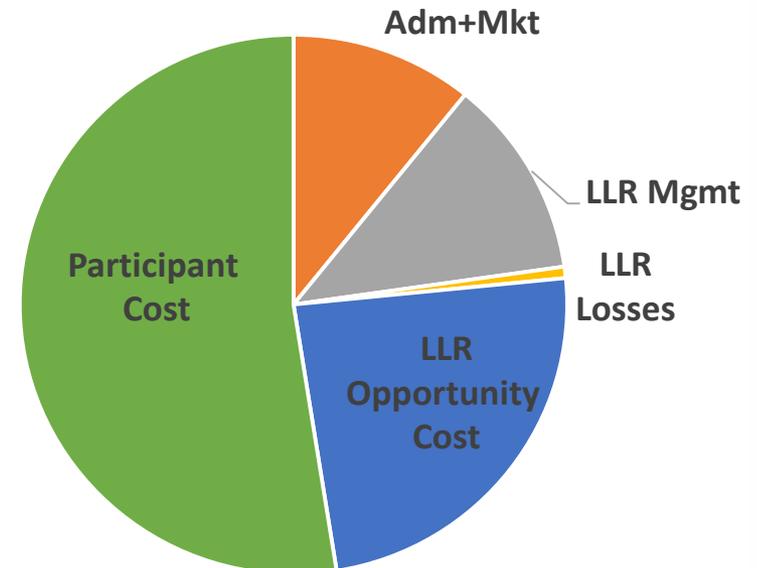


Conceptual Accounting for Costs and Benefits (2)

Total Resources Cost: Benefits



Total Resources Cost: Costs



Issues: Cost-effectiveness

Calculating Financing Costs: Some financing costs may be less straightforward to calculate

- Uncertain future costs (e.g., costs stemming from future loan defaults)
- The cost of offering below-market rate financing
- The opportunity cost of using funds for loan loss reserves

Discussions on valuing these types of costs are underway in California and elsewhere.

Project-Level vs. Program-Level Savings:

- Results on individual projects may vary, and we do propose assessing project-level data in a few instances.
- However, in general, energy savings and cost-effectiveness are assessed at a program level, and we propose doing the assessment in that way except where specifically noted otherwise.

Program Maturity: Programs in very different stages of maturity may perform differently on cost-effectiveness tests, which would not necessarily indicate their long-run cost-effectiveness potential.

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3. Savings, cost-effectiveness, and market penetration by market segment and project type

Impacts by market segment/sub-segment (e.g., residential: single-family, multifamily, low-income; commercial: small, large; industrial; public/institutional)

- **Segments/sub-segments reached:** Customer participation by segment/sub-segment.
 - **Attributable savings and cost-effectiveness by market segment:** The metrics calculated in the first two criteria, but for sectors and sub-sectors rather than the whole market.
-

Measure and project characteristics: Metrics related to the types of projects installed using the financing programs.

- **Measure mix by program:** The share of financed measures by measure category, such as HVAC equipment/controls, building envelope measures (e.g., attic, wall, or floor insulation, infiltration reduction), windows and doors, cool roofs, water heating, etc.).
 - **Number of measures installed per project:** The average number of measures installed per project, which gives a sense of the depth of the financed retrofit.
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4. Customer experience

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Consumer protection: Whether the program adequately protected participants' financial interests.

Issues: Impacts by Market Segment

- Customers/Market Segments and Sub-Segments Reached
- Attributable Savings and Cost-Effectiveness by Market Segment
- Certain programs may better reach market segments (e.g., residential, multifamily, commercial and industrial, MUSH) or sub-segments of special interest – for example:
 - Low-to-moderate income
 - Credit-challenged customers
 - Small businesses
 - Specific business sectors
 - Specific geographies
- Certain programs may generate more savings or be more or less cost-effective within specific markets.
- Understanding impacts by market segment may inform whether and how programs are operating in complementary ways.
- Gathering data on certain customer segments may require cooperation by program administrators.

Issues: Project Type/Characteristics

- Measure Mix by Program
- Number of Measures Per Project
- Savings Per Project

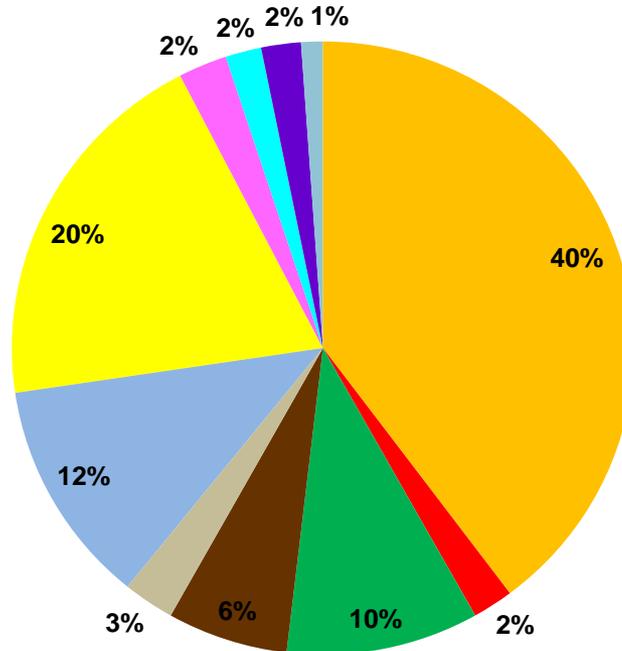
- Programs may differ in measure characteristics, e.g.:
 - Measure category proportions (e.g., more HVAC vs. more insulation)
 - Efficiency levels of installed measures

- Programs may also differ in typical project characteristics, e.g.:
 - Savings per Project: Overall sense of typical per-project impact
 - Measures per Project: How many opportunities captured in a single typical project

- Understanding these differences may provide more information on potentially complementary roles of various programs.

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

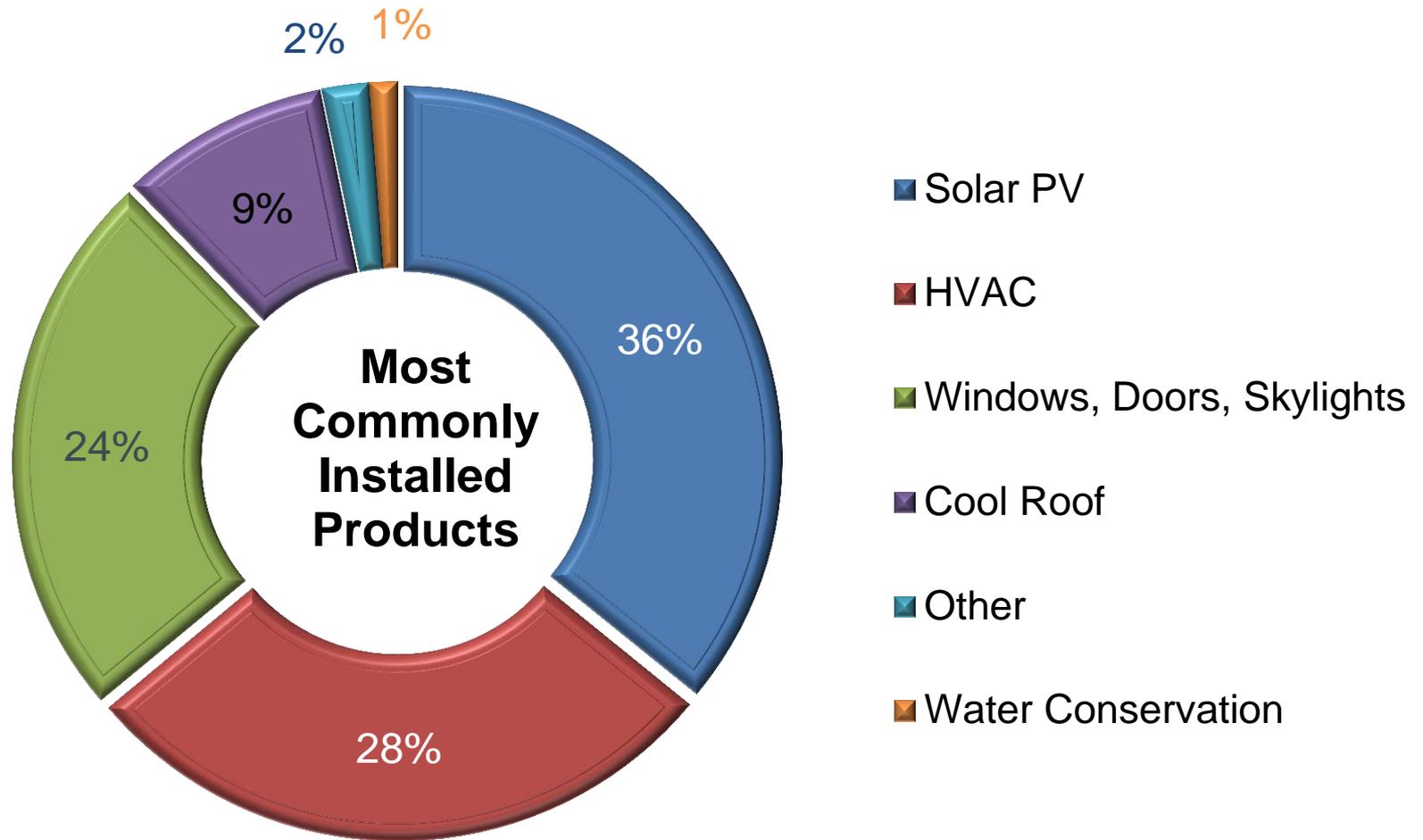
2,150
Efficiency
Improvements!

Generation:
40%

Energy Efficiency:
58%

Water Conservation:
2%

WRCOG: Types of residential projects



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4. Customer experience

Customer satisfaction: Whether customers got what they expected out of the program and were happy with the experience. Customer satisfaction may include ease of use, time/duration of transaction/project, quality of project, comfort, health, etc.

Consumer protection: Whether the program adequately protected participants' financial interests, including by providing a clear understanding of financial product, energy savings expected, the uncertainty of savings projections, terms of financing, and repayment schedule.

Issues: Customer Experience

Customer Satisfaction and Consumer Protection

Customer Satisfaction:

- What value do program participants feel they are receiving from the program?
- Typically derived from customer surveys
- Perceived value may go beyond energy savings, and incorporate ease of use, health benefits, noise reduction or increased comfort.

Consumer Protection:

- Experience with the contractor
- Experience with the administrator/lender
- Do participants understand, and can they manage, their repayment obligations?
- Have they experienced any unforeseen negative consequences as a result of participating in the program?



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



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

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Prospective Future Criteria: Market Transformation

Market Transformation: scaling up savings (largely in the future) through systemic change to the market as a whole, not just through the specific projects implemented

Assessing MT Impacts:

- Logic Models
 - Graphical representation of market transformation theory
 - Detailed chain of events: current conditions to program activities to market impacts
 - Not all programs may be focused on MT
 - Programs may have different MT approaches (e.g., lender-focused vs. customer-focused)
- Market Characterization:
 - Baseline and characteristics of current market activity
- Interim Metrics:
 - Key progress indicators and timelines

More work is needed before a comparative assessment can include MT impacts:

- Financing MT evaluation methodologies still under development
- More discussion needed of anticipated market impacts by program
- More work on program logic models for each program
- Development of interim metrics and timelines for each program
- Need to determine how to track simultaneous program and external impacts

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Supplemental Diagnostic Information

Finance Program Elements

Information to be collected:

- *Loan volume*: the dollar amount of loans or assessments made under the program.
- *Median and average loan amounts*: the median and average of project-level loans/assessments.
- *Private capital leverage*: the share of that dollar amount provided by private lenders.
- *Loan performance data*: share of loans or assessments that are delinquent, in default, or prepaid, defined consistently across programs.
- *Verified gross energy savings*: energy savings from projects supported by each financing product, as measured by a third party, irrespective of whether those savings are attributable to the financing.

These metrics provide useful information but do not provide a direct measurement of the achievement of ultimate policy goals. Their impact on energy savings and cost-effectiveness will be measured through those criteria.

In addition, a comparative assessment should provide qualitative information that may be important in understanding the context of each loan program:

- Policy goals
- Program structures and constraints
- Sources and uses of capital (e.g. direct lending, credit enhancements, subordinated debt, etc.)

Supplemental Diagnostic Information

Process Evaluation

- Types of Information
 - Operational aspects of program implementation
 - Experience with the program
 - Customers
 - Contractors (key sales channel)
 - Lenders
 - Other program partners
 - Typically qualitative, though some information may be quantifiable
- Use of Information
 - Typically used to improve program implementation going forward
 - In a comparative context, may inform quantitative impacts
 - Not “primary” criteria: not direct indicators of ultimate goals

Supplemental Diagnostic Information

Other Policy-Related Metrics

- Non-EE policy-related goals and objectives of specific programs, such as:
 - Renewable generation
 - Water conservation
 - Electric vehicles or infrastructure
 - Seismic strengthening
 - Reduction of greenhouse gas emissions
 - Job creation and economic development
- Since the legislative language calling for these criteria reference “assessment of energy efficiency financing programs,” the criteria focus on energy savings impacts.
- Some “other” policy goals may enter the core criteria as non-energy benefits within the cost-benefit criteria.
- For those that do not, assessment should acknowledge that a complete understanding of any particular program’s performance includes progress toward the full range of objectives of that program.

Public Comment

- CAEATFA will accept written comments on the proposed comparative criteria until Friday, April 29, 2016, at 5:00 p.m. (PDT).
 - Email comments to: Ashley.Bonnett@treasurer.ca.gov
- Examples of Feedback:
 - Did the draft proposal miss any potential comparative criteria?
 - Should any of the proposed criteria not have been included?
 - Are there any additional issues or challenges that should be raised regarding the implementation of the proposed comparative criteria?