2013-2017 Energy Efficiency Programs

Southern California Regional Energy Network
Program Implementation Plan

1) Sub-Program Name:

Sub-Program A: Continue and Expand Various Program Activities of Energy Upgrade California in Los Angeles County throughout the entire Region

2) Sub-Program ID number: _____
3) Type of Sub-Program: __Core _X_ Third Party __Partnership
4) Market sector or segment that this sub-program is designed to serve[1]:

   a. _X_ Residential
      i. Including Low Income? _X_ Yes __ No;
      ii. Including Moderate Income? _X_ Yes __ No.
      iii. Including or specifically Multifamily buildings _X_ Yes __ No.
      iv. Including or specifically Rental units? _X_ Yes __ No.
   b. __ Commercial (List applicable NAIC codes: _____)
   c. __ Industrial (List applicable NAIC codes: _____)
   d. __ Agricultural (List applicable NAIC codes: _____)

5) Is this sub-program primarily a:
   a. Non-resource program ___ Yes _X_ No
   b. Resource acquisition program _X_ Yes ___ No
   c. Market Transformation Program _X_ Yes ___ No

6) Indicate the primary intervention strategies:
   a. Upstream ___ Yes _X_ No
   b. Midstream ___ Yes _X_ No
   c. Downstream _X_ Yes ___ No
   d. Direct Install __ Yes _X_ No.
   e. Non Resource __ Yes _X_ No.

[1] Check all that apply

7) Projected Sub-program Total Resource Cost (TRC) and Program Administrator Cost (PAC)

ELECTRIC:	TRC: 0.74	PAC: 1.26
GAS:	TRC: 0.51	PAC: 0.79

8) Projected Sub-Program Budget

Table 1 - Electric (Subprogram A): Projected Sub-Program Budget, by Calendar Year[2]

	Program Year		
Sub-Program A: EUC	**2013**	**2014**	**Total**
Admin	796,646	796,646	1,593,293
Incentives	2,821,842	2,821,842	5,643,683
Direct Implementation	2,335,236	2,335,236	4,670,472
Marketing, Outreach, and Marketing Incentives	1,377,622	1,377,622	2,755,244
Total	**7,331,346**	**7,331,346**	**14,662,692**

Table 2 - Gas (Subprogram A): Projected Sub-Program Budget, by Calendar Year[3]

	Program Year		
Sub-Program A: EUC	**2013**	**2014**	**Total**

Admin	352,492	352,492	704,983
Incentives	1,296,198	1,296,198	2,592,396
Direct Implementation	1,007,470	1,007,470	2,014,939
Marketing, Outreach, and Marketing Incentives	590,047	590,047	1,180,093
Total	**3,246,205**	**3,246,205**	**6,492,411**

Table 3 - Combined (Subprogram A): Projected Sub-Program Budget, by Calendar Year[4]

	Program Year		
Sub-Program A: EUC	**2013**	**2014**	**Total**
Admin	1,149,138	1,149,138	2,298,276
Incentives	118,039	118,039	8,236,079
Direct Implementation	3,342,706	3,342,706	6,685,411
Marketing, Outreach, and Marketing Incentives	1 967,669	1 967,669	3,935,337
Total	**10,577,551**	**10,577,551**	**21,155,103**

9) Sub-Program Description, Objectives and Theory
   a) Sub-Program Description and Theory:

The LA County team is currently implementing a number of innovative pilot programs through a U.S. Department of Energy Efficiency and Conservation Block Grant (EECBG) and a Better Buildings Program

(BBP) grant. The purpose of these grants is to test program designs that are intended to drive demand for IOU core programs and advance market transformation for whole house upgrades. The EECBG and BBP pilot programs will be in place until at least June, 2013.

LA County is proposing to expand these resource and non-resource pilot programs throughout the SoCal REN region in support of Energy Upgrade California. The programs offer a unique opportunity to avoid the time and cost associated with program design and implementation by simply expanding existing, successful programs with an implementation infrastructure that is already in place.

SoCalREN agrees with the Commission's direction for the IOU's to retain a market transformation consultant, but this should not delay launch of REN and IOU programs in 2013. Market transformation is a long term commitment and the REN would like to be included in screening and interviewing consultant candidates. The REN recommends that a market transformation committee be formed with the consultant, IOU's, and REN's as members to develop a market transformation roadmap with 3, 5, and 10 year targets.

The REN recognizes the value of establishing a working group advisory committee and supports the continuation of open communication between the IOU's and REN's. The REN also supports the Commission's desire that the working group be co-chaired by an IOU and REN representative. The committee should focus on key market transformation issues like expansion of the contractor base, workforce skills development, homeowner demographics and delivery strategies, effectiveness of incentive programs, marketing and outreach, and statewide consistency. The SoCalREN and the IOU's have agreed to engage in stakeholder review of the joint program design that replaces the Basic Path and would involve the working group as needed.

SoCalREN strongly supports the need to improve the contractor and homeowner experience as it relates to EUC programs. This commitment to customer satisfaction is what drove the development of the Flex Path program by the LA County team. The REN looks forward to working with interested parties such

as SolarCity, CBPCA, and BPI to streamline program processes and improve customer and contractor satisfaction. The REN welcomes constructive input from all stakeholders.

The REN agrees with the Commission's direction that the whole house program's brand name should remain Energy Upgrade California. The opportunity to leverage millions of dollars of ARRA funds spent on EUC brand awareness is a great asset to California ratepayers, and cannot be overlooked. The REN will work with SCE and SCG to ensure that brand guidelines are strictly followed in the development of marketing and outreach materials and naming conventions of individual programs. It is important to note that LA County and the IOU's have been closely collaborating in this area for more than two years.

SoCal REN agrees with the Commissions direction to target hotter, inland climate zones with a greater proportion of marketing and outreach funds. Clearly homeowners in these hotter climate zones have more to gain from EUC programs in terms of reducing energy use, saving money, and enhancing the comfort of their homes. The REN is committed to spending marketing and outreach funds in targeted areas that offer the greatest return.

The Commission has directed the IOU's to implement a 10-year declining incentive structure that is based on the number of retrofits achieved by the program. The REN agrees in principle with the declining incentive structure provided it includes a clearly defined market transformation plan with targets for the number and distribution of retrofits, number of participating contractors, and number of low interest loans. The declining incentive structure must have some flexibility to account for the pace of market transformation, and there are a number of critical factors that must be considered. The REN recommends that the development of the declining incentive structure be assigned to the EUC Working Group that includes the IOU's, REN's, and other interested stakeholders.

SoCalREN will work with the IOU's to identify contractor training needs that support market transformation. Unfortunately, the REN budget for ongoing workforce development was not approved and

the IOU's will have to fund most contractor outreach and training activities. The Commission did not approve of contractor scholarships as proposed by the REN and may have erroneously disapproved the entire contractor training and outreach budget, with the exception of contractor co-op marketing and HVAC contractor incentives. The REN requests that the Commission reconsider funding for contractor training and outreach exclusive of contractor scholarships. This funding is necessary in order for the REN to partner with the IOU's in this critical market transformation component.

The REN plans to work with SCE and SCG to enroll contractors into the EUC program. The Flex Path program required homeowners to use a EUC participating contractor from the list maintained by SCE. The REN does not anticipate any change in this approach, and will encourage non-participating contractors to attend a participation workshop and training required to become a EUC participating contractor. After much discussion, the IOU's and REN agree that contractors that perform only modified Basic Path projects need not have a BPI certified analyst on staff as an employee. These contractors would continue to be allowed to subcontract BPI testing to a certified analyst. The REN believes it is critical for market transformation to allow the market to solve this problem by developing a cadre of independent HERS/BPI professionals that can bring real value to a homeowner's project. These professionals can provide testing services that satisfy the EUC program and rate a home for asset valuation. This flexibility is important in terms of understanding market demand for a HERS rating. The REN/IOU team has also agreed that all projects will require test out for combustion safety performed by a BPI certified analyst.

The REN has established a loan loss reserve (LLR) and incentive funding and replenishment protocol. The intent of this protocol is to define the procedure to seed and replenish the SoCalREN LLR and incentive custodial accounts. This procedure will ensure sufficient funds are in the accounts to cover the loan volume and incentives to be paid, while minimizing the frequency of transfers.

Two accounts have been established for the single family LLR– a SoCalREN Escrow Holding account and a SoCalREN Escrow Operating account. LA County seeds the Escrow Holding Account with a wire transfer directly to Matadors, then submits a reimbursement request to Southern California Gas Company (SoCalGas) using the reporting tool. The Escrow Holding account is seeded with $500,000 and the on-going balance should not exceed $500,000. As funds are drawn down in the Escrow Holding account, these funds will need to be replenished to bring the balance back to $500,000.

On or about the 10th business day of each month, Matadors Community Credit Union (MCCU) will provide data on pending, approved, and closed loans for the previous reporting month. This data determines the amount required to cover the loans to be backed by the LLR. It is recommended that the funds be replenished when the balance of the Escrow Holding account falls to $125,000. When the balance of the Escrow Holding account falls to $125,000, Los Angeles County will replenish the Escrow Holding account by transferring funds directly to MCCU and submitting a reimbursement request to SoCalGas for $375,000. Other considerations of the LLR management include:

- These LLR accounts are held separately from other LLR accounts that support the financing program.
- In order to seed the Escrow Operating account, the first five loans are covered at 90%.
    - For example: If the first loan is for $10,000, $9,000 will be transferred from the Escrow Holding account to the Escrow Operating account.
    - For the sixth loan and remaining loans, 10% will be transferred.

Nine custodial accounts are established with US Bank: Home Upgrade, Multifamily (Assessment, Improvement, and Referral), Assessment Vouchers, Upgrade Coupon, Energy Champions, Co-op Marketing, and Contractor Loyalty Program. LA County seeds the custodial accounts with a wire transfer directly to US Bank, then submits a reimbursement request to SoCalGas using the reporting tool. The initial

transfer fully funded six custodial accounts that will not require replenishing: Multifamily Referral, Assessment Vouchers, Upgrade Coupons, Energy Champions, Co-op Marketing, and Contractor Loyalty Program.

Los Angeles County will replenish the remaining custodial accounts (Home Upgrade, Multifamily Assessment, and Multifamily Improvement) by transferring funds directly to US Bank and submitting a reimbursement request to SoCalGas in accordance to the incentive replenishment schedule below. LA County may revise the request dates based on program changes or variations in program uptake.

Incentive Replenishment Schedule		Starting Budgets	Initial Seeding Amounts	First Request Date	First Request	Second Request Date	Second Request	Third Request Date	Third Requests
Home Upgrade		3,049,659	1,000,000	9/1/14	1,500,000	4/1/15	549,659		
Multifamily	Assess	1,000,000	400,000	6/2/14	600,000				
	Improve	5,166,420	600,000	5/1/14	2,000,000	8/1/14	2,000,000	1/5/15	566,420
	Referral	15,000	15,000						
Assessment Vouchers		130,984	130,984						
Upgrade Coupons		67,477	67,477						
Energy Champions		47,122	47,122						
Co-op Marketing		213,232	213,232						
Contractor Loyalty Program		150,000	150,000						

A1: Continue locally tailored marketing and outreach programs - $3,272,744

Marketing & Outreach - $ 2,569,000

Program Description

An essential part of transforming the whole building retrofit market includes increasing awareness of energy efficiency and whole-house building retrofits. To do this, a comprehensive marketing and outreach program was implemented in Los Angeles County with ARRA funds and in conjunction with the IOUs. Under the SoCalREN, marketing and outreach activities will be expanded to include all of the IOU service territory. Please see Exhibit A2 for examples of marketing materials developed for EUCLA.

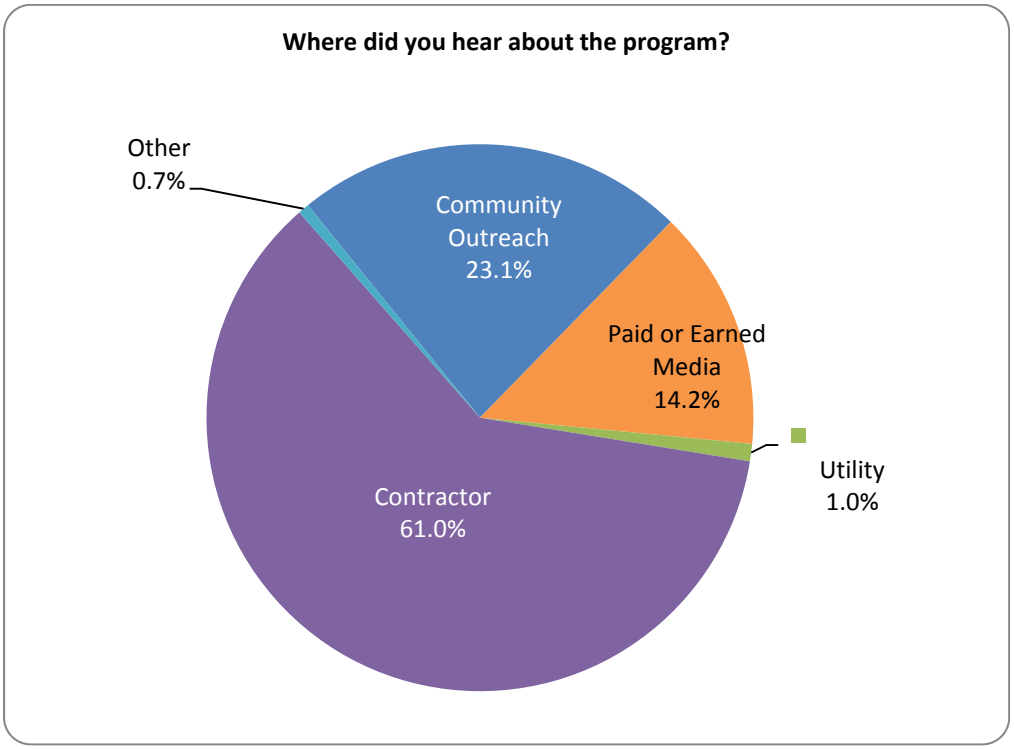
Following are descriptions of a variety of locally tailored marketing and outreach programs implemented by LA County. Because it would be cost prohibitive, not all of the activities undertaken to date in LA County will be replicated. Instead, the most cost-effective methods for promoting the EUC brand through the SoCalREN will be implemented, based on lessons learned.

- Market analysis developed by EUCLA program partners based upon housing stock, demographic, and energy use patterns, including:
    - Target audiences
    - Key messaging
    - Hot spot" maps
- Countywide and local marketing and outreach plans
- Countywide marketing materials and media buys (broadcast, outdoor, and online)
- Countywide and local public relations campaigns
- Countywide developed marketing collateral templates
- Locally customized marketing materials, media buys (including broadcast, outdoor, print, and online), earned media, and social media campaigns (Facebook, twitter, texting campaign)
- Multi-ethnic outreach and marketing including PR, media buys, and in-language support provided in person, by phone, and print materials
- Environmental Information Centers (portable, stand-alone booths placed throughout areas of the County)

- Environmental Service Centers (physical locations where residents can have customer service and learn about energy efficiency and sustainability)
- LA Hotline toll free phone number
- Extensive local outreach directed by countywide marketing plans/analysis, including:
    - Presentations/workshops with key partners/stakeholders (e.g., building department staff, realtors)
    - Community event tabling
    - Canvassing (door hangers, brochures, flyers and homeowner engagement)
    - Homeowner presentations (e.g., through community, business, and civic groups)
    - Homeowner workshops
    - Participation in a variety of events (expos, concerts in the park, green fairs, etc)
    - Providing outreach materials for cities to use (pull-up banners, canopies, posters, tabletop displays)
    - Family Stories videos providing relatable testimonials and completed upgrades
    - PSAs using local celebrities used for advertising and as a sales tool for contractors
    - Assessment vouchers and promo code coupons aimed at tracking where leads come from
    - Customer Resource Management database and email marketing campaign for homeowners that signed up for our database
    - Industry support newsletters and eblasts aimed at engaging stakeholders and inspiring affiliates
    - City stakeholder presentations to maintain engagement by local government leaders
- Energy Upgrade Roadshows consists of an Energy Upgrade logo wrapped van that drives to an event and provides homeowner outreach by explaining how their displays operate (energy efficient model home, lighting display, and window display), answering questions about the program, and dispersing program materials and brochures to homeowners

- Trigger event marketing to capture energy efficiency upgrade opportunities through trigger events (furnace or hot water heater replacement, remodels and renovations, etc.), such as:
    - Realtor-client outreach materials and trainings as outlined below
    - Program collateral and educational materials maintained within building departments
    - Implementing retailer outreach programs that provide in-store training and marketing displays to local home improvement retailers
    - Online ads aimed at catching homeowners searching for solar, HVAC, energy, or home improvement, sending them to Energy Upgrade California Website first
    - Additional stakeholder engagement activities
- Implementing corporate outreach programs with companies such as Northrop Grumman, Jet Propulsion Laboratory, Kaiser Permanente, Disney, Toyota, Parsons, Dreamworks, Yahoo, AeroVironment, and employees of the County of Los Angeles

Figure 1 (Subprogram A): Successful Marketing & Workforce Activities Driving EUCLA Participation
Data as of November 2012



The following outreach activities will be continued to promote Energy Upgrade:

- EUC Workshops (~50/year): Staff will leverage local partner relationships with Cities/COGs, Building Industry Professional/Realtor networks, community organizations (including Energy Champions), neighborhood/property owner associations, corporations and other affiliates to identify opportunities to organize dedicated EUC Workshop events in which the Assessment Vouchers will be given away in an opportunity drawing to interested homeowners that join a mailing list to receive more information about the various programs. At these events, staff will communicate the method by which a homeowner can benefit from the Assessment Vouchers as it relates to EUC. By design, staff will lead with the benefits of an upgrade to a captive audience of eligible homeowners, provide materials to help educate homeowner decisions, and expose them to EUC Participating Contractors, and generate leads for those contractors.
- EUC Presentations (~75/year): Staff will satisfy requests and seek out opportunities to present to key program stakeholders and captive audiences of eligible homeowners to communicate the method by which a homeowner can benefit from entering to win an Assessment Voucher as it relates to EUC. By design, staff will lead with the benefits of an upgrade to a captive audience of eligible homeowners, provide materials to help educate homeowner decisions, and generate interest and leads for Participating Contractors. At these events, if appropriate, staff will secure participation by EUC Participating Contractors.
- Exhibit booths at existing events (~125/year): Since 2010, the EUCLA Staff has built a wide network of relationships with event producers. The team will continue negotiating cost effective requests and seek out opportunities to educate the public at community and private events to increase participation and awareness of the benefits of entering to win an Assessment Voucher as it relates to EUC. The LA County team will describe the benefits of an upgrade to a captive audience of eligible homeowners, provide materials to help educate homeowner decisions, and generate leads for all of the program components. At these events, if appropriate, staff will secure participation by EUC Participating Contractors.
- Secure attendance at Outreach Events: In order to touch the maximum amount of consumers, attendance will be secured using event promotion tactics such as leveraging established electronic communication channels of local partners, local and online ad placement, door hangers/flyer

canvassing, door-to-door canvassing, engaging with a media/PR agency to reach out to main stream and multi-ethnic media to secure earned media coverage for these events. Additionally, the local partners listed above will be utilized to assist in event attendance and promotion and given electronic, print and display materials to communicate with their networks.

- Provide effective marketing collateral materials and templates: Collateral and templates will continue to be utilized to help inform the public about the benefits of EUC and the whole-house approach. These materials will be distributed at events and electronically. Multi-ethnic materials and support will also be available
- Be available for homeowner follow-up: Staff will continue to be available to the public through the LA Call Center and email should any consumers have questions related to the Assessment Vouchers or how the voucher program relates to EUC. Multi-ethnic support will also be available
- Maintain follow-up email marketing campaigns: Staff will continue to manage a homeowner and stakeholder database to continue program component email marketing campaigns for individuals that signed up for our database either through event attendance, presentations, the call center, or website. This will allow for all individuals to be updated on upcoming events and to learn more about the variety of programs offered to the public.
- Website: In collaboration with the statewide EUC implementer, LA County intends on continuing and expanding locally customized pages of the Energy Upgrade California website www.EnergyUpgradeCA.org/LACounty, including:
    - Promotion of Contractor/Rater, Rebates/Incentives, and Financing directories
    - Promotion and updating of News and Events within Local Info county pages
    - Maintenance of training calendar on contractor page
    - Promotion of “Family Stories” web pages which focused on homeowner testimonials and case studies
    - “Overview of the Assessment” web page demystifying the assessment for the homeowner
    - Rotating box on homepage acting as a web “billboard”
    - Live chat feature specifically on LA-specific pages
    - Case studies resulting from the Home Energy Makeover Contest
- Environmental Service/Information Centers: One key communications strategy of bringing awareness to the Energy Upgrade program by LA County was to establish the Environmental Information Center Program which is made up of 11 kiosks, free-standing portable booth that have

built-in literature racks, and a touch screen which links to the Energy Upgrade website activated by the user. During sleep mode, the flat screen plays a looped slide show of photos from outreach events and a video called “Family Stories”, a production video highlighting six homeowners that had their homes upgraded by Participating Contractors during the Energy Upgrade process. An online map will be made available showing homeowners the locations of the kiosks which can be printed out and on display at public buildings, libraries, as well as handed out at the peer-to-peer outreach events, workshops, and presentations if relevant.

- Social Media: EUCLA uses Facebook as a social media outlet to inexpensively reach target audiences. By scheduling regular posts twice daily the team is able to educate homeowners about the program, encourage program event participation, disperse energy-saving tips and environmentally friendly news, and helps build a sustainable connection between contractors and participants. This medium is also used to feature success stories, testimonials, share upgrade and event photos, and answer questions that Facebook fans post. The advantage Facebook has over traditional media is its ability to tap into a user’s social network. Each time someone "likes" EUCLA on Facebook, each of his or her friends is given the opportunity to follow EUCLA on Facebook, giving the program an ever expanding reach. EUCLA has capitalized on this multiplier effect by purchasing inexpensive, targeted Facebook ads that link to either the program website, or our Facebook page. Since ads began running at the end of March, 2012, EUCLA's Facebook fan base has tripled to 600 followers, and over 1,200 clicks have been directed to the program website. By capitalizing on existing Facebook fans’ social networks, Facebook ads have proven to be a highly successful way of introducing the program to new viewers; our Facebook page’s weekly reach of 7,500 people expands to over 140,000 people during a Facebook ad campaign. By complementing our traditional media and other outreach efforts, Facebook has helped keep new and existing followers connected to the program, and has contributed to increased brand recognition and program participation.

  Creating and managing new Facebook pages for regions that do not currently have program Facebook pages (such as Orange County, San Bernardino County, and Ventura County) is vital towards developing a peer to peer following in those regions and increasing program participation, as a result. Hootsuite can be utilized to easily schedule Facebook posts on multiple Facebook

pages in several regions at one time. Facebook ads are recommended in all regions to continue to grow followers and increase program participation.

Besides Facebook ads, Google AdWords is another valuable social media advertising vehicle that has successfully driven traffic to EUCLA's website. At the end of May 2012, EUCLA launched a highly targeted Google AdWord campaign, which generated over 5,000 clicks to the website and over 8 million impressions. Over 83 percent of clicks to the EUCLA website from AdWords were from new visitors. Through strategic keyword, content, and display network targeting, our Google AdWords campaign reached a new audience who did not yet know about the program, but who were already actively searching for components of the program online (i.e. tankless hot water heaters, insulation, air conditioner or window replacements, energy rebates, home remodeling ideas, or local contractors, etc.) Google AdWords helps provide effective program targeting to reach a new and uninformed pool of participants.

Lastly, mobile texting is a cutting-edge social media outlet for reaching new program participants. In mid-April, EUCLA launched a mobile texting campaign as part of our online and radio ads. EUCLA's mobile texting campaign has resulted in more than 500 subscribers. Ad viewers or listeners subscribe to EUCLA program texts by texting the word "Energy" in order to receive program information. Subscribers are sent event reminder texts for local EUCLA homeowner workshops. Mobile texting has resulted in increased attendance to EUCLA homeowner workshops and has resulted in visits to the website.

In addition to marketing and outreach directed at homeowners, *EUCLA* marketing and outreach activities also targeted contractor and realtor groups.

- Contractor-focused marketing and outreach activities included:

- Online Resource library containing marketing materials and Print-on-demand capability
- Free lawn signs
- Co-brandable collateral templates specifically for contractor use
- Contractor case studies on the contractor website aimed at demonstrating successful business models for other contractors
- Sales presentations and webinars
- Program manuals and "How to market Energy Upgrade" toolkits
- "Heat maps" for contractors to use in their own advertising campaigns.
- Workshops with Participating Contractors on how to use/leverage Energy Upgrade California logos, branding, messaging, and collateral templates
- Sharing of developed "hot spot" maps based on housing stock, demographic, and energy-use patterns
- Support to contractors so they could be appropriately listed in www.EnergyUpgradeCA.org directories

- Realtor-focused marketing and outreach activities included:
  - Online resource library containing affiliate advocacy information
  - Presentations, newsletter articles, and web buttons available for Real Estate professionals to be able to touch their market
  - Realtor focused workshops and trainings to educate realtors on whole building retrofits
  - Working groups to address potential implementation of time-of-sale energy conservation ordinances
  - Realtor-client facing materials for program outreach
  - Networking events with Participating Contractors

EUCLA implemented, and coordinated with, various countywide and IOU rebate programs. These programs and associated metrics are summarized in Figure 2 below.

Figure 2 (Subprogram A): EUCLA Summary of Marketing and Outreach Methods as of November 2012

General Marketing Activities	
Total Media Impressions (Paid and earned)	1,473,423,053
Total Website Page Views (Energy Upgrade California/local portals as appropriate)	795,190
Targeted Communications	
Direct mail	15,303
Email sign ups (homeowner, contractors, city/COGs, Real Estate Professionals):	8,341
Individual emails	~53,500
Hangers/canvassing	381,000
Events, including public/homeowner-facing workshops, information sessions and sector-specific (for realtors, building officials, city council, etc.)	
Number of Events	869
Number of touches	799,053
Energy Upgrade Call Center	
Number of Email Tickets	336
Number of Calls	3,756

Assessment Voucher – $248,804

The Assessment Voucher program was created as a marketing tactic used to overcome the reluctance of homeowners to pay for home energy audits which determine potential energy savings and costs of home energy improvements. The vouchers aimed at reducing the upfront cost of entry to the Energy Upgrade program for homeowners, thereby resulting in more upgrade projects for Participating Contractors. Homeowners were provided with a $300 voucher to significantly reduce, if not eliminate, the cost of the whole house assessment. This voucher was distributed to contractors to use as a sales tool at events in addition to being given to homeowners who win an opportunity drawing at events. Participating Contractors

attending such events would leverage the voucher prize as an opportunity to talk more in depth with that homeowner about scheduling an in-home assessment.

The $300 audit voucher may only be fulfilled if an upgrade project is also undertaken so as to discourage contractors from making a business solely from audits without an eye toward selling a whole house retrofit.

The $300 vouchers were designed to look like banknotes. Each voucher has a single identifying code, which allows the team to track the process from the exact event at which a homeowner wins a voucher all the way to the Participating Contractor who turns it in. The $300 is paid to contractors once they submit a paid invoice for the audit that shows the $300 discount and includes the homeowner's information.

Evaluation

The Assessment Vouchers have been an effective marketing tactic for Participating Contractors overall with 174 redeemed assessment vouchers out of 871 assessment vouchers given to those contractors. This means $52,400 in incentives have been awarded as a result of the assessment vouchers. Of the 47 active Participating Contractors (those who have submitted advanced path projects), 24 have redeemed their assessment vouchers resulting in a 51% utilization rate by active Participating Contractors. Out of the 124 assessment vouchers given to homeowners attending Energy Upgrade events, 19 were redeemed reflecting a 15% utilization rate by homeowners attending EUCLA events. This data supports the use of assessment vouchers going forward at events and during face-to-face interactions.

Energy Upgrade Coupon - $154,940

Program Description

Energy Upgrade Coupons were designed to be administered during homeowner-facing events to incentivize homeowners to move forward with EUC Advanced Package retrofit projects by increasing the total amount of money that a homeowner is reimbursed. SoCalREN incentive applicants will be allowed to

use up to two of these $200 coupons per retrofit project for a total incentive increase of $400. The coupons provide an additional incentive to help offset project costs for homeowners, and more importantly, to track program marketing efforts. Methods of delivery will include giving homeowners a coupon:

- For attending an event where we engage them in a conversation about EUC and the benefits of a whole-house approach energy upgrade
- As a reward for signing up to receive the EUC newsletter, thereby becoming part of the EUC marketing database and receiving forthcoming program messaging and news
- As a general handout and "foot in the door" during face-to-face engagement opportunities
- Through EUC Participating Contractors
- Distributed through faith-based and community organizations

Coupons are customized by marketing type and will measure coupon marketing and incentive effectiveness based on coupon redemption. Each Coupon has an identifying code on the coupon and an expiration date. The codes correspond to each of the distribution methods and channels listed above.

Instructions on the back of the coupon guide homeowners to include the coupon code on their EUC application, crediting the marketing source for resulting in an upgrade, and rewarding the homeowner for their participation in this exercise in the form of an additional incentive. As the applications are processed, codes are recorded, and their frequencies are aggregated, the effectiveness of various marketing tactics and channels will be measured. This allows marketing plans to be more nimble and cost-effective for they can be changed and adapted in real time for maximum recruitment impact.

Evaluation

The distribution of Energy Upgrade Coupons at events and other face-to-face engagement opportunities has proven to be an effective marketing tool for Participating Contractors and the EUC program to reach homeowners. 19% of the *active* Participating Contractor's (those submitting Advanced and Basic Energy Upgrade projects in SCE territory) have applications that include LA County Energy Upgrade Coupons.

Energy Champions - $300,000

Energy Champions (ECs) began as a pilot program that tested whether or not qualified, non-profit community organizations who utilize their own outreach networks, community activities, and other resources to promote the benefits of EUC are an effective tool to convince homeowners to implement an EUC upgrade. In return, and with verification from the homeowner that the Energy Champion was responsible for the upgrade commitment through the online Homeowner Action Form, the Energy Champion is provided an incentive ($100 for a Basic or Flex Path project, $500 for an Advanced Path project).

The Energy Champions are prequalified through an application process by which applications are submitted to the program administrator through the EUC website and vetted through a selection committee. After acceptance, organizations designate one point person from their organization to lead efforts and act as a liaison with the program administrator, are encouraged to build a partnership with one or more Participating Contractors, and they are trained where they receive a training guide, access to a password protected online website portal housing project information, and marketing resources.

Energy Champions are provided with access to EUC support staff to assist them with program questions, for feedback/support with outreach activities, to obtain customized marketing materials for use in their own peer-to-peer outreach as well as leveraging the implementation team events, workshops, and presentations as outlined in the Local Marketing and Outreach section. Energy Champions rely on implementation team assistance to help connect them to local resources such as Participating Contractors to help promote their EC efforts. Furthermore, Energy Champions have regular communication from the Energy Champions program administrator to keep them up to date on the latest program details regarding the EC program and EUCLA program.

As of 11/30/12,

- 88 organizations have been trained in-person and/or by webinar to become active participants in the program.
    - 103 organizations applied and were pre-qualified for participation; however, due to leadership changes and impacted workloads some organizations were unable to move forward with the program.
- 174 of HAFs have been submitted designating 21 EC organizations.
- Approximately 15% of all Advanced Projects in LA County are attributed to EC efforts.
- $30,800 in incentives have been paid with $51,800 in the pipeline.
- The reach of the 89 organizations through their networks accounts for approximately 24,500 individuals according to their application submissions.
- Over 300 Energy Upgrade events, have involved Energy Champions either through presentations, meetings, workshops, exhibit booths.

In 2013-2014 The Energy Champions program will continue engaging with both existing and additional community organizations to continue testing to see if a better conversion rate can be accomplished. The program design will be modified taking into consideration the lessons learned from the current Energy Champions program as well recent relevant CBSM efforts in similar marketplaces. Many of the problems surrounding the original pilot program reflected a slow EUC ramp up, and the program is anticipating greater ease in continued pilot delivery due to higher baseline EUC awareness and established program norms. Program design will be adjusted to reflect initial Pilot results to better focus resources likely to result in higher Energy Upgrade program participation. Implementation team will coordinate with IOUs as necessary to leverage efforts and streamline processes including simplifying the process for equating completed retrofit projects to the Energy Champion organization. Energy Champions, while continuing to act as a marketing program with financial incentives, will consider innovative methods to further motivate the Energy Champion organizations to continue outreach on behalf of the Energy Upgrade program.

A2: Continue and expand implementation of EUCLA Green Building Labeling Pilot program which includes Realtor training, MLS advocacy, assessment incentives, and homeowner education and outreach - $2,010,000

Market Description

The home purchase/sale trigger event is a key leverage point to educate homeowners on the value of whole house energy efficiency retrofits. A review of DataQuick home sales data shows more than 188,000 homes sold in the four counties of Los Angeles, Riverside, Orange, and San Bernardino in 2012. The Southern San Joaquin counties of Fresno, Kern, Kings, and Tulare generated an additional 28,000 home sales in the same period. This segment represents a substantial pool of Energy Upgrade California program candidates because the Joint Center for Housing Studies estimates that home buyers spend more than $6,000 per year on home improvements in the first two years after buying homes. In subsequent years, the annual average outlay drops to $2,500.[5] This initiative expands the pool of qualified real estate professionals who are able to match contractors with prospective clients. Key market actors are as follows:

- Real Estate Professionals are a key community for the promotion of green building decision criteria at time of sale and purchase. California Association of Realtors counts 113 local chapters and approximately 160,000[6] members statewide. Many Realtors have a significant database of current customers to whom they communicate on a regular basis. Anecdotal evidence suggests that many may have 1000–2000 contacts, with whom they correspond regularly outside of real estate transactions.

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[5] Joint Center for Housing Studies of Harvard University (2011), *The State of the Nation's Housing: 2011*, http://www.jchs.harvard.edu/research/state_nations_housing

[6] http://www.calculatedriskblog.com/2010/10/california-number-of-licensed-real.html

- Home Inspectors: Statewide, there are approximately 6,000 inspectors with most belonging to a national or statewide membership association[7]. Home inspectors typically develop close working relationships with Realtors, on whom they rely heavily for inspection referrals. The general inspection represents an ideal opportunity to assess opportunities for energy efficiency improvements in the course of an inspection that is already a core part of the transaction process.
- Appraisers can provide added value to buyers and sellers by evaluating the green features in a home based on industry standards and methods. According to the Office of Real Estate Appraisers, 12,812[8] appraisers are licensed in California.
- Loan officers play a critical role in assisting home buyers through the process of accessing energy-efficient mortgages, 203k loans, and other sources of financing. Lenders also control the selection of the appraiser.

Market Characterization

The green real estate market is impeded by at least four key market barriers:

- Lack of consumer awareness. Green features are largely invisible and their benefits become apparent only through experience.
- Lack of industry expertise. Real estate professionals do not understand the value of green features, how to evaluate them, or how to communicate them.
- Lack of credibility. Home buyers do not know which sources of information to trust as credible and which to discount as potentially biased.
- High evaluation costs. The cost of evaluating a home's environmental features and benefits to a credible standard currently ranges from $1,500 to $2,000, which is considered cost-prohibitive in the context of a home sale transaction.

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[7] http://www.inspectionpro.com/

[8] http://www.orea.ca.gov/pdf/Weekly%20Pie.pdf (http://www.orea.ca.gov/)

The Green Real Estate Initiative will pursue at least three opportunities to reduce market barriers and promote energy-efficient upgrades:

1) Time of purchase: Realtors and home inspectors are well positioned to help their clients assess the energy performance of potential home purchases, identify energy upgrade opportunities, and connect with the financial and technical resources needed to make the improvements.
2) Past clients: Realtors and loan officers maintain large contact lists of prior clients and regularly look for opportunities to reconnect with them in ways that spur referrals and repeat business. Information about Energy Upgrade California rebates and associated financing opportunities can provide such an opportunity.
3) Time of sale: Research has demonstrated a measurable sales price premium for green homes. However, capturing the property value benefit at time of sale is complicated by the lack of a credible mechanism for differentiating green homes from conventional homes. The Green Real Estate Initiative fills this gap by establishing a definition for a "green home," supported by a robust mechanism for third party verification.

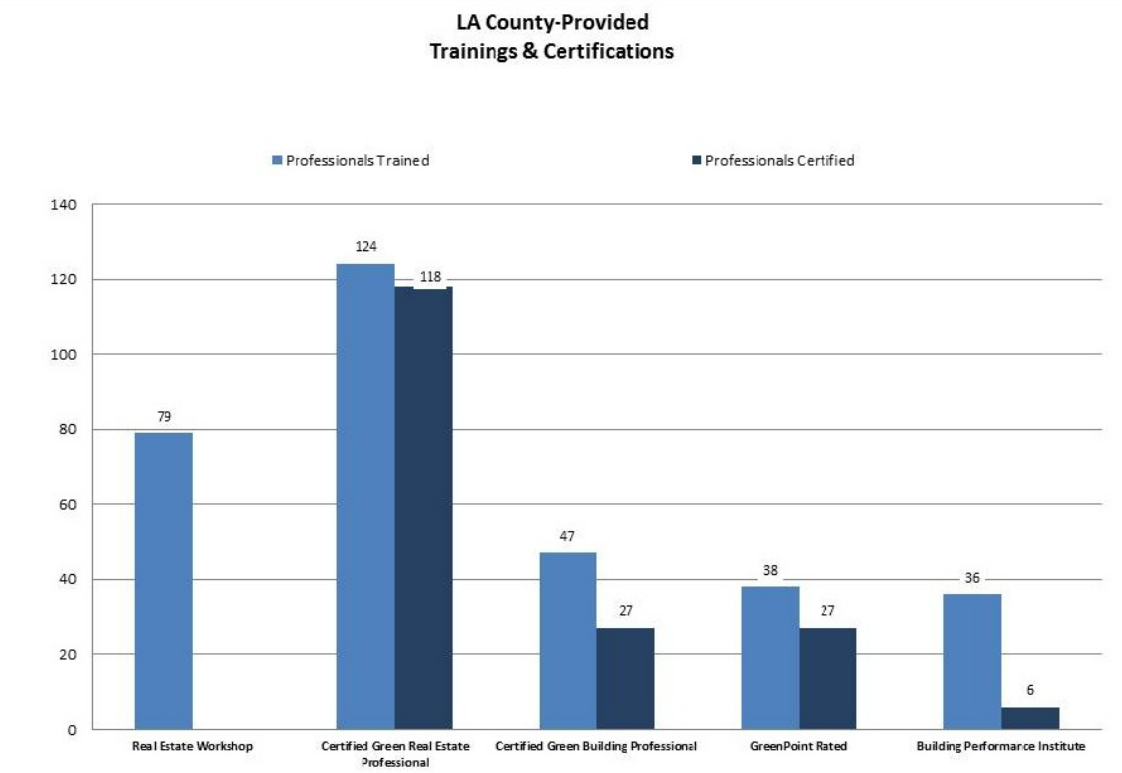
Proposed Interventions

The Green Real Estate Initiative builds on prior investments the County of Los Angeles has made in this arena.

- The County provided training for 158 real estate professionals via three Certified Green Real Estate Professional training events since August, 2011. The training equips the real estate professional with critical knowledge and understanding needed to advocate for and assist consumers in participating in Energy Upgrade California. It demonstrates how the overall cost of homeownership (mortgage, taxes, insurance and utility costs) can be reduced using the incentives and financing available as well as the potential for increased home values.
- The County funded advocacy efforts to MLS systems, including dissemination of Guideline for Greening an MLS in California. Green fields are now incorporated into CRMLS, which serves ten counties and 31 Associations of Realtors in Los Angeles, Butte, Almador, Lake, Madera, Mariposa, Merced, Orange, Riverside, and Tehama counties.

- The County offered incentives through its Green Labeling pilot program: an incentive to homeowners to offset the cost of a green building label and a referral incentive to professionals (e.g., contractor, real estate agent) who refer projects into the program. More than 600 homeowners received either a $1,000 incentive or a $2,000 incentive, depending on the improvements they made. The County also offered an additional $200 referral incentive to the real estate professional who referred the homeowner to the program.
- The County completed valuation studies on the acceptable appraisal methodology to justify increased value of a green home when the most traditional form of attributing value in the residential market (comparables) is not available.

Figure 3 (Subprogram A): LA County-Provided Trainings and Certifications



For 2013-2014, the Green Real Estate Initiative will develop the real estate market for energy-efficient homes via three key interventions:

Intervention	Barriers Addressed
In-depth training for real estate professionals, including Realtors, home inspectors, appraisers, and loan officers	Lack of industry expertise High evaluation costs
Inclusion of green fields on MLS systems	Lack of credibility
Home buyer education and outreach	Lack of consumer awareness

The Green Real Estate Initiative seeks to accomplish four outcomes by the end of 2014:

1) Establish and/or disseminate industry best practices for assessing environmental performance in the course of time-of-sale inspections.
2) Establish and/or disseminate industry best practices for appraising green features.

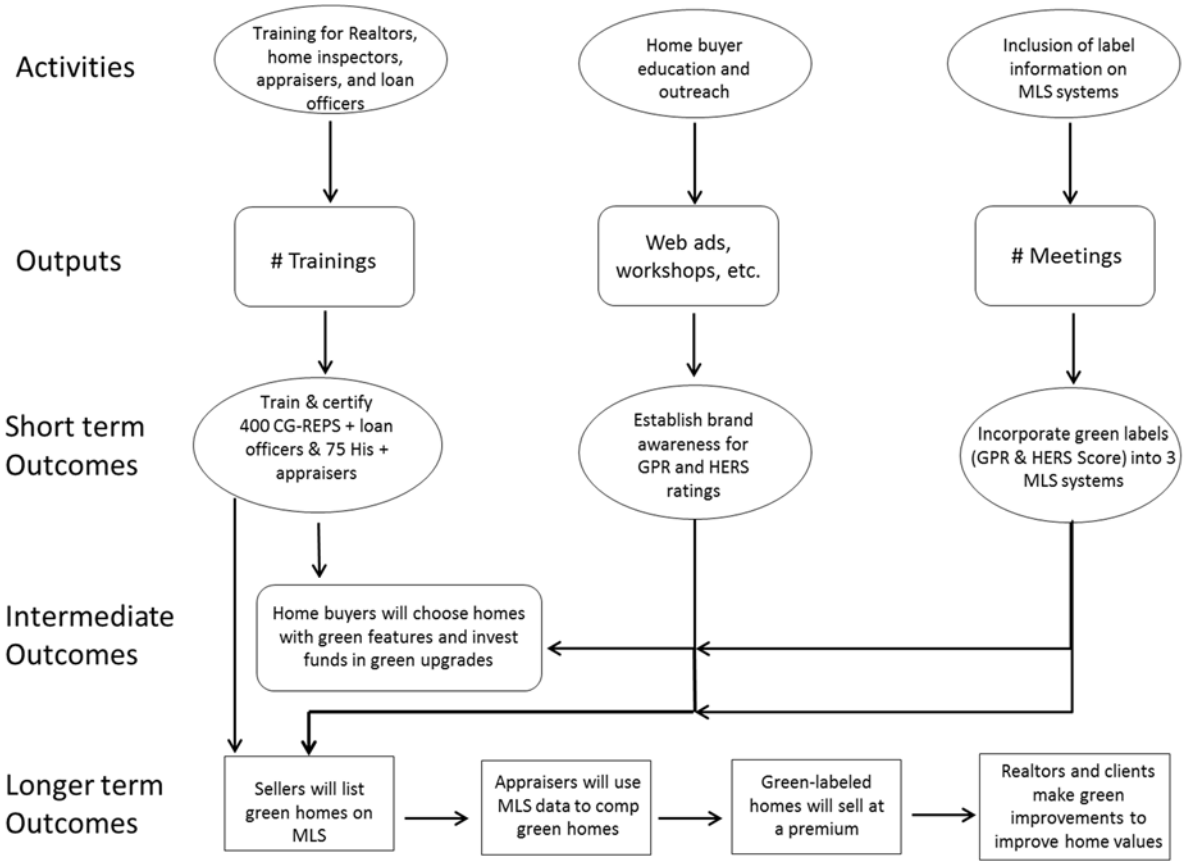
3) Train and certify 475 green real estate professionals (i.e. Realtors, home inspectors, appraisers, and loan officers) by the end of 2014, including 80 professionals in Southern San Joaquin Valley
4) Incorporate green fields and green labels, such as GreenPoint Rated and HERS Score, into 3 MLS systems, representing the primary MLS systems serving Southern California

The Green Real Estate Initiative supports achievement of the CPUC's Energy Efficiency Strategic Plan, which calls for deployment of energy or carbon labeling programs at time of sale and inclusion of home energy ratings in real estate sales listing information.

Logic Model

The Green Real Estate Initiative aims to transform the real estate market in the following ways:

1) Home buyers will preferentially choose homes with green features and will increasingly invest post-purchase home improvement funds in green upgrades.
2) Home sellers will market the green benefits of their homes through the MLS.
3) Appraisers will use MLS data to develop comps for green homes.
4) Green-labeled homes will sell at a premium, thereby providing the necessary comps to support higher appraisals.
5) Realtors and clients will begin making green improvements prior to sale to improve home values.



Evaluation Plan

The proposed evaluation plan will support program tracking and reporting for the following Market Transformation Indicators:

- Number of trained real estate professionals, including Realtors, home inspectors, appraisers, and loan officers
- Homebuyer awareness of Energy Upgrade California, HERS scores, and green labels
- Number of green inspections and HERS ratings associated with home sales or purchases
- Number of Energy Upgrade jobs completed within two years of home purchase
- Number of green appraisals

Evaluation activities associated with each implementation activity are summarized below. Performance benchmarks will be established for all evaluation elements and program performance will be compared to those benchmarks.

1) Train real estate professionals
    a. Track training pipeline on a monthly basis, including number of prospects, number of enrollees, and number of certified graduates.
    b. Invite all trainees to complete evaluation surveys, including questions about satisfaction and communication channels they used to learn about the program.
    c. Conduct quarterly surveys of certified CG-REP Realtors to determine:
        i. Number of seller's agents who marketed a green-labeled home in the prior quarter
        ii. Opportunities and challenges encountered in marketing green homes
        iii. Opportunities and challenges encountered in providing green Realtor services to buyers
    d. Conduct annual focus groups with CG-REPs and other industry stakeholders to review program accomplishments
2) Green MLS systems, serving key metropolitan markets in California.
    a. Conduct annual surveys of certified CG-REP Realtors to determine:
        i. Number of seller's agents who listed a green-labeled home on the MLS in the prior year
        ii. Number of seller's agents whose clients made green improvements prior to sale in order to enhance green score and/or market value
        iii. Number of buyer's agents who used green fields in MLS listings to help identify candidate properties for their clients

A3: Continue, enhance and expand EUCLA "Flex Path" Incentive Program which supplements the under-performing EUC Basic Package and is more attainable for most low-moderate income households and for EUC contractors. - $4,614,308

The Existing ARRA Flex Path Program

Introduction

Flex Path was an innovative energy upgrade option developed and administered by the LA County team using ARRA funding. This pilot program provided more flexibility than the Basic Path, and used the same list of eligible Basic and Advanced Path measures in a user-friendly, prescriptive, point value menu format. The program was intended to test market acceptance of a simple, flexible prescriptive approach in terms of engaging both homeowners and contractors. EUCLA provided a $1,500 incentive for a Flex Path project, and homeowners also qualified for individual measure utility incentives. The ARRA funded Flex Path program was fully subscribed with 1,650 approved projects and a wait list of 187 project applications on October 19, 2012, just nine months after program launch. LA County paid out all qualified project applications early in 2013 using remaining ARRA funds for a total of 1,837 projects.

SoCal REN has been authorized to continue the current Flex Path pilot design in LA County until the April 1, 2013 Advice Filing is approved. The program could be re-launched within three weeks of authorization to proceed; however, this is not the REN's preferred course of action. The REN proposes a modified Flex Path program that is fully compliant with the final decision. The final decision has mandated that the following design elements be incorporated into a Basic Path replacement program:

- Require that each project include at least three qualifying energy efficiency measures;
- Include scaled or tiered incentives;
- Support the energy efficiency loading order that provides that building shell envelope improvements generally occur first; and
- Support appropriate combustion safety testing protocols.

SoCalREN ARRA Flex Path Program Overview

In discussions with the IOU's, SCE and SCG have made it clear that they intend to pilot an enhanced Basic Path pilot program immediately after the April 1 advice filing date. The REN requests the same consideration to implement the ARRA Flex Path program design using ratepayer funds with slight

improvements immediately upon approval by Commission staff. The minor modifications are intended to mitigate Commission concerns about overpaying for energy savings and include the following:

1. Eliminate all five-point measures and require or recommend them as best practices in appropriate equipment replacement or system upgrade measures.
2. Recommend thermal control valves (TCV) be installed on all showers in the home.
3. Reduce the program incentive from $1,500 to $1,000.

This will serve to extend what is a successful pilot, enhanced to provide a bridge to the Home Upgrade program design being proposed in this advice filing. In addition, continuing with a slightly modified Flex Path pilot, with the same name, will provide significant, additional data for evaluation and program design going forward. While the REN's and IOU's did not come to complete agreement on a single program design statewide, substantial progress has been made on coming to agreement on major program design elements.

A. Tracking Energy Usage

With the help of the IOU's, the REN hopes to track actual energy usage of Flex Path participants. The success of Flex Path and its approval by the U.S. Department of Energy and the California Energy Commission regarding design and achievement of program savings objectives, clearly demonstrates that a government entity is perfectly capable of designing, developing, and implementing a successful community scale energy efficiency incentive based program.

B. Moving Homeowners To Action

Flex Path served to augment the under-utilized Basic Path to put homeowners on the path toward a whole house energy upgrade and provides contractors with a simple introductory offer that can be used to upsell a homeowner to a more comprehensive, Advanced Path retrofit. This feature will continue to be tested during 2013-14. The program also encourages more contractors to become active in EUC with the

goal of expanding their participation over time and bringing the EUC program to scale. Flex Path is a contractor delivered program and therefore does not require a large marketing and outreach budget.

C. Qualifying Measures

To participate in the Flex Path, two or more qualifying retrofit measures with a combined point total of one hundred or more had to be installed using a EUC participating contractor. Flex Path motivated contractors and homeowners to consider higher levels of efficiency (beyond code) when selecting new equipment or upgrading envelope systems. Under the proposed Home Upgrade program the REN may add a walk-through energy audit component (draft audit form displayed in Attachment D) to the program delivery, creating a roadmap and priority of additional projects that can be done over time or providing the justification for moving to an Advanced Path project. The ARRA Flex Path program includes the measures listed in the table below, edited for five-point measures requested to be removed, along with pre-and-post retrofit requirements and point values.

ARRA Flex Path Measure List

To participate in Flex Path, homeowners had to install two or more qualifying measures with a combined point value of 100 or greater using an Energy Upgrade California Participating Contractor. All Flex Path projects required installation of a thermostatic shut-off valve on all showers in the home except when installing a tankless water heating system.			
I. Insulation & Air Sealing			
Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
Crawlspace insulation	No insulation	≥ R-11 Supporting documentation required for close out: specification sheet, before & after photos	55
Wall insulation	No insulation	≥ R-13 Supporting documentation required for close out: specification sheet	90
Air sealing	CFM50 ≥ 1900	CFM50 ≤ 1100 Supporting documentation required for close out: blower door test-in results, blower door test-out results, combustion safety test results	30

Attic insulation & sealing	≤ R-11	≥ R-38 Supporting documentation required for close out: specification sheet, before & after photos. It is highly recommended that all incandescent recessed can lighting fixtures be replaced with ENERGY STAR® CFL fixtures or ENERGY STAR® LED fixtures.	45
Attic radiant barrier	No radiant barrier	Continuous rolled or pre-laminated Supporting documentation required for close out: specification sheet, before & after photos	50

II. Heating, Ventilation, & Air Conditioning

Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
Replace existing central forced air furnace with new ENERGY STAR® central forced air furnace	Gas-fired; AFUE ≤ 0.80	ENERGY STAR®; Gas-fired; AFUE ≥ 0.95 Supporting documentation required for close out: specification sheet, before & after photos including nameplate	90
Replace existing central AC with new central AC	≤ 10 SEER	≥ 15 SEER 11 EER Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Recommend replacement of a manual thermostat with digital, setback programmable model.	90
Replace existing heat pump with new heat pump	≤ 5.6 HSPF, 8 SEER 6 EER	≥ 8 HSPF, 15 SEER 11 EER Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Recommend replacement of a manual thermostat with digital, setback programmable model.	90
Duct insulation & sealing OR Duct replacement with insulation	Leakage ≥ 28% ≤ R-4	Leakage ≤ 15%; ≥ R-8 Supporting documentation required for close out: Duct Blaster® test-in results and test-out results, specification sheet, before and after photos. Recommend replacement of a manual thermostat with digital, setback programmable model.	95

III. Windows

Retrofit Measure	**Pre-Retrofit Condition**	**Post-Retrofit Condition**	**Point Value**
Replace all windows to be ENERGY STAR®	Single metal clear pane (U-factor ≥ 1.19; SHGC ≥ .83)	ENERGY STAR®; U-Factor ≤ 0.40; SHGC ≤ 0.30 Supporting documentation required for close out: specification sheet, before & after photos	65

IV. Domestic Hot Water

Retrofit Measure	Pre-Retrofit Condition	Post-Retrofit Condition	Point Value
Domestic hot water heater (gas)	Gas-fired tank heater; EF ≤ 0.525	Gas-fired; EF ≥ 0.62 Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Must include pipe wrap for first five feet of exposed pipes.	45
Domestic hot water heater (electric)	Electric tank heater; ≥ 40 gallons; EF ≤ 0.88	EF ≥ 0.93; ≥ 30 gallons Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Must include pipe wrap for first five feet of exposed pipes.	90
ENERGY STAR® whole house tankless hot water heater (gas)	Gas-fired tank heater; EF ≤ 0.525	ENERGY STAR®; gas-fired; EF ≥ 0.82 Supporting documentation required for close out: specification sheet, before & after photos including nameplate. Must include pipe wrap for first five feet of exposed pipes.	90

V. Lighting

Retrofit Measure	Pre-Retrofit Condition	Post-Retrofit Condition	Point Value

VI. Cool Roof

Retrofit Measure	Pre-Retrofit Condition	Post-Retrofit Condition	Point Value
Cool roof	≤ R-11	All of the following requirements must be met for ≥ 75% of the roof over conditioned space: ≥ R-38; Low slope (≤ 2:12): SRI≥ 70, Thermal Emittance Factor ≥ 0.85; Steep slope (> 2:12): SRI ≥ 40; Thermal Emittance Factor ≥ 0.85 Supporting documentation required for close out: specification sheet, before & after photos	40

Flex Path was marketed to homeowners primarily through contact with EUC participating contractors. By educating all EUC participating contractors and targeting specialty building service companies, the workforce is able to sell the program directly to homeowners. When the program ended in

October 2012, there were 57 contractors actively participating in the Flex Path pilot. The fact that only 15 of these contractors had delivered both an Advanced or Basic and a Flex Path project demonstrates that this simple approach succeeded in getting more EUC contractors off the sidelines and into the game. Since there are many different combinations of retrofit measures that can make up a Flex Path project, the program structure allowed each contractor to develop a business model that works for them, or partner with other contractors to provide a wider array of upgrade options. Another delivery channel was the Flex Path webpage, www.energyupgradeca.org/LAflex on the EUC Los Angeles web site. This webpage encouraged contractors and homeowners to participate in the program using Frequently Asked Questions, a Qualifying Measures list, information about Supplemental Utility Rebates, an Online Application, and the Project Completion Form.

D. Incentive Structure

Flex Path projects received an incentive of $1,500. SoCalREN proposed to reduce the incentive amount to $1,000 should the program have been reinstated until such time as a Basic Path replacement program was approved by the Commission. The incentive amount cannot exceed project cost. The average cost of a Flex Path project was about $5,800. Modeled energy savings predicted an average energy savings of 15 percent for a typical home in a typical LA County climate zone. This level of energy savings, along with an estimation of average project cost, was used to determine the incentive amount of $1,500. When a completed application was received, the incentive funds were reserved for 60 days. When installation was complete, the contractor submitted an online Project Completion Form that included uploading required supporting documentation. Required supporting documentation included an itemized, paid invoice and, if applicable, before and after photos, specification sheets, diagnostic test-in/test-out results and proof of a combustion appliance safety test conducted by a BPI certified building analyst.

E. Project Tracking

The program administrator uploaded customer and project data into a secure, closed-loop program tracking database (energyOrbit) and monitored progress throughout the application process. When any of five status codes changed on a Flex Path project, the tracking system automatically sent an email status notification to both the homeowner and contractor. If all program requirements were met after a review of the Project Completion Form, required supporting documentation, and Quality Control on-site inspection, a Flex Path project was approved and a check request was processed with LA County. Checks were routinely paid by LA County within two weeks of project completion approval.

F. Quality Assurance

Flex Path Quality Assurance included one hundred percent desktop review of the Utility Service Account Holder and Participating Contractor information, the project application; the Project Completion Form and supporting documentation. After a Flex Path project completed desktop review of the Project Completion Form and required supporting documentation, the project may have been selected for an onsite post-installation inspection. The sampling rate for Flex Path Quality Control post-installation inspections followed the Home Performance with ENERGY STAR inspection guidelines. In the ARRA Flex Path program LA County conducted 100 percent post-installation inspections for the first three months to ensure contractor compliance with terms and conditions before reducing the sampling rate, and actually achieved an overall on-site post-installation inspection rate of about 15 percent. The on-site visit included a visual inspection of the measures installed, verification that any mechanical equipment installed matched submitted specification sheets and program requirements, and a brief oral survey with the homeowner regarding overall program and contractor satisfaction. If a test-out was required for any of the installed measures, this triggered an inspection that included a BPI certified Quality Control professional witnessing the diagnostic testing performed. Examples of Flex Path test and inspection forms are included in Attachments A through C. The REN will perform field QC using a HERS/BPI certified professional in the

Home Upgrade program to confirm that installed measures met industry best practices and provide mentoring to contractors that might need additional training.

The REN worked with the IOU's and CPUC staff to determine reasonable measure level savings values, QA and QC requirements, and EM&V data collection objectives. Flex Path offers an excellent opportunity to continue testing this flexible approach in the residential marketplace, refine kWh savings, kW demand reduction, and therm savings numbers by measure, vintage, and climate zone. With funding being reduced by 50% LA County is now proposing a 2,376 retrofit pilot with estimated energy savings of 1,985,417 kWh based on savings values calculated using EnergyPro with DEER and RASS data; a method similar to what was used to derive Basic Path measure level energy savings values. Revised targets are shown in Figure 4.

Figure 4 (Subprogram A): Flex Path Proposed Net Energy Savings

Resource Acquired	2013	2014	Total
kWh Energy Savings	794,326	1,191,091	1,985,417
Peak kW Demand Reduction	912	1,367	2,279
Therm Savings	55,928	84,007	139,935

Program Successes through December 2012

In nearly nine months of operation, the number of Flex Path projects far exceeded the number of Advanced and Basic Path projects combined that were paid a matching incentive by LA County. This is significant because the IOU programs had been available to homeowners for 19 months at the time Flex Path ended. It should be noted that Flex Path was not been featured in the County's marketing materials or media campaigns, and promotion was limited to training contractors and distributing flyers at community

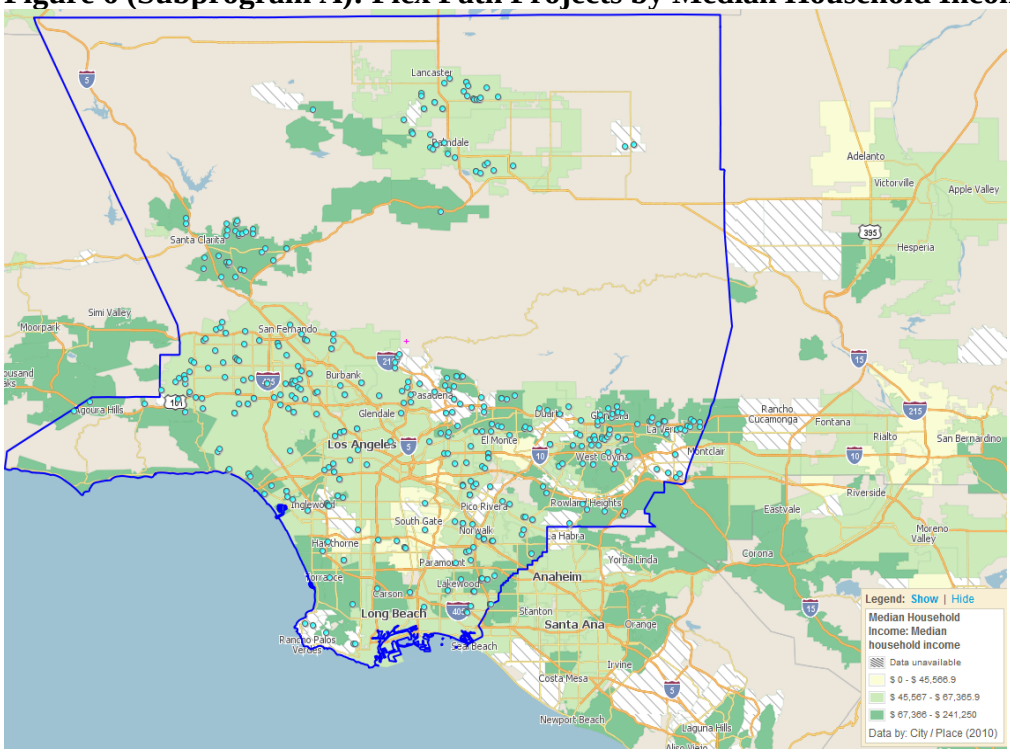
events alongside Advanced Path and Basic Path promotional materials. Figure 5 presents the important metrics for Advanced, Flex, and Basic options in LA County.

Figure 5 (Subprogram A): Breakdown of retrofit projects paid by LA County through February 2013

Retrofit Project Type	% of Total LA County Projects Paid	# of LA County Projects	Average Savings	Average Cost	Average Rebate (Utility + LA County)
Advanced Path	36%	1,048	31%	$12,685	$5,458
Flex Path	63%	1,793	17%	$5,875	$1,500
Basic Path	1%	21	10%	$4,202	$2,000

One of the most exciting successes of Flex Path to date is the clear indication that the program made great strides in penetrating the lower-middle and middle-income homeowner markets. This is essential for scaling up EUC to achieve a much greater volume of projects. This will help to transform the market, reaching California Long Term Energy Efficiency Strategic Plan goals, and creating much needed new jobs. The map below shows the distribution of Flex Path projects in LA County overlaid on median household income census data.

Figure 6 (Subprogram A): Flex Path Projects by Median Household Income in LA County



Contrary to the relatively narrow demographic adoption of Advanced Path, Flex Path has achieved an impressive penetration across LA County, particularly in lower-middle and middle-income communities. The REN proposed to target limited marketing and outreach to these communities and assist contractors in focusing Flex Path sales on middle-income homeowners. In expanding the Flex Path program or the Home Upgrade program throughout the SCE/SCG service territories the REN also proposed to target inland climate zones where comprehensive energy retrofits would result in greater benefits for homeowners.

To determine expected energy savings for Flex Path prescriptive measures, the LA County team used EnergyPro software to model each measure individually assuming a typical Los Angeles County single family detached home configuration based on RASS data to represent the pre-retrofit baseline. The assumptions from the EnergyPro analysis are as follows:

1. Climate Zone: 9 (Claremont used as base city)

2. Area: 1710 sq ft
3. Ceiling Height: 8 ft
4. House Dimensions: 38 ft x 45 ft
5. Perimeter: 166 ft
6. Winter Indoor Temp: 70
7. Summer Indoor Temp: 74
8. Infiltration: 1800 CFM50 (~0.57 ACHn)
9. Duct Insulation: R-4
10. Duct Leakage: 28%
11. Attic Insulation: R-11 (using default for pre-1978)
12. Wall Insulation: R-0
13. Crawlspace Insulation: R-0
14. Windows: Single Metal Clear
15. HVAC: Gas-fired, 0.80 AFUE, 10 SEER 6 EER
16. DHW: Gas-fired, 50 gal. 0.525 EF
17. Setback thermostat (except for thermostat measure)
18. Electric stove, washer/dryer in house

The success of the ARRA Flex Path program was the direct result of the simple, menu driven program design and simple delivery method. The REN encourages the Commission to adopt a program design that is easy for homeowners to understand and simple for contractors to deliver. Energy efficiency projects are sold at the kitchen table, and few homeowners have an understanding of how investing in energy efficiency or a whole house upgrade will benefit them. A simple program design will sell more projects, and result in more satisfied ratepayers. Market transformation is a long process that must engage all market actors with the

fewest barriers to entry as possible, while still maintaining a high standard of quality and emphasis on building science principles.

Home Upgrade program

Overview

The Home Upgrade program builds on the success of the ARRA Flex Path pilot program implemented under Energy Upgrade California (EUCLA) in Los Angeles County, and expands this innovative point based prescriptive program design to accommodate and encourage more comprehensive upgrade projects. The Flex Path approach was developed as a response to poor market penetration by both the Basic Path and Advanced Path programs previously offered as part of EUC by investor owned utilities (IOU(s)) in Los Angeles County. The Los Angeles County team first introduced a modified Flex Path program (Home Performance Flex Path) concept that included a tiered incentive structure and a calculated energy savings methodology by vintage and climate zone in July 2012. This original program concept has now become the Home Upgrade program presented in this program implementation plan.

The program supports the EE loading order with 1 of 3 envelope Base Measures.

SoCalREN and the IOUs reached agreement on a single program design and delivery method for a modified basic program. Both the REN and IOU program designs have the same three envelope Base Measures which include Whole House Air Sealing, Attic Insulation and Air Sealing, and Duct Sealing or Duct Replacement. The statewide IOU and REN teams agreed on a program design that required 1 of 3 Base Measures and a minimum of 3 total measures. The REN provided engineering workpapers, and submitted a revised E3 Calculator supporting the 1 of 3 Base Measure design as part of the January 14, 2013

compliance filing. These work papers were not approved, and the RENs agreed to use the approved IOU workpapers. In the decision to approve the 2015 extension year the 1 of 3 Base Measure requirement was eliminated. The RENs continue to work with the Energy Division Ex-Ante team to correct the methodology in its workpapers and hope to have them approved at some time in the future.

Program Design

The Home Upgrade program offers a balanced approach intended to produce a high volume of retrofits while maintaining a reasonable level of technical rigor and quality assurance. The proposed program will:

- Support the energy efficiency loading order with 1 of 3 Base Measures and requiring Duct Sealing and Insulation or Duct Replacement with HVAC equipment replacement to support an HVAC core system upgrade
- Provide a flexible tiered incentive approach of $10 per point up to $3,000 (shown in Figure 5 below) which still allows the contractor to upsell to the Advanced Path if desired by the homeowner
- Penetrate the lower-middle and middle-income homeowner markets with a simple, menu driven approach that will greatly increase the volume of projects
- Maintain high standards of Quality Control consistent with IOU and industry best practices and promote homeowner safety with pre-and-post-installation combustion appliance safety testing to BPI standards
- Maximize ratepayer benefits by creating an on-ramp for both homeowners and contractors while minimizing lost opportunities

Figure 5- Proposed Flexible Tiered Incentive Structure (Examples)

Measures	Total Points	Total Incentive Amount
Duct Replacement; Air Conditioner; Furnace; Whole House Air Sealing (second Base Measure)	250	250 X $10 = $2,500

Attic Insulation and Attic Plane Sealing; Whole House Air Sealing (second Base Measure); Wall Insulation; Floor Insulation	220	220 X $10 = $2,200

The 1 of 3 envelope Base Measure approach guarantees that 100 percent of homeowners will implement at least one envelope (building shell) measure. The Home Upgrade program will also require that HVAC equipment projects include Duct Sealing and Insulation or Duct Replacement and Insulation.

This simple, flexible design is expected to greatly increase the volume of projects over the Basic Path. The Home Upgrade program is flexible enough to allow some homeowners to focus on envelope improvements while others focus on completing core system upgrades. Contractors will be trained and encouraged to develop work scopes that go beyond core systems and include more envelope measures. The 2013-2014 transition period gives the Commission the opportunity to test a program design that will achieve a higher volume of retrofits and reasonably support the energy efficiency loading order.

> The Home Upgrade program requires that HVAC equipment projects include Duct Sealing and Insulation or Duct Replacement and Insulation.

The Home Upgrade program also introduced a bonus measure for right-sizing of HVAC equipment to support the EE loading order for core systems and test market acceptance of this approach outside a formal Quality Installation requirement. This measure was not accepted by the IOUs and workpapers were not approved by Energy Division. This measure will require further engineering analysis. Again, the REN wishes to use the transition period to try an innovative program design to see what works and what does not, and one that does not unnecessarily limit participation. The challenge in any program design is finding the right balance between volume and building science priorities. Lessons learned will be few if homeowner participation is low. The Commission cannot afford another three years of learning only what does not work.

SoCalREN has made a number of changes to the program, effective February 17, 2014, that are intended to expand the contractor base to include more specialty contractors, increase homeowner interest in the program, and help contractors be more profitable on each project. The changes are as follows:

- Increased Incentive Cap from $2,500 to $3,000
- Implemented a $150 CAS/CAZ Testing Incentive for Contractors
- Flexible Incentive Structure: $10 per point (up to $3,000)
- Eliminated Extra Shell Measure for HVAC Projects

The Home Upgrade program is intended to de-mystify the whole house energy efficiency upgrade approach. The program may offer a homeowner education component that will explain the benefits of the EE loading order and encourage homeowners to undertake a whole house energy upgrade in steps as their budget allows. Contractors may perform a walk-through audit that will serve as an energy efficiency roadmap for the homeowner that provides a comprehensive list of measures for future implementation. A draft of the walk-through audit form is presented in Attachment D. The energy efficiency roadmap provides contractors with an expanded customer base that promotes long term job stability and repeat business. The IOUs did not accept the requirement for a walk-through audit for Home Upgrade, and the REN did not implement it because of low contractor participation.

The Home Upgrade program addresses the barriers to entry into the home performance upgrade market and is intended to facilitate driving EUC to scale statewide.

- Home Upgrade is a prescriptive incentive program that eliminates the need for energy modeling of a home, reducing the number of visits by contractors and QC inspectors to the home by at least half over the Advanced Path.

- Home Upgrade is a points-based approach that gives homeowners and contractors the flexibility they need to bundle measures as their needs and budget allow while still supporting the energy efficiency loading order.
- Homeowners are able to do several energy efficiency upgrade projects over several years and prioritize upgrades that meet their needs, thereby dramatically increasing the number of middle-income homeowners that can be engaged in the home performance upgrade path.
- Home Upgrade facilitates homeowner engagement and energy efficiency education over a longer period of time and provides contractors with a base for repeat business that creates more jobs and makes employment more sustainable.
- The streamlined, prescriptive approach allows program implementers to handle a much greater volume of home performance upgrades at a lower cost, and has proven to increase customer satisfaction.
- The Home Upgrade program will be integrated with existing financing products, and loans can be funded in weeks as opposed to months.

The REN has eliminated all five-point measures from the Flex Path prescriptive menu and have included them as required or recommended best practices in applicable equipment measures.

- Home Upgrade solves the problem of mechanical equipment replacement on burn-out and provides incentives to move homeowners up to a higher level of efficiency; and a trained contractor pool is ready with the right equipment.
- Home Upgrade will allow more contractors to get involved in the program, create more green jobs, and accelerate market transformation.

- Home Upgrade focuses workforce development on contractor quality installation and improving home performance best practices, not energy modeling that is controversial at best. Key design elements include the following:

  - Three or more qualifying measures must be installed using a combination of Base and Flex Measures as described in Figure 8 below.
  - The Home Upgrade program requires that HVAC equipment projects include Duct Sealing and Insulation or Duct Replacement and Insulation.
  - The three selected measures must have a dollar value of $1,000 to meet the minimum incentive threshold, and up to $3,000 for the maximum incentive.
  - All five-point measures have been eliminated from the ARRA Flex Path program design.
  - Work must be performed by a EUC Participating Contractor or a contractor qualified by SoCalREN.
  - Projects must provide proof of all applicable building permits and adhere to all local, state, and federal laws and building codes.
  - All projects require 100% pre-and-post-combustion safety testing regardless of measures installed, and must be performed by a BPI certified Building Analyst (BA) as directed by Energy Division staff. SoCalREN will provide a $150 CAZ testing incentive to contractors to help offset the added, and often unrecoverable, cost of pre-installation testing.
  - Homeowners must be an active IOU account holder, and may choose to have the incentive paid directly to the Participating Contractor.

Program requires 100% pre-and-post-combustion safety testing for all projects regardless of measures installed as directed by Energy Division staff.

The RENs and IOUs agree that all five-point measures offered in the ARRA Flex Path program will be eliminated. It is also agreed that the measures do offer value to homeowners as best practices and Figure 7 describes the proposed disposition of each five-point measure.

Figure 7: Proposed Disposition of ARRA Flex Path Five-Point Measures

Flex Path Five-Point Measures to be Removed	Flex Path Requirement	Proposed Disposition
Programmable Thermostat	Energy Efficient Programmable Thermostat(s); Serves Entire Conditioned Area	Recommend replacement of a manual thermostat with digital, setback programmable model.
Low Flow Showerheads	Low Flow Showerheads ≤ 1.5 gpm; Bathroom Faucet Aerators ≤ 1.5 gpm; Kitchen Faucet Aerators ≤ 2.2 gpm	Recommend installation of a thermostatic control valve (TCV) on all showers in the home except when installing a tankless water heating system, and a low flow shower head on all showers. Installation of kitchen and bathroom faucet aerators is also recommended.
Hot Water Pipe Wrap	Minimum First 5ft of Hot Water Pipe Wrapped	Recommend including pipe wrap for first five feet of exposed pipes, or in accordance with local code.
ENERGY STAR Lighting	Energy Star CFL or LED Fixture(s); Permanently Installed	Recommend that all incandescent recessed can lighting fixtures be replaced with ENERGY STAR® CFL fixtures or ENERGY STAR® LED fixtures.

The Home Upgrade program also proposes to provide a bonus to the homeowner for installing more than one Base Measure. The first additional Base Measure (2 of 3) will receive a bonus of $150 and the second additional Base Measure (3 of 3) will receive a bonus of$200. The measure point values and bonuses are cumulative. Figure 8 below summarizes how the Base Measure Bonus will add value to a project and drive more envelope measures.

Figure 8: Example of Base Measure Bonus Structure

Number of Base Measures	Base Measure Description	Base Measure Rebate	Rebate Added	Measure Rebate	Total Rebate
1 of 3	Attic Air Sealing and Insulation	$550	Base Measure Rebate only	$550	$550
2 of 3	Duct Replacement	$650	Base Measure Rebate + $150	$550+$650+$150	$1,350
3 of 3	Whole Building Air Sealing (≥ 30% leakage reduction from vintage table defaults)	$450	Base Measure Rebate + $200 Bonus Points	$1,350+$450+$200	$2,000

The REN supports the IOU's in the development and limited piloting of a software tool that a contractor can use to calculate project points and percentage of energy savings based on basic characteristics of each home, vintage, and climate zone, provided the RENs are not required to use it. The currently proposed REN data management system will not support the use of this tool. In addition, the REN feels this approach is too complicated for homeowners to understand, as it is technically a calculated method that could result in different energy savings values and incentive amounts for each home. The REN would prefer to offer the same simple, prescriptive, points based menu approach to all homeowners and do virtually the same calculated energy savings calculations on the back end for the purpose of claiming savings and providing project specific data to Energy Division staff. The reason the ARRA Flex Path program was successful is because it was very simple and easy for homeowners to understand. The Home Upgrade measures in Figure 8 below include post-upgrade conditions and point values.

Qualifying Measures

Category	Upgrade Measure	Technical Specifications	REN Rebate Value
Base Measures (1 or more)	**Duct Sealing***	Seal to ≤10% for existing systems	**$250**
	Duct Sealing or Replacement*	Seal to ≤6% for replacement ducts	**$650**
	Whole Building Air Sealing	≥15% leakage reduction from vintage table defaults	**$250**
	Whole Building Air Sealing	≥ 30% leakage reduction from vintage table defaults	**$450**
	Attic Insulation & Air Sealing	Insulation ≥ R-38	**$550**
	Attic Insulation & Air Sealing	Insulation ≥ R-44	**$650**
Base Measure Kickers	**2nd Base Measure**	Total of two base measures	**$150**
	3rd Base Measure	Total of three base measures	**$200**
Flex Measures	**Wall Insulation**	Insulate ≥R-13	**$500**
	Floor Insulation	Insulate ≥R-19	**$550**
	Duct Insulation	Insulate ≥R-8	**$400**
	Central Furnace	≥92% AFUE	**$600**
	Central Furnace	≥95% AFUE	**$700**
	Wall Furnace	≥70% AFUE	**$400**
	Central Air Conditioner	≥14 SEER/12 EER	**$650**
	Central Air Conditioner	≥15 SEER/12 EER	**$750**
	Gas Storage Water Heater	EF ≥0.67	**$350**

Category	Upgrade Measure	Technical Specifications	REN Rebate Value
	Gas On-Demand Water Heater	EF ≥ 0.82	**$900**
	Electric Storage Water Heater	EF ≥ 0.93	**$400**

*Must also include Duct Insulation (Flex Measure). Duct Sealing (or replacement) and Duct Insulation count as two measures toward the three measure minimum.

Both the REN and IOU programs require 100% pre-and-post-combustion safety testing for all projects regardless of measures installed as directed by Energy Division staff. IOU/REN collaboration has resulted in a number of agreements that will allow the partners to move quickly to implement a single Basic Path replacement program and other vital EUC support services in SCE and SCG service territories. SoCalREN has worked closely with SCE and SCG to reach an unprecedented level of cooperation that serves to leverage the substantial investment made by LA County in Energy Upgrade California. SoCal REN appreciates Energy Division's approval of the Home Upgrade program with its 1 of 3 Base Measure approach in order to continue piloting a simple, flexible program design that will provide invaluable market penetration data to inform the next generation of whole house upgrade programs and move the statewide team closer to sustainable market transformation.

Geographic Territory

In recognition of the final decision which states that, "we would like to see the REN proponents and the IOUs work together to design a programmatic approach that covers all of the geographic areas of the IOU service territories with a seamless set of offerings. This means that the RENs would implement the Home Upgrade in the geographic areas that they cover, while the IOUs would implement the program in the rest of their territory," SoCalREN proposes to eventually operate the Home Upgrade program in all the geographic areas it serves. The final decision goes on to explain that, "The vision for RENs is that they are

regional, which, in the context of defining a REN, means that they represent several local government entities and not just one or two. For example, BayREN and SoCalREN represent two of the most populous regions of the state, encompassing multiple city and county governments within their structures."

SoCalREN has clearly established its territory as being that of the joint service territories of SCE and SCG for all of the SoCalREN services; however, for the Home Upgrade program, the REN will start by implementing the program only in the joint SCE and SCG service territories within L.A. County and will expand into other counties within the SoCalREN territory as the program shows success. Future REN expansion will be negotiated with SCE and SCG based on program performance metrics to be jointly determined. SCG will administer the program in municipal electric utility territories; SCE will administer the program in municipal gas territories. SCE and SCG will administer the modified Basic Path in territories that are shared with PG&E and SDG&E. Non-resource programs (contractor related outreach, green building labeling, audit subsidies, vouchers, marketing/outreach, etc.) are assumed to be IOU territory-wide. The REN will work with the IOU's to eliminate duplication and provide REN services where they provide the greatest ratepayer benefit.

The REN may engage in an email campaign to follow up with homeowners on recommended additional measures based on their energy efficiency roadmap.

Marketing and Outreach

As demonstrated on the ARRA funded Flex Path program, very few specific marketing activities will be required to engage homeowners in the program. A program brochure may be produced for the contractor that explains the importance of the EE loading order, the benefits of a whole house energy upgrade, and the terms of participation in the program. Home Upgrade program messaging will be added to existing planned marketing and outreach activities and media promotions. A program

specific web URL will be established to engage homeowners and contractors in participation in the program using Frequently Asked Questions, a Qualifying Measures list, an Online Application, and the Project Completion Form. The REN will work with contractors directly to promote and deliver the program.

Data Processing

EnergyOrbit is a cloud-based energy efficiency program management solution. Built on the Force.com platform, energyOrbit allows Demand Side Management (DSM) programs to be set up quickly and be managed with little overhead, while maintaining maximum flexibility. With both the broad functionality of the Salesforce platform and the industry-specific customization of energyOrbit, the full life cycle of a program can be managed from online, portal-based application entry to post-retrofit communications. EnergyOrbit has been deployed by dozens of POUs, IOUs, cooperatives, and program implementation firms, including ComEd, PG&E and Santee Cooper.

The REN has proposed using energyOrbit to manage and track all REN programs. Previously used in Los Angeles County to administer the Flex Path program, the energyOrbit solution contains a number of turn-key features that facilitate fast program set-up and comprehensive program tracking. These features support customers and program administrators while satisfying program funding requirements and other stakeholder interests through comprehensive customer relationship management (CRM), automated work processes, and standardized energy calculation and analysis. EnergyOrbit supports the full life-cycle of a program with robust tracking and reporting capabilities. Examples of what energyOrbit supports include:

- Full spectrum of efficiency technology measures
- Equipment management
- Contractor management
- Customer management

- Audit and work-order management
- Energy savings, installation costs and rebate savings for prescriptive and calculated measures
- Detailed reporting of program performance

In conjunction with energyOrbit's exclusive features, the tool is bundled with Salesforce CRM Enterprise Edition. Salesforce is the most comprehensive cloud-based CRM tool available, managing not only sales, but also marketing and customer service. Examples of how the REN will take advantage of these capabilities include:

- Call center management for contractor and homeowner support
- Automated status update emails based on event triggers
- Post-retrofit email campaign to follow up with homeowners on recommended additional measures based on their walk through audit and resulting energy efficiency roadmap

EnergyOrbit is a closed-loop system with extensive security features. Data can be locked down in a number of ways based on a broad data access model. At the baseline, organization-wide defaults restrict access to the bare minimum needed by all users. Salesforce also provides system security for physical, network, transmission, and application mechanisms, resulting in an ISO27001 security certification.

Based on the prior successful use of energyOrbit in Los Angeles County and the robust functionality of the system, the REN proposes to use this tool for the 2013-14 portfolio of programs. EnergyOrbit would support Energy Upgrade California (EUC) and financing programs including:

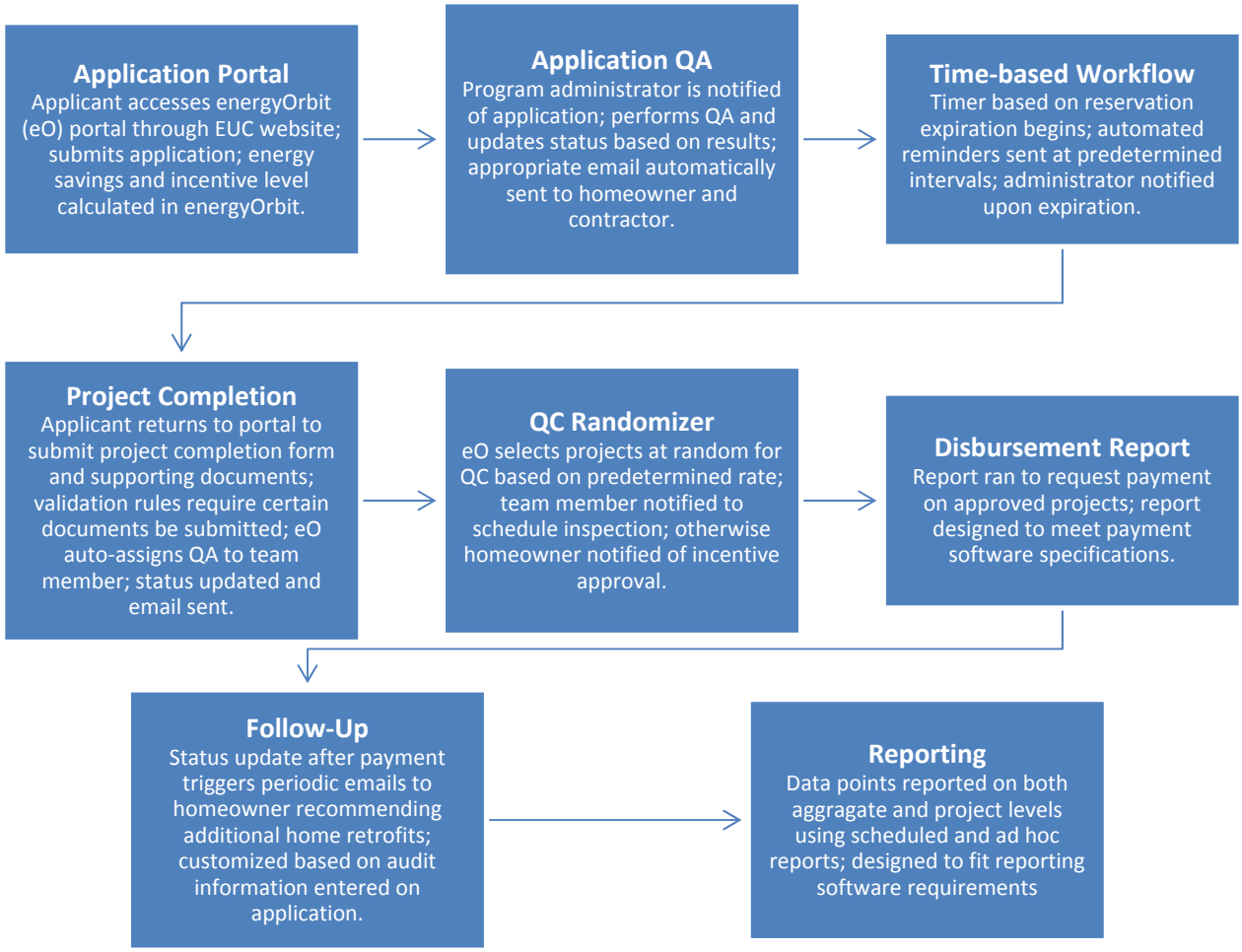
- Home Upgrade
- Multifamily
- HVAC
- Energy Champions
- CoOp Marketing

- Assessment vouchers
- Commercial PACE
- Single family LLR
- Multifamily LLR

Each program would be developed according to both program designs and relationships between programs to accurately report on both unique projects and connections between them. Projects in each program would be tracked seamlessly throughout their life-cycle, from application to incentive payment and post-payment follow-up. SoCalREN will issue all incentive payments using the energyOrbit system and a third-party incentive payment fulfillment firm.

While each program will utilize different functionality, it may be illustrative to describe the process of how a project moves through the energyOrbit system. Figure 10 provides an example of this flow that is based on a hypothetical project in the Home Upgrade program.

Example of energyOrbit Process Flow



Application Processing and Quality Assurance

A comprehensive Quality Assurance (QA) Plan is an integral part of the Home Upgrade program. Quality assurance protects participants by providing an independent review of the work performed by the participating contractor to ensure that the installation meets industry best practices and program standards. The REN Quality Assurance Plan includes strategies to ensure that participating contractors are competent and that completed energy efficiency improvements meet program standards as follows:

- Project Completion Form review process that ensures compliance and provides follow up with the Participating Contractor where necessary.
- Customer feedback mechanism which allows the customer to provide program and contractor feedback directly to the Program Administrator.
- In-field inspection protocols including a sampling rate that is aligned with Home Performance with ENERGY STAR standards at a minimum.
- Conflict Resolution Protocols for responding to contractors' disputes with QA reports.
- Record keeping and tracking of results from in-field inspections, customer feedback and any corrective actions undertaken.

1. Flex Path Process

The Home Upgrade program will manage program participation in the following sequence:

- Contractor (or homeowner) completes project Application Form.
- Review of project Application Form. Submission of Application Form is necessary for 60 day reservation date to be issued by Program Administrator.
- Walk through audit and project work scope initiated and completed by participating contractor.
- Quality Control (witness of test-out results may be required for some measures).

- Contractor submits Project Completion Form (with required supporting documentation).
- 100% Desktop Quality Assurance Review of Project Completion Form and Supporting Documentation.
- Quality Control (In-field inspection).

Figure 11 outlines the 12-step desktop quality assurance review that will be undertaken for every Flex Path Application Form received.

Figure 14: Quality assurance procedure for desktop review of Application Form

Step	Review	Action
1	Alert created if Utility Service Account number is the same as another EUCLA project	The program administrator will check the Utility Service Account number provided against all other EUCLA projects. If an application is found with the same Utility Service Account, then the program administrator will review the scope of work for each application and confirm that they are different.
2	Utility Service Account Holder address is within Los Angeles County	The program administrator verifies that address provided is within Los Angeles County and is a single family detached home.
3	Utility Service Account Holder has not received an incentive for the same measure(s) in the past five years	The REN will work with the IOUs to share data regarding previous participation in IOU programs. Every application will be checked for previous participation at the measure level.
4	Contractor has valid contractor's license	Program administrator confirms that contractor is on the Participating Contractor list. A valid contractor's license is confirmed during the Participating Contractor application process in the Energy Upgrade California Program.
5	Contractor has performed walk through audit	Program administrator confirms that Contractor has submitted a completed walk through audit form.

Step	Review	Action
6	Utility Service Account Holder's email address functions	Upon application submittal, a manual email will be generated to the Utility Service Account Holder's email address. Program administrator will see if the email is undeliverable.
7	Utility Service Account number is in correct format for electric utility selected	The program administrator will verify the account number provided against the known number of digits for selected utility provider.
8	Utility Service Account number is in correct format for gas utility selected	The program administrator will verify the account number provided against the known number of digits for selected utility provider. If it is not in the correct format, and the homeowner or contractor informs the program administrator that there is no gas utility service to the property, then this is acceptable.
9	Utility Service Account address is within electric utility territory selected	Confirm that the city is listed within Los Angeles County, and not served by Los Angeles Department of Water and Power or other municipal utility provider.
10	Utility Service Account address is within gas utility territory selected	Confirm that the city is listed within Los Angeles County, and is not served by a municipal utility.
11	Measures selected in application are deemed qualifying measures	The program administrator will verify that at least one Base Measure is selected and a total of three or more retrofit measures have been selected and that their combined point value is 100 or greater.
12	Electronic signature matches utility service account holder's name	The program administrator will verify that the Utility Service Account holder name matches the electronic signature on the application.

2. Other Eligibility Requirements

Another eligibility requirement that is included in the program design, website, and marketing material: new construction and major (gut) rehabilitation cannot apply for the Home Upgrade program.

3. Review of Project Completion Form

After installation of the Qualifying Measures agreed to in the Application Form is complete, the participant will be required to close out their application by completing a Project Completion Form. The purpose of this form is to ensure that program requirements for pre-and-post-retrofit conditions have been met, an itemized invoice has been paid in full, proof of pre-and-post combustion appliance safety testing, and all additional supporting documentation required for each measure has been submitted. In the case of a homeowner not being able to pay the full amount at the time of project completion, proof of financing is acceptable in lieu of a paid invoice. To satisfy the invoice requirements, a written copy of the financing agreement, signed by both parties, must be submitted to the Program Administrator as part of the supporting documentation package.

Once a Project Completion Form is submitted through the EUCLA website, an application processor will review all supporting documentation to verify the required documents have been submitted in compliance with pre-and-post-retrofit conditions.

At the point of downloading the Project Completion Form information from the website, the application processor will ensure that a note is made in the file if the project cost does not equal or exceed the total amount of the Flex Path incentive. The processor will also verify that regularly-permitted measures have a permit number included, and if not a note is made in the file and the contractor is contacted.

For air sealing and duct insulation and sealing, the Participating Contractor will submit test-in and test-out results using a downloadable Excel file located in the Project Completion Form section of the website. After filling in the appropriate information into the Excel document entitled Flex Path Test-In and Test-Out Templates, the contractor will upload the file into the Project Completion Form. Flex Path Test-In and Test-Out Templates will be the file that the quality assurance professional will use to review Combustion

Safety Test-In and Test-Out results, Duct Blaster Test-In and Test-Out results, and Blower Door Test-In and Test-Out results.

Attachment A provides examples of existing Flex Path Test-In and Test-Out Templates which are provided in Excel format for participating contractors to complete and submit, and are available for use on the Home Upgrade program. Attachment B describes the process related to the review of test-In and test-Out documents. The in-field quality control selection protocol is described in Attachment C. Attachment D presents a draft of the proposed walk through audit template.

Attachment A: TEST FORMS

Figure A1: Combustion Safety Tests (CST) – Pre-Retrofit

COMBUSTION APPLIANCE SAFETY / COMBUSTION APPLIANCE ZONE TESTING

PRE-RETROFIT

In each box, please enter "PASS", "FAIL," the value requested or "N/A" (i.e. no blank boxes). N/A is the appropriate response only if there is no such combustion appliance to test. Explain all responses of "N/A" in the NOTES section. Any combustion device that is not on this form (e.g. fireplace insert) should be listed under "other" as necessary and explained in NOTES.

Date of Combustion Safety Test-Out:	
BPI Building Analyst Performing Test-Out:	
Phone Number of BPI Professional:	
Outside Temperature at Time of Testing (in degrees F):	

	Worst Case Depressurization Test Results			Natural Conditions Test Results (if failed Worst Case)				
	Spillage	Draft (Pa)	CO (ppm)	Spillage	Draft (Pa)	CO (ppm)	Flue Inspection	Action Required*
Heating System 1								
Heating System 2*								
DHW System 1								
DHW System 2*								
Other*								

	location of testing	CO Ambient (ppm)	Base Pressure (Pa)	Worst Case pressure (Pa)	Final Net CAZ Depressurization	Limit for CAZ	Result	Action Required*
CAZ 1								
	list of CAZ 1 appliances:							
CAZ 2*								
	list of CAZ 2 appliances:							

Gas Leak Testing:		Leakage Notes:	

	Kitchen	Other*	Action Required
Ambient CO (ppm)			

	Fuel*	CO (ppm)	Vent Out?	Action Required
Oven				
Range				
Other Appliance				

	Fuel*	Gas Properly Vented	Action Required
Dryer Vent			

NOTES:	

***As needed, list additional systems/zones/actions in the notes section; identify other system/fuel types in the notes section**

Figure A2: Combustion Safety Tests (CST) – Post-Retrofit

COMBUSTION APPLIANCE SAFETY / COMBUSTION APPLIANCE ZONE TESTING

POST-RETROFIT

In each box, please enter "PASS", "FAIL," the value requested or "N/A" (i.e. no blank boxes). N/A is the appropriate response only if there is no such combustion appliance to test. Explain all responses of "N/A" in the NOTES section. Any combustion device that is not on this form (e.g. fireplace insert) should be listed under "other" as necessary and explained in NOTES.

Date of Combustion Safety Test-Out:	
BPI Building Analyst Performing Test-Out:	
Phone Number of BPI Professional:	
Outside Temperature at Time of Testing (in degrees F):	

	Worst Case Depressurization			Natural Conditions Test Results (if				
	Spillage	Draft (Pa)	CO (ppm)	Spillage	Draft (Pa)	CO (ppm)	Flue Inspection	Action Required*
Heating System 1								
Heating System 2*								
DHW System 1								
DHW System 2*								
Other*								

	location of testing	CO Ambient (ppm)	Base Pressure (Pa)	Worst Case pressure (Pa)	Final Net CAZ Depressurization	Limit for CAZ	Result	Action Required*
CAZ 1								
	list of CAZ 1 appliances:							
CAZ 2*								
	list of CAZ 2 appliances:							

Gas Leak Testing:		Leakage Notes:	

	Kitchen	Other*	Action Required
Ambient CO (ppm)			

	Fuel*	CO (ppm)	Vent Out?	Action Required
Oven				
Range				
Other Appliance				

	Fuel*	Gas Properly Vented	Action Required
Dryer Vent			

NOTES:	

***As needed, list additional systems/zones/actions in the notes section; identify other system/fuel types in the notes section**

Figure A3: Blower Door Tests – Pre-Retrofit

Blower Door Test-In	
PRE-RETROFIT	
Date of Blower Door Test-In:	
BPI Building Analyst Performing Test-In:	
Phone Number of BPI Professional:	
AIR INFILTRATION RESULTS	
House Infiltration (at 50Pa):	
For house infiltration testing, with method did you use?	
Below please paste a photo of the manometer results of this test:	

Figure A4: Blower Door Tests – Post-Retrofit

Blower Door Test-Out	
POST-RETROFIT	
Date of Blower Door Test-Out:	
BPI Building Analyst Performing Test-Out:	
Phone Number of BPI Professional:	
AIR INFILTRATION RESULTS	
House Infiltration (at 50Pa):	
For house infiltration testing, with method did you use?	
Below please paste a photo of the manometer results of this test:	

Figure A5: Duct Blaster Tests – Pre-Retrofit

Duct Blaster Test-In	
PRE-RETROFIT	
Date of Duct Blaster Test-In:	
BPI Building Analyst Performing Test-In:	
Phone Number of BPI Professional:	
DUCT LEAKAGE RESULTS	
How many HVAC duct systems were tested? For each one, submit this form separately.	
Calculated air flow from HVAC fan unit (CFM):	
For the duct pressurization test, how did you determine the full air flow from the fan unit? Write the equation you used and the numbers you inputted into the equation.	
Duct pressurization results (at 25Pa):	
Total duct leakage at start of job (supply + return), percentage of full flow (i.e. row 13 divided by row 11):	
Below please paste a photo of the manometer results of this test with the setting at 25Pa. If you are running a blower door test simultaneously, so you are pressurizing the whole house, please submit a photo of that manometer's reading as well to show that the ducts were pressurized to 25Pa.	

Figure A6: Duct Blaster Tests – Post-Retrofit

Duct Blaster Test-Out

POST-RETROFIT

Date of Duct Blaster Test-Out:	
BPI Building Analyst Performing Test-Out:	
Phone Number of BPI Professional:	

DUCT LEAKAGE RESULTS	
How many HVAC duct systems were tested? For each one, submit this form separately.	
Calculated air flow from HVAC fan unit (CFM):	
For the duct pressurization test, how did you determine the full air flow from the fan unit? Write the equation you used and the numbers you inputted into the equation.	
Duct pressurization results (at 25Pa):	
Total duct leakage at end of job (supply + return), percentage of full flow (i.e. row 13 divided by row 11):	

Below please paste a photo of the manometer results of this test with the setting at 25Pa. If you are running a blower door test simultaneously, so you are pressurizing the whole house, please submit a photo of that manometer's reading as well to show that the ducts were pressurized to 25Pa.

Attachment B: Review of Test-In and Test-Out Documents

The review of the test-in and test-out documents will be done in the following order:

- Based on the measures selected, the quality assurance professional will ensure that the correct tabs have been completed according to the chart on Page 1 of the template document.
- Review Combustion Safety / Combustion Appliance Zone Testing Pre-Retrofit and Post-Retrofit.
    1. Ensure that all of the notes under "Action Required" are the appropriate responses to the results listed in the previous columns according to BPI Standards:

Combustion Safety Test Action Levels

CO Test Result*	And/ Or	Spillage and Draft Test Results	Retrofit Action
0 – 25 ppm	*And*	**Passes**	Proceed with work
26 – 100 ppm	*And*	**Passes**	Recommend that the CO problem be fixed
26 – 100 ppm	*And*	**Fails at worst case only**	Recommend a service call for the appliance and/or repairs to the home to correct the problem
100 - 400 ppm	*Or*	**Fails under natural conditions**	Stop Work: Work may not proceed until the system is serviced and the problem is corrected
> 400 ppm	*And*	**Passes**	Stop Work: Work may not proceed until the system is serviced and the problem is corrected
> 400 ppm	*And*	**Fails under any condition**	Emergency: Shut off fuel to the appliance and have the homeowner to call for service immediately

**CO measurements for undiluted flue gases at steady state*

- Review Blower Door Test-In (if applicable)
    1. Ensure that infiltration is at CFM50 ≥ 1900
    2. Ensure that result and CFM50 setting matches photo of manometer
- Review Blower Door Test-Out (if applicable)

1. Ensure that infiltration at CFM50 ≤ 1100
2. Ensure that result and CFM50 setting matches photo of manometer

- Review Duct Blaster Test-In
  1. Ensure that percent leakage ≥ 28%
  2. Ensure that result and CFM25 settings match photo of manometer

- Review Duct Blaster Test-Out
  1. Ensure that percent leakage ≤ 15%
  2. Ensure calculations have been done correctly
  3. Ensure that CFM and CFM25 numbers coincide
  4. Ensure that result and CFM25 settings match photo of manometer

If a Project Completion Form is found to be incomplete or missing supporting documentation, an email and phone call will be made to both the participant and the Participating Contractor three times.

In-field Inspection Protocols

The Flex Path Pilot in-field inspections will be conducted by a quality control professional that holds a Building Analyst certification from the Building Performance Institute as a minimum. The quality control professional will not have existing business ties with any of the Participating Contractor's conducting retrofits in the Flex Path pilot. If such as relationship existed in the past, a minimum of a twelve month period is required between terminating the business relationship and performing any quality control procedures in the Flex Path Pilot program.

Attachment C: In-Field Quality Control Selection Protocol

The program administrator will ensure in-field inspections are performed at a sampling rate minimum of 5 percent (1 in every 20) for each Participating Contractor that has completed jobs under the SCE/SCG Energy Upgrade California Program. Randomly-chosen in-field inspections will target the incentive recipient and contractor to be notified after the Project Completion Form has been submitted. Notification will be sent via email and phone.

The national Home Performance with ENERGY STAR (HPwES) Program guidelines for a phased approach to sampling rates for in-field inspections will be applied to Participating Contractors that have not yet submitted jobs through the SCE/SCG Energy Upgrade California Program.

Phase 1: In-field inspection with a passing score on 3 of the first 5 jobs completed by a new Participating Contractor.

Phase 2: After the first 5 jobs are completed, 20 percent of the next 20 jobs would receive in-field inspections.

Phase 3: After completion of the Participating Contractor's first 25 jobs, the program administrator will lower sampling rate to 5 percent or greater of completed jobs.

It is important to note that the in-field inspections are at Participating Contractor level and not 5 percent of total program jobs. All in-field job inspections will occur after improvements have been installed. An in-field inspection may be scheduled during the contractor's test-out and prior to job completion (see Air Sealing/Duct Sealing below).

If a Participating Contractor is part of Southern California Edison's Quality Installation (QI) program, a site inspection may be waived if the documentation submitted to Edison's Quality Control division is submitted to the Flex Path Quality Control Professional as well.

Random Sample

Jobs will be selected through a random sample in order to maintain a representative sample of each Participating Contractor's work. However, a sample may not be purely random as some customers may not be willing to schedule an inspection or may schedule an inspection based on concerns with the work undertaken.

Air Sealing/Duct Sealing

Participants that plan to undertake air sealing and duct sealing in the Flex Path Pilot will be flagged in the Application Form desktop review for 5 percent minimum in-field inspection during the contractor's test-out procedure, to be conducted at a rate commensurate with the sampling rate of the contractor's in-field inspections. By signaling that these measures are being installed, the quality control professional can arrange to witness the performance of the duct and/or blower door test-outs. In this case, the Participating Contractor may be asked to submit all supporting documentation prior to this meeting (with the exception of test out results and an itemized paid invoice). In this case, the QA professional will notify the incentive recipient and participating contractor within ten business days of receiving the application. This notification ensures the QA professional will be kept abreast of scheduled test-out dates and times.

The QC Professional will verify the system tonnage by inspecting the condenser nameplate. This number, multiplied by 400CFM, will equal the total nominal system airflow. This will be the denominator when dividing the CFM result of the Duct Blaster test to calculate the leakage percentage.

Pre-Installation Inspection

The program administrator reserves the right to perform a pre-installation inspection on all jobs in the Flex Path Pilot. Flex Path applications submitted for a property with multiple HVAC systems will trigger a mandatory post-installation inspection.

Scheduling Inspections

The Flex Path administrator will identify the random sampling of projects to be inspected weekly and forward them to the Quality Control Professional. Once received, this person will use a Route Planner function to identify the most efficient order in which the sites should be inspected on a given day.

Calls are then made to each homeowner. The call script is as follows:

"Hello, my name is _____, and I'm calling from LA County's Flex Path program. I wanted to let you know that we received all the supporting documentation we need to close out the project and issue your incentive. The last step is to schedule an on-site inspection, and I was wondering if you were available on _____."

The Route Planner will be used to calculate what amount of time to leave between inspections for travel. The amount of time it takes in current traffic should influence this determination. If any measure may be located in the attic, the homeowner will be asked if they can have a ladder readily available. Such measures include:

- Attic insulation & sealing
- Attic radiant barrier
- Furnace replacement
- A/C replacement (coil)

After the day and time have been agreed upon, the following information is included in the calendar event:

- SUBJECT: On-site Inspection: Last Name, First Name: Project Number
- LOCATION: Address
- NOTES: Phone number, email address, measures in application

Preparing for Inspections

Before going out in the field, each inspection will be prepped with the information necessary to verify what was installed matches the supporting documentation that was submitted. This includes, but is not limited to:

- Manufacturer and model numbers (A/C, furnace, DHW tank/tankless, heat pump, thermostat)
- Photos of installation (light fixtures, water fixtures, whole house fan, windows, cool roof)
- R value of insulation (attic insulation & sealing, crawlspace insulation)

This information can be included in the notes section of the calendar event and pulled up on a smart phone or other computer in the field to match all information with what is present in the home.

What to Bring to the Field

The Quality Control Professional will be responsible for bringing with him/her all the necessary information to check that the submitted supporting documentation matches that which is found in the house. This includes:

- Furnace specifications
- A/C specifications
- Heat pump specifications
- Thermostat specifications
- Hot water heater specifications
- Tankless hot water specifications
- Light fixtures specifications

On-site Inspection Procedures

When arriving at the site, the Quality Control Professional will ask to inspect anything that may be outside first. This may include the A/C condenser, cool roof, windows, crawlspace insulation, DHW tank/tankless, lighting fixtures, and pipe wrap.

When entering the home, the Quality Control Professional will ask the homeowner if he/she prefers that booties be worn around work boots. All measures that are inside the home will then be inspected. The Flex Path representative should be courteous and polite. This person will not touch anything in the home that is

not necessary for inspection purposes. Ask the homeowner to turn off the A/C or heating system if inspecting any part of this core system.

General guidelines for what to complete during the visit include:

- A visual survey
- Review the measures selected on the application and determine whether each is new to the home.
- Note obvious missed opportunities for improving home performance that could have driven the scope to an Advanced Path project.
- Evaluate each measure against Flex Path's Qualifying Measures post-retrofit conditions.
- Witness the test-out performed by the contractor (in the case of duct insulation & sealing or air sealing)

For each measure below, the following information is verified in the field:

- Crawlspace insulation: Verify that it has been installed by looking in at least one entry point. If there are multiple, enter or look through them all. It is not necessary to get completely under if a vision inspection can be made by only inserting one's head. Look at the quality of the installation.
- Wall insulation: If there are patches or paint marks in outside walls, look to see that they are spaced about 3' from each other and that there are at least two points vertically at which the insulation was drilled and filled. Ensure that the wall insulation is in every exterior wall around the conditioned space.
- Air sealing: The QC professional will be at the Blower Door test-out to verify that the manometer reading matches Flex Path requirements. If not present for this, check that weather stripping and caulking were installed at any easy-to-access points (doors, windows, walls, etc.)

- Attic insulation & sealing: Verify that the thickness installed matches the thickness that the specification sheet indicates is necessary to reach the required R-value. Look at the quality of the installation.
- Attic radiant barrier: Ensure that the radiant barrier is continuous throughout the entire attic roof. Look at the quality of the installation.
- Furnace: Verify that model number match the specification sheets or AHRI certificate submitted as supporting documentation. This may require removing the cover of the furnace.
- A/C: Verify that condenser model number and coil model number match the specification sheets or AHRI certificate submitted as supporting documentation. If the condenser is on the roof, do not inspect it.
- Heat pump: Verify that model number match the specification sheets or AHRI certificate submitted as supporting documentation
- Whole house fan: Look to see that one was installed and ask if it vented out of the roof or just into the attic.
- Thermostat: Verify that it is programmable and that it is the same manufacturer and model number as the specification sheet submitted as supporting documentation
- Duct work: Ideally, the professional is present during test-out. If not, check to make sure that insulation is R-8. Look to see how the ductwork was laid out to see if it can be improved.
- Windows: From outside the house (or inside when necessary), go around the house to verify that all the windows are new and double-pane.
- Hot water heater (tank or tankless): Verify that model number match the specification sheet submitted as supporting documentation.

- Pipe wrap: Look at the DHW heater to see that pipes have been wrapped. Ensure that the insulation is not within 5" on the unit or a wall entry point. If you can also see exposed hot water piping in the crawlspace, basement, or attic, look to see that it is wrapped there are well.
- Water fixtures: Verify that the thermostatic shut off valve (i.e. the Evolve ShowerStart Roadrunner) was installed on all showers. Look underneath all faucets in all bathrooms and kitchen to see that aerators were installed.
- Lighting fixtures: Verify that the photos submitted as supporting documentation match those that are encountered in the home. The QC professional must ask the homeowner which of the light fixtures have been retrofitted.
- Cool roof: Look from the ground to see that shingles match the specification sheet submitted as supporting documentation. Verify that the entire roof has been re-shingled. Do not go up to the roof.

After all measures have been inspected, the QC professional will ask the homeowner where a good place to sit to fill out his/her paperwork would be. Then he/she will complete the in-field inspection form. After that, the customer discussion will begin. For details, see the section below by the same name.

Utility Service Account Number Conflict

During the review of the Application there will be a check to see whether the applicant has already participated in the EUCLA Basic or Advanced Package by a cross reference of the Utility Service Account Number. If the participant has previously had retrofits installed under the Energy Upgrade program, they will be flagged for an in-field inspection to ensure that the qualifying measures installed in the Flex Path Pilot were not already installed in the Basic or Advanced Package.

Contractor Performance

In-field inspection rates may be increased for a Participating Contractor whose score at a previous inspection is below 3 (See In-field Inspection Score Template). A contractor who receives a score below 3 will receive a mandatory in-field inspection for his/her next project.

Customer Discussion

The in-field inspection will begin with the quality control professional (acting on behalf of the program administrator) introducing themselves, their organizational affiliation, and the purpose of the visit; to verify that the work conducted by the Participating Contractor meets program guidelines.

The quality control professional must maintain a positive and objective attitude during all conversation with the participant, address any specific questions that they may have about the inspection and determine any concerns about the installed work. (See Figure 1 for possible talking points).

After the measures have been verified, the homeowner will be asked if he/she does not mind answering a few questions. The following questions will include:

Figure C1: Optional customer discussion items

- Confirm that the customer received correct information regarding what to expect from the program.
- Verify that the applicable test-in was performed and that the customer received a copy of all results from any test.
- Verify that any applicable test-outs were completed prior to submittal of the Project Completion Form (except in the case of air sealing/duct sealing in which the QA professional will be present during the test-out procedures).
- Confirm that the pre-retrofit requirements as described in the Qualifying Measures document were in place before the installation.
- Enquire if the customer has and is willing to share utility bill data, whether the utility bills were requested by the contractor, and whether or not the customer provided them to the contractor upon request.
- Confer with the customer regarding his/her satisfaction with the contractor's assessment, installation and overall experience with EUCLA.
- If customer displays positive attitude with regard to overall satisfaction, recommend that he/she share the experience with friends and family to encourage their participation in Energy Upgrade California.
- Encourage the customer to enroll in other Energy Upgrade California Programs.
- Ask the customer how he/she heard about the program.

In-field Inspection Scoring Protocol

Figure C2: The protocol described below will be used during in-field inspections

Score	Performance	Overall Comment
FAIL		
0	• Combustion appliance testing results do not meet BPI Technical Standards or relevant program standards. • Measures in contracted scope of work not installed. • Minimum standards for building ventilation are not being met. • Unsafe conditions resulting from installed work and posing immediate health/safety threat to occupants are found.	Contractor's performance does not meet technical standards, program requirements and/or the home needs immediate corrective action.
1	• Health and safety issues are present, but do not pose an immediate threat to the occupants. Measures were installed but not correctly to meet program requirements and standards. • Measures were not installed correctly.	Contractor's performance does not meet technical standards or program requirements and the home requires non-immediate corrective action.
2	• Below standards/incorrect installation of required measures.	Several technical deficiencies were observed that require corrective action.
PASS		

Score	Performance	Overall Comment
3	• Installed measures did not meet all technical installation standards, but no serious deficiencies were found. • Some incorrect data gathered and provided to customer without any significant impacts on work completed or effectiveness of job.	Contractor's performance meets all technical standards and program requirements but some areas of technical performance need improvement and may require corrective action.
4	• All technical standards of installation have been met (e.g. BPI Technical Standards) • Work is comprehensive in nature. • Recommended and installed measures were consistent with Application Form. • Test-out reporting was accurate.	Contractor's performance meets all technical standards and program requirements.

- Contractor Performance Record

Customer Feedback

If positive or negative feedback is received from the customer about the Participating Contractor, this will be stored in the contractor's performance history file. An in-field inspection will be promoted if the customer feedback warrants additional investigation to ascertain that the contractor has abided by all program policies and procedures.

Contractor Feedback and Corrective Action

If corrective action is indicated on the quality control professional's in-field inspection report, this will trigger the program administrator to contact the Participating Contractor. The contractor will be contacted within ten business days from when the in-field inspection report was filed via phone and email.

The contractor must correct the problem that has been identified and submit documentation regarding the corrections made to the program administrator immediately after the issue has been resolved.

If the quality control professional notes small errors at an in-field inspection, this will be recorded into the contractor's performance file. Feedback will be provided to the contractor in a constructive manner that includes instructions on how to prevent making such mistakes on future projects. If the same errors are found multiple times for the same contractor, a higher sampling rate for in-field inspections may be established.

If significant errors are found (i.e. the contractor receives a score of 0 or 1), the quality control professional will perform a phone consultation with the contractor to discuss pertinent issues. After this, the quality control professional will send the contractor a document that outlines corrective action scope of work that is required within 30 days, or an appropriate amount of time consistent with the construction work included. Documentation, both in written and photographic form (as applicable), must be submitted by the contractor as a record that the remediated action has been completed.

If an in-field inspection determines a severe situation is present within the house (i.e. one threatening the health and safety of occupants), the customer will be notified, and the quality control professional will decide an appropriate course of action. This may consist of informing the Utility Service Account Holder, contacting the fire department, or turning off equipment. The quality control professional will contact program administration to inform them of the situation. The quality control professional will immediately address the situation and provide the contractor instructions for necessary corrective actions to take as soon as possible. Documentation, both in written and photographic form (as applicable), must be submitted by the contractor as a record that the remediated action has been completed.

If acceptable for health and safety standards, the quality control professional will rely solely on the contractor to inform the customer about any deficiencies in the installation and any necessary corrective action.

Conflict Resolution Procedure

Situations may arise in which a contractor disputes a low in-field inspection score or disagrees with the QA professional's assessment of the Completion form with backup documentation. Some potential conflict resolution scenarios include:

- The measures installed were not the same as those selected in the Application Form. In this case a new application may be submitted if the point values of the installed measures meet the minimum required.
- The property is not located in Los Angeles County.
- The measures were not properly installed.
- The photographs or cut sheets are missing pertinent information.

In order to obtain resolution, the contractor can call the EUCLA call center (877-785-2237) and ask to receive the Program Administrator's contact information. The Administrator will then review with the Participating Contractor's QA in-field report. The following process will be used by the Program Administrator to resolve any contractor disputes:

- Review Application Form and Project Completion Form for the project.
- Review the content of In-field Quality Assurance Report.
- Discuss the results of the In-field Quality Assurance Report with the contractor.
- Review all relevant information and make a decision whether or not to revise the In-field Quality Assurance Report score. If appeal is denied, go to the next step. If the appeal is approved, skip to step 7.

- Recommend that contractor seek additional training and/or mentoring.
- Increase the sampling rate the of the contractor's next five projects.
- Report all Conflict Resolution proceedings and outcomes to the Los Angeles County.

Inputting Scores

Once the QC professional returns to the office, he/she must notify the Flex Path administrator of the scores for all inspections. The in-field reports must be scanned and saved into the supporting documentation files for the inspections. If a site has more than one project number (i.e. Flex Path application), the report should be saved to each supporting documentation folder. Additionally, the inspection scores must be uploaded to each project via EnergyOrbit.

- Program Data Reporting Requirements

The following will be compiled and maintained for all applications received through the Flex Path Pilot program:

- Database of Application Forms
- W-9 Forms (if applicable)
- Project Completion Form
- Copy of Itemized Paid Invoice
- Supporting Documentation (e.g.: specification sheets, before and after photos, test-in and test-out results)
- In-field inspection results (if performed)
- Corrective action documentation (if in-field inspection performed and corrective action prescribed)

Figure C3: In-field Quality Assurance Report

	Verification Date
Customer Address	
Customer Phone	Customer Email
Customer Name	Verifier Name

Instructions to the Verifier

Answer the questions below using observation and the information provided by the program administrator. In completing the forms include comments on the quality of the work performed. Feedback helps contractors improve the quality of their work, so be as specific as possible.

Meeting Program Requirements and Technical Standards

- Does the work scope in the Application Form match the work actually done in the home? If no, include explanation.

- Were any BPI standards or installation standards *not* satisfied? If yes, explain.

- Did any of the selected Qualifying Measures not meet the required post-retrofit conditions? If yes, explain.

- Do any of the products installed *not* match the product details on the specification sheets? If yes, provide details.

- If applicable, do the nameplates in the photos match the nameplates present on the installed equipment? If no, explain.

- Describe any items overlooked or done poorly.

- Describe items done particularly well.

In-Field Inspection Procedures

- Combustion safety test (CST)
  1. Be present when the contractor is performing the CST.
  2. Does CST meet BPI technical standards? YES or NO or N/A
  3. Do CST results show everything passes? YES or NO or N/A

- Blower door test in and test out
  1. Be present when the contractor is performing the blower door test out.
  2. Does blower door test out meet BPI technical standards? YES or NO or N/A
  3. Does the blower door test out results meet program requirements? YES or NO or N/A

- Duct test in and test out
  1. Be present when the contractor is performing the test out.

2. Does duct test out meet BPI technical standards? YES or NO or N/A

3. Does the duct test out results meet program requirements? YES or NO or N/A

Post Retrofit QA Verification

Fail – Score 0

Contractor's performance does not meet technical standards, program requirements and/or the home needs immediate corrective action.

- Combustion appliance testing results do not meet BPI Technical Standards or relevant program standards.
- Measures in contracted scope of work not installed.
- Minimum standards for building ventilation are not being met.
- Unsafe conditions resulting from installed work and posing immediate health/safety threat to occupants are found.

Fail – Score 1

Contractor's performance does not meet technical standards or program requirements and the home requires non-immediate corrective action.

- Health and safety issues are present, but do not pose an immediate threat to the occupants. Measures were installed but not correctly to meet program requirements and standards.
- Measures were not installed correctly.

Fail – Score 2

Several technical deficiencies were observed that require corrective action.

- Below standards/incorrect installation of required measures.

Pass – Score 3

Contractor's performance meets all technical standards and program requirements but some areas of technical performance need improvement and may require corrective action.

- Installed measures did not meet all technical installation standards, but no serious deficiencies were found.
- Some incorrect data gathered and provided to customer without any significant impacts on work completed or effectiveness of job.

Pass – Score 4

Contractor's performance meets all technical standards and program requirements.

- All technical standards of installation have been met (e.g. BPI Technical Standards)
- Work is comprehensive in nature.
- Recommended and installed measures were consistent with Application Form.
- Test-out reporting was accurate.

Overall Inspection Score for this Project _____

Verifier Signature _____ Date _____

Attachment D: Draft Walk-through Audit Form

energy upgrade CALIFORNIA IN LOS ANGELES COUNTY

Improve your home. Get rebates. Save money.

FLEX PATH

Walk-Through Whole House Assessment

Account Holder/Property Owner Information					
First Name:					
Last Name:					
Street Address:		City:		Zip Code:	
Full Mailing Address (if different):		City:		Zip Code:	
Email address:					
Phone number:					

Contractor Information					
EUC ID#					
Company:					
Street Address:		City:		Zip Code:	
First Name:					
Last Name:					
Email address:					
Phone number:					

Visual Inspection from the Street	
Type of landscaping (circle one):	DROUGHT-RESISTANT & NATIVE SPECIES / SPRINKLER-DEPENDENT
Moisture damage to side of home (circle)?	YES / NO
Any visible safety hazards? List here:	

Attic Insulation	
R-value:	
Radiant barrier (circle)?	YES / NO

Windows	
Majority are (circle one):	
SINGLE PANE / DOUBLE PANE	

Wall Insulation	
R-value*:	
*If infrared scan is not used, this value will most likely be based on the year the home was buil.	

Crawlspace Insulation	
R-value:	
Vapor barrier (circle)?	YES / NO
Check here if slab on grade:	

Whole House Fan	
Is one installed in the home (circle)?	

Domestic Hot Water Heater / Plumbing			
Type (circle one):	TANK / TANKLESS		
Model Number:			
Nameplate Efficiency:			
If tank, size (gal):			
If tank, fuel source (circle one):		ELECTRIC / GAS	
Number of Bathroom Faucets:		Pipes wrapped?	YES / NO
Number of Showerheads:			
Number of Kitchen Faucets:			
Any thermostatic shut-off valves installed (circle)?		YES / NO	

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Lighting	
Number of Incandsecent Bulbs in Home:	
Number of Light Fixtures in Home:	

Cool Roof
Was a cool roof previously installed (circle)?
YES / NO

Heating, Ventilation, and Cooling Equipment			
Does the house have central A/C (circle)?	YES / NO	Number of Ceiling Fans:	
Number of systems:		Number of Electric Heaters:	
System #1			
Does the A/C system function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Does the furnace function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Condenser Model Number:			
Coil Model Number:			
SEER Rating:			
EER Rating:			
Furnace Type:			
Furnace Model Number:			
AFUE Rating:			
Type of Ducting:			
R-value of Ducting:			
Condition of Ducting (circle):		POOR / FAIR / GOOD	
System #2			
Does the A/C system function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Does the furnace function properly (circle)?		NEVER / SOMETIMES / ALWAYS	
Condenser Model Number:			
Coil Model Number:			
SEER Rating:			
EER Rating:			
Furnace Type:			
Furnace Model Number:			
AFUE Rating:			
Type of Ducting:			
R-value of Ducting:			
Condition of Ducting (circle):		POOR / FAIR / GOOD	
Notes on number and location or return/intake registers and homeowner's comfort in the house (Any drafts? Usually cold/hot rooms?):			
Is asbestos present in the house (circle)?	YES / NO		

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A4: Continue EUCLA contractor outreach and training programs. - $1,014,250

Heating, Ventilation and Air Conditioning (HVAC) Contractor Incentive Pilot - $539,250

Pilot Overview

Currently, EUCLA contractor participation is limited to those contractors that have completed EUC contractor training and received Building Performance Institute (BPI) certification (as required by the California Public Utilities Commission). The County has implemented an HVAC Contractor Marketing and Training Incentive pilot program to motivate non-EUCLA certified contractors (through incentives, training, and other resources) to convert typical HVAC equipment replacement, service or maintenance events into EUCLA projects. HVAC contractors are provided with the tools and training to assess and implement more comprehensive measures under EUCLA as part of routine equipment work. The HVAC Contractor Pilot provide free manual J,D, S equipment and duct sizing software to HVAC contractors ($1,000 value), EUCLA certification tuition reimbursement for up to two company technicians, and a $500 incentive for each EUCLA upgrade completed. Under the 2010-12 program, up to 100 homes were targeted for retrofits, 20 Wrightsoft software licenses were made available at no cost for distribution, and 30 EUCLA participating contractors were recruited to accomplish advanced HVAC design through LA County. Under the proposed 2013-14 program, LA County strives to continue the success of the existing program and also align this HVAC Pilot program with the Final Decision direction on HVAC Incentives Programs in two focus areas:

1) Support the energy efficiency loading order that provides building shell improvements followed by "right-sized" central Heating, Ventilation, and Air-Conditioning (HVAC). The HVAC Program shall focus on increasing the participation of new and existing HVAC contractors in the Energy Upgrade California program;
2) For EUC projects the HVAC Program shall encourage "above-code" HVAC design, with energy savings attributed to the delta between the EUC program minimum modeling requirements (EnergyPro) for duct and equipment sizing and the equipment and ductwork sized by using more advanced calculations of the manual J, D, and S. Reductions in both ductwork and equipment can

contribute to overall energy savings in a single family residence that may not be realized as recognized by the EnergyPro software limitations.

Under the two focus areas listed above, the HVAC Program is designed to address three initiatives.

1) Permitting: To create scaleable results, the HVAC Program shall collaborate with future Energy Upgrade incentive program designs to reinforce permitting requirements into job submittal documents. This shall be done by implementing a Quality Control check on permits for work performed in Energy Upgrade projects.
2) Workforce Development: While supporting a target market of HVAC Contractors, the program will make opportunities available for general contractors to acquire the knowledge, skills and abilities of the design and installation of "right-sized" HVAC retrofits. In a complementary fashion, the program will provide opportunities for HVAC Contractors to become home performance contractors.
3) Market Transformation: A capable local workforce will be developed by increasing the participation of HVAC Contractors in Energy Upgrade Programs, and by ensuring resources are made available to existing Participating Contractors to properly size HVAC systems. Additionally, the value and benefits of energy efficiency through a loading order shall be communicated in Energy Upgrade outreach to Realtors, Appraisers, Raters and equipment Distributors, creating awareness across a broader level of stakeholders.

Planned Approach

1) Ensure existing and new contractors are equipped to deliver quality whole house retrofits:
    a. Ensure at program cycle launch that existing EUCLA Participating Contractors with HVAC related licenses have opportunities to receive advanced Manual J, D and S software training.
    b. Identify large volume HVAC Contractors and create funneled opportunities for them to become new Energy Upgrade Participating Contractors. Marketing and Outreach Collateral specific to HVAC Contractors has been developed under the previous program cycle which can be leveraged for quick dissemination and recruitment.
2) Provide adequate information to contractors to influence the early adoption of HVAC technologies and value added whole house upgrades:

a. Encourage contractors and their staff to educate homeowners about HVAC operations and maintenance to ensure long-lived energy savings. The Sales and Marketing webinars proved highly effective under the previous program cycle. Providing home performance sales training to ancillary staff at traditional HVAC Contractor offices will further increase their participation in Energy Upgrade California programs.
b. Collaborate with IOU programs for funneled opportunities for Homeowner enrollment in Summer Discount Plan, 10 for 10 Program, and HVAC related Demand Response opportunities.

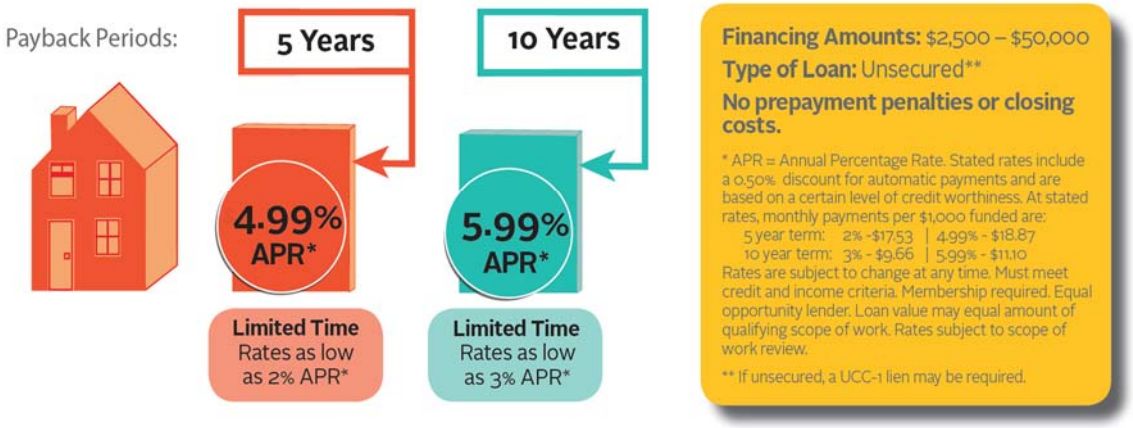
3) Empower local governments and non-utility actors to embed HVAC best practices in their communities.
   a. Support the integration of HVAC resources into future iterations of Energy Upgrade California programs.
   b. Work with Local Governments to identify strategies for increasing code compliance for HVAC retrofits in their communities.
4) Cool Comfort Financing- SoCalREN will leverage multiple funding sources to implement an HVAC financing program designed to facilitate more efficient equipment upgrades, quality installations, and permitting compliance. The program builds on the success of the Matadors' Single Family Loan Loss Reserve (LLR) financing program implemented as part of Energy Upgrade California (EUC) in Los Angeles County to offer a loan product for emergency and non-emergency HVAC equipment replacement undertaken by Southern California homeowners. The program requires equipment efficiencies that are above current code as shown below.

Qualifying HVAC Upgrades

HVAC Installation	Minimum Energy Efficiency Requirement
Central Air Conditioning Unit	15 SEER and 12 EER
Central Forced Air Furnace	95% AFUE
Heat Pump	8 HSPF, 15 SEER and 12 EER
Duct Sealing and Insulation or Duct Replacement	Compliance with Local Code

To be eligible, property owners must receive utility service from at least one of the following utilities: SCE, SCG, or SDG&E. Low APR financing (shown in Financing Terms) is available for HVAC projects in single-family homes, attached or detached.

Financing Terms



The Cool Comfort Financing program will be fully integrated with SCE's Quality Installation program, SCG's ENERGY STAR® & Tier I Natural Gas Furnace incentive program, LADWP's Energy Efficient Central Air Conditioner or Heat Pump incentive program, and other municipal utility programs in the southern California region (depending on funding source restrictions). Integrating utility incentives with low cost financing will create a comprehensive package of services for contractors to deliver to their customers and will ensure that customers receive a more comprehensive, quality HVAC upgrade that meets (or exceeds) local code requirements.

Evaluation

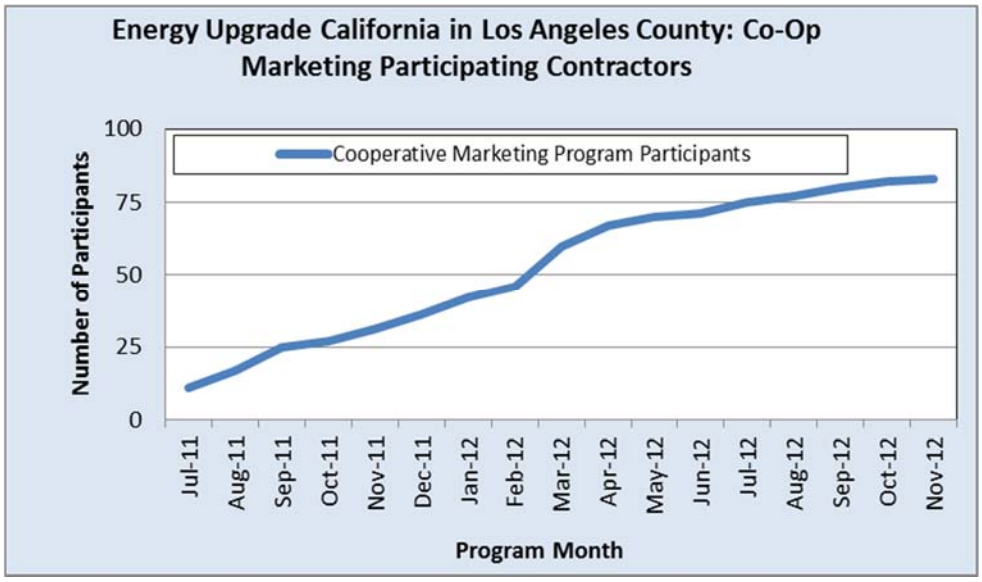
- Number of EUC PCs with HVAC related licenses
- Number of HVAC jobs and value-added upgrades performed towards whole house retrofits
- Number of trainings offered
- Number of case studies, tours and presentations
- Number of loans and permits closed

Contractor Co-op Marketing - $ 475,000

The County has made grant funds available to EUCLA Contractors to offset the cost of their own customized marketing and outreach materials. This program was created in response to input from contractors that although the overarching EUCLA media campaign was successful in raising awareness, they needed to supplement it with advertising for their individual companies in order to drive demand. The Co-op Marketing program provides 50% matching funds (up to $40,000 per contractor) as reimbursement to contractors who submit invoices for marketing materials and advertising. Eligible materials must meet program guidelines and must be preapproved by program staff. They must include the EUCLA logo and be used within the County of Los Angeles. This program, combined with other marketing tools and training provided to Participating Contractors, allows them to differentiate their company and increase the number of upgrades performed.

From the program inception in July of 2011 to November of 2012, nearly $220,000 in matching funds has been distributed to contractors. That means that Co-Op Marketing has stimulated nearly $440,000 in contractor marketing endeavors toward promoting EUCLA. Nearly half of participating contractors in Los Angeles County are actively using Co-Op Marketing to promote their EUC business as shown below.

Figure 7 (Subprogram A): EUCLA Contractor Co-op Marketing Participation



The uniquely high level of participation in Co-Op Marketing is stimulated by pro-active marketing and support to contractors. The keys to our success are:

- PERSONAL COMMUNICATION: Fewer mass emails, more phone calls and personal emails.
- LEVERAGE OPPORTUNITIES: Take every opportunity (community events, training sessions, phone inquiries, etc.) to remind contractors of the program and discuss how it can benefit their business.
- SAVE TIME: Offer pre-designed materials at low cost or no cost.
- SIMPLIFY: Offer concise Program Guidelines that are brief and easy to understand. Forms should be simple and short.
- BE AVAILABLE: Offer a single point of contact or a single email to which Co-Op Marketing communication should be sent.
- SET EXPECTATIONS: Clearly outline design requirements in the Guidelines, and adhere to them.
- BE FLEXIBLE: Be available for rush approvals or design exceptions on an as-needed basis.
- FOLLOW UP: Call contractors quarterly to follow up on pending projects, or to discuss ideas they may have.
- GET INPUT: Contractors know best what contractors need. Be open to suggestions or ideas for uses of Co-Op Marketing Funds.
- GIVE EXAMPLES: Offer specific examples of how funds can be used in order to pique a contractor's interest, or give them ideas they may not have previously considered.

The categories of promotional items that contractors typically design and produce include:

- Print On Demand (free customized brochures, flyers, etc.)
- Auto Wraps
- Signage
- Small Print Materials
- Canvassing/Distribution
- Apparel
- Trade Show Fees/Expenses
- Print Media
- Electronic Media
- Other, Miscellaneous

A5: Expand EUCLA multifamily pilot incentive program - $9,543,801

Program Statement

The Existing Multifamily Energy Efficiency Initiative aims to transform the multifamily energy efficiency market in the following ways:

1) Help multifamily property owners perform significant upgrades (e.g. beyond basic cosmetics or minor repairs) to projects totaling 6,458 housing units
2) Property owners will realize measurable economic benefits from energy and green upgrade projects
3) Tenants will prefer and seek out multifamily buildings with energy efficiency and green improvements and/or labels.
4) Lenders will encourage and/or require energy efficiency and green improvements with commensurate benefits

Raters and contractors will comprise a highly skilled workforce for the multifamily sector. The Multifamily Energy Efficiency program will be offered to all multifamily property owners in the combined service territories of SCE and SCG, including low income properties. While qualified multifamily buildings must contain a minimum of three units for participation, there is no limit to the total number of units or floors in a multifamily building. SoCalREN will work with the IOUs to ensure that owners of low income multifamily properties are aware of IOU program options available to them, and they will be required to opt-in to the SoCalREN multifamily program. SoCalREN will coordinate with the IOUs on all project applications to ensure there is no double-dipping with respect to incentives, or prior participation in an IOU program in the past five years.

Market Description

The existing multifamily housing sector holds great potential for energy savings in addition to other resultant economic and environmental benefits from a robust energy efficiency industry. Market study estimates[9] have shown over 1.0 million multifamily units in Southern California Edison's service territory located in over 145,000 multifamily buildings. This unique customer segment warrants specific, focused attention and effort in order to motivate property owners and managers to actively participate in whole building energy efficiency programs. In the multifamily sector, energy savings and social equity are intertwined challenges. Eighty-eight percent of multifamily building residents are renters, and many of these are low-income households. Compared to higher income homeowners, lower income renters spend a disproportionate amount of their income on energy, and yet they typically do not have the financial resources or ownership rights to make energy efficiency investments in their homes. Well-coordinated upgrade programs targeted at the multifamily and affordable housing sector can make a big difference in individual's lives while also helping achieve the state's ambitious energy and climate change goals.[10]

The multifamily sector encompasses a range of building sizes, system types and configurations of dwelling units and nonresidential areas. These configurations generally fall into the categories shown in Figure 9 below. When multifamily buildings undergo energy efficiency and green upgrades, these occupancy mixes and physical configurations affect how technical protocols, codes and standards (such as the residential vs. commercial versions of Title 24) are applied.

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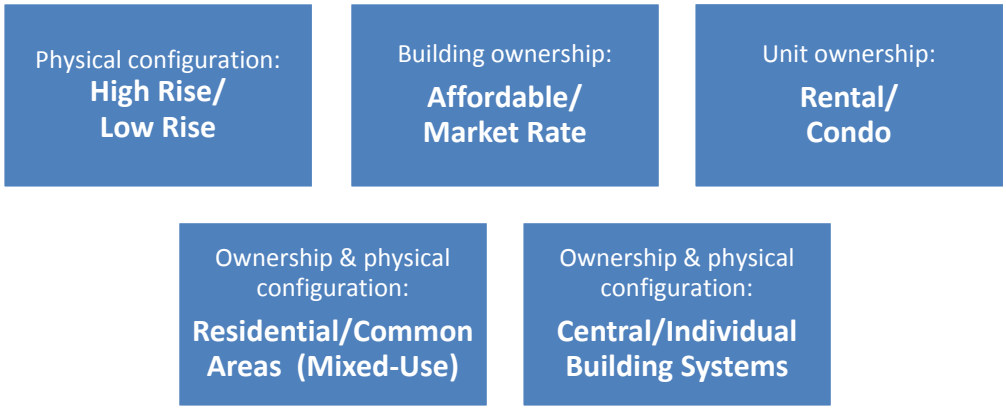
[9] The California Energy Commission's "2003 Residential Appliance Saturation Survey (RASS)" database

[10] California Home Energy Retrofit Coordinating Committee (2010), *Improving California's Multifamily Buildings: Opportunities and Recommendations for Green Retrofit & Rehab Programs*

Figure 9 (Subprogram A): Multi-family configurations



Program Rationale

In IOU service area, the multi-family market sector has a consumption base well over 2 billion annual kilowatt hours generated by over 680,000 multifamily service accounts[11] (in buildings of five or more units). Assuming the age of the multi-family housing stock in the IOU service territory mirrors the age of the overall housing stock, up to 70% of the multifamily buildings were built pre-1980[12], representing a large opportunity to improve efficiency within this segment of housing.

Despite the potential for energy savings, there are significant barriers to participation for property owners, including but not limited to:

- Split Incentives. Rental property owners have inadequate incentive to make green improvements because the improvements accrue to the tenants, while tenants have no incentive to make permanent improvements to the property because they have no equity stake and their tenure in the building is too short to realize a return on investment.

[11] (See footnote 1)

[12] 2005 American Community Survey, US Census

- Lack of Information. Lack of well-documented business case information and standardized analytical methodologies leaves property owners ill-equipped to evaluate the technical and economic potential for retrofitting their properties
- Lack of access to affordable capital limits retrofitting opportunities, particularly in the affordable housing sector.

Despite the challenges, various initiatives sponsored by a variety of industry stakeholders are underway to address the above stated barriers, including increased property owner/manager outreach and workforce development, and financing and incentive programs that help property owners complete comprehensive rehabilitations of their properties. In particular, the Los Angeles County Multifamily Pilot Program provided for $425,000 in property owner incentives and additional funds for Program Administrator outreach. This Pilot program was fully subscribed well before program expiration, with 14 projects representing 1,174 housing units. The momentum generated by this and similar initiatives in Southern California creates a positive environment for further action which the Existing Multifamily Energy Efficiency Initiative aims to satisfy.

Support of the Strategic Plan

The Existing Multifamily Energy Efficiency Initiative, in support of the California Long Term Energy Efficiency Strategic Plan (Strategic Plan), pursues comprehensive energy efficiency measures and treats multifamily buildings as a system to seek deep energy reductions. One of the goals of the Strategic Plan is the transformation of the home improvement market to apply whole-house energy solutions to existing homes. The overall objective of the goal is to reach all existing homes and maximize their energy efficiency potential through delivery of a comprehensive package of cost effective measures. The Strategic Plan further states that a similar approach must be developed for multifamily housing.

Program Objectives and Expected Outcomes

The program objective is to help multifamily property owners perform whole-building energy upgrades to projects totaling 6,458 housing units.

Expected program outcomes:

- Deeper energy savings per building than otherwise possible; with a target of 10-20% or greater savings per building, benefitting both property owners and tenants;
- A broader suite of measures than in typical deemed programs, resulting in deeper energy savings;
- Improved property owners' and property managers' understanding of the benefits of a whole building approach;
- A better understanding of combustion safety as it relates to comprehensive (non-prescriptive) retrofits within the multifamily market;
- Refinement of a market transformation strategy for cultivating a self-sufficient building performance industry capable of serving the unique needs of the multifamily sector.

Innovation

The Existing Multifamily Energy Efficiency Initiative builds on the success of Los Angeles County's ARRA-funded multifamily pilot program to offer whole-building energy upgrades to multifamily property owners. Historically, multifamily energy efficiency programs have focused on single-measure rebates or offered direct installation of a limited number of weatherization measures. This initiative seeks to achieve deeper energy savings on a per-project basis than prior programs.

Energy Measures

The Existing Multifamily Energy Efficiency Initiative utilizes a customized savings approach to determining program eligibility and calculating incentives. Any permanent improvement that can be shown to produce energy savings using approved building simulation software is an eligible energy measure.

Approved measures include but are not necessarily limited to:

- INSULATION
    - Attic insulation (with attic plane sealing)
    - Wall insulation

    - Floor insulation
- HVAC
    - Duct sealing
    - Duct insulation
    - Package terminal air conditioners
    - Package terminal heat pumps
    - Evaporative coolers
    - Central natural gas furnace
    - Room (or through the wall) Air Conditioner
    - Variable Refrigerant Flow Ductless Heat Pump
    - Room (or through the wall) Heat Pump
    - Central Air Conditioner and Heat Pump
    - Chillers
    - Radiant/Hydronic Heating
    - HVAC Duct Replacement/Retrofit
    - Refrigerant Charge (New Systems only)
    - System Air Flow Verification
- System Fan Wattage VerificationWATER HEATING SYSTEMS
    - Electric storage water heaters
    - Central system natural gas boiler for space heating/ DHW
    - Natural gas storage water heater
    - On -Demand control for centralized water heater recirculation pump
- WINDOWS
    - High performance dual-pane windows
- LIGHTING
    - Interior Lighting
    - Exterior Lighting
    - Screw-in CFL reflector bulbs (ENERGY STAR® qualified)
    - Interior LED lamps (ENERGY STAR® qualified)
    - Interior LED fixtures (ENERGY STAR® qualified)
    - Interior CFL fixtures (ENERGY STAR® qualified)
    - Exterior CFL fixtures (ENERGY STAR® qualified)
    - Exterior LED lamps
    - Exterior LED fixtures
    - LED pool and spa lighting
    - Landscape/parking lighting
- APPLIANCES
    - Refrigerators
- OTHER MEASURES
    - Cool roofs

- Radiant barriers
- Showerheads (1.7gpm, 1.6gpm, 1.5gpm)
- Thermostatic control valve
- Thermostatic control valve and showerhead
- Bathroom faucet/ Aerator: 1.5gpm, 1gpm. 0.5gpm
- Kitchen faucet aerator
- Solar thermal

Eligible improvements may also include ventilation improvements that do not themselves save energy but are necessary to maintain indoor air quality in conjunction with related building energy efficiency improvements. Combustion appliance safety testing will take place as appropriate. Solar photovoltaic and solar thermal measures will not be considered as part of the energy analysis for program participation.

Program Strategy/Implementation/Proposed Interventions

Incentive programs that deliver energy and green upgrade services for single-family homes typically rely on contractors to serve as the conduit for participating in the program and providing services such as diagnostics, verification and documentation. This contractor-based approach, however, is unlikely to be successful for California's diverse for-profit multifamily and affordable-subsidized housing sector for a variety of reasons, including the fact that developers/owners prefer to work with contractors with whom they have long-established relationships rather than with program-designated contractors. For these reasons, Existing Multifamily Energy Efficiency Initiative will offer a hybrid of a rater/consultant and direct delivery program model. Property owners that prefer to use their own rater can access an assessment incentive, while those who need assurance of project benefit before they commit funding will be able to access audit services directly from the SoCalREN consultant team.

For 2013-2014, the Existing Multifamily Energy Efficiency Initiative will build upon the Los Angeles County Multifamily Pilot Program's progress to-date for energy-efficient multifamily units. The proposed interventions comprise the program approach toward reducing the identified market barriers:

Proposed Intervention	Intended Result/Outcome	Barrier Addressed
Outreach and Education – inform property owners of the potential benefits and savings	• Increase property owner motivation and demand for whole building energy efficiency	(2) Information
Assessment Incentives – cash payments to property owners to cover the costs of property energy assessment & simulation	• Increase property owner demand • Reduce upfront assessment costs • Increase property owner/manager knowledge & awareness	(2) Information (3) Access to capital
Improvement Incentives – performance based rebates for installing energy efficiency measures and going beyond minimum standards for 6,458 housing units	• Increase property owner demand • Reduce improvement costs	(1) Split incentives (2) Information (3) Access to capital
Technical Assistance – Single Point of Contact to assist multifamily property owners in evaluating energy efficiency opportunities and access financial resources, including available On-Bill Repayment mechanisms	• Reduce complexity and knowledge gap • Streamline program processing time • Create a pool of trained professionals • Creation of a robust quality assurance / field verification program • Optimize program incentive dollars by Increasing property owner access to other financing and incentives	(1) Split incentives (2) Information (3) Access to capital

To build upon the existing group of known professionals with the experience and credentials to execute within the Existing Multifamily Energy Efficiency Initiative, we will offer a 5-day California Multifamily Existing Building (CAMFEB) Training. The CAMFEB training combines curricula that will prepare professionals for

BPI Multifamily certification exam, modeling requirements for MF buildings , and GreenPoint Rated Multifamily Existing Buildings certification.

Incentives

The Existing Multifamily Energy Efficiency Initiative is designed specifically to motivate the multifamily property owner/manager to install whole building energy efficiency measures with incentives, information, and outreach that help alleviate the split incentive, confusion, and technical hurdles that currently exist.

The incentive structure will be tiered, based on estimated whole building site energy saving modeled in EnergyPro. Incentives are to be paid at two points in the submission process; one incentive upon completion of an investment grade audit, and one incentive on a per-unit basis, at the successful completion of the job. Costs for the ASHRAE Level 2 audit and combustion appliance safety testing will be incurred by the building owner. The first incentive is expected to cover a substantial part of the cost of the audit and will be paid prior to the installation of any proposed measures. The second incentive will offset the cost of the measures that contribute to whole building savings (i.e., central boilers, central water heaters, common area and in-unit upgrades, etc.) that have not been directly installed or incentivized via participation in another CPUC-approved program.

Figure 10 (Subprogram A): Multi-family Incentive Structure

Assessment Incentives	
<50 units	$5,000
50 – 100 units	$10,000
+100 units	$20/ unit incremental increase
Improvement Incentives*	
10% improvement	$550
15% improvement	$625
20% improvement	$800

25% improvement	$1000
>30% improvement	$1,200

Project Pre-Qualification/Assessment/Verification

1) Pre-Qualify Property Owner. SoCalREN will work with the building owner to pre-qualify a building and facilitate a preliminary walk through as needed to confirm eligibility and identify energy savings opportunities. SoCalREN will provide technical assistance resources as needed to help the building owner make an informed participation decision.
2) ASHRAE Level 2 Audit. The Property Owner will then select a Participating Consultant, who will conduct an assessment to establish baseline conditions and generate a proposed scope of work that meets the building owner's energy savings goals. Simultaneously, a building energy simulation model and a combustion appliance safety plan will be created that is specific to the scope of work.
3) Submit Assessment Incentive Request. The Participating Consultant will submit an Asessment Incentive Request on behalf of the property owner. SoCalREN will review the proposed work scope, energy model, and combustion safety plan prior to issuance of assessment rebate. .
4) Installation of Improvements. The building owner will utilize a contractor of the building owner's choosing to install the agreed-upon scope of work.
5) Quality Assurance, Test-out and Quality Control. Upon completion of work, the Participating Consultant will perform 100% verification of all installed measures. The Participating Consultant will also perform a final test-out assessment to ensure proper and safe installation of the approved scope of work, including remediation of any identified combustion appliance safety issues. SoCalREN will conduct field quality control inspections for a representative sample of jobs. Inspections will generally occur concurrently with the Participating Consultant's test out assessment.
6) Submit Improvement Incentive Request. After job close-out, the Participating Consultant will submit an Improvement Incentive Request on behalf of the property owner. A complete submittal includes test-out CAS and related performance test results, , statement form owner that all applicable permits were pulled and the client-signed contract. Energy model files and related technical documentation do not need to be resubmitted unless material changes to the work scope have occurred since the investment grade audit. Savings related to measures installed as part of integration efforts with ESAP, MIDI, and MFEER will only be claimed under those respective programs.

Energy Savings and Modeling Software

For all low-rise multifamily buildings, SoCalREN will utilize the EnergyPro Residential Performance Module for site savings calculations. For all high-rise buildings, SoCalREN will utilize the Energy Pro, Non Res Module for measurement of savings and determination of incentive levels. Currently, SoCalREN is working with the Energy Division to define reported savings methodologies and modeling requirements that will change the standards stated above. SoCalREN will confer with the Energy Division to confirm reporting of savings as well as modeling requirements. If there are additional alternative software packages available then, SoCalREN will confer with the Energy Division, the IOUs and BayREN on the suitability of alternative software packages and savings calculation methods that may be approved for use in addition to EnergyPro.

Marketing/Outreach

The Existing Multifamily Energy Efficiency Initiative targets property owners and managers of multifamily buildings located in SCE and SoCalGas service territories:

- Multifamily buildings must contain a minimum of three units for participation
- Affordable and market-rate properties qualify
- Buildings served by propane are not eligible to participate

By January 2014, the program seeks to identify property owners with large portfolios and/or large buildings comprising approximately 6,458 units. With anticipated attrition and a goal of completing these projects by the end of 2014, these projects would be expected satisfy the goal of completing 6,458 units by the end of the program cycle.

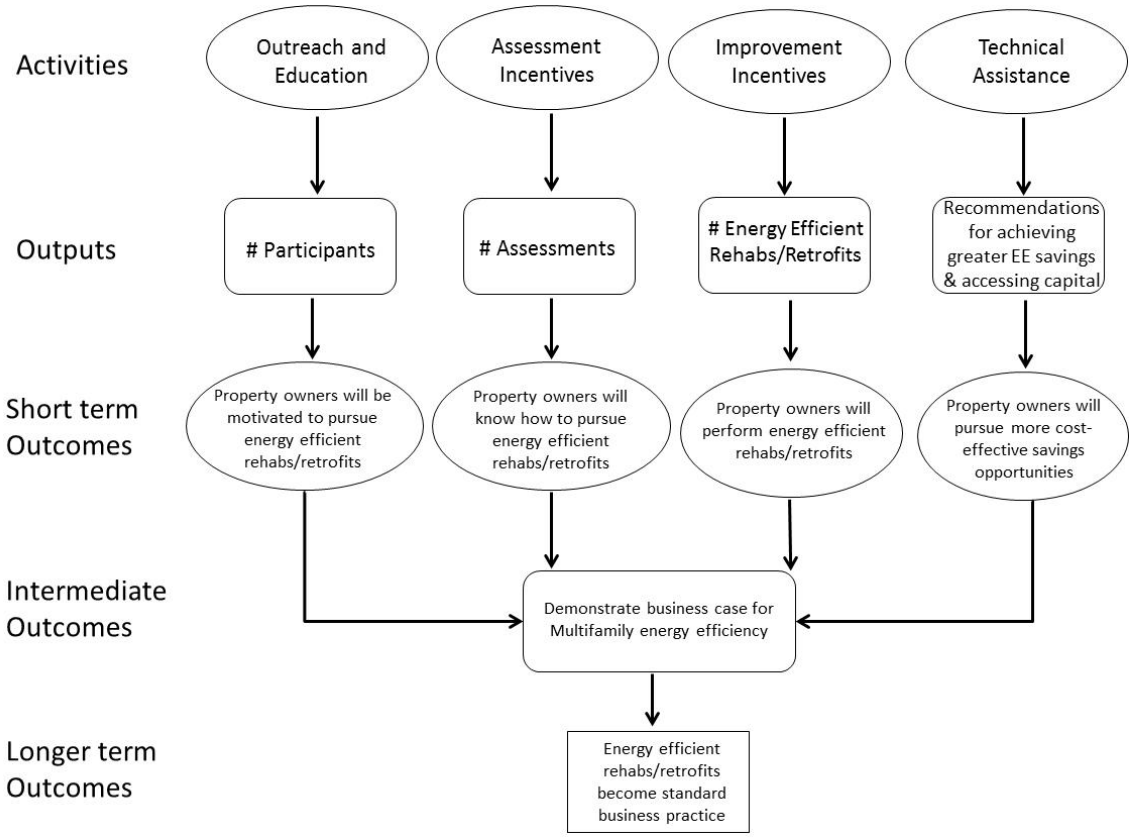
We will develop a “hotlist” of property owner participants, known properties with planned or in-progress renovations, targeted referrals from:

- Low-income tax credit program
- Trade associations for affordable housing and market-rate housing developers
- Property owners and/or managers who have expressed interest from EUC outreach events
- IOU ESA, MFEER, or MIDI programs
- On-Bill Repayment program being pilot by California Housing Partnership Corporation (CHPC) and Stewards of Affordable Housing for the Future (SAHF)

We will assist Participating Consultants in marketing program services to their client base as well.

Logic Model

Figure 12 (Subprogram A): Logic Model



Program Performance Metrics

The Existing Multifamily Energy Efficiency Initiative will adopt the following Program Performance metrics as leading or proximate indicators of success:

1) Number of participants
2) Number of energy upgrades completed
3) Level of energy efficiency improvement in energy upgrades
4) Energy Savings: kWh, therms, and KW
5) Quality Assurance Reporting: number of field verification and results, corrective actions taken
6) Number of technical assistance consultations in each region/county

Evaluation Plan

SoCalREN will work closely with ED's M&E team and the IOUs to develop an approved EM&V Plan that permits a consistent "apples-to-apples" comparison of multifamily initiatives across the entire CPUC energy efficiency portfolio. The plan is anticipated to include both process and impact evaluation components. The process evaluation is expected to address research issues such as:

1) Verification of program theory and program logic model.
2) Verification of program process and design, and assess the effectiveness of implementation and the program team's ability for ongoing process improvement
3) Verification of program QA/QC process and improvements
4) Verification of energy savings methodology and tool(s)
5) Collect customer feedback from all touch points (e.g. Property owners/managers, contractors, tenants and various program teams)
6) Implement appropriate segmentation question batteries to allow for data analysis across key target groups
7) Recommendations for program design, implementation and marketing activities

The impact evaluation is expected to examine measure installation, project-level and program-level gross and net energy savings, ex-post energy savings as a function of ex-ante forecasts, and program cost effectiveness.

In support of the EM&V planning process, SoCalREN currently plans to track a number of parameters to support evaluation of (1) the program theory and program logic model, (2) program QA/QC process, (3) energy savings methodology and tools, and (4) participant feedback, and participant segmentation. SoCalREN will be prepared to report out on preliminary program results at the mid-cycle multifamily workshop scheduled for late 2013 or early 2014 as ordered in D. 12-11-015.

Program theory and program logic model	Outreach effectiveness: • Participation relative to program goals Technical assistance effectiveness • Technical assistance provided, including number of projects receiving assistance, type of assistance provided, recommendations made • Energy savings per project, comparing it to planning targets as well as technical assistance recommendations • Quality assurance results, including number of projects requiring corrective action and the scope of corrective actions called for • Participant feedback Impact of incentives • Energy savings per project, comparing it to planning targets as well as technical assistance recommendations • Participation relative to program goals • Participant feedback
Program QA/QC process	Desktop review results: • Data values within range of expected values, based on the building's vintage and scope of work • Proposed scope of work consistent with modeling assumptions • Repairs required to address CAS test failures included in scope of work • Model results show minimum of 10% energy savings • Project has stated that appropriate permits were pulled Field quality control inspection results: • Sample selection • Combustion appliance safety test results • Building parameters consistent with building simulation model inputs
Energy savings methodology and tool(s)	Building simulation model input and output files, predicted ex-ante annual consumption as percentage of actual consumption
Customer feedback	Customer feedback from participating property owners/managers, consultants, and contractors, compiled via participant satisfaction surveys, workshops and forums
Participating property owner segmentation	• Building vintage, climate zone, utility providers, political subdivision (city, county) • Physical configuration (high rise / low rise) • Building ownership (affordable / market rate) • Unit ownership (Rental / condo) • Spaces targeted for improvement (tenant / common areas) • Mechanical systems (central / individual)

Relationship to IOU Programs

The SoCalREN Multifamily Incentive Program is designed to be complementary to the full set of IOU programs for the multifamily sector, including:

- Energy Upgrade California (EUC)
- Multifamily Energy Efficiency Rebate (MFEER) Program
- Energy Savings Assistance Program (ESAP)

Specific mechanisms for avoiding duplication are discussed in detail below:

Energy Upgrade California

Clearly the greatest potential for overlap between SoCalREN's proposed Multifamily Incentive and the IOU portfolio is around Energy Upgrade California. LA County's 2011-2012 multifamily pilot was designed and implemented as a multifamily component to Energy Upgrade California. The intent of the SoCalREN's proposal is to expand these two pilots to serve the entire SoCalGas/SCE service territory and, in doing so, satisfy the ongoing need for a robust multifamily component to the Energy Upgrade California. This approach extracts maximum value from the field experience gained in the LA County pilots and offers a pathway to scale these programs more quickly than the IOUs are currently proposing.

To succeed in this effort, the SoCalREN must coordinate closely with both SCE and SoCalGas on program design and implementation. The SoCalREN Multifamily Incentive Program incorporates key design elements that align with the joint utility advice letter regarding a multifamily pilot for Energy Upgrade California (Advice No. 4312-G-A, et al.):

- Comprehensive building assessments to identify potential energy savings opportunities, utilizing best practices established through BPI and HERS
- Integration with ESAP and MFEER
- Combustion appliance safety protocols consistent with industry best practices, as established by BPI
- Performance-based incentives tied to percent energy reduction on a per-dwelling unit basis
- A Single Point of Contact (SPOC) to help the property owner or manager navigate through the incentive process

SoCalREN adopts a hybrid consultant model for program delivery rather than a contractor delivery model. This approach allows the property owner or manager to work with contractors with whom they have long-established relationships rather than limiting them to Program-designated contractors. More importantly, it gives the Program much needed flexibility to align its procedures with external funding and financing sources that property owners will need to access to bring a project to fruition. In addition to ESAP and MFEER, key sources include the OBR pilot, CHF and other energy efficiency finance programs that may enter the market, Low Income Housing Tax Credits, and loan programs through Fannie Mae, HUD, and the California Housing Finance Authority.

Moving forward, SoCalREN seeks to confer with both SCE and SoCalGas on a number of program design issues of particular importance to the IOUs, including but not limited to:

- Program cost-effectiveness
- Ongoing refinement of combustion appliance safety protocols
- Coordination with ESAP and MFEER
- Energy savings and modeling software
- Program evaluation, measurement, and verification
- Data sharing

Multifamily Energy Efficiency Rebate Subprogram (MFEER)

The SoCalREN Multifamily Incentive Program focuses on permanent improvements to the building. Many of the MFEER-eligible measures constitute permanent improvements and thus raise the potential for double-dipping. The SoCalREN Single Point of Contact (SPOC) will work with property owners to develop property-specific needs assessments and determine whether those needs are best met through participation in MFEER, the Multifamily Incentive Program, or a combination of the two. In doing so, the SoCalREN will coordinate with the IOUs to ensure that there is no double-dipping on technologies that might qualify for both

programs. The SoCalREN will further coordinate with the IOUs to accomplish successful program integration per the metrics established by the Commission in D.08-11-031.

Energy Savings Assistance Program

The IOUs have been directed by the CPUC to pursue full coordination between the Energy Savings Assistance Program (ESAP), Energy Upgrade California (EUC), Multifamily Energy Efficiency Rebates (MFEER), and Middle Income Direct Install (MIDI) programs. The SoCalREN is committed to accepting this mandate as extending to the Multifamily Incentive Program as well. In particular, the SoCalREN proposes to coordinate with SoCalGas and SCE to accomplish successful program integration per the metrics established by the Commission in D.08-11-031:

- Interdepartmental Coordination: Increased coordination in work efforts between departments within the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:
    - Consolidation of work efforts; and
    - Elimination of overlapping and/or repetitive tasks.
- Program Coordination: Increased coordination between multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:
    - Increased services provided to customers; and
    - Greater number of customers served by a program.
- Data Sharing: Increased information and data sharing between departments within the utility and/or multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:

- Greater number of customers served; and
- Consolidation of work efforts.

- ME&O Coordination: Consolidation of marketing, education and outreach for multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as any or all of the following:
  - Greater number of customers reached;
  - More cost effective marketing, education and/or outreach to
  - customers; and
  - Elimination of customer confusion.

A6: Promote and support Community Development Commission (CDC) programs to achieve greater energy efficiency and green building practices in the development and rehabilitation of low-income single family residential projects - $700,000

Low Income Development Projects

Local and regional Commission programs being implemented by various local governments and local housing agencies in Southern California are promoting sustainability policies in the rehabilitation of existing residential projects as well as in new development projects.

Low Income Single Family Rehabilitation (700,000)

The two-year pilot program's main objective is to develop and implement a business process that allows for connecting Community Development Commission of the County of Los Angeles (CDC) program clients to Energy Upgrade California (EUC) through outreach and by working through and coordinating the

numerous requirements of the existing programs in order to reduce possible barriers to low-income homeowners for greater access to EUC Basic Path and Advanced Path packages.

Using a variety of Federal funding sources, the CDC offers various programs with distinct objectives and qualification criteria. The Home Improvement Program (HIP) assists low-income, owner-occupied, single-family homes with rehabilitation financing up to $15,000. The Residential Sound Insulation Program (RSIP) offers grant funds to qualified residents for needed sound insulation improvements ranging in cost from $27,000 to $32,000. This pilot program will emphasize education to rehabilitation program clients about the specific EUC packages that they are eligible for and how they may integrate EUC eligible measures into the rehabilitation work.

Outreach for EUC packages will be incorporated into the HIP and RSIP programs, which target low- and moderate-income homeowners, respectively. Strong efforts will be made to encourage and incentivize clients to incorporate cost effective, energy efficiency measures to access EUC incentives and rebates. In recent years, through various programs, the CDC has assisted with the rehabilitation of about 300 homes per year. However, due to Federal budget cuts, the CDC anticipates completing 180 homes a year. Every attempt will be made to aggressively target, inform, and assist interested clients in accessing EUC Advanced and Basic Path packages in order to enhance the scope of rehabilitation.

Another important objective of the pilot program will be to educate and train residential building rehabilitation contractors working with low income homeowners on the EUC programs and encourage them to become EUC participating contractors. These efforts will lead to the same comprehensive upgrades in the rehabilitation of low-income homes that occur under standard EUC single-family residences.

Outreach and marketing for EUC packages will be incorporated in all CDC rehabilitation programs. Outreach and marketing efforts for HIP will be expanded to target a larger pool of eligible low-income homeowners; this may include community events, mailers in various languages, billboards in low-income

communities, and door-hangers among other approaches. It should be noted that although energy efficiency may be desirable to low-income homeowners, it is not something they may always be able to justify even with the assistance of various programs. Identifying and minimizing the barriers to access EUC programs will be an emphasis of this pilot program.

Figure 14 represents the number of homes to outreach for EUC. However, the actual number of residential rehabilitations to be completed that incorporate energy efficiency is anticipated to be less. This pilot program will be important to assess the priority level energy efficiency improvement has for low-income homeowners and how to best overcome barriers to access the EUC programs.

Figure 14 (Subprogram A): Outreach Targets for Incorporating EUC into Low- and Moderate-Income Programs

Programs		Energy Efficiency Increment	Location	Est. Number of Homes		
				2013	2014	Total
1	Residential Sound Insulation (RSI) Program (Grant)	EUC: Basic or Advanced Path	Unincorporated Lennox, Del Aire, Athens	25	25	50
2	Home Improvement Program (Loan)	EUC Basic Path or Advanced Path	Unincorporated LA County	375	375	750
			TOTAL	**400**	**400**	**800**

*Due to reductions in federal funding and sequestration, the HOME Rehabilitation program which served participating cities is no longer being offered. Consequently, only unincorporated areas will be served by the Home Improvement program.

Two-Year Pilot Program Overview

1) Integrate outreach for EUC Advanced and Basic Paths into CDC's single-family home rehabilitation and sound insulation programs by:
    a. Developing and implementing a business process that allows for connecting CDC program clients to EUC packages.
    b. Outreach to and personally engagement with 400 eligible homeowners a year and targeting for completion of 70 Basic Path and 10 Advanced Path projects a year. Because the $1,000

special incentive is being removed, the estimate for outreach is adjusted upward to reflect expanded efforts, and the project completion estimate is adjusted downward since it will be more challenging for HIP clients to participate in EUC incentives without the special incentive. These estimates may need to be adjusted again once modifications are finalized for the Basic Path.

2) A detailed program design period will take place during the first 4 to 6 months of 2013. Program design includes:
    a. Training CDC staff in EUC program requirements.
    b. Designing the implementation plan. This includes resolving conflicts between program requirements, identifying and mitigating barriers to low-income homeowners, and preparing a thorough cost analysis of overlapping eligible energy efficiency measures.
    c. Designing the marketing efforts needed and coordinating outreach efforts to homeowners and general contractors.
    d. Training and educating general contractors on EUC program to encourage participation in EUC.

CDC Programs

RSIP provides grants to eligible single-family homes and rental units impacted by airline take-off and landing path noise levels caused by the Los Angeles International Airport (LAX). The eligible geographic areas are designated by the CDC as low- and medium-income. The RSIP program insulates homes from aircraft noise, thereby providing sound insulation improvements such as: sound rated doors and windows, replacement of exterior vents with vent baffling, attic insulation and attic ventilation, sound deadening double wall modifications, acoustic and vent louvers, and kitchen and bathroom exhaust modifications among others. However, many measures, whether required or eligible under EUC, are not eligible costs under RSIP, for example, energy assessment, wall insulation, hot water pipe insulation, thermostatic shut-off valve, combustion testing, air sealing, and duct sealing. One challenge for this pilot would be to encourage clients to incur additional costs to cover the energy efficiency measures needed to achieve an EUC incentive, but

not covered by the RSIP grant program. The second challenge would be to establish a method to determine the energy efficiency contributed by eligible measures not covered under RSIP in order to obtain the EUC incentive.

RSIP will incorporate outreach for EUC Basic and Advanced Package, and for interested clients, facilitate integration of energy efficiency measures into the RSIP program work for single-family homes only. The cost per project for sound insulation ranges from approximately $27,000 to $32,000 depending on the condition of the property and what is needed to achieve a maximum interior noise level of 45 decibels. The RSIP program operates in Lennox, Del Aire and Athens; areas, which are directly affected by the LAX flight path.

In contrast, HIP offers up to $15,000 for repairs and improvements. It is designed to help low-income qualified homeowners with repairs to single-family units. Eligible repairs include electrical, plumbing, heating, roofing, exterior painting, windows, and elimination of code violations. The current scope of work is narrow and the repairs needed may not always be energy efficiency related. Thus, the regular measures for HIP will be modified, to the extent feasible, to require some measures that are part of the Basic Package. A determination will be made on changes to HIP once modifications are finalized for the EUC Basic Path. It is anticipated that if some of the very basic energy efficiency components are made standard for all HIP participants, that it may be easier to obtain client interest to achieve a full EUC package. The primary challenge for the HIP program remains how to cover the incremental energy efficiency costs to complete an EUC package when the home rehabilitation components require the full $15,000 loan amount.

In an effort to reduce costs incurred by the homeowner, at the application stage, CDC staff will check client eligibility for the Energy Savings Assistance Program (ESAP). Clients will be directed to apply for ESAP prior to incurring costs associated with the EUC Package. As part of this pilot, CDC staff will track participation in ESAP by HIP clients.

In accordance with HIP program funding requirements, marketing and outreach efforts will target homeowners earning 80% County Area Median Income (AMI) or below; AMI income limits are issued annually by the U.S. Department of Housing and Urban Development. Because of the difficulty anticipated in getting participation by very low-income homeowners, the CDC will expand and tailor its outreach efforts to strategically target homeowners at 75%-80% AMI. Outreach will include informing clients about opportunities for EUC Basic and Advanced Package incentives even if the client does not reside in unincorporated areas of Los Angeles County

Outreach to General Contractors

Under both programs, CDC-qualified contractors will be encouraged to go through the EUC training and certification process to become participating EUC contractors. While the general contractors performing rehabilitation work for the CDC are licensed, the challenge this pilot would work through is getting small to medium size contractors interested in investing in the necessary training for the Building Performance Institute (BPI) Accreditation to be eligible to offer the EUC Advanced Upgrade Package.

For the different programs, CDC staff will serve as the homeowners' representative in each of the participating rehabilitation and sound insulation projects. CDC staff will engage existing EUC participating contractors and CDC-qualified contractors that have completed all EUC requirements through this pilot to provide the client home improvements with energy efficiency upgrades eligible for EUC incentives.

Mortgage Credit Certificate for Energy Efficiency Feasibility Study

The Internal Revenue code authorizes government entities to issue Mortgage Revenue Bonds and Mortgage Credit Certificates (MCC). MCCs provide eligible borrowers with a federal income tax credit equal to a specified percentage (10-50%, as determined by the locality) of the mortgage interest paid each year on

a qualified loan. The tax credits are available on an allocation basis by states, requested and administered by local agencies, and coordinated with residential lenders.

In early 2013, the California Debt Limit Allocation Committee approved MCCs for energy efficiency (MCC-EE) as eligible under a qualified loan program. The CDC will conduct a feasibility study that will include research current jurisdictions that are administering MCC-EE programs and developing an implementation plan that incorporates best practices to make MCC-EE available to residents of Los Angeles County.

The proposed feasibility study would be for a MCC-EE program that would be available to all homeowners and would provide an alternative financing program for energy upgrades. The scope of the study includes examining the demand for participation by private lenders, outline operating procedures and guidelines, estimate the energy efficiency retrofit loan, and identify opportunities for leveraging EUC incentives.

Currently, the MCC-EE program requires that borrowers participate in an interest-bearing loan program. The CDC has identified this requirement as an impediment for low-income borrowers participating in the HIP program, even though these are zero interest, deferred loans. In order to implement the MCC-EE program, administrative functions would need to be undertaken by CDC staff which would create an administrative burden. By contrast, the administration of the current MCC program is conducted by the third-party lender rather than in-house by the CDC. Moreover, the CDC does not have funds available to lend. The feasibility study will research further barriers for implementing a Los Angeles County MCC-EE program as well as propose possible sceneries in which such program can be offered.

END OF DESCRIPTION OF SUBPROGRAM A: EUC

b) Sub-Program Energy and Demand Objectives

Table 5 (Subprogram A): Projected Sub-Program Net Energy and Demand Impacts, by Calendar Year

	Program Years		
	2013	2014	Total
Subprogram A: Energy Upgrade			
GWh	2.9 (3.4 gross)	4.4 (5.2 gross)	7.3 (8.6 gross)
Peak MW	1.4 (1.6 gross)	2.1 (2.4 gross)	3.4 (4.0 gross)
Therms (millions)	0.15 (0.17 gross)	0.22 (0.26 gross)	0.37 (0.43 gross)

c) Program Non-Energy Objectives:

SMART non-energy objectives of Subprogram A:

- During the period 2013–2014, the average cost of an energy efficiency project, including all Advanced Package, Basic Package, and Flex Path jobs, will be reduced by 25 percent.
- During the period 2013–2014, the number of contractors registered as Energy Upgrade Participating Contractors participating in the six-county Southern California Area will increase by 20 percent.
- During the period 2013–2014, marketing and outreach activities will create at least 300 million impressions.
- During the period 2013–2014, 500 individuals will be trained in one of the following: sales and customer relations, small business best practices, marketing and messaging, and job sequencing.

Average project costs and rebates for IOU Basic and Advanced Packages have been provided to LA County by SCE/SCG, based upon completed projects to date.

Statistics on Energy Upgrade Participating Contractors are provided by SCE, and the total number of Participating Contractor in a county is available at www.energyupgradeca.org.

Table 3 (Subprogram A): Quantitative Subprogram Targets (PPMs)

Target	2013	2014
Number of homes or buildings treated	951 (Flex Path) +90 (MF)	1,425 (Flex Path) +90 (MF)
Number of units incented or rebated	2,378 (Flex Path) +4,000 (MF)	3,563 (Flex Path) +4,000 (MF)

d) Cost Effectiveness/Market Need: What methods will be or have been used to determine whether this program is cost-effective?[13] If this is a non-resource program, describe the literature, market assessments or other sources that indicate a need for this program.

In order to determine the energy savings expected with the Flex Package program, we adapted the calculation methodology recommended by the Commission reviewer during work paper development for the 2010-2012 Whole House Retrofit Program (now the Whole-House Upgrade Program). The Whole House Retrofit Program is similar to Flex Package in that multiple measures are to be completed under each retrofit project, and thus, the interactive effects of the measures need to be taken into account, use of EnergyPro to determine the modeled energy savings, provided that the simulation model of a pre-retrofit house could be shown to generate energy usage similar to that of a corresponding home in the DEER database. Once such a model was created for a given vintage and climate zone, we could apply values from the statewide

[13] If the program has energy and demand objectives, simply state that the methods contained in the Standard Practice Manual will be used. If the program does not have energy and demand objective, propose an approach to assess cost-effectiveness.

Residential Appliance Saturation Survey (RASS) database for the target population in each climate zone and vintage expected to participate.

An EnergyPro model was created for each climate zone and vintage range (pre-1978 and 1978-1992), and calibrated against the DEER database specifications for such single family homes. The kWh, therms, kW, and overall BTU percent savings were determined for each retrofit measure.

e) Measure Savings/ Work Papers:

a. Indicate data source for savings estimates for program measures (DEER, custom measures, etc). Can provide Title 24 Compliance Reports for past, implemented multifamily new development and rehabilitation projects. These reports require contractors to quantify energy savings beyond baseline requirements (Title 24). Single family rehabilitation project savings will utilize EUC program savings metrics.

In order to determine the energy savings expected with the Flex Path and Multi-family program, the calculation methodology recommended by the Commission reviewer during work paper development for the 2010-2012 Whole House Retrofit Program (now the Whole-House Upgrade Program) was adopted. The Whole House Retrofit Program is similar to Flex Path in that multiple measures are to be completed under each retrofit project, and thus, the interactive effects of the measures need to be taken into account, use of EnergyPro to determine the modeled energy savings, provided that the simulation model of a pre-retrofit house could be shown to generate energy usage similar to that of a corresponding home in the DEER database. Once such a model was created for a given vintage and climate zone, values from the statewide Residential Appliance Saturation Survey (RASS) database for the target population in each climate zone and vintage expected to participate were applied.

An EnergyPro model was created for each climate zone and vintage range (pre-1978 and 1978-1992), and calibrated against the DEER database specifications for such single family homes. The kWh, therms, kW, and overall BTU percent savings were determined for each retrofit measure.

b. Indicate work paper status for program measures:

Table 4 (Subprogram A): Work Paper Status

#	Workpaper Number/Measure Name	Approved	Pending Approval	Submitted but Awaiting Review
	FLEX PATH			
1	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-0 to R-38)		X	
2	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-5 to R-38)		X	
3	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-11 to R-38)		X	
4	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-19 to R-38)		X	
5	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
6	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
7	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
8	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
9	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
10	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
11	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
12	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
13	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-0 to R-38)		X	
14	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-5 to R-38)		X	
15	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-11 to R-38)		X	
16	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-19 to R-38)		X	
17	HVAC 0.80 AFUE/AC 10 SEER - Wall Insulation (R-0 to R-13)		X	
18	HVAC 0.80 AFUE/AC 10 SEER - Building leakage		X	

19	HVAC 0.80 AFUE/AC 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
20	Heat Pump 10 SEER - Attic Insulation (R-0 to R-38)		X	
21	Heat Pump 10 SEER - Attic Insulation (R-5 to R-38)		X	
22	Heat Pump 10 SEER - Attic Insulation (R-11 to R-38)		X	
23	Heat Pump 10 SEER - Attic Insulation (R-19 to R-38)		X	
24	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
25	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
26	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
27	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
28	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
29	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
30	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
31	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
32	Heat Pump 10 SEER - Cool Roof (R-0 to R-38)		X	
33	Heat Pump 10 SEER - Cool Roof (R-5 to R-38)		X	
34	Heat Pump 10 SEER - Cool Roof (R-11 to R-38)		X	
35	Heat Pump 10 SEER - Cool Roof (R-19 to R-38)		X	
36	Heat Pump 10 SEER - Wall Insulation (R-0 to R-13)		X	
37	Heat Pump 10 SEER - Building leakage		X	
38	Heat Pump 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
39	Replace gas-fired furnace and AC (0.92 AFUE. 15 SEER 11 EER)		X	
40	Replace gas-fired furnace and AC (0.95 AFUE. 15 SEER 11 EER)		X	
41	Replace gas-fired furnace and AC (new HVAC: HP 8HSPF & 15 SEER. 11 EER)		X	
42	Replace furnace (new furnace: 0.95 AFUE)		X	
43	Replace AC (new AC: 15 SEER 11 EER)		X	
44	Replace Heat Pump (new HVAC: 8 HSPF. 15 SEER 11 EER)		X	
45	Duct sealing (28% to 6%)		X	
46	Duct sealing (28% to 10%)		X	
47	Duct sealing (28% to 15%)		X	
48	Duct insulation (R-2.1 to R-8)		X	
49	Duct insulation (R-4 to R-8)		X	
50	Duct replacement (R-4, 28% to R-8, 6%)		X	
51	Crawlspace Insulation		X	
52	DHW (gas-fired 0.525 EF to 0.620 EF)		X	
53	DHW (gas-fired to 0.525 EF to tankless 0.88 EF)		X	
54	Replace Thermostat		X	
	MULTI-FAMILY			
1	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-0 to R-38)		X	
2	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-5 to R-38)		X	

3	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-11 to R-38)		X	
4	HVAC 0.80 AFUE/AC 10 SEER - Attic Insulation (R-19 to R-38)		X	
5	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
6	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
7	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
8	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
9	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
10	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
11	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
12	HVAC 0.80 AFUE/AC 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
13	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-0 to R-38)		X	
14	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-5 to R-38)		X	
15	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-11 to R-38)		X	
16	HVAC 0.80 AFUE/AC 10 SEER - Cool Roof (R-19 to R-38)		X	
17	HVAC 0.80 AFUE/AC 10 SEER - Wall Insulation (R-0 to R-13)		X	
18	HVAC 0.80 AFUE/AC 10 SEER - Building leakage		X	
19	HVAC 0.80 AFUE/AC 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
20	Heat Pump 10 SEER - Attic Insulation (R-0 to R-38)		X	
21	Heat Pump 10 SEER - Attic Insulation (R-5 to R-38)		X	
22	Heat Pump 10 SEER - Attic Insulation (R-11 to R-38)		X	
23	Heat Pump 10 SEER - Attic Insulation (R-19 to R-38)		X	
24	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Continuous)		X	
25	Heat Pump 10 SEER - Radiant Barrier (R-0 to R-0 Sheathing)		X	
26	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Continuous)		X	
27	Heat Pump 10 SEER - Radiant Barrier (R-5 to R-5 Sheathing)		X	
28	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Continuous)		X	
29	Heat Pump 10 SEER - Radiant Barrier (R-11 to R-11 Sheathing)		X	
30	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Continuous)		X	
31	Heat Pump 10 SEER - Radiant Barrier (R-19 to R-19 Sheathing)		X	
32	Heat Pump 10 SEER - Cool Roof (R-0 to R-38)		X	
33	Heat Pump 10 SEER - Cool Roof (R-5 to R-38)		X	
34	Heat Pump 10 SEER - Cool Roof (R-11 to R-38)		X	

35	Heat Pump 10 SEER - Cool Roof (R-19 to R-38)		X	
36	Heat Pump 10 SEER - Wall Insulation (R-0 to R-13)		X	
37	Heat Pump 10 SEER - Building leakage		X	
38	Heat Pump 10 SEER - Replace Windows (SMC to Vinyl Low E)		X	
39	Replace gas-fired furnace and AC (0.92 AFUE. 15 SEER 11 EER)		X	
40	Replace gas-fired furnace and AC (0.95 AFUE. 15 SEER 11 EER)		X	
41	Replace gas-fired furnace and AC (new HVAC: HP 8HSPF & 15 SEER. 11 EER)		X	
42	Replace furnace (new furnace: 0.95 AFUE)		X	
43	Replace AC (new AC: 15 SEER 11 EER)		X	
44	Replace Heat Pump (new HVAC: 8 HSPF. 15 SEER 11 EER)		X	
45	Duct sealing (28% to 6%)		X	
46	Duct sealing (28% to 10%)		X	
47	Duct sealing (28% to 15%)		X	
48	Duct insulation (R-2.1 to R-8)		X	
49	Duct insulation (R-4 to R-8)		X	
50	Duct replacement (R-4, 28% to R-8, 6%)		X	
51	Crawlspace Insulation		X	
52	DHW (gas-fired 0.525 EF to 0.620 EF)		X	
53	DHW (gas-fired to 0.525 EF to tankless 0.88 EF)		X	
54	Replace Thermostat		X	

10) Program Implementation Details
    a) Timelines: List the key program milestones and dates. An example is included below.

Table 5 (Subprogram A): Subprogram Milestones and Timeline

Milestone	Date
Project Initiation Meeting	Within 1 week of NTP
Regional Marketing Strategy Developed	4 weeks after NTP
Regional Flex Path Program Launch	4 weeks after NTP
Regional Marketing and Outreach Launch	4/1/2013
Community Development Program Launch	4/1/2013
Installations Completed. All Incentives Closed to New Applications	10/31/2014
Final Incentives Issued	12/8/2014

Conclude Program	12/31/2014
Quarterly Progress Reports	3/31/2013 – 12/8/2014

b) Geographic Scope: List the geographic regions (e.g., CEC weather zones) where the program will operate

Table 6 (Subprogram A): Geographic Regions Where the Subprogram Will Operate

Geographic Region	Energy Upgrade Subprogram
CEC Climate Zone 1	
CEC Climate Zone 2	
CEC Climate Zone 3	
CEC Climate Zone 4	
CEC Climate Zone 5	X
CEC Climate Zone 6	X
CEC Climate Zone 7	X
CEC Climate Zone 8	X
CEC Climate Zone 9	X
CEC Climate Zone 10	X
CEC Climate Zone 11	
CEC Climate Zone 12	
CEC Climate Zone 13	X
CEC Climate Zone 14	X
CEC Climate Zone 15	X
CEC Climate Zone 16	X

c) Program Administration

Table 7 (Subprogram A): Program Administration of Program Components

Program Name	Subprogram Component	Implemented by IOU staff (X = Yes)	Implemented by contractors to be selected by competitive bid process	Implemented by contractors NOT selected by competitive bid process	Implemented by local government or other entity (X = Yes)
Energy Upgrade Expansion	A1: Energy Upgrade marketing and outreach				X (LA County)
	A2: Green Building Labeling				X (LA County)
	A3: Flex Path				X (LA County)
	A4: EUCLA Contractor outreach and training				X (LA County)
	A5: Multi-family				X (LA County)
	A6: Low-Income Single Family				X (LA County)

d) Program Eligibility Requirements:

i. Customers: List any customer eligibility requirements (e.g., annual energy use, peak kW demand):

Table 8 (Subprogram A): Customer Eligibility Requirements

Customer Eligibility Requirement	SCE
Green Building Labeling: Property must be located in IOU service territory.	X
Flex Path: Property must be located in IOU service territory. Single-Family Detached Housing.	X
Multi-family: Property must be located IOU service territory. Multi-Family Housing (defined as 5+ units). May require a test-in/test-out and a combustion safety test. Post-installation inspection.	X
Community Development: Low-Rise or High-Rise. Property must be located in IOU service territory.	X

ii. Contractors/Participants: List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required).

Table 9 (Subprogram A): Contractor/Participant Eligibility Requirements

Contractor Eligibility Requirement	SCE
Green Building Labeling: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X
Flex Path: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X
Multi-family: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X
Community Development: Must be an Energy Upgrade California Participating Contractor, including: California Licensed Contractor in Good Standing, liability insurance, BPI Certified Analyst on staff, other training as required. Other TBD.	X

e) Program Partners:

a) Manufacturer/Retailer/Distributor partners: For upstream or midstream incentive and/or buy down programs indicate:

Table 10 (Subprogram A): Manufacturer/Retailer/Distributor Partners (Not Included)

Manufacturer/Retailer/Distributor Partner Information	SCE
Manufacturers enrolled in program	None
Manufacturers targeted for enrollment in program	None
Retailers enrolled in program	None
Retailers targeted for enrollment in program	None
Distributors enrolled in program	None
Distributors targeted for enrollment in program	HVAC

b) Other key program partners:

Other key program partners include the following:

- Los Angeles Department of Water and Power
- Los Angeles Regional Collaborative (LARC)
- City of Los Angeles
- University of California Los Angeles Institute of Environment and Sustainability
- Long Beach Gas & Oil
- Pasadena Water & Power
- Glendale Water & Power
- Azusa Light & Water
- City of Vernon Light & Power
- Anaheim Municipal Utility District
- Moreno Valley Electric Utility
- City of Corona Department of Water & Power
- City of Riverside Public Utilities
- Metropolitan Water District
- Irvine Ranch Water District
- Santa Ana Watershed Project Authority
- Southern California Association of Governments (SCAG)
- Southern California Air Quality Management District (SCAQMD)

f) Measures and incentive levels: E3 calculators will provide the list of measures and incentive levels to be provided via the program. In this section the utilities should provide a summary table of measures and incentive levels.

Flex Path incentives are based on a variable mix of measures, both electric and gas, which are selected from a menu of options by the property owner.

The Multi-family incentives are tiered based on energy savings.

Table 11 (Subprogram A): Summary Table of Measures, Incentive Levels and Verification Rates

Measure Group (measure combinations based on actual Flex Path projects)	Market Actor Receiving Incentive or Rebate	IOUs	
		Incentive Level	Installation Sampling Rate
wall insulation + attic insulation + air sealing	Homeowner or Contractor	$1,500	20%
attic insulation + air sealing + duct insulation & sealing	Homeowner or Contractor	$1,500	20%

wall insulation + replace windows	Homeowner or Contractor	$1,500	20%
replace furnace + replace A/C + thermostat	Homeowner or Contractor	$1,500	20%
replace furnace + thermostat + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
wall insulation + pipe wrap + low-flow fixtures	Homeowner or Contractor	$1,500	20%
crawlspace insulation + attic insulation + air sealing	Homeowner or Contractor	$1,500	20%
crawlspace insulation + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
air sealing + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
replace a/c + thermostat + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
thermostat + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
replace a/c + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
replace a/c + thermostat + pipe wrap	Homeowner or Contractor	$1,500	20%
attic insulation + air sealing + windows	Homeowner or Contractor	$1,500	20%
attic insulation + attic radiant barrier + pipe wrap + low-flow fixtures	Homeowner or Contractor	$1,500	20%
wall insulation + duct insulation & sealing + pipe wrap + low-flow fixtures	Homeowner or Contractor	$1,500	20%
duct insulation & sealing + pipe wrap	Homeowner or Contractor	$1,500	20%
wall insulation + low-flow fixtures + lighting fixtures	Homeowner or Contractor	$1,500	20%
replace furnace + thermostat + pipe wrap	Homeowner or Contractor	$1,500	20%
replace furnace + replace A/C	Homeowner or Contractor	$1,500	20%
wall insulation + thermostat + pipe wrap	Homeowner or Contractor	$1,500	20%
attic radiant barrier + windows	Homeowner or Contractor	$1,500	20%
replace furnace + duct insulation & sealing	Homeowner or Contractor	$1,500	20%
crawlspace insulation + replace DHW	Homeowner or Contractor	$1,500	20%
Multi-family measures (refer to Table 4 and Exhibit A1)	Building Owners	Varies by Project	100% desktop, 15% field

g) Additional Services: List additional services that the sub-program will provide, to which market actors.

a. For each service provided, indicate any expected charges to market actors of the services, and/or the level at which any such services will be incented or funded.

Table 12 (Subprogram A): Additional Services

Additional Services that the Sub-Program Will Provide	To Which Market Actors	IOU
Assessment Vouchers	Contractors	$300
Energy Upgrade Coupon	Homeowners	$200
Energy Champions (Basic or Flex Path/Advanced Path)	NonProfit Organizations	$200/$400
Environmental Information Center	Homeowners	$0
Social Media	Homeowners	$0
Green Building Labeling (GB Elements/GB Label)	Homeowners	$1,000/$2,000
Flex Path Retrofit Program	Homeowners	$1,500
Heating, Ventilation, and Air Conditioning	Contractors	$500
Contractor Co-op Marketing	Contractors	Up to $40,000

h) Sub-Program Specific Marketing and Outreach: Please describe, providing timelines (suggested word limit: 300 words)

A detailed description is provided in prior section on Energy Upgrade Marketing and Outreach in Subprogram A1.

Figure 15 (Subprogram A): Marketing and Outreach Timeline

Marketing and Outreach Timeline	Date
Marketing & Outreach Kickoff Meeting	2/1/2013
Develop comprehensive Regional Marketing Strategy to include all Energy Upgrade components, such as Flex Path, Assessment Vouchers, Coupons, Energy Champions, Social Media and Community	2/15/2013

Development Program, Green Building Labeling and Contractor Outreach	
Finalize Regional Marketing and Outreach Strategy	3/1/2013
Launch of Regional Marketing and Outreach Strategy	4/1/2013
Ongoing Implementation and Launch of Regional Marketing and Outreach Strategy	4/1/2013 – 9/30/2014
Ramp-down	10/1/2014
Conclude Program	12/31/2014

i) Sub-Program Specific Training: Please describe, providing timelines (suggested word limit: 300 words)

The success of the whole building upgrade industry and Energy Upgrade incentive programs depends upon Participating Contractors' ability to navigate and excel within an evolving marketplace and deliver high quality upgrades. This marketplace is being shaped by the IOUs, RENs, and other program partners, so wherever possible these partners should provide coordinated support to help Participating Contractors and have a clear and accessible entry point for contractors who wish to take on whole-house efficiency services.

Through the Whole House Program and other educational efforts, the IOUs have provided technical training offerings that familiarize contractors with the knowledge and technical skills needed to install energy efficiency upgrades and ensure client health and safety. In the ARRA period, SoCalREN partners coordinated with training organizations such as the California Building Performance Contractors Association, Build It Green, EnergyPro, and others to develop and deliver in-class trainings and field mentoring that addressed these gaps.

In 2013-2014, SoCalREN will expand the training and mentoring efforts started during the ARRA period and continue to collaborate with workforce and training organizations to identify training needs and

use existing or new trainings to fill critical skills gaps. Trainings will be coordinated with IOU trainings, and announced through SoCalREN and IOU contactor outreach channels. Using this approach, SoCalREN will be able to train a minimum of 500 building professionals in the 2013–2014 period in the following areas:

- Quality Installations, Especially HVAC Installations
- Sales and Marketing
- Client Management Before, During and After a Project
- Business Management and Administration
- Energy Pro Modeling (Basic and Advanced classes)
- BPI Field Mentoring-job sequencing, proper equipment, use, customer interactions

j) Sub-Program Software and/or Additional Tools:

a. List all eligible software or similar tools required for sub-program participation.

This Subprogram A will continue to require Energy Upgrade-approved software in order to conduct energy assessments. As possible and appropriate, SoCalREN will consider promoting new technologies available to Participating Contractors to facilitate their energy modeling activities.

b. Indicate if pre and/or post implementation audits will be required for the sub-program.

Pre-implementation audit required X Yes ___ No

Post-implementation audit required X Yes ___ No

c. As applicable, indicate levels at which such audits shall be rebated or funded, and to whom such rebates/funding will be provided (i.e. to customer or contractor).

Table 13 (Subprogram A): Program Related Audits

Levels at Which Program Related Audits Are Rebated or Funded	Who Receives the Rebate/Funding (Customer or Contractor)
$300 Assessment Voucher	Customer or Contractor (Customer may sign incentive over to Contractor)
Up to $10,000 for Multifamily retrofit program	Customer or Contractor

k) Sub-Program Quality Assurance Provisions: Please list quality assurance, quality control, including accreditations/certification or other credentials

Table 14 (Subprogram A): Quality Assurance Provisions

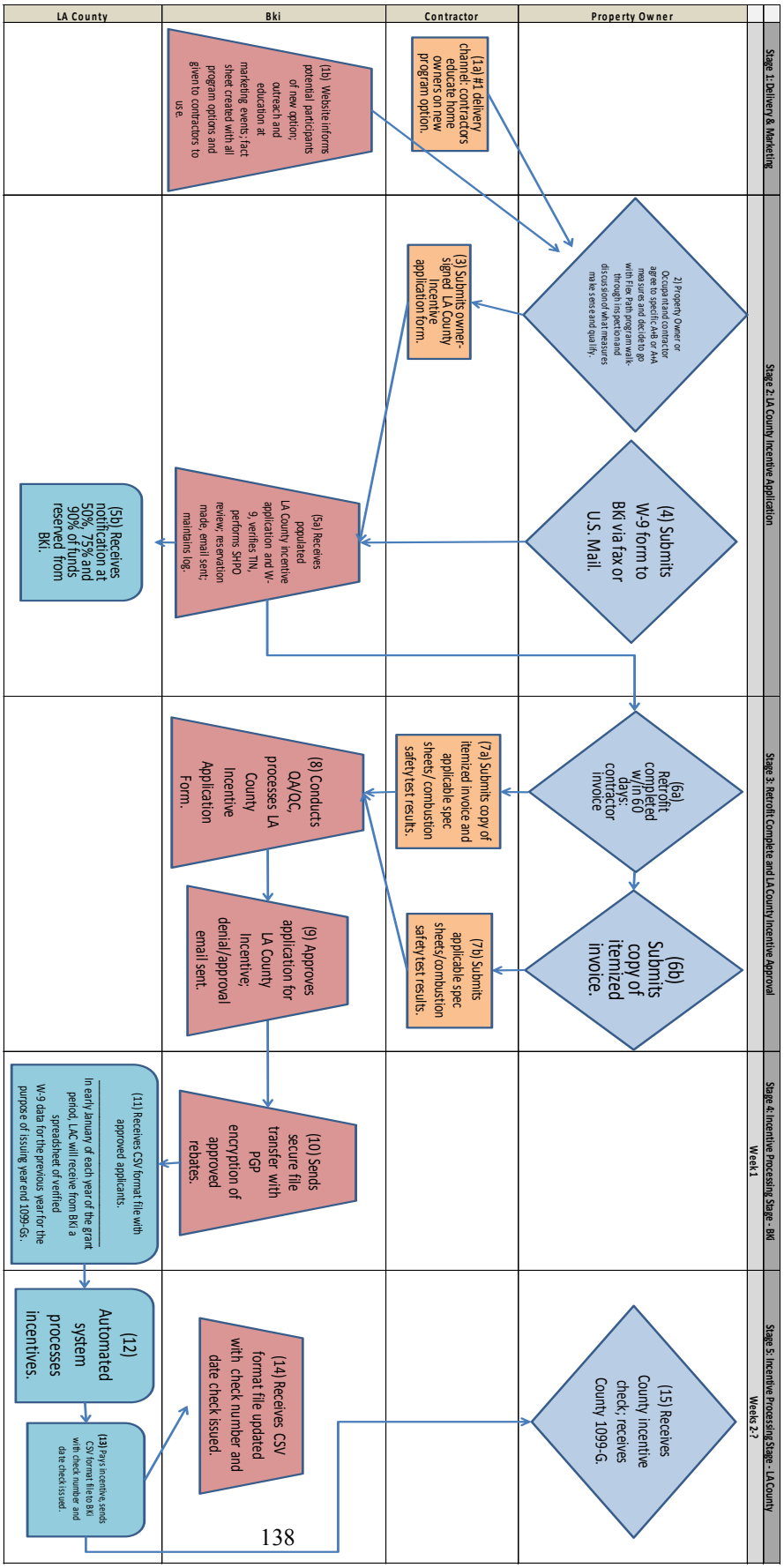
QA Requirements	QA Sampling Rate (Indicate Pre/Post Sample)	QA Personnel Certification Requirements
Flex Path Incentive Program : Property must meet eligibility requirements for measures installed.	20% Post Installation	BPI Analyst Certification
Multi-family : Property must meet eligibility requirements for measures installed.	100% Pre/20% Post Installation	BPI Analyst Certification
Community Development : TBD	TBD	TBD

l) Sub-program Delivery Method and Measure Installation /Marketing or Training: Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above.

m) Sub-program Process Flow Chart: Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example, the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities.

Please see Figure 16.

Figure 16 (Subprogram A): Flow Chart



n) Cross-cutting Sub-program and Non-IOU Partner Coordination: Indicate other IOU EE, DR or DG sub-programs with which this sub-program will regularly coordinate. Indicate also key non-IOU coordination partners. Indicate expected coordination mechanisms[14] and frequency[15]:

Table 15 (Subprogram A): Cross-cutting Sub-program and Non-IOU Partner Coordination

Subprogram A: Energy Upgrade California		
Other REN Subprograms	Coordination Mechanism	Expected Frequency
Financing	Project referrals	As requested by contractor/homeowner
SoCalREC	Meetings, other regular communication	As needed to ensure consistency of message and increase efficiency of local government outreach
IOU Programs	Coordination Mechanism	Expected Frequency
IOU Whole House Upgrade Program (Energy Upgrade California)	Meetings, communication, participating contractor and QA updates	Bi-Monthly
Coordination Partners Outside CPUC	Coordination Mechanism	Expected Frequency
Low-Income Weatherization Programs	Project referrals	As requested by contractor/homeowner
Non-SoCalREN Financing Programs	Project referrals, meetings, other regular communication	Quarterly or as needed
Local Workforce Investment Boards	Meetings, other regular communication	Quarterly or as needed
Building Trade Associations	Meetings, other regular communication	As needed as part of marketing efforts
Real Estate Associations	Association meetings, trainings	As needed as part of marketing efforts

[14] "Mechanisms" refers to communication methods (i.e. quarterly meetings; internal list serves; monthly calls, etc.) and/or any cross-program review methods (i.e., feedback on program plans; sign off on policies, etc). or harmonization techniques (i.e. consistent certification requirements across programs, program participant required cross trainings, etc).

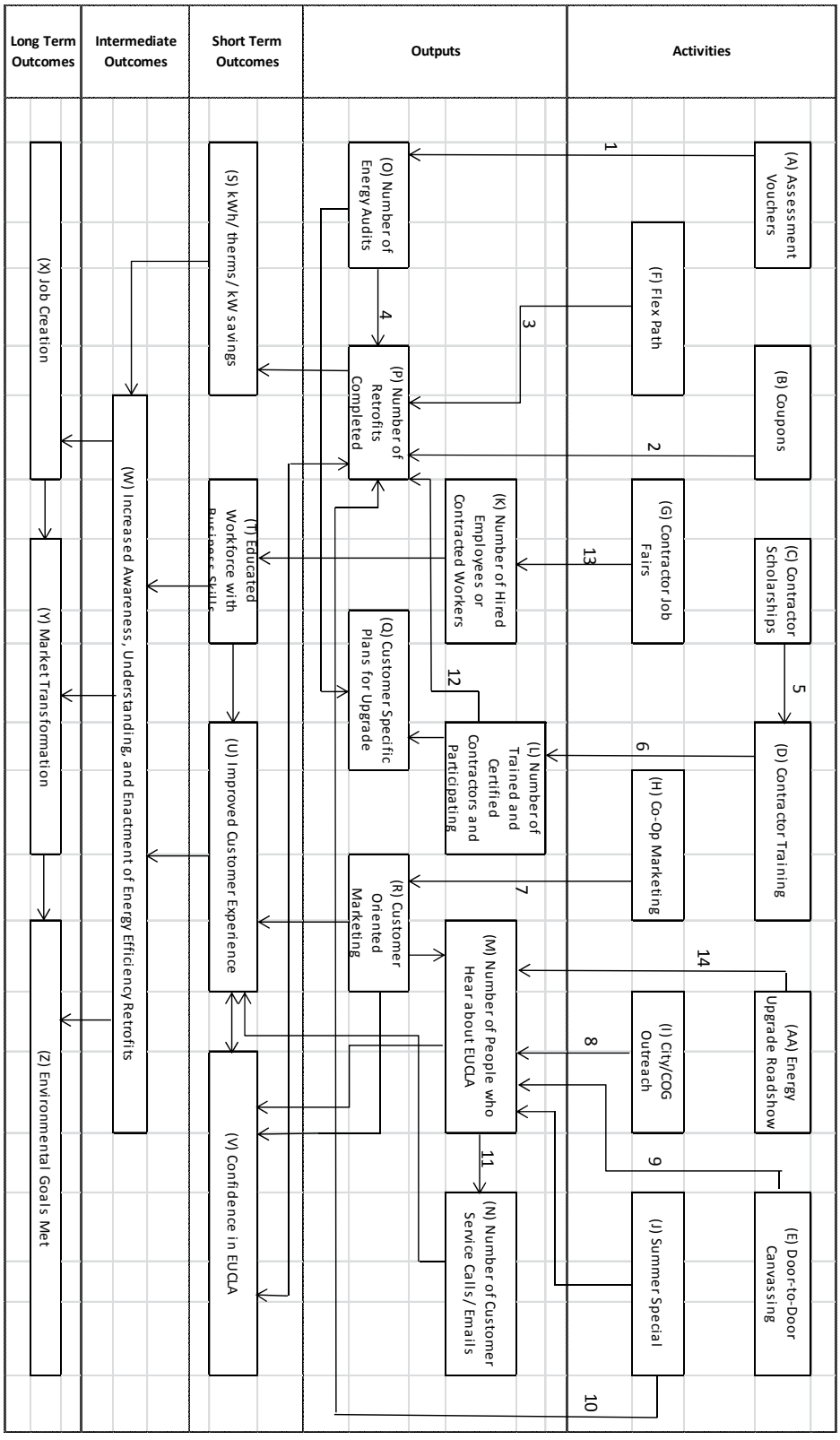
[15] This does not mean there would be mutual understanding of the on the mechanism or a known frequency of coordination; rather, just provide enough information to give a general sense of the coordinate efforts.

Green Building Labeling Organizations	Meetings, other regular communication	As needed as part of marketing efforts
Local Retailers, Suppliers	Meetings, other regular communication	As needed as part of marketing efforts
Community Based Organizations, Religious Institutions, Educational Institutions	Meetings, other regular communication	As needed as part of marketing efforts

o) Logic Model: Please append the logic model for this sub-program to the end of this PIP. Describe here any additional underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.).

Please see below. This logic model is also included as Exhibit A3.

Figure 17 (Subprogram A): Logic Model



11) Additional Sub-Program Information

a) Advancing Strategic Plan Goals and Objectives: Describe how sub-program advances the goals, strategies and objectives of the California Long Term Energy Efficiency Strategic Plan (word limit: 150 words)

Figure 18 (Subprogram A): Strategic Plan Alignment

SoCalREN Subprogram A Alignment with CA Long Term Energy Efficiency Strategic Plan		
Residential		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
1-5	Encourage local, regional, and statewide leadership groups to support pilots and foster communication among pioneering homeowners and builders	SoCalREN will conduct contractor, other building professional, real estate, and other trade outreach to spread brand awareness and facilitate dialogues among industry partners to support the program.
2-2	Promote effective decision-making to create widespread demand for energy efficiency measures	SoCalREN will conduct broad outreach and awareness campaigns to customers and provide support around decision making.
3-2	In coordination with Strategy 2-2 above, develop public awareness of and demand for highly efficient products	See strategy 2-2 above.
DSM Coordination and Integration		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
1-1	Carry out integrated marketing of DSM opportunities across all customer classes	SoCalREN marketing efforts will be coordinated with IOU Whole House Upgrade Program, Local Government Partnerships, Weatherization Programs, etc. Assessment Voucher will increase opportunities for homeowners to undergo no-commitment BPI audits as a basis to learn about energy saving opportunities.
Marketing, Education and Outreach		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
1-3	Use social marketing techniques to build awareness and change consumer attitudes and perceptions	SoCalREN marketing campaign will include use of community based organizations, schools, religious institutions and other organizations as drivers of energy efficient behaviors. Campaign will also use online social networking platforms such as Facebook.
1-5	Conduct public communications campaigns, alongside longer-term supporting school education initiatives to deliver the efficiency message	See 2-2 and 1-3 above. SoCalREN will coordinate with BBP Pilots that activate nonprofit organizations as “Energy Champions” to spread energy efficiency message to their constituents.
Local Government Goals		
Strategy Number	Strategy	SoCalREN Subprogram A Strategy
4-4	Develop local projects that integrate energy efficiency, DSM, and water/wastewater end uses	Promote cross-resource DSM offerings and promote green labels (e.g. GreenPoint Rated Existing Home) as well as perform direct installations of water conservation measures.

5-2	Develop model approaches to assist local governments participating in regional coordinated efforts for energy efficiency, DSM, renewables, green buildings, and zoning	SoCalREN partners will engage local governments at multiple levels to support outreach campaigns and ensure local government is aware of SoCalREN and other DSM program offerings.

b) Integration

i. Integrated/coordinated Demand Side Management: As applicable, describe how sub-program will promote customer education and sub-program participation across all DSM options. Provide budget information of non-EE sub-programs where applicable.

Through efforts conducted during the ARRA period, SoCalREN partners began to develop relationships with water efficiency and green building programs to help cross-promote services and increase customer awareness of all efficiency options. These efforts will be expanded in the 2013–2014 period, as SoCalREN will continue to identify opportunities to promote indoor and outdoor water efficiency, green product rebates, and other programs to consumers. SoCalREN will also promote green building upgrades, which focus on additional concerns such as indoor air quality and resource conservation, as a viable long-term strategy for increasing property value and occupant health and quality of life.

SoCalREN will promote cross-program services through two efforts. First, the Environmental Information Center (EIC) services offered through SoCalREN will provide an integrated, one-stop service for homeowners to learn about all IOU, local government, water utility, and other DSM offerings. EIC and outreach staff will be well positioned to engage with customers when they are most receptive to hearing about how to improve their home, and will provide them with options for any upgrades they are interested in pursuing. In addition, a significant part of homeowner marketing will be cross promotion efforts by various DSM programs to ensure that, whether through media, collateral, or targeted

outreach, homeowners are made aware of all program options and provided opportunities to participate in all relevant DSM programs.

Table 16 (Subprogram A): Non-EE Sub-Program Information

Non-EE Subprogram	Budget	Rationale and General Approach for Integrating Across Resource Types
Water Programs	TBC	Cross promotion of brand, installation of products (e.g aerators) by EICs
Green Point Rated Existing Home	TBC	Cross promotion of label, incentives offered through BBP pilots

ii. Integration across resource types (energy, water, air quality, etc): If sub-program aims to integrate across resources types, please provide rationale and general approach.

Please see above for a description of cross-marketing efforts to be conducted by SoCalREN. In addition to marketing activities, contractor training opportunities will integrate cross-resource consideration and promote awareness amongst building professional of water conservation, air quality, and other consideration and customer offerings.

The Flex Path Incentive Program will include measures associated with non-energy savings, especially those related to indoor water conservation. Points will be awarded to measures including such water efficiency measures as low-flow showerheads, faucet aerators, high efficiency toilets, etc.

c) Leveraging of Resources: Please describe if the subprogram will leverage additional investments by market actors or other state, local or federal agencies.

In D 12-05-015, the Commission determined that a key role for local governments was to "Leverage additional state and federal resources so that energy efficiency programs are offered at lower costs to ratepayers." To that end, SoCalREN's Energy Upgrade Subprogram A leverages the following programs:

- Local government ARRA-funded programs (BBP Pilots)
- CPUC/CEC Energy Upgrade California Brand
- SCE/SCG Whole House Upgrade Program
- SCE/SCG Local Government Partnerships and Institutional Partnerships
- Water utility incentives and programs
- Other local government energy and sustainability efforts and campaigns
- Other local government agencies and bureaus, such as building, permitting and inspection departments

d) Trials/ Pilots: Please describe any trials or pilot projects planned for this sub-program

e) Knowledge Transfer: Describe the strategy that will be used to identify and disseminate best practices and lessons learned from this sub-program

SoCalREN staff and partners will regularly track challenges, lessons learned, and necessary adjustments for all technical, administrative, and marketing aspects of program implementation. These challenges will be transmitted to local government partners operating similar programs through regular meetings of the SoCalREN Governance Committee with local government forums (such as LGSEC, Local Government Commission), regional and institutional partners (e.g., Councils of Government, local government partnership program) and through program updates provided to Commission and program partners.

12) Market Transformation Information: For programs identified as market transformation programs, include the following (suggested page limit- five pages):

Market Transformation Objectives

The market transformation objectives of the SoCalREN Energy Upgrade Program are the following:

- Increased general knowledge and awareness amongst homeowners of energy efficiency and green upgrade practices and benefits, and encourage a long-term transition towards energy efficient behaviors and purchases;
- High awareness of energy efficiency and green upgrades among relevant professional industries, including real estate, building trades, manufacturing/supply, and other industries;
- Streamlined coordination of DSM programs across IOUs, local governments, and other organizations;
- Development of a skilled and motivated professional building workforce that makes energy efficient and green upgrade best practices standard practice in service delivery.

Market Description

Market actors include:

- Building Performance Contractors — Deliver Energy Upgrades to Residential Property Owners, Participating Contractors in Energy Upgrade California
- General Contractors — Oversee delivery of residential remodels, other installation work; May perform direct installation or subcontract to specialty contractors May or may not be associated with whole house performance upgrades and Energy Upgrade California
- Specialty Contractors — Have specialty license in HVAC, Insulation and deliver installation. May also perform whole house and general contracting duties. May or may not be associated with whole house performance upgrades and Energy Upgrade California
- Green Building Professionals — Building professionals, including general and specialty contractors, who are trained in delivering or assessing technical work that incorporates additional green building concerns beyond energy efficiency, such as outdoor water efficiency, indoor air quality, resource conservation, and low-impact development/site water management. Serve as private contractors or on behalf of green building rating and incentive programs.
- Single-Family Residential Property Owners

- IOUs — Run energy efficiency incentive programs, such as Energy Upgrade California. Conduct contractor management, quality assurance, program administration for Energy Upgrade California.
- Local Governments — Set greenhouse gas emissions, energy savings, and other sustainability goals and implement programs to meet those goals. Support IOU energy efficiency programs through professional and customer outreach, coordination amongst local actors, enforcement of code. Pilot energy efficiency programs.
- Other Energy Efficiency Programs — IOU third party and local government partnership programs that implement direct install, weatherization, and other incentive programs.
- Workforce Training Organizations — Community colleges, professional training organizations, workforce investment boards, and nonprofit programs that provide job training and placement services for new professionals.
- Non-Energy Efficiency and Conservation Programs — Water utility, local government, green building, and other programs that promote and incent resource conservation, air quality, green products, and other non-energy efficiency efforts.
- Other Relevant Professional Trades — This includes all professional industries and associations that may affect property owner and building professional choices, including real estate professionals, product manufacturers and suppliers. These actors affect behavior of their clients through the services they offer and products they provide.

Market Characterization and Assessment

Many of the market barriers associated with the single-family energy efficiency and whole house markets are described above in the Subprogram Description and Theory. The following market characterization and assessment is adapted from the analysis in the *Recommendations for Energy Upgrade California in the Bay Area* report which can applied statewide to address Southern California's need as well.

i. Homeowner Awareness and Behavior

While the Energy Upgrade California website and local marketing campaigns have achieved an initial measure of homeowner education, most homeowners are not aware of how their homes work or the economic and environmental benefits of energy efficiency. Building broader awareness and deeper knowledge will be a key to future program implementation and market transformation.

Homeowners vary in their motivations for undertaking energy efficiency work in their homes, including saving money, increasing comfort and health, and protecting the environment (among others). Given this, as well as demographic, geographic, economic, and ethnic diversity in the SoCal region, there is no one single marketing approach that will reach or resonate with everyone. There is a need to market to different segments with different strategies — social media, print, radio, TV, tabling events, workshops, etc. Such multi-faceted marketing should be employed in future programs. Additionally, marketing and outreach are inherently local, and marketing success in generating leads must leverage the character of a community, local events, and trusted messengers.

Currently, most marketing efforts for single-family energy upgrade programs are relatively uncoordinated, with IOUs providing limited direct marketing and Participating Contractors varying significantly in their messaging and focus, as well as the veracity of their information regarding program options and incentives. Additionally, awareness amongst other industry actors is relatively low, and energy efficiency considerations have not yet entered into standard business practice for any relevant market actors.

Additionally, market barriers as described in the Subprogram Description and Theory, including high cost, lack of adequate financing, program complexity, and customer distrust of

the contracting community, have dissuaded many interested customers from participating in Energy Upgrade California, and, as of yet, no simple coordinated solution has been provided to address many of these barriers.

ii. Professional Industry Awareness

Successful program implementation depends on a robust partnership between program administrators (IOUs or local governments) and those working in the industries related to those programs. Through the services these industries provide, they have a dramatic effect on homeowner and professional valuation of energy efficiency products and services. In D 12-05-015, the Commission directed the IOUs to take a strong role in engaging industry partners, especially those in the real estate industry. Local governments have been performing this work for several years, and stand poised to continue strengthening connections in these industries in partnership with the IOUs.

In 2011-2012, SoCalREN partners conducted concerted effort to make inroads into the real estate sector, and, to a lesser extent, the supplier market. Through the ARRA period, SoCalREN partners have engaged these actors, developed and delivered trainings for realtors, discussed approaches towards listing and valuation of energy efficient and green-labeled homes, coordinated on strategic marketing approaches with local retailers, and developed pilot approaches towards securing reduced costs for energy efficient and green products for Participating Contractors.

All of this work has created inroads into industries vital towards long-term market transformation. That said, energy efficiency and green upgrades are still tangential considerations by most professionals in these industries, and are not yet part of the central

message conveyed to customers and clients. In order to ensure that opportunities created within the last few years are not lost, local governments and IOUs must continue outreach and engagement, and develop models and messages that serve the core needs of these industries while promoting energy efficiency and other cross-resource conservation options. Through the Energy Upgrade Program, SoCalREN partners will continue to engage these actors through cross-promotion and marketing efforts so energy efficiency can be a core consideration of these actors.

iii. Coordination of DSM Programs

Similarly, the ARRA period dramatically expanded the role of local governments within energy efficiency, and provided an unprecedented opportunity for collaboration and streamlining between local government actors, IOUs and third-party program providers (third-party providers, water utilities, nonprofit advocates, etc.). The ARRA period was successful in more firmly establishing relationships between these actors, and led to some successes in collaboration and streamlining between actors, most notably through the use of a common program brand and statewide website.

That said, the ARRA period also demonstrated the significant challenges associated with coordination among large bureaucracies, and the confusion that this many actors can have in the marketplace. Notable examples include the coordination of marketing and outreach messages, coordination of incentive program offerings and messaging around those offerings, and sharing of program data amongst organizations for program evaluation. It is clear that continued coordination, and the long-term development of governance structures

that can effectively manage such issues, is required to for the market to mature and effectively penetrate into professional and customer awareness.

iv. Professional Building Workforce

As the market has developed, it has become clear that, to successfully penetrate the market, Energy Upgrade California needs to provide a distinct advantage to the building industry professionals over business as usual. In its current program design, Energy Upgrade California fails to provide the convincing argument for professionals to provide energy efficiency services and develop the systems necessary to work with Energy Upgrade California. With this fundamental challenge, the efforts to recruit, train, and place new professionals have been impaired.

Energy Upgrade California's failure to provide a strong business case to building professionals has significant impacts that go beyond the success of the program. As identified by UC Berkeley in 2011[16], proper incentive program design is a key to increasing the overall quality of any installation in the residential sector (especially HVAC installations) and shifting the "low-road" environment of residential energy efficiency to one that values the quality of installations. In the energy efficiency sector, since the quality of installations affects the energy use of a building, it becomes vital to the long-term mission of the Commission to

16 Zabin, C, et. al. California Workforce Education & Training Needs Assessment For Energy Efficiency, Distributed Generation, and Demand Response. Donald Vial Center on Employment in the Green Economy, Institute for Research on Labor and Employment, University of California, Berkeley. 2011.

ensure that Energy Upgrade California and other incentive programs provide are attractive to residential building professionals.

To increase the business proposition of Energy Upgrade California, program implementers need to remove the market barriers that stand in the way of market penetration. This would include such coordinated actions as a re-evaluation of the program design and introduction of accessible upgrade packages, more effective marketing, strong consumer advocacy and support, targeted contractor support, introduction of viable financing mechanisms and reduction of other cost and process barriers.

If implementers are able to remove these barriers successfully in the coming years, then consumer demand will create a demand for qualified and trained professionals, which can be filled by trainers and other workforce actors, working alongside program implementers.

Proposed Interventions

Proposed interventions have been described throughout this program description. Along with Financing (Subprogram B), all proposed interventions are focused on reducing the technical, cost, and process barriers toward making Energy Upgrade California a successful program. A summary is provided in the table below.

Figure 19 (Subprogram A): Market Transformation Barriers and Interventions

Barrier	Proposed Intervention
Program design barriers-Required audit, program complexity	Assessment incentives, Flex Path incentive, Environmental Centers
Program cost barriers	Assessment incentives, Flex Path incentive, Financing (Subprogram B)
Lack of customer awareness	Broad and targeted marketing campaign, contractor sales training,

Lack of professional/industry awareness	Professional outreach as part of marketing campaign
Contractor skills gap	Contractor sales, administrative, installation and other technical trainings; Environmental Centers to support contractor sales

Market Transformation Indicators (MTIs) and Evaluation Plans

Resolution E-485 (December 2, 2010) Appendix B, lists adopted Market Transformation Indicators for the 2010-2012 Energy Efficiency Portfolio, which were then amended by Energy Division in 2011 at the direction of the Commission. To ensure consistency with adopted Market Transformation Indicators and Program Evaluation strategies, SoCalREN proposes the following Market Transformation Indicators, based upon the proposed amended Whole House Upgrade Program and IDSM MTIs proposed by Energy Division in 2011:

- Whole-House MTI 1: Costs to customers of whole house upgrades, including costs of materials, equipment, and labor. Metric Type 3.
- Whole House MTI 2: The proportion of households that elect to perform comprehensive energy upgrades. Metric Type 3.
- Whole House MTI 3: The number of IOU customer households that undergo a deep upgrade (Advanced and/or IDSM) audit through IOU programs. Metric Type 3.
- IDSM MTI 2a: Percent of customers in the residential sector who have received an integrated audit.
- IDSM MTI 2b: Percent of integrated audit customers who have adopted one or more audit recommendations.
- IDSM MTI 3: Percent of customers in each customer classes who are aware of integrated programs or incentive opportunities.
- IDSM MTI 5: Water conservation, GHG, and waste reduction strategies are incorporated into integrated program offerings.

Program evaluation will be conducted in coordination with EM&V activities conducted on behalf of the Commission and IOUs. SoCalREN partners will participate as possible in all data collection and interpretation activities, as directed by the Commission.

13) Additional information as required by Commission decision or ruling or as needed:
Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers):

Exhibit A1: Tables

Exhibit A2: EUC marketing collateral

Exhibit A3: Logic Model

Exhibit A4: EUC E3 calculations – Due to file size, please download at:

https://drive.google.com/folderview?id=0B-geqhnadhYHLUR6dEVMRVZMVkE&usp=sharing