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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Application of Pacific Gas and Electric Company for Approval of the 2012-2014 Energy Savings Assistance and California Alternative Rates for Energy and Programs and Budget (U 39 M).

Application 11-05-19  
(Filed May 16)

**Response of the Energy Efficiency Council on Application of Pacific Gas and Electric Company (PG&E) 2012-2014 Energy Savings Assistance and California Alternate Rates for Energy Programs and Budget.**

Allan Rago for The Energy Efficiency Council

June 17, 2011

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**Introduction**

The Energy Efficiency Council (The Council) is comprised of Energy Efficiency Service Providers throughout the State of California. Our membership includes a mix of Community Based Organizations (CBO's) and Private Contractors entrenched in their respective communities throughout the state. We hereby submit our response to the Application of Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SCG), Southern California Edison (SCE), and San Diego Gas and Electric's (SDG&E) *collectively* (Utilities) 2012-2014 Energy Savings Assistance and California Alternate Rates for Energy Programs and Budget.

Our response provides a brief background of each issue we believe needs to be properly vetted and are listed and cited in the order they appear in the Utility Applications. The Council has significant concerns in the following primary areas.

1. Estimated Population

2. Program Delivery
3. Incorporating Evaluation and Impact Study Results
  - a) Incorporation of the Process Evaluation Study Results
  - b) Incorporation and review of Impact Evaluation Study results
  - c) Incorporation and review of the California Workforce Needs Assessment Report
4. Cost-Effectiveness of the overall ESAP program
  - a) Policy conflicts between cost-effectiveness and program goals
5. Workforce Reductions and Layoffs
  - a) The ramifications of workforce reduction for contractor employees
  - b) The ramifications of workforce reduction for Utility employees
6. Budgets
  - a) Insufficient budgets to support a growing and established workforce
  - b) Potential to shift funds from non-energy saving budget line items to the Energy Efficiency category
  - c) Review of NGAT costs
7. Schedule

## **B. Background**

Decision 07-12-051 established the following programmatic initiative for low income EE: *To provide all eligible customers the opportunity to participate in the LIEE programs and to offer those who wish to participate all cost-effective energy efficiency measures in their residences by 2020.*

## **3. Eligible Population**

RESPONSE OF THE ENERGY EFFICIENCY COUNCIL ON 2012-2014 UTILITY ESAP APPLICATIONS

The Utilities “unwilling to participate” numbers are too aggressive and inaccurate. For example, SCG and SDG&E tracked “Customer over 200% FPL” and then suggest these numbers be used to reduce the overall eligible population estimate. There is no indication these customers were originally counted in the estimated population. These customers may very well have been customers visited by contractor’s marketing to a non-low income neighborhood. As well, a “customer who is unable to provide proof of income” may wish to participate but because of the requirements to prove their income, may not be able to at this time. However, this group will more than likely be able to furnish such proof at a future date so they should not be excluded. “Customer Moving” is another category tracked by SCG and SDG&E and again here, it sounds like the customer is low-income; they are just moving. It is more than likely the customer will request service at their new location. These three categories alone represent 5% swing in the SCG estimates. In addition, for the category “customer refused”, contractors are told to indicate if the customer refused at the time they were offered the program. Contractors were not required to notify the customer this was their one and only opportunity to participate. Many of these customers may have refused because of their current time restraints but would participate at a future date. While the Utilities indicate they will make the program available to those customers who change their mind about participation, removing this group from the estimated population paints an inaccurate picture of the amount of work that remains.

PG&E and SCE cite SCE’s tracking data that indicates 12% of customers are unable to participate in the program even if they are willing and suggest most of these are due in large part because customers are unable to produce the significant documentation to prove income eligibility for program participation. This alarming figure clearly

identifies a barrier to participation that should be addressed. It is our experience that customers often do not keep the documentation showing their employment as many work as day laborers for cash or are even unemployed with no remaining unemployment benefits. Surely, we can find a way to allow those to participate who are extremely low-income or unemployed with no unemployment benefits. These are the poorest of the poor but at this point are unable to participate in this program to help reduce their energy burden.

The IOU proposal to estimate the number of homes served by LIHEAP through 2020 should also be rejected. The budget for continued LIHEAP levels are unknown through 2020 and could swing drastically based on federal funding, especially since the 2009-2010 number was based on the increased ARRA funding which will end soon. Utilizing estimates based on short-term increases to households treated could create a situation where the number of actual customers served ends up being significantly lower than estimated and subsequently could leave many untreated customers by the Commission 2020 goal.

### **C. Program Goals**

- **Energy Upgrade California Multi-Family Buildings Project**

PG&E envisions coordinating their ESA offerings with Energy Upgrade California and their other Core Energy Efficiency Programs. We support an effort where ESA measures are installed in multi-family buildings. This coordinated approach will certainly help increase the savings associated with multi-family buildings and be a very good compliment to the multitude of other programs available to the multi-family resident. In order to reap the greatest energy savings benefit for this housing type, we cannot overlook the need to add infiltration measures back into the program in several

climate zones, for all Utilities. Infiltration measures should be the core base for energy upgrade offerings as they support not only energy savings but also the health, comfort and safety of the customer. In addition, adding back infiltration measures for multi-family dwellings will significantly increase the amount of multi-family dwellings participating in the program; a goal shared by many.

#### **D. Program Delivery**

##### **1. Existing Strategies**

###### **(f) Customer Service Improvements**

We agree the program continues to offer a service that is simple and convenient to its customers. However, paperwork remains a barrier to participation in many cases and a burden to the customer and contractor in others. As PG&E and SCE point out in Table 1-2, *Unable to Participate – After initiating contact with enrollment contractor, customer is unable to provide documentation, such as income or owner’s authorization*<sup>1</sup>, an alarming 17,534 customers in 2009-2010 were unable to participate because of the paperwork requirements. For SCG, the customers in this category who were unable to participate amount to 4,751 additional lost energy saving opportunities. SCG also recognizes this problem as they noted customers found it difficult to meet the full income documentation requirement for historically low-income, extremely impoverished or equally marginalized neighborhoods and/or communities<sup>2</sup>. In addition, agencies are reporting that due to the economy, more and more people are working as day laborers or in cash wage jobs and are unable to participate due to the income proof requirements.

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<sup>1</sup> Pacific Gas and Electric Company SCE Willingness to Participate for ESA Program in 2009 and 2010

<sup>2</sup> SCG ESAP 2012-2014 Application, Item 3, page DM-41

Perhaps this is a good time to reconsider and review the paperwork requirements of the program. The program was developed to help low-income people yet many are not able to participate due to this barrier.

## **2. Incorporating Evaluation and Study Results**

### **(a) Process Evaluation**

- **Paperwork**

For those customers who can make it past the barrier of proving homeownership or their income level, the volume of paperwork remains an issue. There are several references in the applications regarding the use of Tablet PC's and streamlining the data process. PG&E notes "Contractors keep paperwork to the minimum required". For PG&E, the customer file includes, Income Verification and Information, Home Assessment Form, Refrigerator and Air Conditioner Application, Energy Education, Property Owner Waiver - Owner, Property Owner Waiver - Renter, Home Qualification Worksheet, Installation Work Order, Proof of Ownership (title search document or mortgage bill or Prop tax bill), a copy of the Power of Attorney for who signed the owner waiver (if property is owned by a management company or corporation), and proof of income in the form of check stubs or bank statements. In addition to the forms above, Edison and SCG require copies of the customer utility bills, DMRI's printed from their databases, Proof of Categorical eligibility, Proof of manufacture year for refrigerator by model number, washing machine form (the specific names of the documents may be different per utility and there is no refrigerator or AC for for SCG). In addition, contractors are required to keep all these documents on file and in all cases make *several copies* to send to the utility company or their administrator.

This issue can certainly be viewed as a customer barrier to participation and if reducing the carbon footprint to deliver these programs is part of the goal, perhaps this is the time to review the hard copy document storage and wet signature rules, total documents required and the potential barrier they cause and the possibility to go paperless.

- **In Home Education**

While much of the in-home education is unique to the individual resident and residence, we suggest the Utilities develop a standardized DVD or PowerPoint presentation that can be viewed in multiple formats such as VHS or hosted on a web site. The outreach and assessment personnel can use this tool to review the standardized details of the program with the customer, leaving more time to customize the remaining portion of the education to the individual resident and residence. This will enable the customer to receive a unique education experience and at the same time receive a standardized message about the program such as what to expect, what is or is not offered, where the program funds originate, what other programs may be available and the next steps such as installation and inspection.

**(b) Impact Evaluation Study**

Many parties have raised concerns about the Impact Evaluation Study Draft results and we believe it is pre-mature to base the next three years on a study with so much controversy surrounding it. One particular concern is the study's assessment and implication that some measures such as evaporative coolers and furnaces are used only because we provided new appliances to the customers. While that may be the case in some instances, we are working with the elderly, neediest, and the general low-income population. As a result, we should be touting the success of providing such services to the

most needy, not removing measures from the program and walking away from those who need our service most.

In addition, we are concerned the study implies single individual measure evaluation as the way to evaluate the program. Many programs suggest the whole house should be serviced for a more comprehensive final retrofit and this program should be no different.

It is apparent from the Impact Evaluation Study Draft that one of the major recommendations in the program should be to find procedures to further encourage the inclusion and expansion in the use of attic insulation and duct testing to assure a comprehensive savings package for low-income customers. To allow for this, the draft study should include the importance of attic insulation and duct testing in a comprehensive ESAP effort and of the importance of considering lifecycle savings, even if this is not a direct function of the requested impact evaluation.

#### **4. New and Proposed Strategies**

**(c) New WE&T Strategies for 2012-2014. Include Specific Training Strategies for Reaching Disadvantaged Communities and How the Utility Will Work With Community Stakeholders to Assist in the Development of Training Strategies. Also Include Any Recommendations Resulting From the California Workforce Needs Assessment Report.**

Many issues have been raised about the inaccurate statements made in the California Workforce Education and Training Report produced by the Vial Center. Specifically, we would point to the response by Richard Heath and Associates that was emailed to the CPUC and LIOB members on June 8, 2011<sup>3</sup>. The report makes fundamentally inaccurate assessments of the low-income programs. The Council believes

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<sup>3</sup> See attached Comments on the California Workforce Education and Training Needs Assessment developed by RHA, Inc.

it would be a significant error if the Utilities and Commission base restructuring and changes on a report that mischaracterizes so grossly the inspection, training and implementation process of the low-income EE programs.

**(g) New Customer Service Improvements**

Please see our earlier comments on improving customer service by going paperless, removing barriers to participation at the paperwork level and the suggestion for a standardized DVD, VHS or PowerPoint Presentation. We plan to provide detailed suggestions on improvements during the application process.

**E. Cost-Effectiveness and Energy Savings**

**2. Cost-Effectiveness of Overall ESA Program**

We understand the importance and directive by the Commission to create a more cost-effective program. However, we remember the non-energy benefits the program provides to California such as sales tax on the millions of dollars spent for material, corporate income tax, employee payroll tax, DMV fees on thousands of vehicles used to deliver the service, fuel surcharge tax collected on millions of miles driven to deliver services and many other revenue producing streams for California. These non-energy benefits are not included in the cost-effectiveness calculations but certainly should be considered when determining the program benefits.

In addition, we should not lose sight of the customers we serve and their need for our service. One could argue the program only saves the customer a few dollars per month and we should remove program measures to make the program more cost-effective. We can assure you that most customers rely on the savings they receive each month to purchase food and medicine and the importance of this should not be understated.

Moreover, these programs are an excellent opportunity to provide living wage jobs and provide a stimulus to a dragging California economy. Unfortunately, if the Utilities are required by the Commission to continually provide a more cost-effective program, the Utilities are going to follow that direction by reducing costs. Subsequently, if the program costs continue to be driven down, contractors will not be able to provide living wage jobs, employment benefits and cost of living pay increases. In order to deliver the program, contractors must purchase material where the costs are driven by the industry and economy. The cost of material, metal, insurance and fuel have risen dramatically over the past three years and the program has not kept pace with those cost increases, causing contractors to drive down the only cost they can control; labor.

#### **F. Measure Portfolio Composition**

Section A, item 2 (i), PG&E writes:

*In addition to the non-energy benefits they provide, these measures (especially attic insulation) also increase the potential for long-term energy savings.*

In PG&E's opening introduction, Section A, item 1, PG&E states:

*The ESA program, utilizes a "whole house" approach to provide free home weatherization, energy-efficient appliances and energy education services to income-qualified PG&E customers throughout the Company's service area.*

Under section C. Program Goals, item (b), PG&E writes:

*Many of the measures offered are fairly low-cost weatherization measures that have traditionally been the foundation of low-income energy programs in the United States*

*(U.S.). Individually, these measures produce small energy impacts, and most of their effect is achieved together as a package producing both energy savings and less tangible, comfort, health, and safety benefits when measures in a whole-house context.*

We strongly agree with PG&E's statements here that the program measures have been the foundation of low-income energy programs in the United States and that individually, these measures produce small energy impacts and most of their effect is achieved together as a package. That is why it is so important to view the program cost-effectiveness as a whole and not remove individual measures.

### **Attic Insulation**

PG&E indicates that attic insulation did not pass the cost effectiveness tests. However, they propose that attic insulation remain as a measure in the program. Attic insulation did pass for SDG&E and SCG, which again brings into question the accuracy of the Impact Evaluation Study Draft. While we support attic insulation as a measure, we also support increasing the levels of both the minimum required to receive attic insulation and the maximum allowed to be installed under the program. Currently, the program requires contractors to walk away from homes with an existing R-value of 12 or higher. We have completed some initial research and can find no program where the recommended level of ceiling insulation is adequate at R12. In fact, most programs require the home to be insulated to an R-value of 38 to receive a rebate or performance payment<sup>4</sup>. Therefore, our recommendation is to bring levels of insulation up to a

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<sup>4</sup> See IOU rebate programs and Energy Upgrade California

minimum of R38, from R19 for the 2012-2014 program cycle to complement a comprehensive energy saving package and to re-evaluate the results of the impact study.

PG&E also notes under section G 4, that in the 2009-2011 program, attic insulation *did* meet the minimum energy savings threshold, offering the largest therm savings of the gas measures. We would question how this measure went from offering the largest therm savings to one of the lowest in just one program cycle and would suggest that before we make any major program changes based on the Impact Evaluation Study Draft, the results of the study be re-evaluated. As well, we want to point out that in the same section PG&E goes on to write, “even in the 2009-2011 ESA Program, it [attic insulation] was installed much less frequently than in the past, as most homes already have adequate insulation levels. We would again reiterate that R12 is not considered an adequate level of insulation by the CEC standards, DOE standards or in the insulation and energy conservation industry.

We would also point out that while PG&E is requesting standard attic insulation remain in the program, the new measure evaluated Attic Insulation-R19 which was not recommended (adds insulation up to R30 from the R19 level), passed the cost-effectiveness tests at the same level or higher as the standard attic insulation measure in many climate zones<sup>5</sup>.

### **Air Sealing and Envelope Measures**

Here is another measure that is the foundation of energy savings for any home and should be viewed as part of an overall comprehensive package of measures. Many homes we service have large holes in the walls, ceilings, doors and around windows and would not be corrected were it not for this program. PG&E notes air sealing is often the only

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<sup>5</sup> PG&E ESAP Applications 2012-2014, Attachment A-6

viable measure available to customers residing in multi-family units. The Council strongly supports the inclusion of this measure for all housing types, including multi-family and suggests the Commission require all Utilities to add this measure back in any climate zones where it was removed in the 2009-2011 cycle. This measure alone will significantly increase the number of multi-family units served under this program.

### **Water Conservation Measures**

As PG&E points out, this is another low-cost measure that provides a significant benefit to residences. More importantly is the increased scarcity and cost of water resources in California. Unabated use of water has an impact on not only the low-income community, but also reaches beyond to critical industries like farming, etc. The Council suggests ensuring this measure is available to all housing types, including multi-family homes where the measure may not have passed the minimum cost-effectiveness threshold. In addition, this measure group if available will increase multi-family participation in the program.

### **(b) New and Proposed Measures**

Both PG&E and SCG propose to add the thermostatic showerhead adapter as a measure primarily based its savings level and the success of the SDG&E installations of this measure. The Council supports this new measure and believes it will add value to the program offerings.

We would also suggest the Commission consider requiring PG&E to offer Furnace Clean and Tune. While this measure passes the cost-effectiveness tests for SCG, it does not for PG&E. Many low-income customers do not have the ability to pay for this measure on their own and it is our experience that most HVAC systems are in dire need

of maintenance. As with our earlier suggestions, the availability of this measure will also increase the multi-family participation.

As we stated earlier, we suggest the inclusion of the measure Attic Insulation R19 to the program mix to bring the level of attic insulation in the homes we serve to R30 or R38, which is the DOE recommendation. This measure provides long-term verifiable savings, which is in line with the Strategic Plan.

**(c) Retired Measures**

The Council opposes the retirement of duct test and seal (DTS) and Central and Room Air Conditioning. We believe additional discussion is warranted here for several reasons. First, DTS is a measure required by the CEC to be Title 24 compliant when installing a new furnace. Therefore, either the Utilities will have to capture all DTS under the furnace repair and replacement program and not report the energy savings for this measure or list the measure separately and report those savings. If DTS is going to be categorized as a separate measure so the utilities can capture and report the energy savings, then DTS needs to be a measure in the program. If the costs are listed under the furnace repair and replacement program with no balancing category to capture the energy savings associated with the measure, the reported cost-effectiveness of furnace repair and replacement will be lower than the Utilities are reporting.

Secondly, virtually all programs, whether rebate or performance based, require the ducts to be tested and sealed if necessary in order for participants to receive the rebate or performance payment. This is true with the Utility rebate programs as well as Energy Upgrade California. In fact, you cannot participate in the Basic Path of the Energy Upgrade California program unless you have a central heating system where ducts exist,

that is how important the savings for DTS are to comprehensive energy retrofit<sup>6</sup>. A comprehensive approach to energy conservation is imperative to meet the energy savings demands of California.

Central Air Conditioning and Room Air Conditioning are just as important and speak to our ability to provide a comprehensive energy retrofit. Just as PG&E is asking to ensure infiltration measures are included for all climate zones, we should make sure we are taking advantage of all available opportunities for energy savings when we are at the customer's home. We recognize there are many measures when looked at individually that do not provide as much energy savings as we would like, nevertheless, it is important to view the overall savings per home, not per measure. This is apparent when we review the Program Cost-Effectiveness tables the Utilities have submitted in their applications<sup>7</sup>. While an individual measure may be rated at the .25 level, the program savings as a whole virtually triples when the program views the cost-effectiveness at a program level. Now is not the time to chip away at the energy savings we can achieve in a low-income residence.

## **J. Budget**

The Council is concerned the Utility budgets represent an inadequate amount to cover reasonable program costs over the 2012 to 2014 cycle. For example, PG&E is budgeting \$1253 per home in PY2012, \$1264 per home in PY2013 and \$1308 in PY2014<sup>8</sup>. That represents an average of about a 2% increase in the cost per home from year to year. While SCG proposes an average increase of about 4%, SDG&E and SCE increases are even lower than PG&E and certainly do not even cover the cost of inflation.

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<sup>6</sup> <https://energyupgradeca.org/overview>

<sup>7</sup> PG&E ESAP Applications 2012-2014, Attachment A-5

<sup>8</sup> PG&E ESAP Applications 2012-2014, Table 1-1, page 1-2

If a benefit of these programs is to provide living wage jobs, contractors are unlikely to be able to provide even cost of living increases to their employees once the cost of material, insurance and fuel increases are considered.

In addition, we should discuss the opportunity to shift funding from outside the budget for Energy Efficiency (items that do not produce any energy savings) to the actual installation of measures that produce energy savings. For example, according to Attachment A-1 for PG&E, the drop in requested funds from 2011 to 2012 amounts to a 13% decrease (\$143,658,287 to \$125,126,000) matching the 13% decline in actual units. However, costs for PG&E's in-house inspections drop only 1% for the same period (\$5,917,128 to \$5,847,000), only 9% for PG&E's general administration (\$3,892,750 to \$3,550,000) and costs for regulatory compliance actually go up 19% from 2011 to 2012. It sounds like there additional funds available and perhaps these funds would be better spent on actual energy efficiency.

- **Reduction in Workforce**

According to Attachment A-3, PG&E is reporting 133,329 homes serviced in 2010 and in PY2011 PG&E is reporting 126,248 customers served. That is a 6% reduction in homes served and subsequently a significant reduction in the total workforce. The problem will only intensify from 2012-2013 where PG&E proposes a sharp decline in the number of homes served from 127,000 to 110,000.

For SCG the problem with employee layoffs will be even worse. SCG is reporting 165,000 customers served in 2011. However, they budget for a decline to 129,106 in PY2012 and 100,249 in PY 2013 and 2014. This decline represents a 22% reduction in the homes served in year one and almost a 40% reduction from PY 2011 to PY 2013. If the SCG contractor system has grown to be capable to complete 165,000 customers per

year, certainly dropping the number of treated customers to 100,249 will result in significant layoffs of both the Utility and contractor employees.

To exacerbate the employment problem further, SCG is recommending a new position called Customer Assistance Representative (CAR)<sup>9</sup>. In this position, SCG envisions taking SCG Company employees and moving them into the ESAP positions (along with all employment costs) already occupied by CBO and Contractor outreach and assessment personnel.

In addition, as we stated above, these programs are an excellent opportunity to provide living wage jobs and provide a stimulus to a dragging economy. If we continue to drive the cost of the program down, contractors will not be able to provide living wages, benefits and cost of living pay increases.

The Utilities and Commission should carefully consider the implications of a reduction in service and the subsequent halting of the growth of a *green jobs* industry should these significant reductions be approved by the Commission.

- **Missing Budget Figures and Review of NGAT Costs**

The most limiting budget number is not included in PG&E's filing – the NGAT budget. While NGAT budgets are not listed in the PG&E application because NGAT funding comes from sources outside of the ESAP budget, the ability to pay for NGAT certainly affects the Utilities ability to complete the ESAP work. Sempra filed a PTM last year indicating they did not have enough NGAT money budgeted and asked to be able to track those expenses; PG&E has also indicated they will run close to maxing out on NGAT budget in PY2011. Therefore, it would appear the NGAT budget (including the

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<sup>9</sup> SCG ESAP 2012-2014 Application, page DM-6

number of homes expected to receive NGAT) is an integral part of this application process and we request PG&E make those numbers available.

Not only is understanding the total NGAT budget necessary but a discussion on the reimbursement rate for NGAT needs to take place. SCG has indicated they expect NGAT costs to be about \$4,200,000 each of the three years<sup>10</sup>. Because PG&E has not indicated their expected NGAT costs, we look to PY2011 for a comparison and it is our understanding PG&E budgeted \$2,500,000 for the 133,000 homes they expect to serve.

Both Utility budget levels estimate contractors will receive between \$34 and \$38 over the three years to perform NGAT services. A service that not only can take well over an hour to perform, but the \$34 to \$38 level is meant to cover the cost of insurance and the level of responsibility contractors take on once they perform an NGAT. These levels may be acceptable when the Utility performs their own in-house NGAT because the Utility can absorb a much higher level of liability than the contractors can. However, when the cost and liability are passed on to a small CBO or contractor, these organizations are placed at a serious disadvantage while exposing their organizations to significant litigation risks and costs. Moreover, our research of the industry standard for the NGAT service is between \$125 to \$250 per job. While we understand economies of scale for contractors, there is a significant difference between \$38 and \$125 for this service, especially when liability is taken into consideration and we respectfully request this be discussed moving forward.

- **Potential Budget Increases Need to be Addressed**

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<sup>10</sup> PG&E ESAP Applications 2012-2014, Attachment A-1b

We need to recognize that mid-cycle budget changes may be required. Two primary areas are due to the change in the refrigerator replacement policy and the need for NGAT.

The change to the policy of qualifying a refrigerator will almost certainly increase the level of refrigerators being delivered in the program. While we support this policy change, the potential impact on the number of refrigerators being delivered is unknown. If only 5% more refrigerators are delivered than estimated, that represents a 4.5 – 5 million-dollar increase in the budget. What happens if more refrigerators qualify than expected? In addition, in 2011, PG&E contractors are on their way to completing NGAT in 55% of the homes. A small shift in the next budget cycle outside of the historical norms of only a 2% to 4% increase in additional NGATs being completed will significantly affect the Utilities ability to meet their unit goals. The Utilities and Commission should recognize the potential need for mid-cycle budget changes and incorporate the ability to make these mid –cycle changes without interruption of service to customers.

- **Schedule**

We respectfully request the Commission either approve a schedule that ensures there will be no break in service or approve bridge funding should the program not be up and running by January 1, 2012. California has a significant workforce relying on these programs and any hiatus would be detrimental to that structure.

**Closing**

As you can see, many issues should be addressed as we move forward in the application process. The Energy Efficiency Council looks forward to participating as a Party in this proceeding.

RESPONSE OF THE ENERGY EFFICIENCY COUNCIL ON 2012-2014 UTILITY ESAP  
APPLICATIONS

If you have any questions or comments pertaining to this filing, please feel free to  
contact me.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'ARago', with a stylized flourish at the end.

Allan Rago for The Energy Efficiency Council

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June 17, 2011

June 8, 2011

Ms Carol Zabin  
Donald Vial Center on Employment in the Green Economy  
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RE: *Comments on the California Workforce Education and Training Report*

To Whom It May Concern:

As a longtime provider of energy efficiency programs in California with extensive experience in workforce training and development, Richard Heath and Associates, Inc. (RHA) recognizes the importance of a thorough review of California's workforce education and training needs in the energy efficiency sector. RHA understands that with a trained and prepared workforce, the more California can accomplish in energy efficiency. Enclosed please find our observations and comments on the California Workforce Education and Training Report.

Thank you for the opportunity to submit our observations and comments. Please feel free to contact the undersigned should you have any questions or if you would like to discuss the enclosed document further.

Sincerely,



Tom Barrett  
Senior Advisor,  
Strategic Planning and Technical Resources

offices  
ALAMEDA  
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# Comments on the California Workforce Education and Training Needs Assessment

Prepared by Tom Barrett  
RHA, Inc.

RHA recognizes the importance of a thorough review of California's workforce education and training needs in the energy efficiency sector. The better trained and prepared the workforce, the more we can accomplish. As a longtime provider of energy efficiency programs in California with extensive experience in workforce training and development, we provide our observations and comments on Part One of the report as listed below.

## 1. Page XII

*“The residential sector represents about one-third of California’s current electricity and natural gas consumption. The EE Strategic Plan sets ambitious targets for energy use reduction in existing housing stock, and aims to give all eligible low-income customers the opportunity to participate in the fully-subsidized Low-Income Energy Efficiency (LIEE) program. The statewide residential retrofit incentive program mandated in AB 758 is now under the umbrella of Energy Upgrade California and has a budget of approximately \$275 million from all funding sources. The IOU LIEE program has a budget of approximately \$310 million for 2010 and the federally funded low-income programs have increased their budget to \$257 million due to a temporary influx of 2009 American Recovery and Reinvestment Act (ARRA) funds.”*

*“In all three sectors, the key workforce issue that surfaced in our interviews was the high incidence of poor quality installation, affecting immediate energy savings and the growth of the energy efficiency sector. This issue is most dramatic in the HVAC sector, where prior studies have reported that 30 to 50 percent of new HVAC systems and up to 85 percent of replacement systems are installed incorrectly, and that by 2020 potential energy savings from higher quality HVAC installation and maintenance could eliminate the need for the equivalent of two combined- cycle gas-fired 500 MW power plants. This same issue is prevalent in the residential retrofit and commercial advanced lighting sectors, where poor quality installation and the resulting failure to deliver on expected energy savings has undermined market growth, including financing.”*

### Comments:

By stating “in all three sectors,” the author claims there are significant quality issues within the HVAC sector, residential retrofit (low-income and retrofit incentive programs) sector, and commercial lighting sector, yet the authors provide supporting data for only the HVAC, residential incentive, and commercial lighting programs. The inclusion of low-income programs in the residential sector implies there are significant quality issues in this area, when this is not the case according to the full report.

While the author is certainly correct that “prior studies” have found “that 30 – 50 percent of new HVAC systems and up to 85 percent of replacement systems are installed incorrectly”, this statement is based on a report published in 1999 and based on studies conducted in the mid-1990s by John Proctor and others. The findings of these studies resulted in utility-provided; HVAC installation training for contractors and innovative incentive programs to address the inadequacies identified by these reports. The CEC also responded by adding more Title 24 requirements to address these issues at the permit compliance level where they had been ignored before.

Studies conducted by RHA in the mid-1990s on duct system installations found that HVAC installers were not installing ducts to code or using the proper materials to seal ducts, which resulted in duct failure, leaks, and poor performance. As a result of these studies, PG&E developed a comprehensive program to train contractors on proper duct installation and sealing; provide rebates to incentivize contractors to install ducts to code; produce duct installation standards for contractors; and to monitor the program through quality assurance and control processes by utility personnel and third-party inspectors. These studies also informed the CEC to require duct testing as part of the Title 24 permit process to ensure proper installation. Similar studies today would provide vastly different results than those cited in the WE&T Needs Assessment.

Commercial lighting retrofit programs are described in the WE&T report as also suffering from poor quality installations, But most quality issues observed in the field have not been due to poor quality installations, but from poorly manufactured lamps and ballasts, which led to early lamp and ballast failure, much to the dissatisfaction of customers. RHA’s commercial lighting retrofit program technicians (trained in-house) have installed tens of thousands of CFLs, energy-efficient lamps and ballasts, and energy-efficient fixtures with almost all “quality” issues stemming, not from poor installation practices, but from equipment failures. It is unclear how the author reached the conclusion that commercial lighting retrofit programs suffer inadequate training which results in poor quality installations as our experience with commercial lighting retrofit programs, documented by high customer satisfaction levels and positive evaluations by utility verifiers, doesn’t result in the same conclusion.

## **2. Page XIII**

*“Low-Income Energy Efficiency programs, which have received significant additional funding through both one-time ARRA funds and on-going ratepayer funds, continue to take a traditional single measure approach to energy retrofits. Sometimes this work is based on subcontracting individual measures to other firms or individuals in ways that discourage leveraging of all available funding sources or linking of measures in a whole-house approach. The IOU LIEE programs, whose goal is to help low-income families reduce energy bills, may have an opportunity to both increase energy savings and improve access to good jobs if they are restructured.”*

Comments:

The authors' characterization of LIEE and DOE WAP (ARRA) programs as taking "a traditional single measure approach" does not accurately represent the approach used in LIEE (now ESA – Energy Savings Assistance) and DOE WAP low-income programs. Low-income energy efficiency programs use a whole-house, "prescriptive" approach that is designed to install "all feasible measures" and do not take a "single measure" approach. This statement implies that low-income weatherization programs are not sophisticated or effective as the Whole House programs, which is not true.

In the low-income, whole-house, prescriptive approach retrofit measures are "prescribed" from a standardized list of cost-effective residential energy measures. These lists of measures have been vetted through numerous in-situ studies and building simulations. They are also Climate Zone based and typically meet stringent cost-effectiveness criteria required of each program's funding sources. The funds available on a per unit basis for each program and the cost-effectiveness criteria are different, so while both programs install similar measures, the State's Federally-funded programs can spend more per household and operate from a longer list of measures to install. While the lists of measures are not exhaustive, they do cover almost all cost-effective energy retrofits possible. Both programs also address combustion appliance safety issues that may arise from tightening the building shell. In addition, federally funded low-income programs also use a portion of their funds to fix non-energy items that may be hazardous to occupants.

The prescriptive approach eliminates the need to do an energy audit to justify the installation of any of the measures. An assessor or energy specialist identifies measures to be installed on a home from the list, which is passed on to the installation crew. By installing from a list of measures, preselected for cost-effectiveness, the LIEE and WAP programs not only save time, but are also able to spend more on energy saving measures by eliminating the cost of an energy audit for each household.

The "traditional single-measure approach" can be characterized by utility and government-funded, non-low income incentive programs. In these non-low income programs, homeowners and/or their hired contractors purchase and/or have installed an energy-efficient piece of equipment or measure and then apply for an incentive (utility rebate and/or government tax credit). Often contractors use marketing services (sales forces) with limited energy knowledge to market the incentives under the guise of energy savings to homeowners. No trained energy auditor makes a determination as to whether or not the home will benefit from the measure being promoted. The measure may be installed by the homeowner or by a contractor, who may or may not have specific training pertaining to proper installation of the retrofit measure. This approach in the non-low income sector is completely different from LIEE/ESA or WAP approaches and often leads to poorly installed measures, inadequate assessment of energy savings potential, and customer dissatisfaction. Homeowners and untrained contractors can inadvertently cause a number of air quality and safety issues when they seal a home too much or fail to implement combustion appliance safety requirements.

A third approach, the “Whole House Approach”, is a “performance approach”. This approach utilizes a detailed energy audit and building diagnostics to create a list of energy retrofit measures for the homeowner. The approach is based on the concept of a “house as a system” where changes made to one part effect other parts and this interaction needs to be taken into account to make the house more efficient. Many of these same diagnostic tests are also conducted in the DOE WAP prescriptive approach and the LIEE/ESA program conducts natural gas appliance testing in their prescriptive approach. The end result is very similar to standard weatherization practices; however, as one spokesperson stated at a conference, “Weatherization is a low-income program, whole-house retrofits is not a low-income program.”

While the whole-house approach is considered by many to be a “Best Practice” and the “gold standard of residential energy retrofits”, the total cost to implement all the recommendations to make an older house energy efficient, can be in the \$20,000 - \$30,000 range, or more. This type of “up-scale” weatherization work is the “high road” goal that is touted as the place the State’s workforce development is trying to reach; however, the cost of doing the work and the ability to for a homeowner to pay for the work is the major obstacle to this approach. Not only may the energy savings never cover the cost of the improvements, but also many people may not be able to finance the work without deep incentives or special financing programs. Economic factors, more than the lack of a trained competent workforce, are impeding the progress of this approach in the non-low income market segment which is larger and consumes far more energy than the low-income segment and has the greatest opportunity for meeting the State’s goals.

The low-income programs (DOE WAP, LIHEAP, and LIEE/ESA) utilize program leveraging to provide low-income households with the best package of measures for which they are qualified. Besides program requirements that households receive a minimum number of measures (not a single measure) agencies and contractors strive to provide as much as they can within program limitations. The authors’ portrayal of this segment of the energy retrofit market appears to be based on inadequate information. Restructuring existing programs that have function successfully for over 20 years based on the conclusions stated would have little effect on increasing energy savings and improving access to “good” jobs. These programs have already added hundreds of workers at all levels from clerical to managerial to the State’s job force.

### 3. Page 103

*“The main policy instruments aimed at achieving residential energy efficiency goals in the state are direct-install weatherization programs for low-income households, and incentive programs for homeowners. In addition, Titles 20 and 24 of the California Code of Regulations set minimum standards for appliances and work specifications for home remodels. As mentioned above, these codes were recently updated to require more stringent energy efficiency measures and third-party inspections. However, in many cases remodeling and retrofit work in the residential sector is done without the required permits, so the work is never inspected to ensure it is compliant with these codes.”*

#### Comments:

The authors fail to understand that most weatherization work does not require permits in most jurisdictions. Energy efficiency retrofits also do not require Title 24 analysis, with the recent exception of HVAC system replacement. Installing insulation, water saving devices, caulking, weather stripping, energy-efficient lamps, and other energy measures (tuning up a heating and/or air conditioning system) do not require permits. In many communities, energy efficient window retrofits (which are not part of the LIEE/ESA low-income program) also do not require a permit.

In California, the LIEE/ESA and DOE/LIHEAP programs utilize program-specific Weatherization Installation Standards (WIS), internal QA inspections, and third-party QA/QC inspections. The WIS addresses installation issues that may not be covered by building codes to ensure a quality installation. Each crew has their own WIS Manual in their vehicles to refer to while on the job-site. Third-party inspectors utilize the same WIS manual to inspect Wx contractors' jobs for proper installation. All the low-income programs in the State (LIHEAP, DOE WAP, and LIEE/ESA) require that all HVAC work goes through the permitting, inspection, and signing off process. This is not the same in the private sector where the permit process can be easily avoided.

In PG&E's service territory during the first part of 2011 the "All Contractor Pass Rate" as of April showed that there was a 94.9% pass rate among PG&E's Wx contractors and a 97.8% Contractor Performance Index for installed measures for the first quarter of the year. Measures and/or homes that did not "pass" are corrected after the inspections. Contractors are required to maintain a 90% minimum pass rate in the All Contractor Pass Rate category and a 95% pass rate for the Contractor Performance Index. So while the report is correct that work is never inspected to the building code, it fails to recognize that most weatherization activities are not regulated under building codes and that the quality of weatherization work is determined by standards developed and enforced by the IOUs.

Weatherization work utilizing DOE and LIHEAP funds is also conducted using weatherization installation standards, third-party inspections, and corrective action. When

problems are identified in the field by the QA/QC inspectors, the State's WAP program provides additional in-field training and technical assistance to help poor-performing agencies improve their installation practices to deliver a quality product.

Unlike weatherization measures installed under a State or IOU weatherization program, in the non-low income programs there are no installation standards or third-party inspections of the work to ensure a quality installation.

#### **4. Page 107-108**

*“...WAP and most LIEE workers, including installation workers, are required to attend short-term trainings at approved training facilities (such as PG&E's Energy Training Center in Stockton) before starting work. These training programs provide certificates of completion to workers, which are the only certificates that were identified for the weatherization installer job category in California. PG&E and SCE have established specific training standards and courses; these courses follow a specific set of training standards established by the utilities. However, the other two IOUs do not require their contractors to follow specific standards.”*

Each LIEE/ESA weatherization program requires workers to be trained (see the discussion on the first page); however, only PG&E has a formalized weatherization training facility. SDG&E and the SoCal Gas Company require their contractors to train weatherization workers in-house. Gas combustion appliance safety training happens through at the Community Action Partnership of San Bernardino County's Weatherization Training Center.

In SDG&E's case, the program is too small to operate a full-fledged training program. The Wx contractors, who have been successfully (based on QA/QC inspections) working on the program for over ten years train their employees in-house. Two of SDG&E's Wx contractors are also State WAP contractors who have had their workers put through formal Wx training.

SoCal Gas's basic Wx training is provided by a Gas Company employee at the request of the contractor and is held at the contractor's facility.

## 5. Page 107

*“Though the WAP and LIEE programs are very similar, the training requirements differ, so that a worker trained for a WAP contractor is required to undergo new training to be eligible to work for a LIEE contractor. The DOE is now funding efforts to align all the major trainings and link them as much as possible to their new voluntary guidelines for skill standards and training, discussed below.”*

### Comments:

Training requirements are different (see discussion of the training below) between the utility company and State Wx programs. This reflects the amount and type of work to be performed that is based on the funds available. IOU programs were not developed to address every energy issue in every home and yet they have been effective in reducing energy consumption.

DOE has no regulatory authority over IOU weatherization program training requirements, so while it could be developing a set of training standards, its aim is to make training consistent throughout the U.S. for its program (WAP).

Required training for low-income weatherization programs funded by the CPUC (LIEE/ESA) is limited to a series of courses provided by the utility companies (except SDG&E and SoCal Gas Company):

- Basic Weatherization (5 days)
- NGAT or combustion appliance safety (5 days)
- Energy Specialist (8 days)
- Duct Testing and Sealing (1 day)

Required training for Federally-funded LIHEAP, and DOE Wx programs managed by the State (CSD) are required for the following job classification: Assessors/Auditors, Weatherization Installers, and Quality Assurance Inspectors and include the following training:

- Pre-Weatherization Training: Measurement, Energy Basics, Tool Types and Uses, Construction Nomenclature
- Basic Weatherization
- Health and Safety (Basic Workplace Safety (OSHA); Ladders; Slips, Trips & Falls; Heat Exposure; Vermin; and Customer Issues)
- Environmental Hazards (lead, asbestos, mold, etc. awareness training)
- Lead-Safe Weatherization Practices
- Combustion Appliance Safety
- Duct Blaster/Blower Door Diagnostics
- Advanced Weatherization (optional)
- Energy Audit Software training (optional)
- Field Assessment Training (Assessors only)
- Inspector Field Training (QA Inspectors only)

Informal training, AKA apprenticeship, mentoring, on-site training, on-the-job training (OJT), or in-field training, was not discussed in this document. Informal training is the most important aspect of a person's skilled learning path in any technical training program. Formal training provides the knowledge base for activity and information training provides the skill base a worker needs to develop competency. The weatherization training programs rely heavily on the apprenticing and OJT of newly trained crewmembers by "older" crewmembers. SDG&E does not provide basic weatherization training, as their program is too small to warrant the expenditure of a training facility; however, the contractors providing weatherization services have been the same contractors for over twelve years who provide all their training to crewmembers on-site. A couple SDG&E's ESA contractors are also CSD Wx agencies that have received formal training.

With regard to career pathways for weatherization workers to HVAC technician or energy auditor or beyond, it is unlikely to be a straight path process from the low-income weatherization field as most weatherization in the State is done without an energy audit. In these cases, the career pathway typically proceeds from to entry-level position to installer, NGAT technician, Crew Leader, Inspector, Field Foreman, Supervisor, and even Project Manager. At each step employee wages and benefits increase and create the "higher road" opportunities within the industry. While the need for energy auditors is small, the skill set is also very different as energy audits are done with computers and there is a need for a different type of technical training – computer skills and typing for potential energy auditors. This simple lesson of supply and demand was missed by community college administrators who obtained grant funding to train hundreds of energy auditors, who graduated to a market with little demand for their services.

The low to high-skill technical pathway in weatherization also does not exist for many weatherization workers where the higher paying opportunities are from supervisory and management positions. Higher-skilled technical work such as HVAC repair in State-run WAP programs is often "subbed out". A number of agencies and contractors have skilled and trained personnel with HVAC skills and do their own limited HVAC work; however, many do not have HVAC technicians on staff and end up hiring HVAC contractors to do this work. In some cases a weatherization installer with experience sealing ducts could cross over to another company in the HVAC sector. The LIEE/ESA program contracts much of its low-income repair and replacement (R&R) HVAC work to licensed HVAC contractors and is not included as part of the weatherization program.

Community colleges and some four-year colleges jumped into weatherization training in 2009 without talking to weatherization contractors or agencies. If they had, they would have found out that WAP agencies needed to ramp up immediately to meet the additional unit goals and could not wait for students to attend one to three semesters of training. Furthermore, graduates from these programs would still have to complete the State-certified Wx courses to work on its program.

The ARRA funding created an opportunity for hiring more weatherization workers; however, the "ramp-up" for training individuals happened at the same time as the need

for getting units weatherized, so weatherization agencies needed to hire all available workers, trained or untrained, and could not wait for the two-year community college training program to produce trained, unskilled workers. Untrained workers were hired and trained in the industry-training model – short specific technical classes and on-the-job training under the supervision of a more knowledgeable crew person.

## 6. Page 108

*“In residential retrofit, the quality issues that surfaced in our interviews included concerns about safety, loss of immediate potential energy savings, and slowing down the expansion of the market for retrofits. Safety concerns were focused mostly sharply on the necessity of testing for appliance combustion safety in order to avoid dangerous buildup of toxic gases inside the building as a consequence of envelope sealing. In terms of immediate energy savings, interviewees identified both single measure quality issues, such as improper installation of insulation, and the more sophisticated diagnostics and workmanship needed for whole house retrofits. Finally, interviewees also emphasized the importance of consumer satisfaction for market expansion. Since growing the market for homeowner investments in energy efficiency retrofits depends in large measure on word-of-mouth advertising and other social marketing, consumer dissatisfaction resulting from inadequate work quality can significantly undermine sector growth.*

*Traditionally IOU incentive programs and low-income weatherization programs have relied primarily on post-installation inspections of a sample of dwellings. This method only captures a fraction of the work that is done, and when poor quality is found, often requires expensive reworking. Though certainly part of any quality assurance package, back-end inspections have not rid programs of quality concerns.”*

### Comments:

In many cases in the non-low income sector, single measure installations such as ceiling insulation, wall insulation, and appliance replacement are performed by individuals without training, installation standards, and the benefit of building codes. There is no quality assurance or control for these installations and often the only verification is to ensure that the item was installed before a rebate is issued.

Single measure installations should not be confused with LIEE/ESA programs. In these programs, installers are trained and monitored through third-party quality assurance and follow-up post inspections, which can result in consequences to the contractors. Even IOU rebate programs have a “back-end” quality inspection program.

Back-end inspections will never rid programs of quality concerns; however, it is impossible to conduct “front-end” inspections and “upfront contractor requirements, including licensure, permitting, a standard agreement, and a mandated orientation course” or hiring only individuals and companies sporting “certificates.” These requirements are

encouraged; yet do not guarantee quality installations, especially in a cost-competitive market where contractors underbid each other and to cut cost by cutting corners and hiring “low-road” workers to make a profit for their efforts.

The author does not discuss what “loss of immediate potential energy savings” and why this is an installation and training issue.

## 7. Page 109

*“The “Recovery through Retrofit Workforce Working Group,” convened by the Obama administration to scale up the residential retrofit market, identified the lack of a skilled and credentialed workforce as a key obstacle to the industry’s growth. As a result, the U.S. Department of Energy (DOE) has developed a set of industry guidelines for worker certifications and training program accreditation for the four main field job categories: Installer/ Technician, Crew Chief, Energy Auditor, and Quality Assurance Inspector.<sup>45</sup> These guidelines were created through rigorous technical analyses of job tasks and minimum technical requirements, standard work specifications, and essential knowledge and skills for workers in each job category. The development of these guidelines followed well-known protocols that included substantive feedback from industry and educators. They provide the first standard for the entry level job category of weatherization installer/technician, which can be used to ensure workers are prepared to do quality work. Now, BPI, WAP, and training programs around the country are working with DOE to align their standards with these basic guidelines. Los Angeles Trade–Technical College (LATTC) is one of the training centers funded by DOE and is working to align the WAP, LIEE, and other curricula. The DOE is encouraging these voluntary standards, and it remains to be seen whether these guidelines will be adopted as mandatory certification requirements by any major state or local retrofit program.”*

### Comments

The author fails to credit the State’s WP and LIEE/ESA programs with the programs set up to train weatherization workers, energy specialists, energy auditors, assessors, and quality assurance inspectors which have been in place for years. The effort that DOE is undertaking in developing standardized training and installation guidelines is aimed at states and organizations that have never provided training to their weatherization workers or have even provided weatherization services to low-income households. California has been a national leader in weatherization since 1978 and most training programs and installation standards used by DOE WAP programs were derived from California’s weatherization training and standards.

While LATTC is trying to “align” WAP, LIEE/ESA, and other weatherization and energy retrofit curricula, they are basically the same training materials (for WAP and LIEE/ESA), written by the same person (James E. O’Bannon of RHA). Aligning training

or developing a “one training fits all” approach will not necessarily work until program delivery and standards are standardized and aligned.

## 8. Page 109

*“The challenge LATTC articulates is that in order for certification to actually lead to strong career pathways with higher skills and higher wages, there must be adequate floors on wages and wide acceptance of the value of certification within the industry, so that employers are willing to pay certified workers more. It is not clear yet whether the residential market can offer these conditions.”*

### Comments:

The authors fail to point out that while it would be nice to have “floors on wages and acceptance of the value of certification,” contracts are awarded to weatherization providers based on price of services delivered. When the Request for Proposals (RFP) is announced by a utility company or the CPUC for LIEE/ESA programs, winning bidders have to provide the greatest number of units served at the lowest cost. Over the years, successive bidding cycles demand that proposers increase the number of units to be served and measures to be installed at lower costs. This funding deflation works against labor and material cost inflation and the CPUC and utilities require competitive companies to provide “more for less” it forces the price contractors can pay for labor down. In other words, the bidding process drives the “low-road” response regardless of the certifications and skills of the workforce.

At the State level, DOE and LIHEAP ARRA funding had the opposite effect on labor costs. The Davis-Bacon requirement for minimum labor rates drove up the cost of labor, which benefitted workers. The Davis-Bacon labor rates came directly from the DOE and LIHEAP funded weatherization programs, which are typically higher than other construction rates in most counties due to the nature of the agencies with Wx programs. However, funding is provided from the Federal government to pay for these labor rates and measures must meet a cost-effectiveness criterion that covers these costs. This cost-effectiveness requirement is significantly different from the CPUC’s cost-effectiveness criteria, which is continually ratcheted downward while the federal criteria only covers the direct cost-to-install and the actual cost of the measure. Administrative and other costs are ignored in the DOE cost-effectiveness calculation, making cost-effectiveness a very relative term.