

Docket: : A.14-11-007, et Al
Exhibit Number : _____
Commissioner : C.J.K. Sandoval
Admin. Law Judge : A. Colbert
Witness : K.C. Watts-Zagha,
: Louis Irwin



OFFICE OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

REPORT OF
THE OFFICE OF RATEPAYER ADVOCATES ON
THE CONSOLIDATED PROCEEDINGS
REGARDING
ENERGY SAVING ASSISTANCE
PROGRAM (ESA)

San Francisco, California
April 27, 2015

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1 **I. ESA-INTRODUCTION**

2 The ESA program supports low income customers by promoting affordable
3 energy, and a healthier and safe environment in residential dwellings. This
4 direction is embedded in statute¹ and has been implemented by a series of
5 Commission decisions, most recently D.08-11-031, D.12-08-044, and D.14-08-
6 030. The utilities' ESA program proposals for 2016-2017 endeavor to fulfill this
7 mandate by delivering bill savings, and improved health, comfort and safety.²
8 ORA's main goal in resolving these applications is for the Commission to ensure
9 the ESA program delivers substantial benefits to low-income customers, and that a
10 significant portion of those benefits are derived from energy savings.

11 The ESA program has a broad reach³ and a large budget. Beginning in
12 2009, the ESA program doubled the number of homes it reaches each year, and
13 doubled annual spending as well. Figure 1 shows a summary of the ESA program
14 over time, from 2003 through 2017. In Figure 1, the red bars/numbers show
15 number of homes treated. The blue line/numbers show program costs. This
16 doubling of effort began in 2009, and can be considered the beginning of the new
17 era of ESA. It was driven by the California Energy Efficiency Strategic Plan
18 (Strategic Plan).⁴

19

¹ California Public Utilities Code sections 327, 381.5, 382, 739.1, 739.5, 2790.

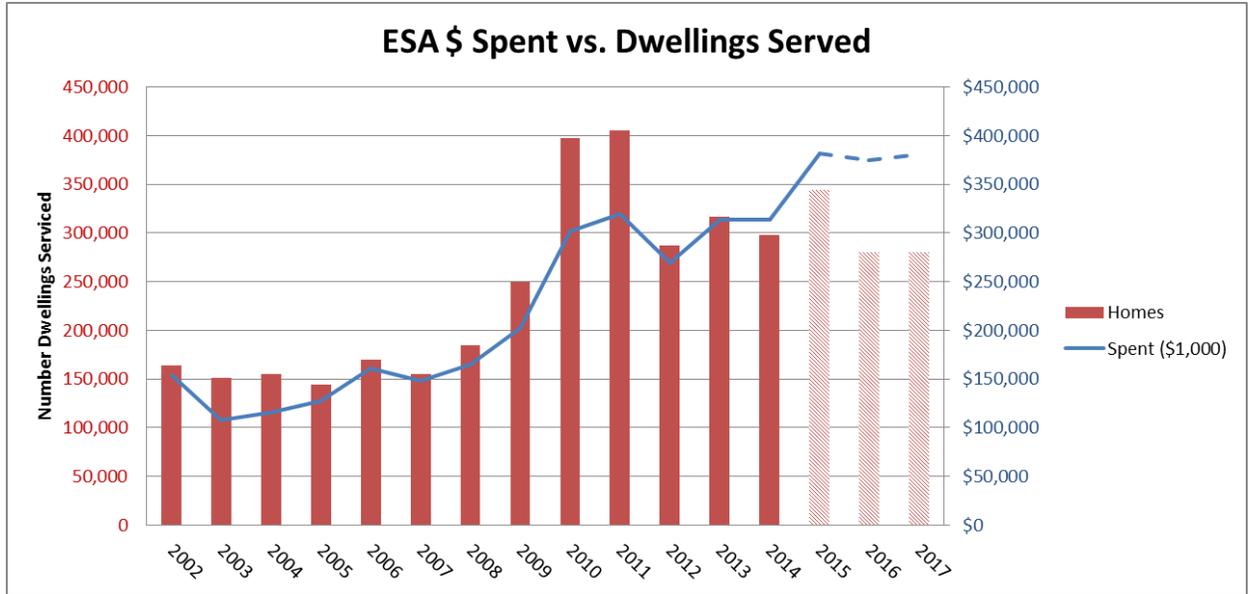
² The utility applications propose programs for three years; 2015-2017. Because the program year 2015 will be nearly over by the time these program applications are resolved, ORA's testimony focuses on the program years 2016-2017.

³ IOU ESA programs have reached approximately 60% of the four and a half million low incomes dwellings estimated eligible for the program for the timeframe 2009 - 2020. The IOU applications indicate they, at the current pace, they could service the remaining eligible and willing customers even before the year 2020. .

⁴ California Public Utilities Commission, California Energy Efficiency Strategic Plan, adopted September 18, 2008, and last updated in January 2011

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Figure 1
Number of dwellings serviced, and program cost, 2002 -
2017



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The Strategic Plan set two specific policy goals for the ESA program. The first goal is sets targets for servicing all low income dwellings, and the second is to utilize ESA to provide beneficial energy savings to low income customers.

The first Strategic Plan goal directs utilities to service all⁵, not just some, low income dwellings with energy efficiency. In the first six years of the twelve year period of the Strategic Plan (2009 – 2014), the utilities have successfully reached and serviced more than 60% of the 4.5 million low-income dwellings estimated eligible and willing for the ESA program⁶. All four utilities predict that

⁵ The programmatic initiative uses the term “all eligible and willing” to signify that there are acceptable limits on which dwellings will ultimately receive the ESA service. The program has worked to track and define the term “eligible and willing” since 2009, adding ESA Table-8 to the utility Annual Reports to identify and track reasons that customers are not eligible or willing. The estimate of “unwilling and ineligible” has been contested, see in A.11-05-018 Reply Testimony of Mark Aguirre 12/9/2011, pp. MA-3 and MA-4.

⁶ Athens Research workpapers supporting February 11, 2015, Compliance Filing of PG&E on behalf of PG&E, SCE, SDG&E Updated Eligibility Estimates.

1 they can reach the entire estimated and willing dwellings by 2020, with room to
2 spare.

3 The second Strategic Plan goal states that the ESA program “will be an
4 energy resource by delivering increasingly cost-effective and longer-term
5 savings.”² The ESA program has not delivered increasing cost-effective savings.
6 As shown in Figures 2 - 5 below, program costs will nearly double, and energy
7 savings per household will remain static for PG&E and SDG&E. For SCE and
8 SoCalGas, program costs will double, but the energy savings projected for 2016
9 and 2017 also increase significantly, particularly at the household level. As shown
10 in Figure 4 below, SCE’s predicts that its ESA customers will save 572 kWh a
11 year on average, an increase from 429 in the current cycle. As shown in Figure 5
12 below, SoCalGas predicts raising the therms saved by its ESA customers from 24
13 to 50, on average.

14 **Figure 2**

15 **PG&E ESA Cost and Energy Savings per household**

	2009-11 Reported	2012-14 Reported	2016-17 Projected
Cost per Household	\$1,018	\$1,060	\$1,733
kWh saved per household	377	340	406
Therms saved per household	20	14	21

16

² California Energy Efficiency Strategic Plan, January 2011 update, Section 2, pp. 23-24.

1 The PG&E level of savings in Figure 2 above translates to about \$50 per
 2 year, or \$4 per month, savings on the combined electric and gas bill per ESA
 3 customer.⁸

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Figure 3
SDG&E ESA Cost and Energy Savings per household

	2009-11 Reported	2012-14 Reported	2016-17 Projected
Cost per Household	\$861	\$1,006	\$1,533
kWh saved per household	324	383	282
Therms saved per household	17	17	16

7

8 This level of energy savings translated into \$107 in electric and gas bill
 9 savings to SDG&E ESA customers in 2013, and to about \$55 a year for SDG&E
 10 ESA customers in 2014.⁹ This trend is troubling. ORA would expect that with
 11 experience, and following the Strategic Plan policy guidance, the benefits
 12 provided to the low income customers would increase, and the costs per home
 13 should be decreasing. Instead, we see the opposite.

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Figure 4
SCE ESA Cost and Energy Savings per household

	2009-11 Reported	2012-14 Reported	2016-17 Projected

⁸ PG&E Monthly ESA Reports, December 2013 and December 2014.
⁹ SDG&E Monthly ESA reports, December 2013 and December 2014.

Cost per Household	\$577	\$816	\$1,157
kWh saved per household	297	453	572

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2 The level of kWh savings translates into approximate \$55 - \$60 annual
3 electric bill reduction for a SCE customer.¹⁰

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Figure 5

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SoCalGas ESA Cost and Energy Savings per household

	2009-11 Reported	2012-14 Reported	2016-17 Projected
Cost per Household	\$615	\$928	\$1,164
Therms saved per household	25	24	50

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7 This level of energy savings translated into \$11 in gas bill savings, or \$1
8 per month to SoCalGas ESA customers in 2013, and to about \$19 a year for
9 SoCalGas ESA customers in 2014.¹¹

10 ORA’s position has been that benefits to the low income participant
11 households should be the defining metric of ESA. ORA supported a doubling of
12 the budget since 2009, but the benefits to the low income participants have not
13 kept pace.

¹⁰ SCE Monthly ESA reports, December 2013 and December 2014.

¹¹ SoCalGas Monthly ESA reports, December 2013 and December 2014.

1 The utilities propose generally similar programs and strategies for the
2 second half of the Strategic Plan period (2014 -2020). Two of the utilities also
3 propose starting to return to ESA homes that haven't been serviced for 8-10 years,
4 under the same program delivery scheme. Recent program evaluations have
5 questioned whether program design revisions are in order, or if the utilities should
6 continue with similar o the first half of the "Strategic Plan" years (2009-2014).¹²
7 Simply scaling up the ESA program is not enough, without scaling up the EE
8 benefits to each ESA program participant. Decision-makers often identify ESA as
9 a solution to energy burdens of low income customers.¹³ Unfortunately, the last
10 two evaluations of the energy savings results, or impacts, show decreases in
11 energy savings delivered through ESA since 2009.¹⁴ ORA has expressed
12 continued concern about flaws in the evaluations,¹⁵ but this is the only information
13 that parties have available at this point.

14 In the following sections, ORA makes recommendations designed to
15 increase the energy savings delivered per household at a reasonable cost.
16 Additionally, these comments identify program areas that need greater attention
17 and improvement than what is provided in the various utility applications.

¹² *2011 Low Income Needs Assessment*, December 16, 2013, Executive Summary, vii-xii.

¹³ The CSI Solar program SASH and the Multifamily Pilot programs were directed to coordinate with ESA to maximize and leverage benefits. The results of these efforts often report ESA is an insignificant help to joint program participants.

¹⁴ *2011 Impact Evaluation, Executive Summary* "For electricity, the current impact estimates are lower than those from PY2009 and PY2005, but in line with estimates from PY2000 thru PY2002. For gas, the current impact estimates are significantly higher than those from PY2009 and generally consistent with impacts from earlier evaluations." p. viii. "Savings from the ESA Program measures is a small fraction of overall household energy consumption." p. x "A significant number of ESA participant households are using more energy after participation." p. xi.

¹⁵ See section III.E. below.

1 **II. ESA PROGRAMS**

2 **A. The ESA program and budgets proposals should be**
3 **adjusted so that costs reflect the value delivered by**
4 **ESA¹⁶**

5 The Strategic Plan makes clear that there are two beneficiaries of ESA; the
6 low income occupants of serviced dwellings, and California as a whole, as ESA
7 should become an energy resource and help the state avoid building new power
8 plants by reducing usage and the need to build new power plants. The low income
9 occupants benefit by virtue of lower electric and gas bills. The low income
10 occupants also benefit by virtue of safer, healthier and more comfortable dwelling
11 by remedying gas appliance failures, improving the function of equipment, and
12 repairing cracks, leaks, burned out lighting, and equipment that would not be
13 installed if it were not for ESA (LEDs, smart strips, improved A/C function,
14 evaporative coolers.) There is no question that low income occupants benefit from
15 ESA, since they bear little of the program cost.¹⁷ The Commission’s job must be to
16 ensure that the value by ESA delivered is reasonable for the cost. This is the
17 criteria ORA recommends for approving the ESA programs and budgets: does the
18 value (both in energy and non-energy savings) approximately equal the cost? ESA
19 has been authorized with a certain amount of faith and good will,¹⁸ which is not

¹⁶ ORA is somewhat restricted from answering the question in the Scoping Memo “What criteria might be appropriate for evaluation of the IOUs’ proposed ESA Program budgets and underlying assumptions and estimates?” Because ORA’s answer is to utilize the cost-effectiveness ratio. Scoping Memo, item B.ii., footnote 8: “This topic is currently being addressed by the Cost-Effectiveness Working Group, as directed in D.14-08-030. This proceeding will not address this topic until such time as the Cost-Effectiveness Working Group has submitted its recommendations to the service list, and parties are directed not to submit comments on this issue until requested to do so, via a future ruling.” Therefore, ORA utilizes a second metric (average household savings) while the cost-effectiveness threshold issue is pending.

¹⁷ Low income customers are not exempt from paying the ESA surcharge, so they fund the program in accordance with other residential customers.

¹⁸ -D.08-11-031, p. 47: We remind the IOUs that the key policy objective for LIEE programs is to provide cost effective energy savings that serve as an energy resource and to promote environmental benefits. As a result, we should be seeing LIEE energy savings for the IOU portfolios increase over the years rather than decrease.... We

(continued on next page)

1 uncommon.¹⁹ Even now, with the drought crisis, the Commission has urgent
2 instructions for electric and gas utilities to enhance water savings through ESA
3 although the utilities have no method by which they can include the value of water
4 savings in their calculations.²⁰

5 Energy savings and non-energy benefits, or NEBs, are the two elements
6 that make up the benefit side of the cost/benefit equation for ESA. The energy
7 savings becomes a dollar value in terms of generation avoided, or a dollar value in
8 a reduced customer bill. NEBS can be quantified in a dollar value by calculating,
9 for each identified benefit, the value to the customer and/or the utility. ORA's
10 preference is for the ESA program proposals to use a cost/benefit test that takes
11 energy savings and NEBs into account. However, the Scoping Memo directed
12 parties not to comment on a cost-effectiveness goal or threshold, which is
13 essentially the comparison of costs invested to value delivered.²¹ Therefore, while
14 this discussion is pending, ORA instead recommends the Commission adjust the
15 ESA budgets in accordance with the second ESA goal stated in the Strategic Plan,
16 to deliver increasingly cost-effective savings. Below, ORA discusses each utility
17 ESA proposal and, for those programs with benefits less than the costs, ORA
18 suggests some budget reductions.

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anticipate that these published results will show that energy savings of the portfolio are increasing over time, with an increased correlation between program spending and energy savings.”

¹⁹ *PRISM, An Introduction*, “In the past, programs designed to induce energy conservation in housing have nearly all been casual about their measurement of energy savings.” Margaret Fels, Center for Energy and Environmental Studies, Princeton University, January 1986.

²⁰ D.14-08-030, Scoping Memo p. 12.

²¹ Scoping Memo, item B.ii., footnote 8. “This topic is currently being addressed by the Cost-Effectiveness Working Group, as directed in D.14-08-030. This proceeding will not address this topic until such time as the Cost-Effectiveness Working Group has submitted its recommendations to the service list, and parties are directed not to submit comments on this issue until requested to do so, via a future ruling.”

				110,000 even without ESA II
Total	\$256.0	\$256.0		

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2 SoCalGas proposes a large increase in budget for 2016-2017, but its therm
3 savings projected more than double. As mentioned earlier, SoCalGas’ proposal
4 has increased its cost-effectiveness ratio above 1.0. There are several drivers for
5 this: 1) new measures (72% of the increase in therm savings can be attributed to
6 the tub spout measure and the high efficiency furnace measure), 2) higher savings
7 estimates for existing measures (about 25% of the increase can be attributed to the
8 higher overall therms estimates, and 3) overall more measures installed, in part
9 because more ESA customers will be serviced.

10 ORA supports the SoCalGas proposal for program plans and budgets
11 because it is consistent with ORA’s policy recommendation the projected energy
12 savings per household increase over previous years.

13 **1. Tubspout, High Efficiency Furnace should**
14 **be approved. Duct seal and test removal**
15 **should be approved**

16 SoCalGas plans to install a new measure, a thermostatic tub spout, for
17 about 80% of ESA participants in 2016 and 2017. The tub spout is estimated to
18 save, on average across all dwelling types and climate zones, 24 therms each year.
19 The Commission should approve SoCalGas’ introduction of the tub spout
20 measure.²⁷ SoCalGas’ tub spout measure is the primary driver of the significant
21 jump in therms saved and cost-effectiveness. While much of the SoCalGas therms
22 savings increase hinges on this measure, the ESA program already has experience
23 with similar measures. The thermostatic shower valve also “shuts off” water
24 coming out of the showerhead once the water has become hot, saving energy on

²⁷ SoCalGas ESA Testimony of Yao/Aguirre, p. 107.

1 water heating. SDG&E introduced the thermostatic shower valve in 2009, and
2 SoCalGas introduced the thermostatic shower valve the following program cycle
3 in 2012. The tub spout diverter is based on the same strategy of limiting the
4 amount of water heating necessary when running water for a bath or shower.

5 PG&E has declined to introduce this measure, stating that it is not
6 commercially available. SoCalGas acknowledges that the measure is not
7 commercially available today, but states it does not want to wait to put the
8 measure into its catalogue of ESA measures. ORA agrees with the premise that a
9 widely applicable measure with high estimated savings should be included in the
10 ESA program as soon as possible.

11 SoCalGas plans to install about 3,000 High Efficiency (HE) furnaces each
12 year.²⁸ SoCalGas estimated annual savings across all dwelling types and climate
13 zones is 34 therms, per installed furnace, based upon an assumption that the prior
14 furnace being replaced is already at code efficiency, which is greater than 80
15 AFUE.²⁹ This estimate should be adjusted since SoCalGas plans to limit HE
16 Furnaces only to those dwellings that have furnaces at or below 65 AFUE.
17 Furthermore, SoCalGas ensures that HE Furnaces will go to those most in need
18 and also those with the greatest potential to save energy. The criteria for the HE
19 Furnace in owner-occupied dwellings includes past winter usage of 400 therms or
20 more. The criteria for the HE Furnace in renter-occupied dwellings is the same for
21 past usage, but the customer must also be on Medical Baseline. SoCalGas also
22 proposes lifting the cap on minor home repairs when a HE furnace will be
23 installed, which makes sense in order to get a valuable measure in the homes of
24 the most needy. In fact, this strategy was recommended in the Low Income

²⁸ SoCalGas ESA Table A-3.

²⁹ SoCalGas ESA Testimony of Yao/Aguirre, p. 109.

1 Assessment.³⁰ The Commission should approve SoCalGas’ introduction of the the
2 High Efficiency furnace.³¹

3 The Commission should also approve SoCalGas’ proposal to eliminate
4 Duct Testing and Sealing as an ESA measure, except in cases where Duct Testing
5 and Sealing is required by Title 24.³² The recent HVAC Impact Evaluation
6 showed no measurable savings for Duct Testing and Sealing.³³ Until the benefits of
7 this measure can be better established, SoCalGas is managing costs appropriately
8 by eliminating this measure.

9 **C. SCE**

10 Under current ESA rules, SCE claims it has had difficulty finding “eligible
11 and willing” dwellings to service because SCE replaces primarily electric-energy-
12 savings items, and these have not been enough to meet the Commission’s
13 “minimum” rules. So SCE proposes in 2016 and 2017 to service 54,000 dwellings,
14 which is about 10% less than the average it serviced during the 2012 – 2014
15 program cycle. SCE also proposes a new rule to overcome the problem of finding
16 “eligible and willing” dwellings, proposing to more closely coordinate with
17 SoCalGas to assess the dwelling for electric and gas measures, and share this
18 information with SoCalGas.

19 Below is a snapshot of the SCE proposal 2016 – 2017 compared to the prior
20 actual performance of the SCE ESA program in the years 2012 -2014.³⁴

21

³⁰ Low Income Needs Assessment, Volume 1, p. 3-46.

³¹ SoCalGas ESA Testimony of Yao/Aguirre, p. 107.

³² SoCalGas ESA Testimony of Yao/Aguirre, p. 105.

³³ p. 57, DNV-GL HVAC Impact Evaluation, WO32, Jan 28, 2014

³⁴ Comparisons are on an annual basis to allow for comparison of different number of program years.

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Figure 8
SCE ESA OVER THE YEARS
Annual Average³⁵

	2009-2011	2012-2014	2016-2017
Admin Cost, including Customer Enrollment ³⁶ (\$ in millions)	\$12	\$9	\$12
Measures Cost (\$ in millions)	\$42	\$40	\$50
Households Serviced ³⁷	92,207	60,627	54,000
Cost per household	\$577	\$816	\$1,157
kWh saved	27,397,216	27,489,868	30,882,000
kWh saved per household	297	453	572
Cost to save a kWh	\$1.87	\$1.82	\$3.27
Cost effectiveness (ESACET)	Not calculated	0.80 (2012) 1.01 (2013)	0.78 (2016) 0.78 (2017)

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SCE’s program plan will produce greater kWh savings per ESA customer in the next few years and value to each individual ESA customer will increase. SCE’s administrative and measure costs will go up as well. However, SCE is undercounting the value of the program and should make the following changes

³⁵ Comparisons are on an annual basis to allow for comparison of different number of program years.

³⁶ ORA includes customer enrollment costs in the Administrative Category, although this line item is presented in the Application Budget Tables and Annual Reports in the Energy Efficiency section of the budget. Keeping enrollment in costs in the Administrative Section is in line with how the utilities present their cost-effectiveness calculations. PG&E specifically makes this recommendation on p. 2-153 of its ESA Testimony.

³⁷ Source of households services for 2012 is SCE 2012 Annual ESA Report, Table ESA-2, “treated households,” for 2013 and 2014 are the SCE annual reports for those years, Table ESA-2, “homes receiving Energy Education.”

1 listed below. ORA estimates SCE's ESACET is over 0.91 as opposed to the 0.78
2 reported in SCE's application. As such, ORA recommends only minimal
3 reductions to SCE's administrative costs to bring it in line with a nearly cost-
4 effective proposal.
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Figure 9
ORA shows the budget impact of ORA's recommended changes 2016-17
(\$ in millions)

	SCE	ORA	% change	Reasons for ORA change
Admin, including Customer Enrollment ³⁸	\$24.5	\$23.3	-5%	IT reduction from General Admin since CE model is not new, SMART scheduler is not best strategy
Measures	\$100.4	\$100.4		
Total	\$124.9	\$123.8	-1%	

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1. SCE's cost-effectiveness value should be corrected by including the non-energy benefit of Reduced CARE subsidy

Without explanation, SCE does not include, as a non-energy benefit, the reduction in the CARE subsidy that occurs when the dwelling uses less energy and has a reduced bill. The CARE subsidy reduction is not the same as the bill reduction to the customer. The SCE ESA customer, on average, saved about \$55 - \$60 on their electric bill in 2013 and 2014. Since the ESA customer pays a subsidized electric bill, if the ESA customer's bill goes down, so does the amount needing subsidy. So the savings that SCE failed to include is the savings accruing to the entire body of ratepayers. If SCE had included this benefit its cost-

³⁸ ORA includes customer enrollment costs in the Administrative Category, although this line item is presented in the Application Budget Tables and Annual Reports in the Energy Efficiency section of the budget. Keeping enrollment in costs in the Administrative Section is in line with how the utilities present their cost-effectiveness calculations. PG&E specifically makes this recommendation on p. 2-153 of its ESA Testimony.

1 effectiveness ratio would be 0.91 in both 2016 and 2017.³⁹ This savings accrues
2 not only to the billpayer, but also to all customers who subsidize a portion of the
3 ESA customer's bill. This is a typical non-energy benefit but SCE does not include
4 it in their calculation.⁴⁰

5 **2. SCE should create separate savings estimate**
6 **for 2nd refrigerator replacement**

7 Second, SCE proposes changing its policy on refrigerator replacement in
8 order to allow replacement of any refrigerator older than 15 years. The current
9 policy is to only replace refrigerators produced in 1999 before. Refrigerator
10 standards were increased in 2001, which lessens the impact of replacing
11 refrigerators produced after 2001. Despite the reduction in benefit per refrigerator,
12 SCE argues that the overall number of refrigerator replacements will increase due
13 to this change (additionally refrigerator replacements will increase with SCE's
14 proposal to replace second refrigerators, discussed in the next section.) SCE
15 reflects this reduction in savings in its estimate, decreasing the savings estimate
16 from 702 kWh to 461 kWh.⁴¹ While this reduction in savings is likely appropriate
17 for first refrigerators, it is probably too low for the second refrigerator
18 replacement.

19 **3. Second refrigerator replacement should be**
20 **approved**

21 SCE estimates that approximately 4% of homes visited would be willing to
22 replace their second refrigerator, and proposes to provide replacements through
23 ESA.⁴² As this was a direct recommendation in the LINA, and refrigerators are a

³⁹ SCE response to ORA SCE-15, Question 5, 4/24/2015.

⁴⁰ SCE LIPPT Utility Cost Model 2016, 2017.

⁴¹ SCE Application, ESA Table-2.

⁴² SCE ESA Testimony, p. 101.

1 great source of savings, ORA supports this proposal. SDG&E has been replacing
2 second refrigerators already.⁴³

3 The second refrigerator program should be implemented with plans in place
4 to encourage customers to be provided and incentive to remove the second
5 refrigerator, and replacement should be a secondary strategy. This approach
6 should be similar to the approach recommended for PG&E regarding second
7 refrigerators, as described later in this testimony.

8 **4. SCE costs associated with SMART, and IT**
9 **costs for General Administration are**
10 **unnecessary and should be denied**

11 SCE plans to address the participation barrier of customers who cannot
12 make time to stay home from work by improving its automated scheduling tool,
13 SMART.⁴⁴ SCE should not invest in IT to try and overcome the barrier of
14 customers being at home for an ESA visit. This does not seem to be addressing
15 the problem head-on; by giving customers multiple appointment times and
16 reminders. Instead, SCE should take the approach of other utilities, and offer
17 appointments when customers may be able to be home, such as on evenings and
18 weekends. PG&E states it has developed a varied contractor work schedule and is
19 able to offer weekend and evening appointments.⁴⁵

20 **D. PG&E**

21 PG&E proposes a similar ESA program to the past five years.

22 PG&E plans to introduce four new measures in 2016 & 2017; three types of
23 LED lights and high efficiency furnaces. However, PG&E anticipates that
24 approximately just 5% of its ESA customers will receive the new measures. Below
25 is a snapshot of the PG&E proposal 2016 – 2017 compared to the prior actual

⁴³ SDG&E ESA Testimony p. 85.

⁴⁴ SCE ESA Testimony, p. 23.

⁴⁵ PG&E ESA Testimony p. 2-28.

1 performance of the PG&E ESA program in the years 2012 -2014.⁴⁶ This shows
 2 that PG&E would increase spending on administration and overhead by 101% in
 3 the 2016 and 2017, while decreasing spending on ESA measures and services by
 4 2%.⁴⁷ PG&E predicts it would save ESA households, on average, close to what
 5 was saved in prior years although total program electric and gas savings would
 6 drop due to **servicing fewer households.**

7 **Figure 10**

8 **PG&E ESA OVER THE YEARS**
 9 **Annual Average⁴⁸**

	2009-2011	2012-2014	2016-2017
Admin Cost, including Customer Enrollment ⁴⁹ (\$ in millions)	\$11	\$13 ⁵⁰	\$28
Measures Cost (\$ in millions)	\$116	\$127	\$128
Households Serviced	114,236	119,867	90,030

⁴⁶ Comparisons are on an annual basis to allow for comparison of different number of program years.

⁴⁷ ORA includes customer enrollment costs in the Administrative Category, although this line item is presented in the Application Budget Tables and Annual Reports in the Energy Efficiency section of the budget. Keeping enrollment in costs in the Administrative Section is in line with how the utilities present their cost-effectiveness calculations. PG&E specifically makes this recommendation on p. 2-153 of its ESA Testimony.

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⁵⁰ PG&E's 2013 ESA Reported Costs in the 2013 Annual Report do not include \$1.5 million in employee benefits that should be included for comparative purposes. ORA has added these in. See PG&E Response to ORA-11 Q1 of 3/19/2015.

Cost per household	\$1,115	\$1,167	\$1,733
kWh saved	43,029,000	40,806,947	36,584,256
kWh saved per household	377	340	406
Cost to save a kWh	\$1.61	\$1.83	\$2.22
Therms saved	2,259,667	1,673,920	1,850,857
Therms saved per household	20	14	21
Cost to save a therm	\$24	\$38	\$40
Cost effectiveness (ESACET) ⁵¹	Not calculated	(2012) 0.73 (2013) 0.89	(2016) 0.78 (2017) 0.78

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2 PG&E has several positive process innovations which ORA discusses
3 further in this section. However, based on ORA’s two criteria of increasing cost-
4 effectiveness, and increasing per household average savings, the PG&E proposal
5 is too costly for the value it delivers. Among other things, PG&E’s Administration
6 cost increase is driven by its request to upgrade PG&E’s ESA database to a cloud-
7 based database to support day-to-day contracting activities. To control costs, ORA
8 recommends PG&E postpone the \$5.7 million replacement of its ESA data
9 management system. Furthermore, because ORA recommends that the
10 Commission deny the ESA II initiative until it is further crafted to target
11 underserved segments, it would be imprudent to redesign the data management
12 system in advance of redesigning the ESA program. Finally, PG&E requests a
13 customer enrollment budget for 2016-17 that is 630% over 2013-14. The
14 Commission should limit these costs to 168% the next highest increase of the four
15 utilities.. These cost projections illustrate how expensive it will be to locate the
16 remaining eligible and willing customers to treat for the Strategic Plan period.

⁵¹ PG&E ESA Testimony p. 2-109, Table 2-11.

- 1 ORA supports reaching the entire low income population, but disagrees that it
- 2 must be done at the pace PG&E proposes, and in conjunction with launching the
- 3 repeat service that PG&E proposes.
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Figure 11
ORA shows the budget impact of ORA’s recommended changes 2016-17
(\$ in millions)

	PG&E	ORA	% change	Reasons for ORA change
Admin, including customer enrollment ⁵²	\$56.6	\$34.9	-38%	Do not replace ESA IT system at this time, limit customer enrollment costs to 168% of 13-14 average costs
Measures	\$255.5 ⁵³	\$230.7	-10%	No ESA II (service 9,000 fewer units per year), no CSD coordinating pilot
Total	\$312.1	\$265.6	-15%	

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1. The Commission Should Deny PG&E’s Administrative Cost Increase Requests for a New Database

PG&E’s 64% proposed increase in General Administration spending in 2016 and 2017 is driven primarily by its request to replace its outdated Energy Partners Online database. PG&E breaks down the total \$5.7 million cost for this proposal to \$3.6 million in 2016 and \$2.1 million in 2017.⁵⁴ PG&E’s main

⁵² ORA includes customer enrollment costs in the Administrative Category, although this line item is presented in the Application Budget Tables and Annual Reports in the Energy Efficiency section of the budget. Keeping enrollment in costs in the Administrative Section is in line with how the utilities present their cost-effectiveness calculations. PG&E specifically makes this recommendation on p. 2-153 of its ESA Testimony.

⁵³ This amount does not include the \$310,575 that PG&E explained was inadvertently left off the budget, in the category of Envelope and Air Sealing. PG&E plans to file an errata. PG&E response to ORA-11, Q3, 3/19/2015.

⁵⁴ PG&E ESA Testimony p. 2-150 to 2-152.

1 rationale for this new system is that the EPO is old, the code base is outdated, and
2 some support and software on which is it based may no longer be supported.

3 ORA acknowledges that EPO is old, and the newer and faster databases are
4 available. However, PG&E has not identified any failures or specific errors with
5 EPO in its testimony. Furthermore, PG&E is proposing that the Commission
6 authorize the ESA II to start repeating service to customers. ORA instead
7 recommends the Commission first redesign ESA to better target specific segments
8 before starting to allow repeat service. If the Commission agrees some redesign to
9 ESA is appropriate, PG&E may be better off waiting to install a new database
10 once they know what the future of ESA will be. Finally, PG&E's overall ESA
11 program is not generating enough value relative to cost. It would be imprudent to
12 invest in a new ESA database in 2016 and 2017.

13 **2. The Commission Should Reduce PG&E's**
14 **Administrative Cost Increase for Marketing,**
15 **Outreach and Enrollment**

16 PG&E emphasizes its commitment to treating all eligible and willing
17 dwellings with ESA by 2020, but says it has not been without challenge.⁵⁵ PG&E
18 explains that its service area is over 70,000 square miles, many climate zones, and
19 a diverse population including nearly 2 million low income customers. PG&E's
20 budgets for Customer Enrollment, and Marketing and Outreach for 2016 & 2017
21 show the greatest increases of any of the four utilities.
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⁵⁵ PG&E ESA Testimony p. 2-30.

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Figure 12

PG&E comparison of outreach & enrollment, average 2013-2014 vs. 2016-2017 (million \$)

	Average Annual 13-14	Average Annual 16-17	% increase 13-14 to 16-17
Customer Enrollment	\$1.4	\$10.4	630%
Marketing & Outreach	\$1.5	\$3.4	133%

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PG&E explains the difficulty in finding and servicing new ESA dwellings locating and enrolling ESA participant homes is increasingly difficult as the eligible and willing population becomes more highly penetrated. In addition to being able to enroll and treat exponentially fewer homes each year, the costs to outreach and successfully enroll eligible customers also becomes exponentially more expensive, such that fewer homes can be outreached for the same dollars than previously. PG&E’s marketing strategies and budgets (...) take this into account.⁵⁶

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PG&E accurately characterizes its customer enrollment costs as exponentially more expensive. Although PG&E outlines several strategies to outreach to specific customer segments, PG&E does not adequately explain why costs will jump so much. ORA identified the percentage cost increases of the other three utilities, both for categories of Outreach & Marketing and Customer Enrollment. SCE and SoCalGas cost increases for Marketing & Outreach are approximately 108% of their 2013-2014 average, while SDG&E is 168% of 2013-2014 average. Cost increases to customer enrollment are 36% or less for all the

⁵⁶ PG&E ESA Testimony, p. 2-33.

1 other utilities. Therefore, ORA recommends the Commission allow PG&E no
2 greater a cost increase than the next highest increase of either category, which
3 would be 168%. This would reduce PG&E’s Customer Enrollment Costs in 2016
4 and 2017 combined from \$20.8 million to \$4.8 million.

5 This recommendation works in conjunction with the following
6 recommendation for the Commission to deny PG&E’s ESA II proposal, because
7 servicing fewer homes will reduce some of the pressure on PG&E’s Marketing,
8 Outreach and Customer Enrollment budgets.

9 **3. The Commission Should Deny PG&E’s ESA**
10 **II Proposal. PG&E Should Instead Attempt**
11 **to Reach its 2020 ESA goal, but At A Slower**
12 **Rate Than Proposed**

13 PG&E proposes beginning to reservice ESA dwellings not treated for eight
14 years or longer, calling this ESA II.⁵⁷ ORA below in section III.A.explains why the
15 Commission should instead direct PG&E to reach the remaining ESA dwellings
16 unserved since 2002 or before. PG&E’s program assumption was to reach over
17 90,000 ESA dwellings each year in 2016 & 2017, half of which would be repeats,
18 and the other half “new” ESA dwellings according to the 2020 ESA goal. For
19 purposes of recommending a lower budget to reflect this recommendation, ORA
20 does not assume PG&E would want to service only about 45,000 “new” dwellings
21 in each year, but rather that PG&E would instead shift focus back to the ESA 2020
22 dwellings and service approximately 80,000 dwelling in each year. ORA assumed
23 that PG&E would want to continue working toward its 2020 goal rather than
24 further slowing the rate of ESA, and therefore only calculated a 10% fewer homes
25 treated per year. However, if PG&E prefers to stretch out servicing the remaining
26 2020 ESA homes over six years, or if PG&E estimates it cannot find 80,000
27 “new” dwellings for ESA each year with the reduced Customer Enrollment

⁵⁷ PG&E Application p. 2.

1 budget, ORA does not oppose the homes treated goal of 43,030 and 47,030 in
2 2016 and 2017 respectively. In summary, ORA is amenable to either option of
3 PG&E finishing its ESA 2020 goal early, or finishing by 2020.

4 **4. PG&E has several promising strategies to**
5 **reduce visits to dwellings and these should be**
6 **funding, as well as checked upon**
7 **periodically.**

8 PG&E is quite specific about its efforts to reduce the number of visits for
9 ESA service. These changes directly respond to recommendations in the LINA
10 that find a barrier to ESA participation is staying home for appointments. PG&E's
11 efforts are likely to reduce this barrier to participation. Some of their specific
12 efforts include:

- 13 • Checking to see if municipal inspections duplicate any of the
14 PG&E ESA inspection⁵⁸ and if they do, waiving some
15 PG&E ESA inspections without compromising customer
16 safety.
- 17 • Authorizing PG&E ESA inspectors to make simple
18 corrections instead of calling the original contractor back to
19 the dwelling.
- 20 • Integrating specialized contractor work (repair & replace)
21 more closely with ESA and arranging to have ESA
22 contractors follow the Gas Service Representative visits.
- 23 • Consideration of authorizing more contractor weekend
24 appointments.⁵⁹

25 **5. PG&E's determination not to offer**
26 **replacement of second refrigerators, and**
27 **High Efficiency furnaces should be**
28 **supported with data**

29 PG&E states that rather than offer to replace second refrigerators they
30 prefer to encourage ESA customers to remove and recycle second refrigerators.⁶⁰

⁵⁸ Central Inspection Program (CIP).

⁵⁹ PG&E ESA Testimony, pp. 2-59 and 2-60.

1 PG&E offers no supporting evidence that this approach will generate more energy
2 savings than replacing second refrigerators with more efficient models. Indeed,
3 PBE offers nothing other than a statement of belief. PG&E should be required to
4 report and track how many second refrigerators are encountered in ESA-serviced
5 dwellings each month, and how many second refrigerators are removed by ESA. If
6 it appears, after several months of tracking, that PG&E ESA contractors are
7 unsuccessful in convincing customers to give up their second refrigerators, it
8 would make more sense for PG&E to replace inefficient second refrigerators as
9 SDG&E does and SCE will.

10 **6. The Commission should require PG&E to**
11 **calculate cost-effectiveness for High**
12 **Efficiency (HE) furnaces using a 65% AFUE**
13 **furnace as a baseline, rather than an 80%**
14 **AFUE furnace**

15 Regarding PG&E's intention not to offer High Efficiency (HE) furnaces,⁶¹
16 PG&E states low cost-effectiveness as the basis for this decision. PG&E's
17 assumption in calculating cost-effectiveness is flawed and decreases the cost-
18 effectiveness of HE furnaces. PG&E assumed that the HE furnace would replace
19 an existing unit with an AFUE rating of 80%.⁶² However, previous pilots testing
20 the cost-effectiveness of High Efficiency furnaces were predicated on only
21 replacing furnaces that were well below code, at 65% AFUE or lower. The
22 Commission reserved judgement on whether to require High Efficiency furnaces
23 in the last program cycle, instead requiring the gas utilities to file cost-
24 effectiveness estimates. PG&E was the only one of the three to file cost-

(continued from previous page)

⁶⁰ PG&E ESA Testimony, p. 2-98.

⁶¹ PG&E ESA Testimony, p. 2-98 and 2-118, 2-119

⁶² High Efficiency Furnace 95 AFUE (1.04 HIR) – Residential: Work Paper PGECOHC145 - 95 AFUE Furnace – Res. PG&E Consumer Energy Solutions, 6/19/2012. P. 18.

1 effectiveness estimates based on replacing a code-compliant 80% AFUE furnace.⁶³
2 SDG&E and SoCalGas both filed cost-effectiveness estimates based on the
3 assumption of replacing a 65% AFUE furnace.⁶⁴

4 Another criteria for installing a HE furnace should be high winter gas
5 usage. Indeed, SoCalGas has set this as a criteria for installing HE furnaces. At a
6 minimum, PG&E should be directed to include HE furnace in its proposed
7 Consumption Driven Weatherization Pilot.⁶⁵ PG&E describes the goal of the pilot
8 “to develop and demonstrate methods to better treat high usage customers
9 resulting in a more comprehensive treatment of their home,”⁶⁶ and expects an
10 outcome of the pilot to identify cost effective EE measures that may not be cost
11 effective for non-high energy users.⁶⁷ It is in just these situations that HE furnaces
12 are likely to have the highest cost-effectiveness.

13 **7. Coordination with Community Services**
14 **Development and PG&E has gone as far as it**
15 **can and should no longer be funded**

16 PG&E proposes \$335,500 for a pilot to enhance coordination with CSD.⁶⁸
17 This would be the second pilot to examine and improve coordination with CSD; a
18 Geographic Coordination Pilot conducted during the 2012-2014 program cycle.⁶⁹
19 The Commission should deny this request and associated funding because the 1)
20 the goals and outcomes of the pilot are vague and ill-defined, and 2) the
21 Commission should not spend any more on arranging coordination between ESA
22 and CSD because six years of Commission direction to create a shared database

⁶³ Compliance filing of PG&E in A.11-05-017 et. Al, 10/29/2012.

⁶⁴ Compliance filing of SDG&E and SoCalGas in A.11-05-017 et. Al, 10/29/2012.

⁶⁵ PG&E ESA Testimony, Attachment C-3.

⁶⁶ PG&E ESA Testimony, Attachment C3-1.

⁶⁷ PG&E ESA Testimony, Attachment C3-2.

⁶⁸ PG&E ESA Testimony Attachment C1-1.

⁶⁹ PG&E EST Testimony 3-42 to 3-44.

1 have not been successful. Based on this pattern, there is no reason to expect a
2 positive outcome this time.

3 A significant part of the Strategic Plan direction to ESA was to leverage
4 with other energy efficiency programs to make the ESA program more effective
5 and economic. As stated in 2008, “The most obvious leveraging opportunity is the
6 federal LIHEAP program, operated by DCSD [Department of Community
7 Services and Development, also known as CSD.]”⁷⁰ In fact, the Commission
8 expressly incorporated LIHEAP treated dwellings into the ESA goal, by deducting
9 the number of dwellings treated by LIHEAP from the number of “eligible and
10 willing” potential ESA customers. The problem with depending on another
11 program is that it should be possible to determine which dwellings are treated by
12 which program, and to avoid duplicating visits to dwellings treated by the other
13 program. This coordination has floundered for six years. In 2008, the Commission
14 recognized that the two programs could not exchange data about the dwellings
15 serviced, and directed the utilities to create a database to make this possible.

16 Several parties point out in comments that there is no Low Income Home
17 Energy Assistance Program (LIHEAP) database in place that allows LIEE
18 providers to know whether a house has received LIHEAP measures or what those
19 measures are. We cannot require the IOUs to gather information that does not
20 exist. However, we expect the IOUs to enter into an MOU [Memorandum of
21 Understanding] with DCSD and, along with the Commission, to work toward
22 development of such a database. It is untenable that decades into the LIEE
23 program, there is no means of obtaining or estimating such data. The IOUs shall
24 fully cooperate with efforts to remedy the situation, and shall use whatever means
25 currently available to them to learn which homes have already received LIHEAP
26 service, and what measures are already in those homes.⁷¹

⁷⁰ D.08-11-031, p. 131.

⁷¹ D.08-11-031, p. 132.

1 During the 2009 – 2011 program cycle, the utilities signed an MOU with
2 CSD indicating their intent to develop a database. In 2012, the Commission
3 recognized that no functional database had been created.

4 Following the signing of the MOU and based upon the reviews of the
5 IOUs’ reports, we learned that progress has been less than ideal due, in part, to the
6 following factors:

7 Data sharing among the IOUs and corresponding Local
8 Service Providers proved difficult with different
9 tracking systems, software and data reporting
10 requirements;⁷²

11
12 D.08-11-031 also directed the IOUs to address the
13 database sharing issue and to use whatever means
14 available to them to close data gaps,⁷³ but to date, little
15 has been accomplished.

16
17 Some of the same barriers continue to exist today as they did three years
18 ago where service providers still do not always know if a household has had any
19 previous weatherization treatment until they arrive at the home.⁷⁴

20 In their current applications filed in 2014, the utilities report that four
21 statewide pilots were conducted in accordance with the MOU with CSD.⁷⁵ SCE
22 reports that some progress has been made with data sharing, and that it will work
23 to provide common data program fields that will help LIHEAP fulfill its statutory
24 obligation. However, there still does not appear to be a means for the two
25 programs to determine whether a dwelling has been serviced by the other program,
26 and what type of service was offered. In fact, SCE recommends no further pilots
27 with CSD.⁷⁶ PG&E’s description of data coordination with CSD is primarily

⁷² D.12-08-044, p. 45.

⁷³ D.08-11-031 at 131-132.

⁷⁴ D.12-08-044, p. 51.

⁷⁵ SCE Testimony p. 94-95.

⁷⁶ SCE ESA Testimony, p. 94-95.

1 focused on helping CSD meet its statutory obligations.⁷⁷ At this point it may be
2 prudent for the Commission to deny any additional costs proposed to enhance
3 coordination with CSD.

4 Additionally, PG&E’s stated pilot goals and outcomes are vague. PG&E
5 explains that this pilot will consist of examining findings from the previous pilot
6 with CSD, and developing policies or processes to address barriers identified in
7 that study. The two programs should continue to coordinate in the ways proposed
8 in various utility applications (refrigerator leveraging, referral of certain customers
9 to the other program) but there should be no additional costs authorized for this
10 coordination.

11 **E. SDG&E**

12 SDG&E proposes multiple process improvements to ESA. However,
13 SDG&E’s savings impacts from the last impact evaluation were much lower than
14 expected. SDG&E also proposes spending 35% of its measures budget on
15 Envelope, Air Sealing, and Furnace replacement, which generate little or no
16 savings. Therefore the SDG&E proposal for 2016-2017 shows lower savings than
17 in previous years, despite a significant increase in cost.

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⁷⁷ PG&E ESA Testimony p. 3-43.

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Figure 13
SDG&E ESA OVER THE YEARS
Annual Average⁷⁸

	2009-2011	2012-2014	2016-2017
Admin Cost, including customer enrollment (\$ in millions)	\$5.3	\$5.9	\$9.1
Measures Cost (\$ in millions)	\$13.4	\$13.3	\$21.5
Households Serviced	21,698	19,023	20,316
Cost per household	\$861	\$1,006	\$1,533
kWh saved	7,037,495	7,318,099	5,723,386
kWh saved per household	324	383	282
Cost to save a kWh	\$1.06	\$1.11	\$2.69
Therms saved	371,909	317,798	331,283
Therms saved per household	17	17	16
Cost to save a therm	\$29	\$51	\$47
Cost effectiveness (ESACET)	Not calculated	0.86 (2012) Not calculated (2013)	0.78 (2016) 0.78 (2017)

⁷⁸ Comparisons are on an annual basis to allow for comparison of different number of program years.

1 energy benefits. For 2015 -2017, non-energy benefits comprise more than half the
2 benefits to ESA customers.⁸⁰ Therefore, ORA recommends a few reductions to the
3 SDG&E administrative budget in order to combat costs. Rather than remove any
4 of SDG&E’s proposed new measures, ORA instead recommends that several of
5 these should be implemented only in conjunction with evaluation plans, since
6 many of the new measures have unknown energy savings and unknown benefits in
7 general.

8 **1. The Commission should deny the SDG&E**
9 **administrative costs requested for mass media,**
10 **increased inspections associated with high usage**
11 **requirements, and excess increases in the categories**
12 **of General Administration and Marketing and**
13 **Outreach**

14 SDG&E requests administrative budgets of \$9.5 million and \$9.8 million in
15 2016 and 2017, respectively.⁸¹ These are increases of 63% over the average
16 administrative expenditures in 2013 and 2014. SDG&E requests \$5,735 to handle
17 more inspections associated with the high usage rules.⁸² The high usage rules
18 condition receiving the CARE discount on receiving the ESA service. SDG&E
19 presumably expects more inspections with ESA based on more ESA. However, as
20 the ESA service to high usage households is not different than ESA service in
21 general, there should be no need to increase the inspection budget.

22 ORA reviewed the increases in SDG&E’s administrative categories and
23 identified the greatest increases in the areas of Marketing and Outreach. SDG&E
24 would increase \$.1268 million in 2016 and 2017 to implement a number of the
25 recommendations from the LINA, and other evaluation reports completed in the
26 2012-2017 program cycle. While implantation of these is merited, SDG&E must

⁸⁰ SDG&E ESA Testimony p. 96, Table 13.

⁸¹ ORA includes customer enrollment in administrative costs.

⁸² SDG&E Response to ORA-8, Q.1. Attachment, 3/19/2015.

1 control additional costs. ORA eliminates only one cost category in the amount of
2 \$555,375 in 2016, that of mass media placement. Mass media placement is not
3 associated directly with any of the study recommendations that SDG&E is
4 implementing, and SDG&E can work through the Statewide Marketing and
5 Outreach to disseminate messages generally and widely. SDG&E already budgets
6 a new amount of \$60,000 each year to participate in the Statewide Marketing &
7 Outreach efforts through Energy Upgrade California. After deducting the mass
8 media budget from SDG&E’s overall Marketing and Outreach category, ORA
9 removes an additional 10% of the total amount to limit the increase in this
10 category.

11 Finally, ORA recommends a 10% decrease of \$258,000 each year in
12 SDG&E’s General Administration category. SDG&E has added costs for
13 infrastructure required to support Commission directives. These include a project
14 specialist and system enhancements without direct connection to any of the new
15 initiatives.

16 **2. New proposed measures Combined**
17 **Showerhead/Tub Spout, prescriptive Duct Seal, and**
18 **Tier 2 Smart Strip should be approved only in**
19 **conjunction with evaluations**

20 SDG&E plans to introduce eight new measures in 2016. With the exception
21 of LEDs, the estimated savings for the remaining six measures will be 9% of
22 overall kWh savings, 14% of overall therm savings, and just 7% to the overall
23 measures budget.⁸³ However, SDG&E made questionable assumptions about the
24 savings values for these measures. For the Combined Showerhead/Tub Spout
25 measure and the Tub Spout measure, SDG&E assumes the value of the
26 Thermostatic Shower Valve from the 2011 Impact Evaluation. While the
27 thermostatic diverters all utilize the same strategy to minimize hot water heating,

⁸³ SDG&E ESA Table-2 planning. ORA excludes Customer Enrollment from the “overall budget” in performing this calculation.

1 there are likely differences in the amount of water coming through the tub spout
2 verses the showerhead. The amount of savings for these measures may be small,
3 but because the measures are widely applicable it is important to get a more
4 definitive value for savings. For the Tier 2 Smart Strip, SDG&E assumes the value
5 of the original type of Smart Strip in the 2012 Impact Evaluation.⁸⁴ As SDG&E
6 describes, the Tier 2 Smart Strip is more advanced than the current Smart Strip
7 offered through ESA.⁸⁵ If this is indeed the case, then greater savings should be
8 achieved by offering this measure.

9 The Commission should require SDG&E to develop an evaluation plan for
10 each of these measures, and to file a Program Implementation Plan describing the
11 evaluation, and associated budget, before introducing these new measures in the
12 program. The Commission took this approach with several new measures
13 introduced as pilots in 2009, such as SDG&E In Home Display, and the
14 introduction of microwaves and High Efficiency furnaces.⁸⁶ As a result, the
15 Commission now has the benefit of several evaluations on which to base future
16 decisions about these measures.⁸⁷ While SDG&E is not proposing these as pilots,
17 and instead as new measures, a specific study of the savings outcomes of these
18 measures is merited because none currently exists. g

19 **3. SDG&E plan to minimize inspections visits**
20 **should be approved**

21 SDG&E has identified that NGAT and ESA inspections currently require
22 two visits, and is taking steps to remedy this.⁸⁸ SDG&E budgets \$126,842 in
23 administrative expenses over the cycle to implement this change.⁸⁹ This change is

⁸⁴ SDG&E response to ORA-3, Q.4 , 1/9/2015.

⁸⁵ SDG&E ESA Testimony p. 120.

⁸⁶ D.08-11-031, Ordering Paragraphs 71 – 73.

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⁸⁸ SDG&E ESA Testimony, p. 28, 29, 33.

⁸⁹ SDG&E Response to ORA-8, Q.1. Attachment, 3/19/2015.

1 a direct response to the LINA’s identification of one of the barriers to ESA
2 participation; that it is difficult for customers to stay home for multiple contractor
3 visits. Not only should this have benefits to the customer, but one inspection
4 should be less costly than two. Therefore ORA supports this change.

5 **4. SDG&E plans to install simple measures in**
6 **homes at the time of enrollment**

7 SDG&E states that the measures available for installation at the time of
8 enrollment will include an LED nightlight, CFL bulbs, faucet aerators, torchiere
9 lamp, smart strip, and microwave.⁹⁰ SDG&E states this approach will overcome a
10 barrier for renter participation in the program.

11 **5. SDG&E plans to coordinate installations**
12 **with other fuel provider via a single-point-of-**
13 **contact**

14 SDG&E commits to what appears to be the most logical approach to
15 serving dwellings where the other fuel is provided by a separate provider. SDG&E
16 states that it has been utilizing a single-point-of-contact to service homes where
17 SDG&E is the electric service provider, and SoCalGas is the gas service.⁹¹ This
18 appears to benefit the ESA customer. However, SDG&E reports in its 2013 annual
19 report that out of the estimated 17,087 dwellings eligible, 20 were serviced with
20 SoCalGas.⁹² In 2012 140 were jointly serviced.⁹³ In 2011 298 were jointly
21 serviced.⁹⁴ If SDG&E is to put effort in to a single-point-of-contact, they should be
22 required to estimate the number of jointly served homes that will benefit from this
23 additional expense.

⁹⁰ SDG&E ESA Testimony p. 62.

⁹¹ SDG&E ESA Testimony p. 63.

⁹² SDG&E 2013 Annual Report, ESA Table 4.

⁹³ SDG&E 2012 Annual Report, ESA Table 4.

⁹⁴ SDG&E 2011 Annual Report, ESA Table 4.

1 **III. ESA POLICY RECOMMENDATIONS**

2 **A. ESA II As A Continuation Of Current Program**
3 **Should Be Denied. Esa II Should First Redesigned**
4 **For Identified Underserved Segments⁹⁵**

5 ORA recommends the Commission initiate a process to identify and target
6 the next phase of ESA toward underserved segments. There are many likely
7 candidate segments that are underserved and in need of a more customized ESA
8 program, among these High usage customers (see ORA discussion in section X),
9 renters, or perhaps the San Joaquin Valley.⁹⁶

10 The LINA recommended repeating service for certain homes as a
11 consideration for the ESA program⁹⁷, but any repeat service should be further
12 developed before approval. LINA also recommended an exploration of many
13 program design changes, such as greater program customization, better strategies
14 to reach renters, and greater measure offerings.⁹⁸ These suggestions should be
15 fully explored and incorporated as appropriate in any ESA II. This has not taken
16 place yet. To go back and re-service dwellings with the same program delivery
17 strategy, when there are so many identified segments that may need a different
18 approach, makes no sense.

19 PG&E, SCE and SoCalGas propose returning to dwellings considered
20 “treated” and installing new technologies and services that were not previously
21 available through ESA.⁹⁹ PG&E and SoCalGas explicitly budget for additional
22 dwellings in their proposal. PG&E is explicit about the number of dwellings it

⁹⁵ This section is responsive to Scoping Memo’s item E. “Should the ESA Program’s “go-back” rule for treatment be modified.

⁹⁶ Pursuant to Public Utilities Code section 783.5, the Commission opened a new Rulemaking R.15-03-010 to Identify Disadvantaged Communities in the San Joaquin Valley and to evaluate economically feasible Options for Affordable Energy, March 26, 2015

⁹⁷ LINA, p. 3-46.

⁹⁸ LINA, p. 3-46 to 3-48.

⁹⁹ PG&E p. 1-1, SCE pp. 100-101, SoCalGas section IIB, SDG&E p. 84.

1 plans to return to, stating it will return to 90,000 dwellings in the next three years.
2 ¹⁰⁰ SoCalGas proposes repeating service for 5,000 homes in 2015, 10,000 homes in
3 2016, and 20,000 homes in 2017.¹⁰¹ The repeat service is based on the assumption
4 that the same types of measures will be installed.¹⁰²

5 SCE does not explicitly budget for this but asks for approval. SCE states
6 that it does not intend to target previously treated homes, but only supply a
7 dwelling with any new ESA measures since the time of the original installation.¹⁰³
8 SCE reports that during its outreach, contractors will visit homes previously
9 treated and discover that a newer measure can be installed in the home.

10 SDG&E takes a different approach from SCE¹⁰⁴ and proposes to reinstitute
11 the 10 year go-back rule after it has completed reaching the current ESA
12 programmatic initiative.¹⁰⁵

13 The Commission should deny the ESA II proposals, and the associated
14 budgets of PG&E and SoCalGas. The Commission should authorize either SCE's
15 approach or SDG&E's approach instead. Only once there is an ESA II that
16 specifically remedies the challenges faced by the underserved segments, and
17 hopefully introduces a program design that can have a greater savings impact,
18 should the Commission authorize ESA II.

19 The utilities justify the ESA II proposals by saying with fewer dwellings
20 left to treat, the scope of ESA will be reduced and the workforce that depends on
21 the expanded ESA program of the prior six years will be negatively impacted.¹⁰⁶

¹⁰⁰ PG&E ESA Testimony, p. 2-15, Table 2-1.

¹⁰¹ Yao/Aguierre, p. 130.

¹⁰² SoCalGas Yao/Aguierre Testimony, p. 131.

¹⁰³ SCE ESA Testimony p. 101.

¹⁰⁴ SDG&E proposes treated most of the remaining eligible and willing households during the 2015 -2017 cycle, p. 7 SDG&E ESA Testimony Williams.

¹⁰⁵ SDG&E ESA Testimony p.84-85.

¹⁰⁶ PG&E ESAT Testimony, p. 2-11.

1 SCE adds that some dwellings may not have received the more recently introduced
2 measures.¹⁰⁷ PG&E adds that measures installed in homes more than eight years
3 ago may have surpassed their effective useful life.¹⁰⁸ PG&E specifically identifies
4 caulking and weather-stripping as the type of measures that may have outlived
5 their useful life. ORA is particularly concerned that envelope and air sealing
6 measures are delivering the least value at the greatest cost, and are not a good
7 reason to repeat service.¹⁰⁹ The utilities reasons are not consistent with bringing
8 value to low income homes. SoCalGas’ reasons “Allows contractors to streamline
9 operations, provides a consistent target for local marketing and outreach activities,
10 and facilitates management of the budget.”¹¹⁰

11 The utilities’ concern about workforce impacts has merit. However, the
12 solution, to simply keep the program going at current funding levels, is
13 unsupported. There was never a guarantee that the expansion of the ESA program
14 would be indefinite; in fact, the most clear Commission direction has been that the
15 expansion of the ESA *is* definite, through 2020. There are a variety of options that
16 should be considered to support the workforce that has grown up to deliver the
17 ESA program. These options may include transitioning the workforce to other
18 Energy Efficiency programs or coordinating with municipalities to identify
19 additional opportunities for this workforce. These proposals to go back to already
20 treated homes were not directed by the Commission and should be denied.

¹⁰⁷ SCE ESA Testimony, pp. 100-101.

¹⁰⁸ PG&E ESA Testimony, p. 2-6 & 2-12.

¹⁰⁹ Unit savings values for Envelope & Air Sealing Are presented in the utility applications, Table A-2 Planning.

¹¹⁰ SoCalGas ESA Testimony of Hendler, p. 13.

1 **B. The Commission Should Increase Operational**
2 **Flexibility For Utility Program Administrators In**
3 **Order for ESA to Save More Energy**

4 In response to the Scoping Memo questions¹¹¹ regarding potential barriers
5 and changes, ORA recommends the Commission remove the categories of
6 directives that may limit the discretion of the contractors and the program
7 administrator in determining how to save energy while in the home. The Three
8 Measure Minimum Rule is one example of this. The Commission should also
9 minimize direction as regards to price caps, co-pays and measure replacement
10 criteria. Instead, the Commission should invest efforts in improving the
11 quantification of results of ESA. Specifically the Commission should direct
12 heightened resources and attention to improving confidence in the estimates of
13 ESA energy savings and non-energy benefits.

14 The utilities attempt to deflect criticism to the ESA program by noting the
15 program complexity inherent in dealing with variability amongst customer
16 dwellings. The utilities argue that it is difficult to predict what will be found upon
17 entering a dwelling, and challenging to identify what measures will be appropriate
18 for a dwelling and assessing not only the building, but the occupants in the
19 building and their behavior and needs. Nevertheless, the Commission has put in
20 place multiple program rules to increase accountability. The Three Measure
21 Minimum is a program rule that was intended to ensure a base level of program
22 savings. The rule has been identified as a barrier to program savings in the current
23 applications and prior applications.¹¹²

24 ORA recommends the Commission remove the categories of directives that
25 may limit the discretion of the contractors and the program administrator in

¹¹¹ B.iii. What barriers exist to achieve energy savings in the ESA Program? What strategies can be considered to resolve these challenges? And C.i. What, if any changes should the Commission make to measure-specific price caps, co-pays and measure replacement criteria?

¹¹² SCE ESA Testimony, p. 98.

1 determining how to save energy while in the home. The Three Measure Minimum
2 Rule is one example of this. The Commission should also minimize direction as
3 regards to price caps, co-pays and measure replacement criteria. Instead, the
4 Commission should invest efforts in improving the quantification of results of
5 ESA. Specifically the Commission should direct heightened resources and
6 attention to improving confidence in the estimates of ESA energy savings and
7 non-energy benefits.

8 **C. The Commission Should Actively Guide The Cost-**
9 **Effectiveness Working Group With Direction On**
10 **Inputs, NEBS, And Resource Measures¹¹³**

11 The Scoping Memo, in item I.i., asks “Should the Commission provide
12 explicit guidance on inputs to be included in a cost-effectiveness calculations, and
13 a plan to resolve any outstanding issues in the future?” The reasons that the
14 Commission should provide explicit guidance on these issues, included a process
15 to resolve issues, is because the quantitative, or dollar value of the ESA program,
16 gives the best information regarding the value of the program.

17 In simplistic terms, the cost-effectiveness ratio can be thought of as the
18 value generated by the program compared to the value invested. The program has
19 not had an overall cost-effectiveness requirement. Rather, the program has
20 suggested that certain measures be cost effective. There has been no attempt to
21 look at the whole program. There were several reasons for this. First, the
22 Commission was not confident in quantitative valuations and preferred to operate
23 under the assumption that the program is valuable, and any number would
24 undercount the value. Second, the Commission was not satisfied with the cost-
25 effectiveness test used for the program.¹¹⁴ The problem of unease with the cost-

¹¹³ This section is responsive to the Scoping Memo’s item I. “How should the ESA Program-level cost-effectiveness threshold recommendation(s) of the Cost-Effectiveness Working Group be considered and expanded upon by this proceeding.?”

¹¹⁴ Addendum to the ESA Cost Effectiveness Working Group White Paper, Working Group Final Recommendations, pp. 5-6.

1 effectiveness test has been addressed. The Commission approved the use of two
2 new tests, the ESACET and the Resource Measures TRC, in D.14-08-030. The
3 second problem, of uncertainty around quantification, has not been put to rest.
4 However, ORA believes that the quantifications that do exist should be used as the
5 default values until improved values are proposed.

6 However, as improvements to the quantification are identified and agreed
7 upon, they should be incorporated as soon as possible.

8 **1. Utilities should account for the water savings**
9 **of water measures in the cost-effectiveness**
10 **tests**

11 The Commission directed the utilities to include more measures that
12 contribute to water savings. The utilities have proposed new water savings
13 measures, yet the benefits from these measures are not reflected in tests. SCE
14 suggests that it would more aggressively develop water saving measures if the
15 savings were included in the Cost Effectiveness tests, “In the future, SCE looks
16 forward to working with the Commission and other stakeholders to identify
17 appropriate energy savings claims, which may enable SCE to more aggressively
18 pursue water-energy measures, in both energy efficiency and ESA programs.”¹¹⁵
19 SDG&E does include a number of water-energy measures and asks permission to
20 include the value of these changes.

21 The new water savings efforts are causing increases to the budgets without
22 reflecting any benefits they may generate.¹¹⁶

¹¹⁵ SCE ESA Testimony, p, 11.

¹¹⁶ SCE response to ORA Data Request SCE- 011, question 5, dated 3/13/15.

1 **2. Energy savings estimates change too**
2 **frequently and make understanding**
3 **program changes difficult. The utilities**
4 **should utilize a consistent range of savings**
5 **per measures rather than changing savings**
6 **estimates with each new program application**

7 It is difficult to get consistent cost-effectiveness results from program cycle
8 to program cycle because the main program benefit, energy savings associated
9 with each measure, changes with each ESA Impact Evaluation. Even the energy
10 savings evaluator states that there is quite a bit of variability in the savings
11 estimates over time, and there is no improvement in accuracy.¹¹⁷ For example, if
12 SoCalGas projected its therm savings utilizing the same therm saving estimates
13 that it has in the 2012-2014 cycle, it would project saving 3.2 million therms in
14 2016, but with the new savings estimates it projects saving 4.0 million therms in
15 2016. This type of variation makes it hard to compare programs from cycle to
16 cycle. In contrast, Energy Efficiency programs use a less frequently updated
17 savings estimate from the DEER database.

18 The idea has been raised to incorporate ESA energy savings estimates into
19 the DEER database. SCE is opposed to this idea, stating that the complexity that
20 would result is not worth it, and that the an ESA billing analysis is more accurate
21 and natural.¹¹⁸ While DEER may not be the solution, SCE does not address the
22 frequently changing estimates of the ESA billing analysis nor the flaws raised
23 regarding the prior two ESA Evaluations. However, if a range is determined for
24 certain measures, the DEER values, if available, could be taken into account. The
25 Commission should require the Working Group to identify sources of energy
26 savings on which a consistent range of values could be based.

¹¹⁷ 2011ESA Impact Evaluation p. iii. Also see p. viii, x, xii for discussion of variability and ranges.

¹¹⁸ SCE ESA Testimony p. 136.

1 **D. Next Program Cycle Should Span Three Years**
2 **Or More, With Oversight Checkpoints**

3 **1. The Commission should convene a workshop to plan**
4 **the length of the next program cycle. If multiple**
5 **checkpoints can be built in, with opportunities for**
6 **parties to comment on program changes, a longer**
7 **program cycle may be more efficient**

8 According to the intention of the Strategic Plan, ESA would have had four
9 program cycles of three years each between 2009 – 2020. However, the first two
10 of the program cycles have stretched longer than three years. The 2009 -2011
11 program was continued in 2012 via bridge funding and the Decision authorizing
12 the 2012 -2014 program was issued in August 2012. The Commission proactively
13 extended the 2012-2014 program cycle through 2015 in D.14-08-030. Based on
14 this pattern, it would be most realistic to authorize ESA and CARE for at least four
15 years in this proceeding. A longer program cycle can still allow for program
16 changes and improvement throughout the cycle, as the utilities have proposed in
17 their applications.¹¹⁹ Therefore, a longer program cycle has the following
18 advantages:

- 19 • Adequate time to design, implement and review studies
20 • Less program uncertainty in the final year(s)
21 • More consistent with Energy Efficiency “rolling portfolio”
22 approach

23 The IOU applications contain several proposals to “explore” “consider” and
24 “further investigate.” When there is an intention without checkpoints, progress
25 tends to slow. For example, the prior authorizing decision¹²⁰ required the utilities to
26 create a joint property owner waiver form. ORA repeatedly checked on the
27 progress of this form,¹²¹ but it took over a year for the utilities to produce it. There

¹¹⁹ SCE ESA Testimony p.145-146.

¹²⁰ D.12-08-044, Ordering Paragraphs 27 and 70.

¹²¹ ORA Data Request PGE-3, SDG&E-3, SCE-2, SoCalGas-3, 11/11/2012. ORA Data Requests
(continued on next page)

1 were a series of studies and reports generating a wealth of recommendations, and
2 it would be worthwhile maximizing the recommendations based on this research
3 during an extended program cycle. If the Commission were to shift efforts away
4 from preparing another application (essentially just one year after this proceeding
5 concludes) time could instead be spent implementing and reviewing the various
6 vague proposals. Examples of these proposals include

- 7 • Post ESA Treatment Follow-up¹²²
- 8 • Common SCG SCE application forms¹²³
- 9 • Implementing a process to determine whether a dwelling has been
10 previously serviced by CSD¹²⁴
- 11 • PG&E Water-Energy Leveraging Pilot¹²⁵
- 12 • PG&E Information Sheet for Landlords¹²⁶

13 Furthermore, it would be consistent with the EE Rolling Cycle efforts if
14 the ESA program were to be authorized for the next three to four years with
15 multiple checkpoints on progress.

16 The commission should require the utilities to propose clear metrics and
17 milestones for its ESA and CARE activities over a longer application cycle. This
18 way the Commission and stakeholders can review utility performance in key areas
19 and effectively monitor how effectively the utilities are managing these important
20 activities. Then, the Commission should require compliance filings via Advice
21 letter at least annually in which the utilities can produce progress toward the
22 metrics and milestones, and propose changes to the program should projections
23 not materialize. The Commission took this approach of compliance filings in 2012

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PGE-7, SDG&E-7, SCE-8, SoCalGas-3, 5/3/2013.

¹²² SCE ESA Testimony, p. 60

¹²³ SCE ESA Testimony, p. 61

¹²⁴ SCE ESA Testimony, p. 94.

¹²⁵ PG&E ESA Testimony, p. 2-9.

1 – 2014 which allowed more information and decision-making over the three year
2 period. The utilities filed reports on cost-effectiveness of furnaces and smart strips
3 on October 29, 2012, and on installation costs for simple measures on November
4 28, 2012. However, because these filings were not Advice Letter filings, there was
5 no opportunity for formal review and comment on the filings. The best example of
6 a compliance filing from this period was the Commission’s requirement for a Tier
7 2 Advice Letter filing on the topic of HVAC recommendations. The utilities filed
8 an Advice Letter explaining their decision not to implement recommendations
9 from an HVAC report, and parties had the opportunity to comment through the
10 Advice Letter process. The Commission should follow this model and require
11 compliance Advice Letter filings throughout the next program cycle. The

12 **2. A longer program cycle timeline will improve**
13 **studies results**

14 In the Scoping Memo, the Commission asks whether the three jointly
15 proposed ESA studies should be approved as proposed.¹²⁷ SCE outlines several
16 difficulties with prior ESA program evaluations.¹²⁸ SCE is correct that setting short
17 deadlines for reports compromises the value of the research. If the Commission
18 were to lengthen the next program cycle to three or four years (rather than two)
19 there would be time to order a meaningful program evaluation. If the Commission
20 is to go ahead with authorizing the program for only the two years 2016-17, it
21 would not be prudent to spend money on rushed studies.

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¹²⁶ PG&E ESA Testimony, p. 2-42.

¹²⁷ Scoping Memo, items 2.J.K.L.

¹²⁸ SCE ESA Testimony, pp. 137-138.

1 **E. Impact Evaluation Unreliable As Currently**
2 **Performed; Several Quality Improvements**
3 **Should Be Required**

4 The utilities’ propose an Impact Evaluation to evaluate the energy savings
5 generated by the ESA program.¹²⁹ This study is at the heart of understanding how
6 much ESA helps low-income customers save energy and how much ESA helps
7 California reduce its carbon footprint. Its importance cannot be overstated.
8 Unfortunately, the prior two ESA Impact Evaluations¹³⁰ are so flawed that they are
9 unreliable. This is both documented in prior proceedings and explained further
10 below The Commission should only approve this study with the following
11 safeguards in order to prevent the same problems from re-occurring.

12 **1. Use Standard Statistical Techniques To Avoid**
13 **Incorrect Conclusions**

14 The Impact Evaluation of the 2011 ESA program utilizes the bills of the
15 ESA customers before and after their ESA service to determine if their energy
16 usage changed. This is called a billing regression, and the evaluator utilizes the
17 monthly usage of the households studied. The evaluation only analyzes customers
18 that have received an upgrade during the 2011 program year, and uses customers
19 who have yet to receive an upgrade as a control group. For example, customers
20 that received upgrades in January will be deemed as treated starting then, and their
21 usage will be compared to control customers who do not receive an upgrade until
22 November. Program savings are estimated as the average decrease in energy
23 consumption between the treatment group, and the households that have yet to be
24 treated in that month.

¹²⁹ P&GE ESA Testimony, SCE ESA Testimony p. 141, SDG&E ESA Testimony p. 115, SoCalGas ESA Testimony p.122.

¹³⁰ The Impact Evaluation of the 2009 ESA program was released June 18, 2011 was performed by Evergreen Economics, and is available at calmac.org. The Impact Evaluation of the 2011 ESA program was released August 30, 2013, was performed by Evergreen Economics, and is available at calmac.org.

1 The analysis uses household level fixed effects, which can help account for
2 household unobserved characteristics that do not change over time. This is
3 standard practice in analyses such as these, where it is important to control for
4 different types of household characteristics.

5 The fixed effects model, however, does not account for some important
6 factors that are critical for statistical analysis. In particular, the techniques used in
7 the 2011 ESA evaluation do not properly account for serial correlation, which is
8 dependence between different observations in the same data set. The household
9 fixed effects help control for this in the estimates of the amount (kWh or therm) of
10 savings, but they do not account for serial correlation in the standard errors. This is
11 a critical issue to get correct, since standard errors help the researcher know if the
12 estimates they have found are statistical different from 0, and hence if we can
13 draw any conclusions from the analysis.

14 The common practice over the last decade in statistical analysis is to
15 “cluster” the standard errors at the unit of analysis used. This was highlighted in
16 the seminal paper by Bertrand, Duflo and Mullainathan (2004)¹³¹, which illustrated
17 that not clustering standard errors could lead to concluding significant results
18 when no statistical inference was possible. The effects of clustering standard errors
19 are best illustrated with an example. Consider 10 households that received an ESA
20 upgrade, and the 12 months of post treatment billing data that we have to show
21 their savings. Clustering the standard errors in this example, which is the correct
22 approach, accounts for the fact that these are 12 distinct households where the
23 energy consumption month to month is highly correlated. The electricity
24 consumption in June is going to be very similar to the consumption in July once
25 controlling for weather. Each additional month provides some additional

¹³¹ Bertrand, Duflo and Mullainathan. 2004. “How much should we trust Differences-in-differences estimates?” Quarterly Journal of Economics. Volume 119, Issue 1. P 249-275.

1 information about how a household responds in different conditions, but the same
2 household in different months have a lot of similarities.

3 When the researcher does not cluster standard errors, they do not account
4 for this serial correlation across time. The regression analysis will produce results
5 that treat the 12 months of 10 household observations as 120 independent
6 observations. This makes it appear as if there is much more information in the data
7 than there actually is. Not clustering standard errors thus results in much smaller
8 confidence intervals, and allows the researcher to erroneously reject the null
9 hypothesis.

10 In practice, what this means is that all of the measure level results, such as
11 those reported on page 32-34, are drawing conclusions that likely lack statistical
12 basis. The study is showing savings that are statistically different from zero, but
13 this might not be the case if the standard errors were clustered. If done properly, it
14 is likely that many of those estimates would have confidence intervals that would
15 intersect with 0, meaning that we cannot draw conclusions from the results. It is
16 impossible to know how large of an effect this will have without rerunning the
17 analysis with the proper clustering in place.

18 It is important to distinguish that clustering standard errors only affects the
19 standard error, the t statistic, and the P-value, but not the coefficient estimate. Not
20 clustering standard errors will result in much smaller standard errors, larger t
21 statistics, larger P-values and small confidence intervals. The coefficient estimates
22 are unaffected by clustering standard errors, it is just our ability to have statistical
23 confidence in the estimate which is affected. Usually when clustering is
24 implemented, the authors discuss its usage and to what degree they are using
25 clustering. The 2011 ESA evaluation has no such discussion and appears to not
26 address the issue at all.

1 **2. Do not repeat the practice of tying Ex post**
2 **estimates to ex-ante estimates**

3 The 2011 Impact evaluation engages in dubious research practices by
4 cherry picking results based on evaluator judgement. This practice undermines the
5 conclusions of the report, since the results are shaped to be closely in line with the
6 ex-ante estimates. As a result, the 2011 ex-post evaluation provides next to no
7 insight into the savings that the ESA program offers.

8 This process is outlined as the impact estimates algorithm in section 4 as a
9 3-step process. The process is quoted as follows:

- 10 1. If the 95 percent confidence interval of the
11 impact estimate from the Basic Model included
12 the *ex ante* savings value, then the estimate from
13 the Basic Model was used.
- 14 2. If the confidence interval for the Basic
15 Model estimate did not include the *ex ante* value,
16 then evaluator judgement was used to assign an
17 impact value from among the Basic Model,
18 Measure Model or *ex ante* values
- 19 3. In a couple of instances, an engineering
20 estimate was assigned when the *ex ante* values
21 appeared to be unusual high and neither the
22 regression models could provide a reasonable
23 result.

24 While this is a clearly outlined process, it constitutes poor research practice.
25 Researchers frequently run many specifications and compare the various results.
26 The model they ultimately pick, however, is based on the desirability of the
27 respective model’s assumptions, not their results. It could be valid for the
28 researcher to argue that issues in the estimation (such as problems with
29 collinearity) necessitate using the measure model over the basic model, but this is
30 different from picking results based on how they compare to our ex-ante
31 expectations.

32 One of the major problems with the algorithm is that it almost guarantees
33 that the ex-post estimates will closely match the ex-ante numbers. In step 1, they

1 pick basic model results where the estimated ex-post result is statistically the same
2 as the ex-ante result. In step 2, they used evaluator judgement to replace the ex-
3 post estimate with a different estimate (including the ex-ante one as an option). In
4 step 3, they might revise the ex-ante estimate, but once again this is at the
5 evaluator's discretion. The result of this process is that we learn close to nothing
6 from this evaluation, since any results that deviate from the ex-ante estimates are
7 most likely changed. This creates the sense that this evaluation is actually
8 providing ex-post information that can inform policy makers, when instead it is
9 just reinforcing ex-ante values.

10 The results of this manipulation process are reflected in the reported metric
11 of "realization rate," which show how close the evaluation ex-post savings are to
12 the ex-ante savings. If, for example, the ex-post savings were half as large as the
13 ex-ante ones, then the realization rate would be 50 percent.

14 The realization rates in the 2011 ESA report, however, provide no insight
15 since the evaluator has replaced a number of the ex-post estimated values with ex-
16 ante ones. For each ex-post value that the evaluator chose to replace with an ex-
17 ante one, this realization rate (measured out of 1) mechanically moves closer to 1.
18 This is briefly discussed on page 41, but the report then states that "the realization
19 rate metric does show that the savings values recommended by the evaluation
20 team are fairly close to the original savings estimates provided by the IOUs." This
21 statement is meaningless, since the evaluators *chose* which ex-post metrics they
22 wanted to replace with the ex-ante ones, and thus have control over the eventual
23 realization rate. This constitutes bad research practice to report the realization rates
24 in any fashion, since they are completely fictitious numbers that the evaluator in
25 some circumstances has direct control over. Even if the evaluator does not seek to
26 manipulate these realization rates, the underlying algorithm to estimate program
27 savings pushes them very close to 1.

28 The large effects that this approach has on the savings estimates can be seen
29 in the 2011 ESA evaluation when comparing the whole house model impact

1 estimates to the basic/measure model results on page 44. The whole house
2 approach uses the same regression framework, but just measures the aggregate
3 impact of receiving the ESA program *on average*. It does not produce results for
4 the individual measures installed, but just for households receiving the program in
5 general. There will be a mix of households that have high reductions since they
6 received appliances and insulation, and smaller reductions for households that just
7 received lighting and a few other minor upgrades. The program savings will be the
8 sum of all of the individual measures savings at the houses they were installed at,
9 which is equivalent to the sum of all the household savings together. This is to say
10 that on we can either calculate the total program savings from building up from
11 individual measures or alternatively from calculating the savings from all of the
12 households together that were in the ESA program.

13 The equivalence of the whole house savings and the measure savings is best
14 illustrated in a simplified example. Imagine the ESA program is given to only 10
15 similar households, where each received either a high savings or a low savings
16 upgrade package. All of the households consume 100 kWh/month, and for
17 simplicity sake, would consume 100 kWh/month unless they get an ESA upgrade.
18 We then observe that the consumption for the households that receive the large
19 package of upgrades consume 75 kWh/month, a savings of 25 kWh. The
20 remaining households get the smaller package of upgrades and consume 95
21 kWh/month, a savings of 5 kWh. We could arrive at the program savings two
22 separate ways. The first would be similar to the basic/measure model
23 methodology, and would build program savings up from the individual savings
24 estimates. In this example, one half has a 25 kWh savings and the other half have a
25 5 kWh savings resulting in an average of 15 kWh/household ($25 * .5 + 5 * .5 = 15$).
26 The alternate method would be to take the sum of all post ESA electricity usage
27 ($75 \text{ kWh/month} * 5 + 95 \text{ kWh/month} * 5 = 850 \text{ kWh/month}$), and divide by the
28 total number of customers (10), to find that on the program saved 150 kWh, or an
29 average of 15 kWh/month per household. This is what the whole household

1 method does. In both cases, we find that the program on average saves 15
2 kWh/month using both methods.

3 This equivalence highlights the problem with the large difference between
4 the whole house estimate and the measure/basic level estimates reported. For
5 example, PG&E has a basic/measure model estimate of 366.90 kWh/year saved
6 while the whole house model only shows 35.68 kWh/year saved. The evaluation
7 reports savings for 12 different measures in PG&E in table 16 on page 39. Of
8 those, 7 were replaced with the ex-ante estimates. This includes, for example,
9 99,402 CFLs that had a 0 estimated savings in the regression model, but were
10 replaced with a savings estimate of 75.29 in the evaluation. Considering this is
11 done for over half of the PG&E evaluated measures, it is not surprising that the
12 estimated impacts are so far off from the more accurate whole house measure.

13 In summary, replacing model measure estimates with ex-ante estimates
14 undermines the purpose of an ex-post evaluation. Using the methodology in the
15 2011 ESA paper generates a set of savings estimates that are guaranteed to be
16 similar to the ex-ante estimates. Furthermore, it grants a sense of legitimacy to the
17 savings estimates since they are supposedly based on actual outcomes, when this
18 is far from the case.

19 **3. Do Not Adjust Results To Fit Expected**
20 **Outcomes As This Undermines Research**
21 **Credibility.**

22 The 2011 Impact evaluation makes strong assumptions that the ESA program will
23 result in positive savings for all measures, even when the data presents evidence to
24 the contrary. This is most obviously seen when the Impact Evaluation changes the
25 value of measures that appear to increase usage to actually show zero effect. This
26 is inconsistent with its finding that weather-normalized energy use increased for a
27 significant number of ESA customers in the period after customers participated in

1 the ESA program.¹³² This is essentially changing the results to what the evaluators
2 think they should be, even though the regression model shows negative savings.

3 **4. The Commission Should Set a Longer**
4 **Timeframe for Next ESA Impact**
5 **Evaluation, Even Beyond Utility**
6 **Requests, In Order To Produce Higher**
7 **Quality ESA Impact Evaluation**

8 The utility applications all request a more reasonable timeframe to conduct
9 the next ESA Impact Evaluation. They request the next Impact Evaluation study
10 commence at the end of 2015 and continue for 18 months.¹³³ The Commission, in
11 its eagerness for relevant results quickly during existing program cycles, has set
12 deadlines for Impact Evaluations that cannot realistically be accomplished.¹³⁴
13 Because of regulatory requirements to produce results quickly, the evaluator for
14 the past few Impact Evaluations has been hired after the period to be studied.
15 Furthermore, because the regulatory deadlines demanded a result within a time
16 frame that could not reasonably be accomplished, both the 2009 and the 2011
17 Impact Evaluation studies utilized billing data from the previous program cycle to
18 conduct the analysis. The impact evaluation of 2009 utilized billing and measure
19 data from the 2008 program year. The impact evaluation of 2011 utilized data
20 from this year, but was conducted during the 2012 – 2014 cycle. The evaluators
21 relied upon the fact that the programs are very similar year to year and program
22 cycle to program cycle. However, it would be preferable to allow enough time for
23 a program evaluator to conduct the analysis of a year of the program cycle to be
24 studied. When a prior year is studied, then the measures introduced after that are

¹³² 2011 Impact Evaluation, pp. 29-31.

¹³³ PG&E ESA Testimony Attachment D1-2.

¹³⁴ In 2008 (D.08-11-031, Conclusion of Law 24) the Commission required the completion of the ESA Impact Evaluation in time for the utilities to utilize the savings impacts to prepare their 2012 – 2014 program applications. This proved impossible, and the utilities filed 2012 – 2014 program application based on the draft results of the

1 not included in the evaluation, leaving no verification of the results until many
2 years later.

3 **5. Have Impact Evaluator In Place Prior To**
4 **Period To Be Studied To Leverage and**
5 **Improve Data Collection and Increase**
6 **Confidence In Energy Savings Impacts**

7 A best practice of program evaluation is to hire the evaluator prior to the period to
8 be studied. If the Commission allows adequate time for an evaluator to be hired by
9 program staff, the chances of getting a better outcome improve. Furthermore,
10 when an evaluator is in place early, the problems with gathering the correct data
11 could be more easily addressed. The utility applications detail misunderstandings
12 and delays regarding gathering data for the Impact Evaluation.¹³⁵ Prior Impact
13 Evaluators have expressed a need to collect more and different data.¹³⁶ The
14 Commission should take this extra step for the next Impact Evaluation to improve
15 credibility and confidence in the results.

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¹³⁵ PG&E ESA Testimony p. 2-133 – 2-135.

¹³⁶ See Final LIEE PY2005 Impact Evaluation, Appendices A-9, B.

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IV. HIGH USAGE CUSTOMERS

(Witness Louis Irwin)

A. Introduction

This section addresses ESA policy for high energy usage customers.

Excess energy consumption is a concern for both the ESA program as well as overall state policy. The most recent Commission Decision maintains dividing high usage customers into two groups or degrees of high use: those above 400% of monthly baseline allowance and those above 600% of monthly baseline allowance.¹³⁷ Under current Commission policy, it only takes one month of high usage to get into either of these groups. Many more low income customers have at least one month of electric usage above 400% of baseline than 600%, and the high number of customers getting over the 400% baseline limit creates some management challenges.

Both groups are subject to post-enrollment verification (“PEV”), which is an income eligibility review. This review requires the customer to provide a tax transcript from the IRS. This is more rigorous than the original self-certification enrollment process. Secondly, the customers of both groups are required to participate in the Energy Savings Assistance (“ESA”) Program, which is only waived for those who have already participated in ESA. Additionally, those above 600% of baseline face a 24 month disenrollment from the CARE discount program if they do not get their usage below 600% of baseline and participate in ESA.¹³⁸ As a last resort, de-enrolled CARE customers do have a utility-run appeal process for potential re-instatement.

¹³⁷ California Public Utilities Code 739.1.

¹³⁸ Ibid.

1 ORA supports the current CPUC policy to place high users (above 400% of
2 baseline) through Post-Enrollment Verification (“PEV”) and mandatory ESA. The
3 effort, despite its merits, runs into competing goals to use the ESA program
4 efficiently and to pursue higher enrollment rates for CARE. A uniform, blanket
5 policy loses some policy traction and efficiency if the target population of that
6 policy is itself not uniform. Specifically, in this case, policy inefficiency can occur
7 because high usage is not always correlated with inefficient energy usage. Some
8 CARE customers simply have large families rather than being inefficient or living
9 in a drafty residence. The baseline allowance has never been designed to vary
10 with the number of occupants. This means that smaller families can be even more
11 wasteful, and perhaps, still come under the 400% of baseline threshold.

12 A second Commission goal is to increase the CARE enrollment rate back
13 towards a 90% penetration rate. The PEV and mandatory ESA process, while
14 helping ensure qualified customer participation and promoting energy savings,
15 also leads to some unintentional consequences: the potential for de-enrollment’s of
16 otherwise qualified customers. Due to the inefficiencies and unintended
17 consequences of the current policy, ORA recommends added attention to policy
18 regarding high usage customers.

19 **B. Recommendations – High Usage Customers**

- 20
- 21 • Develop a low cost pre-emptive alert system that notifies the customer in a
22 timely fashion that their usage is approaching 400% of baseline (discussed
23 by ORA witness, Alice Glasner.)
 - 24 • Due to the management burden and the number of customers that can go
25 over the 400% threshold only once in a 12 month period, the Commission
26 should direct the utilities to prioritize review of customers who use over
27 400% of baseline in three billing periods over a 12 month period. This
28 should target habitual high users, as opposed to a household that may have

1 had an anomalous month (such as needing to use electric heat for one
2 month, or having extended house-guests in a particular month).

- 3 • To promote customer retention for CARE, follow-up the written PEV
4 notification by a phone call from a customer counselor who can help them
5 through the PEV process, determine if they are still eligible, and log the
6 deciding factors if the customer is no longer eligible. The counselor could also
7 recommend medical baseline where applicable. The use of outreach in this
8 manner has the benefit of promoting appropriate CARE customer retention and
9 extends positive customer relations for the utility.

10

11 **C. Discussion – High Usage Customers**

12 **1. Contact Rate**

13 The outreach burden of contacting all customers over 400% of baseline for
14 even one month was acknowledged by the Commission. In Decision
15 12.08.044, the Commission allowed that not all such customers need be
16 contacted immediately and that budget constraints may limit the capacity to
17 contact all customers who exceed the 400% threshold in a single billing
18 period. ¹³⁹ While ORA supports this strategy, it also supports a
19 strengthened priority system, such as prioritizing habitual high users
20 (defined as customers exceeding 400% of baseline three or more times in a
21 12 month period). As shown in Table 1 below, the number of customers
22 over 400% is over a quarter of a million for the sum of all three utilities.
23 This creates a large burden despite the lenience to distribute the contacts
24 over an extended time period. Undoubtedly, by the time each of these
25 customers have been verified, many more will have joined their ranks.
26 Table 1 below shows the number of customers, that within a 12 month
27 period, exceed 600% of baseline once, 400% three times, and over 400%
28 once. By prioritizing on customers who exceed 400% at least three

¹³⁹ D.12-08-044. August 23, 2012, p. 214 – 215.

1 months, as opposed to one time, the number of prioritized customers drops
2 by over 50% for all three utilities, dramatically reducing the administrative
3 burden.
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Table 1¹⁴⁰
Frequency of High Use Customers

	PG&E	SCE	SDG&E
Ratio: Customers over 400% of baseline three times vs. once	37%	45%	43%
➤ 600%, once	19,458	9,738	5,488
➤ 400% 3 times	37,946	68,560	5,569
>400% once or more	103,535	154,781	12,846
Total CARE Customers	1.4 million	1.3 million	.4 million

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2. CARE Penetration Rate

10 As described above, the dropping CARE penetration rate is a concern for
11 the program. The PEV process has resulted in a sizable “no response” outcome
12 that is leading to customer disenrollment. Table 2 below shows that the “no
13 response” rate ranges from 54% to 82% across the three utilities. There are over
14 100,000 non-responses and the non-response average over all three utilities is
15 about 75%. This is likely indicative of both a process of sifting out ineligible
16 customers as well as a trend of sifting out eligible customers who may be averse to
17 the PEV process. The Commission should investigate just how many of these

¹⁴⁰ Figures on 400% of baseline from PG&E DR 2, Question 4, November 18, 2014, SCE DR 7, Question 4, March 9, 2015, SDG&E DR 7, Question 4, March 16, 2015. Figures on 600% of baseline PG&E DR 14, Question 8, March 21, 2015, SCE DR 10, Question 8, April 8, 2015, SDG&E DR 9 Question 8, March 11, 2015. CARE participation figures from, “Monthly Report of [utility name] (U 338-E) on Low Income Assistance Programs.”, Section 2.1.2, for PG&E, SCE and SDG&E, December, July and April, respectively.

1 CARE-eligible customers fall into the second category, and identify methods for
 2 encouraging qualified customers to submit the necessary documentation to retain
 3 their enrollment. If only 10% of the “no response” customers are reinstated back
 4 into the CARE program, that would represent an increase of over 10,000
 5 customers, increasing the CARE penetration rate.

6 **Table 2¹⁴¹**
 7 **PEV Response Rates**
 8 **(Accounts over 400% of Baseline)**
 9

	PG&E	SCE	SDG&E
PEV Attempt	66,983	60,925	12,791
No Response	49,715	49,670	6,842
Percentage Non-Response	74%	82%	54%

10
 11 SCE’s testimony specified that it uses phone follow-up to combat the
 12 “no-response” rate.¹⁴² ORA recommends that all of the utilities should institute a
 13 rigorous phone follow-up program so that PEV goals and CARE penetration rate
 14 goals can both be achieved.

15
 16 **3. Maximizing the Cost / Benefit Ratios of ESA**
 17 **Measures**

18 Getting the most impact out of ESA measures is a long-standing ORA
 19 concern. PG&E’s application proposes targeted measures for high usage
 20 customers.¹⁴³ ORA supports the tailored approach to high usage customers if the

¹⁴¹ .Figures on 400% of baseline from PG&E DR 2, Question 4, November 18, 2014, SCE DR 7, Question 4, March 9, 2015, SDG&E DR 7, Question 4, March 16, 2015

¹⁴² California Alternative Rates for Energy (CARE) Program Plan and Budget Proposal for the 2015 – 2017 Program Cycle,” November 18, 2014, p. 8, lines 17 – 21.

¹⁴³ Pacific Gas & Electric Company Energy Savings Assistance (ESA) and California Alternative
 (continued on next page)

1 tailoring considers that not all high usage customers are alike in their energy
2 efficiency needs. In addition, all other utilities should develop similar tailored
3 measure policies for high usage customers.

4 ORA presents some initial results of SCE ESA measures installed based on
5 customer usage. ORA matched billing data with SCE ESA installations and this
6 analysis shows that high use CARE customers are largely getting the same ESA
7 measures installed as compared to general CARE population. Therefore, ORA's
8 data shows that in the case of SCE, ESA installation contractors are not observing
9 actionable differences between high-use and other customers. Figure 1 below,
10 illustrates for SCE that for a variety of key measures, the frequency of installation
11 by level of customer usage shows no particular trend. High energy usage is not
12 prompting more installed measures, or the targeting of particular measures.

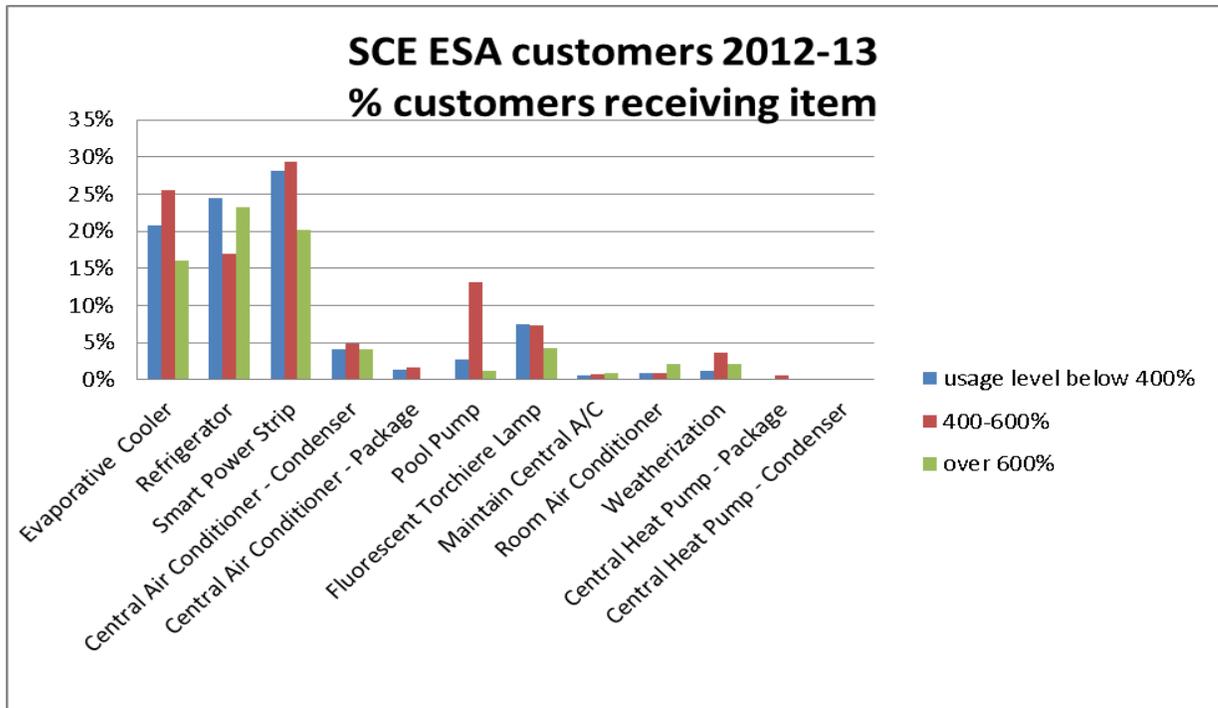
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Figure 1¹⁴⁴
ESA Measures by Usage Level

(continued from previous page)

Rates for Energy (CARE) Program and Budget Applications for the 2015 – 2017 Program Years (PYs) Prepared Testimony, November 18, 2014, p. ATCH C3-1.

¹⁴⁴ ORA Workpapers, developed from utility provided data.



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The lack of a trend between usage level and measure count may be the product of several factors: the condition of the house, the behavior of the customers or SCE administration, or a product of all three factors.

A second consideration is that there are different, more effective ways to achieve the desired results of reducing energy use below 400%. For the utilities with applicable data, ORA finds that the threat of being dropped from CARE was a sufficient motivator to reduce the customer energy usage. In a SDG&E data request, it reported that 558 customers over 600% of baseline got their usage below the threshold prior to when ESA measures were installed, while only 35 got their usage below the threshold after ESA measures were installed.¹⁴⁵ The combined results for SCE and SDG&E indicate that 15 times as many customers got their usage below 600% even before ESA measures were installed compared to after installation. PG&E data did not differentiate between before and after

¹⁴⁵ SDG&E DR 9 Question 8, March 11, 2015

1 ESA installation, so ORA did not include them in this discussion. For the utilities
 2 with applicable data, the threat of being dropped from CARE is a sufficient
 3 motivator to reduce energy use. Results from all three utilities are shown below in
 4 Table 3.

5 **Table 3¹⁴⁶**
 6 **Usage Reduction Outcomes**
 7 **(For usage above 600% of baseline)**
 8

	PG&E	SCE	SDG&E
PEV Passed	4,384	391	1,306
< 600% <i>Before</i> ESA	Not Available / 2,422 for before and after	123	558
< 600% <i>After</i> ESA	Not Available / 2,422 for before and after	8	35
Already had ESA	1,180	70	418
Fail or Decline ESA	782	190	295

9
 10 The results in Table 3 show that ESA should be used efficiently and in
 11 conjunction with all other reasonable means available.

12 **4. Conclusion - High Usage Customers**

13 ORA's proposals for high usage customers have multiple benefits. By
 14 continuing to refine the priorities for addressing high usage customers, resources
 15 can be focused to target the habitual high usage customers. By creating skilled,
 16 assertive and constructive phone follow-up after PEV, the CARE penetration rates
 17 can be improved with the inclusion of deserving customers. Increased energy

¹⁴⁶ PG&E DR 14, Question 8, March 21, 2015, SCE DR 10, Question 8, April 8, 2015, SDG&E DR 9 Question 8, March 11, 2015.

- 1 efficiency can be achieved by tailoring measures to high energy usage. The results
- 2 are a higher CARE penetration rate and more efficient program results.
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APPENDIX A
QUALIFICATIONS AND PREPARED TESTIMONY
OF
CAMILLE WATTS-ZAGHA

Q.1. Please state your name and business address.

A.1. My name is Camille Watts-Zagha, and my business address is 505 Van Ness Avenue, San Francisco, California.

Q.2. By whom are you employed and in what capacity?

A.2. I am a Public Utilities Regulatory Analyst V in the Electricity Pricing and Customers Programs Branch of the Office of Ratepayer Advocates (ORA) at the California Public Utilities Commission.

Q.3. Please describe your professional experience.

A.3. Since 2008 I have been DRA’s Project Coordinator on Low-Income Energy Issues. In this capacity, I have coordinated DRA’s activity on low-income energy assistance programs including the California Alternate Rates for Energy (CARE) and Energy Savings Assistance Program (ESAP). I also work on other issues impacting low-income energy ratepayers such as disconnection policies.

I joined the Commission in June 2000 to analyze competition in the phone and broadband industries. During 2003 – 2006, I worked in ORA and prepared testimony on the ATT & Verizon mergers, telephone universal service reform, and water rates. Prior to working at the CPUC, I performed research and analysis for the Los Angeles Regional Technology Alliance and Niagara Mohawk Power Corporation.

Q.4. Please describe your educational background and qualifications

A.4. My educational background includes a Master’s of Public Administration from the Maxwell School of Citizenship and Public Affairs at Syracuse University (1999) and a B.A. from the University of California, San Diego (1997).

Q.5 What is your area of responsibility in this proceeding?

A.5. I am sponsoring all of ORA’s testimony on the Energy Savings Assistance Programs Application of the IOUs except for High Use Customers

Q.6. Does this complete your testimony

A.6. Yes, it does.

1 **QUALIFICATIONS AND PREPARED TESTIMONY**
2 **OF**
3 **LOUIS IRWIN**

4 **Q.1** Please state your name and business address.

5 **A.1** My name is Louis Irwin. My business address is 505 Van Ness Avenue,
6 San Francisco, California 94102.

7 **Q.2** By whom are you employed and in what capacity?

8 **A.2** I am employed by the California Public Utilities Commission as a
9 Regulatory Analyst in the Division of Ratepayers Advocates.

10 **Q.3** Please describe your educational and professional experience.

11 **A.3** I earned a Master of Arts in Economics from the University of Colorado
12 at Boulder and a Master of Public Administration from the John F.
13 Kennedy School of Government at Harvard University. Both degrees
14 included coursework in finance and economics that are relevant to this
15 case. My undergraduate degree from the University of California at
16 Berkeley was in Psychology, specializing in organizational and business
17 applications. The range of policy areas that I studied included natural
18 resources, environmental, urban and health. Since joining DRA in 1999,
19 I have worked on a large variety of energy related proceedings including
20 smart meters, curtailment policy, distributed generation, congestion
21 pricing and undergrounding issues (regarding distribution wires), prior to
22 working on this case. Prior to coming to the Commission, I worked for
23 seven years in economic consulting, regarding socio-economic impacts
24 due to mining and energy facilities, including the proposed high-level
25 nuclear waste site at Yucca Mountain, Nevada. My more recent
26 consulting experience was directly in the energy field, performing
27 productivity and comparative electric rate analyses with Christensen
28 Associates, a specialist in these areas.

29 **Q.4** What is your area of responsibility in this proceeding?

30 **A.4** I am sponsoring ORA's testimony on Energy Savings Assistance
31 Programs for High Use Customers.

32 **Q.5** Does this complete your testimony?

33 **A.5** Yes, it does.
34