

May 5, 2004

DOCKET OFFICE
California Public Utilities Commission
505 Van Ness Avenue, Room 2001
San Francisco, CA 94102

Re: Order Instituting Rulemaking to Examine the Commission's Future Energy
Efficiency Policies, Administration and Programs – R.01-08-028

Dear Docket Clerk:

Enclosed for filing are the original and five (5) copies of "Myth of IOU Cost-Effectiveness, 2003: Reply Comments of SESCO, Inc. on Proposals for Energy Efficiency Administrative Structure" in the above-captioned matter.

Very truly yours,

Richard M. Esteves

RME/ad

cc: Administrative Law Judge Kim Malcolm
Administrative Law Judge Meg Gottstein
Commissioner Susan P. Kennedy
All Parties of Record in R.01-08-028 (via electronic mail)

Enclosures

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Examine the
Commission's Future Energy Efficiency
Policies, Administration and Programs.

R.01-08-028
(Issued August 23, 2001)

**THE MYTH OF IOU COST-EFFECTIVENESS, 2003:
REPLY COMMENTS OF SESCO, INC. ON PROPOSALS FOR
ENERGY EFFICIENCY ADMINISTRATIVE STRUCTURE**

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THE MYTH OF IOU COST-EFFECTIVENESS, 2003:

REPLY COMMENTS OF SESCO, INC. ON PROPOSALS FOR ENERGY EFFICIENCY ADMINISTRATIVE STRUCTURE

Most Residential Utility EE programs are *not cost-effective*.

Only a *small number* of the Utility EE programs are actually cost-effective.

A large number of Utility EE programs *exaggerate* their cost-effectiveness.

A number of parties have recommended that the Utilities (also known as “IOUs”) act as both administrators (including selectors of EE programs and implementers) and as the primary implementers of those programs. Even while recognizing the potential for a conflict of interest, the pro-utility parties normally justify this recommendation based upon what they believe is the “proven” ability of the Utilities to design and deliver a wide variety of cost effective energy savings statewide.

This is a myth. This myth is largely based upon a few Utility non-residential programs that provide very high savings levels on a very cost effective basis (i.e., the Standard Performance Contract, the Express Efficiency and the New Construction Savings by Design Programs). However, an examination of the Utilities own year-end filings (submitted on May 1, 2004)¹ reviewing the actual costs and benefits of their programs clearly proves that many utility designed and implemented programs are *not* successful in delivering cost-effective savings. This is particularly true in the Residential Sector.

Because these findings may be considered controversial, we are submitting these reply comments early so as to allow other parties to check the year-end reports on the Utility websites and filings to verify the accuracy of these conclusions. SESCO, a minority-owned contractor specializing in residential, low income and small commercial energy conservation projects, reserves the right to submit additional reply comments on or before the May 10, 2004 deadline for such reply comments. Unless otherwise noted, the sole source and reference for the

¹ While due on May 1, 2004, several utilities did not make them publicly available until May 4th or 5th.

information provided concerning the Utility programs herein are the energy efficiency report narratives and workbooks submitted to the Commission by each of the IOUs for each of their approved statewide EE programs, as provided by the respective Utility websites.

BACKGROUND

The primary purpose of EE programs is to provide cost-effective energy savings. The Commission has stated: “Our objective in this proceeding is to *maximize energy savings with cost effective programs* and consider the other public policy criteria we adopt today.” (D.03-08-067, p.10, emphasis added) In the same decision, the Commission indicated the public interest was in maximizing cost effective electric and gas savings: “On the basis of our review of AB 117, however, these [utility program] extensions could not be automatic because we must ensure that *all programs advance the public interest in maximizing cost-effective electricity and natural gas savings* and related benefits and are consistent with the goals of existing programs established pursuant to Sections 381, 381.1, and 890.” (D.03-08-067, p.19, emphasis added) And yet again in the same decision: “Consistent with our previous discussion, our primary objective in this proceeding is to *promote cost-effective EE savings* fairly and sensibly.” (D.03-08-067, p.17, emphasis added)

In their initial comments, some parties apparently felt that the prior success and cost-effectiveness of utility programs justified the selection of the Utilities as both Administrators and Implementers, even with the potential conflicts. This was stated either directly or implicitly. For example:

“The proposals differ in whether or not the administrator(s) are allowed to implement programs. ...Having the utilities as both administrators and implementers in the Reaching New Heights proposal creates potential problems that must be mitigated, but we believe that having the utilities as administrators brings other benefits ..that outweigh the added effort required to make sure that all implementers are treated fairly.” (Comments of NRDC, p. 9-10)

“The IOUs on the other hand are highly motivated to ensure the delivery of the forecasted savings or they will fail to meet their resource plan targets and will incur increased energy costs.” (Joint Comments of the IOUs, p.7)

“..We would also like to state that our overall comfort with investor owned utility (IOU) administration is based on (a) their significant potential for administering a great portfolio of successful programs and (b) effective oversight and independent evaluation.” (“Supplemental Comments of Nexant”, p.1)

“The commission’s highly ambitious goal .. can best be achieved by the amended NRDC proposal because it uses and mobilizes existing strengths and resources that already exist at the IOUs..” (Latino Issues Forum, p.2)

Whether we agree or disagree with this conclusion, it is certainly timely to examine the record of supposed success and cost-effectiveness of utility programs before making a final decision based upon any assumption about the effectiveness of Utility programs.²

THE COST-EFFECTIVENESS OF IOU PROGRAMS

According to their May 1, 2004 filings for year-end 2003, the IOUs conducted 73 statewide and local programs in 2003. However, the overwhelming portion (97%!) of net benefits come from just 13 programs: the four Express Efficiency, the four Non-Res New Construction, the four Standard Performance Contracts³ and PG&E’s Crosscutting Statewide Upstream Lighting program.

	Total Net Benefits (000s)	NR Big 3 Net Benefits (000s)	Portion from NR Big 3
PG&E	\$218,130	\$229,008 ⁴	105.0%
SCE	143,080	129,748	90.7%
SCG	30,104	29,360	97.5%
SDG&E	42,990	31,581	73.5%
TOTAL	\$434,304	\$419,697	96.6%

Thus, the remaining 82% of the programs (60 out of 73) produce a net total of only 3.4% of the net benefits.

² Many non-utility programs may also prove to be as unsuccessful (or worse) as the utility programs. IOU programs are reviewed herein because their assumed success is a critical factor in this evaluation.

³ SCG does use not the SPC, which is primarily electric savings based. Instead SCG uses a gas-based local program also targeted to the Non-Res market.

⁴ Includes Cross Cutting Upstream Lighting Program.

Residential Savings Programs. While there are a number of local or statewide information or single-technology residential programs, each of the four Utilities sponsors the four major generic residential programs: Multifamily Retrofit, Multifamily New Construction, Single Family Retrofit, and Single Family New Construction. Examining these 16 common programs clearly demonstrates that the Utilities do not have a generally positive record of developing and implementing cost-effective, successful residential programs:

Utility	Residential SW Program Titles	TRC Ratio ⁵
PG&E	Multifamily New Construction	0.88
PG&E	Multifamily Retrofits	2.69
PG&E	Single Family New Construction	0.91
PG&E	Single Family Retrofits	0.75
SCE	Multifamily New Construction	0.56
SCE	Multifamily Retrofits	2.02
SCE	Single Family New Construction	0.80
SCE	Single Family Retrofits	0.97
SCG	Multifamily New Construction	2.07
SCG	Multifamily Retrofits	1.26
SCG	Single Family New Construction	0.09
SCG	Single Family Retrofits	0.89
SDGE	Multifamily New Construction	2.03
SDGE	Multifamily Retrofits	1.92
SDGE	Single Family New Construction	0.91
SDGE	Single Family Retrofits	0.92

Some facts that this demonstrates:

Ten of the Utilities' 16 common residential programs (63%) are *not* cost-effective.

None of the Utility Single Family New Construction programs are cost-effective.

⁵ Includes only the savings benefits from the PGC energy provided; thus, SCE TRC values do not include gas savings and SCG values do not include electric savings. Were SCG values to include electric savings benefits, its single family retrofit program would become cost-effective.

None of the Utility Single Family Retrofit programs are cost-effective.

Only two of the Utility Multifamily New Construction programs are cost-effective (SCG and SDG&E).

All four of the Utility Multifamily Retrofits are cost-effective. However, as we see in a succeeding section below, this was achieved by changing these programs into essentially single-measure programs.

Two Utilities (SCG and SDG&E) were cost-effective in 2 of the 4 major programs. The other two Utilities (PG&E and SCE) were cost-effective in only 1 of the 4 major programs.

Behind the Utility MF Cost-Effectiveness Numbers

All four Utilities had a cost-effective Multifamily Retrofit program for 2003. However, the reason this occurred was that what had been touted in the Utilities' original Implementation Plans and workbooks to be an extremely comprehensive program, featuring strong penetrations of a many different types of measures, devolved in late 2003 into one- or two-measure programs. The measures were lighting or programmable thermostats or the combination of the two. The portion attributed to these two measures ranged from 97% of the total (SCE) to 58% for SDG&E. The average was 83% of all savings benefits for the program came from just two measures:

CONCENTRATION OF UTILITY MF REBATE MEASURES						
	Total MF Benefits (000s)	T-Stat Benefits (000s)	Lighting Benefits (000s)	T-Stat Portion	Lighting Portion	LTG+T-Stat Portion
PG&E	\$8,887	\$3,392	\$5,092	38%	57%	95%
SCE	3,066	388	2,584	13%	84%	97%
SCG	5,994	4,305	0	72%	NA	72%
SDGE	3,906	369	1,877	9%	48%	58%
Total MF	\$21,853	\$8,454	\$9,553	39%	44%	83%

This concentration is far different from the original plans submitted and approved. For example, SCG's approved plan had a target goal of only 910 fifty dollar rebates for

programmable thermostats, but concluded the year with 10,081, more than 11 times as many. While the high cost-effectiveness of thermostats and lighting definitely helped the Utility programs become more cost-effective, it did so to the detriment of the comprehensiveness of the program.

A similar scenario has happened in several other programs. For example, in the Express Efficiency program, 78% of SCG's savings come from two measures: programmable thermostats and greenhouse curtains. This is more than 7 times the level called for in the approved plan for these two measures. PG&E's Express Efficiency secures 92% of its savings from lighting and programmable thermostats; SCE secures 97% of its savings from those same two measures; and SDG&E secures 68% of its savings from lighting alone.

And, of course, the Utilities have a history of relying upon single-measure programs for significant savings. For example, the Cross-Cutting Upstream Lighting Program sponsored by the three electric IOUs produced more electric savings than the Utilities' entire non-lighting Residential portfolio. It would probably be of value to determine how much of the IOUs program savings overall are due to lighting alone.

There is nothing wrong with a one- or two-measure program -- provided that is what the designer intended and that is what was approved. The problem arises when this is not what was promised when approved; moreover, it may indicate poor program design if this is the result and something else was planned.

Actual Versus Phantom Savings

The cost-effectiveness of many 2003 Utility programs are achieved only by including both actual savings achieved (from measures actually installed) and all "commitments" or promises to install measures and deliver savings. However, such 2003 promised measures have not yet been installed, or have not been inspected or approved or have not, for some other reason, not counted as having been "achieved." They are, in effect, phantom savings.

Unfortunately, as almost every program implementer or administrator knows, many of these “commitments” fail to materialize; and the longer the delays in being achieved, the less likely they are to be achieved. Nevertheless, PG&E and SCE⁶ rely extensively upon these promised savings to achieve their cost-effectiveness levels. Over half (51%) of all of SCE’s total benefits have not yet been achieved and 42% of PG&E’s savings are still (as of the May 1, 2004 filings) in the committed or promised categories. Although 2003 programs were to have been closed at the end of December, the following programs as of May 1, 2004 are still shown as having very large blocks of promised rather than achieved savings:

ACHIEVED VERSUS COMMITTED SAVINGS						
IOU	Savings Program	Total Benefits (000s)	Achieved Benefits (000s)	Committed Benefits (000s)	Achieved Savings	"Committed" Savings
PG&E	MF New Construction	\$1,691	\$0	\$1,691	0%	100%
PG&E	SF New Construction	5,717	114	5,603	2%	98%
PG&E	Non-Res New Construction	48,328	1,450	46,878	3%	97%
PG&E	CCSF Pilot ⁷	7,632	687	6,945	9%	91%
PG&E	Standard Perf. Contract	72,468	14,494	57,974	20%	80%
PG&E	Express Efficiency	58,813	35,288	23,525	60%	40%
PG&E	Multifamily Retrofits	8,887	7,998	889	90%	10%
PG&E	Upstream Ltg	134,137	123,406	10,731	92%	8%
PG&E	Appliance Recycling	5,347	5,133	214	96%	4%
PG&E	Single Family Retrofits	26,709	26,709	0	100%	0%
PG&E	Total Benefits	\$369,729	\$215,279	\$154,450	58%	42%
SCE	MF New Construction	\$458	\$9	\$449	2%	98%
SCE	SF New Construction	5,166	103	5,063	2%	98%
SCE	Standard Perf. Contract	64,928	9,739	55,189	15%	85%
SCE	Non-Res New Construction	55,062	8,810	46,252	16%	84%
SCE	Express Efficiency	65,939	48,795	17,144	74%	26%
SCE	Multifamily Retrofits	3,066	2,575	491	84%	16%
SCE	Single Family Retrofits	15,855	13,952	1,903	88%	12%
SCE	Appliance Recycling	14,758	13,430	1,328	91%	9%
SCE	Non-Res HTR	3,364	3,061	303	91%	9%

⁶ To their credit, neither SCG nor SDG&E have counted any energy savings in their cost-effectiveness calculations unless the savings measures have actually been installed and the savings achieved.

⁷ The CCSF Pilot is ongoing in 2004 and was not to have terminated in December.

SCE	Upstream Res. Ltg	22,136	21,693	443	98%	2%
SCE	Total Benefits	\$250,732	\$122,169	\$128,563	49%	51%
	Total PG&E and SCE	\$620,461	\$337,448	\$283,013	54%	46%

Some of the programs that provide the most cost-effective and largest savings and the ones with the largest blocks of unachieved savings. This includes the Non-Res New Construction, the Standard Performance Contracts and Express Efficiency. In fact, the respective amount that are still not “achieved” as of May 1, 2004 by each utility is equal to 90% of all of SCE’s 2003 Net Benefits and 70% of all of PG&E’s 2003 Net Benefits. If these two utilities had followed the examples of SCG and SDG&E and not counted any savings that were not yet achieved, their entire portfolios would be barely cost-effective.

Single Energy Utilities Count Savings Benefits Differently

SCE is an electric only utility, collecting PGC funds only from electric customers. In counting its energy savings and the resultant benefits, SCE includes only electric savings derived from its own electric customers. This is true even when an electric savings measure may also result in some gas savings.

On the other hand, the state’s other major single energy utility, SCG, has elected to count any and all electric savings derived, even if it comes from a customer served by a municipal electric company, such as LA DWP, Anaheim, etc. Thus, instead of counting only those savings derived from its PGC customers and their gas energy source, SCG counts savings in fuels which do not contribute to its natural gas PGC-funded programs. Thus, the decisions as to which measures and programs are cost-effective often rely much more on electric savings than on the gas savings derived. This makes the gas savings almost incidental. For example, only 4% of the benefits of SCG’s Non-Residential New Construction program is achieved from saving natural gas; 96% of SoCalGas program’s total benefits come from saving electricity.

SCG does eliminate electric savings in one of its programs, the local Non-Res Financial Incentives, which SCG uses to replace the Standard Performance Contracting program. In this program, SCG includes no electric savings benefits.

However, SCG’s other six savings programs count very significant electric savings to justify the measures and programs. The average portion of electric savings is 54% of each program. If we weight the programs by their size, the average portion of the savings that are counted from electricity savings from these six programs is about 40%.

By removing the electric savings benefits from the SCG workbooks, SESCO has been able to demonstrate the impact on SCG’s savings effectiveness if it followed SCE’s example and counted only the energy savings from its own PGC-funded customers. The following shows the differences:

SCG Savings Programs With Electric Savings	Total Benefits (000s)	Gas Benefits (000s)	Electric Benefits (000s)	Portion Electric	Combined TRC	Gas Only TRC
Non-Res New Construction	\$7,466	\$315	\$7,151	96%	3.28	0.14
Single Family New Construction	432	55	377	87%	0.72	0.09
Multifamily New Construction	1,798	871	927	52%	4.28	2.07
Multifamily Retrofits	5,994	3,338	2,656	44%	2.26	1.26
Single Family Retrofits	10,939	7,562	3,377	31%	1.29	0.89
Express Efficiency	16,013	13,510	2,503	16%	3.33	2.81
SCG Electric Savings Programs	\$42,642	\$25,651	\$16,991	40%	2.22	1.34

Assuming that the primary purpose of Gas PGC-funded EE programs is to provide gas savings in a cost-effective manner, then the “success” of these programs need to be re-stated in terms of gas savings. As an alternative, examining the cost per therm gas savings would indicate if a gas-savings program were successful in delivering cost-effective gas savings. The following compares cost per therm saved of several SCG programs compared to the typical ten-year avoided costs of a therm of gas (\$3.56 per values included in the workbooks).

SCG Savings Program	Cost per Therm Saved	Value of Therm⁸ Saved	B-C Ratio
Single Family New Construction	\$56.29	\$3.56	0.06
Non-Res New Construction	\$35.40	\$3.56	0.10
Single Family Retrofits	\$4.83	\$3.56	0.74
Multifamily Retrofits	\$3.61	\$3.56	0.99
Multifamily New Construction	\$2.49	\$3.56	1.43
Express Efficiency	\$1.06	\$3.56	3.36
Non-Res Financial Incentives	\$0.90	\$3.56	3.96

CONCLUSIONS

None of these Utility programs examined are “new” programs, needing additional years to mature and to become more cost-effective. All of these, both residential and non-residential, are carryover programs from 2002 or even earlier. There is no “ramp-up” or concept changes that might justify a belief that future years for individual programs will be seriously different from the record in 2003 for the same programs.

Even if there are some changes in the individual programs, the patterns are unmistakable:

It is clear that the IOU Residential Programs are frequent failures, with a record of 10 losses out of 16 programs. (Were this a football team, it is likely that both the coach and the general manager would be replaced, especially if, like California’s IOUs, they had many years to “fine tune” their efforts to this level of “success”.)

Thus, it appears that IOU Residential programs, far from being uniformly successful, superior and cost-effective, are for the most part not even adequate. Although it will be instructive to secure greater details and comparisons with some non-utility programs, this finding should be more than sufficient to demonstrate that IOU EE programs, particularly in the

⁸ This value assumes a typical 10 year EUL. The actual may be higher or lower depending upon the actual mix of measures.

Residential sector, do not deserve to be assumed across-the-board successful. The major conclusions based upon the IOUs' own EE filings include the following:

1. Utility designed and implemented residential programs are generally *not cost-effective*, with 10 (63%) of sixteen failing the cost-effectiveness test as per the Utilities own reports to the Commission.
2. Most of the Utility Residential programs that appear to be cost-effective have achieved this by drifting from their original comprehensive concept to becoming essentially a one-or two-measure program. This is also true of some Non-Residential programs such as the Express Efficiency programs.
3. The Utility reputation for quality cost-effective programs are based almost entirely upon a small number of programs, primarily non-residential. 82% of the programs collectively produce only 3% of the net benefits.
4. About half of all the savings claimed for PG&E and SCE programs have not been achieved as of May 1, 2004. These are phantom "committed" installations which may or may not be realized; these are concentrated in the few highly cost-effective programs that supply most of the Utilities net benefits. Excluding these unrealized savings would make those portfolios only barely cost-effective.
5. The savings and cost-effectiveness success SCG's gas savings programs have been exaggerated by including large amounts of electric savings, sometimes in excess of 85% of all savings and averaging for most in the 40% to 50% range. SCE, by comparison, limits itself to benefits from saving the single energy (electricity) that funds its PGC EE programs.
6. The IOU programs may be a disproportionate beneficiary of various local and statewide information programs which act as the marketing arms for those programs without being included in the cost-benefit analysis of those programs. If they had

been included or if the Utility programs had to internalize more of their own M&O, the benefit-cost ratios would have been lower relative to the non-utility programs.

7. Since the primary justification for recommending that utilities take on the dual but conflicting jobs of selecting/administering and implementing EE programs is largely based upon the supposed success and superiority of their programs, the information gathered from their programs shows this to be an erroneous assumption. The data contained in these reports clearly show that the IOU programs are *not* generically successful or cost-effective. This is particularly clear in the Residential portfolio programs; in the non-residential category, there are sufficient concerns that this assumption of superior and cost-effective efforts must be carefully examined on a case-by-case basis.

SESCO welcomes any suggestions or insights into improving this analysis. We are circulating this report prior to the final due dates for other reply comments so as to allow their use by other interested parties. We do ask that anyone seeking to criticize the accuracy of any statements or numbers presented herein, please provide the details and sources with the specificity contained herein. This will allow others to evaluate the comparative claims in an objective manner.

SESCO recognizes that additional details may be useful in further evaluations, and we would welcome any efforts to put that analysis together and circulate it among interested parties.

Respectfully submitted,

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May 5, 2004
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CERTIFICATE OF SERVICE

I hereby certify that I served the foregoing “Myth of IOU Cost-Effectiveness, 2003: Reply Comments of SESCO, Inc. on Proposals for Energy Efficiency Administrative Structure” by emailing this document in MS Word 6.0 and/or PDF format to all email addresses on the R.01-08-028 service list. A list of the email addresses is attached to the original of this filing.

Dated: May 6, 2004

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R.01-08-028 Email Service List

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