1999-2008 Clean Energy Initiative (CEI) Assessment Report

Prepared for:

Long Island Power Authority

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1. INTRODUCTION

In 1999, the Long Island Power Authority (LIPA) initiated a number of energy efficiency programs known as the Clean Energy Initiative (CEI). As these programs have matured and experience has been gained, the choice was made by LIPA to assess the efficacy of the CEI portfolio's performance in support of optimizing its successor portfolio Efficiency Long Island (ELI).

This report assesses the accomplishments of CEI against specific goals established for the portfolio of programs and provides a macro-level review of portfolio expenditures, performance results, and societal benefits from 1999-2008. To support a continuous improvement approach, this report also assesses, and makes recommendations regarding, opportunities to refine program processes and implementation as well as to target evaluation goals.

CEI's residential, commercial and renewable programs were developed to reduce energy consumption and promote energy efficiency and renewable energy generation. Many CEI programs continue to exist in an altered form within the new ELI portfolio.

Table 1 maps CEI programs to corresponding ELI programs, and provides an indication as to whether each program will continue, be discontinued or merge into new programs under the ELI portfolio. Of the 12 CEI programs offered from 1999-2008, 9 will continue in some form under the ELI program portfolio.[1]

[1] A thirteenth program, Keep Cool AC Bounty was offered from 2001 through 2003.

Table 1: Completed CEI Programs and Proposed ELI Programs

CEI Program (1999-2008)	ELI Program (2009- 2018)
Residential	
Residential Lighting & Appliances	Energy Efficient Products
Cool Homes Residential Energy Affordability Partnership Home Performance with ENERGY STAR® Information & Education	Residential Existing Homes Cool Homes Residential Energy Affordability Partnership Information & Education Home Performance with ENERGY STAR® Home Performance Direct NEW
ENERGY STAR® Labeled Homes	Residential New Homes ENERGY STAR ® Labeled Homes
	MultiFamily Program NEW
Commercial	
Commercial Construction	Commercial New Construction
	Commercial Existing Buildings Small Commercial Direct Install NEW
	Government/Not-for-Profit
Retrofit Energy & Capacity Program (RECAP)	*Discontinued*
Multi-Sector	
Customer Driven Efficiency	*Discontinued*
Research, Development and Demonstration	Operates a separate program (not included in ELI)
LIPA*edge*	LIPA*edge*
Renewable	
Solar Pioneer	Solar Energy Program Solar Pioneer (Residential) Solar Entrepreneur (Commercial & Government Not-for-Profit) Solar Thermal (Residential) *Effective 2010* NEW
	Wind Energy Program NEW

The majority of CEI programs sought market transformation for energy efficient measures in residential and commercial markets (retrofit and new construction). Homeowners and commercial occupants comprised the bulk of the target market. Upstream market actors, such as contractors, retailers, manufacturers, and distributers, were also targeted by many of the programs. Appendix A presents an overview of CEI programs including a brief description of the program's intent, the measures utilized and the program's target market(s).

2. EXECUTIVE SUMMARY

1999 marked the start of LIPA's Clean Energy Initiative (CEI). CEI's residential, commercial and renewable programs were developed to reduce energy consumption and promote energy efficiency and renewable energy generation. The programs operated in the residential and commercial markets and targeted residential homeowners and commercial occupants. In addition, upstream market actors, such as contractors, retailers, manufacturers, and distributers, were targeted by a number of the programs. Many CEI programs continue to exist in an altered form within LIPA's new ELI portfolio.

Results

The cumulative expenditures for the lifetime of the CEI portfolio totaled $351 million.[2] The largest share of this was the residential programs, accounting for 39% of cumulative expenditures. However, among individual program cumulative spending, the Commercial Construction program had the highest lifetime spending at $64 million, followed by Solar Pioneer ($53 million), RD&D ($46 million) and Lighting & Appliance ($45 million). It should be noted that cumulative spending for nine of the thirteen CEI programs exceeded their lifetime program budget.

Year to year program spending varied greatly, particularly in 2001, 2002 and 2007. However, residential programs also represented the lion's share of year to year program spending. Commercial spending rose 400% over the 10 years of the CEI portfolio from $2 million in 1999 to $8 million in 2008, while all multi-sector spending declined over the ten years of the program.

Over the lifetime of the CEI portfolio, the programs saved and/or produced 3,096 GWh of energy. In addition, the portfolio was generally successful when compared to program goals:

- Cumulative Annual portfolio MWh savings reached at least 94% of portfolio goals, missing portfolio goals by 47 GWh.
- Cumulative Annual portfolio MW savings reached at least 90% of portfolio goals, missing portfolio goals by 19 MW.
- Cumulative Annual CEI participation exceeded portfolio goals by at least 17%, achieving 47,000 more participants than program goals.[3]

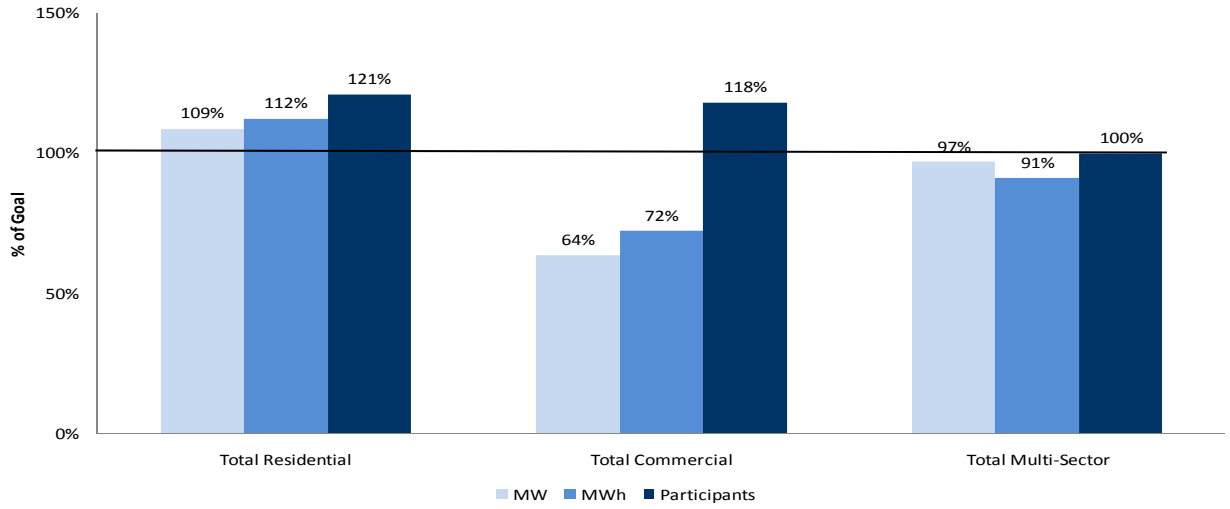
Residential programs exceeded all goals over the lifetime of the CEI program, while commercial programs fell short on savings goals but exceeded participation goals and multi-sector programs fell just shy of savings goals and met participation goals. Figure 8 presents

[2] All dollars in this report are nominal dollars e.g. they represent previous year's expenditures that have not been adjusted for inflation.

[3] Note that participant goals and reported participation levels do not include Lighting & Appliance participants because they count units (CFLs, torchieres), rather than participants. In addition, this does not include 2008 results, as no official goals were set for these programs in that year.

the program achievements as a percentage of program goals over the lifetime of the CEI portfolio.

Figure 1: Portfolio Achievements as a % of Goal (1999-2008)



In 2008, the CEI portfolio also reported favorable measures of societal benefits and costs with an overall benefit cost ratio of 2.08, a levelized cost of $0.048 and emissions reductions of over 1,934,800 tons of CO_2.

During its lifetime, the CEI portfolio also made strides towards market transformation. For example:

- Energy Star Labeled Homes - LIPA achieved the established market transformation goals through "encouraging towns to adopt ENERGY STAR® Labeled Home standards as an energy code for all new construction projects." As of January 2009, eleven out of fifteen townships engaged by LIPA have adopted or are planning to adopt new code standards. [4]
- Solar Pioneer - The Solar Pioneer program sought to accelerate development of a "self-sustaining local infrastructure for the delivery and maintenance of PV systems."[5] According to a 2002 baseline report, the program had already begun to demonstrate "the market opportunity created by the Solar Pioneer Program, [as] many of the manufacturers have partnerships with distributors, systems integrators, or contractors serving Long Island."

[4] From KEMA, Inc., "Attitude and Awareness Baseline Study and Market Barrier Assessment for LIPA's ENERGY STAR® Labeled Homes and Home Performance with ENERGY STAR® programs", 1/26/2009.

[5] Opinion Dynamic Corporation "Residential Photovoltaic Baseline Study", 1/1/2002.

Recommendations

Based on our review of the CEI portfolio, the evaluation team is making a number of recommendations to improve ELI program processes including:

- Ensure that all parties involved in ELI (i.e., LIPA staff and contracted program managers, program implementers, portfolio planners, and evaluators) coordinate their efforts so that meaningful and consistent data is collected, documented and incorporated into program planning, review and evaluation.
- Institute annual meetings in which revisions to program assumptions based upon field data are documented and provided to all interested parties. Efforts to streamline and institutionalize program revisions will increase transparency.
- Have the incoming program planner provide clear documentation of how cumulative annualized and portfolio performance results are calculated. Under CEI, inconsistencies in how the data was reported over time show that there are sizable discrepancies across year-to-year performance results and room for error in the conclusions that were drawn from these data.
- Create a higher degree of transparency regarding program assumptions and factors that are utilized to determine performance results. Under CEI, the Annual Reports contain minimal documentation regarding whether or not the algorithms used to determine performance results are accurate, revised, modified or evaluated.
- Ensure that MWh savings are reported over the effective useful life of each measure, not simply as one-time savings.

In addition, the evaluation team is making the following recommendations for future ELI evaluation efforts:

- Develop a current efficiency baseline for relevant markets and end uses based on site visits and measure persistence studies[6] to refine and evaluate the current program algorithms and assumptions used to estimate expected program savings. In addition, these site visits can verify installation estimates and refine program goals. Through thorough evaluation efforts that inform performance results, program performance and effectiveness can be assessed over time to ensure that the portfolio meets its objectives.
- Conduct evaluations with sufficient frequency to identify the results of program efforts and verify program assumptions, especially impact evaluations. Under CEI, the performance results presented in the Annual Reports were informed by a limited number of evaluation results.

[6] A persistence study collects data that assesses the long-term persistence of energy savings and effective useful life of measures installed due to the intervention. This typically means that evaluations are performed to determine if measures that were installed continue to be operational or continue to be used. Persistence studies help to inform program planning assumptions and performance results. Under CEI, one persistence study was completed.

- Leverage prior evaluations to determine a baseline for future evaluation efforts, such as the evaluation of ENERGY STAR® Labeled Homes and Home Performance with ENERGY STAR®, in order to determine impact as well as assess market barriers.

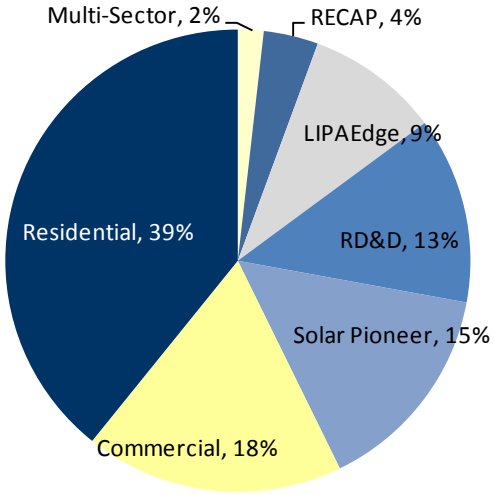
3. PORTFOLIO BUDGETS AND EXPENDITURES

This section presents a review of CEI budgets and expenditures. The evaluation team sources the budget values presented below from the annual Operations and Maintenance Variance Reports supplied by LIPA.

Cumulative CEI portfolio expenditures totaled $351 million[7] from 1999-2008 (Figure 2).

Figure 2: CEI Portfolio Spending by Market Sector (1999-2008)

($351 million dollars)



Residential programs comprised the largest share of cumulative portfolio spending, followed by commercial, RD&D and multi-sector programs. Figure 3 depicts portfolio spending by market sector for each year of the portfolio. Over the last decade, residential programs comprised the bulk of spending for each year. Commercial program spending has increased over the years from approximately $2 million in 1999 to $5 million in 2000, remaining relatively stable between $6 million and $10 million between 2001 and 2006. 2007 saw a significant increase in Retrofit Energy and Capacity Program (RECAP) spending ($10 million). Total commercial spending decreased to approximately $8 million in 2008. Multi-sector and RD&D programs combined spending has steadily declined over the program years with a high of $20 million in 2001 decreasing to $4 million in 2008. As can be seen, program spending varied greatly over time, particularly in 2001 and 2002, and 2007. Spending in 2001 was largely driven by an increase in spending for Lighting & Appliances (approximately $4 million more than the previous year) and the start of LIPA*edge* for which spending totaled $7.2 million. Increased spending in 2002 was primarily due to the Keep Cool AC Bounty[8],

[7] All dollars in this report are nominal dollars e.g. they represent previous year's expenditures that have not been adjusted for inflation.

[8] The Keep Cool AC Bounty was a component of the Residential Lighting & Appliance Program and was run in partnership with NYSERDA.

which totaled approximately $14 million in spending in 2002. Additionally, spending for RECAP totaled approximately $10 million dollars in 2007, driving up spending for that program year. Solar Pioneer increased spending from approximately $1 million in 2000 to approximately $12 million in 2008.

Figure 3: Portfolio Spending by Market Sector (1999-2008)

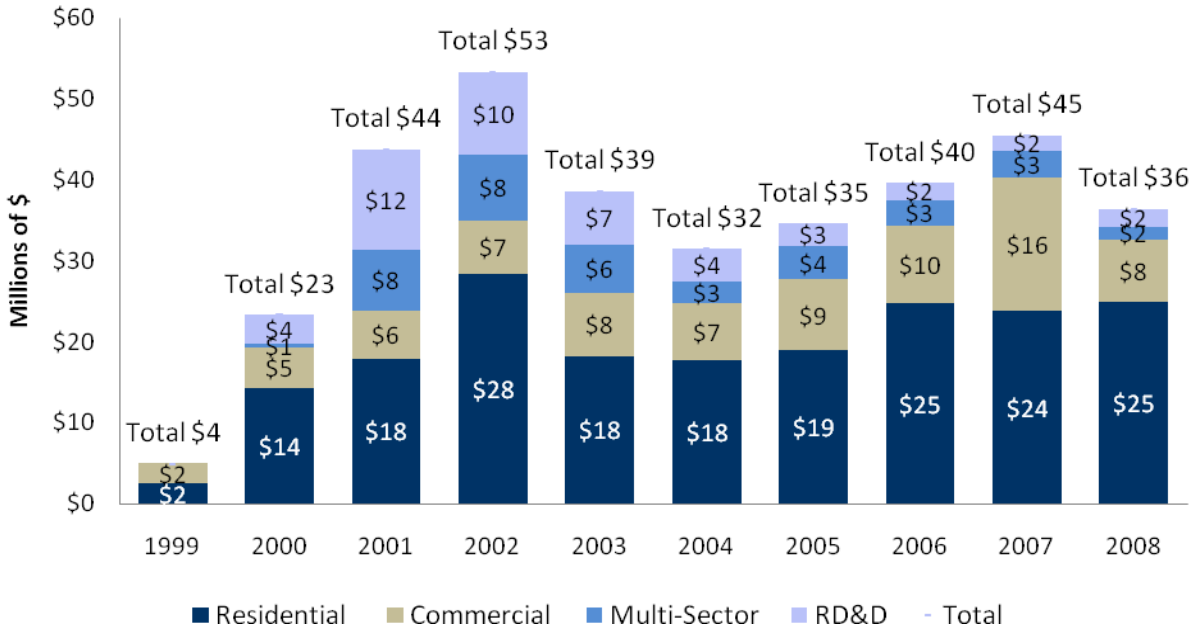
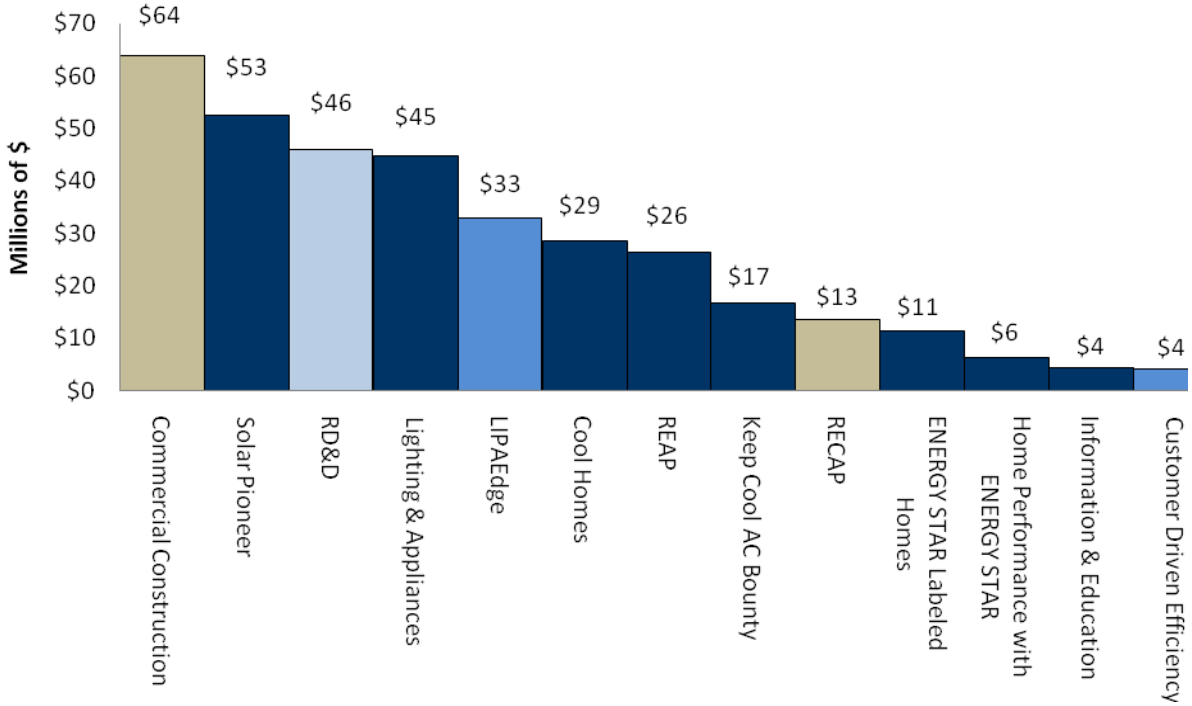


Figure 4 reviews cumulative program expenditures by program. The programs with the highest portfolio spending include Commercial Construction ($64 million), Solar Pioneer ($53 million), RD&D ($46 million) and Lighting & Appliance ($45 million). The programs that made up the lowest expenditures include ENERGY STAR® Labeled Homes, Home Performance with ENERGY STAR®, Information & Education and Customer Driven Efficiency. (See Appendix B for annual expenditures by program and market segment).

Figure 4: Cumulative Program Spending by Program (1999-2008)



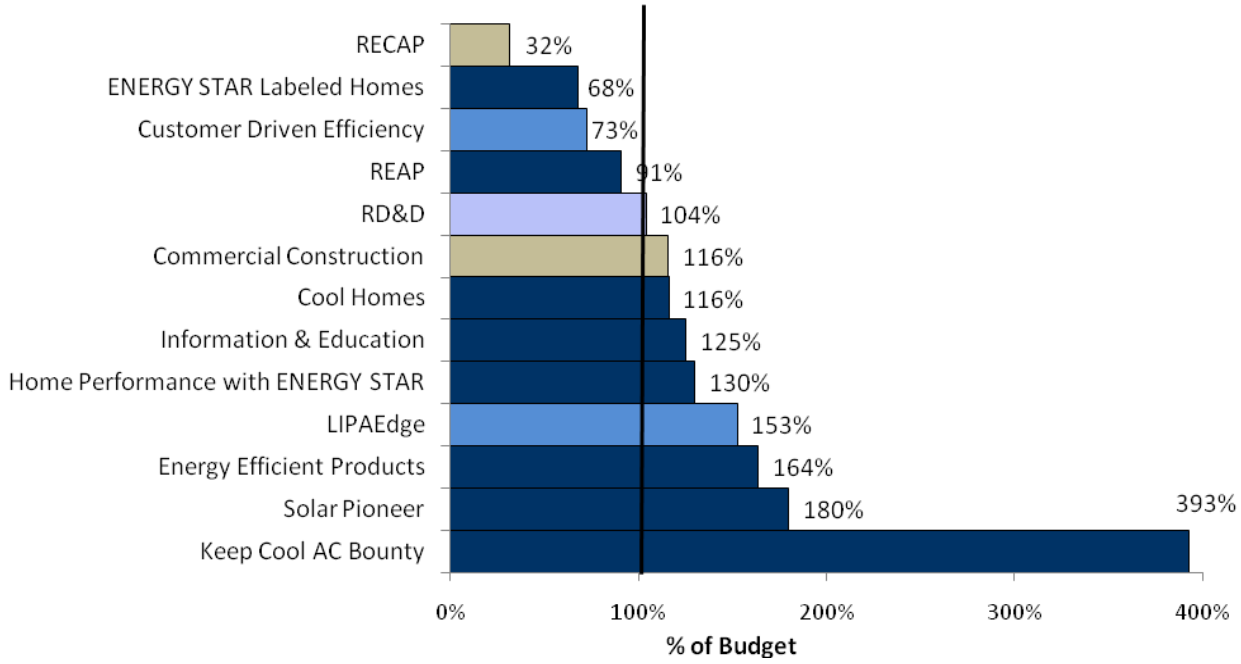
Expenditures as a Percent of Budget

Programs varied in terms of the degree to which actual expenditures remained within program budget limits. Figure 4 depicts each program's actual expenditures compared to its original budget goal on a percentage basis. Nine of the thirteen programs exceeded their budgets. [9] However, three programs in particular, Keep Cool AC Bounty, Solar Pioneer and Lighting & Appliance, significantly exceeded budget goals. Keep Cool AC Bounty represented $17 million in actual spending, but exceeded its program budget by approximately $12 million. Solar Pioneer also exceeded its budget goal in spending the second largest share of the overall budget ($53 million) while having been budgeted for approximately $29 million. Lighting & Appliance was budgeted $27 million, while spending totaled approximately $45 million over the decade.

Four programs spent less than their budget goals over the lifecycle of the portfolio. These programs include Retrofit Energy and Capacity Program (32% of budget goals), ENERGY STAR® Labeled Homes (68% of budget goals), Customer Driven Efficiency (73% of budget goals) and Residential Energy Affordability Partnership (91% of budget goals). Many of these programs also represent a much smaller share of overall spending. (See Appendix B for more information on spending by market segment as a percent of goals).

[9] Budget amounts are sourced from annual Operations and Maintenance Variance Reports supplied by LIPA.

Figure 5: Percent of Budget by Program (1999-2008)



4. PORTFOLIO PERFORMANCE

The following sections present the Clean Energy Initiative's performance results and attributable societal benefits from 1999-2008.

4.1 Performance Results

Below we present the cumulative results of the CEI portfolio as reported in the 2008 Annual Report in terms of three performance metrics: MWh savings, MW savings, and number of participants. In addition, we compare reported portfolio performance to stated goals.

The 2008 Annual report presents energy and demand savings results in two formats; Cumulative Annual Savings, and Total Savings. Cumulative Annual Savings represent the sum of the annual (first year) energy and demand savings estimates for each year of the portfolio. Total Savings represents the estimated total lifetime savings associated with all measures installed since portfolio inception and is calculated as the sum of the Cumulative Annual Savings estimates for each year since portfolio inception.

To be consistent with the use of these savings estimates in the 2008 Annual Report, below we compare Cumulative Annual Savings to the sum of the annual savings goals for the portfolio as a means of assessing portfolio performance. Total CEI Portfolio Savings are used to calculate estimated Greenhouse Gas (GhG) Reductions attributable to the CEI portfolio.

Total CEI Portfolio Savings

According to LIPA's 2008 Annual Report, the Clean Energy Initiative has saved and/or produced 3,096 GWh of energy over the decade of it's existence. The general methodological approach to obtain this result is consistent with other portfolio initiatives. However, as some measure specific data required to calculate an independent estimate of Total Savings were not available from the CEI planning contractor, we can only comment on the strength of the overall methodological approach and not the numerical result.

Cumulative Annual Savings

Below we compare the sum of the first year savings and participation estimates for each CEI program from 1999-2008 as reported in the 2008 report to the sum of the annual goals established for each program year as reported in the Annual Reports.[10] Below we review portfolio performance for MWh, MW and participation:

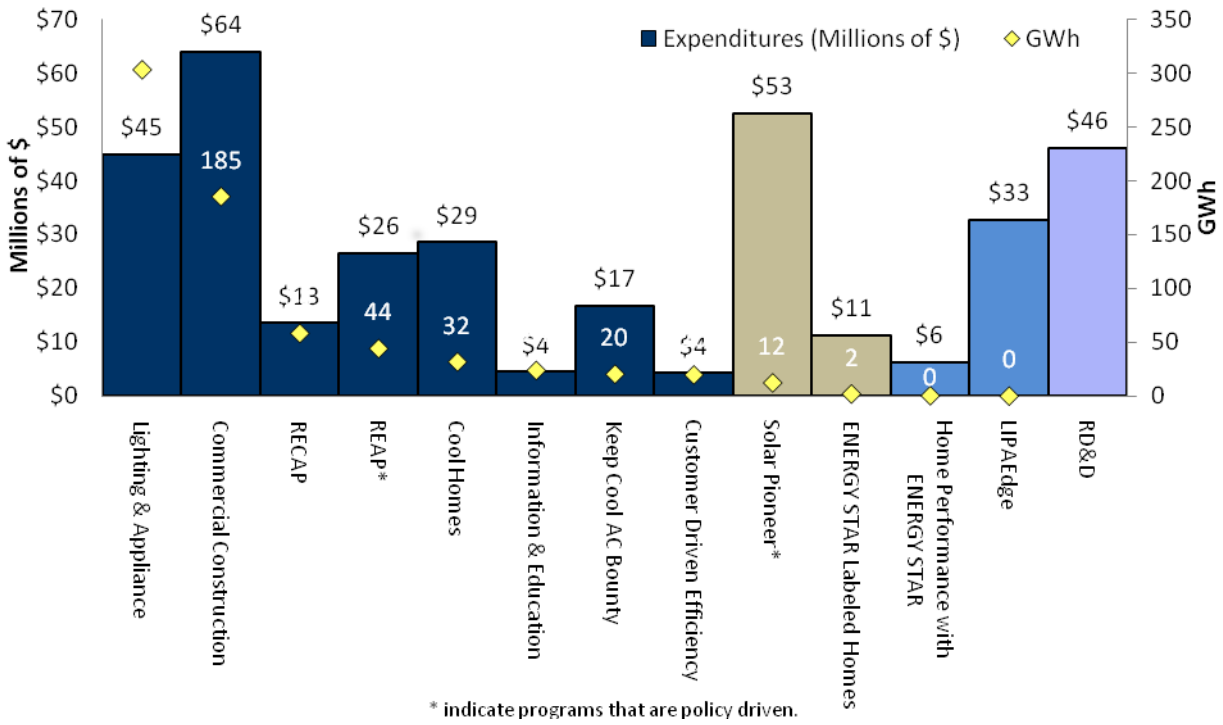
[10] There were no official participation goals for 2008 reported in the 2008 Annual Report, therefore the participant performance results savings totals are the annual cumulative results presented in Table 1 of the 2007 Annual Report. The goals represent Opinion Dynamics' cumulative sum of goals derived from each Annual Report. Note that neither the performance results nor goals include the programs that were phased out in 2001 and 2002 (Peak Reduction and Resource Conservation Manager). MW savings and goals include LIPA*edge*.

- Cumulative Annual portfolio MWh savings reached at least 94% of portfolio goals, missing portfolio goals by 47 GWh.
- Cumulative Annual portfolio MW savings reached at least 90% of portfolio goals, missing portfolio goals by 19 MW.
- Cumulative Annual CEI participation exceeded portfolio goals by at least 17%, achieving 47,000 more participants than program goals[11].

Appendix C presents the annual portfolio MWh and MW values.

Figure 6 depicts program expenditures (columns) and compares reported program expenditures to Cumulative Annual GWh savings (white diamonds) achieved by each program across the program lifecycle as a proxy for portfolio cost effectiveness. The program expenditures scale is on the left axis, and GWh savings scale is on the right axis. Commercial Construction incurred the largest share of expenditures, but did not gain the largest share of GWh savings, which was instead achieved by Lighting & Appliance. Solar Pioneer and REAP are implemented as a matter of LIPA policy , and as such are not necessarily designed or required to meet cost-effectiveness goals and installed measures are screened as cost-effective resources. Due to this, Solar Pioneer which incurred the second largest share of expenditures achieved one of the lowest amounts of GWh savings out of any program in the portfolio. The RD&D does deliver GWh savings.

Figure 6: Program Expenditures Compared to GWh Achievements (1999-2008)



[11] Note that participant goals and reported participation levels do not include Lighting & Appliance participants because they count units (CFLs, torchieres), rather than participants. In addition, this does not include 2008 results, as no official goals were set for these programs in that year.

Figure 7 depicts program expenditures (columns) against capacity savings (white diamonds) achieved by each program over the program life cycle. The program expenditures scale is on the left axis, and MW savings scale is on the right axis. Cool Homes, LIPA*edge* and Commercial Construction achieved the largest amount of MW savings, followed by Keep Cool AC Bounty and Lighting & Appliance.[12]

Figure 7: Program Expenditures Compared to MW Achievements (1999-2008)

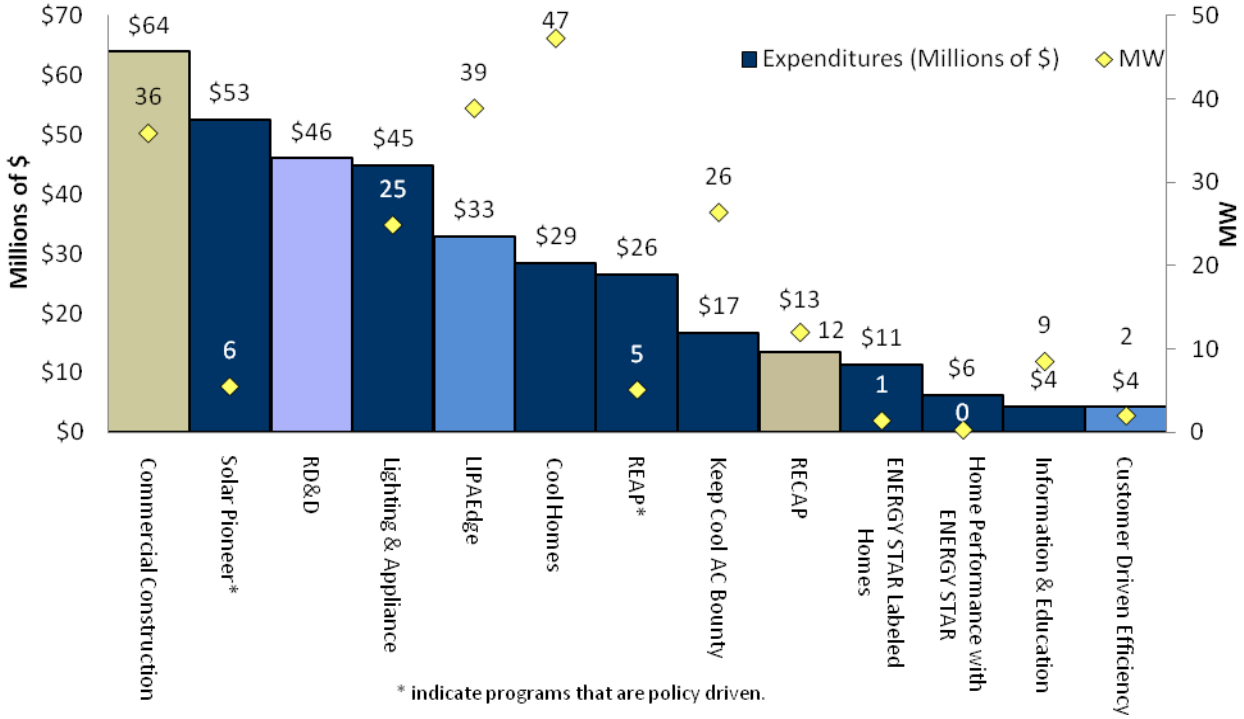


Figure 8 presents a comparison of reported Cumulative Annual savings and participation to the sum of the annual goals established for each program year as reported in the CEI Annual Reports by market segment. Residential sector program results exceeded program goals in terms of participation and energy and demand savings. Commercial sector programs fell short of MWh and MW, but achieved participation goals. Multi-sector programs fell slightly short of MW and MWh goals, and achieved participation goals.

[12] Note that MW savings are cumulative annual savings reported in the 2008 Annual Report.

Figure 8: Portfolio Performance as a % of Goal (1999-2008)

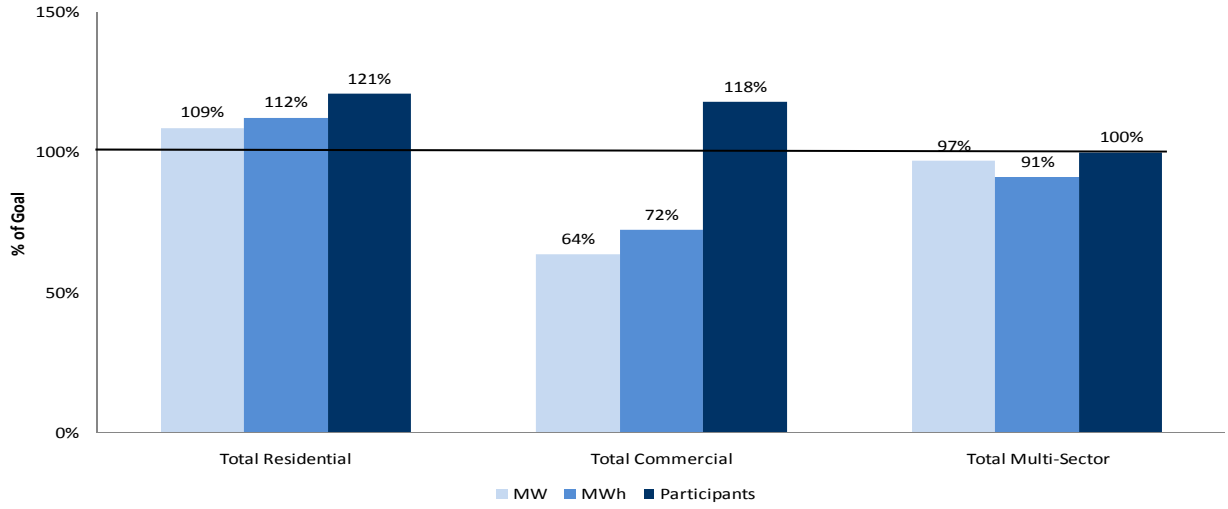
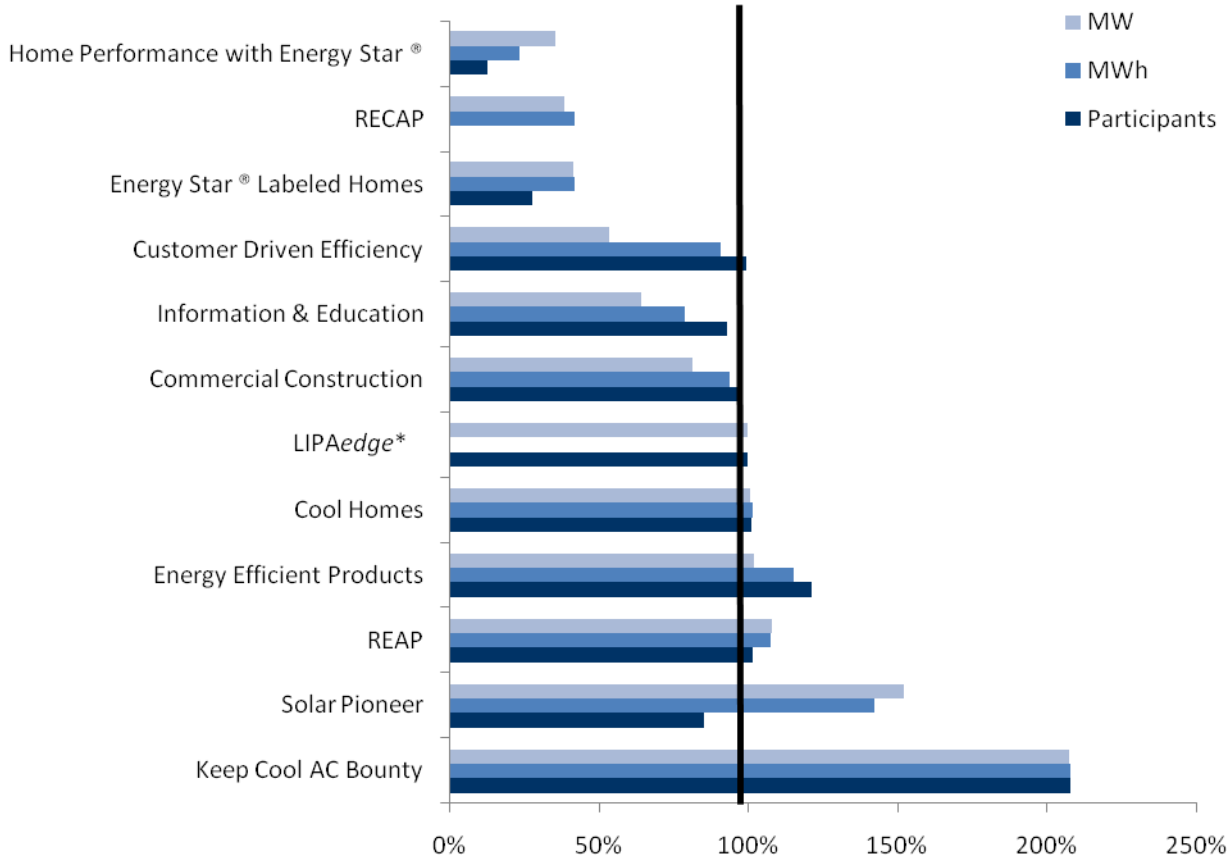


Figure 9 presents a comparison of reported Cumulative Annual savings and participation to the sum of the annual goals established for each program year as reported in the Annual Reports by program. Residential programs that consistently did not meet their performance targets (either participant rates, MWh or MW savings) include Information & Education, ENERGY STAR® Labeled Homes, and Home Performance with ENERGY STAR®. Commercial and multi-sector programs that did not consistently achieve performance goals include Customer Driven Efficiency and RECAP. Strong program achievers include Keep Cool AC Bounty, Solar Pioneer, REAP, Lighting & Appliance and Cool Homes.

Figure 9: Program Performance as a % of Goal (1999-2008)



2008 Participant actuals were removed because there were no official participant goals for 2008.
** LIPA*edge* MW represent installed capacity. *LIPAedge* participants are capped at a certain number per year.
RECAP had no participant goals and LIPA*edge* was never intended to create MWh savings.

The programs that will be discontinued going forward with ELI include are Retrofit Energy & Capacity Program (RECAP) and Customer Driven Efficiency. These programs did not reach goals in terms of energy or demand savings performance. Other programs that did not meet goals, such as Information & Education and ENERGY STAR® Labeled Homes will continue under ELI, while Home Performance with ENERGY STAR® will launch efforts to market the program through the Home Performance Direct program contractors.

4.2 Societal Benefits & Costs

The contractor responsible for developing program plans provided LIPA with cost benefit analyses, levelized costs and GHG emissions savings for inclusion in the Annual Reports. Below we review the methodologies employed by the planning contractor to calculate these results. In addition, we provide an alternative analysis of GHG emissions to validate portfolio performance.[13]

[13]As of the submission of this report, the data required to independently analyze societal benefits for the entire ten years of the CEI portfolio were not yet available to LIPA by the planning contractor and thus were not available for review and verification by the Opinion Dynamics team.

Cost Benefit Analysis

The 2008 Annual Report provides a benefit cost ratio for the portfolio as well as for residential and commercial market segments. Because any ratio over 1.0 is cost effective, the ratio provided in the 2008 Annual Report reflects a highly cost-effective portfolio.

Table 2: Benefit Cost Ratio

Segment	Benefit Cost Ratio
Portfolio	2.08
Residential	1.61
Commercial	3.44

The cost benefit analysis methodology was based largely on the *California Standard Practice Manual: Economic Analysis for Demand Side Programs and Projects* (July 2002), which is considered standard practice for cost benefit analysis of energy efficiency programs.

To provide context to the results presented in Table 2 above, the Opinion Dynamics team sought to compare the benefit cost ratio for the CEI portfolio to those for other, similar program portfolios. Because most portfolios provide benefit cost ratios at the program level and LIPA has developed ratios at the portfolio and market sector level, we were unable to compare the results to programs delivered in other jurisdictions. In addition, because LIPA's portfolio is unique in its programmatic offerings, we were unable to identify a portfolio that is comparable in all respects. Comparing LIPA's portfolio to dissimilar portfolios would provide inconclusive and likely erroneous results.

Levelized Costs

LIPA's Annual Reports provide levelized costs calculated by amortizing program expenditures over the life of the efficiency measure and then dividing their result by the annual energy savings of the same measure. Table 3 provides overall levelized costs for the CEI portfolio from 1998-2008 per kWh by portfolio and market segment.

Table 3: Levelized Costs per kWh

Segment	Levelized Costs per kWh
Portfolio	$0.048
Residential	$0.062
Commercial	$0.030
Note that this excludes LIPA*edge*.	

The Opinion Dynamics team did not independently verify the overall levelized cost estimates by market segment as the required data for the calculation were not yet available to us that allowed us to recreate the information.

GHG Emissions Reductions

According to LIPA's 2008 Annual Report, emissions reductions displaced over 1,934,800 tons of CO_2.[14] This value was derived by multiplying portfolio savings by an assumed carbon

[14] Note that this excludes RD&D efforts.

emission factors provided by the New York PSC. To benchmark the estimate reported in the 2008 Annual Report, we calculated GHG emission reduction by multiplying the CEI portfolio GWh energy savings (excluding RD&D) by the EPA CO_2 lb/GWh factor for the NPCC Long Island subregion.[15] Our calculation produced results within 10% of the estimate presented in the Annual Report.

4.3 Market Transformation Efforts

A portfolio of programs such as CEI provides value not only in terms of energy savings but also from contributions to the energy efficient marketplace and market transformation. Programs can provide additional value in other areas such as:

- Channeling customers into rebate programs,
- Contributing to socially equitable access to energy efficiency information and resources,
- Intervening in the marketplace at an optimal point in time,
- Educating the next generation of energy users,
- Stimulating economic growth,
- Ensuring that the residential building market complies with energy codes and standards,
- Advancing local energy policies, and
- Accelerating market adoptions of new energy efficient technologies

We selected two programs that provide a glimpse into how the CEI portfolio is effecting market transformation in Long Island. These programs, ENERGY STAR® Labeled Homes, and Solar Pioneer, are making strides towards achieving market transformation[16] through the reduction of market barriers.

ENERGY STAR® Labeled Homes

According to the most recent program evaluator report of this program, progress has been made towards effecting market transformation of residential new construction practices. According to the report, these programs seek to transform the Long Island residential new construction market to the point where (1) all new single-family homes are built to ENERGY STAR® standards and (2) potential homebuyers expect this as a matter of course. Note that

[15] The EPA emission factor for the Long Island subregion is 1,509.85, according to "Egrid2007 Version 1.1 Year 2005 GHG Annual Output Emission Rates" Located at:
http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2007V1_1_year05_GHGOutputRates.pdf

Avoided emissions were calculated as follows:

$$CO_2 \text{ in metric tons} = 3{,}096\ GWh * \left[\frac{1{,}509{,}850\ CO_2 \frac{lb}{GWh}}{\frac{2{,}204 lbs}{metric}\ ton}\right]$$

[16] Market transformation is a reduction in market barriers resulting from a market intervention, as evidenced by a set of market effects that lasts after the intervention has been withdrawn, reduced or changed. *CPUC: California Energy Efficiency Evaluation Protocols (2006).*

for purposes of this discussion, we focus on findings regarding the residential new construction market to highlight the effects of code changes on market transformation.

One method by which LIPA achieves the established market transformation goals is through "encouraging towns to adopt ENERGY STAR® Labeled Home standards as an energy code for all new construction projects."[17] According to the report, as of January 2009, eleven out of fifteen townships engaged by LIPA have adopted or are planning to adopt new code standards. Specifically, the report notes that revisions to the town energy codes will have substantive effects on building practices even if LIPA were to withdraw program funding. These codes are especially important because most town officials agree that builders will not adopt more energy-efficient home features except when regulations, incentives and customers demand these adoptions. The report noted that according to builders and HERS raters, these efforts have been "particularly effective in increasing participation by builders and educating them on new techniques."

Solar Pioneer

The Solar Pioneer program seeks to accelerate development of a "self-sustaining local infrastructure for the delivery and maintenance of PV systems."[18] According to the 2002 baseline report, the program had already begun to demonstrate "the market opportunity created by the Solar Pioneer Program, [as] many of the manufacturers have partnerships with distributors, systems integrators, or contractors serving Long Island."

This baseline assessment was borne out as, according to LIPA's 2008 Annual Report, "We are witnessing the positive efforts of market transformation for the Solar Pioneer program." In 2006, there were only six LIPA qualified participating contractors for the program. In 2008 the number of solar PV installation contractors had grown to over 50.[19] Prior to the initiation of the program, the Long Island photovoltaic market was close to non-existent. Rebates offered through LIPA have gradually been reduced from $6.00 in 2001 to $3.50 per watt in December 2007 adjusting to reflect the cost effectiveness of PV technology for the customer. Even with this drop in incentives, participation rates have shown sizable growth– a sign of possible transformation within the market. As of January 1, 2009 LIPA approved a revision to the Tariff for Electric Service to authorize net metering for renewable generation for commercial customers, which will likely further serve to increase the customer cost effectiveness and market viability of solar technology on Long Island and ensure a transformation of the market. Opinion Dynamics will document additional effects for these and other programs in the March 2010 Annual ELI Report.

[17] From KEMA, Inc., "Attitude and Awareness Baseline Study and Market Barrier Assessment for LIPA's ENERGY STAR® Labeled Homes and Home Performance with ENERGY STAR® programs", 1/26/2009.

[18] Opinion Dynamic Corporation "Residential Photovoltaic Baseline Study", 1/1/2002.

[19] LIPA's 2008 Annual Report (26-27).

5. EVALUATION OF STRENGTH OF PERFORMANCE RESULTS

Opinion Dynamics reviewed each performance result and societal benefit metric in an effort to determine the strength of the results presented in the preceding sections. We reviewed each CEI Annual Report, 25 prior evaluation reports, monthly performance tables, incremental reports, cumulative reports, quarterly reports, monthly reports, CEI budget spreadsheets, and the Draft Electricity Plan. In addition, we conducted interviews with LIPA staff, program managers and program contractors to develop an understanding of how the performance results in the CEI Annual reports were derived.

To support a continuous improvement approach to achieving Efficiency Long Island (ELI) goals, this section assesses the methods used to calculate and evaluate portfolio results. We reviewed each prior evaluation report to determine the number of evaluations performed for each program, the time period in which they were performed, the type of evaluation that was conducted, whether they informed subsequent program planning assumptions and their level of rigor. We begin by presenting the evaluations that were conducted throughout the CEI portfolio period in order to get a sense for the scope of evaluation efforts.

Description and Timing of Evaluations Performed

Table 4 presents the evaluations conducted by program from 1999-2008, including the type of evaluation that was conducted. Please note that in some cases two types of evaluations were performed in one report. For example, in 2007 both a process evaluation and market assessment were compiled into one evaluation report for the Customer Driven Efficiency program. In addition, in some cases two separate evaluations were conducted for the same program in the same year. For example, the Solar Pioneer program had both a baseline and market assessment in 2000. Finally, some programs were jointly assessed in one evaluation report. For example, Home Performance with ENERGY STAR® and ENERGY STAR® Labeled Homes jointly conducted a baseline and market assessment in which data was collected over program years 2005-2007.

Impact evaluations are especially important because they obtain data that can help to revise program energy assumptions. According to the table, most impact evaluations took place later in the portfolio cycle, which is consistent with market transformation programs where program effects occur years into the program cycle. Six programs conducted impact evaluations. These included Lighting & Appliance, Cool Homes, Residential Energy Affordability Partnership, Solar Pioneer, Information & Education, and LIPA*edge*. Note that some of the programs that registered the largest number of savings, such as Commercial Construction, has not yet conducted an independent third party impact evaluation.

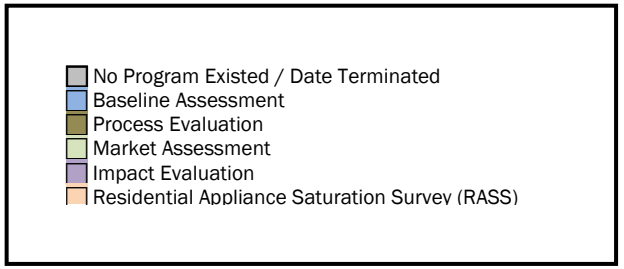


Table 4: Evaluations Conducted by Program, Year and Type

Program	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
Lighting & Appliance		B	MA I					MA	RASS		4
Cool Homes		B		MA I		MA					3
Residential Energy Affordability Partnership (REAP)			P I	P	I	P		I			5
Home Performance with ENERGY STAR ®							MA* B*				1*
ENERGY STAR ® Labeled Homes					B		MA* B*				1*
Solar Pioneer		B	MA						I	I	4
Information & Education									I		1
Commercial Construction		B		MA		MA			MA		4
Retrofit Energy and Capacity Program (RECAP)											0
Customer Driven Efficiency									P MA		1
LIPA*edge*						I					1
Total	0	5	2	4	2	3	2	1	5	1	25

*Note that the 2005-2007 Impact and Market Assessment was for both Home Performance with ENERGY STAR ® as well as ENERGY STAR ® Labeled Homes.
Note that the date reflects when the data was collected, not when the report was authored.
Gray cells indicate those years when the program either did not exist or was phased out.

Rigor of Prior Evaluation Efforts

Knowing the number, timing and type of completed evaluations provides an empirical basis for our review of the strength of the performance results. However, the evaluations must also be conducted in a well-defined and consistent manner in order to enhance the validity of performance metrics. Key elements of a rigorous approach include the method in which data was collected, the accuracy of the data collected, and the techniques used to analyze the data. Therefore, we reviewed prior evaluation reports to determine the degree to which they provide a sound basis for determining the strength of CEI program performance. This includes an assessment of the merits of each evaluation's research design, including how the sample was selected, whether the same questions were asked over time, and if there were any biases inherent in the study. This assessment is ongoing, however, our initial results show that, for the most part, prior evaluations were conducted with rigorous research designs, sufficient sample sizes, and limited biases.[20]

Because many of the CEI programs continue under the new ELI portfolio, any limitations uncovered during our analysis will serve to identify opportunities for improving future processes and evaluative goals.

[20] Note that only two of the evaluations that were documented as informing program assumptions had a potential bias in that their confidence interval was conducted at 80% rather than 90% level.

6. RECOMMENDATIONS AND CONCLUSIONS

The Clean Energy Initiative provided significant energy and demand savings as a result of their programs. These include energy savings of 3,096 GWh from 1999-2008 in addition to significant MW savings and progressive steps towards market transformation. Looking forward to future Efficiency Long Island efforts, a review of the Clean Energy Initiative can serve to (1) benchmark and assess future portfolio goals as well as (2) to institute program process improvements to ensure that the results of prior programs are evaluated and documented going forward.

Based on our review of CEI, we present the following recommendations to improve ELI program processes.

- Ensure that all parties involved in ELI (i.e., LIPA staff and contracted program managers, program implementers, portfolio planners, and evaluators) coordinate their efforts so that meaningful and consistent data is collected, documented and incorporated into program planning, review and evaluation.
- Institute annual meetings in which revisions to program assumptions based upon field data are documented and provided to all interested parties. Efforts to streamline and institutionalize program revisions will increase transparency.
    - To help with this, Opinion Dynamics is currently in the process of creating implementation logic models through interviews with program managers in order to lay a foundation for determining the best process for revising assumptions and documenting program changes.
    - Annual meetings will help to ensure that findings from program evaluations are utilized to revise program assumptions and are documented in ELI Annual Reports. Under CEI, many of the performance results appear to reflect initial program assumptions that were infrequently revised after 2005 and lack existing documentation.
- Have the incoming program planner provide clear documentation of how cumulative annualized and portfolio performance results are calculated. Under CEI, inconsistencies in how the data was reported over time show that there are sizable discrepancies across year-to-year performance results and room for error in the conclusions that were drawn from these data.
- Create a higher degree of transparency regarding program assumptions and factors that are utilized to determine performance results. Under CEI, the Annual Reports contain minimal documentation regarding whether or not the algorithms used to determine performance results are accurate, revised, modified or evaluated.
    - To help with this effort, Opinion Dynamics will provide Technical Reference Manual estimates of 2009 program savings and a review of the custom program and Solar Pioneer program screening tools in our March 2010 Annual ELI Report.

- Ensure that MWh savings are reported over the effective useful life of each measure, not simply as one-time savings.

Recommendations for future ELI evaluation efforts include:

- Develop a current efficiency baseline for relevant markets and end uses based on site visits and measure persistence studies[21] to refine and evaluate the current program algorithms and assumptions used to estimate expected program savings. In addition, these site visits can verify installation estimates and refine program goals. Through thorough evaluation efforts that inform performance results, program performance and effectiveness can be assessed over time to ensure that the portfolio meets its objectives.
    - To help with this, Opinion Dynamics will conduct targeted baseline and persistence studies early in the evaluation process.
- Conduct evaluations with sufficient frequency to identify the results of program efforts and verify program assumptions, especially impact evaluations. Under CEI, the performance results presented in the Annual Reports were informed by a limited number of evaluation results.
    - Over the next five years, Opinion Dynamics will conduct impact evaluations for each program at least every other year.
- Leverage prior evaluations to determine a baseline for future evaluation efforts, such as the evaluation of ENERGY STAR® Labeled Homes and Home Performance with ENERGY STAR®, in order to determine impact as well as assess market barriers.
    - Our March 2010 Annual ELI Report will provide a review of each prior evaluation report conducted under the CEI portfolio. This information will allow us to assess the market of each program and inform future program planning.

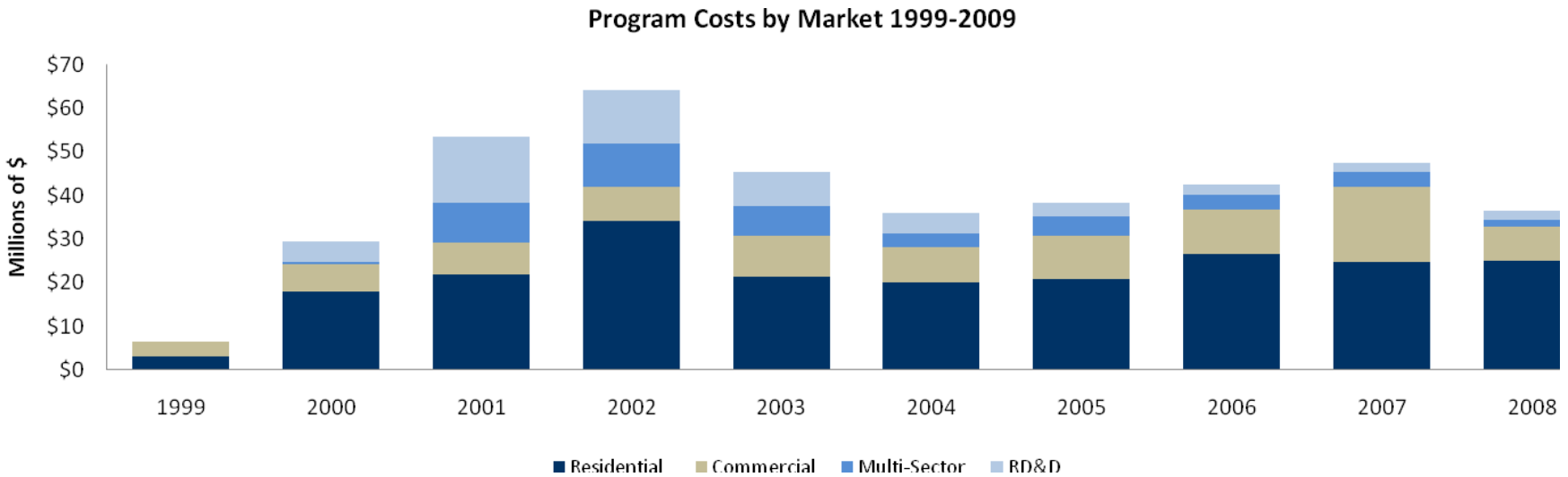
[21] A persistence study collects data that assesses the long-term persistence of energy savings and effective useful life of measures installed due to the intervention. This typically means that evaluations are performed to determine if measures that were installed continue to be operational or continue to be used. Persistence studies help to inform program planning assumptions and performance results. Under CEI, one persistence study was completed.

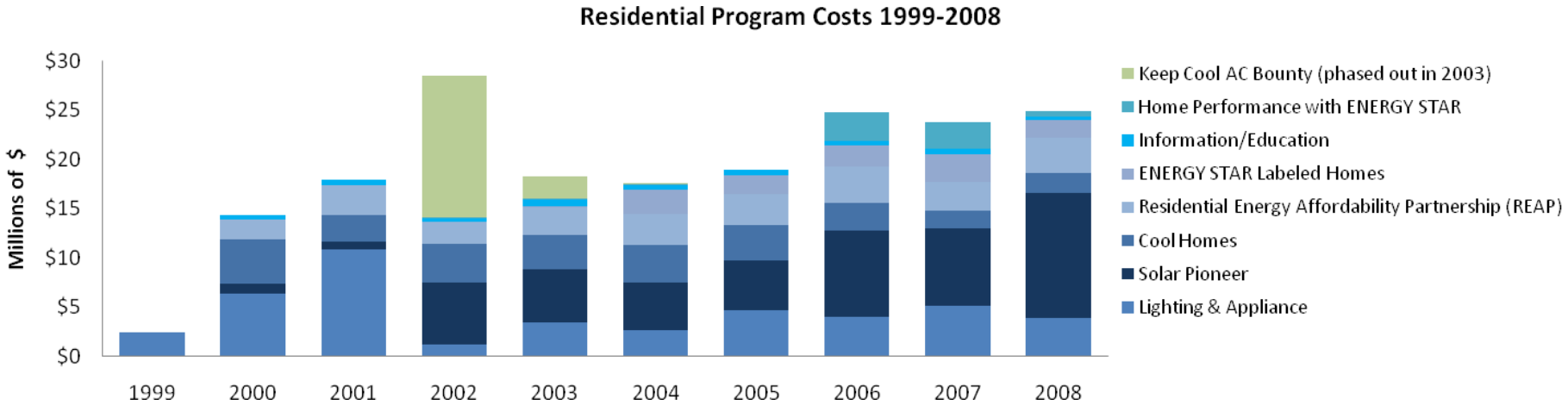
A. CEI PROGRAM OVERVIEW

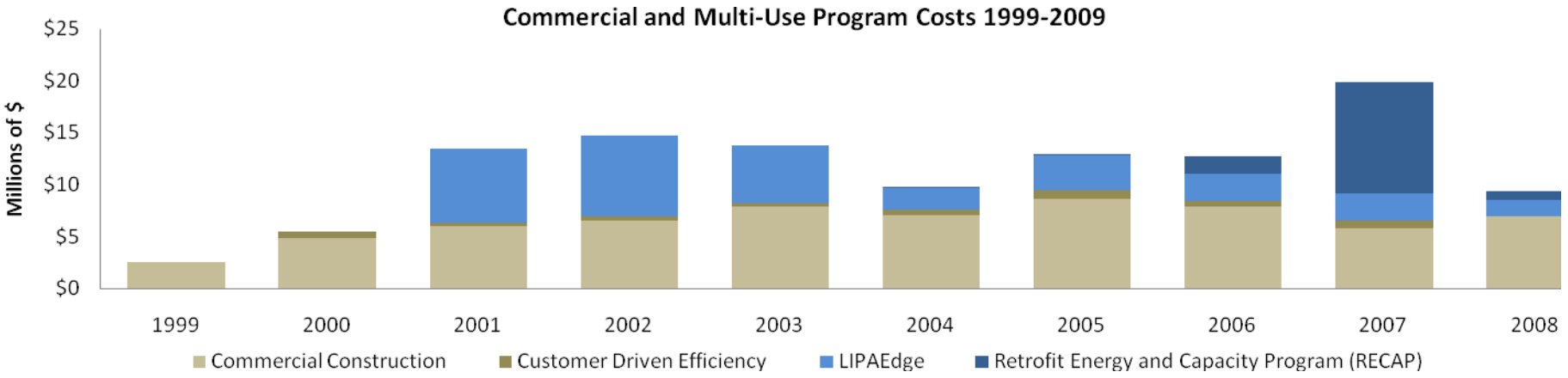
Table 5: CEI Program Overview			
Program	**Description**	**Energy Efficient Measures**	**Target Market**
Residential Programs			
Lighting & Appliance	Encourages customers to purchase consumer electronics, appliances and lighting products that have an ENERGY STAR label and are energy efficient through customer rebates and incentives, marketing and advertising support and retailer services.	ENERGY STAR labeled lighting and appliances (CFLs, lighting fixtures, torchieres, clothes washers, LEDs, dehumidifiers, refrigerators and room air conditioners)	Consumers, Retailers, Manufacturers
Cool Homes	Encourages customers to purchase and install energy-efficient central air conditioning, air source heat pumps and geothermal heat pumps by providing financial rebates and incentives to offset a portion of the equipment's higher initial cost.	Residential HVAC (CAC/HP and geothermal heat pumps)	Homeowners, Contractors
Residential Energy Affordability Partnership (REAP)	Encourages lower income households to improve energy affordability through free installation of a comprehensive set of cost-effective efficiency measures, extensive energy education and counseling.	Cost-effective measures identified through an energy audit. Installation of energy efficient products, such as CFLs, refrigerators, air filters, shower heads and faucet aerators, duct repair, air sealing	Low income customers
Home Performance with ENERGY STAR®	Targets residential existing homes to implement energy efficiency market transformation through encouraging installation of weatherization, insulation and other building shell measures and facilitating the growth of the nascent building performance industry on Long Island through creating a competent and professional contractor, builder and designer infrastructure to deliver energy efficiency services.	Whole building, weatherization/building shell	Homeowners, Contractors
ENERGY STAR® Labeled Homes	Targets contractor, builder and designer infrastructure to deliver energy efficiency services as well as consumer awareness/education through marketing campaigns to residential new construction as well as existing homes and buildings.	ENERGY STAR rated new homes through Home Energy Rating System	Homebuyers, Builders, Contractors, Distributors, Manufacturers, Town Governments
Information & Education	Provides energy saving information to residential customers through printed materials, home energy audits, advertising and marketing directed to homeowners and students.	In school information sessions (In Concert with the Environment), trade show and event participation, home energy audits, NYSERDA Energy Smart Student Program workshops	Homeowners, Students

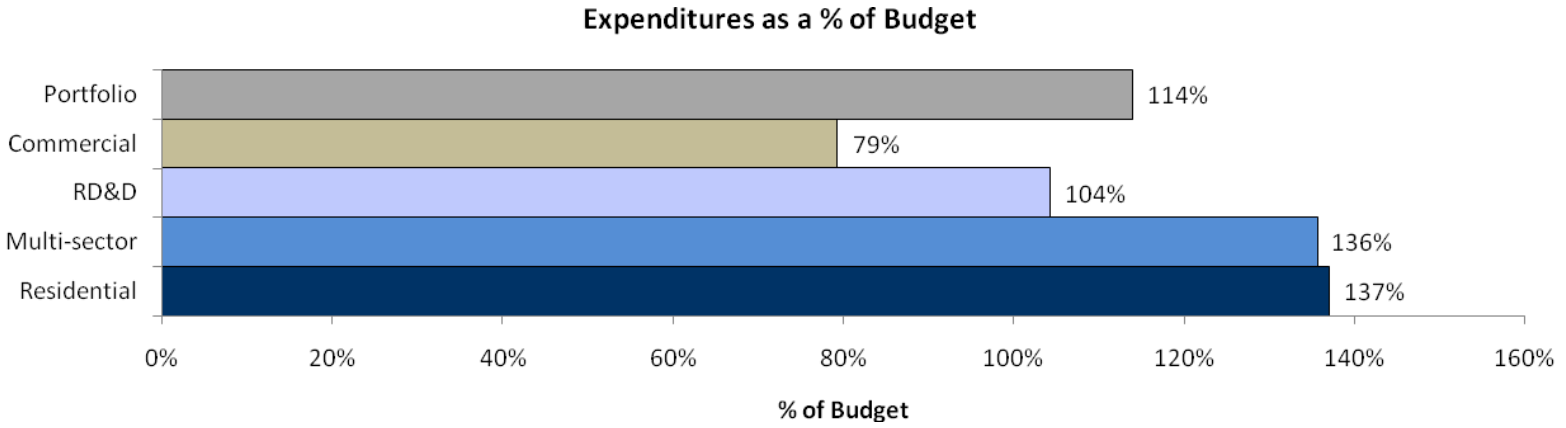
Commercial Programs			
Commercial Construction	Promotes the application of a broad range of energy efficient electric technologies and design opportunities through prescriptive, custom and whole building components. Influences current design and construction practices on Long Island to achieve greater energy efficiency, as well as promote greater efficiency among the remodeling and equipment replacement markets.	Energy efficient products (C/I Geothermal units, Cooling, Lighting, Motors and VFDs, Compressed Air, Commercial Kitchen Equipment, Vending Machine Controls, Performance Lighting, Custom Component, whole building components, BOC)	End users, vendors, manufacturers, developers/builders, and design professionals
Retrofit Energy and Capacity Program (RECAP)	Targets commercial customers, multifamily buildings and publicly owned facilities to identify retrofit or replacement opportunities to reduce overall energy consumption and operating costs.	Replace older equipment, retrofit existing equipment with more efficient technology (such as lighting upgrades and controls, HVAC, refrigeration, motors and VFRD's, EMS)	Customers, Contractors, Energy Service Companies
Multi-Sector Programs			
Solar Pioneer	Promotes the use of solar energy for residential, commercial and municipal and not-for-profit customers by increasing consumer awareness and demand for PV systems, accelerating development of local infrastructure for maintenance and delivery, and overcoming financial barriers to purchasing systems.	Photovoltaics	Homeowners, facility managers, Contractors, Electricians, Architects
Customer Driven Efficiency	Provides assistance to residential and commercial customers wishing to make energy efficiency improvements not covered by other programs by providing technical, on-site energy analysis and audits to help commercial and industrial customers evaluate potential energy saving opportunities.	Financial rebates and incentives for cost-effective opportunities, audit reports to identify savings, verify/refute claims of savings from manufacturers and understand energy bills.	Residential and commercial/industrial customers
LIPA*edge*	Demand response program that curtails the demand of CAC systems installed by residential and small commercial buildings through direct load control as well as pool pumps for residential customers.	Load Management with residential thermostats, commercial thermostats and pool pumps	Residential and small commercial customers

B. Market Segment and Program Costs









Residential programs exceeded program budget goals by 37% primarily driven by Keep Cool AC Bounty, Solar Pioneer and Lighting & Appliance. Multi-sector programs exceed program budget goals by 36% with LIPA*edge* driving expenditures. RD&D spending exceeded budget goals by 4%. Commercial segment programs on average spent less than other segments, particularly due to RECAP.

C. ANNUAL PORTFOLIO PERFORMANCE

Note that the source of this analysis were the cumulative performance results and goals stated by program from each Annual Report for each year.

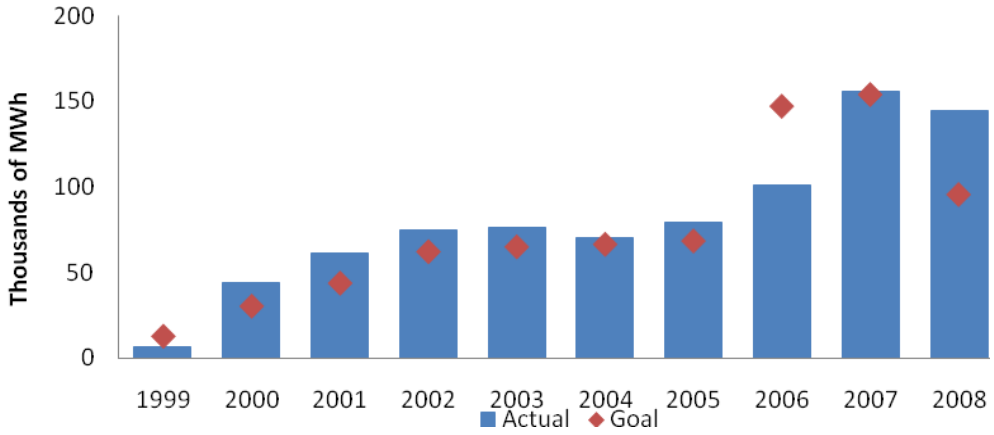
Portfolio performance frequently exceeded or met its stated goals.

- Portfolio MWh performance exceeded its stated goals in all years (except 1999 and 2006).
- Portfolio MW performance less frequently met its stated goals.

The following figures review the portfolio performance accomplishments against its stated goals.

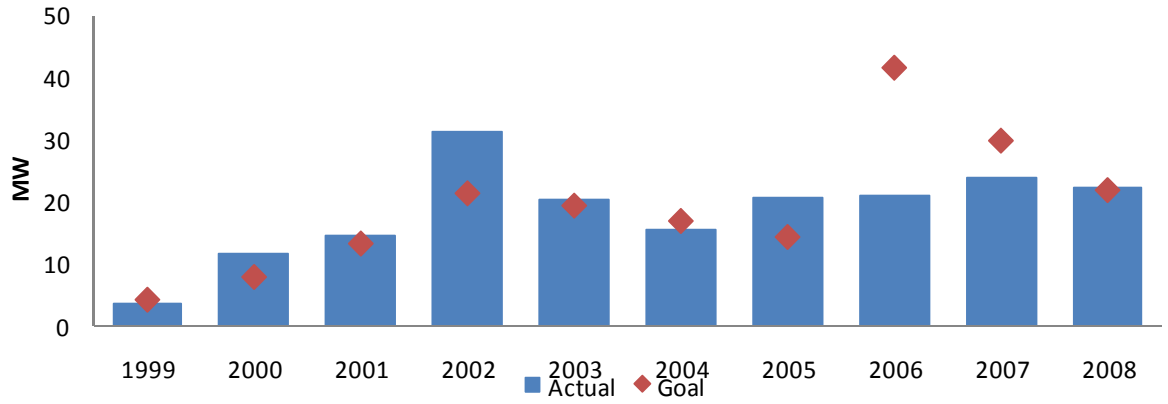
Figure 10 Figure 10 reviews the annual portfolio MWh. Portfolio MWh goals were met or exceeded (except for 1999 and 2006).

Figure 10: Portfolio MWh 1999-2008



According to Figure 10, which compares MW performance to goals, MW goals were routinely met or exceeded goals, except for years 1999, 2004, 2006, and 2007.

Figure 11: Portfolio MW 1999-2008

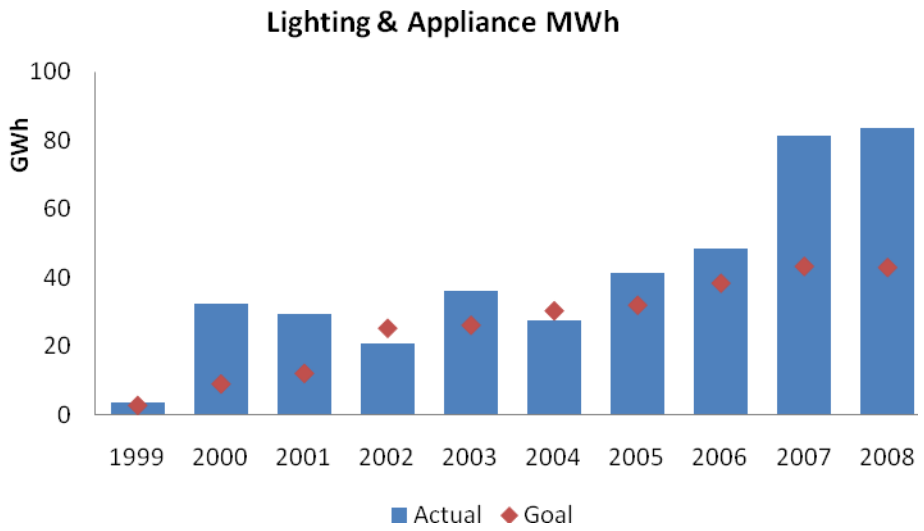


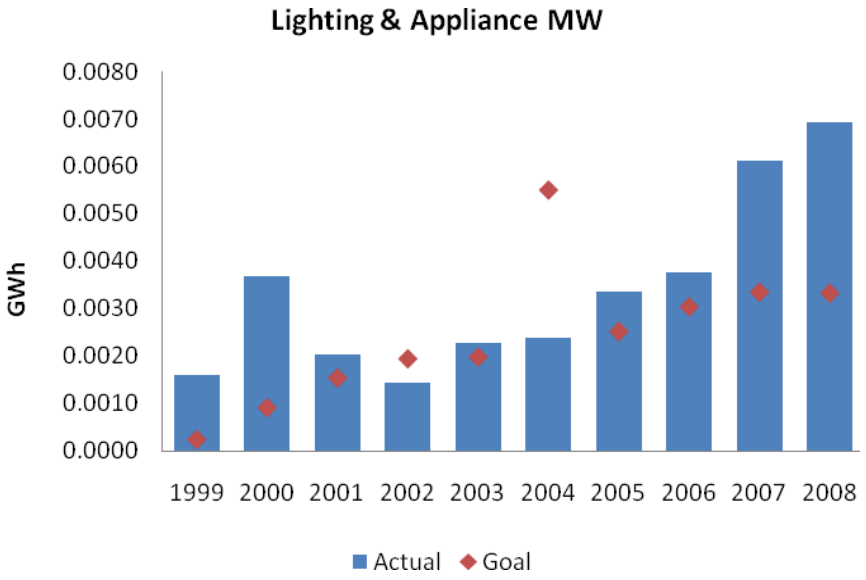
D. ANNUAL PROGRAM PERFORMANCE

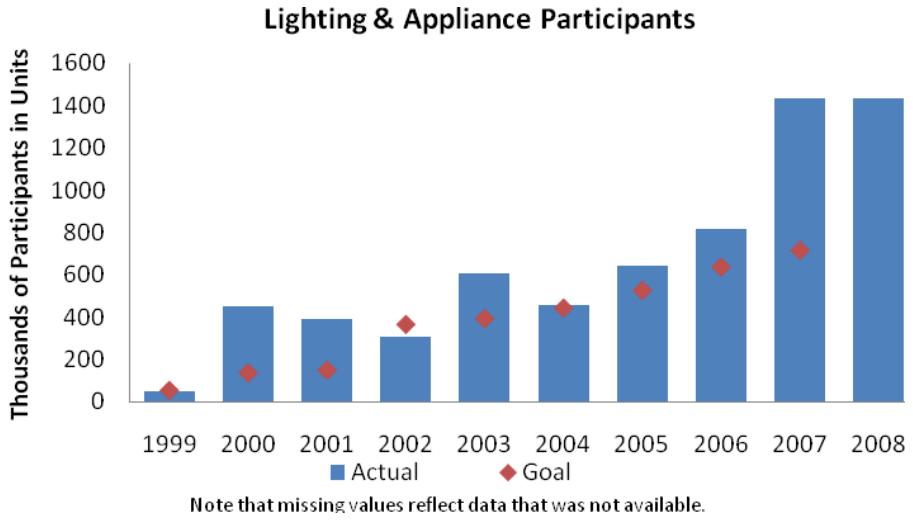
The primary objective of this appendix is to present an assessment of program performance relative to program goals. The information provided below allows the reader to see the variation across the program years between actual performance and goals. A single program is shown per page. The data used to develop each exhibit were taken directly from each CEI Annual Report from 1999-2008. This appendix does not provide programmatic or market effects to explain trends in the data.

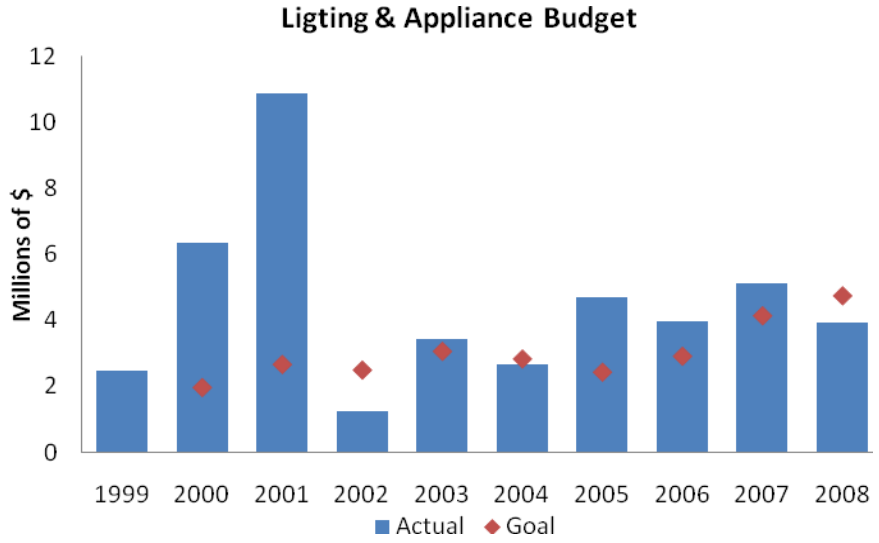
There are two caveats for the data in this appendix:

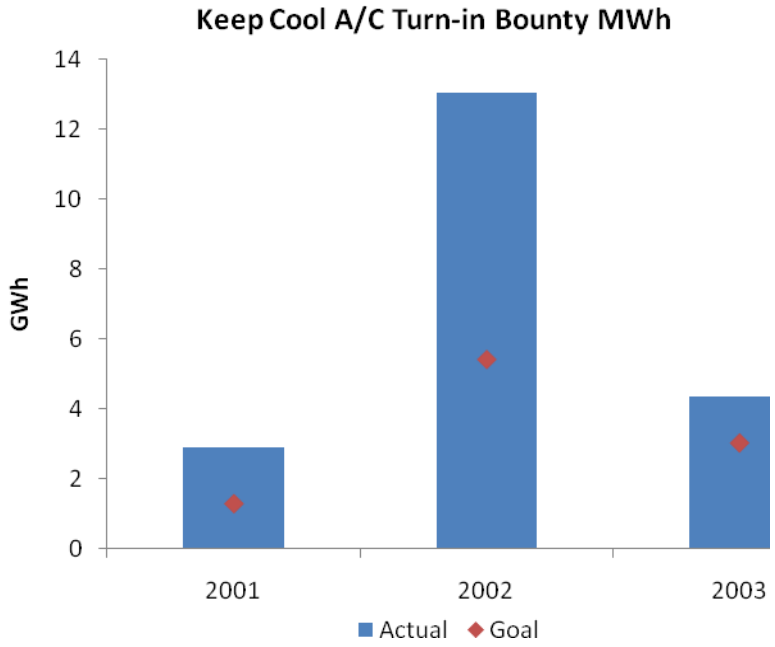
- The scales are intentionally different across programs as they are meant to examine results within a program, not between programs.
- The data labeled as "Actual" in the graphs, when summed, do not always match the information in the 2008 Annual Report (which indicated summed actual values as well). The reasons for the discrepancies are unknown and not considered relevant for this appendix. However, we bring this up as an examination of the data presented in Figure 9 and the data in this appendix may seem different in a few cases with the data in this appendix generally higher. With the exception of missing values, the goal values in the 2008 Annual Report and those found in the annual reports matched.
- We are missing data for some program measures indicated by missing columns or diamonds.

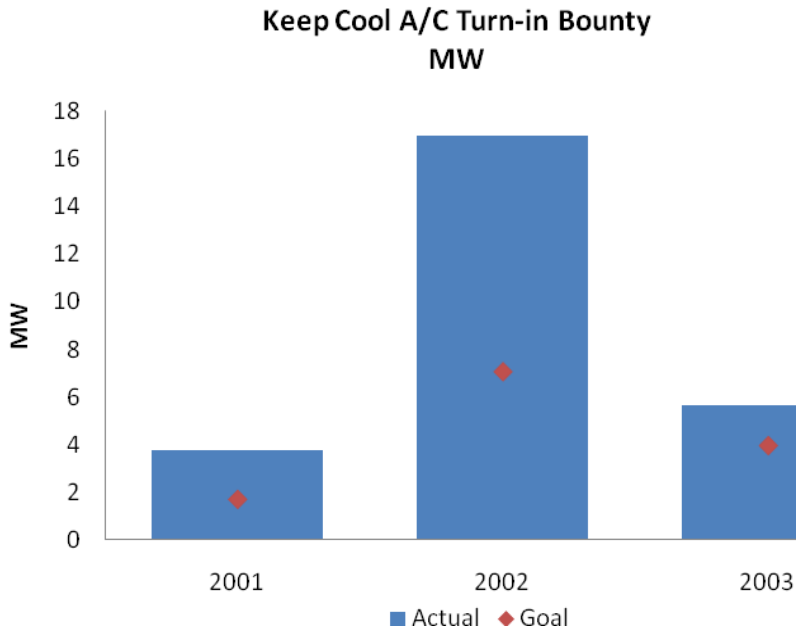

Lighting & Appliance MWh
GWh
100
80
60
40
20
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

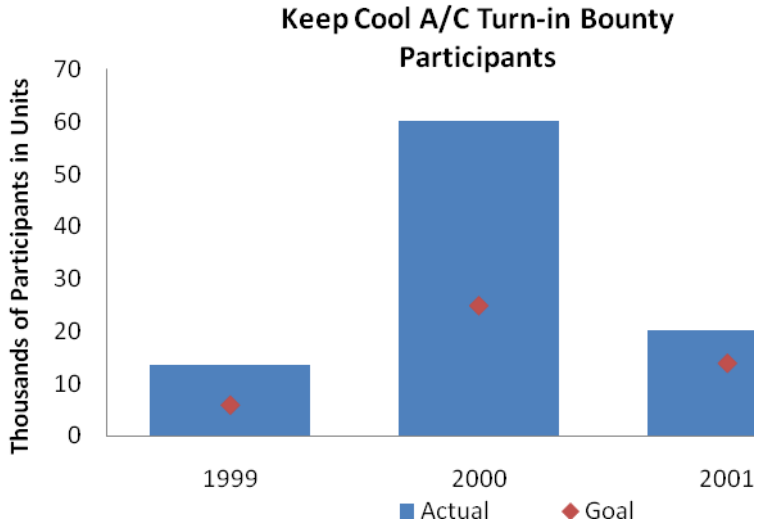

Lighting & Appliance MW
GWh
0.0080
0.0070
0.0060
0.0050
0.0040
0.0030
0.0020
0.0010
0.0000
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

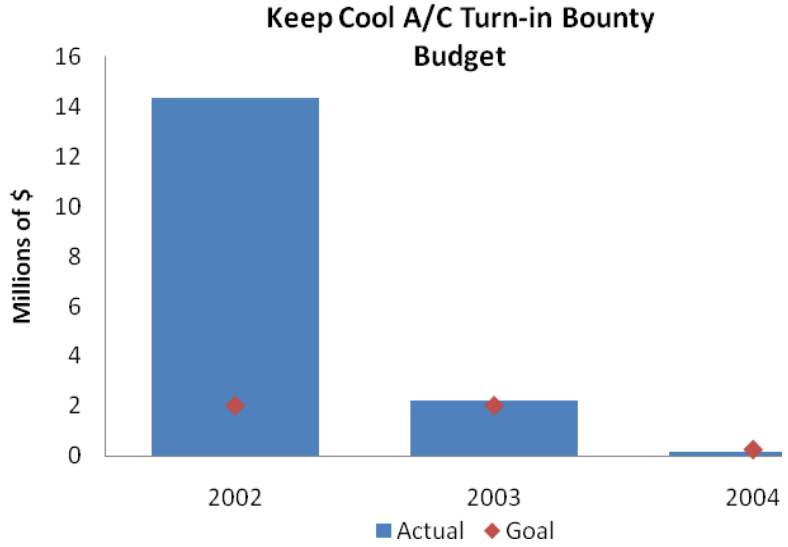

Lighting & Appliance Participants
Thousands of Participants in Units
1600
1400
1200
1000
800
600
400
200
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal
Note that missing values reflect data that was not available.

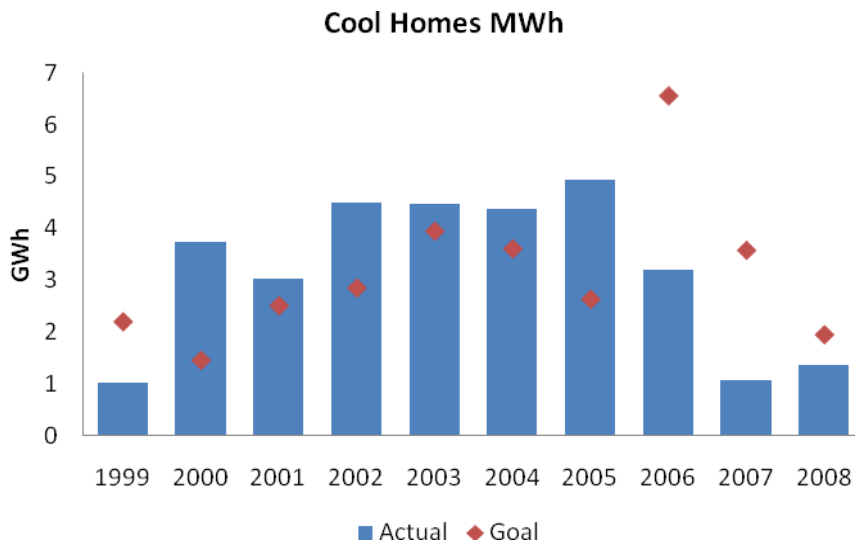

Ligting & Appliance Budget
Millions of $
12
10
8
6
4
2
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

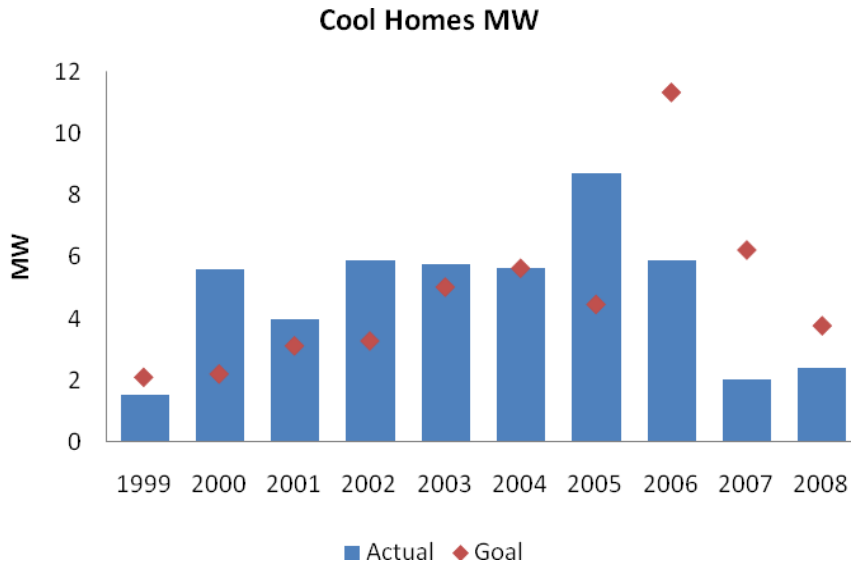

Keep Cool A/C Turn-in Bounty MWh
GWh
14
12
10
8
6
4
2
0
2001
2002
2003
Actual
Goal

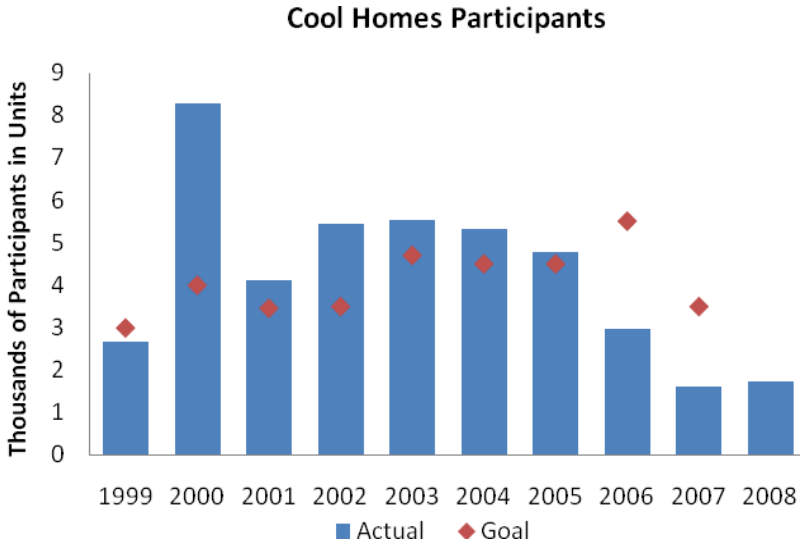

Keep Cool A/C Turn-in Bounty MW
MW
18
16
14
12
10
8
6
4
2
0
2001
2002
2003
Actual
Goal

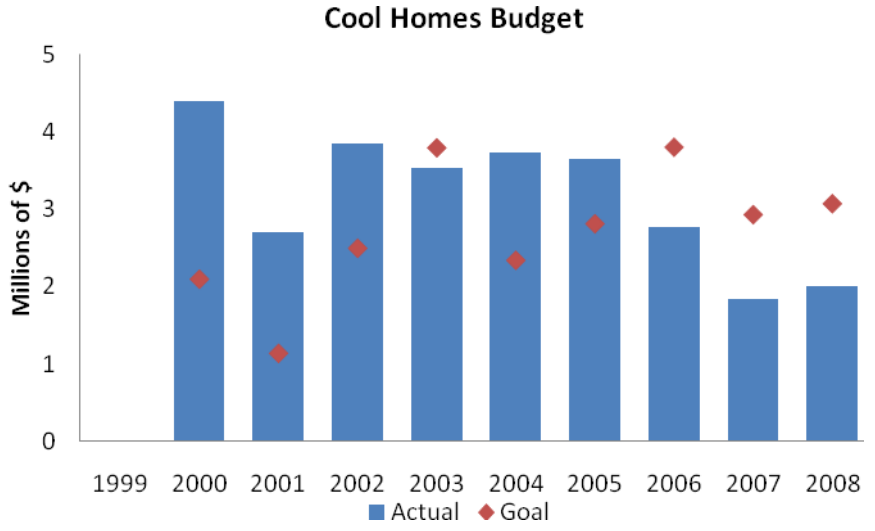

Keep Cool A/C Turn-in Bounty Participants
Thousands of Participants in Units
70
60
50
40
30
20
10
0
1999
2000
2001
Actual
Goal

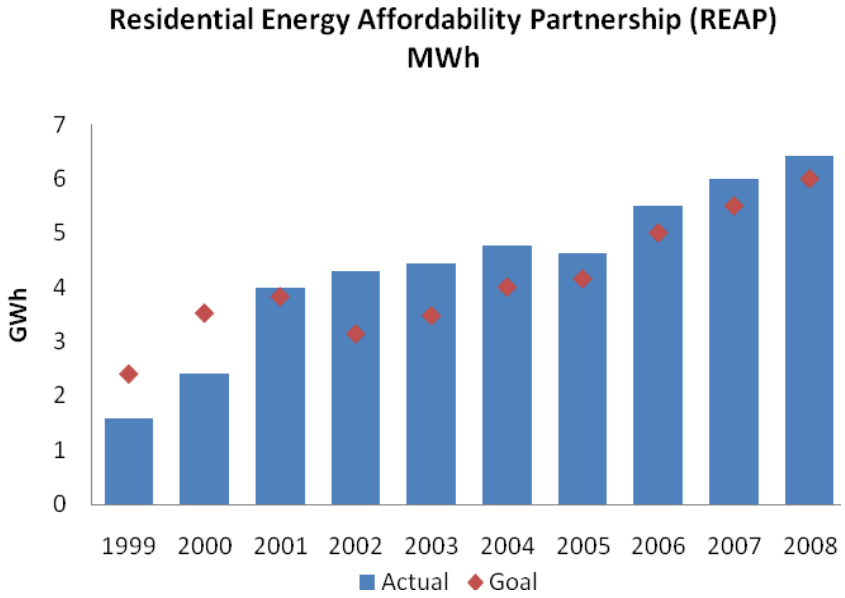

Keep Cool A/C Turn-in Bounty Budget
Millions of $
16
14
12
10
8
6
4
2
0
2002
2003
2004
Actual
Goal

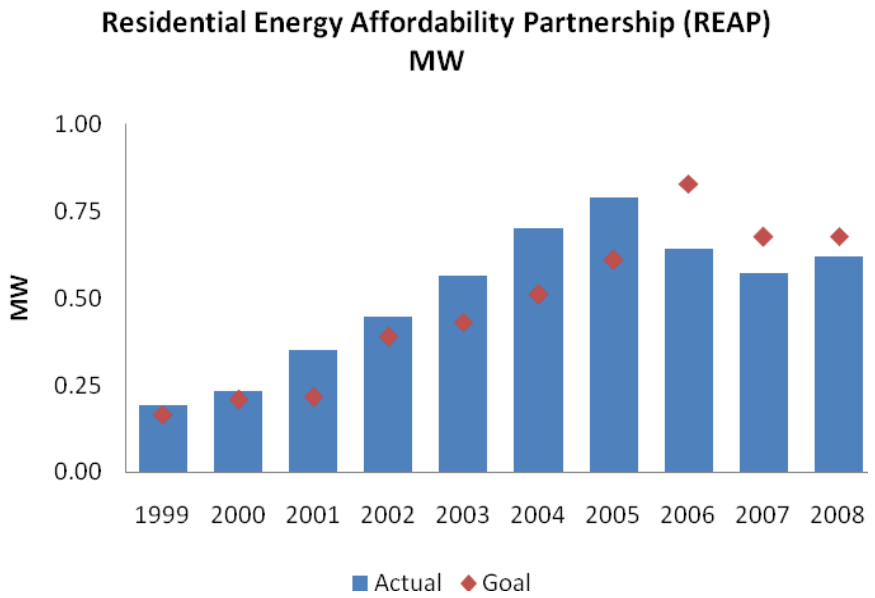

Cool Homes MWh
GWh
0
1
2
3
4
5
6
7
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

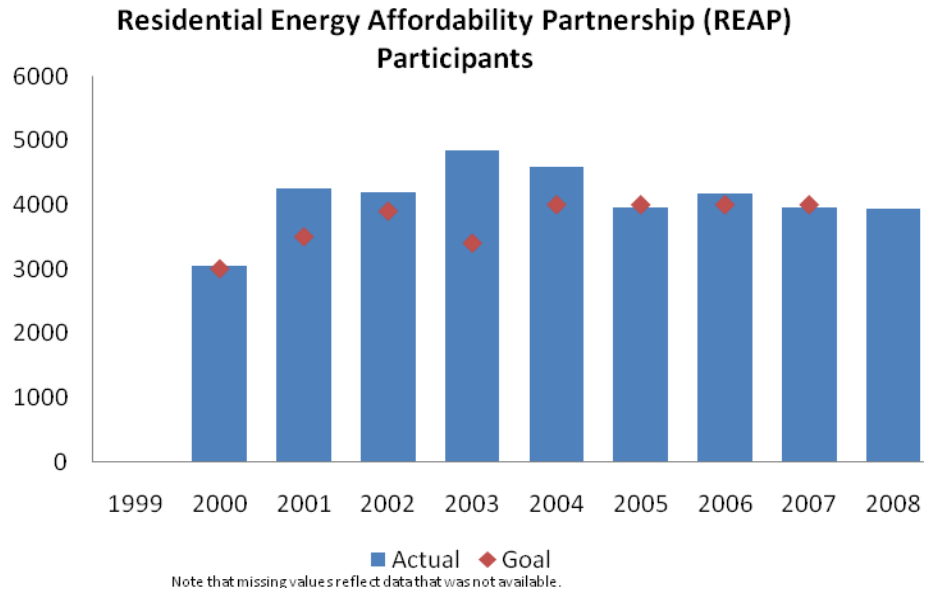

Cool Homes MW
MW
0
2
4
6
8
10
12
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

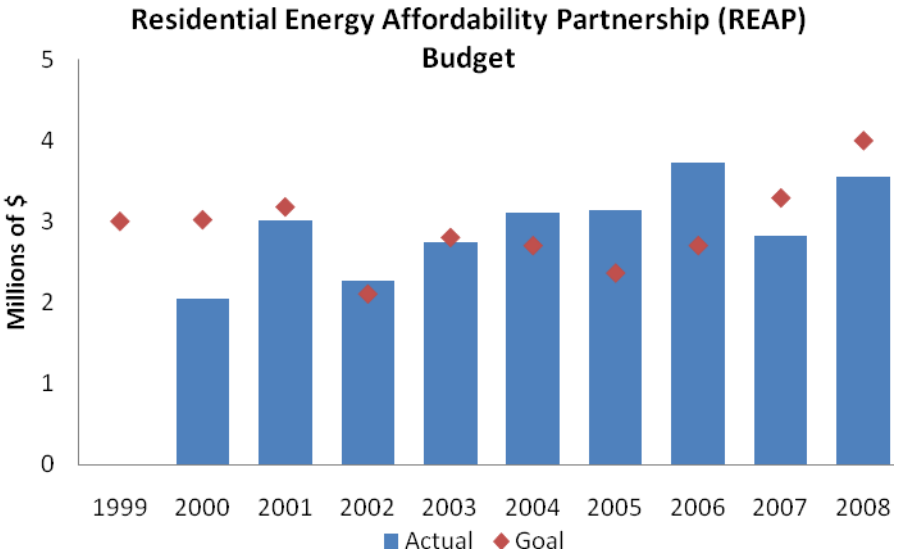

Cool Homes Participants
Thousands of Participants in Units
0
1
2
3
4
5
6
7
8
9
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

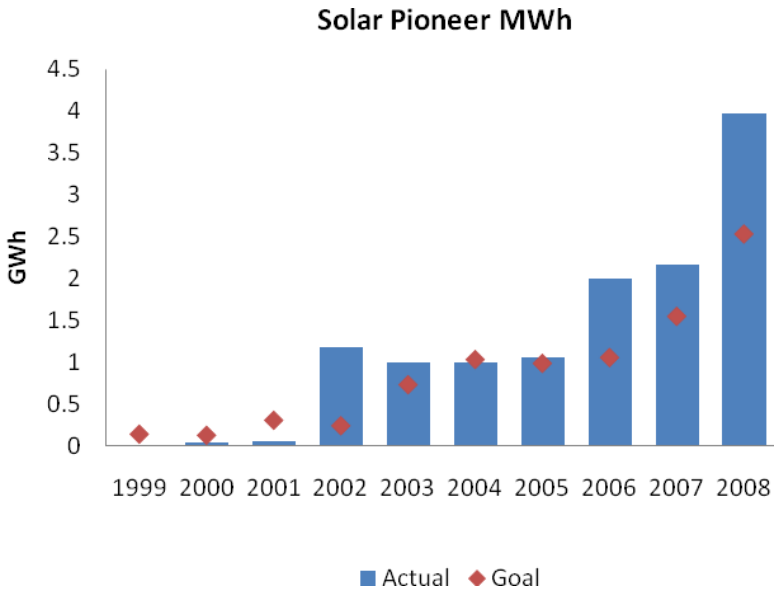

Cool Homes Budget
Millions of $
0
1
2
3
4
5
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

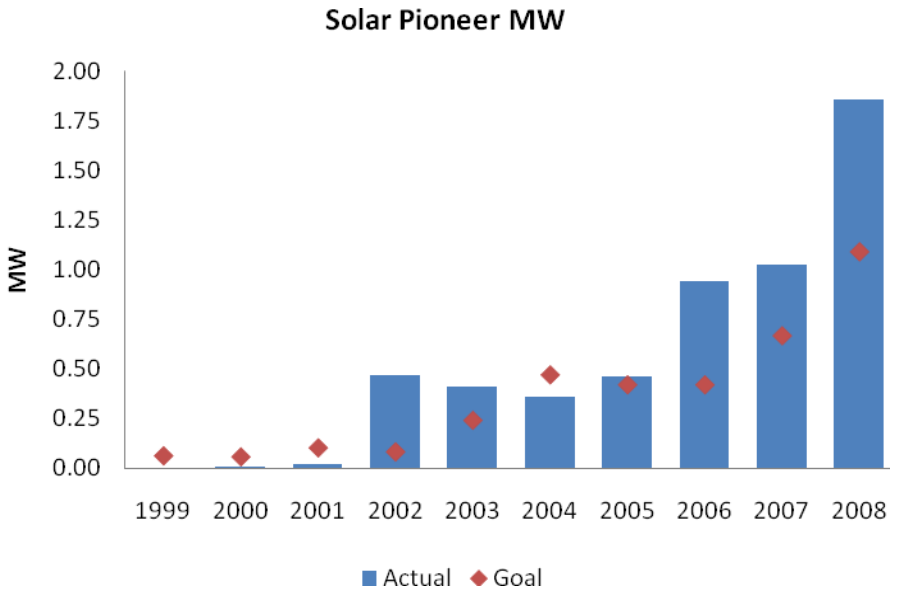

Residential Energy Affordability Partnership (REAP)
MWh
GWh
7
6
5
4
3
2
1
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

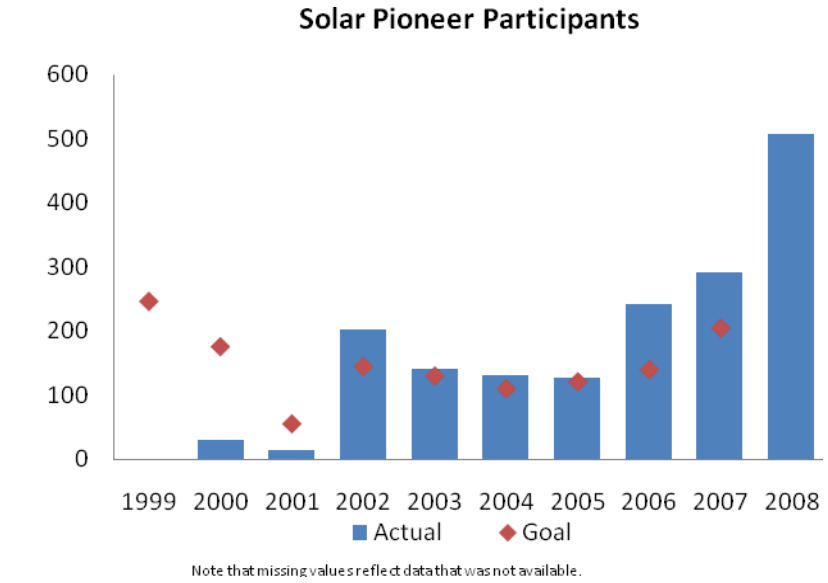

Residential Energy Affordability Partnership (REAP)
MW
MW
1.00
0.75
0.50
0.25
0.00
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

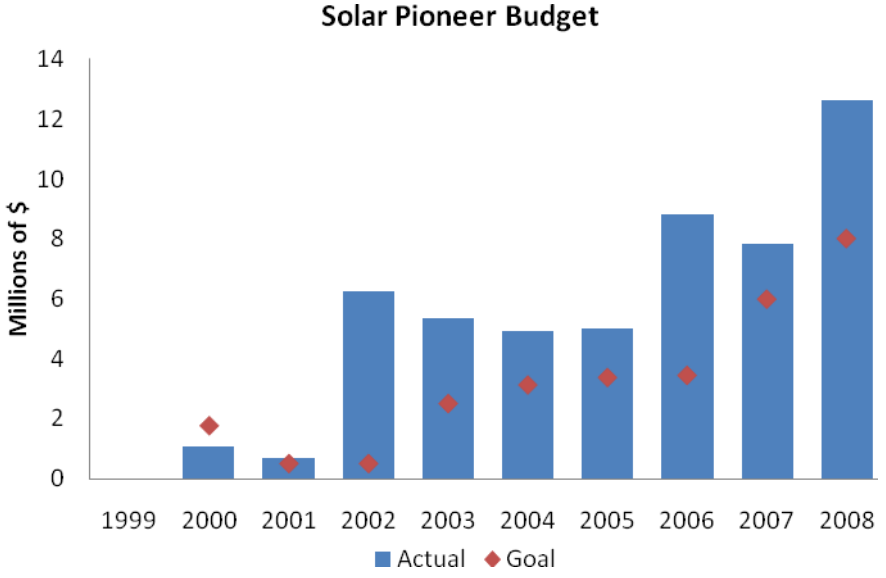

Residential Energy Affordability Partnership (REAP)
Participants
6000
5000
4000
3000
2000
1000
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal
Note that missing values reflect data that was not available.

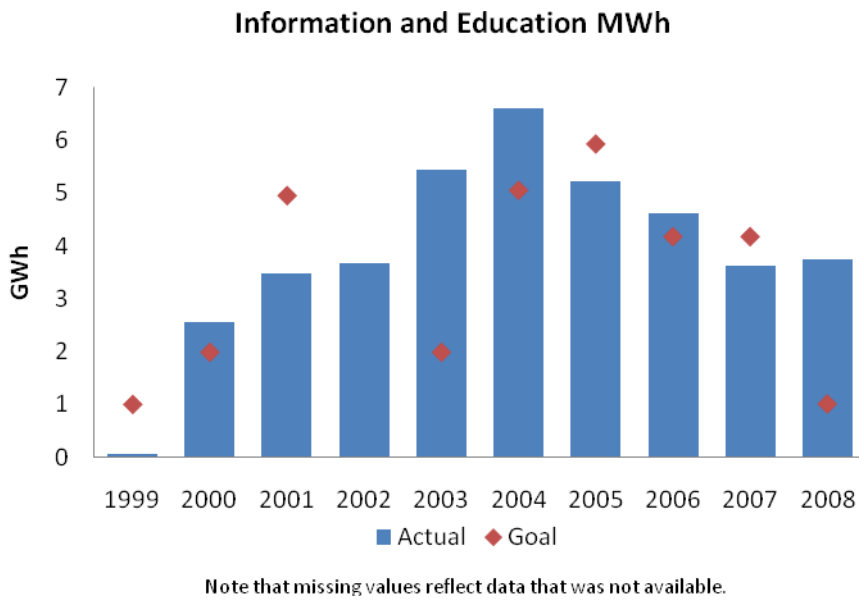

Residential Energy Affordability Partnership (REAP)
Budget
Millions of $
5
4
3
2
1
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

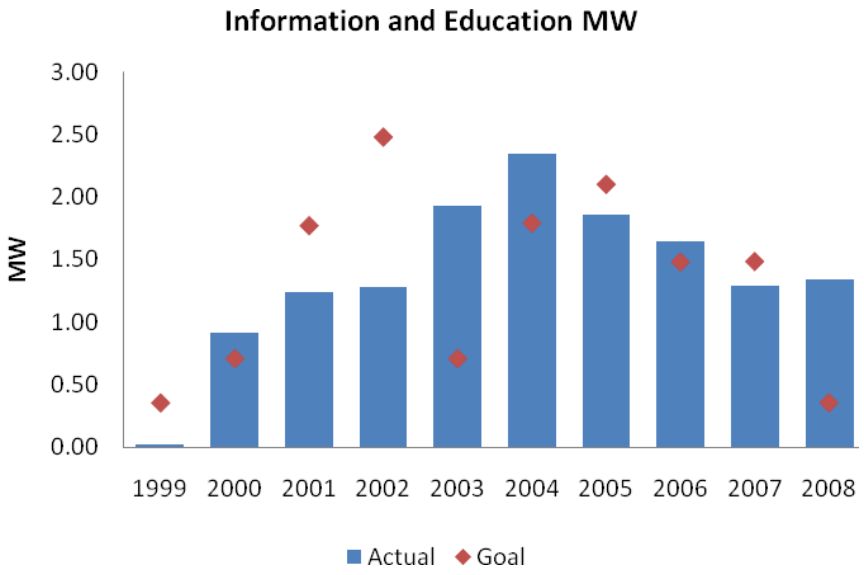

Solar Pioneer MWh
GWh
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

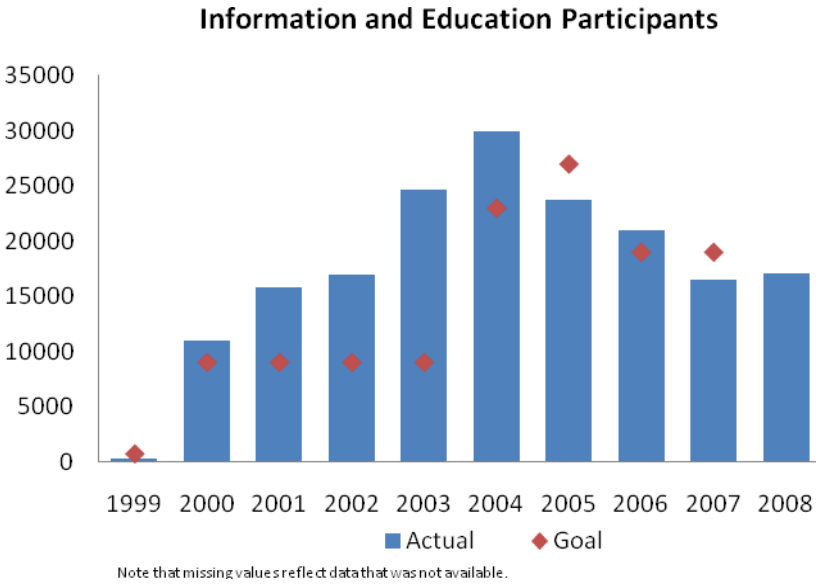

Solar Pioneer MW
MW
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

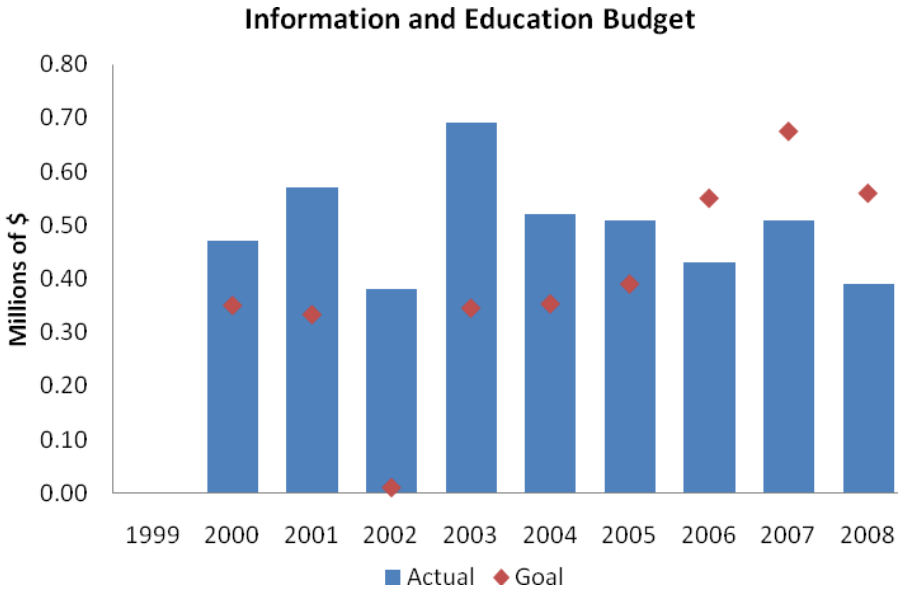

Solar Pioneer Participants
600
500
400
300
200
100
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal
Note that missing values reflect data that was not available.

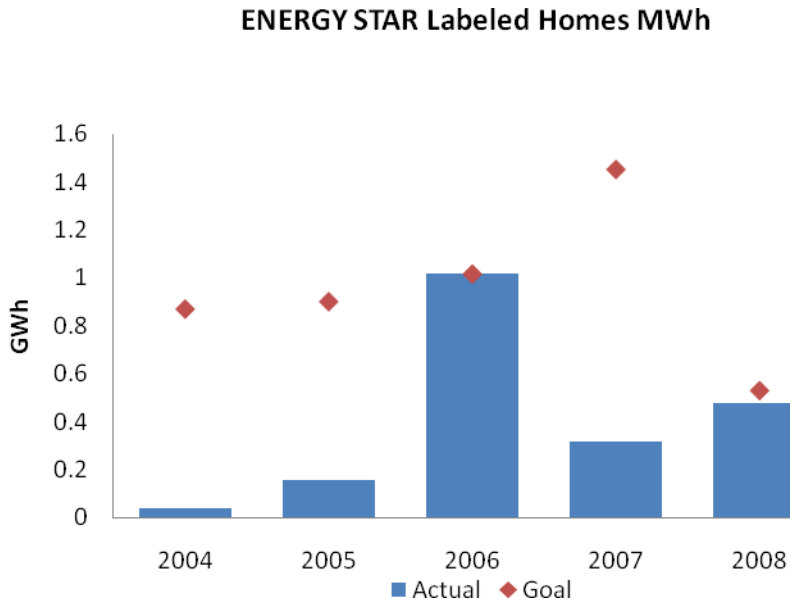

Solar Pioneer Budget
Millions of $
14
12
10
8
6
4
2
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

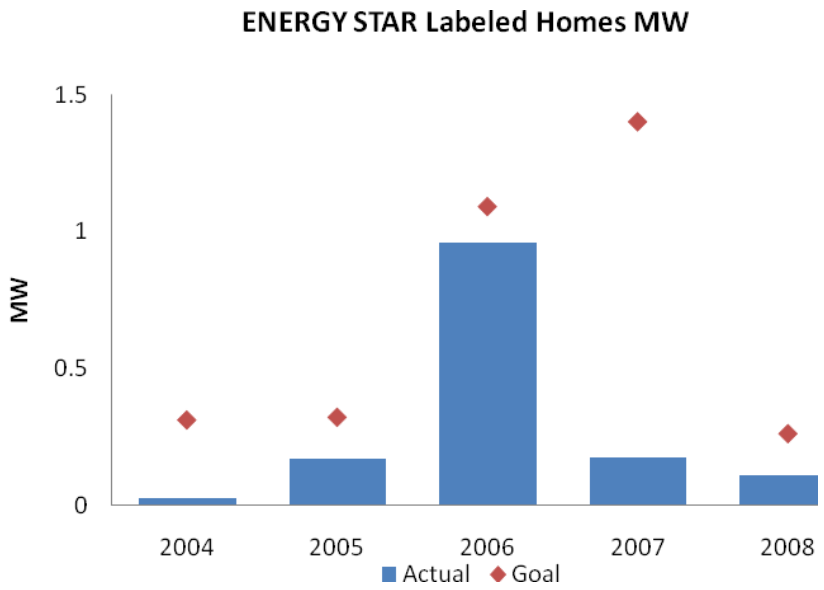

Information and Education MWh
GWh
7
6
5
4
3
2
1
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal
Note that missing values reflect data that was not available.

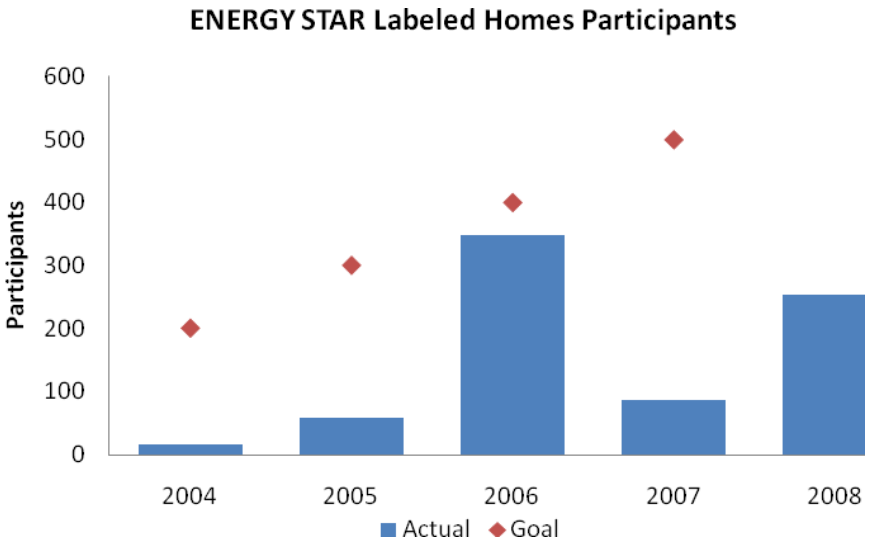

Information and Education MW
MW
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

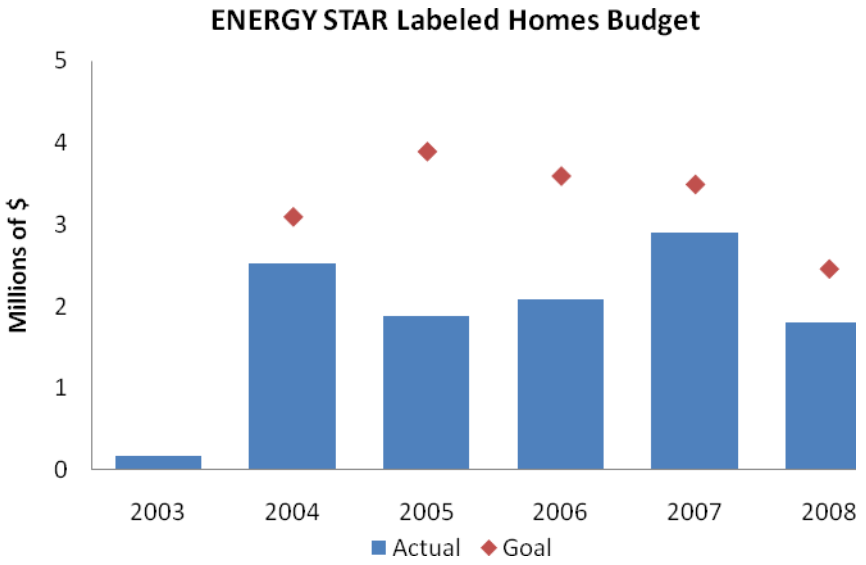

Information and Education Participants
35000
30000
25000
20000
15000
10000
5000
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal
Note that missing values reflect data that was not available.

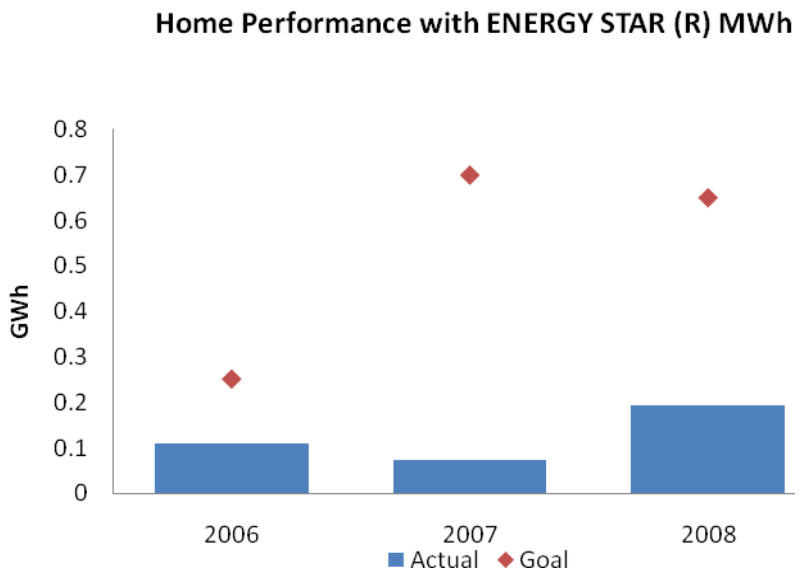

Information and Education Budget
Millions of $
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

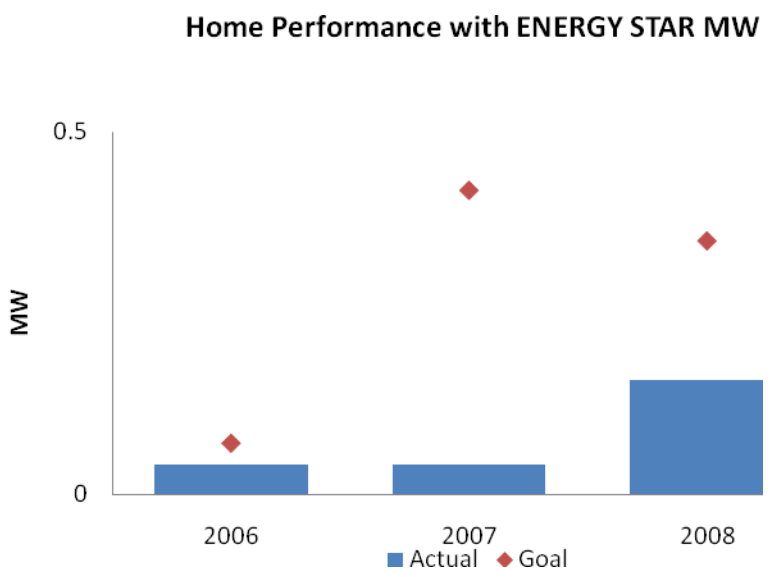

ENERGY STAR Labeled Homes MWh
GWh
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2004
2005
2006
2007
2008
Actual
Goal

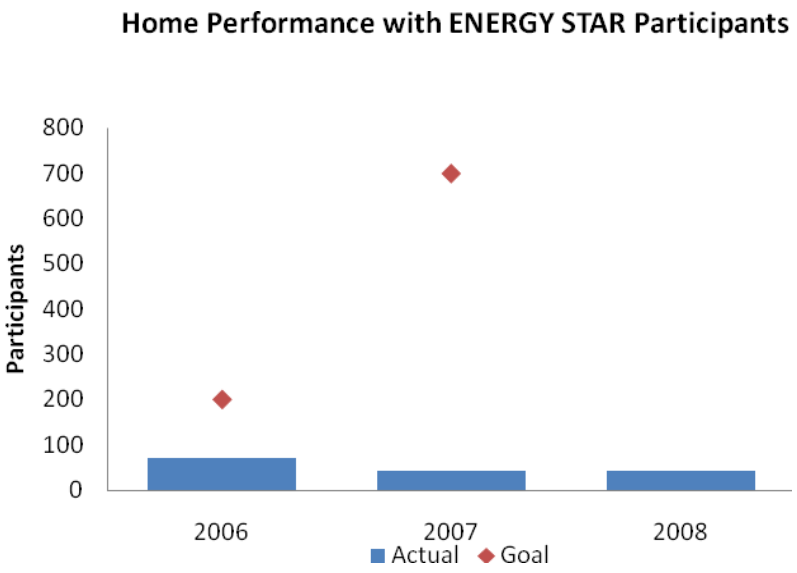

ENERGY STAR Labeled Homes MW
MW
1.5
1
0.5
0
2004
2005
2006
2007
2008
Actual
Goal

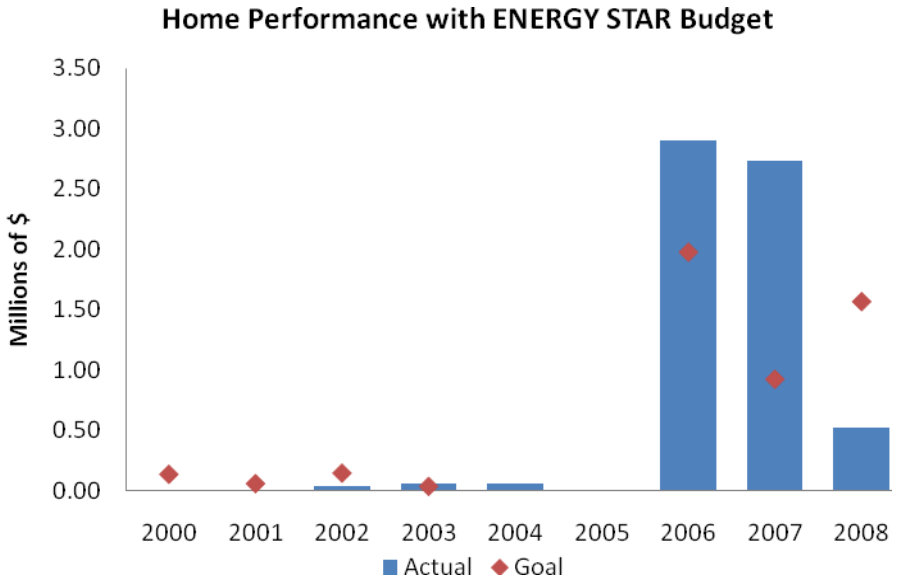

ENERGY STAR Labeled Homes Participants
Participants
600
500
400
300
200
100
0
2004
2005
2006
2007
2008
Actual
Goal

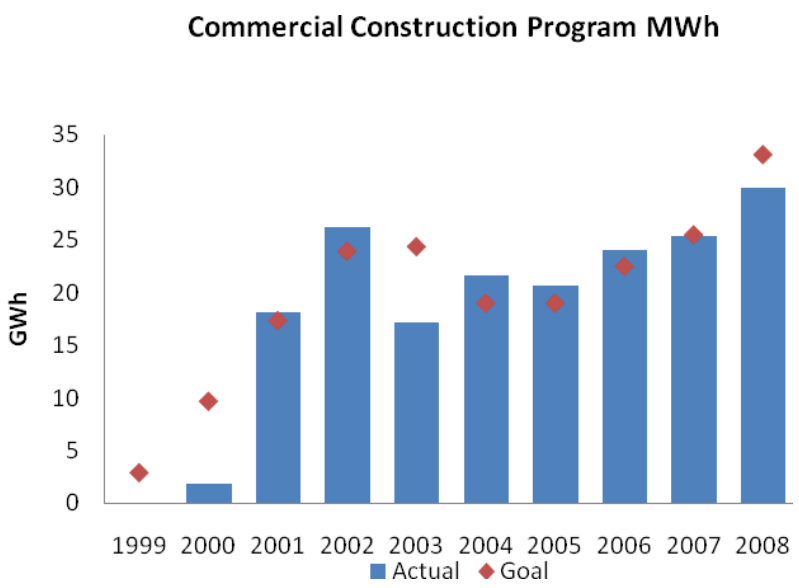

ENERGY STAR Labeled Homes Budget
Millions of $
5
4
3
2
1
0
2003
2004
2005
2006
2007
2008
Actual
Goal

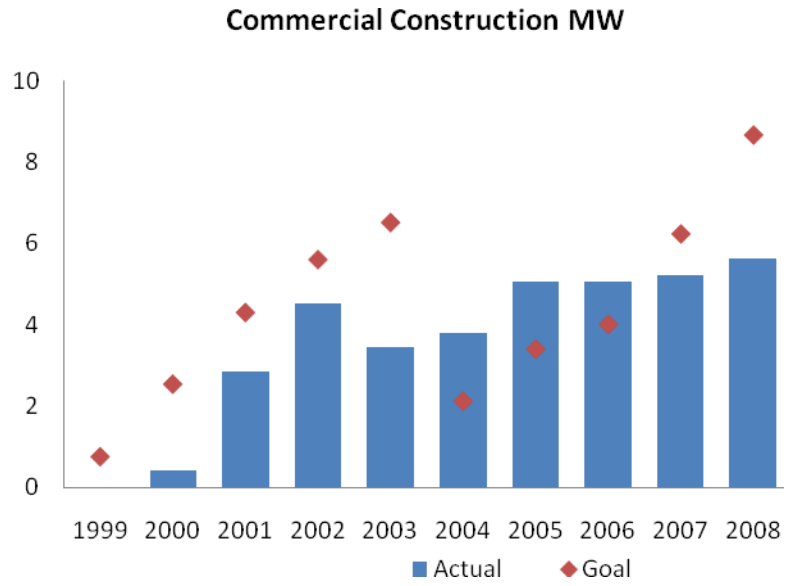

Home Performance with ENERGY STAR (R) MWh
GWh
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2006
2007
2008
Actual
Goal

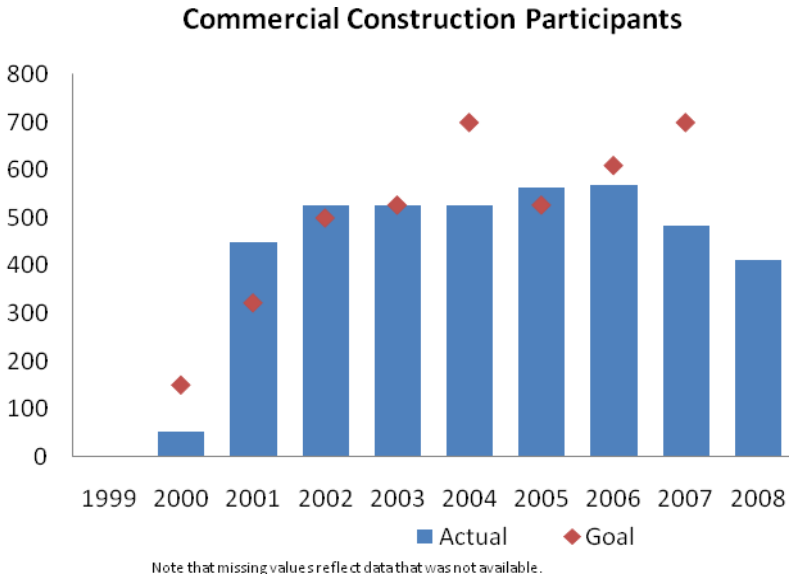

Home Performance with ENERGY STAR MW
MW
0.5
0
2006
2007
2008
Actual
Goal

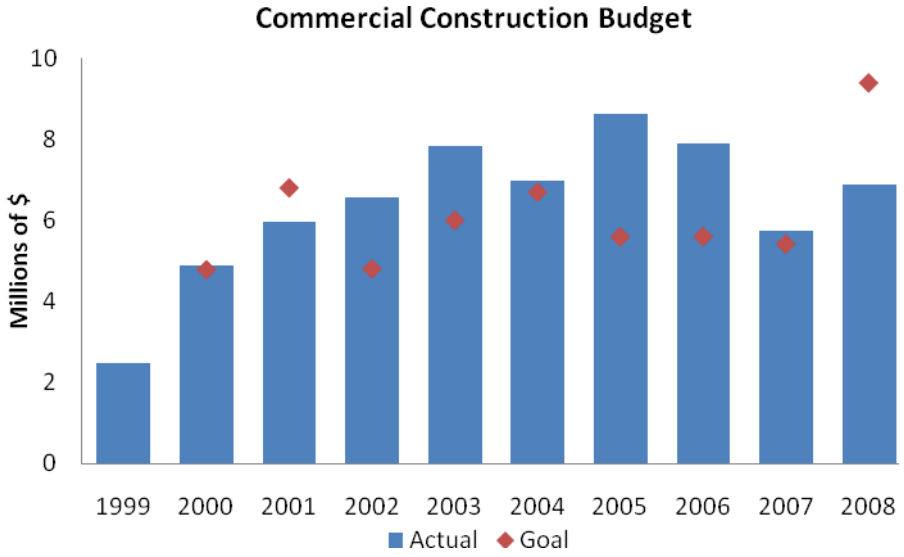

Home Performance with ENERGY STAR Participants
Participants
800
700
600
500
400
300
200
100
0
2006
2007
2008
Actual
Goal

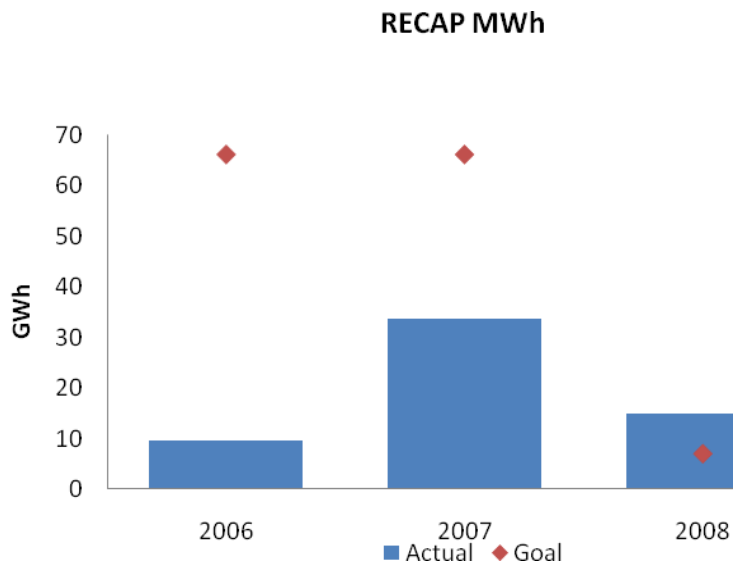

Home Performance with ENERGY STAR Budget
Millions of $
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
2000
2001
2002
2003
2004
2005
2006
2007
2008
Actual
Goal

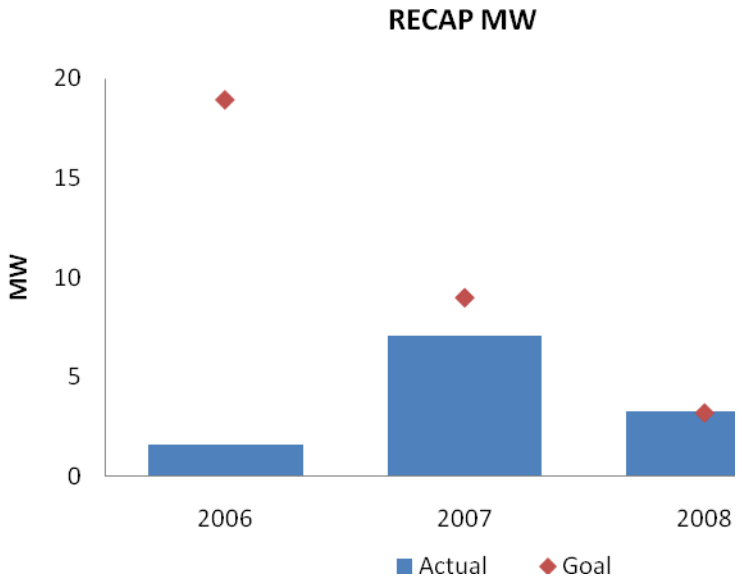

Commercial Construction Program MWh
GWh
35
30
25
20
15
10
5
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

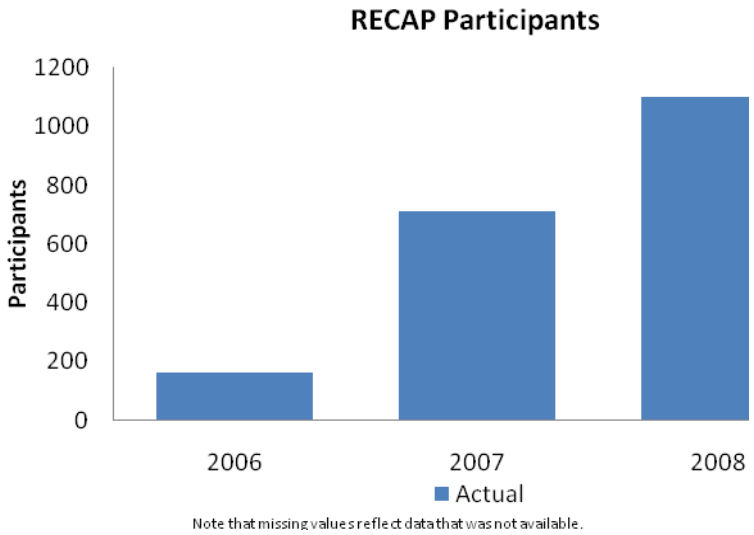

Commercial Construction MW
10
8
6
4
2
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

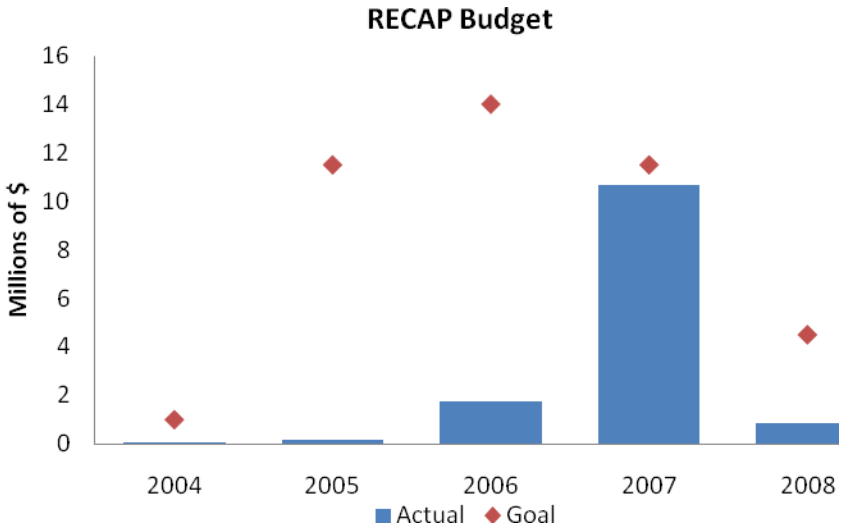

Commercial Construction Participants
800
700
600
500
400
300
200
100
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal
Note that missing values reflect data that was not available.

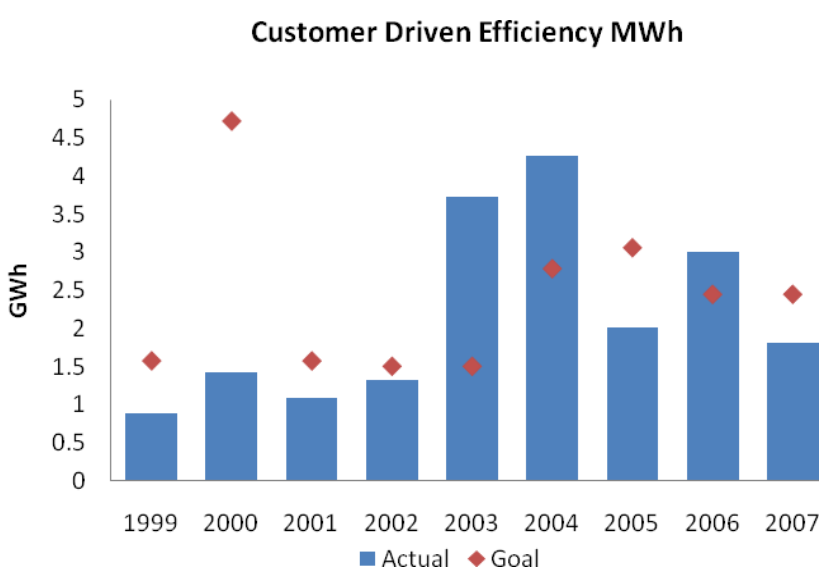

Commercial Construction Budget
Millions of $
10
8
6
4
2
0
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actual
Goal

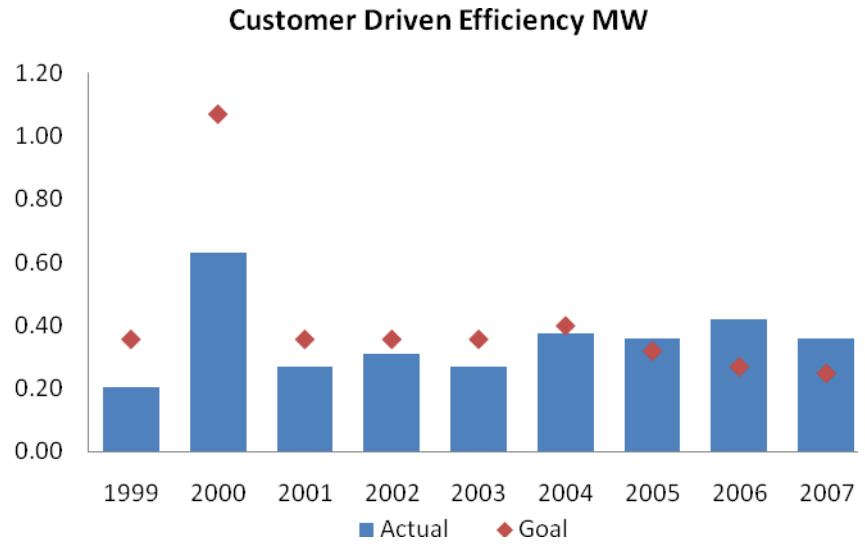

RECAP MWh
GWh
70
60
50
40
30
20
10
0
2006
2007
2008
Actual
Goal

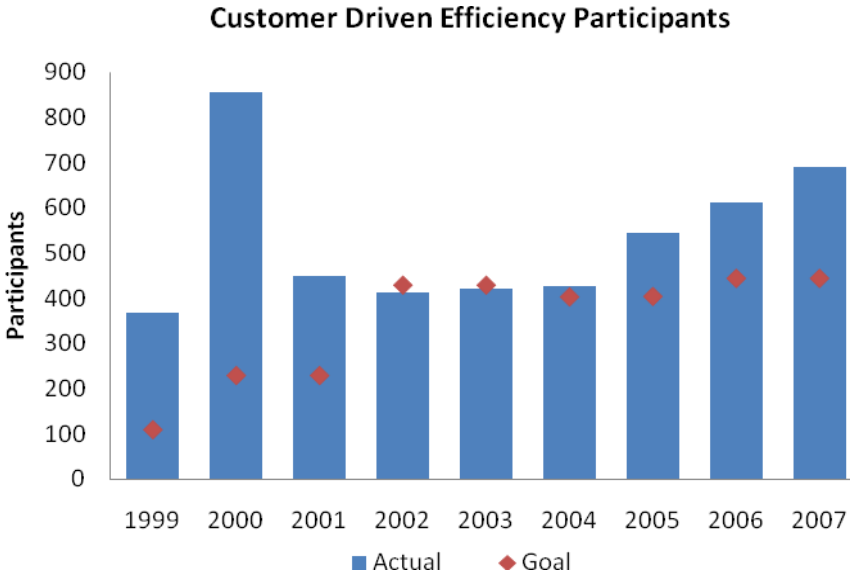

RECAP MW
MW
20
15
10
5
0
2006
2007
2008
Actual
Goal

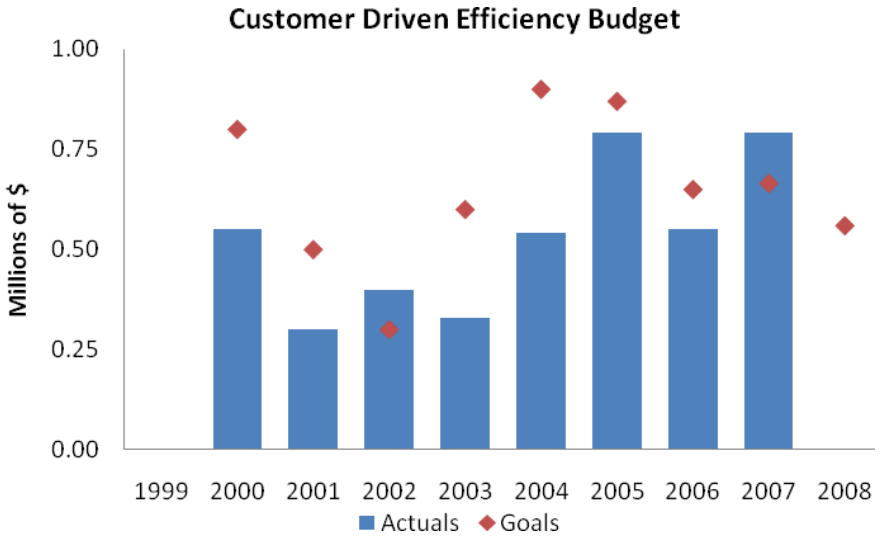

RECAP Participants
Participants
1200
1000
800
600
400
200
0
2006
2007
2008
Actual
Note that missing values reflect data that was not available.

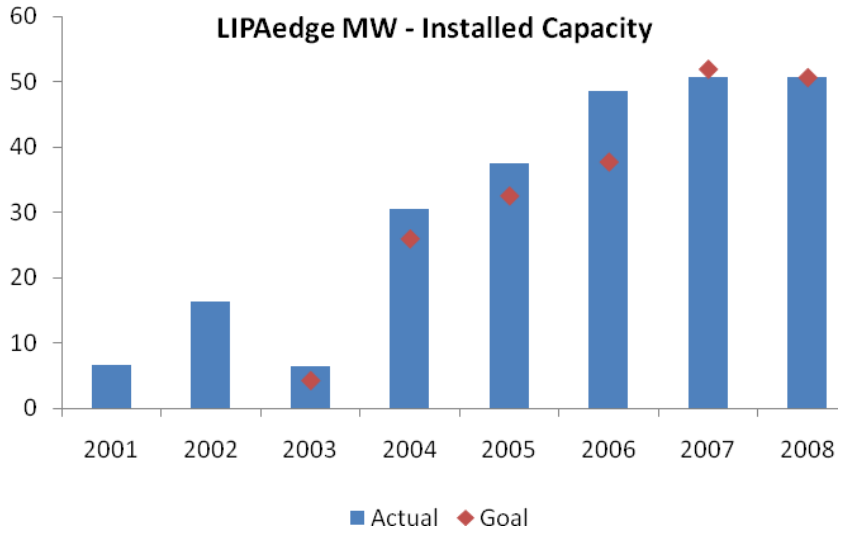

RECAP Budget
Millions of $
16
14
12
10
8
6
4
2
0
2004
2005
2006
2007
2008
Actual
Goal

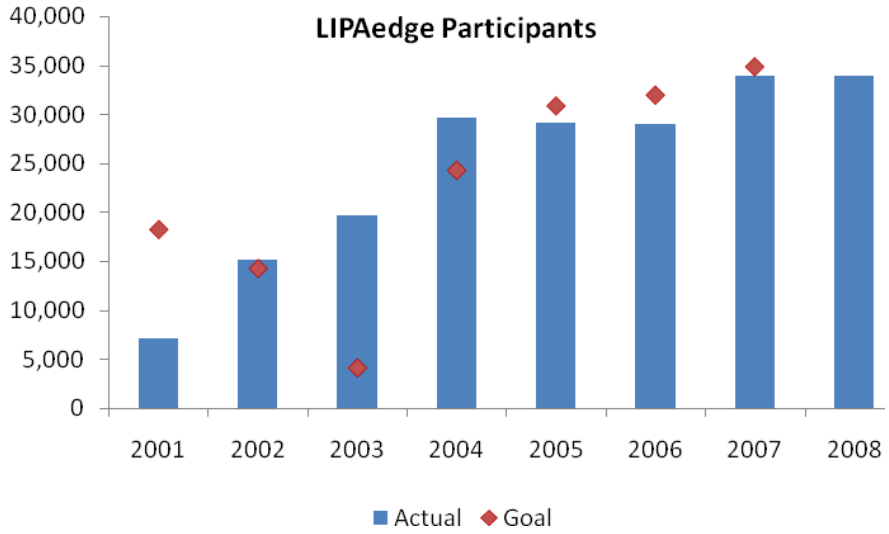

Customer Driven Efficiency MWh
GWh
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1999 2000 2001 2002 2003 2004 2005 2006 2007
Actual
Goal

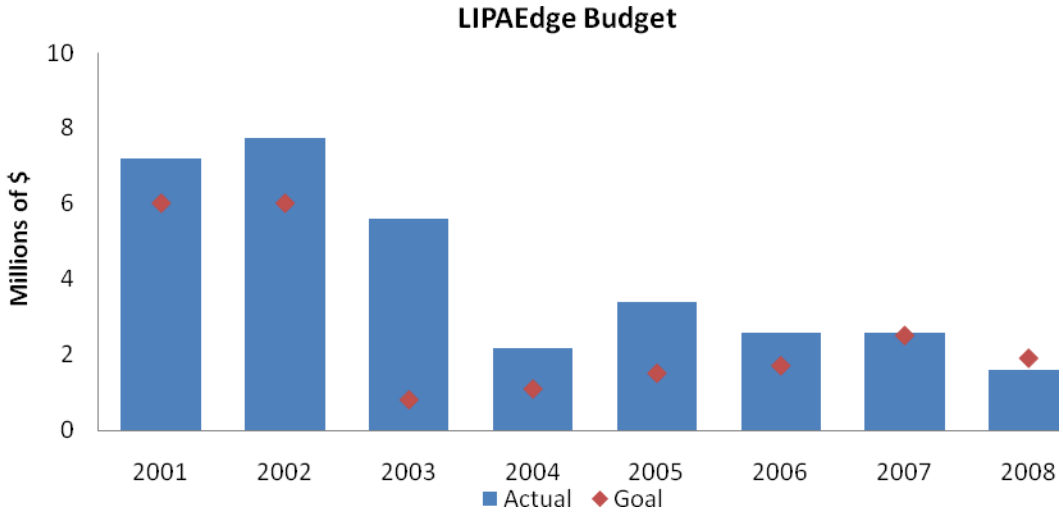

Customer Driven Efficiency MW
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1999 2000 2001 2002 2003 2004 2005 2006 2007
Actual
Goal


Customer Driven Efficiency Participants
Participants
900
800
700
600
500
400
300
200
100
0
1999 2000 2001 2002 2003 2004 2005 2006 2007
Actual
Goal


Customer Driven Efficiency Budget
Millions of $
1.00
0.75
0.50
0.25
0.00
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Actuals
Goals







Note that MW denote installed capacity, not events or test days.

E. EVALUATIONS THAT INFORMED PROGRAM ASSUMPTIONS AS DESCRIBED IN ANNUAL REPORTS

Table 6 identifies those evaluations that informed program energy and demand savings assumptions regarding performance results.[22] According to each year's Annual Reports, program evaluations conducted from 2001-2005 tended to result in program reassessment and revision. In general, the types of revisions that were conducted to refine performance results were typically to revise program specific algorithm parameters, such as formulas, metrics goals and engineering assessments.

Table 6: Evaluation Efforts that Informed Program Performance Results Assumptions as Described in Annual Reports

Program	2001	2002	2003[a]	2004	2005
Residential Lighting & Appliance (Energy Efficient Products)	X		X		
Cool Homes	X			X	
REAP	X		X		X
Home Performance with ENERGY STAR ®					
ENERGY STAR ® Labeled Homes					
Solar Pioneer	X				
Information & Education					
Commercial Construction	X		X	X	
Retrofit Energy and Capacity Program					
Customer Driven Efficiency[b]			X		
LIPA*edge*	X[c]		X		

Gray cells indicate those years when the program either did not exist or was phased out.
This table notes only when Annual Reports noted that evaluations informed or revised their program assumptions. This does not mean that these evaluation efforts did not inform program planning, rather that these revisions were not documented. We found no evidence that evaluations after 2005 were incorporated into subsequent program years and hence do not include those years in the table.
[a] Because there was no 2002 Annual Report, revisions from evaluations that occurred in 2002 were likely documented in 2003.
[b] Phased out in 2008
[c] 2001 Biennial Annual Report noted that LIPA*edge* savings potential may be required to be re-estimated due to new regulations from MYDEC.

Specific programs like Commercial Construction and the Residential Energy Affordability Partnership most frequently revised program performance assumptions based upon evaluation results. In the early years of CEI, the baseline assessments had a large effect on revising program performance assumptions. However, after 2005, the Annual Reports do not note that these evaluations revised assumptions. This does not necessarily mean that they did not revise assumptions; rather that no documentation exists within the Annual Reports that states if revisions were made. For a more detailed analysis of prior evaluations please refer to the "Clean Energy Initiative Prior Evaluations Table" and accompanying "Data Dictionary" submitted to LIPA on 1/4/2010.

[22] Note this does not review the evaluation results that informed program process or implementation strategies.