

Decision 04-09-060 September 23, 2004

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.

Rulemaking 01-08-028
(Filed August 23, 2001)

**INTERIM OPINION: ENERGY SAVINGS GOALS FOR
PROGRAM YEAR 2006 AND BEYOND**

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INTERIM OPINION: ENERGY SAVINGS GOALS FOR PROGRAM YEAR 2006 AND BEYOND

1. Summary¹

The Energy Action Plan, adopted by this Commission, the California Energy Commission (CEC) and the California Consumer Power and Conservation Financing Authority (CPA), identifies reduction of energy use per capita as one of six sets of actions that are of critical importance.² By today's decision, we have translated this mandate into explicit, numerical goals for electricity and natural gas savings for the four largest investor-owned utilities (IOUs): Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas). Electric and natural gas savings from energy efficiency programs funded by ratepayers through the public goods charge (PGC) and procurement rates will contribute to these goals, including those achieved through the low-income energy efficiency (LIEE) program.

Our adopted annual and cumulative goals for energy savings through the year 2013 are presented in Tables 1A-1D, by IOU service territory. Table 1E presents the savings goals for PG&E, SDG&E, SCE and SoCalGas, combined. For the three electric IOUs, today's adopted savings goals reflect the expectation that energy efficiency efforts in their combined service territories should be able to capture on the order of 70% of the economic potential and 90% of the maximum achievable potential for electric energy savings over the 10-year period, based on

¹ Attachment 1 explains all acronyms and other abbreviations used in this decision.

² A copy of the complete Energy Action Plan is available for downloading on the Commission website at www.cpuc.ca.gov.

the most up to date study of that potential. These efforts are projected to meet 55% to 59% of the IOUs' incremental electric energy needs between 2004 and 2013.

For natural gas, our adopted savings goals are designed at this time to capture approximately 40% of the maximum achievable potential identified in the most recent studies of that potential. This level of expectation recognizes the fact that natural gas program funding levels have dropped substantially over the last five years, and that ramping up those efforts to meet the full savings potential may take more time than on the electric side. It also recognizes some uncertainty over the level of achievable savings in the non-core sector. Nonetheless, today's adopted natural gas savings goals represent substantial "stretch goals" by anyone's standards: They reflect an increase in savings by 244Mth over the 210 Mth in savings that would be achieved if current funding levels and program effectiveness (therms per dollar) remained constant. In other words, today's adopted goals for natural gas energy efficiency represent a 116% increase in expected savings over the next decade, relative to the status quo.

In sum, we believe that our expectations for energy efficiency savings over the next decade are appropriately aggressive and in keeping with the objectives of the Energy Action Plan. At the same time, they recognize that there may be some practical limits to effectively increasing program funding and ramping up programs to capture the full economic potential of energy efficiency at this time, particular with respect to natural gas savings.

Today's adopted goals will be updated every three years, in concert with a three-year program planning and funding cycle for energy efficiency ("program cycle"). In preparation for the program year (PY) 2006-2008 program cycle, we are in the process of designing the future administrative structure for energy efficiency in a separate phase of this proceeding. The program administrator(s)

that we select under this structure will be required to submit energy efficiency program plans and funding levels for PY2006-PY2008 in the coming months to meet the electric and natural gas savings goals we adopt today. Future updates to these goals will be considered for the PY2009-PY2011 program cycle, based on updated savings potential estimates, accomplishment data and other evaluation studies, as appropriate.

Our upcoming decisions in Rulemaking (R.) 04-04-003 concerning the long-term procurement plans and 2005/2006 ongoing procurement authorizations of PG&E, SCE and SDG&E will be made in full recognition of the aggressive energy savings goals we adopt today. For the procurement plans that will be filed in 2006 and during subsequent procurement plan cycles, or for any updating to the long-term procurement plans required by the Commission before then, PG&E, SDG&E and SCE shall incorporate the most recently-adopted energy savings goals into those filings.

More generally, in any application or other filing in which PG&E, SCE, SDG&E or SoCalGas present projections of supply-side resource needs, pipeline or transmission needs, propose new facilities or otherwise utilize projections of energy demand, they must demonstrate that such filings are fully consistent with and reflect today's adopted energy savings goals, or updates to these goals as adopted by the Commission.

2. Procedural Background

By ruling dated July 3, 2003, Assigned Commissioner Susan Kennedy established the scope and direction for this proceeding during the remainder of 2003, and beyond. Among other things, the ruling discusses the need to establish energy savings goals in this rulemaking based on the overall potential

for cost-effective energy efficiency.³ To this end, the Commission held a workshop in collaboration with the CEC and CPA on October 8, 2003 to explore the potential for energy efficiency in California. The most recent evaluations of the potential for increased savings from electric and natural gas efficiency investments in California were used as the starting point for the workshop discussion, including The Hewlett Foundation Energy Series report, “California’s Secret Energy Surplus” (Hewlett Foundation Report), which is based on studies funded through the public goods charge.⁴ The workshop was attended by over twenty-five individuals and organizations representing a wide range of interests, including program providers, equipment contractors, government agencies, consumers and consultants.

By ruling dated October 30, 2003, Commissioner Kennedy summarized her conclusions from the discussion and presentations at the workshop, and solicited written comments to follow-up questions related to the potential for energy efficiency and the ways the Commission could adjust policy and program rules to achieve that potential. Post-workshop comments were filed on January 7, 2004 by the City of Berkeley, California Consumer Empowerment Alliance, Davis Energy Group, Intergy Corporation, Office of Ratepayer Advocates (ORA), San

³ See also D.04-01-050 in R.01-10-024, *mimeo*. pp. 104-105, where the Commission reiterated the need to address issues related to energy efficiency goals in this proceeding.

⁴ Mike Rufo and Fred Coito, Xenergy Inc., 2002. *California’s Secret Energy Surplus: The Potential for Energy Efficiency*, prepared by Xenergy Inc. for the Energy Foundation and Hewlett Foundations, October, 2002. This study was also made possible by the efforts of PG&E, which sponsored the anchor study on the commercial sector in 2001, and support from the CEC in early 2002 for the initial residential work. This report and Xenergy’s natural gas savings potential reports can be downloaded off of the web at: www.cpuc.ca.gov/static/industry/electric/energy+efficiency/rulemaking.htm.

Diego Regional Energy Office, SCE, The Utility Reform Network (TURN), Natural Resources Defense Council (NRDC), PG&E, Robert Mowris Associates, and Women's Energy Matters (WEM).

Per Commissioner Kennedy's further direction, Energy Division and CEC staff jointly prepared a report on annual energy savings targets by IOU service territory, building upon the record in this rulemaking on energy savings potential and work underway for the CEC's 2003 Integrated Energy Policy Report proceeding. We collectively refer to Energy Division and CEC staff working on this effort as "Joint Staff" throughout this decision. The Assigned Commissioner also established a schedule for opening comments, a public workshop, and reply comments on the Joint Staff reports.⁵

Joint Staff distributed two separate reports for public review on March 26, 2004: (1) Natural Gas Savings Goals Report, and (2) California Electricity Energy Savings Goals Report. The latter reflected a Joint Staff addendum to an October 2003 report on statewide electricity savings goals prepared by CEC staff.⁶

⁵ See Assigned Commissioner's Ruling Establishing Schedule for Addressing High Priority Issues During 2004, and Notice of Workshop on Administrative Structure, dated February 6, 2004, pp. 5-6.

⁶ These documents can be viewed at:
<http://www.cpuc.ca.gov/static/industry/electric/energy+efficiency/rulemaking/index.htm>

Opening comments on the Joint Staff reports were filed on April 14, 2004 by NRDC, ORA, PG&E, SCE, jointly by SDG&E and SoCalGas, and WEM.⁷

On April 20, 2004, Joint Staff facilitated a workshop on the energy efficiency savings goals outlined in the reports. Post-workshop reply comments were filed in May 2004 by PG&E, SCE, Intergy Corporation (Intergy), SESCO, Inc. (SESCO) and jointly by SDG&E/SoCalGas.

Since issuing its reports on March 26, 2004, Joint Staff has responded to comments by performing additional analysis and making certain modifications to its initial savings goal recommendations. In the following sections, we first summarize the Joint Staff's March 26, 2004 recommendations for energy savings goals, and summarize the issues raised by workshop participants and in post-workshop comments. Next, we describe Joint Staff's response to these issues. Finally, we address the remaining areas of contention and present our adopted energy savings goals.

3. Joint Staff's March 26 2004 Recommendations

Tables 2 and 3 present Joint Staff's March 26, 2004 recommendations for electricity and natural gas savings goals. We summarize below the methods used by Joint Staff to develop these goals.

⁷ We note that WEM's April 14, 2004 pre-workshop comments do not address the energy efficiency targets presented in the Joint Staff report. Rather, they reiterate WEM's position on energy efficiency administrative structure, arguing for the California Standard Offer Program that WEM has submitted for Commission consideration in a different phase of this proceeding. WEM's April 14, 2004 filing is not relevant to the issues we address today, and is therefore not considered in the discussion that follows.

3.1. Electricity Savings Goals

In developing its recommendations for electricity savings goals, Joint Staff started with the statewide goals developed by CEC staff for the 2003 Integrated Energy Policy Report (referred to hereafter as the “statewide goals study”).⁸ Those statewide goals were, in turn, based on a review of the economic potential for energy efficiency programs, i.e., the magnitude of savings that could be achieved by programs at a cost equal to or less than the projected cost of supply alternatives.

The statewide goals study utilized the costs and benefits information provided in the Hewlett Foundation Report to develop an estimate of the potential to increase the number of energy efficiency investments made by customers and businesses in specific segments over the next decade. This report presents estimates of the remaining potential to reduce energy usage over the next 10 years by influencing customers to make energy efficiency investments. It does so by examining market saturation for a list of over 200 measures for the residential, commercial and industrial sectors, and deriving cost of conserved energy supply curves. Based in this information, the report shows that additional energy savings can be achieved equivalent to 10 percent of total electricity sales in 2011, and at a levelized cost of less than 5 cents per kilowatt hour (kWh). The cost of conserved energy includes administration costs, incremental measure costs, rebate costs and marketing costs.

⁸ *Proposed Energy Savings Goals for Energy Efficiency Programs in California*, prepared by Mike Messenger et al. in support of the 2003 Integrated Energy Policy Report Proceeding (o2-IEP-01), October 27, 2003. This paper can be downloaded at http://www.energy.ca.gov/reports/2003-11-05_100-03-021F.PDF, and is also appended to the Joint Staff’s March 26, 2004 California Electricity Energy Savings Goal Report, referenced above.

The statewide goals study utilizes the supply curves and other information presented in the Hewlett Foundation Report to compare the cost of energy efficiency measures to the levelized costs of three separate supply cost benchmarks. The benchmarks are: (1) a peak load plant designed to run from 10 to 999 hours per year, (2) a plant designed to serve shoulder load for one to four thousand hours per year and (3) a baseload plant designed to run year round. Based on this comparison, the statewide goals study projects the remaining economic potential for energy efficiency measures. That economic potential was estimated at 35,325 gigawatt hours (GWh) per year, by the year 2013. This reflects the lower end of the range for economic potential presented by the generalized cost of conservation curve analysis in the Hewlett Foundation Report.

The statewide goals study also considers the impact of achieving these savings goals on future per capita energy usage levels as well as on the overall electricity forecast, and assesses the feasibility of using energy efficiency programs to reach different per capita reduction goals. Based on an evaluation of previous program experience and trends in cost-effectiveness, the study concludes that the maximum achievable potential (or program potential) is on the order of 30,000 GWh statewide over the next decade, and establishes this level as a long-term goal. In developing this estimate of program potential, CEC staff considered various limiting factors, including constraints to ramping up program funding and the trend in market saturation for certain measures.

In the March 26, 2004 report, Joint Staff translates this statewide level of energy savings goals to the individual IOU service territory levels. This was accomplished by applying a baseline ratio of savings per dollar of expenditure to each IOU's relative share of program funding. Table 2 presents Joint Staff's March 26 2004 recommendations for electricity savings goals on an annual and

cumulative basis over 2004-2013 by IOU service territory. The annual numbers represent the annual GWh and megawatt (MW) savings achieved by the set of programs and measures implemented in that specific program year. The cumulative numbers represent the annual savings from energy efficiency program efforts up to and including that program year.

As indicated in Table 2, Joint Staff recommends a cumulative goal for electricity savings of 26,508 GWh (6,892 MW peak) by 2013 for PG&E, SCE and SDG&E combined. This total is approximately 85% of the savings goals adopted in the statewide goals study, reflecting the exclusion of incremental savings estimates for energy efficiency programs in municipal utility areas.

As Joint Staff explains in the report, there are two ways to describe the impacts of electricity savings goals on trends in per capita usage or, alternatively, to estimate the level of savings necessary to meet a requirement to reduce per capita electricity energy use by a certain percentage. In this proceeding, Joint Staff looked at per capita reductions relative to an initial base year level of usage in 2003, as did PG&E. On the other hand, SCE and SDG&E chose to look at per capita reductions relative to their own forecasts of per capita usage in future years, which can be rising, stable or declining.⁹ In other words, the Joint Staff method assumes that establishing a “per capita reduction goal” means to reduce

⁹ However, in their procurement filings in R.01-10-050, all three IOUs translated the 1% per capita energy reduction goal identified in the July 3, 2003 Assigned Commissioner’s Ruling in this proceeding into savings projections that reduced per capita usage by 1% each year relative to their own forecasts of future year usage. As discussed below, this approach results in much lower energy savings levels than interpreting per capita usage reduction goals as a requirement to reduce per capita usage relative to an initial base year usage level.

per capita electricity use each year, starting now, and not from a forecasted value ten years from now.

Use of these different methods yields very different forecasts of savings achieved for the same per capita reduction percentage. For example, relative to the level of per capita usage in the 2003 base year, the savings goals recommended in both the statewide goals study and the Joint Staff report translate to a reduction in per capita electricity usage on the order of 0.3 to 0.4 percent over the next 10 years. Using the lower end of the range means that per capita usage in 2004 would be 0.3 percent lower (in absolute value) than the level of per capita usage in 2003, or 99.7 percent of that level. In 2005, the per capita usage would be 99.4 percent (99.7×99.7 percent) of the level in 2003, and so on compounded out to 2013, when per capita usage is approximately 3% lower than the 2003 base value.

Using the second method, where reductions to per capita usage occur relative to the forecast of future per capita usage, the Joint Staff recommendation for savings goals for each utility translates to a reduction in the annual forecasts of per capita electricity usages of 0.6% per year for PG&E, 0.8% per year for SCE and 0.93% per year for SDG&E. This means that per capita usage in each of the years forecasted over the 2004-2013 period would need to be reduced by the per capita reductions calculated above for each IOU to achieve the equivalent energy savings goal contained in Joint Staff's recommendations. The percentage change in per capita usage derived using the second method is higher because the reductions are not compounded over time from a base per capita usage level. Rather, the reductions are simply used to scale down a forecast of per capita usage that is already trending upwards for all three utility forecasts.

Regardless of the interpretation of how to calculate per capita reductions achieved by energy efficiency program savings, Joint Staff recommends that the

Commission “adopt our aggressive overall savings goals that were determined based on potential studies and cost-effectiveness and are not tied to any particular interpretation of trends in per capita usage.”¹⁰

3.2. Natural Gas Savings Goals

The analysis in the March 26 2004 Joint Staff report on natural gas savings goals was based on Xenergy’s recent evaluations of the potential for energy efficiency to reduce natural gas use.¹¹ First, Joint Staff calculated the “technical, economic and maximum achievable” potential estimates from the Xenergy studies by combining the results for each market segment (residential, commercial and industrial). To develop the “economic and maximum achievable potential,” Joint Staff utilized the energy cost scenario closest to current conditions and future natural gas price projections, and summed the results. Staff also compared the assumed avoided cost figures from the Xenergy reports with updated figures, and found that the differences were minimal and not expected to dramatically affect the results of Xenergy’s potential analysis. Finally, Staff evaluated factors suggesting that Xenergy’s natural gas savings estimates may be too high or too low, and identified several that could bias the results in both directions.

Figure 1 shows the natural gas savings potential that result from Xenergy’s evaluations. *Technical potential* encompasses complete penetration of all measures that are technically feasible to install from an end-use and engineering standpoint. An estimated 4,559 million therms fall into this category for the residential, commercial and industrial markets. *Economic potential* typically refers

¹⁰ *California Electricity Energy Savings Goals Report*, March 26, 2004, Joint Staff memo, p. 3.

¹¹ See the website reference in a previous footnote.

to that portion of technical potential that is cost-effective for customers when compared to supply-side alternatives. At 1,592 million therms, the economic portion of the total potential is considerably smaller than what is technically possible.

The third type of potential, *maximum achievable*, is the amount estimated to be achievable over a period of time with an aggressive program scenario. This scenario assumes that programs use cash rebates equivalent to 95% of the incremental cost of the measures to reach roughly 80% of the eligible population. It also assumes that program managers significantly increase the fraction of customers reached by their programs from roughly 3 to 5% of the population to 15 to 20% of the population on an annual basis. Xenergy's estimates of the maximum achievable savings for the residential, commercial and industrial customers sum to a total of 1,057 million therms over a ten year period, for SoCalGas, SDG&E and PG&E, combined. However, for all three definitions of potential, the savings estimates are based on measures that can be substituted for, or applied to, already installed technologies on a retrofit basis. They do not reflect emerging technologies or energy savings that might be achieved through an integrated redesign of a building's existing energy-using systems.

Joint Staff also examined Xenergy's projections of natural gas savings achieved using different program funding trajectories: (1) Level 1--current spending of \$45 million per year, (2) Level 2--50% more than current spending, (3) Level 3--100% more or doubling the current spending trend, and (4) Level 4--spending for the maximum feasible potential. Table 5 presents the results of those projections. Based on an evaluation of historic natural gas efficiency program experience and trends in cost-effectiveness, Joint Staff develops in its March 2004 report natural gas savings goals that are slightly higher than the

Level 3 trajectory, i.e., reflecting 100% increase in program funding levels. In presenting its recommendations, Joint Staff states the following:

“We conclude that it would be feasible to ramp up program funding to achieve the term savings reported by Xenergy for the Level 2 and Level 3 funding levels but not the Level 4 (Maximum Achievable). We find it very unlikely that the Commission would approve a five fold increase in funding in 2006 to begin to achieve the savings envisioned in the Maximum Achievable scenario. This level of funding increases and actual expenditures have never occurred over the last two decades. Our review of the funding levels over the last 5, 10 and 20 years and the trends in existing program effectiveness rules out Maximum Achievable as a feasible goal....[S]taff does not believe it wise to pursue goals much greater than the Level 3 Increase, or 100% increase in program funding levels until more experience is gained with respect to the IOUs ability to rapidly ramp up both funding and achieve incremental natural gas savings.”

Joint Staff’s March 26, 2004 recommendations for natural gas savings goals are presented in Table 3. As described in Section 5 below, Joint Staff revised these initial recommendations in response to the workshop discussion and post-workshop written comments.

4. Positions of the Parties

In their May 2004 comments on the Joint Staff report, the IOUs recommend that the following technical issues be resolved before finalizing energy efficiency savings goals: (1) reconciling various consumption and population data, (2) removing electricity and natural gas sales to “resale cities”¹² (3) removing

¹² Resale cities are municipalities located within an IOU service territory that purchase energy “wholesale” from the IOUs for resale to their residents and businesses. In population, resale cities comprise approximately 5.5% of SCE’s service territory and 15% of PG&E’s service territory, based on 2002 data. The resale cities for SCE are: Azusa, Vernon, Anaheim, Banning, Anza, Riverside and Colton. For PG&E, they are: Alameda, Biggs, Gridley, Calaveras, Lassen, Ukia, Atwater, Livingston, Merced,

Footnote continued on next page

usage by self-generators, (4) removing natural gas sales to private marketers, to cogenerators and to thermally enhanced oil recovery customers, and (5) removing usage by direct access customers.

PG&E also argues that the Commission needs to address how non-utility generation at customers' premises ("private supply") will be accurately measured on an ongoing basis for the purpose of defining usage within a utility service territory. SESCO concurs with the IOUs that municipal utility customers and other non-PGC paying customers should be excluded from the calculation of savings goals, as long as the savings achieved by those customers are also removed from the calculation of savings accomplishments.¹³

Based on their post-workshop comments, SDG&E/SoCalGas and PG&E appear to generally support the magnitude of the electricity goals presented in the Joint Staff. SCE, on the other hand, argues that the Joint Staff recommendations for electricity savings goals for its service territory are not reasonably attainable because they would exceed the "maximum achievable potential" by the year 2012. SCE contends that additional analysis is needed to determine that level of energy efficiency that would represent stretch goals, but could also be counted on for resource planning purposes.¹⁴

Some parties take issue with Joint Staff's recommendations for natural gas savings goals, arguing that they are far too low relative to the achievable, cost-

Roseville, Plumas, San Francisco, Lodi, Lompoc, Palo Alto, Santa Clara, Redding, Shasta Lake, Sierra (unincorporated), Healdsburg, Modesto, Turlock and Tuolumne (unincorporated).

¹³ Reply Comments of SESCO, p. 7.

¹⁴ SCE Reply Comments, April 30, 2004, p. 8.

effective potential for savings. In particular, ORA points out that there is a large disparity in the aggressiveness of Joint Staff's recommended goals for electricity and natural gas savings. Whereas the electricity report recommends a long-term goal on the order of 90% of the maximum achievable savings potential, the natural gas report recommends a long-term goal that represents only 27.5% of that potential.¹⁵

NRDC echoes these observations in its pre-workshop comments, and presents an alternative proposal for natural gas savings goals for consideration. In NRDC's view, a more appropriate savings goal for all three IOUs combined would be a cumulative annual savings of 750 million therms by 2014, or three-quarters of the achievable, cost-effective savings potential presented in the Xenergy studies. Under NRDC's proposal, the savings target would increase by 10 million therms every year until 2010, and then 8 million therms thereafter. Table 6 presents NRDC's proposal for annual and cumulative annual savings over the 2005-2014 period.

SESCO supports the NRDC proposal for a more aggressive natural gas savings goal. SDG&E and SoCalGas recommend that the Commission adopt the Joint Staff recommendations, arguing that the underlying program ramp up rate would be achievable and would result in an acceptable impact on customers' rates.¹⁶ However, if the Commission should adopt NRDC's recommended natural gas savings goals, SDG&E and SoCalGas recommend a slower ramp-up in the first two years of the program, equal to the Joint Staff recommendations.

¹⁵ Comments of ORA, April 14, 2004, p. 2.

¹⁶ PG&E's reply comments do not reveal what level (or levels) of natural gas savings goals PG&E considers to be achievable.

In addition, the IOUs argue that the specific metric used to determine the cost-effectiveness of energy efficiency measures and/or programs, and the avoided costs used for calculating these metrics require further consideration in the process of setting goals for energy efficiency. In its post-workshop comments, SESCO takes issue with the levelized cost method used in the Joint Staff report, and argues that the total resource cost test continues to be the most important cost-effectiveness consideration.

More generally, the IOUs contend that the Joint Staff report needs to also address how savings goals will be established in a forum in which the cost and rate impacts of the goals, as well as their relationship to other policy objectives, can be properly assessed. The IOUs, NRDC, SESCO and Intergy also request further clarification on how the energy savings goals will be used, the applicable timeframe for establishing them, and how they will be updated and coordinated with procurement funding cycles. NRDC also urges the Commission to reaffirm that the purpose of this goal-setting process is to translate into numerical targets the overriding policy goal of pursuing all cost-effective energy efficiency opportunities.

Whatever energy savings goals the Commission adopts in this decision, parties appear to be in agreement that they should be updated on a regular basis. Consensus among workshop participants was reached that updating should occur every three years, consistent with a three-year program cycle. In particular, the IOUs recommend that the Commission establish a process whereby adjustments can be made to account for changed circumstances, such as economic growth, community choice aggregation and other significant demand forecasting parameters, and to take into account the existing supply portfolio so

that ratepayers do not procure redundant resources.¹⁷ NRDC suggests that the Commission update the studies of the full potential for cost-effective gas energy efficiency across all sectors every three years, and then update the natural gas savings targets accordingly. SESCO prefers that the Commission set a cumulative ten-year savings goal along with annual values needed to achieve that goal, and undertake revisions of the goals as frequently as new data is available. Intergy recommends that energy savings targets be continuously adjusted and refined with accomplishment data, and the results of measurement and evaluation studies.

5. Joint Staff's Response to May 2004 Comments and Revised Recommendations

Subsequent to the filing of post-workshop comments, Joint Staff worked with the IOUs to remove electricity sales to resale cities, as well as resale cities' population, from the calculation of sales and per capita usage for each IOU service territory, and to reconcile other technical differences. In addition, Joint Staff removed the impacts of gas sales to thermally enhanced oil recovery customers and sales to the City of Long Beach for the SoCalGas service territory. These adjustments are documented in Attachments 2-4.

As described in these attachments, adjustments to sales, population and other technical differences noted in the comments are relevant when calculating the effect of increased program savings on the forecast of per capita electricity usage, but they have no impact on the Joint Staff recommendations of GWh and MW savings goals for each IOU. This is because the recommended energy savings targets are based on cost effectiveness, funding increase constraints and

¹⁷ Joint Reply Comments of SDG&E and SoCalGas, April 30, 2004, pp.3-4; Reply Comments of PG&E, April 30, 2004, p. 7.

the projected trend in the effectiveness (kWh saved per dollar spent) ratios for the programs. Raising or lowering the amount of electricity (or natural gas) sales to be considered in the calculation of per capita trends does not affect these factors unless it serves to limit or reduce the target population for programs. Instead, these technical adjustments affect what one might conclude about the impact of a given level of program savings on forecasts of overall usage and per capita usage trends.

More specifically, Attachments 2 and 3 show that removing electricity sales to resale cities from the CEC electricity demand forecast reduces the overall sales forecast by 20% for PG&E and 7% for SCE. Population forecasts are also reduced by 15% and 5.5%, respectively, by removing persons served by municipal utilities. The net effect of both of these changes is to reduce the cumulative savings required to meet a reduction goal of -0.3% in per capita electricity usage by approximately 2% for PG&E and 1.5% for SCE. This change has no impact on the estimates of technical potential because the Xenergy studies started with estimates on IOU customer-only sales, and by definition exclude self-generation, resale cities, and other non-PGC paying entities. Attachment 4 also illustrates that removing natural gas sales to resale cities, cogeneration customers and thermally enhanced oil recovery sales has no impact on the recommended trajectory of incremental natural gas savings from the program over the next ten years. Joint Staff agrees with SESCO that savings achieved by customers that are not included in the calculations of savings potential should also be removed from the calculation of savings accomplishments.

In response to SCE's comments, Joint Staff points out that the Xenergy analysis in the Hewlett Packard Report estimates the statewide economic potential at 40,186 GWh and the maximum achievable potential at 30,400 GWh by 2012. Applying SCE's reported ratios of savings per dollar of expenditure to

its relative share of program funding (40%) yields a maximum achievable potential of 12,160 GWh, which is considerably higher than the Joint Staff recommendation of 10,773 GWh for that year.

Joint staff also notes that PG&E's concerns over how private supply will be measured is now moot, since Joint Staff has modified its forecasts from an earlier approach to exclude private supply numbers. Therefore, estimates of the quantity of private supply do not affect either the setting of goals or the determination of per capita reductions equivalents. With regard to the availability of reliable data on these quantities, Joint Staff points out that all private suppliers over 1 MW are required to report their energy production to the CEC on a monthly basis.

On the issue of how to consider direct access customers on the electric side, or non-core customers on the natural gas side, Joint Staff believes that some level of potential energy savings from these markets should be considered in establishing overall savings goals. Although IOUs no longer procure energy on their behalf, Joint Staff points out that direct access and non-core customers continue to pay the PGC and ratepayer-funded programs continue to be designed and implemented to capture savings in these markets. As described in Attachment 5, overall savings goals can be bound by performing sensitivity analysis on what percentage of the non-core (or direct access) market savings potential is achievable. Joint Staff believes that this is a more reasonable approach than eliminating direct access and non-core usage from savings goal calculations altogether, or assuming that all of the economic potential can be effectively captured via ratepayer-funded programs.

In sum, Joint Staff concludes that the March 26, 2004 recommendations for electricity savings goals do not require adjustments in response to parties' May 2004 comments. Those recommendations are presented in Table 2.

However, Joint Staff did perform additional analysis in response to workshop discussion and comments that has resulted in modifications to the March 26 2004 recommendations on natural gas savings goals. That analysis and Joint Staff's revised recommendations are presented in Attachment 5. As a result of revisiting this issue, Joint Staff has increased its recommended savings goals from 290 Mth to 472 Mth in annual savings, by 2013. This represents approximately 40% of the maximum achievable savings levels estimated from the Xenergy potential studies.

Finally, some parties at the workshop and in comments requested that Joint Staff perform a rate impact analysis to reflect increases in program funding consistent with the recommended savings goals. Attachment 6 presents Joint Staff's analysis of the rate increase required to fund the programs associated with its recommended natural gas savings goals and the net rate impact taking into account the resulting natural gas savings. The results indicate that the rate increase to fund the program of 0.6 cents/therm is counteracted by accumulated commodity savings. The net rate impact is calculated to be a negative 2.6 cents/therm, on average. In other words, Joint Staff projects that the extra savings valued at the commodity price of gas will be higher than the accumulated program costs.

Joint Staff was unable to prepare a comparable analysis of net rate impacts on the electric side because of the difficulty and uncertainty in forecasting the difference between avoided costs and retail rates over the next 10 years, which is needed for such a calculation. Instead, Joint Staff prepared a preliminary analysis of the revenue requirements and the program levelized costs associated with recommended savings goals for PY2006. The results and assumptions used in the calculations are displayed in Table 7. Joint Staff estimates that the programs implemented to meet the 2006 savings goals will cost 3.5 cents/kWh

on a levelized cost basis. In Joint Staff's view, this cost is less than any new baseload, combined cycle or peaking plant that can be brought on line over the next 10 years. Therefore, Joint Staff concludes that the rate impacts associated with its recommendations for electric savings goals are also likely to be negative when the value of electric energy savings is taken into account.

Joint Staff recommends that the IOUs be required to provide their best estimate of the net rate impacts of their programs when they file their program applications in mid-2005 for the next funding cycle.

6. Discussion

As NRDC points out, California's "one high-level, overriding goal guiding its energy efficiency efforts: to pursue all cost-effective energy efficiency opportunities."¹⁸ This overriding goal has been clearly articulated in the Public Utilities Code, in rulings and decisions by this Commission, and in the joint agencies' Energy Action Plan, which calls for conservation and energy efficiency to be first in the "loading order" of resources pursued in procurement.¹⁹ Pub. Util. Code § 701.1(b) provides that utilities should seek to exploit all cost-effective energy efficiency. Commission policies on energy efficiency articulated in D.02-10-062 and D.04-01-050, as well as the Assigned Commissioner's ruling dated July 3, 2003 in this proceeding, echo the Energy Action Plan requirement that energy efficiency be first in the loading of resources in the IOUs' procurement plans.

¹⁸ NRDC Comments, p. 3.

¹⁹ A copy of the Energy Action Plan can be viewed on the Commission's website at www.cpuc.ca.gov.

It is within the context of our objective to capture all cost-effective energy efficiency that we establish numerical targets for electricity and natural gas savings today, and create a process for updating them on a regular basis in the future. In order to meet our objective, the annual and cumulative numerical goals for energy savings *must* be aggressive, that is, they must “stretch” the capabilities and efforts of all those involved in program planning and implementation. At the same time, these stretch goals need to reflect a pace for increasing program efforts that is achievable, so that the savings goals can also be relied upon for resource planning and procurement purposes.

In our judgment, the Joint Staff final recommendations for electricity and natural gas goals achieve this balance, with certain adjustments. Based on the issues raised in the comments on the draft decision, and after further consultation with Joint Staff, we have made some modifications to the electric savings goals presented in Table 2. Specifically, we adjust the annual 2004 and 2005 GWh savings goals upwards to reflect the values adopted by the Commission for these program years, as several parties propose.²⁰ In addition, we trend the GWh savings for the remaining years to produce cumulative savings goal for each IOU that take into account the IOU-specific estimates of maximum achievable potential presented in an expanded version of the Hewlett Foundation Report, prepared by the same authors. The expanded study disaggregates the statewide maximum achievable potential estimates presented in that report to each of the three major electric IOU service territories.

²⁰ Those numbers include savings from procurement, statewide, local-utility, local-nonutility and partnership programs. For simplicity, we divide the goals established for the two-year 2004/2005 program cycle in half to obtain the annual levels. See Attachment 7.

We refer to the expanded study as the “disaggregated Secret Energy Surplus Study.” It was prepared for the IOUs to assist them in developing their July 2004 procurement plan filings in R.04-04-003. The disaggregated numbers were not available to Joint Staff as it prepared the March 2004 report, discussed its proposed allocation of the statewide numbers to each IOU service territory during the April 2004 workshops, and developed its final recommendations for the draft decision.

In their opening comments on the draft decision, SCE and SDG&E attach a summary of the results of the disaggregated Secret Energy Surplus Study prepared by the study authors, and compare the disaggregated numbers adopted in the draft decision to those results.²¹ As explained in that summary, the study authors went back to interim work products developed as part of the statewide analysis of savings potential. Those interim products provided energy efficiency potential estimates by utility. The authors presented those underlying 10-year estimates of technical, economic and maximum achievable potential by utility and compared them to the Joint Staff final recommendations. That comparison is shown in Attachment 8.

The Joint Staff recommendations and the disaggregated study results both sum to 30,000 GWh of statewide maximum achievable savings by the end of 2013. However, Joint Staff’s approach for allocating the statewide numbers between municipal utilities and the IOUs results in IOU cumulative totals that

²¹ Attachment 1 of SDG&E/SoCalGas Opening Comments and Exhibit A of SCE’s Opening Comments. At the request of the assigned ALJ, SDG&E/SoCal also submitted a breakdown of the disaggregated maximum achievable potential savings values presented in those attachments that displayed the information on a year-by-year basis for each IOU service territory. See August 25, 2004 SDG&E/SoCal Response to ALJs Request for Supplemental Information.

are approximately 1000 GWh higher than the sum of the maximum achievable results for each utility in the disaggregated Secret Energy Surplus Study.

Specifically, the sum of the utility-specific numbers underlying the Secret Energy Surplus Study yields a cumulative total of 25,490 GWh in maximum achievable potential for the IOUs combined, out of the statewide total of 30,000 GWh. Joint Staff's approach for allocating the statewide total to the IOUs (based on applying a baseline ratio of savings per dollar of expenditure to each IOU's relative share of program funding), yields an IOU combined cumulative total of 26,511 GWh. In addition, the Joint Staff approach for allocating the statewide savings goals to SCE and SDG&E results in goals for these two service territories that are higher than the maximum achievable potential produced under the disaggregated study. (See Attachment 8.)

We believe that using the utility-specific numbers that underlie the statewide assessment of savings potential is preferable to using the top-down allocation that Joint Staff produced in the absence of having this disaggregated data available when it prepared the March 2004 report. However, in making our adjustments to the savings goals recommended by Joint Staff and in the draft decision, we recognize that several key assumptions underlie the calculation of the maximum achievable savings potential. These include how rapidly funding levels can be ramped up, the role of emerging technologies in contributing to future energy efficiency savings, as well as the overall savings yield of program dollars (kWhs/dollar) over time. There continues to be considerable disagreement over some of these underlying assumptions, as reflected in the comments on the draft decision. For example, PG&E argues that the savings yield of program dollars will decline from current levels as energy efficiency

potential becomes “mined out” over the decade.²² Joint Staff, on the other hand, presents the view that a constant savings yield per dollar appropriately balances the range of factors that could produce either decreasing or increasing saving yields over the next decade.²³

Today’s adoption of specific savings goals is not intended to resolve these issues. Rather, the underlying assumptions that drive the development of both economic and maximum achievable potential should be thoroughly considered and addressed during the next update of potential studies. As described above, our adjustments to the draft decision are designed to reasonably bound the savings goals trajectory at either end of the forecast period, based on the best study information available to date.

In doing so, we note that attempts to use the maximum achievable savings potential presented in the disaggregated study to limit the cumulative GWh savings goals for SDG&E creates very anomalous results. This is because the disaggregated study starts with a baseline of maximum achievable savings for SDG&E that is much lower than either the Commission-adopted energy savings goals or the savings estimates presented in SDG&E’s long-term resource plan (LTRP) over the first two years (2004 and 2005) of the 10-year period.²⁴ As a

²² PG&E’s Opening Comments, pp. 3-4.

²³ See the Joint Staff discussion of these factors on pp. 16-19 and 23-25 in California Electricity Energy Savings Goal Report, dated March 26, 2004 and filed in this proceeding.

²⁴ In R.04-04-003, SDG&E filed a LTRP that projects cumulative savings over the 2004-2005 period on the order of 540 GWh, which is consistent with the Commission-adopted goals for those program years. The disaggregated Secret Surplus Energy Study, on the other hand, projects a cumulative total of only 306 GWh in SDG&E’s service territory for those two program years. See Attachments 7 and 8.

result, creating a mathematical trajectory of energy savings for SDG&E that sums to the cumulative maximum achievable potential at the end of 2013 requires one to assume an unrealistic trajectory for spending and/or savings yield per dollar of expenditure over the next decade. In particular, one would need to assume dramatically declining funding levels at current savings yield ratios, or else constant funding levels at dramatically declining savings yield ratios.

Rather than force a result using unrealistic assumptions for future funding or savings yield ratios, we adopt a cumulative GWh savings goal for SDG&E that is somewhat higher than the maximum achievable potential presented in the disaggregated study for SDG&E's service territory, but that does not increase the numbers above the maximum achievable potential for all three electric IOUs combined. As a result, our adjustments result in an adopted trajectory of GWh savings goals for SDG&E that is 118% of the cumulative maximum achievable potential presented in the disaggregated Secret Energy Surplus Study, whereas the adopted GWh savings goals for PG&E and SCE are more on the order of 88% the cumulative maximum achievable potential presented in that study.

For the reasons discussed above, there is no way to equalize these percentages of maximum achievable potential across all three service territories without (1) ignoring current performance and adopted savings goals for SDG&E and substituting the much lower values of maximum achievable potential presented in the expanded Secret Energy Savings Study for 2004 and 2005, (2) requiring greatly disproportionate increases in program effort and funding for SCE and PG&E, relative to SDG&E, to bring all three IOUs to the 100% level of maximum achievable potential, and/or (3) dramatically decreasing both funding levels and savings yield ratios for SDG&E in 2006 and beyond to result in the same percentage (88%) of maximum achievable potential as PG&E and SCE. Clearly, we will need to take a fresh look at the underlying assumptions that

create the disparity in the 2004/2005 savings baseline and estimated savings potential across the three service territories when we update our savings potential estimates in the future. In the meantime, we have adjusted the Joint Staff recommended trajectories of GWh energy savings over the 2004-2013 period for PG&E, SCE and SDG&E in a manner that we believe is reasonable and appropriate based on the record in this proceeding.

The peak savings (MW) goals presented in the Joint Staff recommendations and draft decision were derived as a fixed percentage (26%) of the GWh savings goals. This percentage (or “conversion factor”) was selected as a reasonable mid-point estimate of the historical relationship observed between GWh and MW savings over the past 5 years.²⁵ We are persuaded by the comments that a lower conversion factor (on the order of 20%) that reflects the average relationship between and MW savings for the 2004 and 2005 program years alone is a reasonable alternative assumption. Using this assumption in the calculations will yield cumulative peak savings values that do not exceed the cumulative total maximum achievable peak savings potential (4959MW) projected by Xenergy over the 10-year period.²⁶ We adjust the peak MW goals presented by Joint Staff, accordingly. However, as we look to develop energy efficiency programs for

²⁵ That relationship or conversion between GWh and MW savings has ranged from 0.17 to 0.41 over the past 5 years, depending on the mix of measures being promoted and the relative level of peak savings emphasis. See California Electricity Energy Savings Goals Report, March 26, 2004, Appendix A.

²⁶ For the reasons discussed above, we establish peak savings goals for SDG&E at a level that is somewhat above the disaggregated study results (i.e., 502 MW versus 402 MW), but substantially reduce them from the 889 MW level presented in the Joint Staff’s March 26 2004 report and draft decision. See Attachments 8.

2006 and beyond that more aggressively reduce peak loads, we may need to adjust the conversion factor upwards.

As PG&E and others point out, there are several different ways to define and calculate peak savings. For the purpose of establishing energy savings goals and measuring performance against those goals, we adopt the Joint Staff definition of the term, which is the average number of GWhs saved by energy efficiency measures during the summer peak period. That period is defined as the 560 hours from 12 noon to 7 pm, each weekday, from July through September. We recognize that the IOUs will need to develop a consistent method for translating average peak savings to coincident peak for resource planning purposes. For this purpose, we anticipate the need for workshops or another forum, in which the IOUs, Joint Staff and interested parties can evaluate alternative approaches for developing a consistent method. We leave it to the assigned ALJs and the assigned Commissioners in our energy resource-related proceedings to determine how and when this issue can best be addressed.

In response to comments, we also make adjustments to the Joint Staff recommendations for natural gas savings goals to reflect the 2004/2005 annual savings targets adopted by the Commission in recent program funding decisions. In addition, we adjust Joint Staff's trajectory of natural gas savings to reflect the same 10-year time period (2004-2013) that it presents on the electric side. We also adjust the savings goals for SoCalGas to better reflect its proportion of statewide natural gas sales, so that each utility's long-term (cumulative) savings goal is now roughly proportionate to its share of those sales. The effect of these adjustments is a reduction of 28 Mths (from 472 to 444 Mths) in cumulative savings goals over the 10-year period for all three natural gas utilities combined. Most of this reduction (22 Mths) is reflected in our adopted savings goals for SoCalGas. (See Attachment 9.)

In terms of how best to express energy savings goals, we agree with Joint Staff that establishing per capita usage reduction goals using future forecasts of per capita usage is problematic, since the calculation of energy savings based on such goals is particularly vulnerable to forecasting errors. We therefore prefer to express savings goals in terms of annual and cumulative GWh, peak MW, and Mth savings levels for each of the IOUs. To the extent that such goals need to be expressed in terms of per capita usage reductions, they should be described relative to a single base year of usage, as the Joint Staff proposes. Our adopted annual and cumulative savings goals are presented in Tables 1A through 1D, by IOU service territory. Table 1E presents the goals for all four IOUs, combined.

For the three electric IOUs combined, today's adopted savings goals reflect the expectation that energy efficiency efforts in their service territories should be able to capture on the order of 70% of the economic potential and 90% of the maximum achievable potential for electric energy savings over the 10-year period, based on the most up to date study of that potential.²⁷ Table 4 presents the share of incremental needs met by electric energy efficiency programs if these long-term goals are met. As indicated in that table, energy efficiency programs are projected to meet 55% to 59% of the IOU's incremental electric (GWh) energy needs between 2004 and 2013, including those savings produced by programs funded through the \$232 million PGC authorized by the Legislature. When electricity savings associated with this minimum program funding level are removed from the baseline forecast, achieving the recommended goals would enable the IOUs to meet 36%-45% of projected increases in electricity usage over the next decade with increased investment in energy efficiency.

²⁷ See Attachment 9.

For natural gas, our adopted savings goals are designed at this time to capture approximately 40% of the maximum achievable potential identified in the Xenergy study. This level of expectation recognizes the fact that natural gas program funding levels have dropped substantially over the last five years, and that ramping up those efforts to meet the full savings potential may take more time than on the electric side. It also recognizes some uncertainty over the level of achievable savings in the non-core sector. Nonetheless, today's adopted natural gas savings goals represent substantial "stretch goals" by anyone's standards: They reflect an increase in savings by 244Mth over the 210 Mth in savings that would be achieved if current funding levels and program effectiveness (therms per dollar) remained constant. In other words, today's adopted goals for natural gas energy efficiency represent a 116% increase in expected savings over the next decade, relative to continuation of the status quo.

In sum, we believe that today's expectations for energy efficiency savings over the next decade are appropriately aggressive and in keeping with the objectives of the Energy Action Plan. At the same time, they recognize that there may be some practical limits to effectively increasing program funding and ramping up programs to capture the full economic potential of energy efficiency at this time, particular with respect to natural gas savings.

We will use our adopted savings goals primarily on a prospective basis for resource procurement and program planning. More specifically, during each program cycle for energy efficiency, we expect the program administrator(s) (which may or may not be the IOUs²⁸) to demonstrate that their proposed level of

²⁸ The Commission is currently considering the issue of the future administrative structure for energy efficiency. We therefore do not presume in today's decision that the IOUs will continue the role of program administrator in preparing the program

Footnote continued on next page

program activities and funding is consistent with these goals. In doing so, the program administrator(s) should exclude projected savings associated with customers not included in the calculation of savings potential (e.g., resale cities and self-generation). Similarly, when documenting program accomplishments, savings by customers not included in the calculation of savings potential should be removed from the calculation of savings, in order to ensure consistency between the basis for establishing the goals and the assessment of whether those goals have been met.

We note that none of the saturation studies, lists of high efficiency measures, or estimates by service territory distinguish between consumption by low-income households and non-low income households. It is therefore reasonable to count the savings achieved from energy efficiency measures installed under the IOUs' LIEE program toward these goals, as PG&E, TURN and others recommend. Accordingly, program administrator(s) should include the reported savings from LIEE measures when reporting energy savings accomplishments. As SESCO points out, we will need to ensure that those reported savings use *ex ante* assumptions²⁹, such as estimated useful lives, unit

portfolio for Commission consideration, since other approaches have been recommended by parties, and are currently under consideration. This will not affect the administration of LIEE programs, for which the IOUs are the designated administrators, by statute. (See Pub. Util. Code §327.)

²⁹ *Ex ante* assumptions refer to those assumptions that underlie estimates of measure savings made prior to measure installation, i.e., before any post-installation (*ex post*) measurement or verification is performed on the installed measures. Our adopted EM&V protocols and reporting requirements will establish the extent to which *ex ante* versus *ex post* measurement and verification will be required by program administrator(s) to demonstrate program performance, and how they will be required to report such performance.

savings, etc., that are consistent with *ex ante* assumptions we may utilize in assessing the performance of energy efficiency measures offered under the non-low income program. In a separate phase of this proceeding we will be adopting evaluation, measurement and verification (EM&V) protocols for post-2005 energy efficiency programs. As part of that process, we will work to ensure that measures installed under the LIEE program that count towards our adopted savings goals will be subject to the same EM&V protocols that apply to measures offered under the non-low income program.

In response to comments on the draft decision, we clarify that only actual installations should be counted towards these goals, and not commitments. That means, for example, that the savings reported for PY2006 will reflect measures actually installed during calendar year 2006 (January through December), regardless of whether the commitments to install those measures were made in PY2006 or in prior program year(s). This will require some changes to current reporting requirements, so that while commitments are still tracked for each program year, only the actual installations are counted toward our adopted goals. SoCalGas raises the issue of whether our adopted goals represent savings that are “gross” or “net” of free riders. Gross savings count the energy savings from installed energy efficiency measures irrespective of whether or not those savings are from free riders, i.e., those customers who would have installed the measure(s) even without the financial incentives offered under the program. Gross savings are adjusted by a net-to-gross ratio to produce net savings, that is, to remove the savings associated with free riders. It is our understanding that the savings modeled in the potentials studies are net of free riders in the near-term, but that they become equivalent to gross savings as the net-to-gross ratio approaches 1.0 over the longer-term. Hence, we clarify that the savings goals we establish today through 2008 are net of free riders. We will revisit the issue of

whether the savings goals for the outer years (2009-2013) truly reflect gross savings potential when we next update our savings potential studies.

We recognize that there may need to be some differences between the near-term numerical goals and the savings levels associated with the program portfolios developed during the upcoming PY2006-PY2008 program cycle. Nonetheless, we expect the program administrator(s) to clearly describe in their filings how both electric and natural gas energy efficiency program activities and associated savings will be ramped up over time, how program savings yield ratios will be improved, or other actions will be taken to meet the longer-term numerical goals presented in Tables 1A-1D.

For this purpose, we encourage the program administrator(s) to aggressively develop program design options during the next program cycle that will address major barriers to energy efficiency deployment. We expect program administrator(s) to submit for our consideration an analysis of a wide range of promising options to remove barriers to rapid energy efficiency deployment, including on-bill financing of energy efficiency measures. In doing so, program administrator(s) should look to the practices used in other states to resolve the ratemaking, cost allocation and consumer protection issues raised by the parties in this proceeding regarding on-bill financing. As Joint Staff points out in its March 26, 2004 report, concerted efforts by program administrator(s) and the CEC to develop and support new building and appliance standards beginning in 2008 can also contribute significantly to meeting our savings goals.

PG&E, SDG&E and SoCalGas recommend that the goals we establish today be recalibrated during each energy efficiency funding cycle to take into account the existing supply portfolio “so that ratepayers do not procure

redundant resources.”³⁰ We disagree with the underlying premise reflected in this statement; namely, that the reasonableness of energy efficiency savings goals must be considered in the context of the IOUs’ plans to dispatch existing or procure additional supply-side resources. Rather, the converse is the case, based on the policies clearly articulated in the Energy Action Plan and by this Commission. Those policies dictate that cost-effective conservation and energy efficiency are *first* in the IOUs resource loading order—that is, energy efficiency is evaluated for cost-effectiveness and procured *before* supply-side resources are to be factored into the procurement plan.

We therefore need to ensure that the energy efficiency savings goals adopted in this proceeding are fully reflected in the IOUs’ resource acquisition and procurement plans so that ratepayers do not procure redundant supply-side resources over the short- or long-term. To this end, our upcoming decisions in R. 04-04-003 concerning the long-term procurement plans and 2005/2006 ongoing procurement authorizations of PG&E, SCE and SDG&E will be made in full recognition of the aggressive energy savings goals we adopt today. For the procurement plans that will be filed in 2006 and during subsequent procurement plan cycles, or for any updating to the long-term procurement plans required by the Commission before then, PG&E, SDG&E and SCE shall incorporate the most recently-adopted energy savings goals into those filings.

More generally, in any application or other filing in which PG&E, SCE, SDG&E or SoCalGas present projections of supply-side resource needs, pipeline or transmission needs, propose new facilities or otherwise utilize projections of energy demand, they must demonstrate that such filings are fully consistent with

³⁰ PG&E Reply Comments, p. 7.

and reflect today's adopted energy savings goals, or updates to these goals as adopted by the Commission. We note that in our current natural gas rulemaking, R.04-01-025, the IOUs have submitted natural gas demand forecasts over the 2006 and 2016 period, along with information on their infrastructure requirements for meeting those forecasts. Since the gas demand forecasts for PG&E, SDG&E and SoCalGas will be reviewed in their respective Biennial Cost Allocation Proceedings (BCAPs), they also need to reflect the natural gas energy savings goals adopted in today's decision in their BCAP filings.

In addition, proposals for a risk/reward mechanism for energy efficiency should consider using the cumulative savings goal in a particular year as a threshold for performance, subject to a reasonable uncertainty band around the numerical levels. For example, if SDG&E were the program administrator and the uncertainty band is 15%, for SDG&E to qualify for earnings on its 2006 programs, it would need to show that its programs saved at least 280.5 GWh in 2006 plus or minus 15 %, or between 238 and 323 GWh per year.³¹ We will consider how best to link today's adopted savings goals with the performance basis of a risk/reward mechanism when we address proposals for such mechanisms in a later phase of this proceeding, and in the context of the portfolio of programs being implemented at that time. We will also need to consider at that time how to treat the cost of performance incentives, e.g., whether to include those costs in program cost-effectiveness calculations. We agree with PG&E that it is premature to adopt a position on this issue in today's decision.³²

³¹ From Table 1C, Row 1, annual goal for 2006.

³² See PG&E's Reply Comments, p. 2.

With respect to updating our savings goals, we agree with Joint Staff and the workshop participants that energy savings forecasts should be updated every three years, in concert with a three-year program implementation and funding cycle (“program cycle”).³³ Our use of the term program cycle in today’s decision refers to both (1) how many years energy efficiency program(s) will be approved for implementation and (2) how many years of funding will be authorized for the approved program(s). For a three-year program cycle beginning in 2006, for example, the program administrator(s) would submit proposals for energy efficiency activities and funding levels for Commission approval during 2005 for PY2006-PY2008, and then again during 2008 for PY2009-PY2011, and so on. We recognize that there are evaluation and planning components for each program cycle, but we address in this decision only the timeframe for the implementation and funding years, as defined above.

Today’s adopted energy savings goals will apply to the PY2006-PY2008 program cycle without further updates. In preparation for the subsequent program cycle (for PY2009-PY2011), Energy Division and CEC staff should jointly prepare recommendations for adjustments to our adopted savings goals, as appropriate, based on updated savings potential studies, accomplishment data, changes to CEC mandatory efficiency standards and other evaluation studies and factors they deem appropriate. These studies will continue to be funded out of PGC collections. The administration of savings potential and other

³³ We note that a wide range of participants in the Consumer Needs Workshop have also urged us to move from a two- to a three-year planning horizon for energy efficiency. See Assigned Commissioner’s Ruling Soliciting Post-Workshop Comments on Energy Efficiency Needs Workshop and Scheduling and Soliciting Pre-Workshop Comments for the Workshop on Partnerships, February 9, 2004, pp. 2-3 and p. 4.

evaluation studies, i.e., who contracts for and manages them, will be addressed in a separate decision on energy efficiency administrative structure in this proceeding.

As the IOUs and others point out, the calculation of avoided costs and the specific metrics to be used in evaluating cost-effectiveness require further consideration for resource planning purposes. We are currently addressing avoided cost issues in R.04-04-025, and the outcome of that proceeding will clearly feed into future cost-effectiveness evaluations of energy efficiency. We are also addressing the issue of what metric to adopt as the performance basis for energy efficiency resource programs in a separate phase of this proceeding, and will also be developing updated policy rules on cost-effectiveness and other issues in the coming months.

Nonetheless, the adoption of energy savings goals does not need to await the outcome of these efforts. As described in its reports, Joint Staff has taken reasonable steps to account for uncertainties in avoided cost and energy price forecasts, and to evaluate factors that could bias the analysis of statewide savings potential in either direction. We believe that Joint Staff has also taken a reasonable approach to combining cost-effectiveness metrics for this particular application. Joint Staff's screening process first eliminated all measures that did not pass the total resource cost (TRC) test. Next, Joint Staff compared those measures that did pass the TRC screening against the levelized cost of specific supply projects that can meet the same need. Finally, Joint Staff calculated the economic potential of energy efficiency based on the energy efficiency measures that passed both screenings.

Hence, SESCO's concerns that Joint Staff used levelized costs in place of the TRC and other tests of cost-effectiveness we have used for program evaluation in the past are unfounded. Nonetheless, we clarify that today's

decision does not adopt Joint Staff's screening methodology for the purpose of evaluating the cost-effectiveness of individual measures or programs, or prejudice our consideration of what policy rules to adopt with respect to cost-effectiveness testing for future funding cycles.

Finally, with respect to rate impacts, we will adopt Joint Staff's recommendation that the program administrator(s) submit their estimates of the rate impacts of their proposed program portfolio in each program cycle. This showing should include a calculation of the net rate impacts, that is, taking into account the savings of the programs over the measure lives. In addition, as NRDC and others recommend, the program administrator(s) should submit estimates of bill impacts. The program administrator(s) should work with Joint Staff to develop a consistent format and input assumptions for presenting this information in their program plan applications.

7. Comments on Draft Decision

The draft decision of ALJ Gottstein in this matter was mailed to the parties in accordance with Pub. Util. Code § 311(g)(1) and Rule 77.7 of the Commission's Rules of Practice and Procedure. Opening comments were filed on August 23, 2004 by NRDC, ORA, PG&E, SCE, jointly by SDG&E and SoCalGas, SESCO, TURN, WEM, jointly by Center for Small Business and the Environment and the San Francisco Based Small Business Network (CSBE/SBN), and jointly by Chevron USA Inc., Conoco Phillips Company and Shell Oil Products U.S. (Indicated Producers).³⁴ Reply comments were filed on August 30, 2004 by

³⁴ Indicated Producers submitted a Petition to Intervene with its August 23, 2004 comments. CSBE/SBN filed a Petition to Intervene on September 1, 2004. We find that these organizations have demonstrated an interest in the issues addressed in this proceeding, and grant their Petitions to Intervene.

NRDC, ORA, PG&E, SCE, jointly by SDG&E and SoCalGas, SESCO, TURN, CSBE/SBN and a coalition of oil companies that refer to themselves as the Energy Producers and Users Coalition (EPUC).

We have carefully reviewed the comments on the draft decision, and make changes and clarifications throughout the decision in response to many of them. In addition to modifying the decision text and tables to reflect needed clarifications and corrections, we adjust the savings goals presented in the draft decision for the reasons discussed at length in Section 6 above.

Although we have considered parties' arguments for modifying other aspects of the draft decision, we do not find them persuasive. In particular, we do not reduce the Joint Staff recommendations for natural gas savings goals to reflect the use of natural gas as a hydrogen feedstock (rather than for combustion) in refinery operations, as SDG&E/SoCalGas, EPUC and Indicated Producers recommend. Joint Staff has confirmed with the Xenergy study authors that their evaluations of the technical and economic potential to reduce natural gas use do not include savings based on the usage of natural gas as a feedstock from petroleum refineries. We also do not adjust the natural gas savings goals downwards to reflect those customers that choose cogeneration over traditional energy efficiency, as SDG&E/SoCalGas proposes. As indicated in Attachment 4, removing gas sales to cogeneration customers has no appreciable impact on the Joint Staff recommendations.

The natural gas savings goals we adopt today clearly take into account these and other concerns about the ability of program administrator(s) to reach the non-core market with energy efficiency programs, including concerns expressed by SDG&E/SoCalGas about Xenergy's estimates of savings potential from boiler maintenance and other measures in the industrial non-core sector. As discussed in this decision, our adopted natural savings goals reflect less than half

of the total maximum achievable potential projected by Xenergy for the core and non-core markets combined. Moreover, Joint Staff's sensitivity analysis indicates that program administrator(s) should be able to meet our adopted goals even if they reach only 10% to 25% of the maximum achievable potential in the non-core industrial natural gas market. (See Attachment 5, Table 1.) Therefore, we do not believe that any further adjustments to the goals proposed in the draft decision are justified.

We also reject the recommendation of SCE and SDG&E that we adopt the electric savings forecasts presented in their LTRP filings in R.04-04-003 in lieu of the Joint Staff recommendations. We note that the savings values presented in SCE's and SDG&E's LTRP filings are considerably less than the economic and maximum achievable savings potential estimates developed in the disaggregated study, especially for SDG&E. In particular, the 2004-2013 cumulative savings numbers presented by SDG&E and SCE in R.04-04-003 are on the order of 1,800 GWh and 9,000 GWh, respectively.³⁵ The maximum achievable potential over that period is estimated at 2,231 GWh for SDG&E and 11,939 GWh for SCE, based on the disaggregated Secret Surplus Energy Study. (See Attachment 8.) Moreover, we note that SDG&E did not update its energy efficiency plan as part of its LTRP in anticipation of this decision adopting updated forecasts of savings.³⁶ We believe that the higher GWh savings goals we adopt today more appropriately reflect the need to accelerate energy efficiency deployment in resource procurement, while at the same time give appropriate consideration of

³⁵ These cumulative totals were confirmed by SCE and SDG&E via electronic correspondence with Judge Gottstein.

³⁶ See July 9, 2004 Direct Testimony of Athena M. Besa, SDG&E in R.04-04-003, Section IV.

the practical limits to capturing the full economic potential of energy efficiency at this time.

PG&E requests that we find that the measures that underlie the calculation of savings goals are cost-effective and reasonable. We believe that such a finding is premature. The forum and process for considering what program offerings are cost-effective and reasonable will be dictated in large part by the administrative structure we adopt in a separate phase of this proceeding. Moreover, even though specific measures have been found to be cost-effective in the most recent savings potential studies, we will need to reevaluate these findings over time as additional cost and savings information is made available based on actual installations.

In their comments on the draft decision, several parties take issue with our decision to extend the current program cycle from two to three years, albeit for somewhat different reasons. WEM contends that the adoption of a three-year program cycle in today's decision prejudices our consideration of administrative structure for energy efficiency in a separate phase of this proceeding. According to WEM, this is because the administrative structure proposal that it supports calls for a "rolling" or "continuous" solicitation of direct energy savings programs.³⁷ We note, however, that the administrative structure supported by WEM also involves allocating a percentage of energy efficiency funding to non-direct energy savings programs (e.g., statewide information programs) that would be administered by a Commission-chosen "special administrator". Therefore, the Commission would need to establish a program cycle for review of the special administrator's proposed program plans and funding levels.

³⁷ WEM Opening Comments, p. 1.

Moreover, the Commission would need to authorize overall funding levels for the direct energy savings programs, regardless of whether they were subject to a rolling solicitation or not. While we recognize that the specific application of a program cycle may vary depending on the administrative structure we ultimately adopt, we believe that establishing a timeframe for the program cycle does not prejudice the outcome of our decision on administrative issues.

Although ORA endorses the concept of a three-year program cycle, it recommends that program administrator(s) also submit budget plans on an annual basis, with the opportunity for parties to comment prior to final budget approval for the following program year. We believe that the flexibility ORA seeks through this recommendation is more appropriately addressed through guidelines and rules governing program administration, rather than by requiring an annual Commission budget approval process. As SCE points out in its reply comments, there are alternatives to annual program budget review and approval that will provide regulatory oversight and control while maintaining the benefits of a multi-year funding cycle.

NRDC supports moving from a two-year to a three-year time period for establishing how many years programs will be authorized for implementation, but urges the Commission to consider a longer timeframe for authorizing overall funding levels for energy efficiency. At this time, we prefer that the program implementation and funding cycles move in concert with the savings goals updating process described in this decision. In this way, we can calibrate the funding levels during each program cycle with our adopted longer-term savings goals. We believe that this approach is preferable to authorizing specific funding levels now that are longer than the timeframe over which we will review program plans and update our long-term savings goals.

SCE argues that the program cycle should be extended to four years in order to effectively coordinate energy efficiency planning and funding with the two-year updating process for the IOUs long-term procurement plans. We acknowledge that workshops are currently underway to consider various options on how best to coordinate these two planning processes, including the one that SCE proposes in its comments. We may reconsider today's preference for a three-year cycle if the workshop discussion on the integration of supply-side and demand-side resource planning suggests to us that such reconsideration is warranted. Nonetheless, we are persuaded by the record to date in this proceeding that a three-year cycle is preferable to the two-year cycle that is currently in place.

As ORA and others point out, the length of the program cycle does not dictate the frequency of reporting requirements for energy efficiency administrator(s) and implementers. Through workshops, Commission decisions, Assigned Commissioner rulings and other means, as appropriate, we will make clear what those reporting requirements will be under our adopted energy efficiency administrative structure.

8. Assignment of Proceeding

Susan P. Kennedy is the Assigned Commissioner and Meg Gottstein is the assigned ALJ in this phase of the proceeding.

Findings of Fact

1. Numerical targets for electricity and natural gas savings should be established in the context of California's overriding goal to pursue all cost-effective energy efficiency opportunities.
2. The annual and cumulative numerical goals for energy savings must be aggressive and stretch the capabilities and efforts of all those involved in

program planning and implementation. At the same time, these stretch goals need to reflect a pace for increasing program efforts that is achievable.

3. Today's adopted electricity and natural gas goals reflect the need to substantially increase efforts to procure energy efficiency over both the short- and long-term, based on recent assessments of its economic potential.

4. Today's adopted goals take into consideration the practical limits to effectively increasing program funding and ramping up programs to capture the full economic potential of energy efficiency in the near-term.

5. Joint Staff's recommended savings goals for electric and natural gas savings do not reflect the Commission-adopted savings goals for PY2004 and PY2005. It is reasonable to adjust Joint Staff's recommendations to be consistent with the Commission adopted goals for those program years.

6. It is also reasonable to adjust Joint Staff's recommendations for electric savings goals to reflect the available disaggregated Secret Energy Surplus Study analysis, rather than utilize the top-down allocation method that Joint Staff presented in its March 26 2004 report.

7. As described in this decision, the disaggregated study presents a relatively low baseline of savings for SDG&E in the early years of the planning period. Therefore, using the cumulative totals produced by the study as an upper bound for cumulative savings produces anomalous results for SDG&E. Today's adopted trajectory of savings goals for SDG&E makes reasonable adjustments to the Joint Staff recommendations in light of these problems with the study baseline.

8. As discussed in this decision, removing electricity sales to resale cities from the CEC demand and population forecasts does not affect the estimates of technical potential presented in the Xenergy study or Joint Staff's recommendations for numerical savings goals. Similarly, removing natural gas

sales to resale cities, cogeneration customers and thermally enhanced oil recovery sales has no impact on the recommended trajectory of incremental natural gas savings from the program.

9. Savings achieved by customers not included in the calculation of savings potential should be removed from the calculation of savings accomplishments, in order to ensure consistency when evaluating whether the goals are met.

10. A 20% conversion factor is consistent with the relationship between GWh and MW savings for the 2004 and 2005 program years. When applied to the GWh savings adopted in this decision, a 20% conversion factor results in peak MW savings that do not exceed the disaggregated Secret Energy Surplus study projections of maximum achievable potential for the three electric IOUs combined. In contrast, using Joint Staff's conversion factor of 26% yields cumulative MW savings that exceed that potential.

11. As we look to develop energy efficiency programs for 2006 and beyond that more aggressively reduce peak loads, we may need to adjust the conversion ratio assumption adopted in today's decision upwards.

12. As discussed in this decision, PG&E's concerns over how private supply will be measured is moot, since Joint Staff has modified its forecasts from an earlier approach to exclude private supply numbers.

13. For the reasons discussed in this decision, savings achieved from energy efficiency measures installed under the IOUs LIEE program should be counted toward today's adopted savings goals. Reported savings from those programs should utilize *ex ante* assumptions (e.g., measure lives) that are consistent with the *ex ante* assumptions we may utilize to assess performance and report savings for energy efficiency measures offered under the non-low income energy efficiency programs. The measures installed under the LIEE program that count

towards our adopted savings goals should also be subject to the same EM&V protocols adopted for the non-low income side.

14. Only actual installations should be counted towards the savings goals.

15. The savings goals adopted today through 2008 are net of free riders.

Whether the savings goals in the outer years (2009-2013) represent gross savings (e.g., the net-to-gross ratio approaches 1.0), as assumed in the potentials studies, should be revisited during the next update of those studies.

16. Although the IOUs no longer procure energy on their behalf, direct access and non-core customers continue to pay the PGC and ratepayer-funded programs continue to be designed and implemented to capture savings in these markets.

17. Joint Staff's approach to bounding natural gas savings goals by performing sensitivity analysis on what percentage of the non-core market potential is achievable is more reasonable than either (1) eliminating non-core usage from savings goal calculations altogether, or (2) assuming that all of the economic potential can be effectively captured via ratepayer-funded programs.

18. Joint Staff's recommendations should be adjusted so that the savings trajectories for electricity and natural gas savings cover the same 2004 to 2013 – time period.

19. The proportion of cumulative natural gas savings allocated to SoCalGas under Joint Staff's recommendations should be adjusted slightly downwards to better reflect SoCalGas' relative share of statewide natural gas sales.

20. The natural gas goals adopted today take into account a wide range of concerns about the ability of program administrator(s) to reach the non-core industrial market with energy efficiency programs, as discussed in this decision. In particular, the natural savings goals reflect less than half of the total maximum achievable potential projected by Xenergy for the non-core and core markets

combined. Moreover, Joint Staff's sensitivity analysis indicates that program administrator(s) should be able to meet today's adopted goals even if they reach only 10% to 25% of the maximum achievable potential in the non-core industrial natural gas market.

21. As discussed in this decision, key assumptions underlying the development of both economic and maximum achievable potential, such as the role of emerging technologies and assumptions concerning savings yield ratios, will need to be revisited during the next update of potential studies.

22. Joint Staff's preliminary analysis clearly indicates that the energy savings realized over the life of the energy efficiency measures will exceed the accumulated program costs associated with the energy savings goals, thereby resulting in "negative" net rate impacts to IOU customers.

23. Establishing per capita usage reduction goals using future forecasts of per capita usage is problematic, since the calculation of energy savings based on such goals is particularly vulnerable to forecasting errors. To the extent that GWh, MW or Mth savings goals need to be expressed in terms of per capita usage reductions, they should be described relative to a single base year of usage, as Joint Staff proposes.

24. As discussed in this decision, estimates of the net rate impacts and bill impacts associated with the proposed portfolio of programs designed to meet the Commission-adopted goals should be filed with energy efficiency program plan applications during each program cycle.

25. Recalibrating our adopted energy savings goals in order to address potential procurement redundancies, as PG&E and other IOUs propose, implies that the reasonableness of those goals must be considered in the context of the IOUs' plans to dispatch existing or procure additional supply-side resources. As discussed in this decision, the policies articulated in the Energy Action Plan and

by this Commission dictate just the opposite; namely, that energy efficiency is evaluated for cost-effectiveness and procured before supply-side resources are to be factored into the procurement plan.

26. Some differences between the near-term numerical goals and the savings levels associated with the program portfolios developed for the PY2006-2008 program may be appropriate. Nonetheless, the program administrator(s) should be able to demonstrate how the longer-term numerical goals will be achieved as program efforts ramp and as they offer innovative program designs to address major barriers to energy efficiency deployment.

27. In order to meet today's adopted goals, program administrator(s) should aggressively pursue programs that support new building and appliance standards and submit for our consideration an analysis of a wide range of promising options to accelerate energy efficiency deployment, including on-bill financing options.

28. A three-year period provides a reasonable timeframe for updating energy savings potential studies and goals, and for preparing and planning for each subsequent energy efficiency funding cycle.

29. Joint Staff has taken reasonable steps to account for uncertainties in avoided cost and energy price forecasts, and to evaluate factors that could bias the analysis of statewide economic savings potential in either direction.

30. Joint Staff utilizes a reasonable combination of cost-effectiveness metrics in screening energy efficiency measures to include in its calculations of statewide economic savings potential.

Conclusions of Law

1. The annual and cumulative savings goals presented in Tables 1A-1E are reasonable and should be adopted, subject to the updating process described in this decision.

2. The adopted savings goals will be used primarily on a prospective basis for resource procurement and program planning purposes, as described in this decision. In addition, Joint Staff and the parties should explore using the adopted goals as a threshold for performance, subject to a reasonable uncertainty band, as we consider risk/reward mechanisms in a later phase of this proceeding.

3. As discussed in this decision, the energy efficiency savings goals adopted in this proceeding should be fully reflected in the IOUs resource acquisition and procurement plans, so that ratepayers do not procure redundant supply-side resources over the short- or long-term.

4. Today's decision does not adopt Joint Staff's screening methodology for the purpose of evaluating the cost-effectiveness of individual programs or measures, or prejudice our consideration of cost-effectiveness policy rules for future funding cycles.

5. In order to proceed expeditiously with energy efficiency program planning and supply-side procurement in the context of our adopted savings goals, this decision should be effective today.

6. Since Indicated Producers and CSBE/SBN have demonstrated an interest in the issues addressed in this decision, their Petitions to Intervene should be granted.

INTERIM ORDER

IT IS ORDERED that:

1. The next program implementation and funding cycle for electric and natural gas energy efficiency ("program cycle") shall cover program years (PY) 2006 through PY 2008. Each subsequent program cycle shall cover a three-year period until further order of the Commission.
2. The annual and cumulative energy efficiency savings goals presented in Tables 1A through 1E and Attachment 9 for the service territories of Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas) are adopted for 2004-2013, subject to the updating process described in Ordering Paragraph 3.
3. Today's adopted savings goals will apply to the PY2006-PY2008 program cycle without further updates. These goals shall be updated every three years for use in subsequent program cycles. In preparation for the PY2009-PY2011 program cycle, Energy Division and California Energy Commission staff ("Joint Staff") shall jointly prepare recommendations for adjustments to today's adopted savings goals as appropriate, based on updated savings potential studies, accomplishment data, changes to mandatory efficiency standards and other evaluation studies and factors that staff deems appropriate. These studies shall continue to be funded out of public goods charge collections. The administration of savings potential and other evaluation studies, i.e., who contracts for and manages them, shall be addressed in a separate decision on energy efficiency administrative structure in this proceeding.
4. In submitting proposed energy efficiency program plans and funding levels to meet the savings goals adopted by the Commission, the program administrator(s) shall:

- a. Demonstrate that their proposed level of electric and natural gas energy efficiency program activities and funding is consistent with the Commission's -adopted electric and natural gas savings goals.,
 - b. If there are differences between the near-term numerical goals and the savings levels associated with the program portfolios proposed for PY2006-PY2008, specifically describe how the numerical goals in later years will still be met by ramping up program efforts over time, by initiating innovative programs to improve program-effectiveness ratios, or by other means.
 - c. Submit an analysis of a wide range of promising options to remove barriers to the rapid deployment of energy efficiency with the PY2006-PY2008 program plans, including on-bill financing of energy efficiency measures. In doing so, program administrator(s) should look to the practices used in other states to resolve the ratemaking, cost allocation and consumer protection issues raised by the parties in this proceeding regarding on-bill financing.
 - d. Present specific proposals for programs that support new building and appliance standards.
 - e. Present estimates of the net rate impacts and bill impacts associated with the proposed portfolio of programs designed to meet the Commission-adopted energy savings goals. The program administrator(s) shall work with Joint Staff to develop a consistent format for presenting these estimates in their filings.
5. Further direction on the scope, scheduling and other procedural issues related to the PY2006-PY2008 program cycle shall be provided by the Assigned Commissioner or Administrative Law Judge in this proceeding.
6. The energy savings goals adopted in this proceeding shall be reflected in the IOUs' resource acquisition and procurement plans so that ratepayers do not procure redundant supply-side resources over the short- or long-term. To this end, our upcoming decisions in R. 04-04-003 concerning the long-term procurement plans and 2005/2006 ongoing procurement authorizations of

PG&E, SCE and SDG&E shall be made in full recognition of the aggressive energy savings goals we adopt today. For the procurement plans that will be filed in 2006 and during subsequent procurement plan cycles, or for any updating to the long-term procurement plans required by the Commission before then, PG&E, SDG&E and SCE shall incorporate the most recently-adopted energy savings goals into those filings.

7. In any application or other filing in which PG&E, SCE, SDG&E or SoCalGas present projections of supply-side resource needs, pipeline or transmission needs, propose new facilities or otherwise utilize projections of energy demand, they shall demonstrate that such filings are fully consistent with and reflect today's adopted energy savings goals, or updates to these goals as adopted by the Commission.

8. PG&E, SDG&E and SoCalGas shall reflect the natural gas energy savings goals adopted in today's decision, or as updated from time to time by the Commission, in their BCAP filings and other proceedings where natural gas demand projections are submitted for Commission consideration.

9. As discussed in this decision, the linkage between today's adopted savings goals with the performance of a risk/reward mechanism shall be addressed in a subsequent phase of this proceeding.

10. The Assigned Commissioner or Administrative Law Judge may, for good cause, modify the due dates established by this decision.

11. The August 23, 2004 Petition to Intervene of the Indicated Producers is granted.

12. This decision shall be served on all appearances and the state service list in this proceeding and in Rulemaking (R.) 04-04-003, and in R.04-01-025.

13. The September 1, 2004 Petition to Intervene of the Center for Small Business and the Environment and the Small Business Network is granted.

This order is effective today.

Dated September 23, 2004, at San Francisco, California.

MICHAEL R. PEEVEY
President

CARL W. WOOD
LORETTA M. LYNCH
GEOFFREY F. BROWN
SUSAN P. KENNEDY
Commissioners

I reserve the right to file a concurrence.

/s/ CARL W. WOOD
Commissioner

I reserve the right to file a concurrence.

/s/ LORETTA M. LYNCH
Commissioner

I will file a concurrence.

/s/ SUSAN P. KENNEDY
Commissioner

TABLE 1A
PG&E Total Electricity and Natural Gas Program Savings Goals

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Annual Electricity Savings (GWh/yr) (1)	744	744	829	944	1,053	1,067	1,015	1,086	1,173	1,277
Total Cumulative Savings (GWh/yr)	744	1,487	2,317	3,260	4,313	5,381	6,396	7,483	8,656	9,933
Total Peak Savings (MW) (2)	161	323	503	708	936	1168	1388	1624	1878	2156
Total Annual Natural Gas Savings (MMTh/yr)	9.8	9.8	12.6	14.9	17.4	20.3	21.1	22.0	23.0	25.1
Total Cumulative Natural Gas Savings (MMTh/yr)	9.8	19.6	32.1	47.0	64.4	84.8	105.9	127.8	150.9	176.0

Notes:

(1) Total annual energy savings = all savings from energy efficiency programs funded by public goods charge and Procurement funding. This total includes savings from baseline Energy efficiency program funding of \$100 MM/yr accounted for in the CEC sales forecast. For incremental program savings above the levels included in the CEC forecast see Attachment 9.

(2) GWh Savings converted to MW by multiplying by .217, which is ratio of GWh to peak savings for 2004/5 applications
This is an estimate of average peak savings not coincident peak = GWh savings in peak period/ 560 of hours in period

TABLE 1B
SCE Total Electricity Program Savings Goals

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Annual Electricity Savings GWh/yr	826	826	922	1,046	1,167	1,189	1,176	1,164	1,151	1,139
Total Cumulative Savings GWh/yr	826	1,653	2,575	3,621	4,788	5,977	7,153	8,317	9,468	10,608
Total Peak Savings (MW)	167	334	541	760	1,006	1,255	1,502	1,747	1,988	2,228

Notes:

(1) Total savings = all savings from energy efficiency programs funded by public goods charge and procurement funding. This total includes savings from Energy efficiency programs already in the CEC forecast. For incremental savings above the levels included in the CEC forecast, see Attachment 9.

(2) GWh Savings converted to MW by multiplying by .21, average of utility GWh to peak savings for 2004/5 applications. This is an estimate of average peak savings not coincident peak = GWh savings in peak period/ 560 hours in period.

TABLE 1C
SDG&E Total Electricity and Natural Gas Program Savings Goals

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Annual Electricity Savings GWh/yr	268.4	268.4	280.5	285.1	284.4	282.3	273.6	262.5	221.7	214.9
Total Cumulative Savings GWh/yr	268.0	536.8	817.3	1,102.4	1,386.8	1,669.1	1,942.7	2,205.2	2,426.9	2,641.8
Total Peak Savings (MW)	50.4	100.7	155.3	209.5	263.5	317.1	369.1	419.0	461.1	501.9
Total Annual Natural Gas Savings (MMTh/yr)	1.8	1.8	2.7	3.1	3.7	4.1	4.5	4.9	5.3	5.7
Total Cumulative Natural Gas Savings (MMTh/yr)	1.8	3.6	6.3	9.5	13.1	17.3	21.8	26.7	32.0	37.6

Notes:

(1) Total savings = all savings from energy efficiency programs funded by public goods charge and procurement funding. This total includes savings from Energy efficiency programs already in the CEC forecast. For incremental savings above the levels included in the CEC forecast, see Attachment 9.

(2) MW savings derived by multiplying GWh Savings by .19, average value SDG&E GWH to peak savings for 2004/5 applications. This is an estimate of average peak savings during all the peak hours; = GWh savings in peak period/560 hours in period.

TABLE 1D
SoCalGas Natural Gas Program Savings Goals
MM Therms/Year

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Annual Natural Gas Savings (MMTh/yr)	9.6	9.6	14.7	19.3	23.3	27.2	28.3	29.9	32.3	35.8
Total Cumulative Natural Gas Savings (MMTh/yr)	9.6	19.3	34.0	53.3	76.5	103.7	132.0	161.9	194.2	230.1

Notes:

Total savings = all savings from energy efficiency programs funded by public goods charge and procurement funding.

This total includes natural gas savings from energy efficiency programs already included in the CEC forecast.

TABLE 1E
Total Electricity and Natural Gas Program Savings Goals (all IOUs)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Annual Electricity Savings (GWh/yr) (1)	1,838	1,838	2,032	2,275	2,505	2,538	2,465	2,513	2,547	2,631
Total Cumulative Savings(GWh/yr)	1,838	3,677	5,709	7,984	10,489	13,027	15,492	18,005	20,552	23,183
Total Peak Savings (MW) (2)	379	757	1,199	1,677	2,205	2,740	3,259	3,789	4,328	4,885
Total Annual Natural Gas Savings (MMTh/yr)	21	21	30	37	44	52	54	57	61	67
Total Cumulative Natural Gas Savings (MMTh/yr)	21	42	72	110	154	206	260	316	377	444

Notes:

(1) Total annual energy savings = all savings from energy efficiency programs funded by public goods charge and Procurement funding. This total includes savings from baseline Energy efficiency program funding of \$100 MM/yr accounted for in the CEC sales forecast. For incremental program savings above the levels included in the CEC forecast, see Attachment 9.

(2) Average peak MW estimated by multiplying GWh from utility by the ratio they used in 2004/5 filings ranges from .19 to .21.

This is an estimate of average peak savings not coincident peak = GWh savings in peak period/ 560 hours in period.

**Table 2: Joint Staff Electricity Savings Goals Recommendations
(March 26 2004 Report)¹**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Annual Savings (GWH/ year)										
PG&E	572	639	735	862	1,016	1,062	1,070	1,214	1,318	1,434
SCE	726	811	933	1,094	1,290	1,348	1,358	1,541	1,672	1,820
SDG&E	230	257	296	347	409	428	431	489	531	578
Total	1,528	1,707	1,963	2,304	2,715	2,837	2,858	3,243	3,521	3,831
Cumulative Savings over the Decade (GWH)										
PG&E	572	1,211	1,946	2,808	3,824	4,886	5,956	7,170	8,488	9,922
SCE	726	1,537	2,470	3,564	4,854	6,202	7,560	9,101	10,773	12,593
SDG&E	230	487	783	1,130	1,539	1,967	2,398	2,887	3,418	3,996
Total	1,528	3,236	5,199	7,503	10,218	13,055	15,913	19,156	22,677	26,508
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cumulative Peak Savings (MW/ year)										
PG&E	149	335	506	730	994	1270	1548	1864	2207	2579
SCE	189	400	642	927	1262	1612	1965	2366	2801	3274
SDG&E	60	127	204	294	401	512	624	751	889	10393
Total	397	862	1352	1950	2657	3394	4137	4981	5896	6892

¹See "California Electricity Energy Savings Goals Report," submitted March 26, 2004 in this proceeding by Joint Staff. The method for converting GWh to peak savings (using a conversion factor of .259) is discussed in Appendix A of that report.

**Table 3: Joint Staff Initial Recommendations
For Natural Gas Savings Goals (March 26, 2004)¹**

Time Period	PG&E	SCG	SDG&E	Total
3 Years (2005 - 2007)	23.5 Mth	33.2 Mth	2.9 Mth	59.7 Mth
5 Year (2005 - 2009)	43.7 Mth	61.6 Mth	5.5 Mth	110.7 Mth
10 Years (2005 - 2014)	114.5 Mth	161.6 Mth	14.3 Mth	290.4 Mth

Note: These figures are a combination of natural gas savings projected from current funding levels plus the expected savings from an increase in program funding. The cumulative annual savings estimates in the last column are the result average funding increases of 15% in 2006 and then 10% per year from 2007 – 2014. These results in an annual funding level in 2014 that is roughly 3 times or 147% increase relative to 2002 expenditures.

¹See “California Natural Gas Energy Savings Goals Report,” March 26, 2004 submitted by Joint Staff in this proceeding. Joint Staff’s revised natural gas goals are presented in Attachment 5.

**Table 4: Fraction of Incremental Electricity Needs Met by
Energy Efficiency Programs (%)**

Utility Energy Efficiency Programs	Total Program Savings Share of Incremental Electricity Needs - 2004-2013	Incremental Program Savings Share of Incremental Electricity Needs - 2004-2013
PG&E	58.7%	44.9%
SCE	57.2%	40.6%
SDG&E	54.6%	35.8%

Definitions:

1. Incremental program savings = those savings not in the CEC baseline electricity forecast. CEC forecast includes the projected savings impacts from ten years of constant program funding at the minimum level required of \$233 million per year statewide.
2. Total program savings = baseline program savings + incremental program savings over ten years
3. Fraction of need met by total program savings estimate is derived by dividing total program savings in year 2013 by the adjusted increment of need for the same period
4. Adjusted need increment = change in electricity forecast from 2004 to 2013 + the expected cumulative electricity savings from ten years of programs
5. Fraction of need met by incremental program savings is simply cumulative savings goal divided by the GWH change in forecast of need from 2004 to 2013.

**Table 5: Joint Staff Evaluation of Natural Gas Therm Savings Potential
(by 2014) Under Various Program Funding Levels¹**

Utility	Level 4	Level 3	Level 2	Level 1	Naturally Occurring
PG&E	378 Mth	99 Mth	68 Mth	41 Mth	57Mth
SCG	635 Mth	143 Mth	97 Mth	57 Mth	63 Mth
SDG&E	44 Mth	13 Mth	8 Mth	5 Mth	13 Mth
Totals	1,057 Mth	255 Mth	174 Mth	104 Mth	133 Mth

Where:

Level 1= Current spending of \$45 million per year

Level 2= 50% more than current spending

Level 3=100% more or doubling the current spending trend, and

Level 4= spending for the maximum feasible potential

¹“California Natural Gas Energy Savings Goals Report,” March 26, 2004, submitted in this proceeding by Joint Staff. See pp. 18-21.

Table 6: NRDC Recommended Natural Gas Savings Targets

	Annual Savings (million therms)	Cumulative Annual Savings (million therms)
2005	32	32
2006	42	74
2007	52	126
2008	62	188
2009	72	260
2010	82	342
2011	90	432
2012	98	530
2013	106	636
2014	114	750

Table 7: Joint Staff Projection of Gross Revenue Requirement and Levelized Cost of Recommended Program Goals for 2006

Program Funding (\$ millions)	Total Savings (GWh)	Revenue Requirement (cents/kWh)	Program Levelized Cost (cents/kWh)	First Year Savings Value (\$millions)
421.2	1963	0.00172	3.51	110

Notes: Revenue requirement=total program costs/total GWh sales in 2006

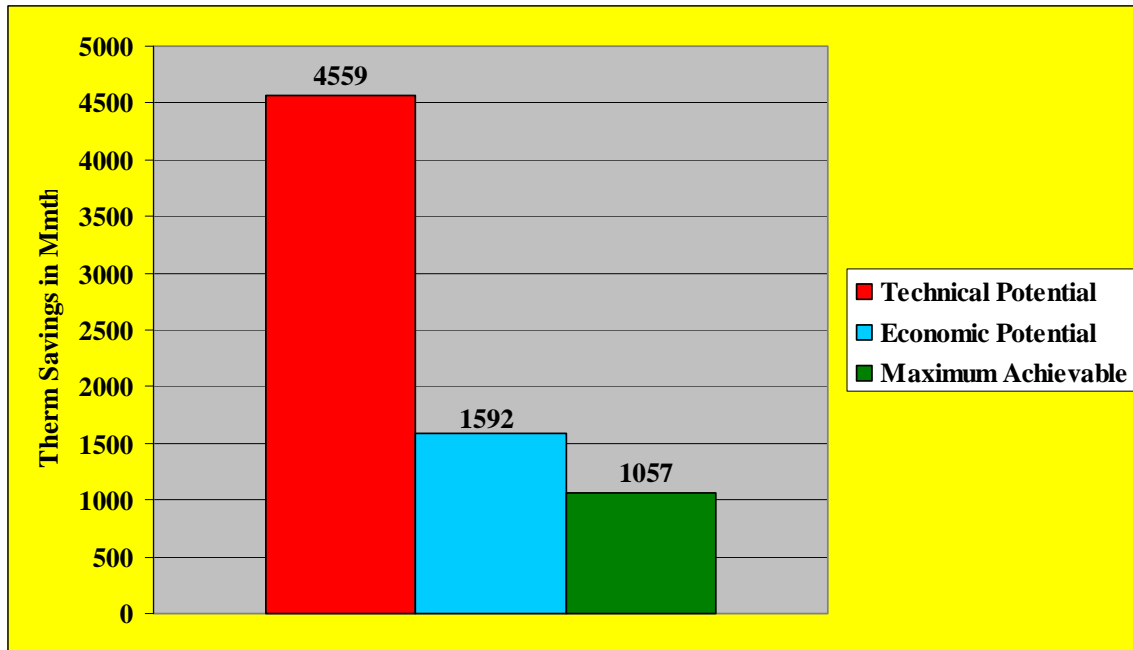
Levelized cost=program cost*1.5*cap.recovery factor/kwh saved

Cap recovery factor=.109 assumes 12 year measure life and 4% real discount rate.

1.5 multiplier adds in estimate of incremental costs paid by customers

Simple payback = 4 years if elect. savings are valued at 5.6 cents/kwh

Figure 1: Natural Gas Savings Potential¹



¹From: "California Natural Gas Energy Savings Goals Report," March 26, 2004 submitted in this proceeding by Joint Staff, p. 9.

ATTACHMENT 1
LIST OF ACRONYMS AND ABBREVIATIONS

BCAP	Biennial Cost Allocation Proceeding
CEC	California Energy Commission
CPA	California Consumer Power and Conservation Financing Authority
GWh	gigawatt hour
Intergy	Intergy Corporation
IOUs	investor-owned utilities
“Joint Staff”	Energy Division and CEC staff
kWh	kilowatt hour
LIEE	low-income energy efficiency
LTRP	long-term resource plan
Mth or MMth	million therms
MW	megawatt
NRDC	Natural Resources Defense Council
ORA	Office of Ratepayer Advocates
PGC	public goods charge
PG&E	Pacific Gas and Electric Company
“program cycle”	program planning and funding cycle for energy efficiency
PY	program year
R.	Rulemaking
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SESCO	SESCO, Inc.
SoCalGas	Southern California Gas Company
“statewide goals study”	statewide goals developed by CEC staff for the 2003 Integrated Energy Policy Report
TRC	total resource cost
TURN	The Utility Reform Network
WEM	Women’s Energy Matters

(END OF ATTACHMENT 1)

ATTACHMENT 2

Impact of Removing Self Generation Production (kWh) and Sales to Resale Cities from the CEC Consumption Forecast for PG&E

Table 1 illustrates the impact of removing self generation and sales to resale cities from the CEC's electricity consumption forecast and the resulting change in per capita end use trends. Columns 1 and 2 show the original forecast and then the revised forecast less self gen and resale cities while columns 3 and 4 show the original and revised population forecasts. The resulting trends in per capita demand for the original and revised forecast are shown in columns 5 and 6.

Table 1
California Energy Commission Demand
Table A-10, CED 2003-2013
Electricity Consumption and Population for

column	1	2	3	4	5	6
	PG&E consumption- entire service territory	PG&E consumption less resale cities and selfgen	PGE area total Pop Millions	PGE -resale cities population	Base per capita usage trend	REVISED kwh Per capita use pge less resale
1980	66,197	55,540	8,584,530	7,314,020	7,711	7,594
1981	67,653	56,661	8,680,387	7,395,690	7,794	7,661
1982	66,043	55,495	8,795,961	7,494,159	7,508	7,405
1983	68,497	57,705	9,047,698	7,708,639	7,571	7,486
1984	73,341	61,490	9,283,228	7,909,310	7,900	7,774
1985	75,617	63,419	9,511,282	8,103,612	7,950	7,826
1986	74,394	62,757	9,718,568	8,280,220	7,655	7,579
1987	78,962	66,645	9,876,854	8,415,080	7,995	7,920
1988	82,141	69,408	10,047,184	8,560,201	8,175	8,108
1989	84,529	71,484	10,273,788	8,753,267	8,228	8,167
1990	86,806	73,437	10,450,149	8,903,527	8,307	8,248
1991	86,929	73,715	10,678,289	9,097,902	8,141	8,102
1992	88,326	74,858	10,874,633	9,265,187	8,122	8,080
1993	89,239	75,857	11,037,587	9,404,024	8,085	8,066
1994	89,582	76,232	11,125,465	9,478,896	8,052	8,042
1995	90,763	77,296	11,221,850	9,561,016	8,088	8,084
1996	93,464	79,718	11,331,594	9,654,518	8,248	8,257
1997	97,078	82,751	11,538,647	9,830,927	8,413	8,417
1998	95,682	81,318	11,685,349	9,955,917	8,188	8,168
1999	99,205	84,642	11,860,298	10,104,974	8,364	8,376
2000	101,980	86,941	12,069,552	10,283,258	8,449	8,455
2001	98,748	84,638	12,285,241	10,467,025	8,038	8,086
2002	97,570	83,645	12,519,186	10,666,346	7,794	7,842
2003	98,597	84,532	12,752,081	10,864,773	7,732	7,780
2004	100,940	86,485	12,984,878	11,063,116	7,774	7,817
2005	103,115	88,359	13,217,557	11,261,359	7,801	7,846
2006	105,101	90,068	13,427,236	11,440,005	7,827	7,873
2007	106,599	91,368	13,636,777	11,618,534	7,817	7,864
2008	108,699	93,191	13,846,171	11,796,938	7,850	7,900
2009	110,053	94,369	14,055,405	11,975,205	7,830	7,880
2010	111,655	95,760	14,264,508	12,153,361	7,827	7,879
2011	113,087	97,001	14,436,378	12,299,794	7,833	7,886
2012	114,441	98,179	14,608,042	12,446,052	7,834	7,888
2013	115,507	99,118	14,779,481	12,592,118	7,815	7,871
Incremental need	2004-2013	12,633	85.8%	col2/col 1		

As expected removing the sales to resale cities and the reported estimates of self generation and cogeneration production decrease the 2013 forecast by roughly 14.2% but have minimal impacts on the underlying trend in per capita usage shown in the last two columns. Use of the revised population and per capita trends will result in a slight change to the reported impact of achieving program goals on the per capita trend. For example use of the original forecast of sales and staff's recommended savings goal resulted in a savings per capita reduction of .30% per year. Use of the revised per capita trends and the same program savings goals results in a change in per capita energy use of 0.34% per year from 2004 to 2013. In any event none of these changes impact staff's development of savings targets for utility programs, these per capita trend exercises are all about how to describe the impact of a given aggregate savings target on the underlying trends in per capita energy use.

(END OF ATTACHMENT 2)

ATTACHMENT 3

Impact of Removing Self Generation Production and Sales to Resale Cities from the CEC Consumption Forecast for SCE on Per Capita Electricity Use Rates

Table 1 illustrates the impact of removing self generation production figures and sales to resale cities from the CEC's electricity consumption forecast and the resulting change in per capita end use trends. Columns 1 and 2 show the original forecast and then the revised forecast less self gen and resale cities while columns 3 and 4 show the original and revised population forecasts. The resulting trends in per capita demand for the original and revised forecast are shown in columns 5 and 6.

Table 1

Adjustments to SCE consumption forecast at the service territory level to remove sales to resale cities and production from self generation and cogeneration facilities

Year	Original SCE consumption forecast service area wide	SCE self generation/co gen	Sales to Resale Cities	SCE sales less sales to resale cities and self gen/cogen	SCE Population	SCE pop less resale city pops	Base per capita usage	Revised kwh Per capita use SCE only
column	1	2	3	col1-col2-col3	5	6	col (1)/(5)	Col (4)/Col (6)
1980	59,624	289	5,870	53,754	8,411,169	7,940,144	7,089	6,770
1981	61,594	296	6,116	55,478	8,494,336	8,018,653	7,251	6,919
1982	59,501	492	5,696	53,805	8,630,444	8,147,139	6,894	6,604
1983	62,006	914	5,922	56,084	8,905,228	8,406,535	6,963	6,672
1984	66,608	1,103	6,761	59,848	9,171,726	8,658,109	7,262	6,912
1985	68,203	1,286	6,883	61,320	9,462,927	8,933,003	7,207	6,864
1986	69,496	1,428	6,943	62,553	9,821,899	9,271,873	7,076	6,747
1987	72,999	1,790	7,247	65,752	10,114,279	9,547,879	7,217	6,887
1988	76,698	3,019	7,428	69,270	10,429,728	9,845,663	7,354	7,036
1989	78,417	3,199	7,305	71,112	10,709,887	10,110,133	7,322	7,034
1990	81,673	3,308	7,901	73,772	10,869,185	10,260,511	7,514	7,190
1991	80,223	3,363	7,787	72,435	11,117,050	10,494,495	7,216	6,902
1992	82,041	3,408	7,545	74,495	11,333,016	10,698,367	7,239	6,963
1993	81,133	3,689	7,654	73,479	11,439,024	10,798,439	7,093	6,805
1994	82,800	3,730	7,952	74,847	11,543,713	10,897,265	7,173	6,868
1995	82,855	3,730	7,577	75,278	11,628,352	10,977,164	7,125	6,858
1996	85,728	3,933	8,029	77,699	11,718,087	11,061,874	7,316	7,024
1997	88,382	4,026	8,300	80,083	11,883,259	11,217,796	7,438	7,139
1998	88,434	3,987	8,189	80,245	12,022,582	11,349,317	7,356	7,070
1999	91,013	4,023	8,782	82,230	12,234,124	11,549,013	7,439	7,120
2000	96,496	3,954	9,108	87,389	12,476,975	11,778,264	7,734	7,419
2001	90,506	3,422	8,631	81,876	12,733,623	12,020,540	7,108	6,811
2002	89,418	4,344	8,537	80,881	12,944,718	12,219,814	6,908	6,619
2003	90,419	4,459	8,649	81,770	13,162,491	12,425,392	6,869	6,581
2004	92,813	4,503	8,896	83,917	13,379,774	12,630,507	6,937	6,644
2005	95,406	4,548	9,140	86,265	13,596,559	12,835,152	7,017	6,721
2006	97,637	4,594	9,352	88,285	13,808,752	13,035,462	7,071	6,773
2007	99,100	4,640	9,506	89,593	14,020,450	13,235,305	7,068	6,769
2008	100,745	4,686	9,673	91,072	14,231,644	13,434,672	7,079	6,779
2009	102,038	4,733	9,816	92,222	14,442,323	13,633,553	7,065	6,764
2010	103,395	4,780	9,963	93,432	14,655,954	13,835,221	7,055	6,753
2011	104,956	4,828	10,124	94,831	14,850,355	14,018,735	7,068	6,765
2012	106,541	4,876	10,287	96,254	15,044,289	14,201,809	7,082	6,778
2013	107,654	4,925	10,402	97,252	15,237,745	14,384,431	7,065	6,761

As expected removing the sales to resale cities and the reported estimates of self generation and cogeneration production decreases the 2013 SCE consumption forecast by roughly 10% but has minimal impacts on the underlying trend in per capita usage shown in the last two columns. This reduction has no impact on the estimates of technical potential because the Xenergy study started with estimates of SCE customer only sales and excluded self generations. It does however have an impact on how one describes the impact of achieving a given level of program savings.

Use of the revised population and per capita trends will result in a slight change to the reported impact of achieving program goals on the per capita electricity usage trend. For example use of the original forecast of consumption and staff's recommended savings goal resulted in a per capita reduction trend of .30% per year between 2004 and 2013. Use of the revised and lower sales forecasts and the same program savings goals results in a change in per capita energy use in the SCE area of 0.47% per year from 2004 to 2013. In any event none of these changes/adjustments impact staff's development of savings targets for utility programs. These per capita trend exercises are all about how to describe the impact of a given aggregate savings target on the underlying trends in per capita energy use.

The impact of these changes in sales forecasts on the resulting growth rates in per capita electricity use is shown in Table 2 below. This table and the proceeding chart shows that changing the underlying forecasts and producing a revised per capita trends in electricity usage gives slightly different absolute values in per capita usage but the trend and growth rates are roughly comparable (as shown below).

**Table 2- SCE Growth Rates in Per capita Electricity Usage
Comparison of Base consumption forecast vs Revised Forecast**

Time Period	Base Per Capita Electricity Usage (%/year)	Revised forecast per capita electricity usage (%/Year)
2004-2008	0.5	0.5
2008-2013	0.05	-.01
2004-2013	0.3	0.3

(END OF ATTACHMENT 3)

ATTACHMENT 4**Impact of Removing Cogeneration and Resale Cities from CEC Forecasts of Natural Gas Consumption**

Revised Natural Gas Sales Forecasts and Resulting Per Capita Reduction Rates

Year	Original Service Area consumption forecast (PGE, SCG and SDGE)	Revised Total Consumption= less cogen and resale cities (1)	All Service territory Population	Base trend per capita	Total savings staff	Revised per capita trend (with programs)
col #	1	2	3	4	5.0	6
Unites	MM therms/yr	MM therms/yr	1000's	therm/cap	MM therms/yr	therm/cap
2002	13,755.0	11,416.7	35,302.2	323.4		323.4
2003	13,940.4	11,570.5	35,893.5	322.4		322.4
2004	14,090.1	11,694.8	36,484.8	320.5	0.0	320.5
2005	14,322.3	11,887.5	37,076.1	320.6	28.7	319.8
2006	14,475.4	12,014.6	37,627.0	319.3	60.5	316.0
2007	14,503.3	12,037.8	38,177.8	315.3	96.6	312.2
2008	14,580.0	12,101.4	38,728.7	312.5	138.6	308.5
2009	14,593.0	12,112.2	39,279.6	308.4	187.5	304.8
2010	14,650.7	12,160.1	39,830.5	305.3	238.2	301.1
2011	14,782.5	12,269.5	40,314.0	304.3	288.8	297.5
2012	14,813.9	12,295.5	40,797.6	301.4	345.5	293.9
2013	14,851.9	12,327.0	41,281.2	298.6	406.5	290.4
2014	14,869.0	12,341.3	41,770.5	295.5	472.3	287.0
Percentage Growth rates						
2005-2014	0.38%	0.38%	1.20%	-0.81%	32.32%	-1.08%
Sources		CEC forecast	CEC forecast		file=finalnumbersatgas.xls	
Notes						
-1 Adjustments to statewide consumption forecast due to removal of resale cities, cogen sales and private marketer gas shipments; Also removed population of long beach						

(END OF ATTACHMENT 4)

ATTACHMENT 5

Joint Staff Response to Parties' May 2004 Comments and Revised Natural Gas Savings Goals

On April 20th, the CEC and CPUC staff ("Joint Staff") held a workshop on Electricity and Natural Gas Efficiency to discuss both natural gas savings goals and the methodology used to derive these goals. The following is a discussion on the natural gas portion of the savings goals.

During the workshop, Joint Staff invited interested parties to make comments on the proposed goals and methodologies. PG&E, SoCal Gas, and SDG&E, and well as the NRDC, made specific comments. The IOUs were generally willing to accept the proposed natural gas goals but expressed concerns about the possible rate impacts. An additional commenter questioned the rationale behind using different ramp-up percentages for electricity and natural gas. The NRDC stated their belief that the staff proposal did not go far enough and made a counter proposal of 750 million therms over ten years as a new goal. The NRDC new goal would achieve approximately 71% of a possible 1,057 Mth estimated maximum achievable.

The NRDC proposal is definitely a laudable goal but Joint Staff believes the proposal is too ambitious for two reasons.

1. The goal relies on the IOU's achieving 50% of the identified savings potential for Industrial non-core customers. Staff believes this is too aggressive a figure given the historic inability of some IOU's to recruit large non-core Industrial customers.
2. The required ramp-up in funding to levels 5 or 6 times current funding would be unprecedented and, more than likely, unsustainable. History has shown that there are definite limits when it comes to effectively increasing funding for efficiency programs.

However, staff felt it was reasonable to re-estimate a modified natural savings goal using the level of funding increases recommended for electricity programs. In response to comments from affected parties, staff has made revisions to the initial proposed goal of 290 Mth of savings by 2014 to simulate the higher levels of funding increase recommended for electricity efficiency programs. The following is a description of the steps staff used to revise its proposed therm savings goals and funding.

1. A sensitivity analysis was performed to gauge the effects of varying the levels of efficiency program effectiveness. **Table 1** shows the projected level of savings if the IOU's could reach 60 – 80% of the residential, commercial, and non-core industrial maximum achievable potential while simultaneously reaching 10 – 40% of the non-core market. This analysis was used as a boundary setting exercise to help set potential goals.
2. The funding level increases taken from Joint Staff's original proposal of \$750 million over 10 years were adjusted to mimic the funding % increases assumed in the electricity goal setting process. A 1% degradation factor was introduced into the therms saved per dollar spent assumption in an attempt to mimic market realities that savings efficiencies will most likely decline over time. The annual therm savings were then calculated as a product of funding levels and the new effectiveness calculations. See **Table 2** for the projections. Net savings from programs increases from 290 MM therms from the original Joint Staff recommendation to 470 MM therms in 2014 for its revised recommendation.
3. Finally, the IOU's were assigned individual funding levels and therm savings goals in the same manner as in the original paper. See **Table 3** for the projections.

Table 4 shows the revised cumulative natural gas savings impact for the individual IOUs. These values can be used to set the minimum threshold of savings to be achieved in the next program cycle by investor owned gas utilities. For example, the 2007 cumulative goal for SCGas is 53.8 MM therms. To meet this goal SCG would have to show in its filing for 2006 and 2007 programs that the cumulative effects of its 2005, 2006 and 2007 programs would save at least 53.8 MM therms by the end of 2007.

**Table 1: Sensitivity Analysis-Natural Gas Savings (in MM therms/yr in 2014)
Achieved as a Function of the Fraction of the Non-Core Potential reached
by Natural Gas Programs and the Fraction of Maximum Achievable
Level Reached for Core Customers**

% of Residential, Commercial, and Core Maximum Savings Achieved	% of Non-Core Industrial Maximum Achievable					
	10%	15%	20%	25%	30%	40%
60% of Residential, Commercial, and Core	353	380	406	433	460	513
70% of Residential, Commercial, and Core	403	430	456	483	510	563
80% of Residential, Commercial, and Core	453	479	506	533	560	613

Source: CEC

**Table 2: Revised Projection of Total IOU (PGE, SCG, and SDG&E) Funding, Program
Effectiveness, and Therm Savings Projections**

Year	Funding \$ Millions	Effectiveness Therms/ \$ Million	Annual Mth Therm Savings
2005	\$ 75	383,130	28.7
2006	\$ 84	379,299	31.8
2007	\$ 96	375,506	36.1
2008	\$ 113	371,751	42.0
2009	\$ 133	368,033	49.0
2010	\$ 139	364,353	50.7
2011	\$ 140	360,709	50.5
2012	\$ 159	357,102	56.8
2013	\$ 173	353,531	61.0
2014	\$ 188	349,996	65.7
Total	\$ 1,299		472

Source: CEC

Summary-Joint Staff's revised savings levels for the ten-year period from 2005 to 2014 is equivalent to achieving 472 million therms. This is roughly 40% of the maximum achievable savings levels estimated from the Xenergy Potential studies. Joint Staff's recommended increase in program funding and savings over the ten-year period increases the per capita reduction trend from .7% per year in the baseline forecast to a 1.2% reduction per capita per year. This is a significant level of increased conservation activity that will generate savings to society (valued at weighted average cost of gas only) equivalent to 472 million therms * \$5.69/therm= \$2.6 billion in comparison to the cumulative program cost of 1.3 billion dollars.

Table 3: Individual IOU Funding Levels and Therm Savings

	SoCal Gas		PG&E		SDG&E	
Year	Funding \$ Millions	Annual Mth Therm Savings	Funding \$ Millions	Annual Mth Therm Savings	Funding \$ Millions	Annual Mth Therm Savings
2005	\$ 40.2	15.4	\$ 28.4	11.3	\$ 6.40	2.5
2006	\$ 44.9	17.0	\$ 31.7	12.5	\$ 7.20	2.7
2007	\$ 51.6	19.4	\$ 36.5	14.3	\$ 8.20	3.1
2008	\$ 60.6	22.5	\$ 42.8	15.6	\$ 9.70	3.6
2009	\$ 71.4	26.3	\$ 50.4	19.3	\$ 11.40	4.2
2010	\$ 74.6	27.2	\$ 52.7	20.0	\$ 11.90	4.3
2011	\$ 75.1	27.1	\$ 53.1	19.9	\$ 12.00	4.3
2012	\$ 85.3	30.4	\$ 60.3	22.4	\$ 13.60	4.9
2013	\$ 92.5	32.7	\$ 65.4	24.1	\$ 14.80	5.2
2014	\$ 100.7	35.3	\$ 71.2	25.9	\$ 16.10	5.6
Totals	\$ 695.6	252.7	\$ 492.5	178.9	\$111.3	40.45

Source: CEC

(END OF ATTACHMENT 5)

ATTACHMENT 6

Joint Staff's Analysis of Rate Impacts Associated with Proposed Natural Gas Program Savings Goals

Some parties at the workshop requested that Joint Staff perform a rate impact analysis of its proposed increased in program savings and funding. There are really three types of information requested:

- The rate increase required to fund the programs= $\text{Funding} / \text{Total retail gas sales in year } x$
- The gross rate impact= $\text{Gas saved (therms)} * \text{Weighted Average Cost/ therm (retail) in year } x / \text{Total retail sales in year } x$
- The net rate impact= $\text{Gas saved} * (\text{rate increase for program cost-rate decrease from gas saved @commodity prices}) / \text{total retail sales in year } x$.

Table 1 presents all three calculations for the Joint Staff's original case and its revised case. The results suggest that the rate increase to fund the program of .0.6 cents/therm is counteracted by accumulated commodity savings by 2006. The net rate impact is calculated to be a negative 2.6 cents/ therm on average, e.g., extra savings valued at commodity price of gas are higher than the accumulated program costs. These values are all shown in Table 1.

We note that the relative rate impact of pursuing more efficiency programs will always be positive as long as the cost of conserved gas in \$/therm is less than the additional gas that would have to be purchased at the margin if the savings did not occur. Joint Staff estimates the cost of conserved natural gas will range from 29 cents/therm to 38 cents/therm over the next ten years. This compares to the weighted average cost of gas of 60 cents per therm over the last two years or the average retail price in 2003 of 70 cents per therm. This cost of conserved energy from 30 to 40cents/ therm is also much cheaper than the forecasted cost of purchasing gas for residential customers, which is forecast for the PG&E and So Cal Gas areas to increase from 67 cents per therm in 2003 to 74 cents/ therm in 2014 (real 2002 dollars). Thus, Joint Staff is very confident that the program savings and cost of conserved energy they represent are likely to have a positive rate impact in the short and long term.

Joint Staff suggests that the Commission order each utility to provide its own estimate of both the rate increase needed to fund the programs and the net rate impacts of the programs as part of its program planning filing in mid 2005 for 2006 to 2008 programs.

Table 1

Rate impacts of the Projected Increase in Funding for Natural Gas Efficiency

	Program funding	Program Savings	Baseline NG sales to retail customers- statewide	Rate increase required to fund program	Present value of Savings @wacog (1)	Net Rate Increase-(col 1- col 4)/col 2	Year	WACOG system average forecast(1)	Preser Value wacog
	\$ millions	Mm therms	MM therms	\$/therm	\$ millions	\$/therm		\$/MCF	\$/MCF
2004			11694.8						
2005	74.9	46.8	11887.5	0.0063	21.28	0.005	0	4.55	
2006	83.7	78.5	12014.6	0.0070	58.03	0.002	1	4.68	
2007	96.2	114.7	12037.8	0.0080	112.04	-0.001	2	4.71	
2008	112.9	156.6	12101.4	0.0093	186.60	-0.006	3	4.76	
2009	133.1	205.6	12112.2	0.0110	286.12	-0.013	4	4.84	
2010	139.1	256.3	12160.1	0.0114	411.19	-0.022	5	4.88	
2011	140.1	306.8	12269.5	0.0114	563.07	-0.034	6	4.95	
2012	159.0	363.6	12295.5	0.0129	745.97	-0.048	7	5.03	
2013	172.6	424.6	12327.0	0.0140	961.67	-0.064	8	5.08	
2014	187.8	472.4	12341.3	0.0152	1204.94	-0.082	9	5.15	
					pv over 10 years	-0.026			3
column numbers	1	2	3	4	5	6	7	8	

(1) CEC weighted average cost of gas (WACOG) forecast from 2003 IEPR for system average gas-PG&E

Note a negative (-) rate increase is a rate reduction

(2) discount rate= 4%/year real

Thus implementing the increased funding and savings called for by staff will

result in a net decrease of 2.6 cents per therm

(END OF ATTACHMENT 6)

ATTACHMENT 7

2004-2005 Energy Efficiency Programs Electricity and Natural Gas Targets*			
Utility	KW	kWh	therms
PG&E	321,502	1,487,201,721	19,574,559
SCE	333,947	1,651,935,105	1,894,594
SDG&E	100,778	536,359,479	3,685,482
SCG	13,291	50,503,895	19,199,234
TOTAL	769,518	3,726,000,200	44,353,869

*Program targets as detailed in Decision 03-12-060 dated December 18, 2003 and Decision 04-02-059 dated February 26, 2004.

2004-2005 Energy Efficiency Programs Electricity and Natural Gas Targets*				
Programs		kW	KWh	therms
<i>Procurement</i>				
PG&E		124,400	466,883,057	250,893
SCE		165,308	938,095,256	0
SDG&E		43,943	251,968,377	1,339,551
SCG		0	0	0
<i>Subtotal</i>		333,651	1,656,946,690	1,590,444
<i>Statewide</i>				
PG&E		146,384	822,363,323	13,542,344
SCE		124,175	563,204,204	0
SDG&E		41,498	227,256,836	1,980,944
SCG		10,402	40,954,534	8,861,691
<i>Subtotal</i>		322,459	1,653,778,897	24,384,979
<i>Local-Utility</i>				
PG&E		0	0	0
SCE		3,871	19,944,954	0
SDG&E		2,476	14,216,530	0
SCG		0	0	2,907,277
<i>Subtotal</i>		6,347	34,161,484	2,907,277
<i>Local-NonUtility</i>				
PG&E		38,553	146,822,180	4,711,413
SCE		31,554	98,187,704	1,752,822
SDG&E		11,963	35,705,738	214,897
SCG		1,271	3,117,018	5,542,681
<i>Subtotal</i>		83,341	283,832,640	12,221,813
<i>Partnership</i>				
PG&E		12,165	51,133,161	1,069,909
SCE		9,039	32,502,987	141,772
SDG&E		898	7,211,998	150,090
SCG		1,618	6,432,343	1,887,585
<i>Subtotal</i>		23,720	97,280,489	3,249,356
Grand Total		769,518	3,726,000,200	44,353,869
*Program targets as detailed in Decision 03-12-060 dated December 18, 2003 and Decision 04-02-059 dated February 26, 2004.				

ATTACHMENT 8

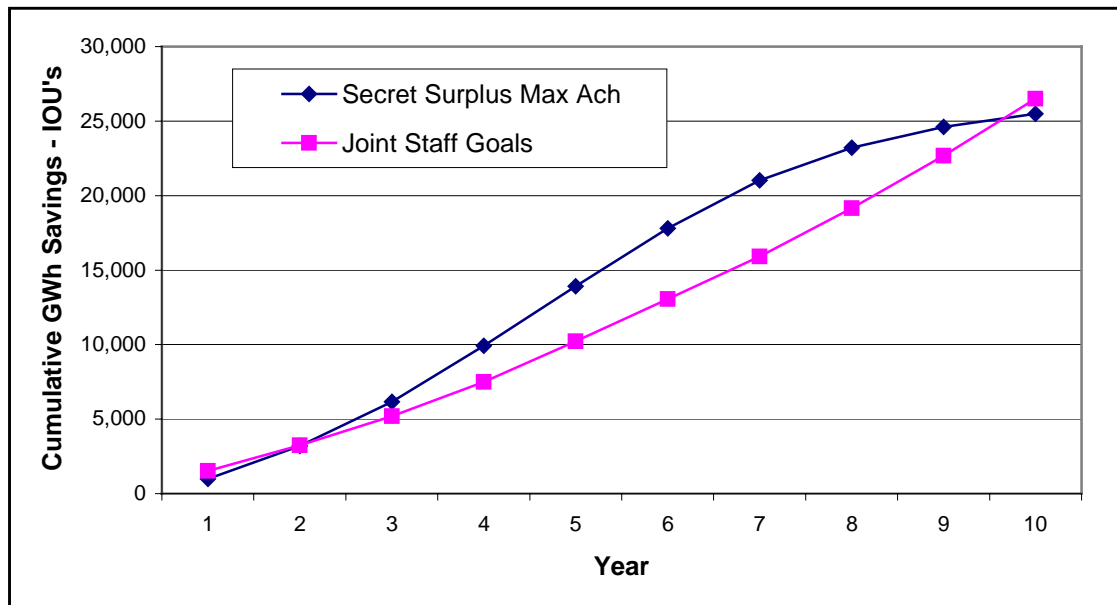
**COMPARISON OF DISAGGREGATED SECRET ENERGY SURPLUS STUDY
RESULTS AND JOINT STAFF RECOMMENDATIONS
FOR GWH AND MW GOALS***

**Table 1: Comparison of Secret Surplus Potential Estimates with Joint Staff
Recommended Goals, 10-Year Planning Horizon**

Utility	Energy – GWh				Peak Demand - MW			
	Secret Surplus Study			Joint Staff Goals	Secret Surplus Study			Joint Staff Goals
	Technical Potential	Economic Potential	Max Ach Potential		Technical Potential	Economic Potential	Max Ach Potential	
SCE	22,046	15,837	11,939	12,593	5,698	3,617	2,249	3,274
SDG&E	4,306	3,164	2,231	3,996	1,175	776	426	1,039
PG&E	20,662	14,813	11,320	9,922	5,434	3,626	2,284	2,579
IOU Total	47,014	33,814	25,490	26,511	12,307	8,019	4,959	6,892
Other	8,823	6,332	4,600		2,457	1,547	943	
State Total	55,837	40,146	30,090		14,763	9,566	5,902	

* Source: Attachment 1, SDG&E/SoCalGas Opening Comments dated August 23, 2004 and supplement dated August 25, 2004.

Figure 1: Comparison of Cumulative Energy Savings Projections



Comparison of the Secret Surplus Potential Forecasts with Joint Staff Goals Electricity**Table 2: Comparison Between Max Achievable Potential and Joint Staff Goals for SCE**

Year	SCE							
	Tech GWh	Econ GWh	Cumulative GWh/Yr		Tech MW	Econ MW	Cumulative MW	
			Max Ach	J-S Goals			Max Ach	J-S Goals
1			468	726			76	189
2			1,494	1,537			245	400
3			2,878	2,470			476	642
4			4,612	3,564			769	927
5			6,480	4,854			1,099	1,262
6			8,305	6,202			1,444	1,612
7			9,830	7,560			1,749	1,965
8			10,873	9,101			1,980	2,366
9			11,526	10,773			2,142	2,801
10	22,046	15,837	11,939	12,593	5,698	3,617	2,249	3,274

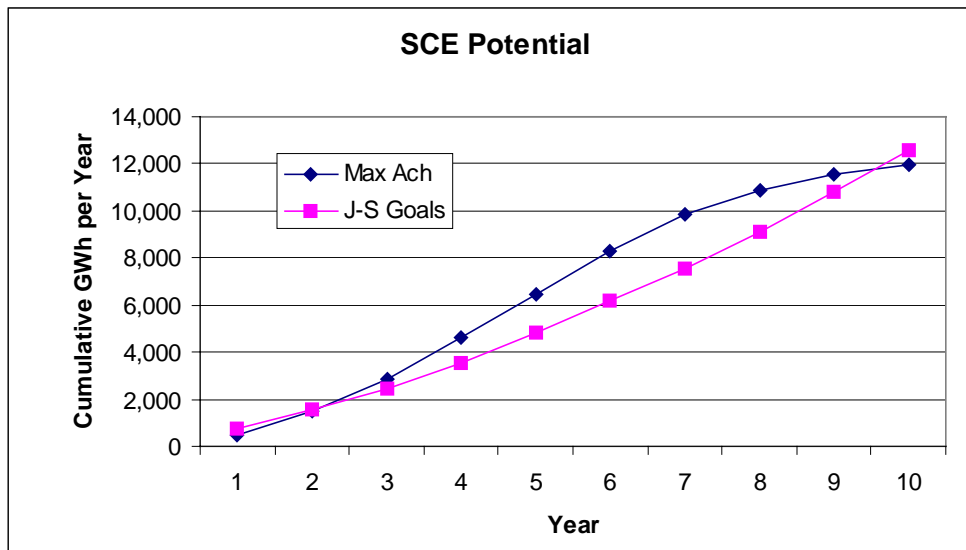
Figure 2: Graph Comparison for SCE

Table 3: Comparison Between Max Achievable Potential and Joint Staff Goals for SDG&E

Year	SDG&E							
	Tech GWh	Econ GWh	Cumulative GWh/Yr		Tech MW	Econ MW	Cumulative MW	
			Max Ach	J-S Goals			Max Ach	J-S Goals
1			95	230			16	60
2			306	487			49	127
3			591	783			94	204
4			946	1,130			150	294
5			1,306	1,539			209	401
6			1,629	1,967			269	512
7			1,870	2,398			318	624
8			2,042	2,887			364	751
9			2,156	3,418			402	889
10	4,306	3,164	2,231	3,996	1,175	776	426	1,039

Figure 3: Graph Comparison for SDG&E

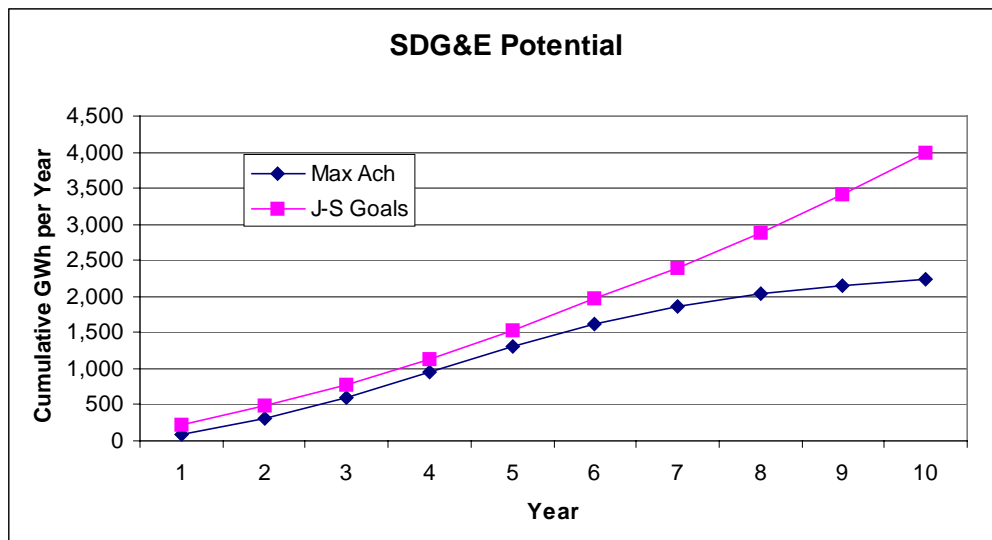
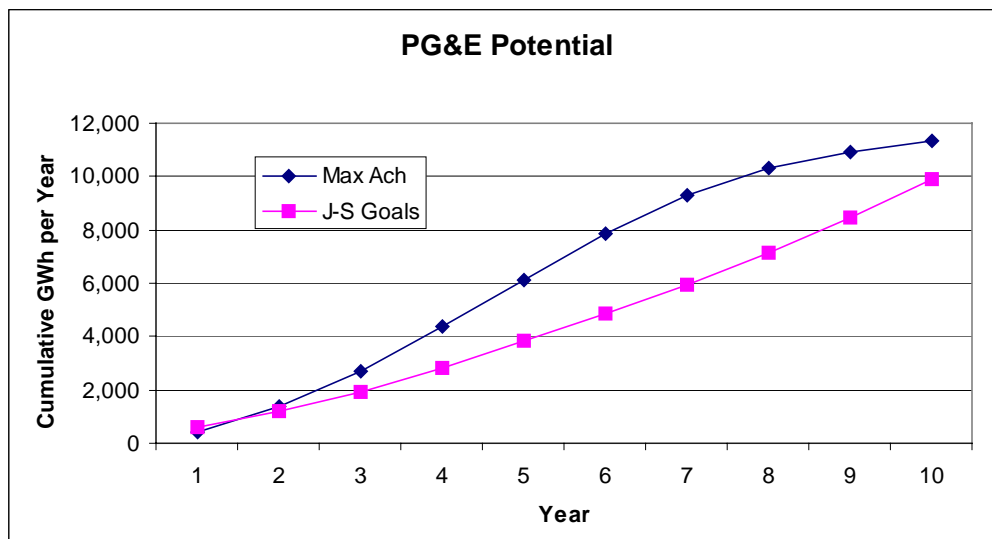


Table 4: Comparison Between Max Achievable Potential and Joint Staff Goals for PG&E

Year	PG&E							
	Tech GWh	Econ GWh	Cumulative GWh/Yr		Tech MW	Econ MW	Cumulative MW	
			Max Ach	J-S Goals			Max Ach	J-S Goals
1			435	572			80	149
2			1,392	1,211			256	335
3			2,698	1,946			495	506
4			4,357	2,808			798	730
5			6,139	3,824			1,133	994
6			7,874	4,886			1,477	1,270
7			9,318	5,956			1,778	1,548
8			10,309	7,170			2,009	1,864
9			10,929	8,488			2,175	2,207
10	20,662	14,813	11,320	9,922	5,434	3,626	2,284	2,579

Figure 4: Graph Comparison for PG&E**(END OF ATTACHMENT 8)**