Attachment 1

ENERGY EFFICIENCY POLICY MANUAL

Version 1

Prepared by the Energy Division

October 2001

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Referenced Documents

The following documents are referenced in this manual. Electronic (if available) or hard copies may be obtained by e-mailing a request, along with relevant contact information, to ee@cpuc.ca.gov. Copies also may be obtained by calling the Commission's Energy Efficiency Hotline at (415) 703-2776 and leaving a voice mail message with the request.

Title	**Date of Publication**	**Available at:**
Database for Energy Efficient Resources (DEER)	August 1, 2001	http://www.calmac.org or http://www.energy.ca.gov
International Performance Measurement and Verification Protocol (IPMVP)	October 2000	http://www.ipmvp.org/info/download.html
Reporting Requirements Manual 2 (for Post-1997 Programs)	April 3, 2001	ee@cpuc.ca.gov (415) 703-2776
Standard Practice Manual (SPM): Economic Analysis of Demand-Side Management Programs	December 1987 (new version in progress; will be made available when complete)	ee@cpuc.ca.gov (415) 703-2776

Introduction

The policy rules contained in this document are the California Public Utilities Commission's (Commission) guiding principles for use in evaluating energy efficiency program proposals. The rules contained herein establish the Commission's approach to all aspects of the development of energy efficiency programs.

Applicants proposing energy efficiency programs to the Commission should use this manual as an overall guide in designing programs, applying for funding, having their programs evaluated, and conducting program implementation.

These rules apply to all programs commencing subsequent to the date of the adoption of this document by the Commission. This manual applies to energy efficiency programs funded through the following mechanisms:

- The electric public goods charge (PGC), as authorized by Public Utilities (PU) Code Sections 381 and 399
- The gas public purpose surcharge, as authorized by PU Code Sections 890-900.

The rules in this document do **not** currently apply, but may in the future be modified to apply, to:

- Low-income energy efficiency programs funded by the PGC or gas surcharge
- California Alternative Rates for Energy (CARE) for low-income customers funded out of PGC or the gas surcharge[1]
- Interruptible rate or load management programs[2]
- Self-generation and demand-responsiveness programs developed in response to AB970 (PU Code Section 399.15(b)).[3]

This document also replaces the "Adopted Policy Rules for Energy Efficiency Activities" adopted in Commission Resolution E-3592 and modified in subsequent decisions including D.00-07-017 and D.01-01-060. Those policy rules, initially recommended by the California Board for Energy Efficiency and adopted in Commission Resolution E-3592, are no longer in effect and are superceded by this manual.

[1] A separate low-income rulemaking was initiated on August 23, 2001 (R.01-08-027).
[2] Interruptible and load management programs are primarily being addressed in Rulemaking R.00-10-002.
[3] These programs were adopted in D.01-03-073, in Rulemaking 98-07-037.

In addition, other reference materials and supporting documents are incorporated into this policy manual by reference, and may include additional information on the application of these rules.

Finally, the rules contained in this document do not apply to pre-1998 program commitments by the Investor-Owned Utilities (IOUs), which are to be funded using pre-1998 carryover funds, or to any shareholder incentives associated with those commitments, both of which remain subject to the demand-side management (DSM) policy rules that were in place at the time those commitments were made.[4]

This document is organized into the following sections:

1. Definitions
2. Policy Objectives
3. Program Design Requirements and Eligibility Guidelines
4. Cost-effectiveness
5. Budgets and Compensation
6. Evaluation, Measurement, and Verification Requirements
7. Process and Procedural Issues

The Commission, or the Energy Efficiency Assigned Commissioner, Assigned Administrative Law Judge (ALJ), or the Energy Division may update this manual, in whole or in part, at any time. In addition, we may update or modify any supporting documents incorporated into these rules by reference, separately or alongside modifications made to this document.

[4] See, for example, *Protocols and Procedures for the Verification of Costs, Benefits, and Shareholder Earnings from Demand-Side Management Programs,* in D.93-05-063, revised March 1998.

1. Definitions

The purpose of this section is to summarize the important definitions necessary to design, develop, and implement an energy efficiency program. This section provides the basic context in which the Commission will consider program proposals for funding.

The Basics

In this section, we define terms specifying various entities' roles and responsibilities and funding sources for energy efficiency programs.

Who's Who

Administrator: A person, company, partnership, corporation, association, or other entity selected by the Commission and any Subcontractor that is retained by an aforesaid entity to contract for and administer energy efficiency programs funded in whole or in part from electric public goods charge (PGC) funds or gas surcharge funds.

California Energy Commission (CEC): The state agency charged with statewide power plant siting, supply and demand forecasting, as well as multiple types of energy analysis.

California Public Utilities Commission (Commission): The state agency charged with regulating California Investor-Owned Utilities (IOUs), and with overseeing ratepayer-funded public purpose energy efficiency programs.

Customer: Any person or entity that pays an electric and/or gas bill to an IOU and that is the ultimate consumer of goods and services including energy efficiency products, services, or practices.

Implementer: An entity or person selected and contracted with or qualified by a program administrator or by the Commission to receive PGC funds for providing products and services to Customers.

Large Investor-Owned Utilities (IOUs): Pacific Gas and Electric (PG&E), San Diego Gas and Electric (SDG&E), Southern California Edison (SCE), and Southern California Gas (SoCalGas).

Parties or Interested Parties: Persons and organizations with an interest in energy efficiency that comment on or participate in the Commission's efforts to develop and implement ratepayer-funded energy efficiency programs.

Funding Sources

Gas Surcharge: Created by AB1002 in 2000, an unbundled rate component included on gas customer bills to fund public purpose programs including energy efficiency, low-income and research and development. This policy manual applies only to the energy efficiency portions of the gas surcharge.

Public Goods Charge (PGC): Per Assembly Bill (AB) 1890, a universal charge applied to each electric utility Customer's bill to support the provision of public goods. Public goods covered by California's PGC include public purpose energy efficiency programs, low-income services, renewables, and energy-related research and development. This manual applies only to energy efficiency PGC funds.

Programs

In this section, we define various types of programs that may be undertaken to achieve a public purpose objective. Not all of the program types described below are the subject of this manual. See Chapter 2 for more detail on the program types covered in this manual. Following program types, we also define some terms associated with program design and implementation, as well as some strategies associated with program delivery.

Program Types

Cogeneration: A process in which a facility uses its waste energy to produce heat or electricity.

Cross-Cutting Program: A program that involves any or all of the following: multiple customer types (residential and / or nonresidential), multiple building types (retrofit, remodeling, and / or new construction), and / or multiple energy efficiency technologies or measures.

Demand Responsiveness: See also, Load Management. Also sometimes referred to as load shifting. Activities or equipment that induce consumers to use energy at different (lower cost) times of day or to interrupt energy use for certain equipment temporarily, usually in direct response to a price signal. Examples: interruptible rates, doing laundry after 7 p.m., air conditioner cycling programs.

Demand Side or Demand Side Management (DSM): Programs that reduce the use of energy by the use of energy efficiency products, services, and practices, or that change the timing of energy use.

Distributed Generation: Small-scale electric generating technologies installed at or near an end-user's location. May also be referred to as "distributed energy resources" or "distributed resources."

Energy Efficiency: The use of high-efficiency products, services, and practices or an energy-using appliance or piece of equipment, to reduce energy usage while maintaining a comparable level of service when installed or applied on the Customer side of the meter. Energy efficiency activities typically require permanent replacement of energy-using equipment with more efficient models. Examples: refrigerator replacement, light fixture replacement, cooling equipment upgrades.

Load Management: Sometimes referred to as load shifting. Activities or equipment that induce consumers to use energy at different (lower cost) times of day or to interrupt energy use for certain equipment temporarily. Examples: interruptible rates, doing laundry after 7 p.m., air conditioner cycling programs.

Local Program: A program that provides services to customers in only one jurisdiction of the state (e.g., one county, city, or region). Local programs may be experimental and are designed to serve the needs of a particular geographic area.

Self-Generation: Distributed generation installed on the customer's side of the utility meter, providing electricity for that customer's on-site electric load without exporting electricity for sale.

Statewide Program: A program available in the service territories of all four large IOUs, with identical implementation characteristics in all areas, including incentives and application procedures.

Program Implementation Terms

Energy Efficiency Measure: Any product, service, or practice or an energy-using appliance or piece of equipment that will result in reduced energy usage at a comparable level of service when installed on the Customer side of the meter.

Market Barrier: Any characteristic of the market for an energy-related product, service, or practice that helps to explain the gap between the actual level of investment in, or practice of, energy efficiency and an increased level that would appear to be cost-beneficial to the consumer.

Program: An activity, strategy, or course of action undertaken by an implementer or administrator using PGC funds. Each program is defined by a unique combination of program strategy, market segment, marketing approach, and energy efficiency measure(s) included.

Program Design: The method or approach for making, doing, or accomplishing an objective by means of a program.

Program Development: The process by which ideas for new or revised energy efficiency programs are converted into a design to achieve a specific objective.

Program Management: The responsibility and ability to oversee and guide the performance of a program to achieve its objective.

Project: An activity or course of action undertaken by an implementer involving one or multiple energy efficiency measures, usually at a single site.

Program Strategies

Energy Management Services: Programs intended to provide customer assistance in the form of information on the relative costs and benefits to the customer of installing measures or adopting practices which can reduce the customer's utility bills. The information is solicited by the customer and recommendations are based on the customer's recent billing history and / or customer-specific information regarding appliance and building characteristics.

Incentives: Financial support (e.g., rebates, low-interest loans) to install energy efficiency measures. The incentives are solicited by the customer and based on the customer's billing history and / or customer-specific information. See also rebates, SPC programs, and upstream programs.

Information Programs: Programs intended to provide customers with information regarding generic (not customer-specific) conservation and energy efficiency opportunities. For these programs, the information may be unsolicited by the customer. Programs that provide incentives in the form of unsolicited coupons for discount on low cost measures are also included.

Rebates: Energy efficiency programs consisting of an agreement between the administrator or implementer and a number of customers to install one or more identified energy efficiency products at the customer facility for an identified and pre-specified amount of money. There are two types of rebates:

> **Prescriptive Rebate:** A prescribed financial incentive per unit for a prescribed list of individual products.

Customized Rebate: A program where the financial incentive is determined using an analysis of the customer's existing equipment and an agreement on the specific products to be installed.

Standard Performance Contract (SPC) Programs: Programs consisting of a set of agreements between the administrator or implementer and a number of project sponsors (either Implementors or Customers) to deliver energy savings from the installation of energy efficiency measures and technologies at a facility or set of facilities. These agreements are for a pre-specified price per unit of energy savings, measured using a pre-specified set of Measurement and Verification (M&V) protocols. An SPC program is an open-ended offer with a pre-specified price and set of terms.

Upstream Programs: Programs that provide information and/or financial assistance to entities in the delivery chain of high-efficiency products at the retail, wholesale, or manufacturing level.

Market Segments

Each program proposal considered by the Commission is required to identify the market segment(s) that it is designed to address. These market segments are listed below and are designed to help the Commission assess how well its portfolio of programs is addressing the variety of markets for energy efficiency products and services in the state. Additional definitions to help clarify the 14 market segments are included below the list of segments.

Residential
1. Residential Appliances
2. Residential Heating and Cooling
3. Residential Lighting
4. Residential Retrofit & Renovation

Nonresidential
5. Large Nonresidential Comprehensive Retrofit
6. Nonresidential HVAC Equipment Turnover
7. Nonresidential Motor Turnover
8. Nonresidential Process Overhaul
9. Nonresidential Renovation and Remodeling
10. Small Nonresidential Comprehensive Retrofit

New Construction
11. Local Government Initiatives/Codes & Standards Support
12. Commercial New Construction
13. Industrial and Agricultural New Construction
14. Residential New Construction

Comprehensive: A program or project designed to achieve all cost-effective energy efficiency activities in individual buildings, usually including multiple energy efficiency measures.

HVAC: Heating, Ventilation, and Air Conditioning Systems. Used in discussing replacement of inefficient equipment with high-efficiency equipment.

New Construction: Residential and non-residential buildings that have been newly built or have added major additions subject to Title 24, the California building standards code.

Process Overhaul: Modifications to industrial or agricultural processes to improve their energy use characteristics.

Remodeling: Modifications to the characteristics of an existing residential or nonresidential building or energy-using equipment installed within it.

Renovation: Modifications to the characteristics of an existing residential or nonresidential building itself, including, but not limited to, windows, insulation, and other modifications to the building shell.

Retrofit: energy efficiency activities undertaken in existing residential or nonresidential buildings where existing inefficient equipment is replaced by efficient equipment.

Customer Segments/Types

Customers are generally divided into two major types: residential or nonresidential. Within those two broad categories, programs may be targeted to one or more subsegments, as described in this section.

Residential

Residential Customers: Existing single family residences, multi-family dwellings (whether master-metered or individually metered), and buildings that are essentially residential but used for commercial purposes, including, but not limited to, time shares and vacation homes.

Residential Hard-to-Reach: Those customers who do not have easy access to program information or generally do not participate in energy efficiency programs due to a language, income, housing type, geographic, or home ownership (split incentives) barrier. These barriers are defined as:

- Language – Primary language spoken is other than English, and / or
- Income – Those customers who fall into the moderate income level (income levels less than 400% of federal poverty guidelines), and / or
- Housing Type – Multi-Family and Mobile Home Tenants, and / or
- Geographic – Residents of areas other than the San Francisco Bay Area, San Diego area, Los Angeles Basin or Sacramento, and / or
- Homeownership – Renters

Nonresidential

Nonresidential: Facilities used for business, commercial, agricultural, institutional, and industrial purposes. Nonresidential customers are further divided into the following subsectors, on the basis of annual electric demand or annual gas consumption:

Large nonresidential: Customers whose annual electric demand is greater than 500 kilowatts (kW), or whose annual or annualized gas consumption is greater than 250,000 therms, or both

Medium nonresidential: Customers whose annual electric demand is between 100 kW and 500 kW, or whose annual or annualized gas consumption is between 50,000 therms and 250,000 therms, or both

Small nonresidential: Customers whose annual electric demand is between 20 kW and 100 kW, or whose annual gas consumption is between 10,000 therms and 50,000 therms, or both

Very small nonresidential: Customers whose annual electric demand is less than 20 kW, or whose annual gas consumption is less than 10,000 therms, or both.

Nonresidential Hard-to-Reach: Those customers who do not have easy access to program information or generally do not participate in energy efficiency programs due to a language, business size, geographic, or lease (split incentive) barrier. These barriers are defined as:

- Language – Primary language spoken is other than English, and / or
- Business Size – Less than ten employees and / or classified as Very Small (as defined above), and / or
- Geographic – Businesses in areas other than the San Francisco Bay Area, San Diego area, Los Angeles Basin or Sacramento, and / or
- Lease – Investments in improvements to the building benefit the business only during the lease period; landlords benefit longer.

Chain Account: a customer with two or more accounts that have the same billing address and same customer name but with more than one service address.

> **Large chain**: a chain whose total aggregated demand over all customer accounts is greater than 500 kW, or whose annual gas consumption is greater than 250,000 therms.
>
> **Small chain:** a chain whose total aggregated demand over all customer accounts is less than or equal to 500 kW, or whose annual gas consumption is less than or equal to 250,000 therms.

Cost-effectiveness

In this section, we outline the basic definitions associated with cost-effectiveness. See Chapter 4 of this manual for a more detailed description of the Commission's requirements for cost-effectiveness of program proposals.

Cost-Effectiveness: An indicator of the relative performance or economic attractiveness of any energy efficiency investment or practice when compared to the costs of energy produced and delivered in the absence of such an investment. In the energy efficiency field, the present value of the estimated benefits produced by an energy efficiency program as compared to the estimated total program's costs, from the perspective of either society as a whole or of individual customers, to determine if the proposed investment or measure is desirable from a variety of perspectives, e.g., whether the estimated benefits exceed the estimated costs. *See* Total Resource Cost Test – Societal Version and Participant Cost Test (below).

Participant Test: A cost-effectiveness test intended to measure the cost-effectiveness of energy efficiency programs from the perspective of electric and / or gas customers (individuals or organizations) participating in them.

Total Resource Cost Test – Societal Version. A cost-effectiveness test intended to measure the overall cost-effectiveness of energy efficiency programs from a societal perspective, rather than merely from the perspective of a set of individual actors.

2. Policy Objectives

The goals and objectives of the Commission's energy efficiency programs are listed below, in order of importance. When evaluating program proposals for 2002-03 and future years, the Commission will determine how well each program proposal meets these goals and objectives. In doing so, the Commission will use the point values listed beside each objective to rank each proposal. The point values next to each objective represent the maximum possible score for each objective. A perfect score would be 100 points.

1. Long-Term Annual Energy (Gas and Electric) Savings ***Points: 25***

The most important goal of any Commission energy efficiency program is to create permanent and verifiable energy savings over the life-cycle of energy efficiency measures affected by the program. Programs are not required to create immediate short-term energy savings, so long as there is a clear, logical, and verifiable link between program activities and eventual energy savings. In other words, the Commission will strive for sustainability in the consumption behaviors and investment choices its programs are designed to stimulate. In general, long-term energy savings are those that continue over at least a three year period.

2. Addressing Market Failures or Barriers ***Points: 20***

Any program proposed for Commission approval should include a description of the type of barrier it is designed to address or overcome. The following examples of barriers are listed in order of importance; programs may also address other barriers not listed below:

- Lack of consumer information about energy efficiency benefits
- Higher start-up expense for high-efficiency measures relative to standard-efficiency measures
- Lack of financing for energy efficiency improvements
- Split incentives (between owners/landlords and tenants)
- Lack of a viable and competitive set of providers of energy efficiency services in the market
- Barriers to the entry of new energy efficiency service providers
- Lack of availability of high-efficiency products

3. Equity Considerations *Points: 17*

The Commission will generally prioritize programs that provide access to energy efficiency alternatives for underserved or hard-to-reach markets. Although those customers contribute equally to the funds collected to support program activities, in the past, they have had access to fewer program alternatives than other customers. Attachment 1 provides a more detailed definition of underserved and hard-to-reach markets, either from the point of view of customer class (*e.g.*, multifamily building residents, small businesses) or geography (*e.g.*, rural customers).

4. Cost Effectiveness *Points: 15*

All proposals for energy efficiency programs will be required to provide an estimate of life-cycle benefits and costs from various points of view, using the assumptions detailed in Attachment 1, Chapter 4. The Commission will use this information to compare and rank program proposals designed for similar uses, markets, or customer segments.

5. Electric Peak Demand Savings *Points: 10*

Programs paid for by electric public goods charge (PGC) funds should emphasize long-term and permanent peak demand savings. Such programs may include, for example, installation of permanent measures to reduce peak demand, such as variable-speed drives on motors, but should not include programs that create peak demand savings only through temporary behavioral change, such as air conditioner cycling or programs that encourage consumers to turn off lighting or air conditioning.

6. Innovation *Points: 8*

The Commission will prioritize programs that present new ideas, new delivery mechanisms, new providers of energy efficiency services, or new and emerging technologies.

7. Synergies and Coordination With Programs Run by Other Entities *Points: 5*

To minimize confusion and overlap for consumers, the Commission desires program proposals that take advantage of synergies or coordination with other existing programs, including those run by other state agencies, private entities, municipal utilities, or the federal government.

3. Program Design Requirements and Eligibility Guidelines

Energy efficiency activities encompassed by this document are those that require permanent replacement of energy-using equipment with more efficient models. Only those activities that fall within this definition or support the ultimate goal (such as related information or education activities), will be considered for PGC or gas surcharge funding.

The following types of activities are not eligible for energy efficiency program funding out of electric PGC funds or gas surcharge funds:

- Cogeneration programs or projects
- Load-shifting programs that rely **only** on temporary or impermanent behavioral change (programs that install *permanent* equipment to manage load, such as energy management systems, are eligible)
- Distributed or self-generation
- Technology research and development
- Fuel switching

The above programs are excluded from funding to ensure maximum funding availability for energy efficiency programs, since other funding sources exist for the listed activities.

All programs selected for PGC or gas surcharge funding will be considered on a program-by-program basis. Although a single entity may be conducting more than one program as part of a portfolio, each program will be chosen individually on a case-by-case basis. In the past some programs have been referred to as "program elements" or other similar names by utilities. In general, each program will have a unique combination of objectives, target market or market segment, marketing approach, energy efficiency measures included, strategy for addressing a market failure, and plan for evaluation and savings measurement and verification.

All programs considered for selection by the Commission will be required to include the following elements:

- A defined market segment the proposed program serves (list and choose from among the market segments listed in Chapter 1)
- Rationale that includes program objectives and a summary of the barrier(s) the program is designed to address
- A delivery strategy (list and choose from among the strategies listed in Chapter 1)

- A defined set of eligible program participants
- A defined set of energy efficiency measures or technologies included in the program (if applicable)
- A marketing and outreach plan
- A budget (see example budget table in Appendix B)
- Cost-effectiveness calculations (projected, as well as updates on a periodic and ongoing basis)
- A set of indicators or benchmarks to be used to determine to what extent the program has been successful
- An evaluation and/or measurement and verification plan

All program proposals should also assume a two-calendar-year implementation period, instead of the one-year cycle used in the past. Thus, for example, program proposals for 2003 will begin in January 2003 and continue through December 31, 2004. Only one year's worth of funding will be allocated at once, however.

Finally, programs should be designed to eliminate potential double-dipping by program participants into more than one ratepayer- or taxpayer-funded public purpose program. The risk of abuse can be minimized through careful participant tracking and coordination among programs. Customers accepting financial incentives through any program approved by the Commission should be required to acknowledge the source of funds by signing an affidavit or other paperwork declaring that they have received no funds for the same activity from another program or source.

4. Cost Effectiveness

Measuring the cost-effectiveness of energy efficiency programs serves several purposes:

- To assist in determining whether a program is warranted (prospectively or on a continuing basis);
- To assist in determining prospectively what program activities are appropriate;
- To assist in understanding motivations for program participation by customers and service providers to customers;
- To assist in determining funding allocations for various programs;
- To assist in modifying programs during operation to increase their effectiveness;
- To assist in assessing retroactively to what extent programs have been successful in achieving the Commission's policy objectives.

Methodology

Cost-effectiveness is an important measure of value and performance. In order to ensure a level playing field for multiple programs, the Commission will continue to use the standard cost-effectiveness methodologies articulated in the California Standard Practices Manual (SPM): Economic Analysis of Demand-Side Management Programs. See the second page of this manual for information on how to obtain a copy of the SPM.

Two cost-effectiveness tests identified in the SPM are particularly important to the Commission in evaluating energy efficiency programs on an ongoing basis. The first is the Total Resource Cost (TRC) test – Societal Version. This test, as defined in the SPM, is intended to measure the overall cost-effectiveness of energy efficiency programs from a societal perspective, taking into account benefits and costs from more than just an individual perspective. The Commission will primarily rely upon the results of this test in assessing program cost-effectiveness.

The TRC should be calculated by treating programs as multi-year (rather than single-year) activities so that programs explicitly designed as integrated, multi-year strategies, which may have modest benefits (and / or high start-up costs) in early program years, can be evaluated considering the expected larger benefits (and / or lower costs) in later program years.

The Commission will not rely on the TRC exclusively in making funding allocation decisions among programs, but instead will use cost-effectiveness as one criterion among many (as summarized in Chapter 2 above).

In addition to the TRC test, the Commission will rely on the Participant Test (also identified in the SPM) to evaluate programs that are aimed at inducing individual

customers to make energy efficiency decisions. The Participant Test measures the cost-effectiveness of a program from the perspective of energy consumers participating in the program. Proposals for programs designed to provide financial incentives directly to customers should include the results of the Participant Test as well as the TRC.

The Energy Division may develop a spreadsheet or other simplified tool, in addition to the SPM, for use by parties proposing programs.

Established Cost-Effectiveness Inputs

Certain inputs to the cost-effectiveness tests identified in the SPM have already been established by the Commission. Parties should use these inputs presenting their cost-effectiveness analysis to the Commission in their program proposals. These established inputs, along with their sources, are given below. All of the values given below represent the best-available data at the time of adoption of this manual. The Commission will update these assumptions periodically.

Effective Useful Lives of Energy Efficiency Measures

Standard values for effective useful lives (EULs) or measures are the standard assumptions used to determine the life-cycle savings associated with certain common energy efficiency measures. The EUL is generally an estimate of the median number of years that the measures installed under a given program are still in place and operable.[5] If a program proposal involves any of the measures listed below, the standard assumption should be used. If a proposed program involves a measure not listed below, the applicant should propose an appropriate assumption for the EUL, citing any relevant studies or other data sources. In order to minimize uncertainty, EULs will be limited to a maximum of 20 years, even if particular devices may be expected to survive longer.

[5] Source: *Procedures for the Verification of Costs, Benefits, and Shareholder Earnings from Demand Side Management (DSM) Programs (MA&E Protocols).* See also p. 26 of September 25, 2000 CALMAC report prepared pursuant to Ordering Paragraph 9 of D.00-07-017.

Table 4.1. Effective Useful Lives of Energy Efficiency Measures

Measure	Lifetime	Measure	Lifetime
Lighting		**HVAC**	
Ballast – Dimmable	16	Air Conditioners – High Efficiency	15
Ballast – Electronic	16	Boiler – High Efficiency	20
CF- Screw-in Replaceable Lamp (Modular)	8	Bypass / Delay Timer	15
Compact Fluorescent Hardware Fixture	16	Chiller – High Efficiency	20
Delamping / Fixture Modifications / Removal	16	Chiller – Variable Speed Drive	20
Exit Sign – CF Hardware Kid / LED / Electro-Luminescent	16	Cooling Towers / Evaporative Condenser	15
Fluorescent Fixture – T8	16	Furnace – High Efficiency	20
Halogen Lamp	0.6	Glazing – High Shade Coefficient	20
HID Fixture	16	Heat Pump – Packaged	15
Occupancy Sensor	8	HVAC / Space Heating / Efficiency (Gas)	15
Photocell	8	Insulation	20
T8 Fixtures – 17 Watt Lamp, 2ft or 32-watt Lamp, 4ft	16	Reflective Window Film / Windows	10
Time Clock – Lighting	8	Set-Back Thermostat	11
Fixture: T8 Lamp & Electronic Ballast	16	Timeclock	10
High Efficiency Lighting	16	Heat Pump – Split System	15
High Output T5 Fixture	16	AC Packaged Terminal Units	15
Induction Lamps	2	Adjustable Speed Drive	15
Induction Fixture	16	Ground Source Heat Pump	15
Indoor or Outdoor System Modification	16	Heat Pump with Integrated Water Heating	15
Lighting Controls	16	Packaged HVAC Systems	15
Daylighting Controls	16	Water Cooled Chillers	20
Lighting Power Density	16	Insulation Package	20
Refrigeration		Energy Management System	15
Auto Closer for Cooler / Freezer	8	Reduce Internal Load	15
Door Gaskets	4	Evaporative Coolers	15
Floating Head Pressure	16	HVAC / Refrigeration – SPC	20
Heatless Door	16	Nonresidential Gas – AC	20
Humidistat Control for Anti-Sweat Heater	12	**Hot Water**	
Insulation on Refrigeration Suction Line	11	Water Heater – Gas	15
Night Covers for Display Cases	5	Horizontal Clothes Washer	10

Table 4.1 (continued). Effective Useful Lives of Energy Efficiency Measures

Measure	Lifetime	Measure	Lifetime
PSC Evaporator Motor – Walk-in / Display	16	Efficient Dishwashing	5
Refrigeration Case Doors – Glass / Acrylic	12	Water Heater Controls	15
Refrigerator Case with Doors	16	Domestic Hot Water Boiler	20
Refrigerator Condensate Evaporator – Elec / Non Elec	8	**Miscellaneous**	
Strip Curtains for Walk-Ins	4	Cooking Equipment	12
Ballast: Electronic, for display case	16	High Efficiency Engine	15
Defrost	16	Kiln / Oven / Furnace	20
FHP & EFF Conditioner	16	Thermal Night Curtains	5
High-efficiency Liquid Suction Heat Exchangers	16	Custom Measures – SPC	15
Night Shields on Refrigerator and Freezer Cases	16	Local Government Initiatives	11
Refrigerator: Evaporative Fan Controller	5	Extrusion Equipment	15
Supermarket Systems	14	Audits	3
		Plug Load Sensor	10
		Information	1
		High Efficiency Motors	15
		Variable Frequency Drives	15
		Process Overhaul	20
		Pump Test	15
		System Controls	15

Net-to-Gross Ratios

Net-to-gross ratios (NTGRs) are used to estimate free-ridership occurring in energy efficiency programs. Free riders are program participants who would have undertaken an activity, regardless of whether there was an energy efficiency program promoting that activity or not. An NTGR is a factor that represents the net program load impact divided by the gross program load impact. This factor is applied to gross program savings to determine the program's net impact.[6] This factor is important in determining actual energy savings attributable to a particular program, as distinct from energy efficiency occurring naturally (in the absence of a program).

Applicants should refer to the SPM to determine the appropriate manner in which to use NTGRs in submitting program cost-effectiveness information.

Program proposals should use the applicable NTGRs listed below. If a program is not listed below, or if a proposed program design deviates substantially from past design of

[6] Source: p. 26 of September 25, 2000 CALMAC report, referencing D.00-07-017 ordering paragraph 9.

related programs, program proposals may utilize a default NTGR of 0.8 until such time as a new, more appropriate, value is determined in the course of program evaluation. All existing programs not listed below shall also use a default value of 0.8.

Table 4.2. Net-to-Gross Ratios

Program Area/Program	Net-to-Gross Ratio
Residential	
Appliance early retirement and replacement	1.30
California Home Energy Efficiency Rating System (CHEERS)	0.72
Residential Audits	0.72
Refrigerator Recycling	0.54
Residential Contractor Program	0.89
Emerging Technologies	0.83
All other residential programs	0.80
Nonresidential	
Advanced water heating systems	1.00
Agricultural and Dairy Incentives	0.75
Coin Laundry and Dry Cleaner Education	0.70
Commercial and agricultural information, tools, or design assistance services	0.83
Comprehensive Space Conditioning	1.00
Lodging Education	0.70
Express Efficiency (rebates)	0.96
Energy Management Services, including audits (for small and medium customers)	0.83
Food Services Equipment Retrofit	1.00
Industrial Information and Services	0.74
Large Standard Performance Contract	0.53
All other nonresidential programs	0.80
New Construction	
Industrial and Agricultural Process	0.94
Industrial new construction incentives	0.62
Savings by Design	0.62
All other new construction programs	0.80

Discount Rate

In evaluating all energy efficiency program proposals, the Commission shall use a pre-established discount rate of 8.15%. This standard assumption, used as the default in recent years, may be updated in the future. The discount rate is used simply to translate potential benefits in future years into current year terms.

Avoided Costs

In order to estimate the value of the energy efficiency occurring as a result of program activities, parties will need to be able to estimate the "avoided cost" of the provision of that supply of energy. Avoided costs represent the value of the electricity or natural gas that, in the absence of a program, would need to be procured and delivered to an individual consumer. When an energy efficiency programs creates a reduction in demand for electricity or natural gas, costs are avoided from the perspective of the consumer, the utility, and society. The Commission will continue to use six sets of avoided cost streams, which should be used on a statewide basis to apply to all program proposals:

Electric

- Avoided generation costs
- Avoided transmission and distribution costs
- Environmental externalities

Gas

- Commodity procurement costs
- Transmission and distribution costs
- Environmental externalities

Not all of the above avoided cost streams are necessary for all cost-effectiveness tests described in the Standard Practices Manual. Refer to that manual for more details on how to use the avoided cost streams.

Table 4.3 gives the Commission's avoided cost assumptions. Sources of each stream of values are given below the table.

Table 4.3. Electric and Gas Avoided Costs

	Electric ($ per MWh)				Gas ($ per therm)			
Year	Generation	Trans. & Dist.	Env. Ext.	Total Electric	Commodity	Trans. & Dist.	Env. Ext.	Total Gas
2002	$99.05	$5.25	$6.55	$110.85	$0.49	$0.03	$0.06	$0.58
2003	$56.71	$5.50	$6.80	$69.01	$0.37	$0.03	$0.06	$0.47
2004	$53.41	$5.74	$7.04	$66.19	$0.34	$0.03	$0.06	$0.43
2005	$54.51	$6.00	$7.20	$67.71	$0.35	$0.03	$0.06	$0.45
2006	$49.61	$6.20	$7.40	$63.21	$0.37	$0.03	$0.07	$0.47
2007	$51.55	$6.50	$7.60	$65.65	$0.39	$0.03	$0.07	$0.49
2008	$53.25	$6.75	$7.85	$67.85	$0.40	$0.04	$0.07	$0.51
2009	$55.10	$7.04	$8.14	$70.28	$0.42	$0.04	$0.07	$0.53
2010	$57.08	$7.34	$8.34	$72.76	$0.44	$0.04	$0.07	$0.55
2011	$58.96	$7.60	$8.60	$75.16	$0.38	$0.04	$0.08	$0.49
2012	$61.38	$7.94	$8.84	$78.16	$0.40	$0.04	$0.08	$0.51
2013	$63.99	$8.30	$9.10	$81.39	$0.42	$0.04	$0.08	$0.53
2014	$66.76	$8.60	$9.40	$84.76	$0.43	$0.04	$0.08	$0.56
2015	$69.76	$9.00	$9.70	$88.46	$0.45	$0.04	$0.09	$0.58

2016	$73.00	$9.34	$9.94	$92.28	$0.48	$0.04	$0.09	$0.61
2017	$76.49	$9.74	$10.24	$96.47	$0.50	$0.04	$0.09	$0.63
2018	$80.23	$10.14	$10.54	$100.91	$0.52	$0.05	$0.09	$0.66
2019	$84.28	$10.55	$10.81	$105.64	$0.54	$0.05	$0.10	$0.68
2020	$88.44	$10.59	$11.08	$110.11	$0.57	$0.05	$0.10	$0.71
2021	$92.87	$11.12	$11.36	$115.34	$0.59	$0.05	$0.10	$0.74

Data Sources

Electric

1. **Avoided Costs of Generation.** These values are based on an August 2000 California Energy Commission forecast of market clearing prices using the MULTISYM model. Values for certain years were updated based on direction given in an October 25, 2000 ALJ Ruling on PY2001 planning in A.99-09-049, subsequently adopted by the Commission in D.01-01-060. Modifications to the CEC forecast were as follows:

Table 4.4. Assumptions for Electric Generation Costs

Program Years	Basis
2002	Historical market clearing price data from the Power Exchange (October 1999 to September 2000)
2003-2010	CEC market clearing price forecast, plus 20%
2011-2020	CEC market clearing price forecast
2021	CEC market clearing price escalated by growth rate over previous five years

In addition, the values reflected in Table 4.3 incorporate an "on-peak" multiplier, as ordered in the ALJ ruling of October 25, 2000 to account for the system value of reduced load on reducing market clearing prices, pursuant to AB970, Section 7, Table B, Paragraph 8, and the September 14, 2000 and October 25, 2000 ALJ rulings in A.99-09-049. The on-peak multipliers are described in Table 4.5.

Table 4.5. On-Peak Multipliers

Program Years	Multiplier
2002	5.0X
2003-2005	2.0X
2006-2021	1.5X

2. **Electric Transmission and Distribution Avoided Costs.** The T&D avoided cost value-stream is calculated based upon a statewide average of weighted forecasts of avoided T&D costs across utility service territories. This forecast was based upon 1996 sales for each utility, and converted from $/kW to $/MWh by assuming a 0.6 load factor. These values were adopted by the Commission in Resolution E-3592.

3. **Electric Environmental Externalities.** These values were adopted by the Commission in Resolution E-3592.

4. **Gas Avoided Commodity Costs.** Gas procurement costs are based on the CEC's August 2000 base case price forecast for electric generation.

5. **Gas Transmission and Distribution Avoided Costs.** These values represent a weighted average of gas T&D costs in PG&E, SDG&E, and SoCalGas territories, as represented by each utility in their PY2000 annual reports.

6. **Gas Environmental Externalities.** These values were recommended by the CBEE and adopted by the Commission in Resolution E-3592.

Flexible Cost-Effectiveness Inputs

The Commission currently does not have standardized and adopted values for two crucial sets of inputs to the standard cost-effectiveness tests. These are:

- Incremental Measure Costs
- Per-Unit Energy Savings Estimates

The most current standard source available for estimates of each is the CEC's Database for Energy Efficient Resources (DEER), research for which is funded by the Commission. This database is updated periodically and available over the Internet at http://www.energy.ca.gov/forecasting/DEER.html, but may not offer appropriate values for all circumstances. If sufficient or appropriate information for cost-effectiveness test inputs is not available through this database, parties proposing programs are free to include alternate values. If the source of incremental measure cost or per-unit energy savings assumptions is not the DEER, the party proposing an alternate value should include reference to other sources and/or calculations supporting the inclusion of the new or alternate value. Reasonable documentation of all assumptions is required by the Commission in order to evaluate all program proposals.

5. Budgets and Compensation

Budgets

The table below shows the amount of ratepayer funds collected annually in each IOU service territory to fund energy efficiency program activities. By statute, funds must be spent in the service territory from which the funds were collected. Thus, for example, funds collected from PG&E customers may not be spent in SDG&E territory.

Proposals to implement programs on a statewide basis (or in more than one large IOU service territory), should estimate the amount of funding required from each utility using a proportional budget allocation.

Table 5.1. Annual Collections by Service Territory

Utility Service Territory	Electric Budget	Gas Budget	Total Annual Budget	Percentage of Total
PG&E	$106,000,000	$12,888,000	$118,888,000	43%
SCE	$90,000,000	$0	$90,000,000	33%
SDG&E	$32,000,000	$5,500,000	$37,500,000	14%
SoCalGas	$0	$26,995,000	$26,995,000	10%
Statewide Total	**$228,000,000**	**45,383,000**	**$273,383,000**	100%
Percentage of Total	83%	17%	100%	

Any program proposal submitted for Commission consideration should include an itemized budget including the following elements (See Appendix B for the required format), as applicable:

Administrative Costs

- Labor
- Benefits
- Overhead
- Travel Costs
- Reporting Costs
- Materials and Handling
- General and Administrative costs
- Subcontractor costs

Marketing, Advertising, and Outreach Costs

- Itemized (e.g., 6 brochures, 1000 copies @ $10 each)

Direct Implementation Costs

- Itemized financial incentives (e.g., 100 water heaters @ $75 each)
- Itemized installation costs (e.g., 100 14 SEER Central AC units @$2000 each, installed)
- Itemized activity costs (e.g., 100 walk-through audits @ $500 each)

Evaluation, Measurement and Verification Costs

- Itemized, including subcontractor costs

Other Costs

- Financing costs
- Other

The Commission retains the right to audit any and all expenditures for which the funding source is either the electric PGC or the gas surcharge. The Commission and/or its agents may audit IOU expenditures, as well as any contracts or subcontracts utilizing this funding.

Compensation

As a matter of policy, the Commission believes that a percentage of the budget for all programs endeavoring to produce energy savings should be devoted to payment based on actual energy savings achieved. The only exceptions to this are programs that provide information only and cannot reasonably be expected to estimate energy savings associated with program activities.

In the past, the Commission has offered shareholder incentives to large IOUs for successful program delivery, in lieu of a profit margin. The Commission will no longer make a special provision for shareholder earnings. Both utility and non-utility entities are free to propose program budgets they feel are necessary for their organizations to complete the program delivery successfully.

To spur superior program delivery, all programs, except information-only programs, will have 7% of their payments held back until final program evaluation, measurement and verification have been completed. Thus, 7% of all program payments (except information-only) will be contingent upon performance goals developed as part of the approved program design.

At the time of program approval by the Commission, for all programs except those providing information only, an energy and peak demand savings target should be set. At least a portion of the final payment for each program (total potential of 7% of program budget) must be scaled on the basis of the energy and peak demand savings achieved.

Proposals may also include other benchmarks against which a program can be measured and for which an implementer may earn their final payment. These other benchmarks may include, but are not limited to, estimations of market share, customer awareness or attitudes, or free-ridership.

An example is given below for a program where 100% of the final payment is based on energy and peak demand savings achieved by the program. Proposals may also choose to allocate only a portion of the performance incentive to energy and peak demand savings, leaving another portion to be awarded on the basis of market share or other benchmarks proposed in the program design.

Example 5.1:

Final payment calculation for program where 100% of payment is based on energy and peak demand savings

	Projected Savings	Verified Savings	% of goal
Energy	10,000,000 kWh	8,000,000 kWh	80%
Demand	2,000 kW	1,800 kW	90%
Average % of goal			85%

Program Total Budget:	$3,000,000
Potential Final Payment Amount (7%):	$210,000
Actual Payment Made (85% of potential):	$178,500

Any benchmarks proposed for receiving the final payment should have the following characteristics:

- Baseline information should be ready available or obtainable
- Achievement must be measurable or demonstrable
- Benchmark should be derived from the program logic or theory
- Benchmark should be related to the market phase described in the table below[7]

[7] Source: September 6, 2000 Energy Efficiency Program Workshop, page 15. Proposal originated by Mike Messenger, CEC.

Table 5.2. Market Phase and Associated Benchmarks

Market Phase	Benchmark Type
Innovators – Less than 5% market share	Program roll out, awareness, program activity, training
Early Adopters – 5% to 12% of market	Knowledge, certification of quality or performance, market share targets
Early Majority – 13% to 49% market share	Train the trainer activities, net resource benefits, leveraged advertising
Late Majority – 50% to 85% market share	Standard performance contracting activity levels, certification or branding, profitability of third party service providers
Laggards – Greater than 85% market share	No benchmarks needed

With the exception of the IOUs, most program implementers will be operating under a signed contract. The Commission intends that authorized energy efficiency programs, however, will operate in a manner more similar to grants than to service contracts. Thus, payments will be made on a similar basis for all program implementers, according to the general procedures described below.

Table 5.3. Payment Schedules

#	Event	% Payment
Information-only programs		
1	Acceptance of final program implementation plan	35%
2	Acceptance of progress reports (payments evenly divided among number of reports submitted during course of program—typically six)	55%
3	Acceptance of final program report	10%
Non-information programs		
1	Acceptance of final program implementation plan	35%
2	Acceptance of evaluation, measurement, and verification plan	20%
3	Acceptance of progress reports (payments evenly divided among number of reports submitted during course of program – typically six)	30%
4	Acceptance of final program report	8%
5	Final payment based on evaluation results	7%

In circumstances where IOUs are administering grants to non-utility grantees, IOUs will also be permitted to retain an administrative fee of 1% of each grant amount.

The Commission retains the discretion to authorize the final payment for each program implementer. Chapters 6 and 7 describe in more detail the process and schedule for evaluating program performance.

6. Evaluation, Measurement & Verification Requirements

Overall Requirements

All programs approved by the Commission for implementation must include evaluation and/or measurement and verification components. Information-only programs require an evaluation plan, but will not require the measurement and verification (M&V) components. Although program implementers may refine their evaluation, measurement and verification (EM&V) plans during the early part of program implementation, all proposals must contain an initial plan for accomplishing the following EM&V objectives of the Commission:

- Measuring level of energy and peak demand savings achieved (except-information-only)
- Measuring cost-effectiveness (except information-only)
- Providing up-front market assessments and baseline analysis, especially for new programs
- Providing ongoing feedback, and corrective and constructive guidance regarding the implementation of programs
- Measuring indicators of the effectiveness of specific programs, including testing of the assumptions that underlie the program theory and approach
- Assessing the overall levels of performance and success of programs
- Informing decisions regarding compensation and final payments (except information-only)
- Helping to assess whether there is a continuing need for the program.

Though not required, it is likely that most program implementers will require assistance from independent evaluators or M&V consultants to accomplish all of the objectives outlined above. Not all of the objectives may be applicable to all programs. Implementers are free to propose an EM&V approach that is logical for their program.

The Commission Energy Division will also work with an overall team of evaluators and M&V consultants to assist program implementers with planning and executing the finer points of their EM&V plans once programs are approved. For the M&V portion of the plan, implementers should adhere to the guidelines in the International Performance Measurement and Verification Protocol (IPMVP), available on the Internet at http://www.ipmvp.org/.

All EM&V plans, in addition to discussing and meeting the objectives above, should also include the components discussed below in detail. These components are not required to be delineated completely at the initial program proposal stage, but will be required to be included in the EM&V plan approved at the end of the first three months of program operation.

Table 6.1. Components of an EM&V plan

Baseline Information
• Determine whether or not baseline data exist upon which to base energy savings measurement. Existing baseline studies can be found on the California Measurement Advisory Committee website (http://www.calmac.org/) and/or the California Energy Commission website (http://www.energy.ca.gov/). Detailed sources of baseline data should be cited.
• If baseline data do not exist, the implementer will need to conduct a baseline study (gather baseline energy and operating data) on the operation(s) to be affected by the energy efficiency measures proposed.
• If the baseline data do not exist and the implementer can show that a baseline study is too difficult, expensive or otherwise impossible to carry out prior to program implementation, the contractor should then provide evidence that baseline data can be produced or acquired during the program implementation. This process should then be detailed in the EM&V plan.
Energy Efficiency Measure Information
• Full description of energy efficiency measures included in the program, including assumptions about important variables and unknowns, especially those affecting energy savings.
• Full description of the intended results of the measures.
Measurement and Verification Approach
• Reference to appropriate IPMVP option.
• Description of any deviation from IPMVP approach.
• Schedule for acquiring project-specific data.
Evaluation Approach
• A list of questions to be answered through the program evaluation.
• A list of evaluation tasks/activities to be undertaken during the course of program implementation.
• A description of how evaluation will be used to meet all of the Commission objectives described above.

Reporting Requirements

Quarterly Reports

All implementers of PGC- and gas-surcharge-funded energy efficiency programs will be required to submit reports on a quarterly basis to the Commission in order to monitor progress. These quarterly reports should also be made available to all interested parties in relevant Commission proceedings and/or posted electronically on

a website for ready access by other members of the public. The reports shall contain information on program budgets and expenditures; projects, measures, and/or activities that were funded; the amount of energy savings and peak demand reductions associated with the program expenditures; and other information necessary to monitor compliance with Commission guidelines.

In particular, the Commission will be interested in monitoring progress toward achieving energy and peak demand savings goals established at the beginning of the program implementation process. Quarterly reports should show a comparison of progress with ultimate program goals.

All implementers will be required to submit these quarterly reports on May 1, August 1, November 1, and February 1 throughout the duration of program operation. The specific formats and contents for these reports are currently given in the joint Energy Division/Office of Ratepayer Advocates Reporting Requirements Manual 2 (RRM2), updated periodically. A copy of this manual is available by contacting the Energy Division using the contact information on the second page of this manual. We expect that the RRM2 will be updated again prior to the submission of the first quarterly report for 2002.

Final Report

In addition to the quarterly reports described above, an annual report will be required to be filed for each approved program. This annual report should be presented in a similar format to the quarterly reports (see RRM2 formats, when updated) but should include cumulative budget, expenditure, savings, and other program activity information for the duration of the program. Actual comparisons against original program savings goals should also be provided. Any independent or separate evaluation, measurement or verification reports should be included in this annual report either as an attachment or incorporated into the actual report text. This final report will form the basis for evaluating the final payments based on program performance described in Chapter 5.

7. Process and Procedural Issues

The Commission adopts the processes and procedures described below to obtain input from interested parties, customers, and market actors on the Commission's efforts to oversee, develop, and implement electric PGC- and gas-surcharge-funded energy efficiency programs. The Commission, the assigned Commissioner, the assigned Administrative Law Judge, or the Energy Division may utilize both formal and informal procedural vehicles to (1) revise this policy manual and / or any of its referenced documents as needed, (2) review on-going programs and adopt mid-course changes if warranted, (3) plan and develop future programs, and (4) resolve disputes among or complaints from various market participants.

Revisions to Policy Manual and Referenced Documents

The Commission may consider updates and revisions to this manual, in whole or in part, at any time, upon request by interested parties or on its own initiative, when deemed warranted. This manual may also be updated by the Assigned Commissioner, the Assigned Administrative Law Judge, or the Energy Division.

Review and Assessment of Current Programs

The Commission delegates to the Energy Division the responsibility for conducting regular forums or workshops, as needed, for interested parties, customers, and market actors to provide input and feedback on energy efficiency programs during the year.

Dispute Resolution and Consumer Protection

The Commission will require that any program proposal for energy efficiency funds describe a dispute resolution process to be used in dealing with complaints from end-use gas or electric consumers participating or attempting to participate in the program. In programs where the IOUs hold contracts with third parties, those contracts will also be required to include dispute resolution provisions.

The Commission's informal and formal complaint process through the Consumer Services Division is another venue which customers and market actors may utilize to file complaints against IOUs, though this complaint process does not extend to other program implementers.

Finally, program implementers may use the name of the CPUC on marketing materials for their programs with the prior written approval from the CPUC Energy Division. In order to obtain this written approval, implementers should send a copy of the planned materials to the Energy Division requesting approval to use the CPUC name and/or logo.

Procedural Schedule

The Commission will allocate and award program funding annually beginning for year 2002 and continuing through at least 2011 (when the legislative authorization for the electric PGC sunsets). Unlike previous practice, however, each program will be authorized to run for two years instead of only one. Therefore, to avoid confusion about calendar years vs. funding years, the programs years will be referred to as Year 1, Year 2, etc. of continued PGC funding authorized by AB995 of September 2000. The table below clarifies this naming convention.

Table 7.1. Program Year Nomenclature

Year Name	Calendar year in which funding is collected by utility	Calendar years during which programs will operate
Year 1	2002	2002 and 2003
Year 2	2003	2003 and 2004
Year 3	2004	2004 and 2005
Year 4	2005	2005 and 2006
Year 5	2006	2006 and 2007
Year 6	2007	2007 and 2008
Year 7	2008	2008 and 2009
Year 8	2009	2009 and 2010
Year 9	2010	2010 and 2011
Year 10	2011	2011 and 2012

The following table summarizes the schedule associated with one complete program cycle.

Table 7.2. Scheduling Cycle

#	Item	Timing	Year 2 Example Date
1	Program Proposals for Calendar Year X Funding	October 1, Year X-1	October 1, 2002
2	Commission Decision Approving Programs for Calendar Year X Funding	December 1, Year X-1	December 1, 2002
3	Contracts Signed and Programs Begin	January 1, Year X	January 1, 2003
4	Program Implementation Plan Finalized	January 31, Year X	January 31, 2003

5	Evaluation, Measurement and Verification Plans Finalized	April 15, Year X	April 15, 2003
6	Quarterly Report Due Covering First Quarter of Year X	May 1, Year X	May 1, 2003
7	Quarterly Report Due Covering First Half of Year X	August 1, Year X	August 1, 2003
8	Quarterly Report Due	November 1, Year X	November 1, 2003
9	Quarterly Report Due Covering First Full Year	February 1, Year X+1	February 1, 2004
10	Quarterly Report Due	May 1, Year X+1	May 1, 2004
11	Quarterly Report Due	August 1, Year X+1	August 1, 2004
12	Quarterly Report Due	November 1, Year X+1	November 1, 2004
13	Final Report Due (includes evaluation, measurement and verification report)	February 1, Year X+2	February 1, 2005
14	Evaluation Proceeding Begins	February 1, Year X+2	February 1, 2005
15	Decision on Final Payments	June, Year X+2	June, 2005
16	Final Payments Made	June, Year X+2	June, 2005

Appendix A: Program Technical Proposal Format

Each program proposal to the Commission should include the following sections. Many of these items were discussed in much greater detail in the main body of this manual; please refer to the appropriate sections of the manual for a more detailed description of the information required to be submitted.

1. Program Overview
   - Brief description, including target market segment(s)
   - Rationale, including discussion of market barriers
   - Objectives
2. Program process
   - Description of program enrollment process for customers
   - Marketing and outreach plans
   - Procedures for equipment purchase or installation
   - Process for payment of incentives to customers (if applicable)
3. Customer Eligibility
   - Detailed description of types of customers targeted by program
   - Customer sizes targeted
   - Description of geographic area (if specialized) and / or utility service territory targeted
   - Other customer characteristics
4. Cost-Effectiveness Calculations
   - Document all data sources
   - Please also submit electronic spreadsheet file, containing projected electricity (kWh), peak demand (kW) and gas (therms) savings for each program
5. Program Performance Goals
   - Energy and peak demand savings targets
   - Other proposed benchmarks for earning performance payments
6. Evaluation, Measurement and Verification Plans
   - Description of general approach to evaluating program success
   - Description of approach to measuring and verififying energy and peak demand savings (applicable to all programs except information-only)
7. Description of Implementer's Qualifications
   - Qualifications of primary implementer
   - Qualifications of proposed subcontractors
   - Personnel resumes or description of relevant experience

Appendix B: Program Cost Proposal Format

Table B.1. Budget Summary

Item	First Year Cost	Second Year Cost	Total Cost
Administrative Costs			
Labor			
Benefits			
Overhead			
Travel costs			
Reporting costs			
Materials & Handling			
General and Administrative costs			
Subcontractor costs (include same line items)			
Marketing/Advertising/Outreach Costs			
Itemized (may be estimated) • E.g., 6 brochures, 1000 copies, @ $10 each			
Direct Implementation Costs			
Itemized financial incentives • E.g., 100 water heaters @ $75 each			
Itemized installation costs • E.g., 100 14 SEER Central AC units @ $2000 each (installed)			
Itemized activity costs • E.g., 100 walk-through audits @ $500 each			
Evaluation, Measurement and Verification Costs			
Itemized, including subcontractor costs			
Other Costs			
Itemized, may include: • Profit or shareholder incentive • Financing costs			
TOTAL BUDGET			

Appendix C: Glossary

(definitions in alphabetical order)

Administrator: A person, company, partnership, corporation, association, or other entity selected by the Commission and any Subcontractor that is retained by an aforesaid entity to contract for and administer energy efficiency programs funded in whole or in part from electric public goods charge (PGC) funds or gas surcharge funds.

Administrative Services: The services to be provided by the administrator, separate from the limited implementation or other services an administrator may perform with prior approval of the Commission.

Affiliate: Any person, corporation, utility, partnership, or other entity 5% or more of whose outstanding securities are owned, controlled, or held with power to vote, directly or indirectly either by an administrator or any of its subsidiaries, or by that administrator's controlling corporation and / or any of its subsidiaries as well as any company in which the administrator, its controlling corporation, or any of the administrator's affiliates exert substantial control over the operation of the company and / or indirectly have substantial financial interests in the company exercised through means other than ownership. For purposes of these Rules, "substantial control" includes, but is not limited to, the possession, directly and indirectly and whether acting alone or in conjunction with others, of the authority to direct or cause the direction of the management of policies of a company. A direct or indirect voting interest of five percent (5%) or more by the administrator, its subsidiaries, or its Affiliates in an entity's company creates a rebuttable presumption of control.

Analysis Agent: An entity or entities selected to perform analytic functions such as strategic planning, market assessment, and evaluation.

California Board for Energy Efficiency (CBEE): An advisory board created by the California Public Utilities Commission in 1998 for overseeing energy efficiency programs. The board was subsequently disbanded in February 2000, but authored the previous version of the Commission's energy efficiency policy rules.

California Demand-Side Management Measurement Advisory Committee (CALMAC): An informal committee made up of utility representative, the Office of Ratepayer Advocates and the California Energy Commission. The purpose of the committee is to: provide a forum for presentations, discussions, and review of Demand Side Management (DSM) program measurement studies underway or completed; to coordinate the development and implementation of measurement studies common to all or most of the utilities; and to facilitate the development of effective, state-of-the-art protocols for measuring and evaluating the impacts of DSM programs.

California Energy Commission (CEC): The state agency charged with statewide power plant siting, supply and demand forecasting, as well as multiple types of energy analysis.

California Public Utilities Commission (Commission): The state agency charged with regulating California Investor-Owned Utilities (IOUs), and with overseeing ratepayer-funded public purpose energy efficiency programs.

Chain Account: A nonresidential customer with two or more accounts that have the same billing address and same customer name but with more than one service address.

> **Large chain**: a chain whose total aggregated demand over all customer accounts is greater than 500 kW, or whose annual gas consumption is greater than 250,000 therms.
>
> **Small chain:** a chain whose total aggregated demand over all customer accounts is less than or equal to 500 kW, or whose annual gas consumption is less than or equal to 250,000 therms.

Cogeneration: A process in which a facility uses its waste energy to produce heat or electricity.

Comprehensive: A program or project designed to achieve all cost-effective energy efficiency activities in individual buildings, usually including multiple energy efficiency measures.

Cost-Effectiveness: An indicator of the relative performance or economic attractiveness of any energy efficiency investment or practice when compared to the costs of energy produced and delivered in the absence of such an investment. In the energy efficiency field, the present value of the estimated benefits produced by an energy efficiency program as compared to the estimated total program's costs, from the perspective of either society as a whole or of individual customers, to determine if the proposed investment or measure is desirable from a variety of perspectives, e.g., whether the estimated benefits exceed the estimated costs. *See* Total Resource Cost Test – Societal Version and Participant Cost Test (below).

Cream Skimming: Cream skimming results in the pursuit of only the lowest cost or most cost-effective energy efficiency measures, leaving behind other cost-effective opportunities. Cream skimming is inappropriate when lost opportunities are created in the process.

Cross-Cutting Program: A program that involves any or all of the following: multiple customer types (residential and / or nonresidential), multiple building types (retrofit,

remodeling, and/or new construction), and/or multiple energy efficiency technologies or measures.

Customer: Any person or entity that pays an electric and/or gas bill to an IOU and that is the ultimate consumer of goods and services including energy efficiency products, services, or practices.

Customer Information: Non-public information and data specific to a Utility Customer which the utility acquired or developed in the course of its provision of Utility Services.

Demand Responsiveness: See also, Load Management. Also sometimes referred to as load shifting. Activities or equipment that induce consumers to use energy at different (lower cost) times of day or to interrupt energy use for certain equipment temporarily, usually in direct response to a price signal. Examples: interruptible rates, doing laundry after 7 p.m., air conditioner cycling programs.

Demand Side or Demand Side Management (DSM): Programs that reduce the use of energy by the use of energy efficiency products, services, and practices, or that change the timing of energy use.

Distributed Generation: Small-scale electric generating technologies installed at or near an end-user's location. May also be referred to as "distributed energy resources" or "distributed resources."

Double-dipping: Taking advantage of multiple financial incentives offered by multiple programs for undertaking only one activity.

Energy Efficiency: The use of high-efficiency products, services, and practices or an energy-using appliance or piece of equipment, to reduce energy usage while maintaining a comparable level of service when installed or applied on the Customer side of the meter. Energy efficiency activities typically require permanent replacement of energy-using equipment with more efficient models. Examples: refrigerator replacement, light fixture replacement, cooling equipment upgrades.

Energy Efficiency Measure: Any product, service, or practice or an energy-using appliance or piece of equipment that will result in reduced energy usage at a comparable level of service when installed on the Customer side of the meter.

Energy Management Services: Programs intended to provide customer assistance in the form of information on the relative costs and benefits to the customer of installing measures or adopting practices which can reduce the customer's utility bills. The information is solicited by the customer and recommendations are based on the customer's recent billing history and/or customer-specific information regarding appliance and building characteristics.

Evaluation: The performance of studies and activities aimed at determining the effects of a program, including program-induced changes in energy efficiency markets, energy savings, and program cost-effectiveness.

Gas Surcharge: Created by AB1002 in 2000, an unbundled rate component included on gas customer bills to fund public purpose programs including energy efficiency, low-income and research and development. This policy manual applies only to the energy efficiency portions of the gas surcharge.

HVAC: Heating, Ventilation, and Air Conditioning Systems. Used in discussing replacement of inefficient equipment with high-efficiency equipment.

Implementer: An entity or person selected and contracted with or qualified by a program administrator or by the Commission to receive PGC funds for providing products and services to Customers.

Incentives: Financial support (e.g., rebates, low-interest loans) to install energy efficiency measures. The incentives are solicited by the customer and based on the customer's billing history and / or customer-specific information. See also Rebates, SPC programs, and Upstream programs.

Information Programs: Programs intended to provide customers with information regarding generic (not customer-specific) conservation and energy efficiency opportunities. For these programs, the information may be unsolicited by the customer. Programs that provide incentives in the form of unsolicited coupons for discount on low cost measures are also included.

Large Investor-Owned Utilities (IOUs): Pacific Gas and Electric (PG&E), San Diego Gas and Electric (SDG&E), Southern California Edison (SCE), and Southern California Gas (SoCalGas).

Load Management: Sometimes referred to as load shifting. Activities or equipment that induce consumers to use energy at different (lower cost) times of day or to interrupt energy use for certain equipment temporarily. Examples: interruptible rates, doing laundry after 7 p.m., air conditioner cycling programs.

Local Program: A program that provides services to customers in only one jurisdiction of the state (e.g., one county, city, or region). Local programs may be experimental and are designed to serve the needs of a particular geographic area.

Lost Opportunities: Energy efficiency measures that offer long-lived, cost-effective savings that are fleeting in nature. A lost opportunity occurs when a customer does not

install an energy efficiency measure that is cost-effective at the time, but whose installation is unlikely to be cost-effective (or is less cost-effective) later.

Market Actors: Individuals and organizations in the production, distribution, and / or delivery chain of energy efficiency products, services and practices. This may include, but is not limited to, manufacturers, distributors, wholesalers, retailers, vendors, dealers, contractors, developers, builders, financial institutions, and real estate brokers and agents.

Market Assessment: An analysis function which provides an assessment of how and how well a specific market or market segment is functioning with respect to the definition of well-functioning markets or with respect to other specific policy objectives. Generally includes a characterization or description of the specific market or market segments, including a description of the types and number of buyers and sellers in the market, the type and number of transactions that occur on an annual basis, and the extent to which energy efficiency is considered an important part of these transactions by market participants. This analysis may also include an assessment of whether or not a market has been sufficiently transformed to justify a reduction or elimination of specific program interventions. Market assessment can be blended with strategic planning analysis to produce recommended program designs or budgets. One particular kind of market assessment effort is a *baseline study*, or the characterization of a market before the commencement of a specific intervention in the market, for the purpose of guiding the intervention and / or assessing its effectiveness later.

Market Barrier: Any characteristic of the market for an energy-related product, service, or practice that helps to explain the gap between the actual level of investment in, or practice of, energy efficiency and an increased level that would appear to be cost-beneficial to the consumer.

Market Effect: A change in the structure or functioning of a market or the behavior of participants in a market that is reflective of an increase in the adoption of Energy-Efficient products, services, or practices and is causally related to Market Interventions.

Market Event: The broader circumstances under which a Customer considers adopting an energy efficiency product, service, or practice. Types of market events include, but are not necessarily limited to, the following: (i) *new construction*, or the construction of a new building or facility; (ii) *renovation*, or the updating of an existing building or facility; (iii) *remodeling*, or a change in an existing building; (iv) *replacement*, or the replacement of equipment, either as a result of an emergency such as equipment failure, or as part of a broader planned event; and, (v) *retrofit*, or the early replacement of equipment or refitting of a building or facility while equipment is still functioning, often as a result of an intervention into energy efficiency markets.

Market Participants: The individuals and organizations participating in transactions with one another within an energy efficiency market or markets, including Customers and Market Actors.

Market Segments: Each program proposal considered by the Commission is required to identify the market segment(s) that it is designed to address. These market segments are listed below. These market segments are simply to help the Commission assess how well its portfolio of programs is addressing the variety of markets for energy efficiency products and services in the state. Additional definitions to help clarify the 14 market segments are included below the list of segments.

Residential
1. Residential Appliances
2. Residential Heating and Cooling
3. Residential Lighting
4. Residential Retrofit & Renovation

Nonresidential
5. Large Nonresidential Comprehensive Retrofit
6. Nonresidential HVAC Equipment Turnover
7. Nonresidential Motor Turnover
8. Nonresidential Process Overhaul
9. Nonresidential Renovation and Remodeling
10. Small Nonresidential Comprehensive Retrofit

New Construction
11. Local Government Initiatives / Codes & Standards Support
12. Commercial New Construction
13. Industrial and Agricultural New Construction
14. Residential New Construction

New Construction: Residential and non-residential buildings that have been newly built or have added major additions subject to Title 24, the California building standards code.

Nonresidential: Facilities used for business, commercial, agricultural, institutional, and industrial purposes. Nonresidential customers are further divided into the following subsectors, on the basis of annual electric demand or annual gas consumption:

> **Large nonresidential:** Customers whose annual electric demand is greater than 500 kW, or whose annual or annualized gas consumption is greater than 250,000 therms, or both
>
> **Medium nonresidential:** Customers whose annual electric demand is between 100 kW and 500 kW, or whose annual or annualized gas consumption is between 50,000 therms and 250,000 therms, or both

Small nonresidential: Customers whose annual electric demand is between 20 kW and 100 kW, or whose annual gas consumption is between 10,000 therms and 50,000 therms, or both

Very small nonresidential: Customers whose annual electric demand is less than 20 kW, or whose annual gas consumption is less than 10,000 therms, or both.

Nonresidential Hard-to-Reach: Those customers who do not have easy access to program information or generally do not participate in energy efficiency programs due to a language, business size, geographic, or lease (split incentive) barrier. These barriers are defined as:

- Language – Primary language spoken is other than English, and / or
- Business Size – Less than ten employees and / or classified as Very Small (as defined above), and / or
- Geographic – Businesses in areas other than the San Francisco Bay Area, San Diego area, Los Angeles Basin or Sacramento, and / or
- Lease – Investments in improvements to the building benefit the business only during the lease period; landlords benefit longer.

Participant Test: A cost-effectiveness test intended to measure the cost-effectiveness of energy efficiency programs from the perspective of electric and / or gas customers (individuals or organizations) participating in them.

Parties or Interested Parties: Persons and organizations with an interest in energy efficiency that comment on or participate in the Commission's efforts to develop and implement ratepayer-funded energy efficiency programs.

Performance Measurement: The determination of the extent to which a person, organization, or program is successfully meeting specified goals and objectives.

Process Overhaul: Modifications to industrial or agricultural processes to improve their energy use characteristics.

Program: An activity, strategy, or course of action undertaken by an implementer or administrator using PGC funds. Each program is defined by a unique combination of program strategy, market segment, marketing approach, and energy efficiency measure(s) included.

Program Design: The method or approach for making, doing, or accomplishing an objective by means of a program.

Program Development: The process by which ideas for new or revised energy efficiency programs are converted into a design to achieve a specific objective.

Program Management: The responsibility and ability to oversee and guide the performance of a program to achieve its objective.

Project: An activity or course of action undertaken by an implementer involving one or multiple energy efficiency measures, usually at a single site.

Project Development: The process by which an implementer identifies a strategy or creates a design to provide energy efficiency products, services, and practices directly to Customers.

Public Goods Charge (PGC): Per Assembly Bill (AB) 1890, a universal charge applied to each electric utility Customer's bill to support the provision of public goods. Public goods covered by California's PGC include public purpose energy efficiency programs, low-income services, renewables, and energy-related research and development. This manual applies only to energy efficiency PGC funds.

Rebates: Energy efficiency programs consisting of an agreement between the administrator or implementer and a number of customers to install one or more identified energy efficiency products at the customer facility for an identified and pre-specified amount of money. There are two types of rebates:

> **Prescriptive Rebate:** A prescribed financial incentive per unit for a prescribed list of individual products.
>
> **Customized Rebate:** A program where the financial incentive is determined using an analysis of the customer's existing equipment and an agreement on the specific products to be installed.

Remodeling: Modifications to the characteristics of an existing residential or nonresidential building or energy-using equipment installed within it.

Renovation: Modifications to the characteristics of an existing residential or nonresidential building itself, including, but not limited to, windows, insulation, and other modifications to the building shell.

Residential Customers: Existing single family residences, multi-family dwellings (whether master-metered or individually metered), and buildings that are essentially residential but used for commercial purposes, including, but not limited to, time shares and vacation homes.

Residential Hard-to-Reach: Those customers who do not have easy access to program information or generally do not participate in energy efficiency programs due to a

language, income, housing type, geographic, or home ownership (split incentives) barrier. These barriers are defined as:

- Language – Primary language spoken is other than English, and / or
- Income – Those customers who fall into the moderate income level (income levels less than 400% of federal poverty guidelines), and / or
- Housing Type – Multi-Family and Mobile Home Tenants, and / or
- Geographic – Residents of areas other than the San Francisco Bay Area, San Diego area, Los Angeles Basin or Sacramento, and / or
- Homeownership – Renters

Retrofit: Energy efficiency activities undertaken in existing residential or nonresidential buildings where existing inefficient equipment is replaced by efficient equipment.

Self-Generation: Distributed generation installed on the customer's side of the utility meter, providing electricity for that customer's on-site electric load without exporting electricity for sale.

Small and/or Multi-Jurisdictional Investor Owned Utilities (IOUs): Any or all of the following IOUs that serve customers in the state of California: Avista Utilities, Bear Valley Electric, PacifiCorp, Sierra Pacific Power, and Southwest Gas Company.

Standard Performance Contract (SPC) Programs: Programs consisting of a set of agreements between the administrator or implementer and a number of project sponsors (either Implementors or Customers) to deliver energy savings from the installation of energy efficiency measures and technologies at a facility or set of facilities. These agreements are for a pre-specified price per unit of energy savings, measured using a pre-specified set of Measurement and Verification (M&V) protocols. An SPC program is an open-ended offer with a pre-specified price and set of terms.

Statewide Program: A program available in the service territories of all four large IOUs, with identical implementation characteristics in all areas, including incentives and application procedures.

Subcontractor: A person or entity who has a secondary contract undertaking some obligations of another contract executed by another person or entity.

Total Resource Cost Test – Societal Version. A cost-effectiveness test intended to measure the overall cost-effectiveness of energy efficiency programs from a societal perspective.

Upstream Programs: Programs that provide information and / or financial assistance to entities in the delivery chain of high-efficiency products at the retail, wholesale, or manufacturing level.

Utility: Any public utility subject to the jurisdiction of the Commission as an Electrical Corporation or Gas Corporation, as defined by California Public Utilities Code Sections 218 and 222.

Utility Services: Regulated Utility Services including gas and electric energy sales, transportation, generation, distribution or delivery, and other related services, including, but not limited to, administration of Demand Side Services, scheduling, balancing, metering, billing, gas storage, standby service, hookups and changeovers of service to other energy suppliers.

(END OF ATTACHMENT 1)