CALIFORNIA
ENERGY
COMMISSION

RENEWABLE ENERGY PROGRAM

2004 BIENNIAL REPORT

RENEWABLE
ENERGY
PROGRAM

CALIFORNIA ENERGY COMMISSION

COMMITTEE REPORT

May 2004
500-04-030

Arnold Schwarzenegger, *Governor*

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

May 28, 2004

Members of the Senate Energy, Utilities and Communications Committee
Members of the Senate Budget and Fiscal Review Committee
Members of the Senate Appropriations Committee
Members of the Assembly Utilities and Commerce Committee
Members of the Assembly Budget Committee
Members of the Assembly Appropriations Committee
California State Capitol Building
Sacramento, California 95814

Re: California Energy Commission's 2004 Biennial Report Concerning the Renewable Energy Program

Honorable Members:

Public Utilities Code (PUC), Article 5, Section 445(g), requires the California Energy Commission to submit biennial reports on the Renewable Energy Program. Enclosed is the *2004 Biennial Report: Renewable Energy Program*, covering the period January 1, 1998 through March 31, 2004. As reflected in the report, the Energy Commission continues to make significant progress in implementing the Renewable Energy Program.

Should you have any questions or comments concerning this report, please contact Cecile Martin, Energy Commission Legislative Director, at 654-4942 or by e-mail at cmartin@energy.state.ca.us.

Respectfully submitted,

JOHN L. GEESMAN
Commissioner and Presiding Member
Renewables Committee

JACKALYNE PFANNENSTIEL
Commissioner and Associate Member
Renewables Committee

Enclosure

cc: California Legislative Analyst's Office

RENEWABLE ENERGY PROGRAM

CALIFORNIA ENERGY COMMISSION

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RENEWABLES COMMITTEE

John L. Geesman
Presiding Member
Jackalyn Pfannenstiel
Associate Member

Marwan Masri
Deputy Director
Technology Systems Division

James H. Hoffsis
Manager
Technology Market Development Office

Tim Tutt
Technical Director
Renewable Energy Program

Kate Zocchetti
Project Manager

Robert L. Therkelsen
Executive Director

Acknowledgments

Renewables Committee
Commissioner John L. Geesman, *Presiding Member*
Commissioner Jackalyne Pfannenstiel, *Associate Member*

Technology Systems Division
Marwan Masri, *Deputy Director*

Renewable Energy Program
Tim Tutt, *Technical Director*

Tony Brasil, *Supervisor*
Jim Hoffsis, *Supervisor*
Drake Johnson, *Supervisor*

Project Manager
Kate Zocchetti

Principal Authors
Tony Gonçalves
Rasa Keanini
Suzanne Korosec
Payam Narvand
Jason Orta
Ann Peterson
Heather Raitt
Kate Zocchetti

Contributing Authors
Tony Brasil
Madeleine Meade

Introduction

The California Energy Commission (Energy Commission) is pleased to submit its *2004 Renewable Energy Program Biennial Report*, covering the Renewable Energy Program over the six years of its implementation (January 1, 1998 through March 31, 2004), in accordance with Senate Bill 1038 (SB 1038 (Sher), Chapter 515, Statutes of 2002), as amended by Senate Bill 183 (SB 183 (Sher), Statutes of 2003, Chapter 666).

SB 1038 requires the Energy Commission to submit a biennial report on the Renewable Energy Program to the Legislature on or before May 31, 2000, and on or before May 31 of every second year thereafter. The report shall include:

> "a description of the allocation of funds among existing, new and emerging technologies; the allocation of funds among programs, including consumer-side incentives; and the need for reallocation of money among those technologies."

The *Biennial Report* must also address the allocation of funds from the accrued interest on the funds in the Renewable Resource Trust Fund and the voluntary contributions made by utility customers. An update on any funds collected from a usage-based charge established by local publicly-owned electric utilities pursuant to Section 385(a) must also be addressed.

In Senate Bill 1078 (SB 1078 (Sher), Chapter 516, Statutes of 2002), a companion bill to SB 1038, the Legislature created the Renewables Portfolio Standard (RPS), which requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017. The Energy Commission must discuss California's progress toward achieving the RPS target in its *Biennial Report*, as required by SB 1038.

Following a background summary of the Renewable Energy Program, this report is divided into five sections to address the requirements of SB 1038 as follows:

Section I **Allocation of Funds**
Section II **Program Description and Results**
Section III **Reallocation of Funds**
Section IV **Interest on the Renewable Resource Trust Fund**
Section V **Voluntary and Local Publicly-Owned Electric Utility Contributions**

In Section I, the allocation of funds among programs is discussed; along with the need for reallocation of money among existing, new, and emerging technologies. Section II describes each element of the Renewable Energy Program that supports these technologies, including the Renewables Portfolio Standard, and summarizes the Renewable Energy Program's activities. Section III includes a cumulative financial

summary of the Renewable Resources Trust Fund, which contains the funds collected as of March 31, 2004, and discusses the details and conditions surrounding the Energy Commission's reallocation of funds among programs. Section IV provides details about expenditures from the interest accrued on the Renewable Resources Trust Fund. Voluntary contributions and funds received from local publicly-owned electric utilities are presented in Section V.

Although this report presents data that is current to March 31, 2004, we have noted significant activities that occurred subsequent to that date for accuracy and completeness.

Background Summary of the Renewable Energy Program

In passing Assembly Bill 1890 (AB 1890 (Brulte), Chapter 854, Statutes of 1996), the Legislature expressed its intent to preserve "California's commitment to developing diverse, environmentally sensitive electricity resources." As an initial step toward this objective, AB 1890 required California's three major investor-owned utilities (IOUs) — Pacific Gas and Electric Company (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E) — to collect $540 million from their ratepayers from 1998 through 2002 to help support renewable electricity generation technologies and help develop a renewable energy market in the state, via a surcharge on customers' electric bills.

In March 1997, the Energy Commission submitted recommendations to the Legislature for allocating and distributing these funds in its *Policy Report on AB 1890 Renewables Funding.*[1] In the *Policy Report,* the Energy Commission recommended that the Renewable Energy Program take distinct approaches for supporting existing, new, and emerging renewable technologies and included recommendations for consumer activities designed to stimulate demand for renewable energy and to promote renewable energy technologies. The Energy Commission's recommendations were incorporated into Senate Bill 90 (SB 90 (Sher), Chapter 905, Statutes of 1997), which created the Renewable Resources Trust Fund and directed the Energy Commission to distribute the funds. With some exceptions and modifications, these basic approaches continue today.

In September 2000, the Legislature passed Assembly Bill 995 (AB 995 (Wright), Chapter 1051, Statutes of 2000) and Senate Bill 1194 (SB 1194 (Sher), Chapter 1050, Statutes of 2000), which directed the IOUs to continue collecting $135 million per year from 2002 through 2006 from their ratepayers for the Renewable Resources Trust Fund. AB 995 and SB 1194 required the Energy Commission to recommend funding allocations and awards to the Legislature, which it provided in June 2001, in a report titled*, Investing in Renewable Electricity Generation in California (Investment Plan).*[2] In 2002, the Legislature incorporated the *Investment Plan* into SB 1038, which authorized the Energy Commission to administer the program beginning in 2003 through 2006. In September 2002, the Governor also signed SB 1078, creating California's RPS.

In the *Energy Action Plan,*[3] adopted in May 2003, the state's three energy agencies —— the Energy Commission, the Consumer Power and Conservation Financing Authority, and the California Public Utilities Commission (CPUC) —— joined efforts to develop a blueprint for accelerating the RPS goal by attaining the target of 20 percent renewables by year 2010, hastening the RPS goal by seven years. Later that year, the Energy Commission emphasized this goal by recommending that the state enact legislation to accelerate the renewable portfolio standard target to 20 percent by 2010 in its *Integrated Energy Policy Report*.[4]

In September 2003, the governor signed Senate Bill 704 (SB 704 (Florez), Chapter 480, Statutes of 2003), which requires the Energy Commission to allocate $6.0 million from the Renewable Resource Trust Fund for incentives to facilities that increase their utilization of qualified agricultural biomass for the 2003-2004 fiscal year. In February 2004, the Energy Commission adopted guidelines to implement this directive.[5] Details about the Agricultural-to-Biomass Program are provided in the Existing Renewable Facilities Program section of this report.

Section I. Allocation of Funds

In striving to move the renewable energy industry towards market competitiveness, the Renewable Energy Program was initially crafted in 1998 to disburse the funds to assist each market segment in a unique way; these mechanisms remain much the same today, as summarized below.

- Financial incentives support existing renewable facilities through varying incentive amounts based on the market competitiveness of the eligible renewable technologies.

- Financial support encourages new renewable electricity generation projects that are most likely to become competitive by competing in auctions for a production-based incentive.

- Financial incentives assist utilities, when costs exceed the market price, for procuring renewable energy under the RPS.

- Capital cost rebates assist customers who purchase renewable technologies for on-site distributed generation.

- Consumer education increases public awareness of renewable energy options and the benefits of renewable energy, and encourages purchases of renewable energy technologies.

- In previous years, incentives stimulated consumer demand for renewable electricity generation and allowed renewable energy generators to compete with conventional generators.

In January 2002, as required by AB 995 and SB 1194, the IOUs continued collecting an amount starting at $135 million per year from the same ratepayers as those established under the previous directive of AB 1890, and depositing those funds in the Renewable Resource Trust Fund. SB 1038 authorized the Renewable Energy Program to administer the funds through 2006. With the passage of SB 1038, the Legislature determined the allocation of the Renewable Resource Trust Fund, as shown in Table 1.

The Renewable Energy Program retains the authority to reallocate the funds among its programs, as detailed in Section III of this report.

Table 1 – Renewable Resource Trust Fund
SB 1038 Renewable Energy Program Allocations ($135M/Year)

Program	Percent of Total	$ Million/Year
New Renewable Facilities	51.5	$69.525
Existing Renewable Facilities	20.0	$27.000
Emerging Renewables	17.5	$23.625
Consumer Education	1.0	$1.350
Customer Credit	10.0	$13.500
TOTAL	100%	$135.000

Section II. Program Descriptions and Results

Renewables Portfolio Standard

In September 2002, the Governor signed Senate Bill 1078 (SB 1078 (Sher), Chapter 516, Statutes of 2002), creating California's RPS. SB 1078 requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017.

In the *Energy Action Plan* adopted in May 2003, the Energy Commission, the Consumer Power and Conservation Financing Authority, and the CPUC encouraged accelerating the RPS goal by attaining the target of 20 percent renewables by 2010. The Energy Commission endorsed this goal in its *Integrated Energy Policy Report*, [6] which recommends that the state enact legislation to accelerate the renewable portfolio standard target to 20 percent by 2010.

As directed by SB 1078 and SB 1038, the New Renewable Facilities Program (NRFP) will provide Supplemental Energy Payments (SEPs) to renewable electricity generators for the above-market costs of renewable energy procured to meet the RPS. However, the law allows that if SEPs are insufficient to cover the above-market costs of eligible renewable energy resources, an electrical corporation could limit its annual procurement obligation to the quantity of eligible renewable energy resources that can be procured with available SEPs.

Along with developing the RPS rules, the Renewable Energy Program staff is also designing a tracking and verification system, as required under SB 1078.

The next section of this report provides a detailed discussion of the Energy Commission's and the CPUC's roles and activities in designing and implementing the RPS and the tracking and verification programs.

Energy Commission's RPS Roles

SB 1078 defined specific roles for the CPUC and the Energy Commission in implementing the RPS. In developing the RPS Program, the Energy Commission is responsible for the following:

1. Certifying facilities as "eligible renewable energy resources."

2. Establishing criteria for "incremental" output from existing geothermal facilities. This determination distinguishes between generation from geothermal resources that can be counted towards the baseline amount of renewable resources and what can be procured to meet the annual targets.

3. Designing and implementing an accounting system to verify retail sellers' compliance with the RPS, and ensuring that generation is counted only once in this or any other state.

4. Allocating and awarding SEPs, as specified in SB 1038, to eligible renewable energy facilities to cover above-market costs of procuring renewable energy to meet RPS requirements.

The Energy Commission is developing rules to implement the RPS through a phased approach. Phase 1, completed in June 2003, addressed eligibility issues for renewable generating facilities. The Energy Commission's decisions on these issues are detailed in its report, *Renewables Portfolio Standard: Decision on Phase I Implementation Issues*.[7]

Phase 2 concerns the rules for distributing SEPs and developing a tracking and accounting system. During the fourth quarter of 2003, the Energy Commission completed its efforts on Phase 2 activities. In October 2003, the Energy Commission provided its Phase 2 decisions in a report titled, *Renewables Portfolio Standard: Decision on Phase 2 Implementation Issues*.[8]

On March 19, 2004, the Energy Commission's Renewables Committee (Committee) released three draft guidebooks which translate the Phase 1 and Phase 2 decision documents into specific procedures and guidelines to implement the RPS. The guidelines were developed pursuant to SB 1038, SB 1078, Senate Bill 67 (SB 67, Chapter 731, Statutes of 2003, Bowen), and Senate Bill 183 (SB 183, Chapter 666, Statutes of 2003, Sher).[9]

The Energy Commission adopted these guidelines in the form of Guidebooks on April 21, 2004, with revisions to be incorporated and adopted on May 19, 2004. The three Guidebooks are described as follows:

- The *Renewable Portfolio Standard Eligibility Guidebook*[10] *(RPS Guidebook)* describes the requirements and process for certifying eligible renewable energy resources for California's Renewables Portfolio Standard (RPS) and supplemental energy payments (SEPs). The *RPS Guidebook* also describes how the Energy Commission will track and verify compliance with the RPS using an interim generation tracking process.

- The *Overall Program Guidebook for the Renewable Energy Program*[11] describes how the Renewable Energy Program will be administered and includes information on requirements that apply to all program elements. To qualify for certification as a renewable energy resource eligible for RPS and SEPs, an applicant must satisfy the requirements specified in the *RPS Guidebook* and the *Overall Program Guidebook*. The *Overall Program Guidebook* also provides general information on the process of creating, appealing, and implementing RPS guidelines.

- The *New Renewable Facilities Program Guidebook*[12] describes the requirements applicants must satisfy to receive SEPs. Parties interested in receiving SEPs may refer to the *New Renewable Facilities Program Guidebook* for information on how to apply for and receive SEPs.

While the Guidebooks reflect current program requirements, the Energy Commission recognizes that it will need to periodically revise the Guidebooks to reflect market and regulatory developments and incorporate the lessons gained from experience implementing the RPS.

Energy Commission and California Public Utilities Commission Collaboration

In October 2002, the Energy Commission and CPUC staff began a collaborative process to implement the RPS. The staff of both agencies began working together to develop the basic framework for the collaboration.

In December 2002, the CPUC issued a ruling announcing that the CPUC and Energy Commission staff would work collaboratively to develop RPS implementation rules.[13] The ruling also announced that the Energy Commission would cease to be a party to the proceeding in regards to the RPS. Instead, the Energy Commission staff was granted special status for RPS deliberations and given the same access to decision-makers as the CPUC staff. In February 2003, the CPUC issued a ruling formalizing collaboration on RPS issues, and in March 2003 the Energy Commission adopted a reciprocal agreement.

Since October 2001, the CPUC has been addressing its responsibilities in implementing the RPS through its proceeding titled, “Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development."[14] In April 2004, the CPUC issued an Order Instituting Rulemaking to specifically address ongoing CPUC efforts to implement the RPS.[15] In consultation with the Energy Commission, the CPUC adopted rules in June 2003 concerning the following:

1. The process for determining market price referents for electricity from non-renewable sources. Market price referents are estimates of the amount that IOUs would pay for each energy type if they were <u>not</u> purchasing renewable power. To avoid biasing bid results, the CPUC will reveal the referent only after bids have been submitted. Under the RPS, electricity suppliers are not required to purchase renewable energy at a price over the relevant market price referent. Approved contract costs above the referents will be covered by the Public Goods Charge (PGC), administered by the Energy Commission in the form of SEPs, subject to fund availability.

2. The process for the IOUs to follow in selecting the “least cost” bidders of renewable energy that “best fit” the IOU’s resource needs. The IOUs will use the process to select winning bidders from their solicitations to procure renewable electricity.

3. Flexible rules for compliance with annual procurement targets. If an IOU fails to procure sufficient renewable energy, despite the flexibility of the rules, the CPUC will impose penalties.

4. A process for establishing the standard terms and conditions to be used by all IOUs in contracting for eligible renewable energy resources.

Working collaboratively with the CPUC, the Energy Commission staff will continue to address the remaining open issues in anticipation of the IOUs conducting an RPS solicitation.

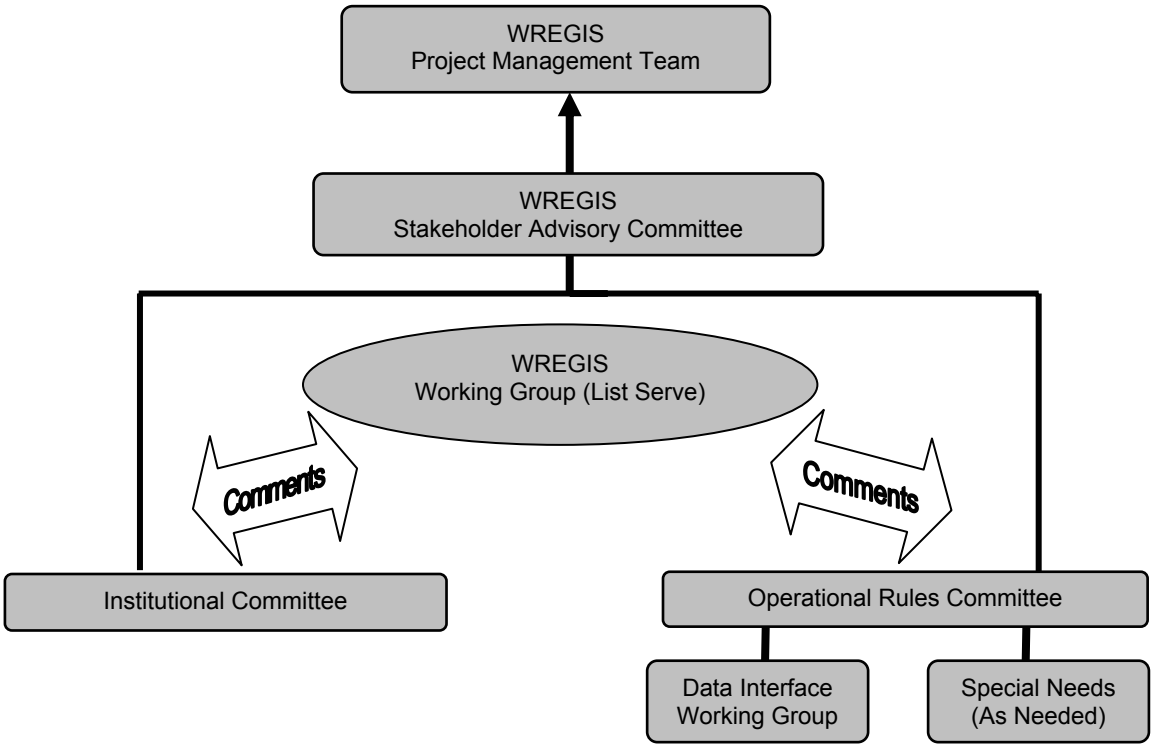
Tracking Renewable Energy

The Energy Commission also developed a methodology for an interim tracking system and a long-term, electronic tracking system, as required by SB 1078. To accommodate the need for an interim system for the RPS, the staff modified the current annual reporting forms that electric service providers are required to submit to the Energy Commission’s Power Source Disclosure Program. Until the long-term tracking system is in place, the Energy Commission will use the modified forms for tracking the collected data from retail sellers of electricity and verify that they have met their RPS obligations.

The Energy Commission, together with the Western Governors’ Association (WGA), began developing a regional electronic tracking system, called the Western Renewable Energy Generation Information System (WREGIS), to address long-term RPS tracking needs. In September 2003, the Energy Commission and WGA jointly released a Needs Assessment Survey to states and provinces in the Western Interconnect to assess stakeholders’ needs concerning the WREGIS. In October 2003, the Energy Commission released a draft report, *Needs Assessment for a Western Renewable Energy Generation Information System (Needs Assessment Report)*, summarizing the survey results and the Energy Commission’s recommendations on the design of WREGIS. The Energy Commission and the WGA hosted six stakeholder workshops throughout the western states to receive public comments on the draft report, and the Energy Commission released the final *Needs Assessment Report* in December 2003.[16]

During the stakeholder workshops, the Energy Commission and the WGA announced plans to establish various committees to help address outstanding issues identified in the *Needs Assessment Report* and invited stakeholders to participate in the process. In December 2003, the Energy Commission and the WGA determined a committee structure and decision-making process for implementing WREGIS. The committee structure is illustrated in Figure 1.

Figure 1 – WREGIS Organizational Structure



To plan for and design WREGIS, the Energy Commission staff continues to receive input from stakeholders. The Energy Commission's technical support contractors, KEMA-XENERGY and the Center for Resource Solutions, will continue to provide assistance in these efforts. In March 2004, the Energy Commission approved a reimbursement contract with the WGA to co-fund this preliminary work.

To implement WREGIS, the Energy Commission re-allocated funds from within the Renewable Energy Program. In April 2003, the Energy Commission approved reallocating 1 percent of the funds collected for the Customer Credit Program (about $1.35 million annually) to the Consumer Education Program specifically for tracking and verifying renewable energy claims.

New Renewable Facilities Program

The New Renewable Facilities Program (NRFP) provides production incentives to new renewable generating facilities. These incentives are paid in addition to what the facility is paid for its electricity.

The NRFP originally awarded funding through competitive auctions in which facilities bid for the amount of incentive they wished to receive, up to a maximum of 1.5 cents per

kilowatt-hour (cents/kWh). The Energy Commission held three such auctions between March 1998 and June 2001, awarding approximately $242 million to 81 facilities that represented about 1,300 megawatts (MW) of capacity.

To receive funding from the Energy Commission, facilities must meet a series of milestones and begin commercial operation. Once on-line, the facilities receive incentive payments for a maximum of five years. Ten of the 81 facilities were unable to meet their milestones, subsequently canceling their funding awards for a variety of reasons that included public opposition or inability to secure a fuel supply or power purchase contract.

Table 2 summarizes the remaining 71 participating facilities by technology.

Table 2 – New Renewable Facilities Program
Summary of Auction Winning Facilities

Technology	# of Projects	Capacity (MW)	Average Incentive (¢/kWh)	Conditional Award*
Biomass	2	11.3	1.35	$3,787,902.00
Digester Gas	1	2.05	1.39	$1,148,209.50
Geothermal	4	156.9	1.28	$80,331,617.60
Landfill Gas	19	55.016	1.17	$22,114,867.53
Small Hydro	5	33.24	1.19	$4,366,785.00
Waste Tire	1	30	0.72	$7,232,413.43
Wind	39	972.67	0.74	$102,092,232.40
Total	**71**	**1,261.176**	**$0.93**	**$221,074,027.46**

* The conditional funding awards for winning bidders in the second and third auctions include potential bonuses for early on-line dates and do not reflect potential penalties for later on-line dates. The encumbered balance for these winners will be adjusted downwards once the projects come on-line.

Project Status

Of the 71 active facilities shown in Table 2, 45 are on-line and producing electricity. Table 3 shows these 45 facilities by technology.

Table 3 – Summary of On-Line Projects (June 1999 to May 2004)

Technology	MW On-Line	# of Projects
Biomass	11.30	2
Digester Gas	2.05	1
Geothermal	59.00	2
Landfill Gas	37.19	14
Small Hydro	31.25	3
Waste Tire	0	0
Wind	288.32	23
Total	**429.11**	**45**

As of April 30, 2004, 41 facilities had received incentive payments totaling $37 million. A summary of payments made through April 30, 2004 is shown in Table 4.

Table 4 – Summary of Payments through April 30, 2004

Technology	MW	MW On-line	Total Payments	Total Funds Encumbered	Percent of Encumbered Funds Paid
Biomass	11	11	$1,140,155	$3,787,902	30%
Digester Gas	2	2	0	$1,148,210	0%
Geothermal	157	59	$17,243,547	$80,331,618	21%
Landfill Gas	55	37	$9,916,440	$22,114,868	45%
Small Hydro	33	31	$578,083	$4,366,785	2%
Waste Tire	30	0	0	$7,232,413	0%
Wind	973	288	$8,219,988	$102,092,232	8%
Total	**1,261**	**429**	**$37,098,213**	**$221,074,028**	**17%**

Four facilities have not yet received incentive payments. Of these, two came on-line very recently, and have not yet submitted invoices to the Energy Commission. The remaining two facilities have not yet demonstrated to the Energy Commission's satisfaction that they are eligible to receive payments under the program guidelines.

One landfill gas facility has been paid its entire funding award and is no longer receiving payments from the Energy Commission. Facilities that have received payments in the past but are currently not being paid include facilities that are not generating due to facility overhaul or facilities whose payments were suspended pending a determination by a bankruptcy court.

The law originally required winning facilities to be on-line by January 1, 2002, to be able to receive five full years of incentive payments. However, the law was changed in September 2000 to allow facilities to come on-line as late as January 1, 2007, and still receive five years of incentive payments. This allowance is contingent on the Energy Commission making a formal finding that the delayed on-line date resulted from "circumstances beyond the developer's control."

The Energy Commission modified the program guidelines to establish a petition process for facilities interested in filing for an extension. A number of projects were unable to meet the January 1, 2002 deadline for coming on-line and submitted petitions for extension to the Energy Commission claiming "circumstances beyond the developers' control." Of the 19 petitions that the Energy Commission has received to date, 17 were approved, one was denied, and one is under review. There are several facilities that have not yet applied for extensions, and the Energy Commission is evaluating what action may be needed to address the delays in these facilities' on-line dates.

For winners in the June 2001 auction, the Energy Commission determined that the timing of the auction in itself constituted "circumstances beyond the project developer's control" for purposes of extending the funding awards. The awards of those facilities were therefore automatically extended to July 1, 2003, but are still subject to the penalties already imposed as a condition of that auction.

Facilities from the June 2001 auction that were not on-line by July 1, 2003 can only receive a maximum of 50 percent of their original awards, and also face further award reductions or termination. In June 2003, several facilities contacted the Committee indicating that because they were in negotiations for project financing, they needed some certainty regarding potential future reductions or terminations of their awards after July 1, 2003. The Committee determined that it would wait until July 1, 2004 to re-evaluate the facilities' progress before making any decisions to further reduce or terminate funding awards for facilities not yet on-line.

Supplemental Energy Payments

Under the direction of SB 1078 and SB 1038, the Energy Commission will award production incentives from the NRFP through competitive RPS solicitations rather than through auctions. New renewable facilities that meet specific eligibility requirements may receive Supplemental Energy Payments, or SEPs, that will be paid for each kilowatt-hour of eligible electricity they generate. The NRFP was allocated 51.5 percent of the program funds, about $69.5 million per year, for SEP funds.

When the Renewable Energy Program was established in 1998, a “new” facility was defined as beginning operation after September 26, 1996. Under the California RPS program, “new” is now defined as beginning operation after January 1, 2002.

To be eligible for SEPs, a facility must first be certified by the Energy Commission as an eligible renewable energy resource for purposes of meeting the state’s RPS. Second, a facility must begin commercial operations or be re-powered on or after January 1, 2002, or such later date as determined by the Energy Commission. Finally, a facility must not be owned by an investor-owned utility or a local publicly-owned electric utility, and the electricity it generates must not be sold under certain long-term contracts with an in-state investor-owned utility, used on-site, or sold in a manner that avoids competitive transition charge payments.

Applicants for eligible renewable facilities will compete for funding by participating in solicitations held by PG&E, SCE, and SDG&E, which are expected to commence in June 2004. Applicants selected by these utilities as winning bidders may receive power purchase contracts to supply power, subject to approval by the CPUC. The CPUC will establish a benchmark price, or market price referent, that will remain confidential until all bids are submitted. If the energy price bid by an eligible applicant is above that price, and the applicant receives a utility contract, the applicant may receive SEPs from the NRFP. SEPs are calculated based on the difference between the bid price and the benchmark price, up to any caps established by the Energy Commission.

Once the renewable facilities are built and begin commercial operations, the applicants may submit monthly invoices to the Energy Commission and begin receiving SEPs. The SEPs will be paid for the lesser of 10 years or the length of the utility contract, with a further restriction that no SEPs will be made for contracts with terms of less than three years.

Existing Renewable Facilities Program

The Existing Renewable Facilities Program (ERFP) was initially allocated $243 million for funding to renewable energy facilities in California that began operating before September 26, 1996. At that time, funding in the ERFP was divided into three tiers, intended to reflect the various degrees of competitiveness of the various renewable energy technologies.

To be eligible for ERFP funds, a facility must be physically located within California and registered with the Energy Commission as a renewable supplier. Once registered, facilities submit monthly invoices and are paid a cents-per-kilowatt-hour (cents/kWh) incentive for their eligible renewable generation. Payments are based on the lowest of three possible calculations:

- The difference between the “target price” and the market price for energy (the market price may be different for different facilities),

- Available funds divided by total generation submitted (modified to account for differences in market prices), or

- A pre-determined cents/kWh cap.

Shortly after the program's January 1998 implementation, 162 renewable generating facilities registered with the Energy Commission as existing renewable suppliers. By December 31, 2001, the number of registered renewable suppliers totaled 378. Of these, the ERFP provided funding support for 273 suppliers, representing 4,400 megawatts (MW) of capacity.

To continue receiving funding, all facilities that were eligible to receive funds from 2002 through 2006 were required to re-register in 2003. As of March 31, 2004, there were 102 suppliers registered and eligible for funding. Because Tier 3 facilities are no longer eligible, the number of suppliers is considerably lower than at the end of 2001. Additionally, approximately half of the Tier 2 facilities are under contracts with energy prices above the Tier 2 target price until the middle of 2006. Approximately 40 to 50 suppliers are under such contracts, and thus have not yet re-registered with the Energy Commission.

Program Activity

Since payments began six years ago, the Energy Commission has made payments totaling more than $189.2 million to existing facilities, as of March 2004.

From 1998 through 2000, the Energy Commission made payments totaling $633,788 to Enron Wind LLC. In 2003, due to Enron’s misrepresentation of the ownership status of some of its facilities, the bankruptcy court approved a settlement agreement between the Energy Commission and Enron Wind LLC for repayment of this amount. Enron Wind LLC was scheduled to re-pay these funds over a two-year period, unless they sold the facility. Enron recently sold its interest in these facilities, and by April 2004, had re-paid the entirety of its obligation.

Table 5 shows the technologies and allocated funds for each tier on an annual basis from 1998 through 2001. As illustrated, the available funds decrease each year to encourage renewable facilities to become competitive with conventional energy technologies.

Table 5 – Annual Funding, Target Prices, and Caps (1998 – 2001)

Tier	Technology		1998	1999	2000	2001	Total
1	Biomass, Waste Tire, Solar Thermal	Annual Funding (millions)	$43.2	$36.45	$31.05	$24.30	$135.0
		Target Price (¢/kWh)	5.0	4.5	4.0	4.0/5.0[17]	
		Cap (¢/kWh)	1.5	1.5	1.0	1.0	
2	Wind	Annual Funding (millions)	$21.60	$18.90	$16.20	$13.50	$70.2
		Target Price (¢/kWh)	3.5	3.5	3.5	3.5	
		Cap (¢/kWh)	1.0	1.0	1.0	1.0	
3	Geothermal, Small Hydro, Digester Gas, Landfill Gas, and Municipal Solid Waste	Annual Funding (millions)	$12.15	$10.80	$8.10	$6.75	$37.8
		Target Price (¢/kWh)	3.0	3.0	3.0	3.0	
		Cap (¢/kWh)	1.0	1.0	1.0	1.0	
	Total Funding		**$76.95**	**$66.15**	**$55.35**	**$44.55**	**$243.0**

With the passage of SB 1038 in 2002, the Energy Commission made modifications to the program affecting eligibility, funding levels, target prices, and caps. The funding for the ERFP was reduced from 45 percent of the overall Renewable Energy Program funds to 20 percent (about $27 million annually). SB 1038 eliminated funding for waste tire facilities in Tier 1 and all Tier 3 technology facilities.

Although SB 1038 did not become effective until January 2003, it allowed retroactive payments for 2002 generation. Of note is the 2002 target price for Tier 1, which is higher than in subsequent years (5.5 cents/kWh vs. 5.37 cents/kWh). The Energy Commission had initially recommended the higher target price to the Legislature, but due to changes in the energy market, it was later determined that the lower target price for Tier 1 was more appropriate. During the 12-month interim, however, most of the facilities had operated on the assumption that the higher target price would prevail. To lessen the burden on these facilities, the Energy Commission conceded to make its 2002 retroactive payments based on the higher target price.

Table 6 summarizes the technologies, funding levels, target prices, and caps for the ERFP from 2002 through 2006.

Table 6 – Annual Funding, Target Prices and Caps (2002 – 2006)*

Tier	Technology		2002	2003	2004	2005	2006	Total
1	Biomass & Solar Thermal	Annual Funding (millions)	$20.25	$20.25	$20.25	$20.25	$20.25	$101.25
		Target Price (¢/kWh)	5.5	5.37	5.37	5.37	5.37	
		Cap (¢/kWh)	1.0	1.0	1.0	1.0	1.0	
2	Wind	Annual Funding (millions)	$6.75	$6.75	$6.75	$6.75	$6.75	$33.75
		Target Price (¢/kWh)	3.8	3.8	3.8	3.8	3.8	
		Cap (¢/kWh)	1.0	1.0	1.0	1.0	1.0	
	Total Funding		**$27.00**	**$27.00**	**$27.00**	**$27.00**	**$27.00**	**$135.00**

*Collection of funds from 2002 - 2006 is adjusted annually; consequently, the funds do not remain at a constant $135 million per year, and the exact amounts available for Tiers 1 and 2 in 2005 and 2006 are unknown.

When the Energy Commission initially adopted the ERFP guidelines, it was determined that the target price and cap would not be adjusted for inflation. However, the Energy Commission decided to periodically review the market price and cap and make adjustments to account for inflation, if appropriate. Table 6 illustrates a constant target price and cap for 2005 and 2006, but these values may change in the future.

Agriculture-to-Biomass Program

In September 2003, the governor signed Senate Bill 704 (SB 704, Florez, Chapter 480, Statutes of 2003), which was designed to improve the air quality in California's agricultural areas by reducing the open-field burning of agricultural fuels. SB 704 requires the Energy Commission to allocate $6.0 million from the Renewable Resource Trust Fund for incentives to electricity-generating facilities that increased their utilization of qualified agricultural biomass for the 2003-2004 fiscal year. The Agricultural Biomass to Energy Program (AgBio Program), although not technically a part of the Renewable Energy Program, is discussed in this section because the funding for this program was reallocated from the ERFP.

Funded for one year, the AgBio Program provides financial incentives to biomass facilities that purchase and convert these fuels for electricity generation from July 1, 2003, through June 30, 2004, funds permitting. Nine participants have registered their facilities with the Energy Commission for funding from the AgBio Program. In March 2004, the Energy Commission issued payments totaling $3.97 million to seven

participants and expects to make a payment totaling $550,000 to one additional participant. These payments are for qualified agricultural biomass (QAB) purchases from July through December 2003.

The remaining facility received a reservation of $506,940, but it will not receive payment until the Energy Commission determines that it exceeded its five-year average annual QAB purchases by at least 10 percent from July through December 2003, as required by the program guidelines. If unable to do so by June 30, 2004, that facility will forfeit these reserved funds. If the remaining $997,000 in funds are not reserved or paid by June 30, 2004, they will revert to the Renewable Resources Trust Fund.

Any funds not disbursed or reserved for purchases made between July and December 2003, will be made available for January through June 2004 purchases. However, the Energy Commission anticipates that there will be insufficient funds to pay incentives for all QAB purchased during the latter timeframe.

Consumer Education Program

The Consumer Education Program was allocated 1 percent of the Renewable Resource Trust Fund provided under SB 1038, or approximately $1.35 million annually, to support renewable energy consumer education activities. These funds are to be used "…to promote renewable energy and to disseminate information on renewable energy technologies … and to help develop a consumer market for renewable energy and for small-scale emerging renewable energy technologies."

The three primary goals of the Consumer Education Program are to:

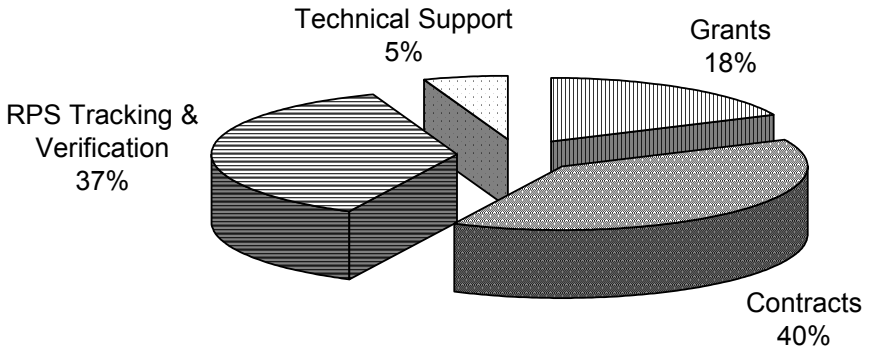
1. Raise consumer awareness of renewable electricity generation options and their benefits,

2. Increase the purchases of small-scale emerging renewable technologies, and

3. Leverage strategic alliances and partnerships with organizations connected to renewable energy in California.

Since 1999, the Consumer Education Program has provided about $4.7 million to fund two public awareness campaigns and 20 consumer education grant projects to meet these goals. Figure 2 shows the Consumer Education Program's expenditures and encumbrances on a percentage basis.

Figure 2 – Consumer Education Program Expenditures and Encumbrances
($8.2 million as of March 31, 2004)



Public Awareness Campaigns

In March 1999, the Energy Commission entered into a $1.5 million contract with the Renewable Energy Marketing Board (REMB) and its partners to conduct grass roots and media activities in targeted communities throughout California. During the 15-month contract, the REMB team developed a cable television advertisement to educate consumers about the environmental effects of conventional electricity generation, and about consumers' option to switch to a “green” electricity provider. In conjunction with the television ad, a series of mail pieces were developed and distributed providing contact information for California electric service providers marketing green power. Additional outreach was conducted to encourage businesses, food cooperatives, and local governments to switch from their electric utilities to providers offering renewable electricity.

In June 2001, the Energy Commission entered into a $2.1 million contract with the ICF Consulting, Inc. firm to develop and implement a public awareness campaign to do the following:

- Develop and present an approach for identifying California consumers most likely to choose renewable energy,

- Develop public awareness advertising messages and strategies to reach those consumers, and

- Implement the campaign while coordinating activities among other renewable energy supporters in the public and private sectors.

In the third quarter of 2001, the ICF team began its 2-year contract by conducting surveys and focus groups to isolate the “tipping points” that influence consumers’

perceptions of renewable energy. Along with data from existing research, these results were used to refine message development, design a new graphic look for the Renewable Energy Program, and create a marketing plan for the campaign.

The ICF Consulting team created a new display booth and designed and distributed new marketing materials including fact sheets on renewable energy and other promotional materials at numerous energy events throughout the state. In its work with newspapers, trade publications and radio stations, the ICF team also conducted an extensive statewide media outreach campaign. With a press kit and a series of ads and web banners, the campaign branded the Renewable Energy Program as a renewable energy information "clearinghouse" by promoting the campaign's renewable energy icons and slogan, shown at right.

The Renewable Energy Alliance, a partnership of organizations interested in promoting renewable energy, was developed in 2002 by the ICF Consulting firm. The Consumer Education Program staff continues to manage this partnership with a bimonthly electronic newsletter to its 199 members representing 176 organizations.

Grant Projects

Since 1998, the Consumer Education Program has issued three grant solicitations offering about $1.5 million to support renewable energy consumer education and outreach activities. In response to these solicitations, 127 applications were received; however, funding constraints permitted that only 20 projects receive grant awards. Grant recipients successfully leveraged about 125 percent in match funds or in-kind services to their projects.

In 2000, the Consumer Education Program staff, together with the program's technical support contractor, conducted market research to better understand consumers' perceptions about emerging renewable energy technologies such as solar photovoltaics and small wind energy systems. With insight gained from this research, the Energy Commission awarded $375,000 for seven grants to support outreach activities focused on emerging renewable technologies.

In June 2001 the Energy Commission approved five grant awards for about $620,000 to provide information to consumers about the benefits and opportunities for installing emerging renewable systems.

In August 2002, the Energy Commission awarded about $500,000 to eight grant recipients in the following categories: schools, new construction, non-profits, advertising, and publicity/events.

Table 7 summarizes the 20 grant projects funded by the Consumer Education Program.

Table 7 – Consumer Education Program Grant Projects

Grant Recipient	Project Description	Funding Award	Match Fund Contribution
Chico Community Publishing Inc.	Educational **media outreach** program.	$69,178	$32,518 (47%)
Evergreen Energy LLC	Develop & produce **Small Wind Consumer's Guide**.	$24,650	$6,500 (26%)
Northern CA Solar Energy Association	**Solar Home Tour** in Northern California.	$11,300	$9,800 (87%)
Pathfinder Communications	**Articles, website content, and handouts** addressing local governments, urban e-commerce participants, and rural self-reliance early adopters.	$75,000	$182,000 (243%)
San Diego State University Foundation	**San Diego Region Photovoltaic Education and Outreach Project.** Virtual PV clearinghouse & targeted outreach campaign.	$74,980	$33,214 (44%)
The Rahus Institute	**Renewable Grass Roots Campaign** Posters, flyers, demo kit, interactive display, PV display, media articles, website.	$71,965	$170,400 (237%)
Twin Pines Cooperative Foundation	**PV and/or Wind for Co-ops**. Installation, education and demonstration program.	$68,995	$60,000 (87%)
Scott Alan Cronk	**This Renewable House**. Filmed program for TV, public service announcements, home video version, website content, and presentations.	$176,156	$478,465 (272%)
The Rahus Institute	**The Solar Series education and energy for schools**. Energy curriculum for K-12, facilitate installation of PV on schools, student fundraising, books, CD, videos, lesson plans, lab equipment, and teacher training seminars.	$112,140	$52,500 (47%)
American Wind Energy Association	**Targeted Small Wind Turbine Marketing**. Direct mail marketing program and three case studies of successful small wind turbine installations in 7 target areas.	$96,205	$24,200 (25%)
Educators For The Environment	**A *Teacher's Guide* and classroom activities**. Grades 6-12: produce and disseminate bookmarks, survey of	$82,076	$50,081 (61%)

Grant Recipient	Project Description	Funding Award	Match Fund Contribution
	students, families and administrators, website page, flyers.		
Local Government Commission	***Stimulating the Implementation of Renewable Energy Technologies*** by California local governments. Facilitate installation on local government facilities; develop expertise for purchasing, permitting, installing, and inspecting PV systems.	$153,423	$99,283 (65%)
Scott Alan Cronk	**Sonny & Friends**. Produce and distribute children's educational video series for TV, the Internet and schools, available in English and Spanish.	$71,937	$95,400 (133%)
The Rahus Institute	**Solar Schoolhouse**. Facilitate installation of PV systems at schools and provide hands-on curriculum through teacher training workshops.	$99,500	$143,070 (144%)
American Wind Energy Association	**Small Wind Turbine County Siting** Develop, produce, and distribute a small wind siting handbook that focuses on educating county officials to help overcome siting barriers.	$49,696	$172,000 (346%)
Energy Solutions	**ReNew Construction**. Provide information to developers, architects and engineers in the project planning or design stage. Develop a "Renewable Energy New Construction Tool Kit", two case studies, provide technical assistance to design projects, brochure and outreach campaign.	$100,000	$128,026 (128%)
Real Goods Solar Living Institute	**Solar Living Institute Installer Training Program**. Educate solar electricians targeting affordable housing. Hold classes all over California.	$85,167	$57,775 (68%)
Twin Pines Cooperative Foundation	**Reducing Energy Costs Roof By Roof: PV for the Non-profit and Cooperative Affordable Housing Industry**. Produce a workshop and solar tours for non-profit housing	$14,803	$8,010 (54%)

Grant Recipient	Project Description	Funding Award	Match Fund Contribution
	industry professionals. Develop a booklet on how to successfully include renewable technology in development and redevelopment projects.		
Global Possibilities	**Solar Home Tour 2002**. Host the Los Angeles Solar Home Tour for consumers, architects, designers, environmental organizations, builders, contractors and developers.	$14,802	$15,690 (106%)
Scott Alan Cronk	**CalEnergy.org**. Website enhancement. Develop new information and related tools. Modify contractor database, enhance photo gallery, and improve navigation and graphics.	$50,823	$57,920 (114%)
TOTAL		$1,502,796	1,876,829 (124.9%)

Tracking and Verification

In April 2003, in response to the Committee's recommendation to discontinue the Customer Credit Program, the Energy Commission approved reallocating 10 percent of the Customer Credit funds (about $1.35 million annually) collected under SB 1038 to the Consumer Education Program for a program to track and verify retail product claims under the RPS requirements.

In May 2004, the Energy Commission revised the Consumer Education Program Guidebook to provide funding eligibility for these activities. Further, the revised Guidebook adds a fourth goal to the Consumer Education Program as follows:

- Develop information, products and processes that promote the renewable energy market by verifying and tracking energy generation and verifying retail product claims.

The revised guidebook authorizes the Renewable Energy Program to use Consumer Education funds for the tracking and verification system (WREGIS) that the Energy Commission is designing in support of the RPS Program. The tracking system is discussed in more detail in the RPS section of this report.

Emerging Renewables Program

The Emerging Renewables Program provides rebates to customers who install renewable energy systems to offset part or all of their electricity needs at their homes or businesses. The program was initially allocated $54 million for incentive payments from 1998 through 2002. In 2002 over $118 million was allocated for rebates from 2003 through 2006.

Renewable Energy Program funds are provided to the Energy Commission on a quarterly basis, yet the demand for rebates can outpace the collection of funds. To respond to rebate requests and maintain momentum in the Emerging Renewables Program, funds may be borrowed from future quarters as needed, provided the total program allocation is not exceeded. All of the rebate funds are available on a first come first served basis until the funding is exhausted. Any funds from cancelled or expired rebate reservations are made available to new participants. The incentive levels have varied over the duration of the program; rebate levels are currently set to decline by 20 cents per watt (close to 5 percent) on July 1 and January 1 of each year.

To be eligible to receive rebates from the Emerging Renewables Program, a number of basic criteria must be met. The generating system must meet be installed on a site that is served by an eligible electric utility, and must primarily offset the electricity demands of its installation site. The eligible technology types are currently limited to photovoltaic (PV) systems, solar thermal electric systems, fuel cell technologies that utilize renewable fuels, and small wind turbines.

The goal of the Emerging Renewables Program is to stimulate the market for distributed renewable energy such that incentives are no longer needed to sustain the market for these technologies. A major barrier to consumer adoption is price. Rebates reduce the initial net purchase cost of the systems, thereby stimulating substantial sales. The dramatic growth in demand in recent years has encouraged manufacturers to expand their production volume, which in turn improved the distribution network and increased the number of qualified installers. Because the market's expansion improves economies of scale, we anticipate lower system costs in the future.

Program Activity

Legislation passed in 2002 directly affected the Emerging Renewables Program. SB 1038 provided new funding allocations, while AB 58 authorized the Energy Commission to establish rebates of up to 75 percent of total installed costs for systems installed on affordable housing projects.

On February 19, 2003, the Energy Commission adopted a new *Emerging Renewables Program Guidebook* in response to changing market conditions and per the directives of SB 1038 and AB 58. As detailed in the *Guidebook*, significant program changes include the following:

- Reducing the rebate level and structure. Previously, the rebate amount was based on the lesser of $4.50 per watt or 50 percent of total installed system costs. The rebate level is now based on system output and is no longer tied to the cost; moreover, the level will gradually decline over time. The Energy Commission reduced the rebate levels for all technology types, and scheduled a decline in rebate rates by $0.20 per watt every six months beginning in July 2003.

- Offering a 25 percent-higher incentive for systems installed on affordable housing.

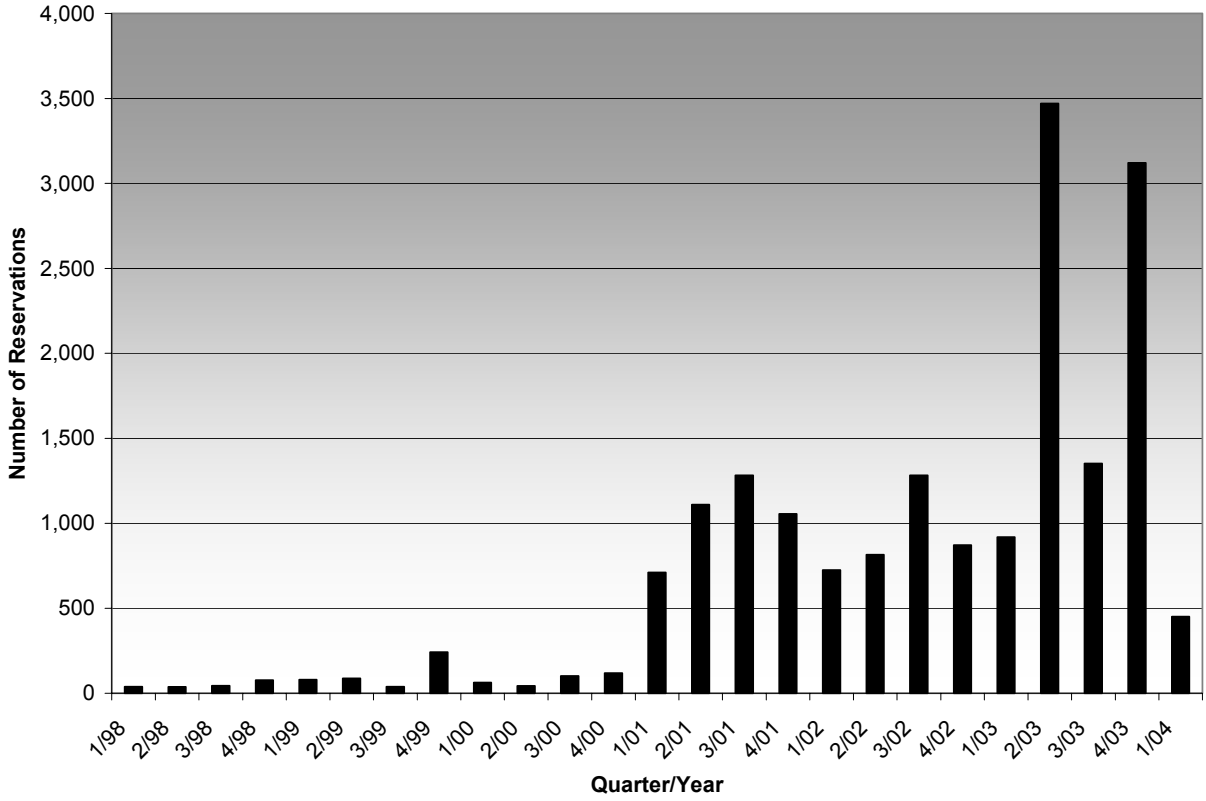
- Requiring system performance meters (enables customers to determine quickly how well their system is functioning).

Because of extremely high demand for program funds, the Energy Commission further lowered the rebate for PV systems by an additional $0.40 per watt in January 2004 (causing the rebate for PV systems to drop to $3.20 per watt instead of the originally-planned $3.60 per watt).

Since April 2002, the Energy Commission has received over 12,600 rebate applications. The dramatic increase in activity since the program began in 1998 can be seen in Figure 3, which shows the number of reservations received by quarter.

Consumer demand for rebates from the ERP continues to show strong growth. Beginning in March 2003, new reservation requests were accepted under the directives of the new legislation. During the first month, the Energy Commission received over 900 reservation requests. Because the rebate level reductions are scheduled, the spikes in the number of applications correspond to months that precede the anticipated drop in the rebate level (about 2,500 applications were received in June 2003 and well over 2,000 applications were received in December 2003).

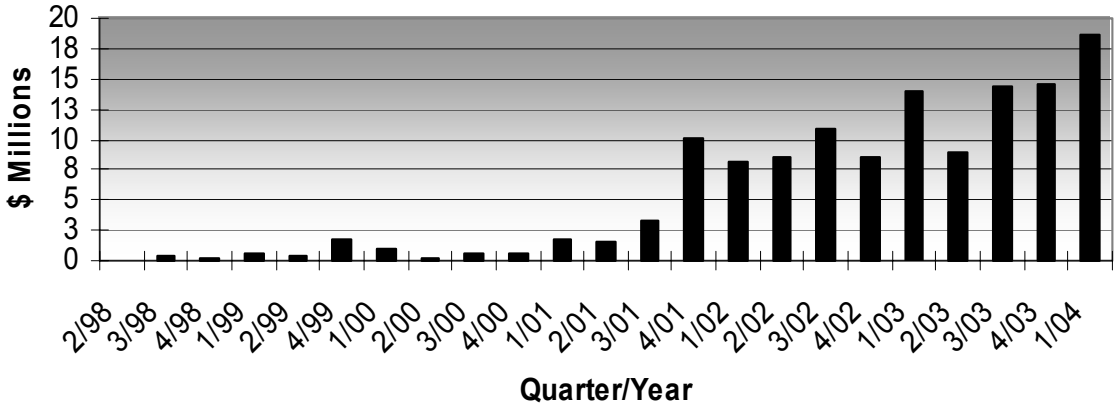
Figure 3- Reservation Activity by Quarter
January 1998 through March 2004



Increased program activity has dramatically intensified the pressure on rebate funds, particularly over the last two years. As shown in Figure 4, over the four years between March 1998 and March 2002, the Energy Commission made payments totaling $32.6 million. In the two years between April 2002 and March 2004, payments tripled, totaling $98.8 million.

By March 2004, more than 8,200 emerging renewable systems had been installed since the beginning of the program, representing approximately 32 MW of distributed renewable electricity capacity, and bringing total disbursements to about $130 million. Customers planning to install 4,500 additional systems hold confirmed rebate reservations for about 19 MW of solar and wind capacity in various stages of completion, encumbering about $73 million in rebate funds. As of May 1, 2004, approximately $40 million remains available for rebates.

Figure 4 –Payment Activity by Quarter
February 1998 through March 2004 ($Millions)



In April 2004, the Energy Commission reallocated $10 million in earned interest from the Renewable Resource Trust Fund, and reallocated 45 percent of the funds collected for the Customer Credit Program (totaling about $30 million collected over five years), to the Emerging Renewables Program.

To extend the availability of rebate funds, the Energy Commission is proposing to reallocate additional Renewable Energy Program funds. Without adding additional funds or taking other measures, the current funding allocated to the Emerging Renewables Program through 2006 will likely be depleted this year.

In 2002, the Energy Commission entered into an interagency agreement with the California Power Authority (CPA) to design and implement a rebate program for public schools. Using CPA funds from settlements between the state Attorney General and electricity suppliers, the program would have provided higher incentives for eligible schools. However, the Energy Commission suspended the Solar Schools Program shortly after it began due to unresolved budget issues with the Department of Finance (DOF) regarding the use of these funds. The DOF recently approved the Energy Commission's proposal to adopt a new Solar Schools Program, which would provide $2.25 million with a one-to-one match with the Attorney General's Alternative Energy Retrofit Account (AGAERA) funds. The new Solar Schools Program rebate level will be based on the prevailing Emerging Renewables Program rebate, and is expected to begin in summer 2004.

With assistance from the Renewable Energy Program's technical support contractor, KEMA-Xenergy, Inc., the program staff continues to update the list of eligible renewable technology equipment and make it available to consumers online and via regular mail. The KEMA-Xenergy team revised and enhanced the program website by adding online forms and an online application status check, improving the application process and enabling participants to check the status of their applications. The KEMA-Xenergy team

also conducts site visits to verify that systems installed using rebate funds comply with the program's requirements.

Customer Credit Program

From 1998 through 2003, the Energy Commission utilized the $75.6 million initially allocated to the Customer Credit Program to foster market demand for renewable electricity. The funds were distributed via a "credit" to registered renewable providers who delivered eligible renewable energy to qualifying customers. The customer credit, a cents-per-kWh discount for eligible renewable electricity purchases, allowed providers to offer their products to customers at prices that were competitive with conventional electricity. Providers passed the credit along to their customers.

Since the electricity crisis in 2000 and 2001, changes in California's electricity market structure affected the Customer Credit Program. In 2001, the CPUC suspended customers' option for direct access contracting. Furthermore, the advent of the Renewable Portfolio Standard (RPS) in California suggested that a very different market would soon be in place for electricity consumers and providers. Although customer choice is no longer an option, the RPS will provide an alternative for supporting renewable energy generation that does not require customers to enter into direct access contracts.

As directed by SB 1038, on April 2, 2003, the Energy Commission produced the *Customer Credit Report* to the Governor and the Legislature on how to utilize the customer credit funds most effectively. In the report, the Energy Commission recommended that the Customer Credit Program be discontinued, and suggested that providers be paid for activity from January 2002 through March 2003. By adopting the *Customer Credit Report,* the Energy Commission supported the renewable energy purchases that were made during that period.

Customer credits were limited to customers within the service territories of PG&E, SCE, SDG&E, and Bear Valley Electric Service. Only those customers that elected to participate in the direct access market and purchase electricity from a registered renewable provider, rather than their default utility distribution company, could receive customer credits.

Electric service providers registered their renewable electricity products with the Energy Commission. A product consisted of electricity from renewable sources or a mix of electricity from both conventional and renewable sources. Customer credits only applied to the portion of an eligible product that was generated by renewable energy.

Providers submitted monthly performance reports (MPRs), which included data on sales to consumers and generation sources, upon which the Energy Commission based its customer credit payments. Registered renewable wholesalers were required to submit information documenting that the power they sold or brokered was eligible for funding.

Despite their inability to receive customer credits, wholesalers or power pools could register with the Energy Commission to become registered renewable wholesalers. Their electricity products became eligible for customer credit funding when sold to an end-use customer by a registered provider.

The Energy Commission required that registered renewable providers inform their customers that they were receiving customer credits on their electricity bills. Typically, providers incorporated the credit into the electricity price offered to their customers, rather than delivering a separate rebate. Registered renewable providers and wholesalers were required to submit to the Energy Commission an annual report that documented their market activity and was verified by a third party. Participating providers and wholesalers were also subject to random spot audits.

At the start of the program in 1998, the customer credit level was set at a maximum of 1.5 cents per kWh to encourage market development. The Energy Commission lowered the credit level to 1.25 cents per kWh from December 1999 through June 2000. Due to increasing demand on funds, the credit level was lowered to 1.0 cent per kWh beginning in July 2000. The credit level remained at this level throughout the remainder of the program.

Program Activity

The Customer Credit Program experienced considerable growth between 1998 through much of year 2000. At the beginning of 2000, 21 registered renewable providers were offering 35 products, and by December 2001, there were 29 providers offering 48 products. Registration remained at this level through March 2003. Since providers were not required to change their registration status when they exited the market, however, the number of registered providers overstated the number that actually participated. , Program activity began to contract in response to changes in the market, and by March 2003, only three providers actively served customers; none of the registered renewable wholesalers participated in the program at that time.

In the fall of 2001, the CPUC implemented Senate Bill 1X, suspending the right of retail customers to purchase electricity through the direct access market. This suspension became effective on September 20, 2001, and prevented the registered renewable providers from signing up new customers to purchase renewable electricity.

From April 1998 through March 2003, the Customer Credit Program supported the purchases of over 6.3 million MW-hours of renewable generation, from both existing and new facilities. Table 8 represents the distribution of eligible generation supported by the Customer Credit Program by fuel type, from 1998 through March 2003.

Table 8 – Eligible Generation by Fuel Type

Calendar Year	Biomass	Geothermal	Small Hydro	Wind	Landfill Gas	Generic	Total
1998	8%	82%	10%	0%	0	0%	100%
1999	16	79	3	2	0	0	100
2000	16	77	3	2	0	2	100
2001	8	88	1	2	<1	0	100
2002	2	89	0	9	0	0	100
2003*	24%	76%	0%	0%	0%	0%	100%

* January – March 2003.

As Table 8 illustrates, geothermal energy purchases accounted for over 75 percent of the total renewable generation purchases for all six years of the program. Because 2003 was limited to a three-month period and program participation declined substantially after 2000, data during the last four years reflects the relatively small set of providers remaining in the market and the limited variety of fuel types they purchased. For example, biomass claims by renewable providers accounted for only 2 percent of the generation purchases in 2002, versus 24 percent in 2003. Conversely, wind generation accounted for 9 percent of the generation claims in 2002, yet none in 2003.

Figure 5 compares the number of customers receiving customer credits by customer class for 2002 and early 2003. From June 2002 through March 2003, the residential category of customers remained relatively flat. During that period, over 50,000 residential customers received customer credits. This is about one-third of the number of residential customers participating during the market's peak in May 2000. No new customers participated in the program after September 2001; the apparent rise in residential customers at the beginning of 2003 is likely an anomaly due to variations in reporting periods among providers.

As shown in Figure 5, the number of small commercial customers steadily declined after December 2001, numbering 70,638 at that time, but decreasing by about half by December 2002. In April 2001, the Customer Credit Program reached its $15 million cap on the cumulative amount of funds available for non residential/non small-commercial customers. In the *Customer Credit Report*, the Energy Commission decided not to provide customer credits to this class of customers for 2002 and 2003 activity. For this reason, non-residential/non-small commercial customers are not represented after June 2001 in Figure 5. It should be noted, however, that large customers could have purchased renewable energy that would otherwise have qualified for customer credits in 2002 and 2003. Because they were not eligible to participate in the program during those years, however, they no longer received customer credits.

Figure 5 – Number of Customer Credit Customers by Class (Semi-Annual Comparison)

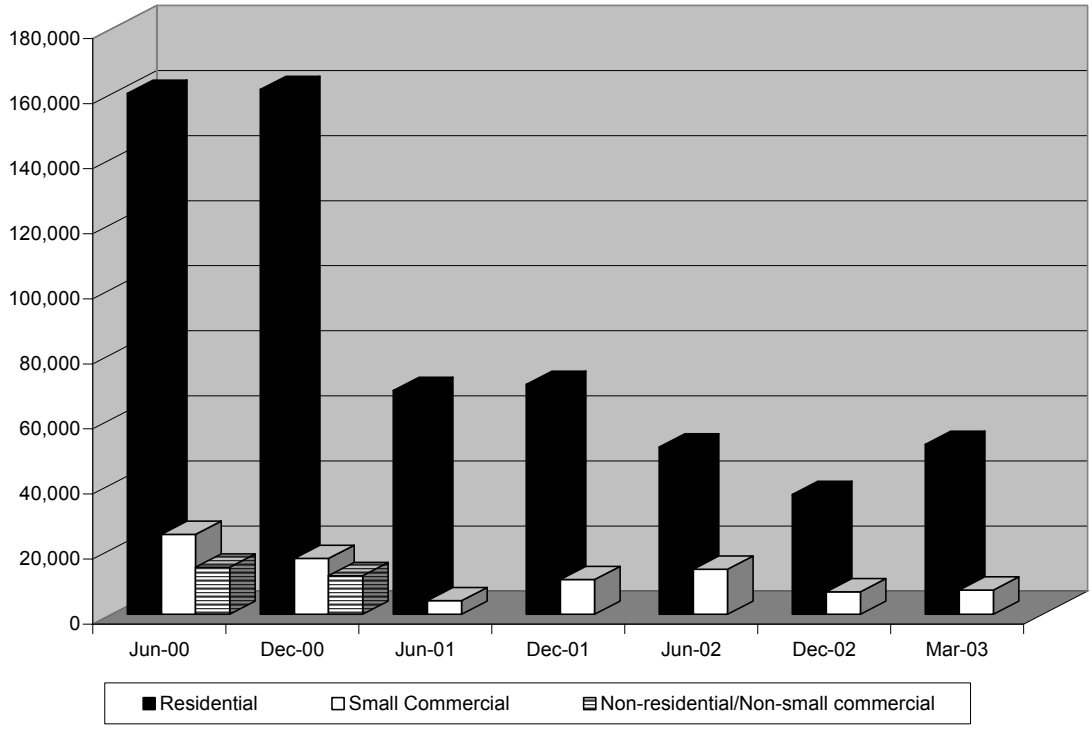
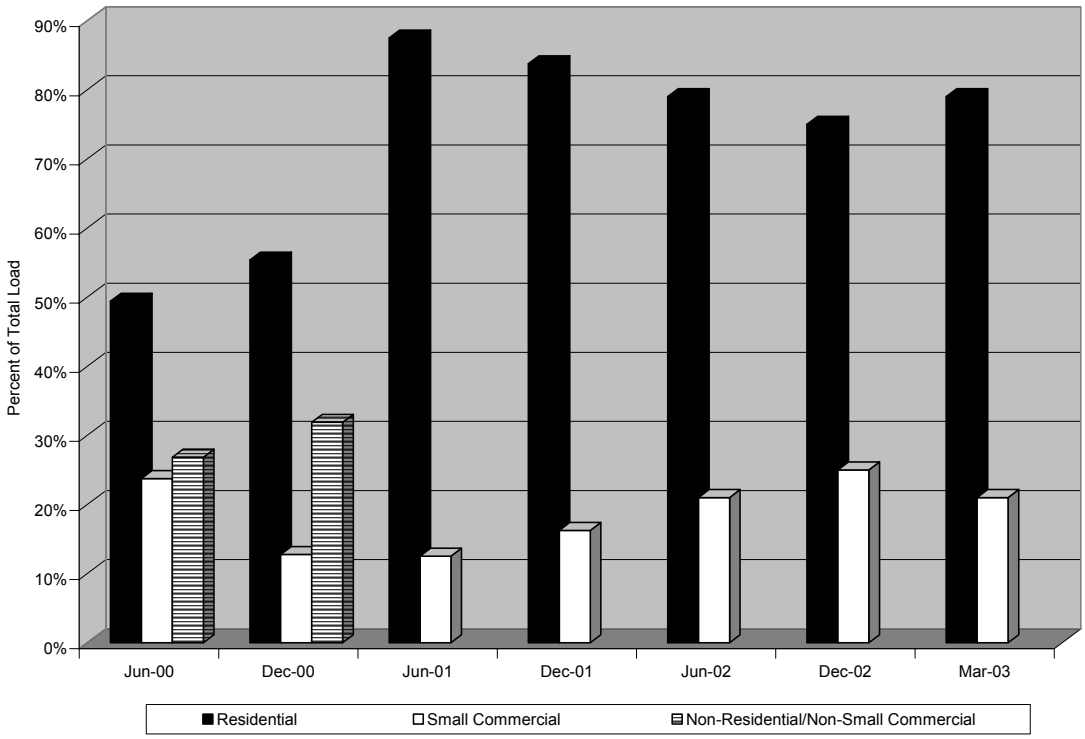


Figure 6 compares the distribution of participating customer load by class for 2002 and 2003. As shown, the proportion of load represented by residential customers and small commercial customers remained at similar levels between 2002 and 2003. For 2002 and 2003, residential customers accounted for eighty percent of the participating customer load while small commercial customers accounted for the remainder. When large customers were eligible to receive customer credit funds, they accounted for 30 percent of the load, while residential customers accounted for 50 percent; those remaining were small commercial customers.

Figure 6 – Customer Load by Class
(Percent of Total Load)



In June 2002, customers receiving customer credits numbered 65,210. In May 2000, at the market's peak, 216,000 customers received customer credits. In March 2003, the last month of program activity, 59,645 customers received customer credits. As of March 2004, the Energy Commission had made payments for customer credits totaling over $65 million.

Section III. Reallocation of Funds

The Energy Commission is authorized to reallocate funds in the Renewable Resource Trust Fund among programs in a manner consistent with SB 1038, which states that, notwithstanding certain subdivisions in the law,

> "…money may be reallocated without further legislative action among existing, new, and emerging technologies and consumer-side programs in a manner consistent with the report [*Investment Plan*] and with the latest [*Biennial*] report provided to the Legislature…"

According to SB 1038, reallocations may not reduce the allocation for the New Renewable Facilities Program nor increase the allocation established for the Existing Renewable Facilities Program.

The next section summarizes the reallocations made during the first four years of the Renewable Energy Program's operation.

1998 through 2002

The Renewable Energy Program did not reallocate any funds in the Renewable Resource Trust Fund since it began operating in 1998 through 2000, as reported in the Energy Commission's first *Renewable Energy Program Biennial Report* of 2000.

In its *2002 Biennial Report,* the Energy Commission noted that high electricity prices in 2000 and 2001 sharply limited payments from the Existing Renewable Facilities Program, which triggered several reallocations among programs during that time, as discussed below.[18]

The Energy Commission responded to the energy crisis and its effects on the renewable energy industry by reallocating program funds from under-subscribed programs to those that needed increased funding. In an effort to bring new electrical capacity on-line in 2001, the Energy Commission shifted funds from the Existing Renewable Facilities Program (ERFP) to the New Renewable Facilities Program (NRFP). In October 2000, the Energy Commission reallocated up to $40 million to the NRFP for a second auction, and additionally authorized up to $40 million in the second quarter of 2001 for a third auction. The actual reallocation of the latter set of funds will not occur until the winning projects are on-line and eligible to begin receiving payments.

Of the $40 million that was reallocated to the NRFP to fund the second auction, $6.2 million was not needed for that purpose and thus was redirected to the Emerging Renewables Program, which was experiencing a rise in demand for rebate funds as a result of high electricity prices and consumer interest in energy independence.

In April 2001, Assembly Bill 29X (AB 29X, Kehoe, Chapter 8, Statutes of 2001) ordered that $15 million from the Renewable Resource Trust Fund be reallocated to the Emerging Renewables Program for additional rebate funds, a portion of which was set aside for customers of Publicly-Owned Electric Utilities (POEUs). The Energy Commission determined that the AB 29X funds would be reallocated from the ERFP. Senate Bill 19X (SB 19X, Chesbro, Chapter 3, Statutes of 2003) subsequently directed that the unused monies (about $6.3 million) designated for rebates to POEU customers be transferred to the General Fund to help reduce the state's budget deficit.

In September 2001, the Energy Commission also reallocated $10 million from the Customer Credit Program to the Emerging Renewables Program to further supplement the availability of rebate funds.

The next section discusses fund reallocations from January 2002 through March 2004.

2002 through 2004

In September 2002, the Energy Commission reallocated $13 million from the Existing Renewable Facilities Program to the Emerging Renewables Program to respond to the continuing growth in demand for system rebates.

The Budget Act of 2003 (Statutes of 2003, Chapter 157, Section 2.0) directed that the Energy Commission reallocate $6.0 million from the Renewable Resources Trust Fund for the Agricultural Biomass to Energy Program, to be administered under the provisions of Senate Bill 704 (SB 704, Florez, Chapter 480, Statutes of 2003). To accomplish this objective, the Energy Commission reallocated $6.0 million from the Existing Renewable Facilities Program to the AgBio Program to be paid on a $10 per green ton basis until funds are expended or until June 30, 2004, whichever occurs first.

In April 2003, the Committee recommended that the Customer Credit Program be discontinued and the funds collected for that program under SB 1038 be reallocated as follows:

- 10 percent to the Consumer Education Program (specifically for the RPS tracking and verification program),
- 45 percent to New Renewable Facilities Program, and
- 45 percent to Emerging Renewables Program.

In April 2004, the Energy Commission approved the Committee’s recommended reallocations to the Emerging Renewables and Consumer Education Programs. In May 2004, due to the continuing high demand for rebate funds, the Energy Commission decided to reallocate the Customer Credit funds planned for the New Renewable Facilities Program to the Emerging Renewables Program.

In April 2004, the Energy Commission also approved the reallocation of $10 million from accrued interest on the Renewable Resource Trust Fund to the Emerging Renewables

Program, and $15 million from the ERFP to the Emerging Renewables Program. Table 9 shows the current status of the Renewable Resource Trust Fund reallocations as of May 2004.

Table 9 – Renewable Resource Trust Fund Renewable Energy Program Reallocations (as of May 2004)

Program	Percent of Total	$ Million/Year*
Existing Renewable Facilities#	20.0	$27.000
New Renewable Facilities	51.5	$69.525
Emerging Renewables	26.5	$35.775
Consumer Education	2.0	$2.700
TOTAL	100%	$135.000

*Funds per year are based on $135 million collected annually under SB 1038, beginning in 2002. Collected funds are actually adjusted for inflation or load growth, whichever is less.
#AgBio Program funds are included in this category for purposes of this report.

Table 10 shows the fund reallocations in the context of the cumulative funds collected, disbursed, loaned, and encumbered as of March 31, 2004.

Table 10 - Renewable Resource Trust Fund Cumulative Funding and Expenditures as of March 31, 2004 ($ Millions)

	Existing Renewable Facilities Program	New Renewable Facilities Program	Emerging Renewables Program	Customer Credit Program	Consumer Education	PROGRAM TOTAL
Collected Funds	$304.139	$319.433	$116.189	$106.170	$8.457	$854.388
Disbursements	-193.076	-35.907	-130.378	-65.307	-4.755	-419.424
Reallocations	**-68.000**	**33.800**	**57.956**	**-26.813**	**3,057**	**0**
Encumbrances	-22.199	-159.893	-73.500	-0.293	-3.702	-259.587
Unencumbered Funds	20.865	127.700	0.000	13.756	3.057	165.378
Loan Balance						-155.645
Fund Balance						$9.733

*$6 million is reallocated to AgBio Program.

The flexibility to reallocate funds has served the Energy Commission well, maximizing the benefits of program funds and avoiding inefficiencies. During the electricity crisis of 2000 and 2001, for example, the Energy Commission reallocated funds from the ERFP, which had not made any payments during several payment cycles due to prevailing high electricity prices, to the NRFP. These funds encouraged the development of new renewable capacity for California's electricity supply, and provided some measure of certainty for developers and investors during this highly volatile period for the electricity market.

During the early years of the Renewable Energy Program, the Emerging Renewables Program activity showed steady but slow growth. Since the electricity crisis, however, consumer demand has soared for solar and wind system rebates. The Energy Commission responded by reallocating funds from under-utilized programs to the Emerging Renewables Program to supplement funds available for rebates. When the direct access market declined at the close of 2000 and the CPUC suspended the ability for consumers to enter into direct access contracts in 2001, the Energy Commission determined the most effective use of the Customer Credit funds and reallocated them accordingly.

If necessary, the Energy Commission intends to continue exercising its authority to reallocate funds in response to market changes; this flexibility is particularly valuable as the Renewable Energy Program is poised to launch the RPS later this year.

The resources necessary to administer the RPS are currently unknown because so many uncertainties surround the implementation of this new electricity paradigm. Funds from the New Renewables Program that will be offered in the form of Supplemental Energy Payments under the RPS could be exhausted, or, conversely, the market may be able to cover those costs. If demand for rebates continues to grow at the current rate, Emerging Renewables Program funds meant to last until 2006 could be encumbered by mid-2004.

If the Energy Commission decides to further reallocate Renewable Resource Trust Fund monies, it will continue to do so with public input and will provide a report on the reallocations to the Legislature.

Section IV. Interest Expenditures

Senate Bill 1038 requires the Energy Commission to address the allocation of funds from interest on the Renewable Resources Trust Fund. As noted in the *Overall Program Guidebook* for the Renewable Energy Program, interest earned on the Renewable Resource Trust Fund pursuant to SB 1038 may be used to augment funds for a particular program at the Energy Commission's discretion. For example, such interest may be used to administer the Renewable Energy Program to the extent appropriated by the Legislature and authorized by the DOF.

As of March 31, 2004, a total of $32,226,254 in interest had accrued on the Renewable Resources Trust Fund. In fiscal year 2002/2003, earned interest totaling $5,300,135 was transferred to the General Fund.[19] Cumulative expenditures totaling $12,215,406 and reallocations totaling $10 million were made from interest funds as of March 31, 2004, with a remaining balance totaling $4,710,713. Interest expenditures are summarized in Figure 2 and detailed by fiscal year in Table 11.

In past years, interest funds, like voluntary contributions, were not allocated among the various program elements under the Renewable Energy Program. In April 2004, however, the Energy Commission approved the reallocation of $10 million in interest funds to the Emerging Renewables Program in response to the progressively higher demand for rebate funds.

Generally, expenditures from the interest accrued on the Renewable Resources Trust Fund are directed to four specific areas, which are described below, along with the total funding to each area to date:

- **Personnel Services ($4,427,937)** – Refers to wages and benefits paid to Energy Commission staff working in the Renewable Energy Program.

- **Pro Rata ($3,952,805)** – A direct assessment against the Renewable Resources Trust Fund that is applied by the Department of Finance (DOF). This assessment is for the cost recovery of expenses incurred by control agencies in the administration of the Renewable Resources Trust Fund. For example, Pro Rata includes the cost of processing claim schedules, journal entries, reports, and payroll for the State Controller, and the work of the DOF budget analyst.

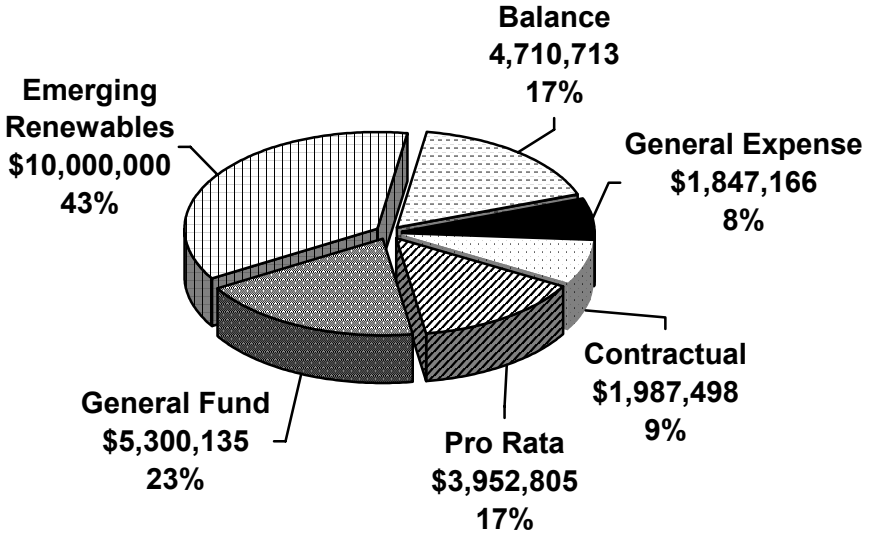
- **Contractual ($1,987,498)** – Represents contracts that were expended or encumbered from the Renewable Resources Trust Fund. This expenditure includes contracts for technical services support and student assistance, and a contract with the DOF for auditing services.

- **General Expense ($1,847,166)** – Signifies the operating expenses that were charged against the fund. These expenditures are in the form of general office supplies, printing, communications, postage, travel, training, facilities operations, data processing, equipment, and indirect charges.

Table 11 – Interest Expenditures by Fiscal Year (as of 3/31/04)

Category/ Fiscal Year	98/99	99/00	00/01	01/02	02/03	03/04	Totals to Date
Personnel Services	$671,854	$617,681	$642,456	$320,771	$1,025,064	$1,150,111	$4,427,937
General Expense	6,545	10,206	55,714	33,2204	745,822	696,675	$1,847,166
Contractual	742,038	604,550	330,863	29,952	97,345	182,750	$1,987,498
Pro Rata	0	952,462	1,355,893	1,112,180	532,270	0	$3,952,805
Transfer to General Fund	0	0	0	0	5,300,135	0	$5,300,135
Emerging Renewables	0	0	0	0	0	10,000,000	$10,000,000
Total	**$1,420,437**	**$2,184,899**	**$2,384,926**	**$1,795,107**	**$7,700,636**	**$12,029,536**	**$27,515,541**

Figure 7 - Renewable Resource Trust Fund Cumulative Interest Expenditures as of March 31, 2004



Section V. Voluntary and Local Publicly-Owned Electric Utility Contributions

Senate Bill 1038 requires the Energy Commission to address the allocation of voluntary contributions and those made by local publicly-owned electric utilities. As of March 31, 2004, no contributions were made to the Renewable Resource Trust Fund from local publicly-owned electric utilities.

Bear Valley Electric Service, an investor-owned utility, made contributions totaling $266,000 to the Renewable Resources Trust Fund.

Voluntary contributions to the Renewable Resource Trust Fund totaled $15,713 by the end of March 2004.

These funds were not allocated to a specific program element nor used for other programmatic purposes; the Energy Commission will decide how to best allocate these funds at a later date.

Endnotes

[1] Publication Number 500-97-002. March 1997.
[2] Publication Number 500-00-022, June 2001.
[3] *Energy Action Plan* available on-line at:
www.energy.ca.gov/2003_energy_action_plan/index.html
[4] Energy Commission publication number 100-03-019F, November 2003.
[5] Energy Commission publication number 500-03-102F, February 2004.
[6] Energy Commission publication number 100-03-019F, November 2003.
[7] Energy Commission publication number 500-03-023F, June 2003.
[8] Energy Commission publication number 500-03-049F, August 2003.
[9] These laws are codified in Public Utilities Code (PUC) sections 381, 383.5, 399.11 through 399.16, and 445, and Public Resources Code (PRC) sections 25740 through 25751.
[10] Energy Commission publication number 500-04-002F, May 2004.
[11] Energy Commission publication number 500-04-026F, May 2004.
[12] Energy Commission publication number 500-04-001F, May 2004.
[13] CPUC Decision 02-12-074.
[14] CPUC Rulemaking 01-10-024.
[15] CPUC Rulemaking 04-04-026.
[16] Energy Commission publication number 500-03-098F, December 2003.
[17] Beginning with the November 2000 payment cycle, the target price for Tier 1 increased to 5.0 cents/kWh.
[18] Energy Commission publication number P500-02-010, May 2002.
[19] Budget Act of 2002, Chapter 379, Statutes of 2002.