

# COMMISSION REPORT

## RENEWABLE ENERGY PROGRAM 2011 ANNUAL REPORT TO THE LEGISLATURE



CALIFORNIA  
ENERGY COMMISSION

Edmund G. Brown, Jr., Governor

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## ABSTRACT

The *Renewable Energy Program 2011 Annual Report to the Legislature (2011 Annual Report)* responds to a legislative directive to report annually on the results of the Renewable Energy Program's activities and status of funding. The comprehensive *2011 Annual Report* covers the period of July 1, 2010, through June 30, 2011, and includes information on the following fiscal and functional aspects of the Renewable Energy Program: allocation of Renewable Resource Trust Fund dollars, information on cash flow, program activities and accomplishments, and projects and funding awards.

**Keywords:** Renewable Energy Program, Renewable Resource Trust Fund, Renewables Portfolio Standard, Western Renewable Energy Generation Information System, Existing Renewable Facilities Program, Emerging Renewables Program, California Solar Initiative, New Solar Homes Partnership, Senate Bill 1, Consumer Education Program, renewable energy, solar thermal, photovoltaic, biomass, fuel cell, geothermal, wind, distributed generation

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# CHAPTER 1:

## Introduction

The California Energy Commission is pleased to submit its *Renewable Energy Program 2011 Annual Report to the Legislature (2011 Annual Report)*, covering the period of July 1, 2010, through June 30, 2011. Public Resources Code Section 25748(a) requires the Energy Commission to report annually to the Legislature on the Renewable Energy Program and specifies that the report shall include the following:

- (1) 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 the reallocation of money among those technologies.
- (2) The status of account transfers and repayments.
- (3) A description of the cumulative commitment of claims by account, the relative demand for funds by account, and a forecast of future awards.
- (4) A description of the allocation of funds from interest on the accounts.
- (5) An itemized list, including project descriptions, award amounts, and outcomes for projects awarded funding in the prior year.

In addition, the *2011 Annual Report* must include a discussion of the progress being made toward achieving the Renewables Portfolio Standard (RPS) targets identified in Public Resources Code Section 25740 for each element of the Renewable Energy Program. Recent legislation increased California's previous 20 percent by 2010 RPS target to a 33 percent RPS by December 31, 2020. This new RPS applies to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities (IOUs), electric service providers, and community choice aggregators.

Lastly, the *2011 Annual Report* must identify the types and quantities of biomass fuels used by facilities receiving funds from the Existing Renewable Facilities Program and their impacts on improving air quality. Recognizing the benefits and contribution that bioenergy could make to achieve California's renewable energy goals, in 2006 California committed to expanding the sustainable use of bioenergy with a target of generating 20 percent of the state's renewable energy from biopower (biomass to electricity) by 2010 and maintaining this ratio through 2020.

The authorization for the collection and expenditure of the funding for the Renewable Energy Program—California's public goods charge—is scheduled to end January 1, 2012.<sup>1</sup> These IOU ratepayer collections, for programs in energy efficiency, renewable energy, and research and

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<sup>1</sup> Section 399.8 (c) (1) of the Public Utilities Code states, "The commission (California Public Utilities Commission) shall require each electrical corporation to identify a separate rate component to collect revenues to fund energy efficiency, renewable energy, and research, development and demonstration programs authorized pursuant to this section beginning January 1, 2002, and ending January 1, 2012."

development, were extended from 2002 to 2012 with the enactment of Assembly Bill 995 (Wright, Chapter 1051) and Senate Bill 1194 (Sher, Chapter 1050) in 2000. Without collections beyond 2011, the Renewable Energy Program's efforts to meet the goals of the New Solar Homes Partnership (NSHP) and other state energy goals will be unfunded. It should be noted that the public goods charge also funds Energy Commission staff and/or activities related to RPS implementation and eligibility certification, and the Western Renewable Energy Generation Information System or WREGIS, a regional renewable energy certificate tracking and registry system. Absent continuation of the public goods charge, the funding for these activities would need to be absorbed by the Energy Commission's Energy Resources Programs Account, thereby affecting other critical programs at the Energy Commission such as power plant siting, energy forecasting, and development of the *Integrated Energy Policy Report (IEPR)*.

Following a legislative history of the Renewable Energy Program, this report is divided into 10 chapters and an Appendix:

Chapter 1: Introduction

Chapter 2: Allocation of Funds

Chapter 3: Program Activities and Results

Chapter 4: Progress in Achieving RPS 33 Percent by 2020 Target

Chapter 5: Additional Renewable Energy Program Activities

Chapter 6: Historical Renewable Energy Program Activities

Chapter 7: Reallocation of Funds

Chapter 8: Account Transfers and Repayments

Chapter 9: Interest Expenditures

Chapter 10: Contributions to the Renewable Resource Trust Fund

Appendix: *2011 Annual Report to the Legislature Appendix*

The *2011 Annual Report* discusses the mandated items for fiscal year 2010-2011, with reference to prior fiscal years for context and comparison as appropriate.

## **Legislative History**

### **1998 Through 2006**

Beginning with the enactment of Assembly Bill (AB) 1890 (Brulte, Chapter 854, Statutes of 1996) and continuing through legislation passed in 2006, the state authorized ratepayer funding and established programs to increase dramatically the proportion of renewable energy and energy efficiency serving California utility customers. AB 1890 authorized the collection of funds from utility ratepayers through a nonbypassable system benefit charge to support existing, new, and emerging renewable resources, among other public goods.

Senate Bill 90 (Sher, Chapter 905, Statutes of 1997) authorized the Energy Commission to establish the Renewable Energy Program to distribute funds collected under AB 1890 and provide incentives for the deployment of renewable energy generation facilities. The Energy Commission, working with the California Public Utilities Commission (CPUC) and other state agencies, achieved initial success with those programs as the state sought to meet new electricity demand with environmentally preferred resources. In light of the unwieldy wholesale electricity prices California faced in 2000 and 2001, and other problems in the market, California's efforts to restructure the market shifted direction, including the creation of the RPS.

Assembly Bill 995 (Wright, Chapter 1051, Statutes of 2000) and SB 1194 (Sher, Chapter 1050, Statutes of 2000) responded to the state's energy crisis by creating the Reliable Electric Service Investments Act, which extended the system benefit charge funding for energy efficiency, renewable energy, and research and development through 2011. Under this legislation, the Energy Commission retained the administration of renewable energy funding and was charged with preparing a five-year investment plan for the Renewable Energy Program for the period January 1, 2002, to January 1, 2007.<sup>2</sup>

Many of the recommendations put forward in the 2001 investment plan were codified by Senate Bill 1038 (Sher, Chapter 515, Statutes of 2002). A companion measure, Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002), created the state's RPS to help diversify the state's electricity system and reduce its growing dependence on natural gas by increasing the percentage of renewables in the state's electricity mix to 20 percent by 2017. That legislation set specific requirements for the utilities, the CPUC, and the Energy Commission to ensure that the state meets the targets of the RPS. The Energy Commission and the California Public Utilities Commission (CPUC) jointly implement the RPS. The Energy Commission's roles are to certify renewable facilities as eligible for the RPS and to design and implement an accounting system to track and verify RPS compliance. The CPUC is responsible for developing the rules for RPS procurement and providing oversight of contract activities.

Additional legislation enacted during the years 2002-2005 affected program funding and refined aspects of the Renewable Energy Program. The Energy Commission adopted changes to the program's various guidelines to reflect the following legislation:

- Senate Bill 704 (Florez, Chapter 480, Statutes of 2003) required the Energy Commission to allocate \$6 million from the RRTF for incentives to electricity-generating facilities that increased their usage of qualified agricultural biomass for the 2003-2004 fiscal year.
- Senate Bill 183 (Sher, Chapter 666, Statutes of 2003) amended and recast the provisions of Public Utilities Code Sections 383.5 and 445 governing the Renewable Energy Program into Public Resources Code Sections 25740 through 25751.
- Senate Bill 67 (Bowen, Chapter 731, Statutes of 2003) changed the eligibility requirements for renewable generators located out of state.

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<sup>2</sup> California Energy Commission, *Investing in Renewable Electricity Generation in California*, June 2001, P500-00-022, [www.energy.ca.gov/reports/2001-06-21\\_500-00-022.PDF](http://www.energy.ca.gov/reports/2001-06-21_500-00-022.PDF).

- Senate Bill 168 (Bowen, Chapter 733, Statutes of 2003) made technical amendments to Public Utilities Code Sections 383.5 and 445, which were chaptered out because SB 183 recast those provisions into the Public Resources Code.
- Assembly Bill 135 (Reyes, Chapter 867, Statutes of 2004) authorized the Energy Commission to immediately use up to \$60 million of the funds in the RRTF to support the Emerging Renewables Program element of the Renewable Energy Program. These funds could be spent only until December 31, 2008, and were subject to the repayment requirements of Public Resources Code Section 25751(f).
- Assembly Bill 200 (Leslie, Chapter 50, Statutes of 2005) modified the eligibility requirements for renewable generators located out of state serving the load of utilities such as Sierra Pacific Power Company and PacifiCorp that have a limited number of customers in California.

California's environmental and energy policy stakeholders defined 2006 as a watershed year with the passage of Senate Bill 1 (Murray, Chapter 132, Statutes of 2006); Senate Bill 107 (Simitian, Chapter 464, Statutes of 2006); Senate Bill 1250 (Perata, Chapter 512, Statutes of 2006); the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Núñez, Chapter 488, Statutes of 2006), Assembly Bill 2189 (Blakeslee, Chapter 747, Statutes of 2006), and Assembly Bill 1969 (Yee, Chapter 731, Statutes of 2006). These statutes affected implementation of the Energy Commission's Renewable Energy Program.

- SB 1 codified a comprehensive statewide solar energy incentive program consisting of the CPUC's California Solar Initiative (CSI), the Energy Commission's NSHP, and the POU's solar incentive programs. With a goal of 3,000 MW of new, solar-produced electricity by the end of 2016, the solar programs authorized under SB 1 aim to move the state toward a cleaner energy future and help lower the cost of solar systems for consumers.
- SB 107 accelerated California's RPS target by requiring retail sellers of electricity to increase renewable energy purchases by at least 1 percent per year with a target of 20 percent renewables by 2010. The bill also added new components to the RPS program, including bringing POU's more fully into the RPS by requiring them to report to the Energy Commission their specific goals and progress toward the goals. Without tracking this additional data, it would not be possible to assess overall state progress toward the RPS goals.
- SB 1250 with SB 107 authorized the Energy Commission's ongoing use of public goods charge funds collected from January 1, 2007, through January 1, 2012, for the continued operation of the Renewable Energy Program.
- AB 2189 modified RPS eligibility requirements for small hydroelectric generation facilities regarding efficiency improvements that result in increased capacity.
- AB 1969 added Section 399.20 to the Public Utilities Code to encourage energy production from renewable resources at public water and wastewater facilities.

Also passed in 2006, AB 32 set a goal of reducing greenhouse gas emissions to 1990 levels by 2020. Electricity generation from fossil fuel power plants and emissions from the transportation sector are the two largest contributors to the state's greenhouse gas emissions. AB 32's greenhouse gas reduction plan for California sees a key role for renewable energy.<sup>3</sup>

### 2007 Through June 30, 2011

Senate Bill 1036 (Perata, Chapter 685, Statutes of 2007), effective January 1, 2008, recast California's RPS program and made several significant changes to the Renewable Energy Program. Among other directives, the legislation removed the Energy Commission's authority to award supplemental energy payments (SEPs) meant to cover the above-market costs of procuring renewable energy for the RPS and eliminated the RRTF's New Renewable Resources Account effective July 1, 2008. Beginning 2008, the CPUC has authority over the disposition of above-market costs for meeting the RPS.

Through June 2011, other legislation affecting the Renewable Energy Program's scope and/or funding included the following:

- Assembly Bill 809 (Blakeslee, Chapter 684, Statutes of 2007) expanded the RPS eligibility of hydroelectric facilities by allowing the incremental generation associated with new efficiency improvements to large hydroelectric facilities to qualify for the RPS.
- Senate Bill 380 (Kehoe, Chapter 544, Statutes of 2008). SB 380 modified the small renewable feed-in-tariff program<sup>4</sup> by expanding the eligible generators beyond water and wastewater facilities to include any customer that meets specific conditions. The bill required that all electrical corporations within CPUC jurisdiction offer the small renewable feed-in tariff program. The bill retained the renewable facility capacity size limit of 1.5 MW and increased the statewide generating capacity limit from 250 MW to 500 MW. The power that is sold to the utilities under the feed-in tariffs will contribute to the utilities' ability to meet their RPS goals.
- Assembly Bill 3048 (Committee on Utilities and Commerce, Chapter 558, Statutes of 2008) amended Section 25742 of the Public Resources Code to remove restrictions on the types of biomass fuels receiving production incentive payments from the Existing Renewable Facilities Program. These restrictions, which were instituted in SB 1250 in 2006, effectively prohibited the use of fuel from federal forests by biomass facilities receiving Existing Renewable Facilities Program funding because the statute required that the fuel must be harvested under an approved state timber harvest plan.

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<sup>3</sup> Air Resources Board, *Climate Change Scoping Plan*, December 2008, [www.arb.ca.gov/cc/scopingplan/scopingplan.htm](http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm); and *Supplement to the AB 32 Scoping Functional Equivalent Document*, June 2011, [www.arb.ca.gov/cc/scopingplan/document/Supplement\\_to\\_SP\\_FED.pdf](http://www.arb.ca.gov/cc/scopingplan/document/Supplement_to_SP_FED.pdf).

<sup>4</sup> A feed-in tariff offers fixed-price payments for energy from renewable sources. For more information on feed-in-tariffs available for the purchase of eligible small renewable generation, please see the CPUC's website at [www.cpuc.ca.gov/PUC/energy/Renewables/hot/feedintariffs.htm](http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/feedintariffs.htm).

- Assembly Bill 811 (Levine, Chapter 159, Statutes of 2008) authorizes California cities and counties to designate areas within which city officials and willing property owners may enter into contractual assessments to finance the installation of distributed generation renewable energy sources, including solar and energy efficiency improvements. The financing arrangements would allow property owners to finance renewable generation and energy efficiency improvements through low-interest loans that would be repaid as an item on the property owner's property tax bill. The intention of the bill is to reduce the upfront and ongoing costs of installing alternative energy systems and energy conservation measures that are permanently affixed to a property.<sup>5</sup>
- Assembly Bill 45 (Blakeslee, Chapter 404, Statutes of 2009) requires California counties to adopt wind ordinances by January 1, 2011, governing the installation of small wind turbines. The intent is to encourage local agencies to develop and adopt ordinances that ease the installation of small wind energy systems. AB 45 also requires the Energy Commission to provide a report to the Legislature on the status of small wind in California by January 1, 2016.
- Assembly Bill 920 (Huffman, Chapter 376, Statutes of 2009) expands the current net-metering programs for wind and solar power to allow net-metered customers to sell any excess electricity they produce over the course of a year to their electric utility. The customer-generator may annually elect to receive direct payment for the net surplus generation or to receive credit on their electric bill. The bill also provides that any renewable energy credit (REC), as defined, for net surplus electricity belongs to the electric utility purchasing the electricity and that net surplus electricity counts toward the electric utility's RPS purchasing requirements.
- Senate Bill 32 (Negrete, McLeod, Chapter 328, Statutes of 2009) revises and expands the current feed-in tariff program for eligible renewable electric generation facilities.
- Assembly Bill 162 (Ruskin, Chapter 313, Statutes of 2009) revised the utilities' disclosure of power sources to consumers and the Energy Commission and streamlined certain reporting requirements. The bill removed the Energy Commission's responsibilities to calculate net system power and requires the utilities to make information on power sources available to their customers annually.
- Assembly Bill 1351 (Blakeslee, Chapter 525, Statutes of 2009) authorizes a state board or agency to be the applicable entity to issue the RPS certification, under the federal Clean Water Act, for out-of-state hydroelectric generating facilities that have increased their generation incrementally by energy efficiency. The bill also requires that a hydroelectric facility be owned by a retail seller or local POU to be RPS eligible.
- Senate Bill 77 (Pavley, Chapter 15, Statutes of 2010) authorizes the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) to establish a

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<sup>5</sup> Information on the status of the Property-Assessed Clean Energy financing program is located at [http://www.energy.ca.gov/mobile/m\\_newsormedia.php?getfile=2010\\_releases/2010-07-29\\_clean\\_energy\\_financing.html](http://www.energy.ca.gov/mobile/m_newsormedia.php?getfile=2010_releases/2010-07-29_clean_energy_financing.html).

Property Assessed Clean Energy (PACE) Reserve program<sup>6</sup> to help local jurisdictions finance the installation of distributed generation of renewable energy sources, or energy or water efficiency improvements. An amount up to \$50 million was appropriated from the RRTF to CAEATFA for the PACE Reserve Program until January 1, 2015. Of the \$50 million, \$16,925 has been loaned as of June 30, 2011. All repayments of moneys received must be deposited into the RRTF.

- Senate Bill x8-34 (Padilla, Chapter 9, Statutes of 2010) authorizes the Department of Fish and Game, in consultation with the Energy Commission, to develop actions to reduce the impacts on endangered and threatened species of solar energy projects that are eligible for federal funding and are proposed for siting in the California desert in the Desert Renewable Energy Conservation Plan planning area.<sup>6</sup> The bill authorizes eligible project developers to meet their mitigation obligations by voluntarily paying fees for deposit into a fund that would be used by Department of Fish and Game to complete the mitigation actions. In advance of receiving the fees, the bill authorizes a \$10 million loan from the RRTF, to be repaid no later than December 31, 2012.
- Assembly Bill 510 (Skinner, Chapter 6, Statutes of 2010), increases the cap on the amount of solar or wind produced electricity that can be generated under the net metering program from 2.5 percent to 5 percent of each utility's collective peak demand. It also requires a licensed contractor to inspect existing solar or wind generating facilities when a customer generator wants to enter the facility into a new net-energy metering contract, unless the facility and meter have been inspected in the prior three years.
- Senate Bill 84 (Committee on Budget and Fiscal Review, Budget Act of 2010: revisions, Chapter 13, Statutes of 2011) directed the Energy Commission to loan \$20 million from the RRTF to the General Fund, which must be repaid by June 30, 2014.
- Senate Bill x1-1 (Steinberg, Chapter 2, First Extraordinary Session, Statutes of 2011) requires an annual allocation of \$8 million from the RRTF or other related fund, to the Superintendent of Public Instruction. These funds are to be used for expenditure in the form of grants to school districts for funding Energy Partnership Academies. The bill's provisions become inoperative on June 30, 2017.

After years of effort to codify California's 33 percent by 2020 RPS goal, Governor Brown signed Senate Bill x1-2 (Simitian, Chapter 1, First Extraordinary Session, Statutes of 2011) in April 2011, making it the most ambitious clean energy plan in the nation. Notably the Governor remarked, "While reaching a 33 percent renewables portfolio standard will be an important milestone, it is really just a starting point—a floor, not a ceiling." All electricity retailers in the state must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020 and maintained

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<sup>6</sup> In 2008, the development of the Desert Renewable Energy Conservation Plan, [www.drecp.org/](http://www.drecp.org/) was ordered for the Mojave and Colorado deserts that would, when complete, provide binding, long-term endangered species permit assurances and ease renewable energy project review and approval processes.

thereafter. Among other responsibilities, the legislation expands the Energy Commission's role to include monitoring the POUs' progress toward meeting the state's RPS goals.

## **Renewable Energy Program Elements**

Since its beginning in 1998, the Renewable Energy Program has evolved under enacted legislation and has supported the renewable energy industry through the efforts of its past and current elements. At present, California's ambitious renewable energy and greenhouse gas reduction goals guide the policies of the Renewable Energy Program.

- The Emerging Renewables Program provides rebates and production incentives to end-use consumers who purchase and install eligible renewable energy systems for on-site generation. Through 2006, eligible technologies were solar photovoltaic (PV), small wind, fuel cells using renewable fuels, and solar thermal electric. Effective in 2007, only small wind systems (rated output of 50 kilowatts [kW] or less) and fuel cells (using a renewable fuel and a rated output of 30 kW or less) are eligible. The Energy Commission's NSHP and the CPUC's CSI have replaced the solar component of the Emerging Renewables Program. The NSHP provides financial incentives and other support to home builders, encouraging the construction of new, energy-efficient solar homes.
- The Existing Renewable Facilities Program offers production incentives to existing solid-fuel biomass, solar thermal, and wind facilities. Incentive payments are tied to market prices, with no payments made if the market price is above a predetermined target price. Beginning in 2007, under a revised program structure, existing facilities must apply for funding and include a project-specific target price request and a cents-per-kilowatt-hour (cents/kWh) cap on funding for energy produced in a calendar year. Facilities participating in the Existing Renewable Facilities Program must be certified as eligible for the RPS.
- The Consumer Education Program funds grants and contracts to increase public awareness of renewable energy and its benefits and helps build a consumer market for renewable energy and small-scale emerging renewable energy technologies.
- The New Renewable Facilities Program fostered the development of new in-state renewable electricity generation facilities by providing financial support. The program consisted of two parts. Under the first, production incentives awarded through competitive auctions supported prospective new renewable electricity generation projects. Once they came on-line, eligible projects received payments for their first five years of generation. Second, under the RPS, the New Renewable Facilities Program was to provide SEPs for up to 10 years to eligible projects for the above-market costs of meeting RPS requirements. In October 2007, however, the enactment of SB 1036 removed the Energy Commission's authority to award SEPs and abolished the New Renewable Resources Account as of July 1, 2008. For additional information on the New Renewable Facilities Program, please see Chapter 6, Historical Renewable Energy Program Activities.

- The Customer Credit Program provided incentives to consumers who purchased renewable energy in the direct access market. This program allowed renewable energy providers to offer electricity products to their customers at prices competitive with conventional electricity products. The program was discontinued after payments made in December 2004 concluded Customer Credit Program activities. For additional information on the Customer Credit Program, please see Chapter 6, Historical Renewable Energy Program Activities.

The next chapter discusses RRTF funding and expenditures for each of the Renewable Energy Program elements.

## CHAPTER 2: Allocation of Funds

The Renewable Energy Program is funded through a public goods charge that is collected from the ratepayers of Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Golden State Water Company (doing business as Bear Valley Electric Service). These funds are transferred from the utilities to the Energy Commission's RRTF quarterly. As stated previously, the public goods charge collections will expire on January 1, 2012, absent action to continue funding of this program.

Table 1 compares the Renewable Energy Program's original funding allocations under SB 90 (1998-2001) with SB 1038 (2002-2006) and the subsequent reallocation of SB 1038 Customer Credit Program funds upon discontinuation of that program consistent with the Energy Commission's *Customer Credit Report* recommendations.<sup>7</sup>

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<sup>7</sup> In April 2003, the Energy Commission recommended in its *Customer Credit Renewable Resources Account: Report to the Governor and the Legislature*, April 2003, 500-03-008F, [www.energy.ca.gov/reports/2003-04-22\\_500-03-008F.PDF](http://www.energy.ca.gov/reports/2003-04-22_500-03-008F.PDF), that the Customer Credit Program be discontinued and the funds available 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 the New Renewable Facilities Program, and 45 percent to the Emerging Renewables Program. However, in May 2004, the Energy Commission approved reallocating 10 percent of available Customer Credit Program funds to the Consumer Education Program and 90 percent to the Emerging Renewables Program. The continuing high demand in the Emerging Renewables Program dictated that the Energy Commission reallocate an increased percentage of Customer Credit funds to the Emerging Renewables Program.

**Table 1: Renewable Energy Program Funding Allocations  
1998 Through 2006  
(cumulative per period)**

Program	SB 90 1998-2001		SB 1038 2002-2006 <sup>8</sup>		SB 1038 2002-2006 (Reallocation of Customer Credit) <sup>7,8</sup>	
	Percent of Total	\$Million	Percent of Total	\$Million	Percent of Total	\$Million
<b>New Renewable Facilities</b>	30	162.0	51.5	347.625	51.5	347.625 <sup>9</sup>
<b>Emerging Renewables</b>	10	54.0	17.5	118.125	26.5	178.875
<b>Existing Renewables</b>	45	243.0	20	135.000	20	135.000
<b>Consumer Education</b>	1	5.4	1	6.750	2	13.500
<b>Customer Credit</b>	14	75.6	10	67.500	0	0.000
<b>TOTAL</b>	100	540.0	100	675.000	100	675.000

Source: SB 90 (Sher, Chapter 905, Statutes of 1997) and SB 1038 (Sher, Chapter 515, Statutes of 2002).

Funding allocations for 2007-2011, legislated by SB 107 and SB 1250, were affected by the enactment of SB 1036, effective January 1, 2008. SB 1036 eliminated the New Renewable Resources Account, effectively reducing RRTF revenues by 51.5 percent, and established new funding allocations for the remaining programs: the Existing Renewable Facilities Program (20 percent), Emerging Renewables Program (79 percent), and Consumer Education Program (1 percent). Table 2 summarizes 2007 through 2011 funding.

**Table 2: Renewable Energy Program Funding Allocations  
2007 Through 2011  
(cumulative per period)**

Program	SB 107 & SB 1250 2007 <sup>8</sup>		SB 1036 2008-2011 <sup>8</sup>	
	Percent of Total	\$Million	Percent of Total	\$Million
<b>New Renewable Facilities</b>	51.5	75.110 <sup>9</sup>	0	0
<b>Emerging Renewables</b>	37.5	54.691	79	227.52
<b>Existing Renewables</b>	10	14.584	20	57.60
<b>Consumer Education</b>	1	1.459	1	2.88
<b>TOTAL</b>	100	145.844	100	288.00

Source: SB 107 (Simitian, Chapter 464, Statutes of 2006); SB 1250 (Perata, Chapter 512, Statutes of 2006), and SB 1036 (Perata, Chapter 685, Statutes of 2007).

<sup>8</sup> The total amount collected each year is adjusted annually at a rate equal to the lesser of the annual growth in electric commodity sales or inflation, as defined by the gross domestic product deflator.

<sup>9</sup> Under SB 1036, these unencumbered funds were transferred back to the electrical corporations whose ratepayers contributed funds to support the RRTF less the remaining General Fund loan of \$18,200,000. As of June 30, 2011, this balance is still owed to the RRTF from the General Fund as a result of monies borrowed under the Budget Act of 2002 (Statutes of 2002, Chapter 379).

The Renewable Energy Program has the authority to reallocate funds among its programs, as detailed in Chapter 7 of this report.

## Renewable Energy Program Disbursements

Since 1998, Renewable Energy Program fund disbursements have paid for incentives for new and existing utility-scale renewable energy generating facilities; consumer rebates for on-site renewable energy systems; credits for choosing renewable energy; and customer information on the purchase, installation, and available incentives for renewable energy.

From the Renewable Energy Program's creation in 1998 through June 30, 2011, the Energy Commission has paid a total of \$934 million<sup>10,11</sup> for program activities. More than \$62 million is encumbered for projects in progress, with \$62.5 million remaining to meet statutory requirements.<sup>12</sup> During the period of July 1, 2010, to June 30, 2011, about \$72.9 million was deposited into the RRTF, and the Energy Commission disbursed more than \$35 million to program participants.

The following summarizes Renewable Energy Program cumulative funds disbursed and market support accomplishments through June 30, 2011:

- Solar PV, wind energy, and fuel cell systems installed at more than 28,673 homes and businesses are providing 127 MW of distributed capacity, bringing total Emerging Renewables Program rebate payments to more than \$409 million.

The Emerging Renewables Program for solar ended December 31, 2006, and was replaced by the NSHP. By June 30, 2011, total NSHP payments of \$34.6 million have been made for 4,088 installed systems representing more than 12 megawatts.

- The Existing Renewable Facilities Program has helped 281 existing renewable facilities, representing 4,700 MW of renewable energy capacity, remain competitive or return to service with more than \$332 million in funding. This disbursement also includes Existing Renewable Facilities Program funding for the Agriculture-to-Biomass Program. A total of \$6 million was paid to biomass facilities that increased their use of qualified agricultural biomass for the 2003-2004 fiscal year.

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10 This dollar amount does not include the \$461,681,784 refunded to the IOUs under SB 1036.

11 Discussion of RRTF fiscal transactions does not include funds from the California Attorney General's Alternative Energy Retrofit Account (AGAERA) unless specifically noted. AGAERA provided match funds of \$2.25 million for the Emerging Renewables Program's Solar Schools Program. This program disbursed rebates for the installation of solar photovoltaic systems for public and charter schools meeting certain eligibility requirements.

12 Legislative mandates are as follows: rebates for emerging renewable energy system installations, generation from existing renewable facilities, and consumer education activities. These remaining funds include the following future loan and appropriation: \$1.011 million loan to CAEATFA per the Budget Act of 2010 and \$34.983 million appropriation for CAEATFA per SB 77 (Statutes of 2010).

- Consumers statewide have been educated about renewable energy and its benefits through public service announcements, events, workshops, radio and television, Web educational material, newspaper and magazine articles, brochures, tool kits, and fact sheets funded by the Consumer Education Program. Since 1999, the Consumer Education Program has spent nearly \$16 million to support 3 public awareness campaigns funded through contracts; 21 grant projects awarded for renewable energy information and outreach activities; and the development of an electronic tracking system, called the Western Renewable Energy Generation Information System (WREGIS, [www.wregis.org/](http://www.wregis.org/)) to address long-term RPS tracking needs. The Consumer Education Program's current marketing and outreach activities support customer-side renewable technologies and programs (Senate Bill 1, NSHP, Emerging Renewables Program) with an emphasis on promoting solar PV installations in the residential new single-family and multifamily market-rate and affordable housing segments within IOU service territories.
- The New Renewable Facilities Program supported new renewable electricity generators. During the program's tenure, more than \$76 million was disbursed to 47 on-line projects that generated 8,731 gigawatt hours (GWh) of clean renewable electricity. This represents 489 MW of new renewable capacity added to California's electricity grid.
- Among residential and small commercial customers who entered into direct access contracts with alternative providers, nearly 100 percent made renewable electricity purchases and were provided incentives through the Customer Credit Program. The discontinued program supported more than 200,000 customers purchasing renewable energy, with funds totaling more than \$65 million.

Please refer to Table 11 for a financial summary of the RRTF through June 30, 2011, reflecting cumulative funds collected, disbursed, encumbered, and reallocated since the beginning of the Renewable Energy Program in 1998. The table also shows funds transferred, loaned, and appropriated.

## **CHAPTER 3: Program Activities and Results**

### **Renewables Portfolio Standard Tracking and Verification–WREGIS**

The Energy Commission, together with APX, Inc., (APX) and the Western Electricity Coordinating Council (WECC), implemented the WREGIS, a regional renewable energy certificate tracking and registry system. WREGIS issues and tracks “WREGIS Certificates” to support verification of compliance with California’s RPS and with regulatory and voluntary renewable energy programs in the Western Interconnect. The WREGIS software application became available for use on June 25, 2007, and the WREGIS staff began accepting applications for account holder registration. California utilities are now required to track all generation in WREGIS for the generation to count toward their RPS goals.

WREGIS consists of two components: (1) a renewable energy registry and tracking system and its technical infrastructure, provided by APX in San Jose, and (2) the administrative operations infrastructure and staff to develop and administer the WREGIS program, provided by WECC at its headquarters in Salt Lake City, Utah. The following are highlights of WREGIS/APX and WREGIS/WECC activities in fiscal year 2010-2011.

#### **WREGIS/APX Activities**

The Energy Commission and APX contract ended on October 5, 2010. WECC entered into a separate three-year contract with APX, beginning October 6, 2010, with options for extensions after the initial contract term. The WECC/APX contract will continue operations of the WREGIS system and software, and all previous services performed by APX.

APX implemented several changes to the registry and tracking system during the fiscal year that were approved through the WREGIS change control process. The Energy Commission is represented on the Change Control Subcommittee as well as on the WREGIS Committee (the governance committee of WREGIS), which issues final approval on all changes to the system.

#### **WREGIS/WECC Activities**

The WREGIS Committee guides policies and makes decisions related to WREGIS activities, while the Energy Commission acts as the financial backstop for WECC with respect to WREGIS activities. The Energy Commission and WECC act under a \$2.2 million contract, which formalizes the agreement to fund WREGIS activities at WECC and defines the roles and responsibilities of the Energy Commission and WECC. WREGIS staff at WECC is responsible for hosting WREGIS and administering the WREGIS program.

The WREGIS Committee also played a major part in ensuring that WECC met its commitment to have WREGIS self-funded within three years. To meet this goal, WREGIS staff began collecting user fees on January 1, 2008, to offset costs. The fee levels were chosen carefully to achieve the goals and oversee the operations of WREGIS in a manner that is fair, credible, consistent with the public interest, and responsive to the needs of participants. Since February 2009 through June 30, 2011, all WREGIS at WECC expenses have been met by user fees.

The Energy Commission/WECC contract will end on March 30, 2012. In anticipation of this contract expiration, WREGIS staff has initiated discussions with WECC to explore the possibility of WECC continuing to house the WREGIS program.

As of June 30, 2011, 445 account holders were registered in WREGIS with another 28 pending complete registration. In addition, WREGIS staff has registered 1,885 active generators with an additional 85 pending approval. These numbers represent an account holder increase of 28 percent from last year and a generator increase of 36 percent over the same time last year. Generally, account holders and generators are considered “pending” because they have yet to submit all necessary documentation, a signed “terms of use” account holder agreement, or the annual fee.

Table 4 shows cumulative funding and expenditures for WREGIS development and implementation as of June 30, 2011.

**Table 3: WREGIS Operations  
Cumulative Funding and Expenditures as of June 30, 2011**

<b>Description</b>	<b>Funding</b>	<b>Expenditures as of 6/30/2011</b>
APX, Inc., System Development and Technical Operations Contractor	\$3,277,702	\$2,554,864
Establish and operate WREGIS at the WECC	\$2,202,750	\$1,171,955
Knowledge Structures, Inc. <sup>13</sup>	\$249,250	\$232,219
KEMA-XENERGY technical support <sup>14</sup>	\$70,293	\$70,293
KEMA technical support <sup>15</sup>	\$236,226	\$185,320
Enterprise Networking Solutions <sup>16</sup>	\$193,200	\$193,200
Visionary Integration Professionals	\$198,000	\$238,000*
Public Sector Consultants	\$55,100	\$55,100
Personal Enterprises, Inc.	\$115,200	\$154,560**
<b>TOTAL</b>	<b>\$6,597,721</b>	<b>\$4,855,511</b>

\*\$198,000 from Consumer Education Account; \$40,000 from Energy Resources Programs Account

\*\*\$115,200 from Consumer Education Account; \$39,360 from Energy Resources Programs Account

Source: California Energy Commission WREGIS Operations database

13 From April 2004 through January 2006, Knowledge Structures, Inc., helped the Energy Commission develop the request for proposals for the WREGIS System Development and Technical Operations Contractor.

14 KEMA-XENERGY, under Energy Commission Contract #500-01-036, was technical support contractor for the Renewable Energy Program from June 2002 through June 2005. KEMA-XENERGY later changed its name to KEMA.

15 KEMA, under Energy Commission Contract #500-04-027, was technical support contractor for the Renewable Energy Program with a contract term of June 2005 through June 2008.

16 Beginning May 2005 through April 2006, Enterprise Networking Solutions served as the senior project manager consultant to manage and coordinate the implementation phase of the WREGIS project.

Additional information for fiscal year 2010-2011 WREGIS development and implementation expenditures and encumbrances are reported in the section and *Appendix E* of its funding source, the Consumer Education Program.

## **Emerging Renewables Program**

### **Background**

The Emerging Renewables Program provides incentives in the form of rebates to customers who install eligible renewable energy systems to offset part or all of their electricity needs at their homes or businesses. Along with expanding the sales of emerging renewable technology systems, the Emerging Renewables Program aims to encourage the siting of small, reliable distributed generating systems throughout California in locations where the produced electricity is both needed and consumed. The overall Emerging Renewables Program has changed over the years to become an umbrella program encompassing several discrete elements. The currently active components are discussed below.

The Emerging Renewables Program continues to focus on stimulating the market for small-scale distributed renewable energy systems until incentives are no longer needed to sustain the market for these technologies. Because price has been a major barrier to consumer adoption, rebates reduce the initial net purchase cost of the systems, thereby stimulating sales. Dramatic increases in demand for solar PV systems has encouraged manufacturers to expand their production volume, which in turn improves the distribution network and increases the number of qualified installers. Because the market's expansion improves economies of scale, the Energy Commission aims to lower system costs over the long term, particularly as technology advances.

### **Emerging Renewables Program (1998-2006 and 2007-2011)**

To be eligible to receive rebates from the Emerging Renewables Program, a number of basic criteria must be met. The generating system must be new, use an eligible technology type, and include other major system components (for example, inverters) approved by the Energy Commission. Qualifying systems must have a five-year warranty and be less than 30 kW in size.<sup>17</sup> In addition, the generating system must be installed on a site that is interconnected to an eligible electric utility (IOUs only) and must offset part or all of the electricity demands of its installation site.

From 1998 through 2006, eligible technologies were solar PV, small wind, fuel cells using renewable fuels, and solar thermal electric. Effective 2007, however, the solar portion of the Emerging Renewables Program ended and was replaced with the Energy Commission's NSHP

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<sup>17</sup> Wind systems up to 50 kW in size may participate, but the rebates for such systems are limited because the rebate applies only to reducing the capital costs of 30 kW.

and the CPUC's CSI.<sup>18</sup> Fuel cells (less than 30 kW in size and using a renewable fuel) and small wind turbines (rated output of 50 kW or less) are still eligible for rebates under the Energy Commission's Emerging Renewables Program.<sup>19</sup>

#### *Program Accomplishments and Status*

During fiscal year 2010-2011, the Energy Commission paid \$3 million to 140 rebate applicants for completed projects located in IOU service areas. Completed projects during the fiscal year represent 1 MW of generating capacity from PV, wind, and fuel cell systems. As of June 30, 2011, customers planning to install additional systems held approved rebate reservations totaling 2.5 MW of wind capacity, encumbering about \$7 million.<sup>20</sup>

Since the Emerging Renewables Program's beginning in 1998 through June 2011, 28,673 emerging renewable systems have been installed with support from the program, representing 127 MW of distributed renewable electricity capacity, bringing total disbursements to about \$409 million.

Details of Emerging Renewables Program projects and payments made during fiscal year 2010-2011 are available in the *2011 Annual Report Appendix, Appendix B*, on the Energy Commission's website at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html).

#### *Emerging Renewables Program Support of Small Wind System Installations*

Since the start of the Energy Commission's Emerging Renewables Program in 1998, California has seen significant fluctuation in the number of small wind systems installed annually, including a steady decline in rebate applications since 2006. With the removal of the solar PV technology from the Emerging Renewables Program, Energy Commission staff in this program has been able to focus more on small wind technology and has conducted the following activities:

- Consumer education has been used to promote small wind technology and raise consumer awareness. In May 2010, the Energy Commission approved an interagency contract with the University of California, Davis, to create a Web-based program, the Small Wind Energy Evaluation Tool or SWEET, to evaluate the electrical performance of small wind turbines, as well as provide an economic analysis of the payback on a small wind purchase and investment. When the model is completed, prospective customers will be able to use the tool to estimate the overall financial value of a small wind turbine and be fully informed about the benefits and costs before considering purchasing a small

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18 Additional information on the CSI is available on the CPUC's website at [www.cpuc.ca.gov/PUC/energy/Solar/](http://www.cpuc.ca.gov/PUC/energy/Solar/). The CPUC's 2009 and 2010 annual reports to the Legislature on the progress of the CSI are located at [www.cpuc.ca.gov/PUC/energy/Solar/apa09.htm](http://www.cpuc.ca.gov/PUC/energy/Solar/apa09.htm) and [www.cpuc.ca.gov/PUC/energy/Solar/apa10.htm](http://www.cpuc.ca.gov/PUC/energy/Solar/apa10.htm).

19 The CPUC's Self-Generation Incentive Program provides rebates for wind or fuel cell (using a renewable fuel) systems greater than 30 kW in size. For more information, please visit [www.cpuc.ca.gov/PUC/energy/DistGen/sgip/](http://www.cpuc.ca.gov/PUC/energy/DistGen/sgip/).

20 The Emerging Renewables Program's Pilot Performance-Based Incentive Program for solar PV installations is no longer accepting new applicants, and program payments were concluded in June 2011.

wind system. The tool is expected to be available on the Energy Commission's website in the third quarter of 2011.

- On March 4, 2011, the Energy Commission issued a temporary suspension of the Emerging Renewables Program. This suspension was issued in response to a significant increase in applications for small wind energy systems where the applicant is requesting rebate amounts close to or equal to the total installed cost of the system. As a result, the consumer and retailer/installation contractor may have no interest in verifying that the installation site has adequate wind resources to accommodate the wind energy system and that the system can generate enough electricity to offset the consumer's electrical load. Wind energy systems installed in locations with a poor wind resource are likely to underperform and result in a poor investment and use of Emerging Renewables Program funding.
  - On April 14, 2011, staff conducted a workshop to solicit input from stakeholders to revise the *Emerging Renewables Program Guidebook*. The *Emerging Renewables Program Guidebook* revisions are anticipated to be adopted in fall 2011 and will allow the Energy Commission to restart the Emerging Renewables Program.

One of the main barriers to small wind development in California is inadequate or overly burdensome permitting processes. In response to these permitting issues, AB 45 (Statutes of 2009) requires California counties to adopt ordinances governing the installation of small wind turbines by January 1, 2011. AB 45 outlines basic criteria that wind ordinances must address. Specifically, this bill states that if a county has not already adopted an ordinance to regulate the installation of small wind energy systems in the jurisdiction outside of "urbanized areas," it must adopt an ordinance to ensure the county is not applying overly restrictive or burdensome permitting requirements on small wind energy system installations. Counties do not have to follow the procedures in AB 45 if they have already adopted a small wind energy installation ordinance. AB 45 requires the Energy Commission to provide a report to the Legislature on the status of small wind in California by January 1, 2016.

### Pilot Performance-Based Incentive Program

Beginning in 2005, the Emerging Renewables Program offered a performance-based incentive (PBI) option for customers installing solar PV systems. The PBI option offered customers \$0.50 per kWh generated for three years. Collecting and reporting on the system performance were done either by the customer's electric utility or through a Web-based monitoring system. Customers submitted their production data quarterly to receive payment.<sup>21</sup>

During fiscal year 2010-2011, the Energy Commission paid \$68,440 to 2 PBI participants. Since 2005, the Energy Commission has paid \$1.9 million to 19 PBI participants representing 3.8 MW. The program closed at the end of June 2011.

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<sup>21</sup> Under SB 1, the Emerging Renewables Program stopped offering solar photovoltaic incentives to new applicants in 2007.

## New Solar Homes Partnership

Senate Bill 1 established the following self-generation solar PV programs: the Energy Commission's NSHP, the CPUC's CSI, and the POU's solar rebate programs. This statewide effort is known collectively as Go Solar California<sup>22</sup> and it is based on the "Million Solar Roofs" vision for the state. The statewide goal of the Go Solar California campaign is 3,000 MW of solar generating capacity with a statewide budget of \$3.35 billion.

As part of this comprehensive statewide solar program,<sup>23</sup> the NSHP has been created to encourage the installation of 400 MW of solar systems on new homes by the end of the program in 2016. The \$400 million NSHP also has a goal that by the end of the 10-year program, 50 percent of new homes constructed annually would have solar systems.

Funding for the NSHP is through monies collected for the Renewable Energy Program's Emerging Renewables Program. Authorization is needed to continue the collection of funds for the Renewable Energy Program beyond 2011, to enable the NSHP to continue working toward the 400 MW and \$400 million funding targets established by SB 1.

The NSHP offers financial incentives to encourage high-performing solar PV installations on new, energy-efficient residential construction, including new affordable housing. To qualify for NSHP incentives, energy efficiency standards for new residential housing must be at least "Tier 1," or 15 percent greater efficiency than Title 24 residential building efficiency standards. In addition, homes must have ENERGY STAR® appliances, if the appliances are provided by the builder. When the program began in 2007, the 2005 standards served as the benchmark for the Tier 1 efficiency requirements. On January 1, 2010, the 2008 standards became effective, and the *New Solar Homes Partnership Guidebook* continues to require eligible residential units to achieve 15 percent higher efficiency than the 2008 standards.

Higher efficiency than the Tier 1 minimum requirement is supported. The NSHP program encourages builders to achieve "Tier 2" efficiency levels that are 30 percent higher than the 2008 Title 24 standards. Utility energy efficiency programs for new residential construction offer builders additional financial incentives to help offset the costs of achieving Tier 1 and Tier 2 efficiency requirements.

The program offers rebates based on the expected output of the systems. The rebates are paid upfront when the system has been completed. The overarching philosophy is that energy-efficient solar homes save homeowners money on their electric bills and protect the

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22 Go Solar California, [www.gosolarcalifornia.ca.gov/about/gosolar/history.php](http://www.gosolarcalifornia.ca.gov/about/gosolar/history.php).

23 SB 1 codified the largest solar program of its kind in the nation and will provide up to \$3.35 billion in investor-owned and publicly owned utility ratepayer funding from 2007-2016 to help California move toward a cleaner energy future and help bring the costs of solar electricity down for California consumers. The solar program will be a major source of dependable and environmentally friendly electricity and is a major tool in the state's promise to address climate change and to meet the goals to reduce greenhouse gas emissions. Both the NSHP and the CPUC-administered CSI programs became operational January 1, 2007.

environment. Incentives currently range from \$2.50 to \$2.60 per watt for market rate housing and \$3.30 to \$3.50 per watt for affordable housing. The actual incentive amount for a particular solar energy system and installation depends on the expected performance-based incentive calculation of the system's expected performance compared to the Energy Commission-specified reference solar energy system. Funding can be reserved for 18 months up to 36 months, depending on the housing type.

The Energy Commission continues its commitment to improve program design and streamline administrative processes. A staff workshop was conducted on February 8, 2011, to discuss proposed revisions to the *New Solar Homes Partnership Guidebook*. Solar retailers, contractors, HERS raters, energy consultants, builders, and the program administrators (the IOUs) attended and offered comments on the issues discussed. The information collected from the workshop will facilitate revisions to the *Guidebook* in the latter part of 2011.

### *Program Administration*

The NSHP program continues to be administered by the IOUs (PG&E, SCE, and SDG&E) with oversight by the Energy Commission. Because the IOUs have established working relationships with home builders and offer financial incentives for higher energy efficiency in new residential construction, the degree of administrative integration and synergies among the IOUs' programs (energy efficiency, interconnection services, and other new production home services) adds further value to justify adding discrete NSHP components to the utilities' other programs. In addition, the structure of the utilities' new residential construction energy efficiency programs streamlines the energy efficiency component of the application process and avoids significant duplication with the NSHP. The Energy Commission has extended its program administration contracts with the IOUs until June 30, 2013, for an additional \$2 million.

NSHP working group meetings are held monthly between Energy Commission staff and utility program administrators to discuss program design and operations and resolve program-related issues.

### *Program Activity*

As of June 30, 2011, 1,668 applications, representing 15,447 residential solar PV systems, had applied for incentives. Of the 1,668 applications, 273 applications (representing 3,464 systems) were under review; 1,395 applications (representing 11,983 residential systems) were listed as approved; and 4,088 of those approved systems had been paid. During the period July 1, 2010—June 30, 2011, total payments of \$13.3 million were made for 1,185 completed systems. Tables 6 and 7 summarize cumulative NSHP activity.<sup>24</sup>

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<sup>24</sup> PG&E and SDG&E issue incentive payments directly to NSHP applicants and are later reimbursed by the Energy Commission upon request. Applicants to the SCE-administered NSHP are paid via the Energy Commission. The Energy Commission's reported cumulative disbursements may not include all of PG&E's and SDG&E's incentive payments for the previous quarter. This is due to the time lag between those utilities issuing a payment, submitting a reimbursement request, and subsequently being reimbursed by the Energy Commission.

**Table 4: New Solar Homes Partnership Activity  
2007 Through June 30, 2011  
Residential Systems**

Application Type	SUBMITTED			
	Under Review	Approved	Completed Systems	Total
Development	3,153	7,425	2,888	13,466
Affordable Housing	108	91	518	717
Custom Home	203	379	682	1,264
<b>Total</b>	<b>3,464</b>	<b>7,895</b>	<b>4,088</b>	<b>15,447</b>

Source: California Energy Commission New Solar Homes Partnership database.

**Table 5: New Solar Homes Partnership Activity  
2007 Through June 30, 2011  
MW and Payments**

Application Type	Under Review/ Approved (MW)	Completed (MW)	Total (MW)	Completed and Paid (\$ millions)
Development	24.22	5.94	30.16	\$16.37
Affordable Housing	2.50	2.52	5.02	\$8.52
Custom Home	3.78	3.85	7.63	\$9.72
<b>Total</b>	<b>30.51</b>	<b>12.31</b>	<b>42.82</b>	<b>\$34.62</b>

Source: California Energy Commission New Solar Homes Partnership database.

Details of individual NSHP projects and payments are available in the *2011 Annual Report Appendix, Appendix C*, located on the Energy Commission's website at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html).

#### *Additional NSHP Activities*

The NSHP website includes a Web-application tool, which was originally designed for record retention, auditing, and application processing. NSHP program participants use this online tool to apply to the program (electronically upload and submit required documents) and monitor the status and progress of their NSHP application. To improve the Web tool and make it more user friendly, work is being completed to refine the database. Information, Integration, Innovation & Associates Inc. began this process by implementing a more standardized industry data model and increasing overall data integrity. Its contract ended in January 2011, and technical assistance is now provided by Engage. Engage is finishing the database

improvements, as well as working on simplifying process flows and designing enhancements based on stakeholder feedback.

Since the incentive levels remain unchanged and are significantly greater than other solar programs, interest in the NSHP has increased. Training workshops have been conducted in Redding, San Francisco, Visalia, and San Bernardino to inform interested parties of program requirements, application processes, the online application tool, and the Energy Commission PV Calculator, which calculates estimated system performance and supports the NSHP rebate application.

Expenditures for the NSHP support contracts are reported under their funding source, the Consumer Education Program.

## **Existing Renewable Facilities Program**

### **Background**

The Existing Renewable Facilities Program provides production-based incentives for renewable energy facilities that began commercial operation before September 26, 1996. Currently, facilities receiving support from this program must generate and sell electricity to an IOU in California using either solar thermal or solid-fuel biomass combustion technologies.<sup>25</sup> To receive funding, an eligible facility must have a contract price below a target price in a given month. Beginning in 2007, SB 1250 modified the program structure, requiring an evaluation of each facility annually. To perform this evaluation, the Energy Commission requires facilities to apply for funding annually. Energy Commission staff evaluates eligibility for Existing Renewable Facilities Program funds based on the criteria in Public Resources Code Section 25742. Specifically, the facility must be physically located in California and certified by the Energy Commission as eligible for California's RPS. Applicants must also provide the following information to the Energy Commission:

- The cumulative amount of funds the facility has previously received from the Energy Commission and other state sources.
- The value of any past and current federal or state tax credits.
- The facility's contract price for energy and capacity.
- The market value of the facility.
- An estimate of the incentive payment needed (in cents-per-kWh) during the calendar year; also an explanation of why this incentive level is needed.
- An explanation of how the incentive payments from the Existing Renewable Facilities Program will allow the facility to become cost-competitive by the end of 2011.

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<sup>25</sup> Although existing wind facilities are technically eligible for funding from 2007–2011, they have not required assistance since 2004 and therefore have not been allocated Existing Renewable Facilities Program funds.

Energy Commission staff assigns each facility a target price every year based on the facility’s utility contract terms and technology. Production incentives are paid on a cents-per-kWh basis for eligible generation. The incentive rate is calculated as the difference between the facility’s contract price and its market price, up to a predetermined cents-per-kWh cap. The goal of the program is to create a self-sustaining industry for existing solid-fuel biomass and solar thermal facilities in California.

A facility seeking Existing Renewables Facilities Program funding is placed in one of five tiers based on the facility’s renewable energy resource type, average annual energy price, and utility power purchase contract. Tables 7 and 8 show the funding tiers and applicable target price and production incentive cap for facilities participating in the Existing Renewable Facilities Program.

**Table 6: Tiers for Facilities Participating in the Existing Renewable Facilities Program**

<b>Tier</b>	<b>Energy Resource</b>	<b>Average Annual Energy Price</b>	<b>Investor-Owned Utility Contract</b>
<b>Tier 1</b>	Solar Thermal Electric	Facilities with power purchase contracts receiving fixed or variable monthly average energy prices for a majority of their generation at 4.0 cents/kWh or less.	PG&E, SCE, and SDG&E
<b>Tier 2</b>	Biomass	Facilities with power purchase contracts receiving fixed or variable monthly average energy prices for a majority of their generation at 5.0 cents/kWh or less.	PG&E and Sierra Pacific Power Company
<b>Tier 3</b>	Biomass	Facilities with power purchase contracts receiving fixed or variable monthly average energy prices for a majority of their generation at 5.0 cents/kWh or less.	SCE, SDG&E
<b>Tier 4</b>	Biomass and Solar Thermal Electric	Facilities with power purchase contracts receiving variable monthly energy payments based on the short-run avoided cost (SRAC) or facilities with contracts receiving fixed monthly average energy prices for a majority of their generation greater than 5.0 cents/kWh but less than or equal to 6.5 cents/kWh or facilities receiving all-in prices.	SCE, SDG&E
<b>Tier 5</b>	Biomass and Solar Thermal Electric	Facilities with power purchase contracts receiving variable monthly energy payments based on the SRAC or facilities with contracts receiving fixed monthly average energy prices for a majority of their generation greater than 5.0 cents/kWh but less than or equal to 6.8 cents/kWh or facilities receiving all-in prices.	PG&E and Sierra Pacific Power Company

Source: California Energy Commission, *Existing Renewable Facilities Program Guidebook, Sixth Edition*

**Table 7: Target Prices and Caps (cents/kWh) From 2008 Through 2011**

<b>Tier</b>	<b>Target Price</b>	<b>Production Incentive Cap</b>
<b>Tier 1</b>	6.2 cents/kWh	2.0 cents/kWh
<b>Tier 2</b>	6.5 cents/kWh	1.5 cents/kWh
<b>Tier 3</b>	6.2 cents/kWh	1.5 cents/kWh
<b>Tier 4</b>	6.2 cents/kWh	1.5 cents/kWh
<b>Tier 5</b>	6.5 cents/kWh	1.5 cents/kWh

Source: California Energy Commission, *Existing Renewable Facilities Program Guidebook, Sixth Edition*

The program is designed to fully fund incentive payments (assured payments) to facilities with fixed-price contracts below 5 cents per kWh – facilities in Tiers 1, 2, and 3 – then the balance of remaining funds is allocated to facilities in Tiers 4 and 5. Tier 4 and 5 payments are calculated and possibly adjusted based on estimated funds remaining during the calendar year. Total Existing Renewable Facilities Program payments are capped at \$18 million per calendar year.

### Market Conditions Affecting Program Funding

The original purpose of the Existing Renewable Facilities Program was to ease the transition for existing renewable facilities from high fixed-price contracts to lower variable-price contracts with the goal of creating a fully competitive renewable market in California. While the Energy Commission has deemed other existing renewable technologies competitive, existing solid-fuel biomass facilities continue to struggle in the marketplace. Many biomass facility operators contend that they could not operate at their current levels without financial assistance.

According to industry representatives, existing biomass cannot compete effectively with other renewables because, unlike other renewables, biomass facilities must procure their fuel and transport it to the facility. Currently, fuel procurement and transportation costs average 2–6 cents per kWh.

In recent years, energy prices based on the SRAC (calculated based on the price of natural gas) have declined from over 7 cents per kWh to under 5 cents per kWh. During the summer of 2009, SRAC prices reached their lowest level since 2002 and hovered near 3 cents per kWh through September 2009. SRAC prices have continued to be below 5 cents per kWh through June 2011.

Low SRAC prices have limited the number of eligible facilities that can be supported by the Existing Renewable Facilities Program funds. Facilities that received SRAC prices continue to draw higher levels of funding from the Existing Renewable Facilities Program, resulting in minimal funding availability for the remaining Tier 4 and 5 facilities. For example, during the July through December generation period, Tier 4 and 5 facilities received \$1 million in 2009 and \$2.7 million in 2010 compared to \$5 million during the same period in 2008.

All of the facilities receiving SRAC prices have been renegotiating their energy price contracts. Two facilities reached an agreement. Two others reached an impasse and were forced to shut down beginning in November 2010.

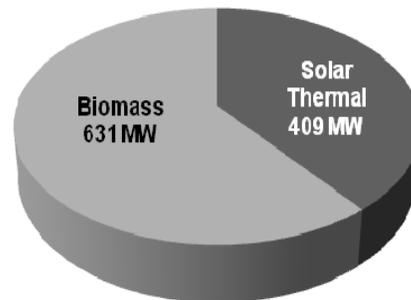
As of June 2011, six participating biomass facilities were temporarily shut down for various reasons, including high fuel costs, low contract prices, and regulatory actions by air districts. These facilities are capable of restarting commercial operations; however, whether they restart depends on timber prices and a more robust timber industry, successful contract renegotiations, and meeting environmental performance standards.

### Program Accomplishments and Status

In January 2011, the Energy Commission received and approved 35 applications for Existing Renewable Facilities Program funding. Applicants represented 25 solid-fuel biomass and 8 solar thermal facilities. Figure 2 provides the breakdown of eligible capacity by technology for calendar year 2011.

The Energy Commission distributed the first payments from the Existing Renewable Facilities Program in March 1998. From the beginning of the program through June 30, 2011, the Energy Commission has provided production incentives of more than \$326 million for more than 87,400 GWh of generation from the Existing Renewable Facilities Program. Payments for fiscal year 2010-2011 totaled \$18.2 million on 4,277 GWh of generation. The *2011 Annual Report Appendix, Appendix D*, located on the Energy Commission's website at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html), provides a project-by-project breakdown of payment and generation for the 2010-2011 fiscal year.

**Figure 1:  
Existing Renewable Facilities Program  
Capacity (MW) for Calendar Year 2011**



Source: California Energy Commission Existing Renewable Facilities Program database

Table 9 summarizes payment information by technology since the beginning of the program.

**Table 8: Existing Renewable Facilities Program Payments  
January 1, 1998, to June 30, 2011**

Technology	Generation (kWh)	Payments	Years Funding Received
Biomass	37,489,608,057	\$221,520,734	1998 – 2011
Solar thermal	9,445,202,951	\$40,551,549	1998 – 2011
Wind	13,647,877,825	\$36,421,502	1998 – 2003
Digester gas	46,951,481	\$17,712	1998 – 2001
Geothermal	21,517,571,711	\$16,393,710	1998 – 2001
Landfill gas	2,906,936,989	\$2,779,033	1998 – 2001
Small hydro	2,061,599,882	\$4,540,603	1998 – 2001
Waste tire	286,844,813	\$4,207,418	1998 – 2000
<b>Total</b>	<b>87,402,593,709</b>	<b>\$326,432,261</b>	

Source: California Energy Commission Existing Renewable Facilities Program database

### Fuel Use by Biomass Facilities and Impacts on Improving Air Quality

As part of the reporting requirements for the *Renewable Energy Program Annual Report to the Legislature*, the Energy Commission must describe the types and quantities of biomass fuels used by each facility seeking an award from the Existing Renewable Facilities Program and their impacts on improving air quality. As stated in the *Existing Renewables Facilities Program Guidebook, Sixth Edition*:

Applicants are required to provide fossil fuel and biomass fuel usage for the previous calendar year in the Biomass and Fossil Fuel Usage Report for Biomass Facilities (CEC-1250E-4). The CEC-1250E-4 requires the following information:

- 1) Type of fuel used: agricultural, urban wood waste, wood/waste from state forests
- 2) Quantity of biomass fuel in bone dry tons
- 3) Total energy input of biomass fuel (mmBTU)
- 4) Types of fossil fuel used
- 5) Total energy input of fossil fuel (mmBTU) <sup>26</sup>

Existing solid-fuel biomass facilities use residual biomass from sawmills, forest fire treatment projects, agriculture, and urban wood waste sources. Without a biomass facility in the vicinity, the residuals from these projects are pile burned or transported to

<sup>26</sup> California Energy Commission, *Existing Renewable Facilities Program Guidebook: Sixth Edition*, January 2009, CEC-300-2009-001-CMF, p. 19, [www.energy.ca.gov/2009publications/CEC-300-2009-001/CEC-300-2009-001-CMF.PDF](http://www.energy.ca.gov/2009publications/CEC-300-2009-001/CEC-300-2009-001-CMF.PDF).

landfills. Biomass used as an energy source also provides additional revenue for wildfire prevention projects, agriculture, and urban waste management.

Biomass facilities provide air quality benefits by combusting biomass in a controlled environment, thus avoiding higher emissions (such as nitrous oxides and particulate matter) from pile burns.

Biomass removal from wildfire prevention projects and agriculture residues can reduce the occurrence of large costly wildfires, protect watershed and ecosystems, provide an alternative to open field burning, and increase the efficiency and profitability of forestry and farming. Compared to wildfires and open field burning, biomass provides improved local air quality and public health. Also, using residual biomass to generate electricity reduces the amount of waste buried in landfills. In addition, by avoiding decay, biomass generation reduces the release of methane and other potent greenhouse gases.

Biomass facilities participating in the Existing Renewable Facilities Program must use less than 5 percent fossil fuel to qualify for full incentive payments.<sup>27</sup> Facilities that use more than 5 percent fossil fuel qualify only for funding for the portion of their energy generated from eligible biomass sources.

The *2011 Annual Report Appendix, Appendix D*, includes the quantities of the following types of biomass fuel used by each biomass facility: agricultural crops, agricultural waste, and agricultural residue; urban wood waste materials; and wood/forest wood waste.

## **Consumer Education Program**

### **Background**

The Consumer Education Program educates consumers and generates public interest about renewable energy, and also seeks to build and maintain a consumer-driven market for renewable power through consumer education and outreach. The Consumer Education Program provides marketing and outreach for the Renewable Energy Program's customer-side renewable programs and technologies (SB 1, NSHP, Emerging Renewables Program) with an emphasis on promoting solar PV installations in the residential new single-family and multifamily market-rate and affordable housing segments within IOU service territories. The Consumer Education Program also provides assistance to builders/installers and supports marketing and outreach efforts as directed in SB 1 through statewide training, workshops, educational material, and other tools.

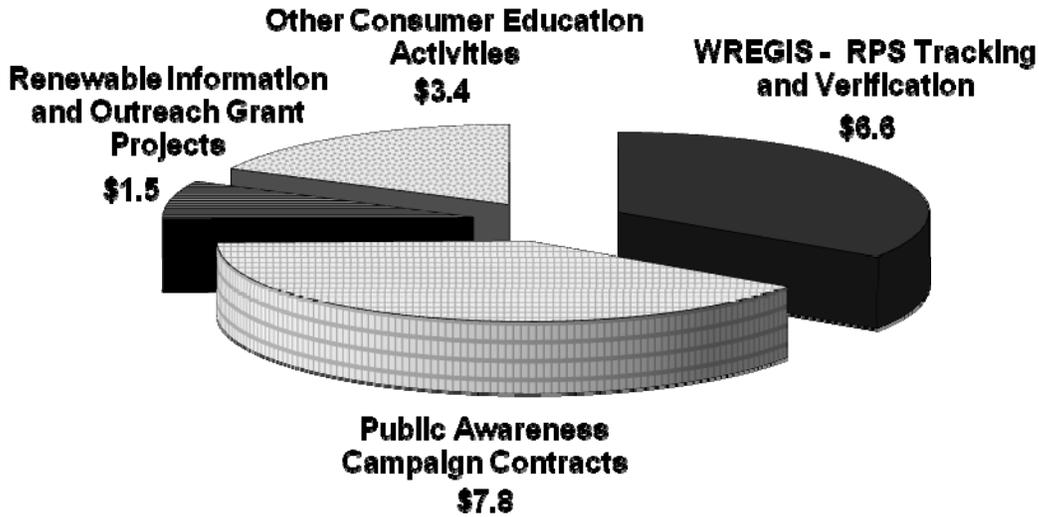
Since 1999, the Consumer Education Program has spent or encumbered about \$18.6 million to support 3 public awareness campaigns funded through contracts; 21 grant projects awarded for renewable energy information and outreach activities; the development of an electronic tracking

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<sup>27</sup> Existing solid-fuel biomass facilities may require at least a minimal amount of fossil fuel use to operate. For example, fossil fuel may be required for ignition, startup, testing, flame stabilization, and control uses, and to alleviate or prevent unanticipated equipment outages or emergencies.

system, WREGIS, to address long-term RPS tracking needs; and other consumer education activities promoting renewable energy. Figure 3 shows how Consumer Education Program funds have been allocated among activities.

**Figure 2: Consumer Education Program Expenditures and Encumbrances (\$ million) as of June 30, 2011**



Source: California Energy Commission Consumer Education Program database.

### Program Accomplishments and Status

Fiscal year 2010-2011 consumer education accomplishments and expenditures are discussed below.

#### *WREGIS – RPS Tracking and Verification*

As part of its goal to develop information, products, and processes that promote the renewable energy market in general, including those that add consumer value to renewable energy by verifying and tracking energy generation and verifying retail product claims, the Consumer Education Program has funded targeted WREGIS activities. Additional WREGIS activities are discussed in the Renewables Portfolio Standard section of Chapter 3.

- Following are WREGIS expenditures for fiscal year 2010-2011 (from the Consumer Education Account unless noted otherwise):
  - APX, Inc. contract for \$3,277,702 for the services of a System Development and Technical Operations (SD&TO) Contractor for WREGIS. The SD&TO Contractor modified an existing generation registry and tracking system to serve the needs of WREGIS and continued to perform operations and maintenance for the system through the end of the Energy Commission’s contract with APX in October 2010.  
Spent: \$147,018

Total expenditures during this contract (October 2006–June 2010) were \$2,554,864, leaving a balance of \$722,838. The remaining funds were transferred back into the Consumer Education Account.

- WECC contract (September 2006-March 2012) for \$2,202,750 for the administration of WREGIS. The WREGIS administration staff runs the day-to-day operations of WREGIS.

Spent: \$0

Since February 2009, all WREGIS at WECC expenses have been met with user fees.

*KEMA Technical Support Contract  
#400-07-030*

This three-year \$3,681,000 contract with KEMA (Consumer Education Program dollars are funding \$1 million of this amount) was originally executed in July 2008. In April 2011, a one-year, no-cost time extension was approved at an Energy Commission business meeting extending the end date of the contract to April 30, 2012. This contract provides technical assistance to the Renewable Energy Program, including Consumer Education-related activities. Following are KEMA Consumer Education activities and expenditures during fiscal year 2010-2011:

- KEMA/Engage – The Solar Advantage Value Estimator

This \$220,652 work authorization was executed in November 2010 to develop the Solar Advantage Value Estimator (SAVE) tool designed to estimate the present value of a solar PV system, including the estimated value in annual energy savings. Staff is creating this tool, with the help of a program developer, in response to expressed interest from appraisers, real estate agents, and other stakeholders. SAVE will be used predominantly by home appraisers to calculate the energy savings value of a solar system and to add that value to an appraisal of a solar home. The initial phase of SAVE went live in summer 2011 and will be housed on the GoSolarCalifornia website at [www.gosolarcalifornia.org](http://www.gosolarcalifornia.org).

Spent: \$69,408

- KEMA/Engage – NSHP Online Tool

Approved in November 2010, this \$357,662 work authorization provides technical support and maintenance for the NSHP Web tool. The NSHP Web tool is an online application tool designed to streamline the application and payment process for NSHP customers. It also helps the application and payment reviews by the program administrators, allowing them to easily communicate with customers. As part of an ongoing effort to improve the Web tool and make it more user-friendly, Engage has been implementing a more standardized industry data model, increasing overall data integrity, simplifying process flows, and designing enhancements based on stakeholder feedback. A new version of the Web tool is expected to be made available to the public at the end of 2011.

Spent: \$72,858

- KEMA/Engage – NSHP Program Evaluation

This \$77,856 work authorization was approved in October 2010 for KEMA to review and evaluate the NSHP program including: 1) NSHP achievements and progress to date; 2) the main external and internal barriers to reaching NSHP goals; and 3) key recommendations (policy, process, and program guidelines) to increase NSHP participation and make the NSHP as successful as possible. The information developed from this work authorization may spur program policy changes to be incorporated later. Currently, a final draft report is underway and expected to be completed by the end of September 2011.

Spent: \$38,410

- KEMA/Smartpower – Emerging Renewables Program Small Wind Marketing and Outreach Strategy

This \$39,699 work authorization was executed in October 2010 to develop a successful multipronged marketing and outreach plan to promote the Emerging Renewables Program for small wind system installations. The marketing and outreach plan identified promotional activities including direct mail, social media, partnership leveraging, and development of marketing collateral. These promotional activities aimed to increase consumer market penetration of small wind energy installations.

Spent: \$23,422

#### *Other Consumer Education Activities*

- Clean Energy States Alliance  
Contract #400-10-011

The Clean Energy States Alliance (CESA) contract, approved in May 2011, is a one-year \$61,000 membership agreement with the Energy Commission. CESA is a multistate collaboration of clean energy funds that have banded together and pooled resources to expand the use of clean energy and low-carbon technologies across the country by supporting solar, wind, fuel cells, and other clean energy projects and companies. At present, there are 18 members, with CESA attracting the interest of a number of other state clean energy programs. CESA is the only organization that represents the collective voice and interests of the public clean energy funds in the United States. Since its foundation in 2002, CESA has been successful in solving common problems encountered by its member funds through project assistance and information sharing. CESA has the ability to frame and address key issues of clean energy market development with federal agencies, regulators, industry participants, and in the national media. This is a major strength of CESA and one that it is effectively realizing through its joint projects, which include States Advancing Solar, States Advancing Wind, Accelerating Offshore Wind, Hydrogen and Fuel Cells, State-Federal RPS Collaborative, Energy Storage Technology Advancement Partnership, Climate Change Policy and the Role of States, and Renewable Energy Finance.

Spent: \$61,000

- Information, Integration, Innovation & Associates Inc.  
CMAS #3-08-70-25094

This \$75,000 two-year contract, executed in October 2009 and completed in January 2011, provided maintenance and support services for the NSHP Web tool. The contractor completed work to streamline the online program application tool processes and develop new enhancements in response to stakeholders' feedback.

Spent: \$15,788
- Small Wind Energy Evaluation Tool (SWEET)  
Contract #400-09-015

The purpose of this one-year \$65,000 contract is to develop a publicly accessible and interactive Web-based small wind energy assessment tool to help analyze the potential performance and economic payback of a small wind turbine. The contractor is modifying and expanding its already-developed small wind assessment tool, known as the California Wind Energy Collaborative-SWEET. This tool will be combined with existing Energy Commission geographic information system wind maps to develop a new small wind energy assessment tool. The new tool is intended to be used by the public, contractors, and other participants of the Energy Commission's Emerging Renewables Program to evaluate the possibility of installing a small wind turbine at a specific location within the state. The tool is expected to be available on the Energy Commission's website in the third quarter of 2011.

Spent: \$0
- Aerial Information Systems, Inc.  
Contract #400-10-012

A \$500,000 contract with Aerial Information Systems, Incorporated (AIS, Inc.), was executed in April 2011 for a two-year term. AIS, Inc. will research vegetation sampling and mapping, and collect information that may assist with the permitting of renewable energy projects in the portion of the California Mojave Desert covered by the Desert Renewable Energy Conservation Plan. The area to be studied and mapped is 1.1 million acres and is considered the highest priority for near-term renewable siting by Desert Renewable Energy Conservation Plan stakeholders. Currently, initial administrative tasks, one-time start-up tasks (for example, inventory and organization of project materials, uploading project-related digital files), and initial field reconnaissance have been completed.

Spent: \$0
- C&G Technology Services, Inc.  
CMAS #3-08-70-2273C

This contract, with a term of February 2010 through June 2011, creates a Web-based version of the California Utility Allowance Calculator (CUAC), which is a stand-alone Microsoft Access® database application. The CUAC is a tool designed to calculate project-specific utility allowances for low-income, multifamily housing projects. Energy Commission staff is

working with the contractor to translate the current CUAC tool into a Web-based tool and make substantial upgrades. To date, the contractor has delivered a software process map of the current CUAC, a diagram of the new online SQLServer database, a beta version of the database, and a beta version of the website. Commission staff and the contractor demonstrated the beta version of the online CUAC at the Housing California Conference in April 2011. The original \$143,550 contract, funded with Consumer Education dollars, was executed in February 2010. In May 2011, a \$15,000 augmentation was funded by the Energy Resources Programs Account. Staff expects the contractor to deliver a final integrated version of the online CUAC in July 2011.

Spent: \$129,891 (Consumer Education Program funds)

For further information about consumer education activities conducted from July 2010 through June 2011, please see the *2011 Annual Report Appendix, Appendix E*, located on the Energy Commission's website at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html).

## CHAPTER 4:

# Progress in Achieving Renewables Portfolio Standard 33 Percent by 2020 Target

The following responds to the *Annual Report's* legislative requirement to address the progress being made toward achieving the RPS goal of 33 percent by 2020 by each element of the Renewable Energy Program.

## Renewables Portfolio Standard

### Background

The enactment of SB 1078 in September 2002 created California's RPS. SB 1078 required retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least 1 percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017.

In September 2006, the enactment of SB 107 codified the accelerated RPS goal of 20 percent renewables by 2010. SB 107 also required each of the state's POU's to report to the Energy Commission on its status of implementing an RPS program and the progress made toward achieving its RPS goals.

Recognizing the potential contribution that biomass could make to achieve this renewable energy goal and more, in 2006 California committed to expanding the sustainable use of bioenergy:

- By generating 20 percent of the state's renewable energy from biopower (biomass to electricity) by 2010 and 2020.
- By producing 20 percent of the biofuels (for example, ethanol, biodiesel) consumed in California within the state by 2010, 40 percent by 2020, and 75 percent by 2050.

The 2004 *Integrated Energy Policy Report Update*<sup>28</sup> endorsed RPS goals beyond 2010, and the *Energy Action Plan II*, adopted in September 2005, directed the evaluation and development of implementation paths for achieving renewable resource goals beyond 2010, including 33 percent renewables by 2020 for all load-serving entities.<sup>29</sup> In its 2007 *IEPR*, the Energy Commission found that "the 33 percent goal by 2020 is feasible, but only if the state commits to significant investments in transmission infrastructure and makes some key changes in policy."<sup>30</sup>

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28 California Energy Commission, *Integrated Energy Policy Report 2004 Update*, November 2004, 100-04-006CM, [www.energy.ca.gov/reports/CEC-100-2004-006/CEC-100-2004-006CMF.PDF](http://www.energy.ca.gov/reports/CEC-100-2004-006/CEC-100-2004-006CMF.PDF).

29 California Energy Commission and California Public Utilities Commission, *State of California Energy Action Plan II*, September 2005, [www.energy.ca.gov/energy\\_action\\_plan/2005-09-21\\_EAP2\\_FINAL.PDF](http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF).

30 California Energy Commission, *Integrated Energy Policy Report 2007*, CEC-100-2007-008-CMF, p. 5, [www.energy.ca.gov/2007publications/CEC-100-2007-008/CEC-100-2007-008-CMF.PDF](http://www.energy.ca.gov/2007publications/CEC-100-2007-008/CEC-100-2007-008-CMF.PDF).

The Energy Commission's 2008 IEPR Update<sup>31</sup> noted that the issues associated with transitioning to a higher renewable future should be evaluated including transmission barriers, grid impacts, contracting, and price impacts of increased use of renewables. Governor Brown signed new 33 percent RPS legislation (SBx1-2) into law on April 12, 2011. The new legislation becomes effective 90 days after the close of the special legislative session. The Energy Commission will continue to certify and verify RPS procurements by retail sellers but, in accordance with SBx1-2, will now expand those responsibilities to include the POUs and monitoring their progress toward meeting the state's RPS goals. Further, the new legislation requires the Energy Commission to provide a report to the Legislature analyzing run-of-river hydroelectric generating facilities in British Columbia, including whether those facilities are, or should be included, as eligible renewable energy resources.

Achieving a milestone in carrying out the responsibility to develop an accounting system to track and verify RPS procurement, the Energy Commission led the launch of WREGIS in June 2007. WREGIS is an electronic system that tracks and verifies renewables generation throughout the Western Interconnect. Beginning in 2008, the Energy Commission began requiring RPS participants—certified facilities, retail sellers, procurement entities, and third parties—to participate in WREGIS as part of RPS compliance.

The next section discusses the Energy Commission's and the CPUC's roles and activities in designing and carrying out the RPS; the IOUs' progress as of June 30, 2011, in procuring renewables; and the progress in implementing WREGIS. The Energy Commission and the CPUC continue to work collaboratively to implement the RPS.

### Energy Commission's Renewables Portfolio Standard Roles

The Energy Commission implements the RPS through guidelines that were originally adopted in spring 2004, with revisions adopted in August 2004, April 2006, March 2007, January 2008, and December 2010. The two Energy Commission guidebooks related to implementing the RPS Program are as follows:

- The *Renewables Portfolio Standard Eligibility Guidebook*<sup>32</sup> explains the requirements and process for certifying eligible renewable energy resources for California's RPS. The *Renewables Portfolio Standard Eligibility Guidebook* also describes how the Energy Commission tracks and verifies compliance with the RPS.
- The *Overall Program Guidebook for the Renewable Energy Program*<sup>33</sup> describes how the Renewable Energy Program is administered and includes information on requirements

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31 California Energy Commission, *2008 Integrated Energy Policy Report Update*, November 2008, CEC-100-2008-008-CMF, [www.energy.ca.gov/2008publications/CEC-100-2008-008/CEC-100-2008-008-CMF.PDF](http://www.energy.ca.gov/2008publications/CEC-100-2008-008/CEC-100-2008-008-CMF.PDF).

32 California Energy Commission, *Renewables Portfolio Standard Eligibility Guidebook*, January 2011, CEC-300-2010-007-CMF, [www.energy.ca.gov/2010publications/CEC-300-2010-007/CEC-300-2010-007-CMF.PDF](http://www.energy.ca.gov/2010publications/CEC-300-2010-007/CEC-300-2010-007-CMF.PDF).

33 California Energy Commission, *Overall Program Guidebook*, January 2011, CEC-300-2010-008-CMF, [www.energy.ca.gov/2010publications/CEC-300-2010-008/CEC-300-2010-008-CMF.PDF](http://www.energy.ca.gov/2010publications/CEC-300-2010-008/CEC-300-2010-008-CMF.PDF).

that apply to all Renewable Energy Program elements, including the RPS. The *Overall Program Guidebook* provides general information on applying for RPS certification and appealing the Energy Commission's decisions about revocation of RPS certification, as well as a glossary of terms that are used by the RPS and other Renewable Energy Program elements.

While the *Guidebooks* reflect current program requirements, the Energy Commission recognizes the need to revise them periodically to reflect market and regulatory developments and to incorporate the lessons learned from experience implementing the RPS. The Energy Commission intends to update these *Guidebooks* in late 2011.

RPS implementation activities for fiscal year 2010-2011 also included the following:

- The Energy Commission adopted the *2007 Renewables Portfolio Standard Procurement Verification Report (Verification Report)* on June 15, 2011.<sup>34</sup> The *2007 Verification Report* presents RPS procurement verification findings for 14 retail sellers, which includes investor-owned utilities (large and multijurisdictional utilities) and electric service providers.
- As required by SB 107, the CPUC could not authorize the use of RECs for RPS compliance until the Energy Commission and the CPUC determined that the tracking system was operational, that it was capable of verifying eligible generation and delivery, and that the generation was not double-counted within the service territory of the WECC. The Energy Commission and the CPUC jointly made this determination in identical reports released in 2008.<sup>35</sup> The CPUC adopted a decision authorizing the use of RECs for RPS compliance in March 2010. This decision was modified by a subsequent decision in January 2011. The passage of SBx1-2 recasts some of the rules for REC procurement, however.
- As of June 30, 2011, the Energy Commission has approved 1,267 facilities for RPS eligibility certification (745) or precertification (522). These facilities have a total capacity of 56.6 gigawatts, 37.2 gigawatts of which is proposed capacity from facilities that are precertified and not yet on-line. These data do not reflect activity in the application queue.

Figure 1 shows the number of facilities for which the Energy Commission has received applications for certification or precertification in the RPS program.

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34 California Energy Commission, *Renewables Portfolio Standard 2007 Procurement Verification – Commission Final Report*, June 2011, CEC-300-2011-002. [www.energy.ca.gov/2011publications/CEC-300-2011-002/CEC-300-2011-002-CMF.pdf](http://www.energy.ca.gov/2011publications/CEC-300-2011-002/CEC-300-2011-002-CMF.pdf).

35 California Energy Commission and California Public Utilities Commission, *Joint Commission Report on Tracking System Operational Determination*, December 2008, CEC-300-2008-001-CMF, [www.energy.ca.gov/2008publications/CEC-300-2008-001/CEC-300-2008-001-CMF.PDF](http://www.energy.ca.gov/2008publications/CEC-300-2008-001/CEC-300-2008-001-CMF.PDF).

**Figure 3: Number of Applications Received for RPS Eligibility Precertification and Certification**

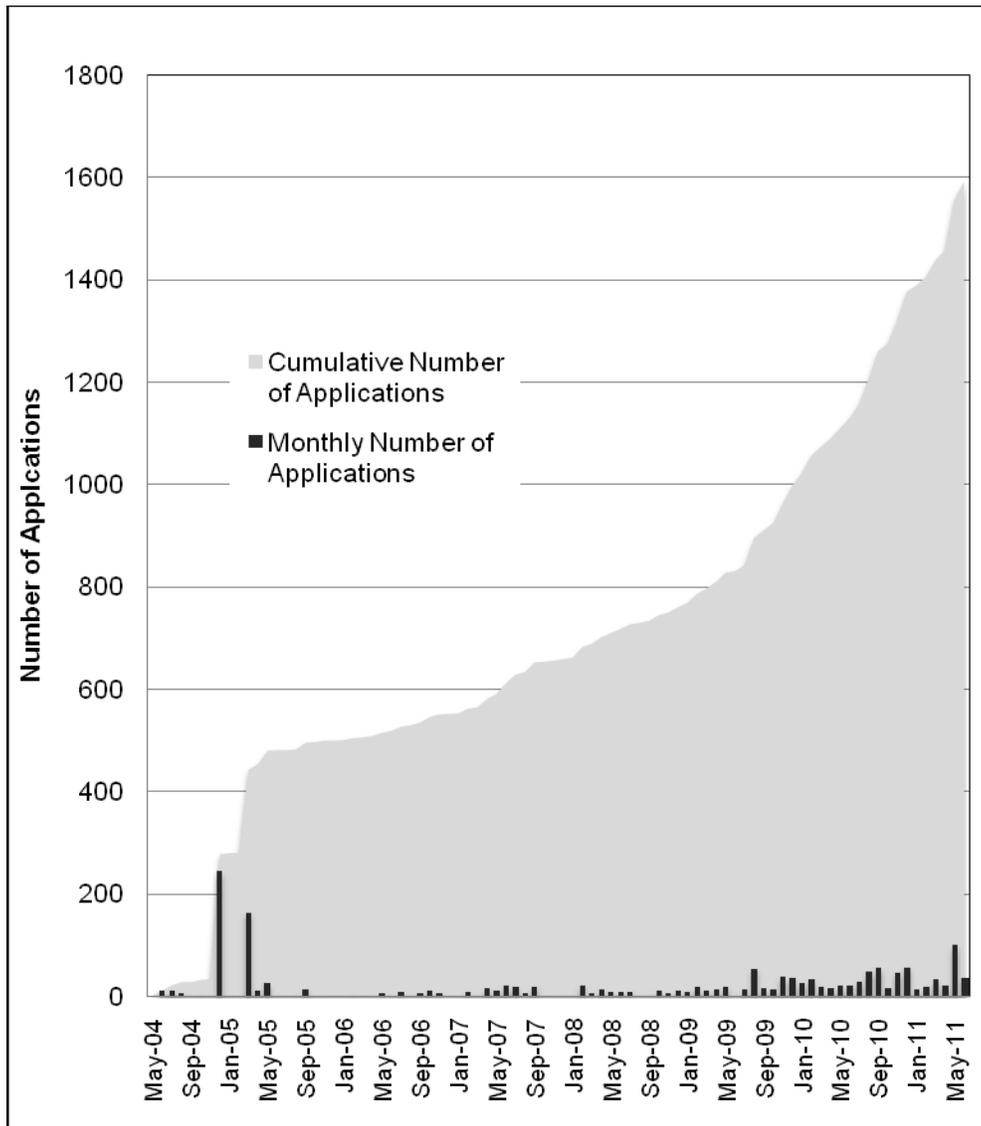


Figure 1 shows the cumulative number of facilities by month for which applications have been received by the Energy Commission for certification or precertification in the California RPS (applications for amended certification, amended precertification, or certification of a precertified facility are not included in this graph). As of June 28, 2011, the Energy Commission had received applications for 1,591 facilities, of which 79 were disapproved as ineligible. In fiscal year 2010-2011, the Energy Commission received applications for 462 different facilities, which is nearly the volume received in fiscal year 2004-2005, when the IOUs submitted mass RPS applications for their existing facilities, and exceeds the submissions from all other years by at least 50 percent.

Source: California Energy Commission, Database of RPS Certified Facilities.

Details of facilities certified or precertified as RPS eligible by the Energy Commission during fiscal year 2010-2011 are provided in the *2011 Annual Report Appendix, Appendix A*, located on the Energy Commission’s website at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html).

## Investor-Owned Utilities' RPS Procurement Results as of June 30, 2011

Since the initial policy was established in 2002, the state's three large IOUs have used a variety of mechanisms to increase procurement of RPS-eligible renewable energy.

The investor-owned utilities have signed contracts for 16,548 to 18,417 MW of capacity from new, repowered, or restarted renewable facilities, with 3,587 MW (or 22 percent) of these projects currently online (updated July 2011).<sup>36</sup>

### *RPS Solicitations and Bilateral Negotiations*

From competitive RPS solicitations (including an all-source solicitation), and through bilateral negotiation, as of June 30, 2011, the IOUs signed contracts for 1,014 to 1,166 MW of existing renewable energy projects and 15,923 to 17,769 MW of new, repowered, or restarted renewable facilities.

### *Feed-In Tariffs for Renewable Generation*

On February 14, 2008, the CPUC made feed-in tariffs available for the purchase of up to 480 MW of renewable generating capacity from small facilities (1.5 MW or less) throughout California. These feed-in tariffs present a simple mechanism for small renewable generators to sell power to the utility at predefined terms and conditions, without contract negotiations.

The CPUC expects that participating small facilities will sell their renewable power to utilities and help contribute to California's climate mitigation and renewable energy goals. The power that is sold to the utilities under the feed-in tariffs will contribute to the utilities' ability to meet their RPS goals

Through June 2011, the three large IOUs have entered into feed-in-tariff agreements representing nearly 35 MW of capacity and 243 GWh of annual generation.

### *Southern California Edison's Renewables Standard Contracts Program*

Through its Renewables Standard Contracts Program, SCE is offering to purchase energy and its associated green attributes from eligible renewable resource generating facilities with capacities not greater than 20 MW. The objective of the program is to provide a standardized procurement process that leads to quick execution (relative to other procurement processes). Two standard contracts are offered depending on the generating facility's capacity: (1) greater than 1.5 MW but not greater than 5 MW, and (2) greater than 5 MW but not greater than 20 MW. Facilities with capacities that exceed 20 MW are not eligible for a renewables standard contract but may submit a proposal in SCE's annual RPS solicitation. Through June 2011, SCE

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<sup>36</sup> Database of Investor-Owned Utilities' Contracts for Renewable Generation, Contracts Signed Towards Meeting the California RPS Targets; updated July 2011, available at [www.energy.ca.gov/portfolio/contracts\\_database.html](http://www.energy.ca.gov/portfolio/contracts_database.html)). To make information about the contracting efforts of the state's investor-owned utilities transparent, the Energy Commission provides this Excel database on the renewable energy contracts signed by PG&E, SCE, and SDG&E since 2002. The database was developed using public information that is available through filings with the CPUC and other sources.

signed standard contracts with a total capacity of 460 to 474 MW and deliveries of 1,164 to 1,242 GWh of annual generation.

### *Solar Photovoltaic Programs*

During 2009 and 2010, the CPUC authorized SCE, PG&E, and SDG&E to own and operate solar PV facilities, and execute solar PV power purchase agreements with independent power producers through a competitive solicitation process. These programs are intended to yield up to a total of 1,100 MW of new solar PV capacity in California over the next five years. All energy produced under the Solar PV Programs is potentially RPS-eligible procurement on the utility-side of the meter that contributes to the state's RPS goals.<sup>37</sup> Through this reporting period, solar PV contracts—both utility-owned generation and agreements with independent power producers—total 144 to 152 MW for 272 GWh of generation per year.

Details of the IOUs' RPS procurement for fiscal year 2010-2011 are provided in the *2011 Annual Report Appendix, Appendix A*, located on the Energy Commission's website at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html).

### CPUC Approval of IOU Contracts

The CPUC approved a total of 55 RPS contracts during the 2010-2011 fiscal year that were submitted by the IOUs in this or previous fiscal years; three of those contracts were subsequently cancelled. The following summarizes the IOU RPS contracts that the CPUC approved during the fiscal year that were "active" (not cancelled or expired) as of June 30, 2011:

- 34 contracts submitted by SCE for a total capacity of 1,492 MW to 1,516 MW representing 3,432 GWh to 4,033 GWh of annual generation.
- 14 contracts submitted by PG&E for a total capacity of 1,767 MW to 1,807 MW representing 4,325 GWh to 4,586 GWh of annual generation.
- 4 contracts submitted by SDG&E for a total capacity of 173 MW to 208 MW representing 536 GWh to 614 GWh of annual generation.

Ranges reflect RPS developers' build-out options for RPS contracts with the three IOUs. (Data may not sum due to rounding.)

Table 3 lists the capacity by technology from active RPS contracts signed in 2002 or later for new, repowered, or restarted renewable energy facilities that have been approved by, or submitted for approval to the CPUC as of June 30, 2011.

Details of IOU RPS contracts considered for CPUC approval in the 2010-2011 fiscal year are provided in the *2011 Annual Report Appendix, Appendix A*, located on the Energy Commission's website at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html). For a complete list of IOU RPS contracts from 2002 to date, please refer to the Energy Commission's website at [www.energy.ca.gov/portfolio/contracts\\_database.html](http://www.energy.ca.gov/portfolio/contracts_database.html).

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<sup>37</sup> CPUC website at [www.cpuc.ca.gov/PUC/energy/Renewables/hot/Utility+PV+Programs.htm](http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/Utility+PV+Programs.htm).

**Table 9: Capacity From IOU RPS Contracts for  
New, Repowered, or Restarted Renewables by Technology for  
Contracts Signed From 2002 Through June 30, 2011 (MW)**

	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Total</b>
<b>Wind</b>	2,416-2,481	3,341-3,932	1,263-1,529	7,020-7,942
<b>Biogas</b>	46-136	14-29	16	76-181
<b>Biomass</b>	123	48	11	182
<b>Geothermal</b>	66-109	203-583	0	269-692
<b>Ocean</b>	0	0	0	0
<b>Small Hydropower</b>	6	0	5	10
<b>Solar Thermal</b>	1,898	2,148-2,420	0	4,046-4,318
<b>Solar Photovoltaic</b>	2,339	2,123-2,131	482-620	4,945-5,091
<b>Total</b>	<b>6,894-7,092</b>	<b>7,877-9,144</b>	<b>1,777-2,181</b>	<b>16,548-18,417</b>

Capacity does not include contracts that have expired or been cancelled. Repowered capacity includes total capacity, not just additional expected capacity. Totals may not sum due to rounding.

Source: California Energy Commission, Database of IOU Contracts for Renewable Generation, July 2011 update.  
[www.energy.ca.gov/portfolio/contracts\\_database.html](http://www.energy.ca.gov/portfolio/contracts_database.html).

## Publicly Owned Electric Utilities' Renewables Portfolio Standard Procurement

Local POU's play a critical role in meeting the state's renewable energy goals. To track the efforts of the state's POU's in meeting their RPS requirements, the Energy Commission developed a database with information on POU's RPS policies, renewable energy deliveries, renewables solicitations, and new renewable energy contracts. Information in the database was compiled from POU's formal filings to the Energy Commission,<sup>38</sup> including their Energy Commission-POU-RPS forms and annual reports for the Power Source Disclosure Program, as well as other publicly available sources. The database has been updated to include data collected from 2003-2009, and the Energy Commission plans to continue with regular updates to the database as needed. The database is located at [www.energy.ca.gov/2008publications/CEC-300-2008-005/index.html](http://www.energy.ca.gov/2008publications/CEC-300-2008-005/index.html).

## Emerging Renewables Program

The Emerging Renewables Program and NSHP are designed to encourage the development of renewable generation technologies for self-generation. Self-generation can also be defined as distributed generation to produce energy used on-site.

The Emerging Renewables Program and the NSHP guidelines recognize that the renewable energy market includes two commodities: the energy produced from renewable facilities (the

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38 SB 107, Statutes of 2006, as codified in Public Utilities Code Section 387.

underlying energy) and the renewable and environmental attributes of the energy, termed “renewable energy credits” or RECs. RECs can be created only if renewable energy is produced, and typically a REC represents the generation of one megawatt-hour of eligible renewable energy. RPS statutes conditionally allow the CPUC to establish rules that would allow retail sellers to use “tradable” RECs for the RPS, the term used for RECs sold separately from the associated electricity. Before the CPUC authorized tradable RECs for compliance with the RPS, only energy and RECs sold together, termed “bundled” energy, were eligible for the RPS. Since the Emerging Renewables Program and the NSHP support facilities that use the energy on-site, the associated RECs typically were not eligible for the RPS. However, in March 2010, the CPUC authorized the use of tradable RECs for RPS compliance, which was modified by a subsequent decision in January 2011. Accordingly, the Energy Commission will be considering the eligibility of facilities that use renewable energy onsite and the applicable eligibility requirements in its next revision of the *RPS Eligibility Guidebook*, planned for adoption by the end of 2011 or early 2012.

For distributed renewable energy facilities that do not participate in the Emerging Renewables Program or the NSHP, distributed generation owners can enter into a standard offer contract/tariff to sell their excess energy and RECs to a retail seller to count toward RPS targets. Or the owners can enter into a contract to sell all of their energy and associated RECs to a retail seller for RPS purposes.<sup>39</sup>

With the passage of SBx1-2 in 2011, the CPUC is in the process of implementing the new 33 percent RPS, including developing rules for procuring tradable RECs for IOU, electric service provider, and community choice aggregator RPS compliance. The CPUC’s authorization for tradable RECs for RPS compliance enables facilities that receive funding under the Energy Commission’s NSHP, Emerging Renewables Program, or Pilot Performance-Based Incentive Program; under the CPUC-approved Self-Generation Incentive Program or CSI; or any similar ratepayer-funded program, to enter into agreements for only the RECs without delivering the associated energy to the load-serving entity. The POU’s are expected to procure tradable RECs to meet some of their new RPS goals under SBx1-2 as well. Rules regarding POU procurement of tradable RECs for the RPS will be established as the Energy Commission develops regulations under SBx1-2 for the POU’s.

AB 920, enacted in 2009, expanded the current net-metering programs for wind and solar. The bill requires IOU’s and POU’s to offer a compensation option for “net generators.” Net generators are customers who export more electricity to the grid than they import from the grid, based on a customer’s 12-month annual billing cycle. AB 920 requires that RECs associated with any new surplus electricity sold to the utility will be owned by the utility, while RECs associated with electricity used onsite will be retained by the customer. The utility may count this surplus generation toward its RPS obligation. On June 9, 2011, the CPUC approved a decision

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<sup>39</sup> The standard contract/tariff is executed under Public Utilities Code 399.20 as implemented by the CPUC (Decision 07-07-027 in Rulemaking 06-05-027 and Rulemaking 11-05-005). However, distributed generation facilities that receive funding from the Emerging Renewables Program and NSHP do not qualify for the standard contract/tariff developed to implement Public Utilities Code 399.20.

establishing a rate for payment of excess kWh generated by distributed wind and solar systems.<sup>40</sup>

As of December 2010, California has more than 924 MW of solar PV systems connected to the electric grid at over 94,000 customer sites; this is equivalent to more than one large power plant.<sup>41</sup> This cumulative installed capacity of solar PV is an aggregate number, which includes all existing IOU solar programs (CSI, Self-Generation Incentive Program, NSHP, and Emerging Renewables Program) and POU solar programs.

## Existing Renewable Facilities Program

Production incentives offered by the Existing Renewable Facilities Program help existing RPS-eligible biomass and solar thermal facilities remain on-line and stimulate restart of nonoperational biomass facilities. This helps meet the state's statutory RPS requirement of 33 percent by 2020 by maintaining and restarting existing baseline renewable generation.

One of the goals of the Existing Renewable Facilities Program is to help these facilities reach self-sustainability by 2011. Achieving this goal remains elusive due to the decreasing market price for natural gas and the continuing volatility in the price of diesel fuel. Diesel fuel costs are one of the greatest contributors to the cost of operating a facility due to the distance the biomass feedstock must be transported.

Thirty-five facilities participating in the Existing Renewable Facilities Program generated 14 percent of the RPS procurement from the three largest IOUs in the 2010 calendar year<sup>42</sup>. This includes almost 20 percent of RPS procurement reported by PG&E, 16 percent of the RPS procurement reported by SDG&E, and 9 percent of the RPS procurement reported by SCE.<sup>43</sup>

Production incentive payments to existing facilities can help aging facilities pay for major maintenance and operational improvements that increase overall plant efficiency and/or reduce the cost of operation, both of which could result in additional generation. Examples include

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40 CPUC, Decision D.1106016, June 9, 2011.

41 CPUC, *California Solar Initiative Annual Program Assessment*, June 2011, [www.cpuc.ca.gov/PUC/energy/solar/apa2011.htm](http://www.cpuc.ca.gov/PUC/energy/solar/apa2011.htm).

42 Percentage calculated using generation data report by participating ERF facilities to the Energy Commission divided by total renewable procurement. Total renewable procurement is based on unverified the total CA RPS eligible procurement data found in the CPUC Compliance report submitted by the Investor Owned Utilities in March 2011. Reports can be downloaded at <http://www.cpuc.ca.gov/PUC/energy/Renewables/compliance.htm>.

43 Data based on the Energy Commission Existing Renewable Facilities Program database and IOUs' annual compliance filings with the CPUC. PG&E, SCE, and SDG&E annually file their RPS-procurement on March 1 and August 1 of each year. The March 1 report is used to determine compliance for the previous year(s). Note that this data is based on unverified procurement claims. [www.cpuc.ca.gov/PUC/energy/Renewables/compliance.htm](http://www.cpuc.ca.gov/PUC/energy/Renewables/compliance.htm).

adding another cooling tower (biomass), replacing boiler tubes (biomass), and replacing broken mirrors and thermal conduction tubes (solar thermal).

Despite financial assistance through the Existing Renewable Facilities Program, representatives of the 25 biomass facilities participating in the program have informed staff that they still face difficulties keeping their facilities on-line due to ongoing economic challenges. For example, many of the existing biomass facilities are nearly 30 years old and face financially taxing maintenance issues. As a cost-cutting measure, several facilities have begun curtailing generation, temporarily shutting down operations, or deferring needed maintenance until the financial climate improves. Since January 2009, six biomass facilities in California have temporarily shut down. As of June 30, 2011, none of the six biomass facilities was back on-line.

## **Consumer Education Program**

The Consumer Education Program plays an important role in increasing consumer awareness about renewable energy and emerging renewable energy systems through education, marketing, and outreach. However, the Consumer Education Program's information, products, and processes are not a direct component of the measured progress in achieving the 33 percent by 2020 RPS goal.

## **New Renewable Facilities Program**

Before the passage of California's RPS in 2002, 31 New Renewable Resources Account auction-winning projects came on-line between 1998 and 2002, despite the beginning of California's energy crisis in 2000 and the increased demand for new renewable electricity-generating facilities.

Most of the New Renewable Resources Account projects were proceeding on schedule with minimal delays until late 2000, when the IOUs' financial difficulties began to strain California's electricity market. New electricity-generating projects began to encounter problems due to market uncertainties and found it difficult, and in some cases impossible, to secure power purchase agreements. Many projects were unable to obtain the financing needed to begin constructing facilities or purchasing equipment. Permitting difficulties were a second factor in project delays. To help overcome these difficulties and ease California's anticipated energy shortage, the New Renewable Resources Account auction process incorporated a system of bonuses and penalties to encourage early on-line dates.

Following passage of the RPS, 16 new facilities were able to come on-line. The RPS helped these New Renewable Resource Account auction winners to obtain long-term power purchase agreements, which helped them secure financing needed for project development.

Of the 47 completed projects that received support from the now-closed New Renewable Resources Account, 46 projects (representing more than 480 MW of annual capacity) sought and received Energy Commission certification for their energy to count toward retail sellers' RPS

requirements. Many wind projects were combined when certified under the retail sellers' RPS programs. As a result, these 46 projects constituted 31 generating facilities eligible to support retail sellers' RPS programs. The last remaining uncertified facility operated in 2010; it is unclear which utility purchases power from this facility.

# CHAPTER 5: Additional Renewable Energy Program Activities

## Senate Bill 1

### Background

In August 2006, the enactment of SB 1 codified a comprehensive statewide solar energy incentive program. SB 1 consists of the CPUC's CSI program, the Energy Commission's NSHP, and the POUs' solar energy incentive programs. Together these programs are referred to as the Go Solar California campaign and stem from the "Million Solar Roofs" plan for California. The goals of SB 1 for the next 10 years are to install 3,000 MW of new solar energy systems, establish a self-sufficient solar industry, and bring down costs to the point where solar energy systems are a viable mainstream option for both homes and businesses. SB 1 also has a goal to place solar energy systems on 50 percent of new homes by the end of the program in 2016.<sup>44</sup>

### Energy Commission's Senate Bill 1 Roles

SB 1 required the Energy Commission to adopt eligibility guidelines for solar energy systems<sup>45</sup> receiving ratepayer-funded incentives and identified the following conditions:

- High-quality solar energy systems with maximum system performance to promote the highest energy production per ratepayer dollar.
- Optimal system performance during periods of peak demand.
- Appropriate energy efficiency improvements in the new and existing home or commercial structure where the solar energy system is installed.

After several workshops and consideration of stakeholder comments, the Energy Commission adopted guidelines in December 2007, *Guidelines for California's Solar Electric Incentive Programs (Senate Bill 1)*. The guidelines' current edition was adopted July 2011 and can be found on the Energy Commission's website at [www.energy.ca.gov/2011publications/CEC-300-2011-005/CEC-300-2011-005-CMF.pdf](http://www.energy.ca.gov/2011publications/CEC-300-2011-005/CEC-300-2011-005-CMF.pdf).

The following list describes SB 1 responsibilities assigned to the Energy Commission and fiscal year 2010-2011 efforts to achieve these directives:

- Initiate a public proceeding to study and make findings on whether, and under what conditions, solar energy systems should be required on new residential and new nonresidential buildings, including the establishment of numerical targets. The study is to be updated periodically.

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<sup>44</sup> Public Resources Code Section 25780, as amended by SB 1 (Statutes of 2006, Murray, Chapter 132).

<sup>45</sup> "Solar energy systems" means a solar energy device that has the primary purpose of providing for the collection and distribution of solar energy for the generation of electricity, that produces at least 1 kW and not more than 5 MW alternating current rated peak electricity, and that meets or exceeds the Energy Commission's established eligibility criteria (Public Resources Code Section 25781[e]).

- Public proceedings were formally initiated in July 2007, and a contract for the study began in January 2010. A draft report has been developed and is being reviewed by staff. A final report is expected to be completed by the end of 2011.
- Develop an offset program that allows a developer or seller of production homes<sup>46</sup> to forego the offer requirement<sup>47</sup> on a project by installing solar energy systems generating specified amounts of electricity on other projects, including, but not limited to, low-income housing, multifamily, commercial, industrial, and institutional developments. The amount of electricity required to be generated from solar energy systems used as an offset must be equal to the amount of electricity generated by solar energy systems installed on a similarly sized project within that climate zone, assuming 20 percent of the prospective buyers would have installed solar energy systems.
  - Following a successful rulemaking proceeding, the Homebuyer Solar Option and Solar Offset Program regulations were adopted by the Energy Commission on December 29, 2010, and approved by the Office of Administrative Law on March 24, 2011. The regulations, California Code of Regulations, Title 20, Division 2, Chapter 9, Article 1, Sections 2700-2704, can be found at [www.ccr.oal.ca.gov/linkedslice/default.asp?SP=CCR-1000&Action=Welcome](http://www.ccr.oal.ca.gov/linkedslice/default.asp?SP=CCR-1000&Action=Welcome)
- Conduct annual random audits of solar energy systems to evaluate their performance.
  - Staff has continued to work with KEMA on developing the PV Check tool and preparing it for use by PV system owners. This project was delayed when staff encountered a barrier in acquiring the necessary data for use by the tool, but the Web-based tool is expected to be available for pilot testing by the end of 2011. PV Check will provide PV system owners the ability to monitor their system's performance. The users will enter solar PV generation data into the PV Check tool, and the tool will compare the system's actual generation with an estimate on what the system is expected to generate. PV Check uses information on the users' solar PV system, along with near real-time weather data to generate the estimate on expected performance. The Energy Commission will use the data to gauge the performance of the PV systems. Users will consist of electric utility customers with NSHP-installed, and CSI-installed solar PV systems. At first, the PV Check will be used in a pilot/demonstration phase with a limited number of users, but after successful demonstration, the tool will be available for use by solar customers statewide.
- Beginning June 1, 2008, each local POU is required to make key information relating to its solar initiative program available to its utility customers, the California Legislature, and the

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<sup>46</sup> "Production home" means a single-family residence constructed as part of a development of at least 50 homes per project that is intended or offered for sale.

<sup>47</sup> SB 1 requires a seller of production homes to offer a solar energy system option to all customers that enter into negotiations to purchase a new production home constructed on land for which an application for a tentative subdivision map has been deemed complete on or after January 1, 2011, and disclose (1) the total installed cost of the solar energy system option and (2) the estimated cost savings associated with the solar energy system option.

Energy Commission. The information is due no later than June 1 of each year of the 10-year program.

- o Data for the 2010 reporting year has been posted on the Energy Commission's website at [www.energy.ca.gov/sb1/pou\\_reports/index.html](http://www.energy.ca.gov/sb1/pou_reports/index.html).

In fiscal year 2010-2011, SB 1 implementation expenses were "staff time only" and were paid with RRTF administration funds.

# **CHAPTER 6:**

## **Historical Renewable Energy Program Activities**

### **Existing Renewable Facilities Program**

#### **Agriculture-to-Biomass Program**

In September 2003, the Governor signed SB 704, which was intended to improve the air quality in California's agricultural areas by reducing the open-field burning of agricultural fuels. SB 704 required the Energy Commission to allocate \$6 million from the RRTF for incentives to electricity-generating facilities that increased their use of qualified agricultural biomass for the 2003-2004 fiscal year. The Agriculture-to-Biomass 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 Existing Renewable Facilities Program.

Funded for one year, the Agriculture-to-Biomass Program provided financial incentives to biomass facilities that purchased and converted these fuels for electricity generation from July 1, 2003, through June 30, 2004. Incentives were paid at a rate of \$10 per green ton of eligible biomass fuel. Nine participants registered their facilities with the Energy Commission for funding. With final payments made in August 2004, total payments from the Agriculture-to-Biomass Program exhausted the \$6.0 million allocation, and the program ended.

### **Customer Credit Program**

#### **Summary**

From 1998 through 2003, the Energy Commission used the \$75.6 million initially allocated to the Customer Credit Program to foster market demand for renewable electricity. The funds were distributed through a "credit" to registered renewable providers who delivered eligible renewable energy to qualifying customers. The customer credit, a cents/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 RPS in California suggested that a very different market would soon be in place for electricity consumers and providers. Although customers may no longer choose to switch from their IOUs to an electric service provider serving renewable energy, the RPS provides 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* for the Governor and the Legislature on how to use the customer credit funds most effectively. In the report, the Energy Commission recommended that the Customer Credit

Program be discontinued. The report also included recommendations for reallocation of Customer Credit funds, as well as retroactive payments to eligible customers for the period January 1, 2002, through April 2, 2003.

In May 2004, consistent with the *Customer Credit Report* and under Public Resources Code Section 25748(b), the Energy Commission reallocated 90 percent of available Customer Credit funds to the Emerging Renewables Program and 10 percent to the Consumer Education Program. A final payment in December 2004 concluded Customer Credit Program activities, and the Energy Commission discontinued the program.

The balance of \$315,829 (consisting of \$276,909 in SB 90 money and \$38,920 from Bear Valley Electric Service contributions) remaining in the Customer Credit Program account was reallocated to the Emerging Renewables Program in August 2006.<sup>48</sup> This reallocation effectively zeroed out the account. Cumulative payments made under the Customer Credit Program totaled about \$65 million.

## Emerging Renewables Program

### Solar Schools Program

The successful litigation of energy contract settlements<sup>49</sup> by the California Attorney General's office was responsible for the launch of the Solar Schools Program. These settlement funds (Attorney General's Alternative Energy Retrofit Account or AGAERA) were received by the California Power Authority, who was directed to invest the funding in alternative energy and retrofit projects on public buildings. The Energy Commission's experience administering the Emerging Renewables Program, in addition to other programs that offered schools technical assistance with making energy improvements (Bright Schools and Energy Partnership), prompted the California Power Authority to enter into an interagency agreement with the Energy Commission to establish the Solar Schools Program in 2002. Through the original interagency agreement and subsequent amended agreement in 2004, the Energy Commission incorporated the Solar Schools Program into its Emerging Renewables Program.

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<sup>48</sup> In April 2003, the Energy Commission recommended in its *Customer Credit Renewable Resources Account: Report to the Governor and the Legislature*, April 2003, 500-03-008F, [www.energy.ca.gov/reports/2003-04-22\\_500-03-008F.PDF](http://www.energy.ca.gov/reports/2003-04-22_500-03-008F.PDF), that the Customer Credit Program be discontinued and the funds available 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 the New Renewable Facilities Program, and 45 percent to the Emerging Renewables Program. However, in May 2004, the Energy Commission approved reallocating 10 percent of available Customer Credit Program funds to the Consumer Education Program and 90 percent to the Emerging Renewables Program. The continuing high demand in the Emerging Renewables Program dictated that the Energy Commission reallocate an increased percentage of Customer Credit funds to the Emerging Renewables Program.

<sup>49</sup> For more information on the electricity contract settlement agreements, see [http://www.lao.ca.gov/analysis\\_2003/resources/res\\_8\\_cc\\_electricity\\_anl03.htm](http://www.lao.ca.gov/analysis_2003/resources/res_8_cc_electricity_anl03.htm).

The Solar Schools Program offered rebates to California schools that purchased and installed eligible solar PV systems. The rebate award was composed of a \$3.20/watt rebate level matched by the same amount from the AGAERA funding, resulting in a \$6.40/watt rebate. The Solar Schools Program was designed to provide up to 90 percent of the cost of the systems for qualifying schools. The other 10 percent could be financed by a low-cost energy efficiency loan offered by the Energy Commission's Energy Efficiency Financing Program.

In 2002, Department of Finance budget authority to expend the AGAERA funding was delayed. Consequently, the 15 schools that were initially approved were unable to receive their rebate awards until the Solar Schools Program was restarted in 2004. Final funding authority to expend the AGAERA funds was granted at the Energy Commission's May 19, 2004, Business Meeting. Program guidelines, including special funding requirements, were also adopted at the same time. Systems had to meet the California Division of State Architects' requirements for solar system installations, including structural support, to satisfy the Emerging Renewables Program and Solar Schools Program requirements. The one-time rebate incentive of \$6.40/watt—twice the amount of the Emerging Renewables Program rebate level at the time—was offered to public and charter schools meeting program eligibility requirements. Successful Solar Schools Program awardees met the following conditions:

- Established a solar energy curriculum tie-in plan to educate students on the benefits of solar energy.
- Committed to purchase, install, operate, and maintain an eligible PV system at the specified school site.
- Showed implementation of energy efficiency measures (such as the installation of high-efficiency fluorescent lighting in at least 80 percent of the classrooms).

More than 60 school districts located within the 3 major IOUs' service areas applied for the rebate incentive based on the then-current rebate level of the Emerging Renewables Program matched by AGAERA funding. The Solar Schools Program made awards to 31 eligible California schools to assist with the purchase and installation costs of their own solar PV system. Of these, three schools were unable to complete their projects for various reasons. By program's end on June 30, 2008, more than \$3.9 million (\$1.95 million RRTF and \$1.95 million AGAERA) was paid out in rebate funding to 28 schools that had completed their solar PV projects. The Solar Schools Program added 6.42 MW of solar PV capacity in California.

## **New Renewable Facilities Program**

### **Background**

The New Renewable Facilities Program fostered the development of new in-state renewable electricity generation by providing financial support to new projects. Under SB 90, the original

program<sup>50</sup> provided production incentives to eligible renewable generating facilities that were first placed in operation between September 26, 1996, and July 1, 2002.<sup>51</sup> These incentives were paid in addition to what the facility was paid for its electricity. Under SB 1038, SB 1078, and SB 107,<sup>52</sup> the program evolved to offer financial production incentives (referred to as SEPs) to cover the above-market costs of meeting the RPS, subject to certain cost constraints. If an eligible facility secured a power purchase agreement with a retail seller through a competitive solicitation, it could apply for SEPs.

In October 2007, the enactment of SB 1036, effective January 1, 2008, radically affected the New Renewable Facilities Program. In accordance with the legislation's direction, the Energy Commission implemented the following:

- The Energy Commission terminated all pending awards made to projects under the RRTF's New Renewable Resources Account before January 1, 2002, unless the projects began generating electricity by January 1, 2007.
- In March 2008, the Energy Commission refunded the New Renewable Resource Account's remaining unencumbered funds (totaling \$461,681,784) to the electrical corporations whose ratepayers contributed funds to support the RRTF. These electrical corporations included PG&E, SDG&E, SCE, and Bear Valley Electric Service (a division of Golden State Water Company).
- The Energy Commission's authority to award SEPs was eliminated as of January 1, 2008. Beginning 2008, the CPUC assumed authority over the disposition of above-market costs for meeting the RPS.

In addition, the enactment of SB 1036 removed the New Renewable Resources Account from the RRTF effective July 1, 2008. Although the New Renewable Resources Account was eliminated, active New Renewable Facilities Program projects continued to be paid for generation from those projects' previously encumbered RRTF funding award dollars.

### New Renewable Resources Account

The New Renewable Resources Account originally awarded funding through competitive auctions in which facilities bid for the amount of incentive they wished to receive, up to 1.5 cents/kWh. The Energy Commission accepted completed bids and awarded funding from lowest bid to highest, until the funds available for the auction were fully subscribed. The Energy Commission held three such auctions between March 1998 and June 2001 and conditionally awarded roughly \$242 million to 81 renewable projects representing about 1,300 MW of capacity.

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50 Original program under SB 90 was called the New Renewable Resources Account and was subsumed under the New Renewable Facilities Program.

51 After September 2000 and in accordance with PUC Section 383.5(c)(2)(B), project developers could petition for an extension of their funding awards due to a delayed on-line date that was determined by the Energy Commission to be the result of circumstances beyond the developer's control.

52 Program under SB 1038, SB 1078, and SB 107 was called the New Renewable Facilities Program.

To receive funding from the Energy Commission, these facilities were required to meet a series of milestones and begin selling power to the grid. Once on-line, the projects were eligible to receive incentive payments for a maximum of five years. Of the 81 original awardees, 34 projects were unable to meet their milestones for various reasons, including public opposition and the inability to secure a fuel supply or a power purchase contract. The Energy Commission canceled funding award agreements if projects could not meet all of their milestones or meet the terms and conditions of the conditional funding award agreements. Forty-seven projects were able to meet the terms of their funding award agreements and collect incentive payments. Table 10 summarizes these payments by technology.

**Table 10: New Renewable Resources Account  
Summary of On-Line Auction Winning Facilities and Payments**

<b>Technology</b>	<b># of Projects</b>	<b>Capacity (MW)</b>	<b>Average Incentive (¢/kWh)</b>	<b>Total Funds Paid<sup>1</sup></b>
Biomass	2	11.30	1.30	\$2,485,743
Geothermal	2	59.0	1.29	\$25,252,142
Landfill Gas	15	39.57	1.11	\$12,350,303
Small Hydro	3	31.25	1.05	\$2,926,016
Wind	25	348.12	0.78	\$33,676,758.87
<b>Total</b>	<b>47<sup>2</sup></b>	<b>489.24</b>	<b>0.94</b>	<b>\$76,690,962</b>

<sup>1</sup> The total funds paid for winning bidders in the second and third auctions reflects both the loss of potential bonuses for early on-line dates and 50 percent penalties for later on-line dates for those projects not yet on-line. The original conditional funding awards for winning bidders in the second and third auctions included potential bonuses for early on-line dates and did not reflect potential penalties for later on-line dates. The total funds paid also reflect a reduction of funds for projects that have completed their five-year collection of funds, did not fully collect the total funds originally allocated to them in their Conditional Funding Award, and had the uncollected funds disencumbered.

<sup>2</sup> The Wintec #2 wind project was split into two projects during fiscal year 2005-2006, but to maintain consistency with previous years, it will continue to be treated as one project for this section.

Totals may not sum due to rounding.

Source: California Energy Commission New Renewable Resources Account database.

### *Program Accomplishments and Status*

As of December 30, 2009, all New Account winning projects reached the end of their five-year award agreements. Since 1998, 47 projects were completed and are producing clean electricity representing 489 MW of capacity. The New Renewable Resources Account was successful in increasing investments in new renewable power plants in California with payments of \$76.7 million for 8,731 GWh of new renewable generation.

## **CHAPTER 7: Reallocation of Funds**

The Energy Commission is authorized to reallocate RRTF funds among programs in a manner consistent with Public Resources Code Section 25748(b), which states that,

(b) 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 [*Investing in Renewable Electricity Generation in California*]<sup>53</sup> and with the latest report provided to the Legislature pursuant to this section, except that reallocations shall not increase the allocation established in Section 25742 [to the Existing Renewable Facilities Program].

### **Reallocations for Fiscal Year 2010-2011**

There were no reallocations of RRTF funds in fiscal year 2010-2011.

The Energy Commission continues to value the ability to reallocate funds in response to varying market demands. Judicious management of ratepayer dollars has allowed underused program dollars to be moved to meet the needs of higher demand program areas as reported in previous *Annual Reports*. This flexibility is particularly important to the Renewable Energy Program's efforts to meet California's renewable resource goals associated with the continued implementation of the NSHP as part of the SB 1 goal of 3,000 MW of distributed self-generation solar systems.

### **Loans and Appropriations From the RRTF – 2002 Through June 30, 2011**

Since 2002, \$261 million RRTF dollars have been borrowed for various purposes, with \$241 million of that loaned directly to the General Fund. In 2010, an additional \$50 million of RRTF monies was appropriated of which \$16,925 has been loaned as of June 30, 2011. Repayments of loans against the RRTF total \$141 million as of June 30, 2011.

Refer to Table 11 for a cumulative financial summary of the Renewable Energy Program as of June 30, 2011.

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53 California Energy Commission, *Investing in Renewable Electricity Generation in California*, June 2001, P500-00-022 (Public Resources Code Section 25741[e]), [www.energy.ca.gov/reports/2001-06-21\\_500-00-022.PDF](http://www.energy.ca.gov/reports/2001-06-21_500-00-022.PDF).

## **CHAPTER 8: Account Transfers and Repayments**

The Energy Commission prepared this chapter in accordance with Public Resources Code Section 25751(f), which authorizes the Energy Commission to transfer funds between program accounts within the RRTF (that is, the Emerging Renewable Resources Account, Existing Renewable Resources Account, and Renewable Resources Consumer Education Account<sup>54</sup>) for cash flow purposes, provided that the balance due each program account is restored and that the transfers do not adversely affect any of the programs.

The Account Transfers and Repayments chapter covers fiscal year 2010-2011 and responds to Public Resources Code Section 25748(a), which states that the Energy Commission shall report to the Legislature on "...The status of account transfers and repayments." There were no transfers or repayments of funds between programs during fiscal year 2010-2011.

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<sup>54</sup> These accounts correspond to the Emerging Renewables Program, Existing Renewable Facilities Program, and Consumer Education Program, respectively.

## CHAPTER 9: Interest Expenditures

Public Resources Code Section 25748 requires the Energy Commission to address the allocation of funds from interest on the RRTF. As noted in the *Overall Program Guidebook* for the Renewable Energy Program, interest earned on the funds deposited in the RRTF may be used to augment funds for a particular program element at the Energy Commission's discretion. Additionally, such interest may be used to administer the Renewable Energy Program to the extent appropriated by the Legislature in the annual Budget Act.

In fiscal year 2010-2011, interest earned on the RRTF was \$871,000 for a cumulative total (from 1998 through June 30, 2011) of \$101.8 million. As of June 30, 2011, cumulative interest expenditures and encumbrances totaled \$57 million; reallocations totaled \$19 million; and in fiscal year 2002-2003, interest totaling \$5,300,135 was transferred to the General Fund.<sup>55</sup>

Prior to 2004, interest funds, like voluntary contributions, had not been reallocated to program elements under the Renewable Energy Program. However, in April 2004, due to escalating requests for rebate funds, the Energy Commission approved the reallocation of \$10 million in RRTF interest to the Emerging Renewables Program. Subsequent demands on rebate dollars prompted additional RRTF interest reallocations in August 2006 and May 2007 (\$6 million and \$3 million, respectively). Information on these reallocations is detailed in previous *Annual Reports* located at [www.energy.ca.gov/renewables/quarterly\\_updates/index.html](http://www.energy.ca.gov/renewables/quarterly_updates/index.html).

RRTF interest also funds three specific areas described below. Dollars include both expenditures and encumbrances for fiscal year 2010-2011:

- **Support Services (\$3,014,313)** – Refers to wages and benefits paid to Energy Commission staff working in the Renewable Energy Program; operating expenses in the form of general office supplies, printing, communications, postage, travel, training, facilities operations, data processing, equipment, and indirect charges.
- **Contractual (\$2,252,880)** – Represents contracts that were expended or encumbered from RRTF interest. This includes contracts for technical support services; a contract with the Department of Finance for auditing services; and contracts with PG&E, SCE, and SDG&E to administer the NSHP.

As of June 30, 2011, the Renewable Energy Program's administrative costs, funded through RRTF interest earnings, have averaged only 5.7 percent of total expenditures from program dollars since 1998. This does not include the costs for the IOUs' administration of the NSHP.

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<sup>55</sup> Budget Act of 2002, Chapter 379, Statutes of 2002.

## CHAPTER 10:

### Contributions to the Renewable Resource Trust Fund

SB 1250 directs electrical corporations to allow their customers to make voluntary contributions in support of renewable resource technologies. These contributions are subsequently deposited into the RRTF. Before 2006, voluntary contributions had never been allocated to specific elements of the program. However, in mid-2006, a need for additional Emerging Renewables Program rebate funds was identified, prompting a reallocation of \$19,417 from voluntary contributions. As of June 30, 2011, the balance of voluntary contributions is \$3,732.

Golden State Water Company (doing business as Bear Valley Electric Service), an IOU, has also contributed to the RRTF for a total of \$615,530 at the end of June 2011. These funds have been allocated to the program elements according to the percentage allocations specified in SB 90 and SB 1038; the reallocations recommended in the Energy Commission's Customer Credit Report under Public Resources Code Section 25748(b); SB 1250; SB 107; and SB 1036.

Table 11<sup>56</sup> provides a financial summary of the RRTF through June 30, 2011, reflecting cumulative funds collected, disbursed, reallocated, and encumbered since the beginning of the Renewable Energy Program in 1998. The table also shows cumulative funds transferred, loaned, and appropriated.

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56 This table contains data from the Energy Commission's Accounting Office. Accounting data reported in the table may differ from Renewable Energy Program staff data because funds may be returned, credited, or repaid that are not tracked in real time by Renewable Energy Program staff.

**Table 11: Renewable Energy Program  
Cumulative Funding and Expenditures Status as of June 30, 2011  
(\$ Millions)**

	<b>New Renewable Facilities Program<sup>1</sup></b>	<b>Emerging Renewables Program<sup>2,3</sup></b>	<b>Existing Renewable Facilities Program<sup>4,5</sup></b>	<b>Consumer Education Program</b>	<b>Customer Credit Program</b>	<b>Other<sup>6</sup></b>	<b>PROGRAM TOTAL</b>
<b>Collected Funds<sup>7</sup></b>	\$592.894	\$492.304	\$446.608	\$23.213	\$75.639	\$120.158	\$1,750.815
<b>Intrafund Reallocations<sup>8</sup></b>	-32.544	177.171	-106.600		-10.316	-24.320	\$3.392
<b>Disbursements</b>	-76.691	-444.316	-332.432	-15.714	-65.323	-53.957	-\$988.434
<b>New Renewable Facilities Disbursement to Utilities</b>	-461.682						-\$461.682
<b>Year-End Accruals</b>			-4.657				-\$4.657
<b>Encumbrances</b>		-59.816		-2.552		-3.052	-\$65.420
<b>Loans</b>							
Loans to General Fund	-21.977	-80.000				-7.123	-\$109.100
Other Loans		-11.415					-\$11.415
<b>REP BALANCE as of June 30, 2011</b>	<b>\$0.000</b>	<b>\$73.928</b>	<b>\$2.918</b>	<b>\$4.946</b>	<b>\$0.000</b>	<b>\$31.706</b>	<b>\$113.498</b>
<b>Future Loans and Appropriations</b>		-\$35.994				-\$15.000	-\$50.994
<b>REP BALANCE including future loans and appropriations</b>	<b>\$0.000</b>	<b>\$37.934</b>	<b>\$2.918</b>	<b>\$4.946</b>	<b>\$0.000</b>	<b>\$16.706</b>	<b>\$62.504</b>

<sup>1</sup>New Renewable Facilities disbursements to utilities include \$76,690,962 in payments to projects awarded funding through competitive auctions; \$412,650,348 of unused SEPs dollars refunded to utilities pursuant to SB 1036, Statutes of 2007; and \$49,031,436 in funds collected from the utilities prior to 2002 that became available due to the Energy Commission's cancellation of two project awards, REN-98-017 and REN-98-018. The New Renewable Resources Account was eliminated July 1, 2008.

<sup>2</sup>Emerging Renewables disbursements include ERP \$409,697,114 and NSHP \$34,619,191.

<sup>3</sup>Emerging Renewables encumbrances include ERP \$7,136,495 and NSHP \$52,679,854.

<sup>4</sup>Existing Renewable Facilities disbursements include \$6 million for the Agriculture Biomass-to-Energy Program.

<sup>5</sup>Existing Renewable Facilities Program accruals are staff's estimated payments for May and June 2010 generation.

<sup>6</sup>"Other" collections include voluntary contributions, interest, and utility late payment penalties. Disbursements and encumbrances are for Renewable Energy Program administrative expenses, discrete contracts, and pro rata (a direct assessment applied by DOF).

<sup>7</sup>Collected funds include \$615,530 from Bear Valley Electric Service.

<sup>8</sup>Intrafund reallocations include \$27.711 million from sources outside investor-owned utility collected funds.

**Note: Account balances are committed to meeting legislative mandates as follows: rebates for emerging renewable energy system installations, generation from existing renewable facilities, and consumer education activities.**

## ACRONYMS

AB	Assembly Bill
AGAERA	Attorney General's Alternative Energy Retrofit Account
CAEATFA	California Alternative Energy and Advanced Transportation Financing Authority
CESA	Clean Energy States Alliance
CPUC	California Public Utilities Commission
CSI	California Solar Initiative
CUAC	California Utility Allowance Calculator
GWh	Gigawatt hours
<i>IEPR</i>	<i>Integrated Energy Policy Report</i>
IOU	Investor-owned utility
kW	Kilowatt
kWh	Kilowatt hours
mmBTU	Million metric British thermal units
MW	Megawatts
NSHP	New Solar Homes Partnership
PACE	Property Assessed Clean Energy
PBI	Performance-based incentive
PG&E	Pacific Gas and Electric Company
POU	Local publicly owned electric utility
PV	Photovoltaic
REC	Renewable energy credit
RPS	Renewables Portfolio Standard
RRTF	Renewable Resource Trust Fund
SAVE	Solar Advantage Value Estimator
SB	Senate Bill
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SEPs	Supplemental energy payments
SRAC	Short-run avoided cost
WECC	Western Electricity Coordinating Council
WREGIS	Western Renewable Energy Generation Information System