

# Policy Brief

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## California's Renewable Energy Program: its future amid economic crisis

By **Sheau-Chyng Wong, Eiko Kojima and Naoya Abe****Keywords:** *Renewable energy programs, California energy sector***Important numbers:** Renewable energy contributed over 10,000 MW of generating capacity and 14% of power mix in California in 2010.

### Introduction

California is unarguably one of the most energy efficient states in the U.S. It has the most stringent energy efficiency standards and regulations in the country, developed since the oil shocks of the 1970's. While the annual electricity use per capita of the country has been steadily rising past 12 kWh, the average Californian has been consistently consuming only 7 kWh per year since the 1970's.

Blessed with abundant renewable energy resources, California has long been utilizing solar, wind, geothermal, hydro and other renewable sources to fuel its economic growth and help strengthen its energy source diversification. To increase renewable energy's competitiveness with traditional fuels in the energy market, Californian lawmakers had established policies and programs that would make renewable energy affordable for the commercial and industrial sectors as well as households.

This brief introduces the background, structure and accomplishments, and addresses some of the current issues of the California's Renewable Energy Program.

### Background

1998 marked the year when California restructured its electricity supply industry by deregulating electric utilities (which were later re-regulated after a series of energy crises in 2000/2001). The Renewable Energy Program was subsequently established with the goal to "establish a competitive, self-sustaining renewable energy supply for California while increasing the near-term quantity of renewable energy generated within the state." The program would be administered by the California Energy Commission (CEC).

In 2002, the Renewable Portfolio Standard (RPS) Program was established, setting the state's first goal of generating 20% of electricity from renewable sources by 2017. This deadline was accelerated to 2010, when senate bill SB 107 was signed in 2006.

In 2011, senate bill SB X1-2 renewed the RPS goals to 33% renewables by 2020. Gov. Brown's signing statement "... stimulating investment in green technologies in the state, creating tens of thousands of new jobs, improving local air quality, promoting energy independence, and reducing greenhouse gas emissions" appeared to be addressing the universal 3-E problems: energy security, economic instability and environmental crisis, which California is now simultaneously faced with.



Photo: Windmill farm near Cabazon in southern California

Since the Renewable Energy Program's establishment in 1998, its structure has constantly evolved to reflect the changing needs of the energy market and state economy. Alongside other clean energy-related efforts undertaken by the state, the program aims to promote the development and installation of renewable energy technologies by incentivizing and educating consumers.

### Program Structure

The Renewable Energy Program is funded through the Renewable Resource Trust Fund, a fund primarily composed of "public goods charge" collected from the ratepayers of the major investor-owned utilities in California.

The Renewable Energy Program is currently organized under three main categories:

- Emerging Renewables Program provides rebates and incentives for the purchase and installation of small scale on-site electricity generation systems using small wind turbines and fuel cells with a renewable fuel. Its subset program, New Solar Homes Partnership Program, provides incentives for solar photovoltaic installations in the residential construction market (Notes).
- Existing Renewable Facilities Program offers financial assistance in the form of production incentives for existing in-state renewable electricity facilities to improve their competitiveness in the renewable energy market.
- Consumer Education Program aims to educate consumers and raise awareness about renewable energy (Notes).

One of the unique features of the Renewable Energy program is the flexibility in funds re-allocation according to the market demands. For the 2008-2011 program cycle, 79% of the funding was allocated for the Emerging Renewables Program. Twenty percent of the funding was allocated for the Existing Renewable Facilities Program. The remaining 1% of the funding was allotted for consumer education.

Previously implemented programs include the New Renewable Facilities Program (1998-2007) and Customer Credit Program (1998-2007). They covered various segments and needs of the renewable markets during their effective period.

In general, qualified applicants for the above programs are rewarded in the forms of rebates and incentives to help reduce the up-front cost of installing renewable energy systems. The incentives are typically calculated based on the expected output of the system and type of installation.

### Program Accomplishments

The renewable energy capacities and generations provided through the Renewable Program from 1998 through mid-2011 are summarized in the following table.

Table 1: Renewable Energy Capacity and Eligible Generation

Program	Total Renewable Energy Capacity (MW)	Total Eligible Generation (GWh)
Emerging Renewables Program	127	n/a
Existing Renewable Facilities Program	4,700	87,400
New Renewable Facilities Program	489	8,731

Source: California Energy Commission (CEC), Renewable Energy Program 2011 Annual Report to the Legislature, December 2011.

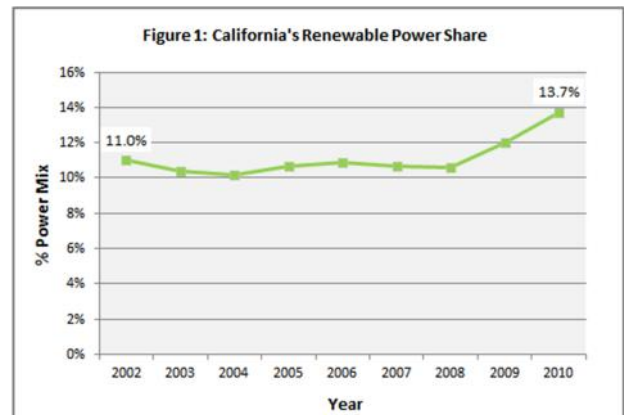
CEC estimated that California had over 10,000 MW of renewable generating capacity in 2010, with additional 3,000 MW installed in 2011. The Renewable Program contributed over 5,000 MW – a substantial share of the total renewable capacity.

### Current Issues and Status

The percentage of renewables in California's power mix has merely grown to 13.7% in 2010 from 11% in 2002, when RPS was first established (Figure 1). Nonetheless, according to the CEC's report "Renewable Power in California: Status and Issues" published in December 2011, California is on track to achieve its RPS target of 33% renewables by year 2020. This estimate is made based on the renewable generation capacity of the project contracts already in place and under the assumption that existing renewable facilities will remain operational through the estimate period.

The Public Goods Charge program expired on January 1, 2012. A new mechanism called the Electric Program Investment Charge (EPIC) was approved in late May of 2012 to ensure continued funding support for energy efficiency, renewables and RD&D. The future of the California's Renewable Energy Program remains bright at this time, even though there has been no official announcement of a new program cycle beyond 2011 (Notes).

The extension of the Renewable Program is especially critical for the existing biomass and solar thermal energy sectors, which are in need of financial assistance to maintain and improve the performance of their facilities. Precisely how much existing capacities would be discounted from the RPS estimates is unknown, but shutdown of any numbers of these facilities would not only put a hole in the renewable energy shares but also cause jobs to be removed from the struggling economy.



Source: California Energy Commission (CEC). [http://energymanac.ca.gov/electricity/total\\_system\\_power.html](http://energymanac.ca.gov/electricity/total_system_power.html)

### Neighboring States

Like California, its resourceful neighbors such as Arizona and Nevada with their abundant sunshine are demonstrating tremendous amount of effort in promoting clean energy development. An example similar to the California's Renewable Energy Program is the Nevada's Renewable Generations Program, which offers rebates for solar, wind and small hydro generations. Since the program started in 2004, it had helped install over 30 MW of solar and 4 MW of wind power projects in Nevada.

### Where will it go from here?

Once known as the Golden State, California is presently faced with multi-fold challenges to revive its once booming economy and to lower its unemployment rate. With the announcement of its \$16 billion budget deficit by Governor Brown in May 2012, one would wonder if the RPS goal of achieving 33% of renewables by 2020 is still reachable.

The future prospect of the Renewable Energy Program is greatly depending on funding, and the California's Governor and statesmen recognize its importance in the long-term economic growth of the state. With its 18 million MW of renewable technical potential, it makes good sense for California to continuously invest in renewable energy projects, and thus create new economic opportunities.

#### SOURCES:

California Energy Commission (CEC) website. [www.energy.ca.gov](http://www.energy.ca.gov).  
 California Public Utilities Commission website. [www.cpuc.ca.gov](http://www.cpuc.ca.gov).  
 NV Energy Renewable Generations Program website. <https://www.nvenergy.com/renewablesenvironment/renewablegenerations/index.cfm>.

#### NOTES:

The California government is presently restructuring its renewable energy policies. The Emerging Renewables and Consumer Education programs have been closed out in June 2012 in accordance with Senate Bill 1018. CEC is currently exploring options to meet the market needs in these areas with the California Public Utilities Commission. This paper was written prior to the aforementioned policy changes.