California’s Public Goods Charge

The Renewable Resource Trust Fund

Panama Bartholomony
Deputy Director
California Energy Commission
March 2011
### History of the Renewable Energy Program

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>AB 1890 required large IOUs to collect $135 million/year from their ratepayers from 1998–2001 to support renewable resources.</td>
</tr>
<tr>
<td>1997</td>
<td>SB 90 created RRTF as funds depository and created <strong>Renewable Energy Program</strong> to distribute the funds.</td>
</tr>
</tbody>
</table>
CA’s Renewable Energy Program

Long-term goal of a fully competitive and self-sustaining California renewable energy supply

<table>
<thead>
<tr>
<th>Existing Renewable Facilities Program</th>
<th>Emerging Renewables Program</th>
<th>Consumer Education Program</th>
<th>New Renewable Facilities Program</th>
<th>Customer Credit Program</th>
</tr>
</thead>
</table>

The REP is legislatively mandated to:

- Optimize public investment and ensure most cost-effective and efficient investments in renewable resources are vigorously pursued.

- Increase quantity of California’s electricity generated by renewable resources, while protecting system reliability, fostering resource diversity, and obtaining greatest environmental benefits to the state.

- Identify and support emerging renewable energy technologies with greatest near-term commercial promise that merit targeted assistance.
Renewable Energy Program
Annual Funding Allocations 1998 – 2011

- 1998-2001 Annual Allocation: $135 million
- 2002-2006 Annual Allocation: $135 million*
- 2007 Annual Allocation: $145.8 million*
- 2008-2011 Annual Allocation: $72 million*

*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.

**Projected 2008-2011 annual allocation would have been approximately $77.2 million.
Accelerated RPS from IEPR / EAP / SB 1250 [2006]/107 [2006], California Solar Initiative, State Bioenergy Goal, and AB 32 GHG Reduction Targets are supported by the Renewable Energy Program.

- **2010**:
  - Renewables: 20% of retail sales
  - 20% of RPS from biopower
  - 20% biofuels produced in California

- **2016**:
  - Renewables: 33% of retail sales
  - 3,000 MW of new solar
  - 20% of RPS from biopower

- **2020**:
  - 40% biofuels produced in California
  - Specific GHG reduction target allocated to RE is contained in the CA Air Resources Board’s Climate Change Scoping Plan, October 2008.
The ERFP encourages existing renewable generation facilities to remain on-line while transitioning to a competitive market.

- Production incentives for generation from existing renewable facilities
- Payments are tied to market prices
- Eligible technologies: solid-fuel biomass, solar thermal, wind
### RESULTS AS OF DECEMBER 2010

<table>
<thead>
<tr>
<th>Technology</th>
<th># of Projects</th>
<th>Capacity (MW)</th>
<th>Generation (GWh)</th>
<th>Payments ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass</td>
<td>34</td>
<td>760</td>
<td>35,895</td>
<td>$214</td>
</tr>
<tr>
<td>Solar Thermal</td>
<td>8</td>
<td>410</td>
<td>9,187</td>
<td>$40</td>
</tr>
<tr>
<td>Other</td>
<td>230</td>
<td>3,385</td>
<td>40,468</td>
<td>$64</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>272</strong></td>
<td><strong>4,555</strong></td>
<td><strong>85,549</strong></td>
<td><strong>$318</strong></td>
</tr>
</tbody>
</table>

- Also provided $6 million for 2004 Agriculture-to-Biomass Program to improve air quality in CA’s agricultural areas.
### Existing Renewable Facilities Program

#### 2010 ERFP Generation and Incentive Payments by Utility

<table>
<thead>
<tr>
<th>Utility</th>
<th>Generation (MWh)</th>
<th>Incentive Payments</th>
<th>% of Utility RE Procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E</td>
<td>2,751,405</td>
<td>$9,894,131</td>
<td>20%</td>
</tr>
<tr>
<td>SCE</td>
<td>1,241,311</td>
<td>$2,735,871</td>
<td>9%</td>
</tr>
<tr>
<td>SDG&amp;E</td>
<td>312,018</td>
<td>$4,680,263</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,360,271</strong></td>
<td><strong>$17,612,132</strong></td>
<td><strong>14.4%</strong></td>
</tr>
</tbody>
</table>

* Utility renewable procurement claims from 2010 IOU RPS compliance report filings.
## Existing Renewable Facilities Program

### ERFP Payments and RRTF Collections by Utility Territory 2007-2010

<table>
<thead>
<tr>
<th>Utility</th>
<th>Percentage of ERFP Payments</th>
<th>Percentage of RRTF Collections</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E</td>
<td>54%</td>
<td>50%</td>
</tr>
<tr>
<td>SCE</td>
<td>15%</td>
<td>41%</td>
</tr>
<tr>
<td>SDG&amp;E</td>
<td>26%</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Emerging Renewables Program

The ERP aims to reduce costs and expand sales of emerging renewable technologies. DG systems installed where the electricity is needed and consumed.

- Provides rebates for purchasing and installing eligible renewable energy systems to offset electricity needs at homes or businesses.
- Reduces up-front costs for customers.
- Through 2006, eligible technologies were solar photovoltaic, small wind, fuel cells using renewable fuels, solar thermal electric.
- Effective 1/1/07, only small wind and fuel cells eligible because solar component replaced with New Solar Homes Partnership and the CPUC’s California Solar Initiative.
# Emerging Renewables Program

## RESULTS AS OF DECEMBER 2010

<table>
<thead>
<tr>
<th>Technology</th>
<th># of Projects</th>
<th>Capacity (MW)</th>
<th>Payments ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar</td>
<td>28,036</td>
<td>123.6</td>
<td>$398</td>
</tr>
<tr>
<td>Wind</td>
<td>558</td>
<td>3.6</td>
<td>$8</td>
</tr>
<tr>
<td>Fuel Cells</td>
<td>2</td>
<td>0.4</td>
<td>$1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>28,596</strong></td>
<td><strong>128</strong></td>
<td><strong>$407</strong></td>
</tr>
</tbody>
</table>
### Emerging Renewable Facilities Program

#### ERP Payments and RRTF Collections by Utility Territory 2007-2010

<table>
<thead>
<tr>
<th>Utility</th>
<th>Percentage of ERP Payments</th>
<th>Percentage of RRTF Collections</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E</td>
<td>63%</td>
<td>50%</td>
</tr>
<tr>
<td>SCE</td>
<td>25%</td>
<td>41%</td>
</tr>
<tr>
<td>SDG&amp;E</td>
<td>12%</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Senate Bill 1 enacts California Solar Initiative

- Largest solar program of its kind in the country
- $3.35 billion effort by CPUC, CEC, and publicly owned utilities
- Residential and nonresidential customers

- 3,000 MW combined public/investor-owned utilities goal
- Solar industry self-sufficiency in 10 years
- Emphasis on energy efficiency and high performance installations
The legislation…

- Modified the Renewable Energy Program’s role in administering solar PV rebates.
- Established the New Solar Homes Partnership to be funded from the Renewable Resources Trust Fund.
- Mandated the Energy Commission to develop governing language that applies to all ratepayer-funded solar PV programs in the state (Energy Commission, CPUC, and publicly owned utility programs).

SB 1 included additional mandates that were incorporated into the roles and responsibilities of the Renewable Energy Program.
Solar incentive programs under SB 1

**CALIFORNIA SOLAR INITIATIVE**
- CPUC Program
  - Commercial, Industrial, Existing Residential
  - 1,940 MW
  - $2 Billion*

**NEW SOLAR HOMES PARTNERSHIP**
- CEC Program
  - New Residential Construction
  - 400 MW
  - $400 Million

**SOLAR INITIATIVE PROGRAMS**
- POU Programs
  - Varies According to POU
  - 700 MW
  - $784 Million

*Additional $100 Million for Solar Thermal and Solar Water Heaters plus $50 Million for Solar R&D
New Solar Homes Partnership

The NSHP intends to create a sustainable market for solar homes and gain builder commitment to install solar energy systems.

- High-performing solar systems on highly efficient residential construction
- 400 MW installed capacity by the end of 2016
- Solar energy systems on 50% of new homes by end of program in 2016
- Self-sufficient solar industry
- Net Zero Energy homes in 2020 and beyond
**RESULTS AS OF DECEMBER 2010:**

- More than **1,430 pending and received applications** representing **12,071 solar systems** in various stages of applying to the NSHP.

- **3,541 solar installations** represent **10 MW** of renewable solar capacity bringing total payments to **$28.5 million**.

Seal represents an NSHP home
New Solar Homes Partnership Program

NSHP Reserved Systems, Paid and Unpaid 2007-2010

<table>
<thead>
<tr>
<th>Utility</th>
<th># of Systems</th>
<th>MW (AC)</th>
<th>$ (Millions)</th>
<th>% of Total NSHP Payments</th>
<th>% of RRTF Collections</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E</td>
<td>7722</td>
<td>19.04</td>
<td>53.10</td>
<td>70%</td>
<td>50%</td>
</tr>
<tr>
<td>SCE</td>
<td>2329</td>
<td>5.29</td>
<td>14.43</td>
<td>19%</td>
<td>41%</td>
</tr>
<tr>
<td>SDG&amp;E</td>
<td>799</td>
<td>3.05</td>
<td>8.51</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>10850</td>
<td>27.38</td>
<td>76.04</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
As of January 2011

- Sellers of production homes shall offer solar energy system to all customers for homes for which an application for a tentative subdivision map for at least 50 units has been deemed complete on or after January 1, 2011.

- Sellers are able to apply an off-set by installing a solar energy system equal to the amount of electricity generated assuming 20 percent of prospective home buyers would have installed solar energy systems.
Consumer Education Program

- Provides information to California consumers to help build a market for renewable energy.
- Supports market development of emerging renewables technologies.
- Raises consumer awareness about renewables and their benefits
- Increases purchases of emerging technologies
- Fosters renewable energy education partnerships
- Tracks and verifies RPS renewable energy procurement

**RESULTS AS OF DECEMBER 2010:**

- Over **$9 million** provided for market research, 21 outreach and demonstration grant projects, and 4 public awareness campaign contracts.
- Marketing and outreach activities continue to support the New Solar Homes Partnership and SB 1.
California’s Renewables Portfolio Standard

- California’s RPS signed into law in 2002 with enactment of SB 1078, assigning roles to the Energy Commission, CPUC, and requiring retail sellers to procure 20% renewable energy by 2010.

- Publicly owned utilities set their own RPS goals recognizing the intent of the legislature to attain the 20% by 2010 target.

- State energy and GHG policy set further goals of 33% renewable energy by 2020.

*RPS procurement compliance is measured in terms of electricity delivered, not signed contracts.*
IOU, ESP, and CCA RPS Implementation

**CEC ROLE**
- Certify renewable facilities as eligible for the RPS
- Design and implement an accounting system to track and verify RPS compliance
- Distribute Supplemental Energy Payments (Legislation deleted CEC authority to award SEPs and transfers administrative responsibility to CPUC)

**CPUC ROLE**
- Oversight of IOU procurement:
  - Approve procurement plans
  - Set baselines and targets
  - Develop market price referent
  - Develop least-cost-best-fit process to evaluate bids
  - Set rules for flexible compliance
  - Standardize contract terms
  - Approve/ reject contracts
  - Ensure RPS competitiveness
  - Administer above-market funds

Oversight for other “retail sellers”
CEC RPS Certification

651 facilities certified as RPS eligible represent more than 13,360 MW of capacity.*

<table>
<thead>
<tr>
<th>Category</th>
<th># Facilities</th>
<th>Megawatts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biofuels (gas &amp; liquid)</td>
<td>72</td>
<td>510</td>
</tr>
<tr>
<td>Biomass (solid)</td>
<td>40</td>
<td>863</td>
</tr>
<tr>
<td>Conduit Hydro</td>
<td>69</td>
<td>222</td>
</tr>
<tr>
<td>Geothermal</td>
<td>58</td>
<td>2,500</td>
</tr>
<tr>
<td>Incremental Hydro</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MSW Combustion</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>PV</td>
<td>22</td>
<td>48</td>
</tr>
<tr>
<td>Small Hydro</td>
<td>209</td>
<td>1,039</td>
</tr>
<tr>
<td>Solar Thermal</td>
<td>11</td>
<td>453</td>
</tr>
<tr>
<td>Wind</td>
<td>169</td>
<td>7,704</td>
</tr>
</tbody>
</table>

( # ) = number of facilities
*Includes only the percent of capacity certified as RPS eligible.
Data as of March 2011.

CEC ROLE
- Certify renewable facilities as eligible for the RPS
- Design and implement an accounting system to track and verify RPS compliance
Western Renewable Energy Generation Information System

WREGIS tracks renewable generation to help ensure the credibility of the "green" value of renewable electricity

- WREGIS is a voluntary, independent renewable energy registry and tracking system for the Western Interconnection transmission area
- WREGIS launched in June 2007
- Retail sellers and renewable facilities participating in California’s RPS are required to register with and use WREGIS. POUs can opt to use WREGIS to track their RPS energy.

RESULTS as of December 2010:
- More than 380 companies and over 1,615 generators are approved to be WREGIS Account Holders.

CEC ROLE
- Certify renewable facilities as eligible for the RPS
- Design and implement an accounting system to track and verify RPS compliance
SB 1078 set a broad mandate for the Energy Commission to implement an RPS tracking and verification system for retail sellers, but the statute is silent on how the Energy Commission should report the verification results to the CPUC.

Energy Commission prepares *RPS Procurement Verification Report* to provide verified results of retail sellers’ annual RPS claims and transmits report to CPUC.

CPUC uses *Verification Report* and applies its flexible compliance rules to assess RPS compliance for retail sellers.
Thank You for your time

Contact Information

Panama Bartholomy
Deputy Director

Pbarthol@energy.state.ca.us

916-654-4896