

# California Energy Commission

## 2011 Accomplishments

### *Conserving and Developing Energy Resources . . .*

#### **Setting standards for energy-efficient appliances**

- Since 1975, the Energy Commission's energy-efficient appliance standards (Title 20) have saved California consumers nearly \$37 billion.
- Standards developed in 2011 (and adopted in January 2012) for battery chargers – the devices that charge cell phones, laptop computers, and many consumer appliances – will save Californians \$300 million in annual energy costs and enough energy to power about 350,000 homes.
- Federal law now requires that light bulbs use 25 percent less electricity to produce the same amount of light as traditional 100 watt incandescent bulbs. By adopting the federal standards in 2011 – one year earlier than the rest of the nation – the Energy Commission is helping Californians to save nearly \$36 million on their electricity bills.

#### **Assuring appliance standards are effective**

- The Energy Commission certifies new appliance models to meet California's appliance energy efficiency standards.
- In 2011, the Energy Commission added more than 19,000 new models to the Title 20 appliance database.
- Governor Brown signed legislation (Senate Bill 454, Pavley) providing the Energy Commission with new authority to enforce California's appliance energy efficiency standards.

#### **Licensing power plants**

- The Energy Commission has exclusive permitting jurisdiction over thermal power plants with a net generating capacity of 50 megawatts (MW) or more.
- The Energy Commission certified three new power plant projects totaling 1,394 MW.
- Thirteen solar and natural gas plants with a capacity of more than 4,750 MW began construction, the phase of the project that involves significant compliance efforts by the Energy Commission.

#### **Creating the Desert Renewable Energy Conservation Plan (DRECP)**

- Led by the Energy Commission, the California Department of Fish and Game, U.S. Bureau of Land Management, and the U.S. Fish and Wildlife Service, an unprecedented collaboration of public and private groups plan to develop large-scale renewable energy facilities while protecting fragile desert ecosystems.

- The DRECP is developing guidelines to identify and map areas suitable for renewable energy project development and needed transmission corridors, while developing long-term natural resources conservation areas.

## ***Investing in Tomorrow and Creating Jobs Today . . .***

### **Investing federal stimulus funds**

- The Energy Commission received \$314 million – the largest federal stimulus award in the nation – from the American Recovery and Reinvestment Act of 2009 (ARRA) to fund energy efficiency and renewable energy programs implemented by almost 4,000 businesses in nearly 300 California cities and counties.
- Contractors performed more than 18,000 energy audits and made energy improvements to more than 3,600 houses, 2,900 multifamily units, and 3,700 commercial buildings.
- Energy efficiency upgrades contributed to significant energy savings and reduced greenhouse gas emissions:
  - More than 170,000 light-emitting diode (LED) and induction lights were installed.
  - More than 18,000 heating, ventilation, and air-conditioning (HVAC) systems were installed.
  - More than 9,000 efficient control projects such as lighting sensors and programmable thermostats were installed.
  - Collectively, these projects conserved over 120,500,000 kilowatt hours (enough energy to power 14,500 homes), saved consumers over \$16 million, and reduced greenhouse gas emissions by over 42,000 tons.
- More than 178,000 consumer rebates – totaling about \$33 million – were awarded to individual Californians through ARRA’s “Cash for Appliances” program.
- More than \$550,000 in costs savings by state agencies installing energy efficient systems. The Energy Commission partnered with the Department of General Services to administer California’s first revolving loan program helping state agencies fund energy efficient projects on state-owned buildings and repaying those loans from the cost savings.

### **Providing grants to transform transportation**

- To help develop sustainable transportation fuels, innovative vehicles, and 21<sup>st</sup> century automobile batteries, the Energy Commission’s Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) awarded \$207 million to 110 projects in 2011. This investment leveraged nearly \$350 million in private sector contributions and \$105 million in public sector contributions.
- ARFVTP funding supported the installation of electric vehicle charging infrastructure in Los Angeles, San Francisco, San Diego, and Sacramento. Consequently, 30 percent of all Chevy Volts and 40 percent of all Nissan Leafs sold in the United States were sold in California.
- One grant recipient, Electric Vehicles International (EVI), moved its manufacturing operations from Mexico to Stockton, California, using a \$6.4 million ARFVTP grant to leverage another

\$10 million in private investments; EVI expects to add more than 100 workers, providing a welcome boost to Stockton's economy.

### **Encouraging energy research, development, and demonstration**

- The Energy Commission's Public Interest Energy Research (PIER) Program awarded \$62 million to over 120 research, development, and demonstration projects; these awards were matched with more than \$548 million in public and private funds.
- PIER-funded lighting demonstrations reduced annual energy use by more than 810,000 kilowatt hours and cut carbon dioxide emissions by about 340 tons.
- Another PIER project completed in 2011 reduced excessive air conditioning use and lowered energy costs at California's data centers. Research with temperature sensor equipment led to reduced annual cooling energy usage by 40 percent and cut carbon dioxide emissions by about 950 tons.
- PIER's comprehensive assessment of the benefits of 15 years of synchrophasor research determined that use of this technology by the California Independent System Operator is estimated to save Californians \$210 million in reliability costs and \$90 million in economic benefits annually.

### **Generating green jobs and a skilled workforce**

- The Energy Commission awarded \$12 million to the high school educational programs of the Clean Technology and Renewable Energy Partnership Academies.
- During the first quarter of 2011, 5,500 Californians were employed – as developers, manufacturers, marketers, distributors, and installers – as a result of research funded by the PIER Program.
- ARFVTP grant recipients reported by the end of 2011 the funding they received created a total of 5,394 short- and long-term jobs.
- ARRA funding led to the creation of nearly 3,000 new jobs, according to the U.S. Department of Energy.
- More than 670 contractors participated in the Energy Upgrade California™ and commercial retrofit programs statewide.
- ARRA investments provided job skills training for nearly 20,000 unemployed and underemployed Californians, who learned how to perform energy audits, install solar photovoltaic (PV) systems, build large-scale renewable power plants, and make Leadership in Energy and Environmental Design (LEED) certification determinations.

### **Supporting renewable energy and distributed generation (DG)**

- Through the New Solar Homes Partnership, the Energy Commission continues to support small-scale renewable distributed generation projects by providing rebates for the installation of solar photovoltaic (PV) on efficient new homes. Through 2011, nearly 4,500 systems totaling 13.8 MW were installed.
- Solar PV applications for about 28 MW of electricity were received or approved by the Energy Commission.

- Within its newly restructured Emerging Renewables Program the Energy Commission funded 78 wind power and fuel cell projects.
- The Energy Commission adopted the *2011 Bioenergy Action Plan*, which offers recommendations to overcome the barriers to using biomass resources in California.

## ***Leading the Way on Meeting California's Energy Goals . . .***

### **Setting energy policy**

- Every two years the Energy Commission prepares an *Integrated Energy Policy Report (IEPR)*. The *IEPR* is the state's main energy planning document and provides the Governor, Legislature, and public with accurate information and analysis about energy supply, demand, distribution, and price.
- The *2011 IEPR* identifies transmission projects critical to bringing renewable power to market; reports on progress toward meeting California's 33 percent by 2020 Renewables Portfolio Standard (RPS) target; highlights the economic development and job creation benefits of achieving California's clean energy goals; includes forecasts of electricity, natural gas, and transportation fuel demand and supply that form the basis for future energy system planning by the state's energy agencies; and makes recommendations to address issues facing California's nuclear power plants in the wake of last year's catastrophic events at Fukushima, Japan.
- The latest *IEPR* provides the information leaders need to ensure that California reaches its clean energy goals and secures the economic and job creation benefits of renewable energy.

### **Implementing the most ambitious Renewables Portfolio Standard**

- Senate Bill X1 2 (Simitian) requires California utilities to procure 33 percent of their electricity from renewable energy sources by December 31, 2020.
- The Energy Commission developed methods to track and verify the RPS-eligibility of facilities and certified and precertified 428 facilities for a total of 26,265 MW in nameplate capacity.

### **Measuring California's clean energy progress**

- The Energy Commission led the creation of the *California Clean Energy Future Metrics Progress Report*, available at [www.cacleanenergyfuture.org](http://www.cacleanenergyfuture.org).
- California already leads the nation in sustainable energy planning, and its policies are driving change across energy industries and across the country.
- California's policy goals include reducing greenhouse gas emissions, establishing RPS requirements, adding solar PV to one million rooftops, creating zero net energy buildings, and stimulating the development of advanced battery storage and electric vehicles.
- The *Metric Progress Report* identifies 16 metrics that will demonstrate progress on each of California's clean energy goals. For example, the greenhouse gas metric tracks progress toward meeting California's reduction targets, and the renewable energy metric tracks progress toward the 33 percent by 2020 RPS requirement.