

Overview of California Energy Policies and Targets December 2013

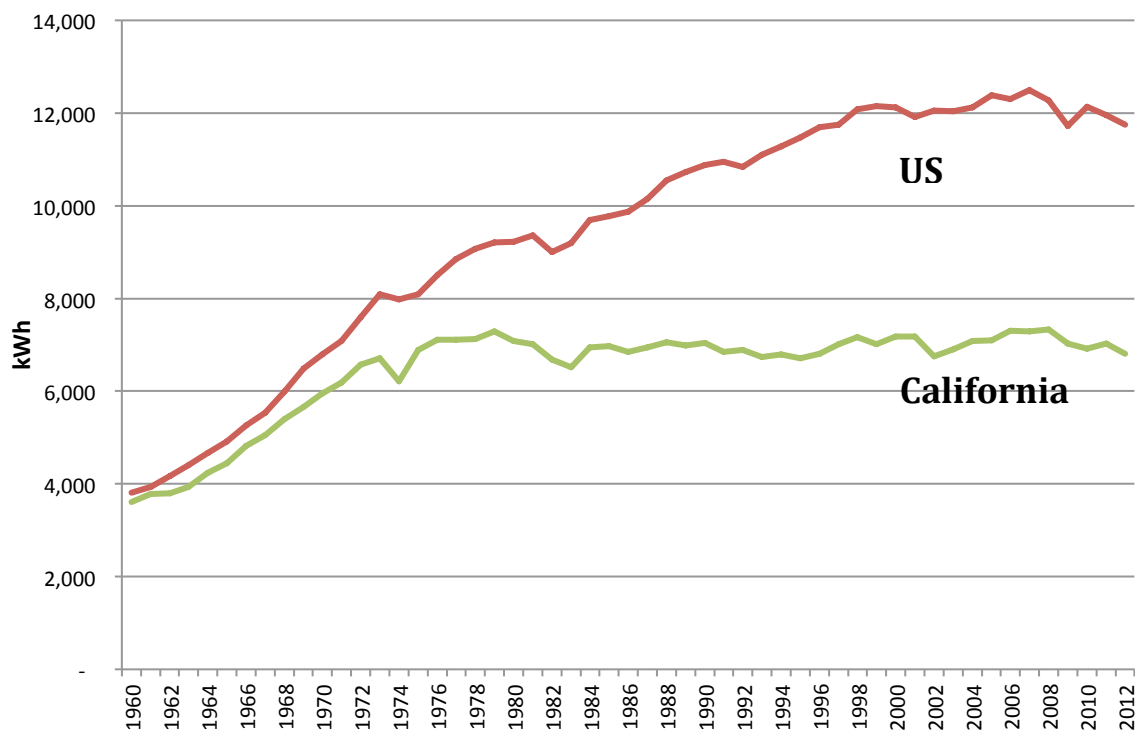
Dave Olsen

Greenhouse Gas Reduction Goals

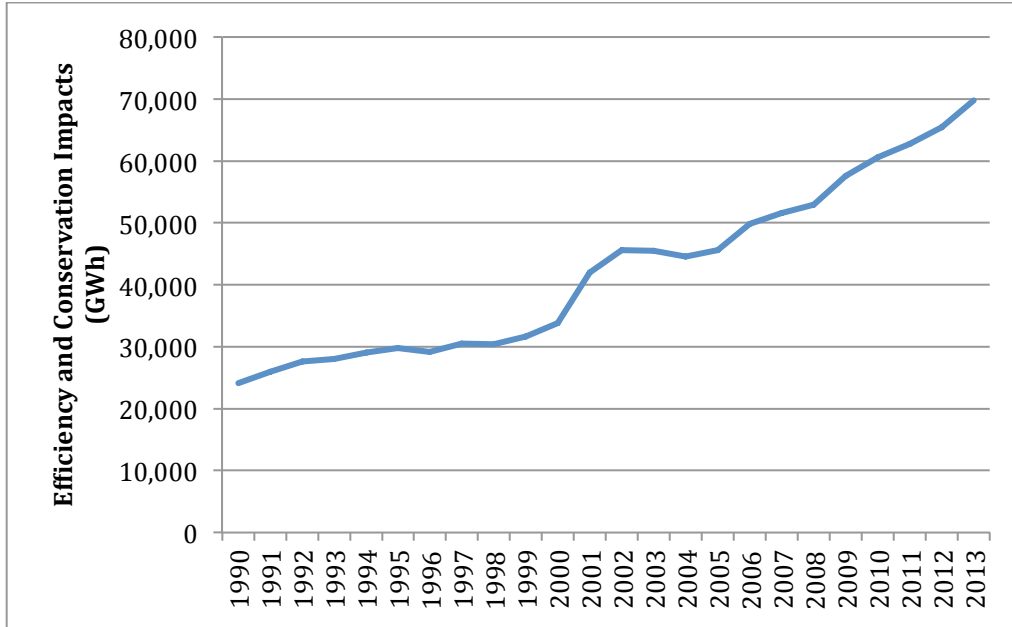
California law, the Global Warming Solutions Act of 2006, requires the state to reduce emissions of greenhouse gases to 1990 levels by 2020. Authority to enforce that requirement and ensure policies are in place capable of achieving it rests with the California Air Resources Board. As of 2013, the state appears on track to meet its 2020 goal. State policy also directs that GHG emissions be reduced at least 80% by 2050. All state energy policies are developed in consideration of both 2020 and longer-term GHG goals. A GHG cap and trade program has been in operation since 2012. Québec will join this program on January 1, 2014.

Energy Efficiency

Long-standing California policy requires utilities to procure all cost-effective energy efficiency first, before considering other resources. Energy efficiency programs have kept per capita electricity demand flat, since building codes and appliance standard were introduced in 1975--despite growing electrification of the economy. Californians consume 40% less electricity than the US average, due in part to California policies.

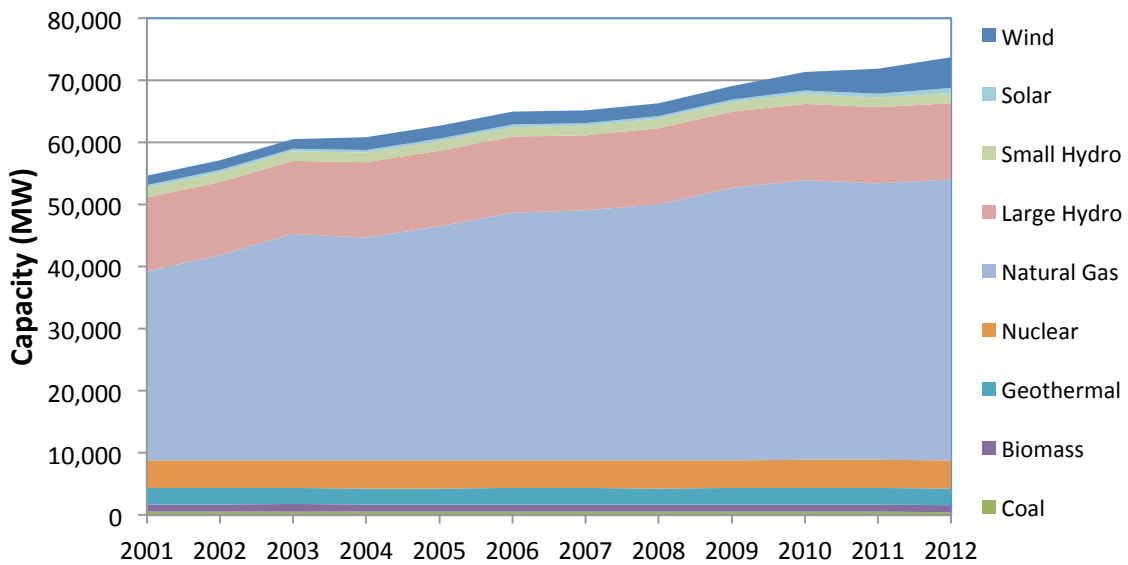


Building codes and appliance standards alone have saved California consumers \$74 billion since 1975. Savings from all California energy efficiency programs together now reduce electric demand by 70,000 GWh/year.



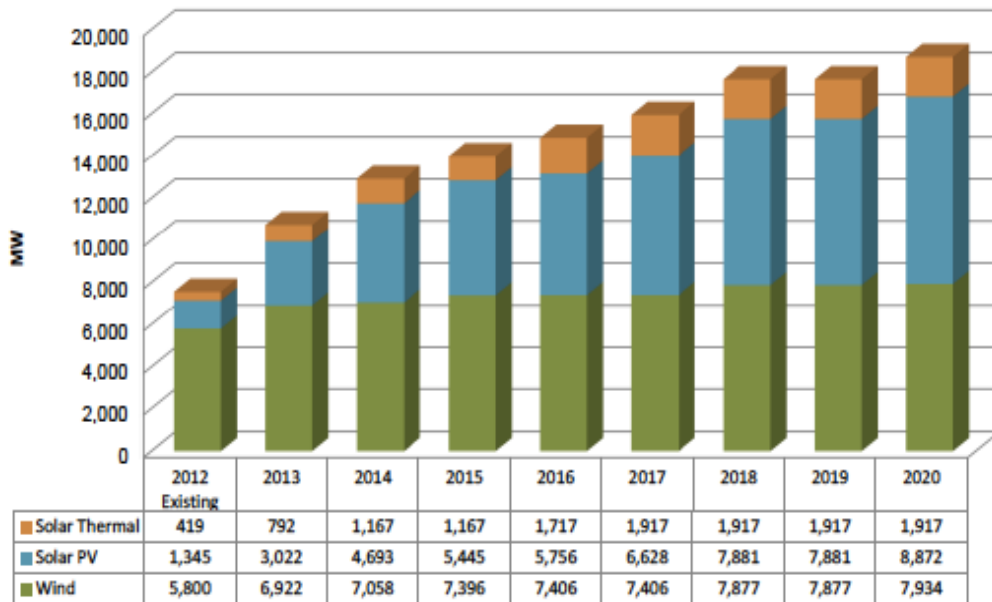
Resource Mix and Installed Capacity

Natural gas-fired generation has grown steadily over the past decade and now accounts for about 63% of California supply.



Renewable Resources

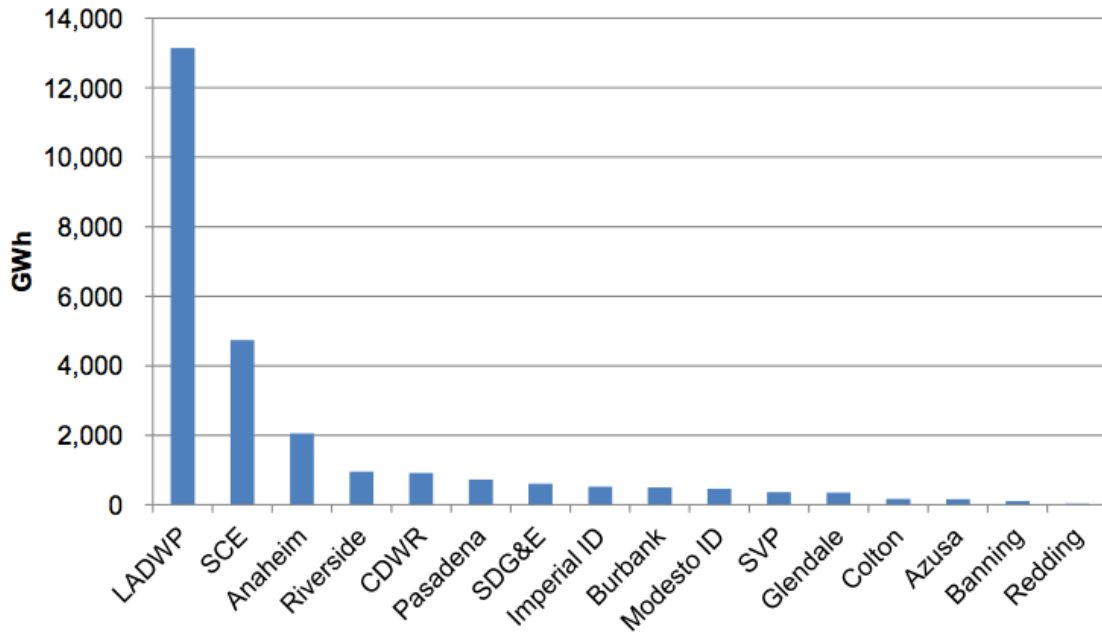
Renewables—geothermal, biomass, wind, solar and small hydroelectric—accounted for 18% of installed capacity at the end of 2012. California is on track to supply 33% of its electricity from renewables by 2020, as required by law. Small, distributed PV systems are not included in this requirement. When such systems are counted, California renewable energy generation is projected to total more than 38% by 2020.



Coal

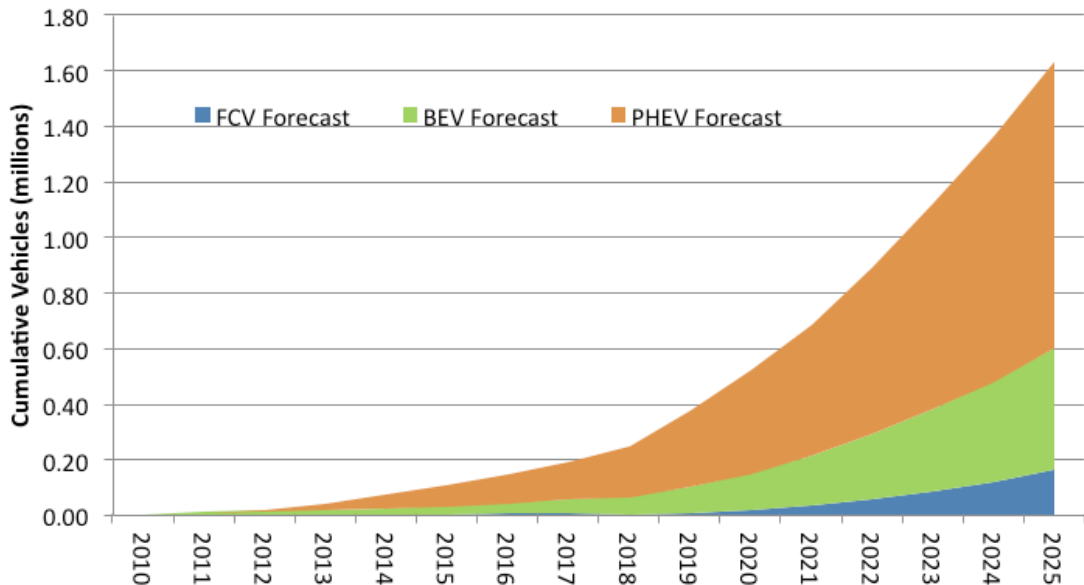
Electricity from existing coal and petroleum coke plants represents about 10 percent of the total energy requirements to serve loads in California, and accounts for about 29 percent of all greenhouse gas emissions attributed to the electricity sector. All coal-fired generation consumed in California is imported from out of state.

California law limits imports of coal and prohibits new contracts for coal-fired power. Shares of coal plants are owned mainly by municipal utilities, as shown below. All California utilities have announced plans to sell their interests in coal-fired power by 2025.



Electric Vehicles

Electric Vehicles have potential to provide flexible energy storage and frequency-responsive ancillary services to help balance supply and demand for electricity. California policies encourage their adoption. Note: FCV = Fuel Cell Vehicles; BEV = Battery-Electric Vehicles; PHEV = Plug-Hybrid Electric Vehicles.



Additional Key Policies

California policies also set specific targets for development and deployment of:

- Demand Resources
- Low-Carbon transportation fuels
- Combined Heat and Power
- Biopower
- Geothermal Heat Pumps and ground loop technologies
- Zero Net Energy Buildings
- Energy-related research and development

Information on these and other California energy and climate policies is available from:

California Public Utilities Commission: www.cpuc.ca.gov

California Energy Commission: www.energy.ca.gov

California Air Resources Board: www.arb.ca.gov