

California Clean Energy Future Metrics

Installed Capacity

Figure 1 shows on-line capacity by technology by year for California from 2001 to 2010. Power plants fueled by natural gas provide the largest portion of California's installed capacity.

The values reported in Figure 1 below are for the years 2001 through 2010 and reflect “nameplate” capacity. Nameplate capacity is the maximum possible output from a generation facility under specific conditions as designated by the manufacturer.

Figure 1: Installed Capacity by Technology from 2001 to 2010

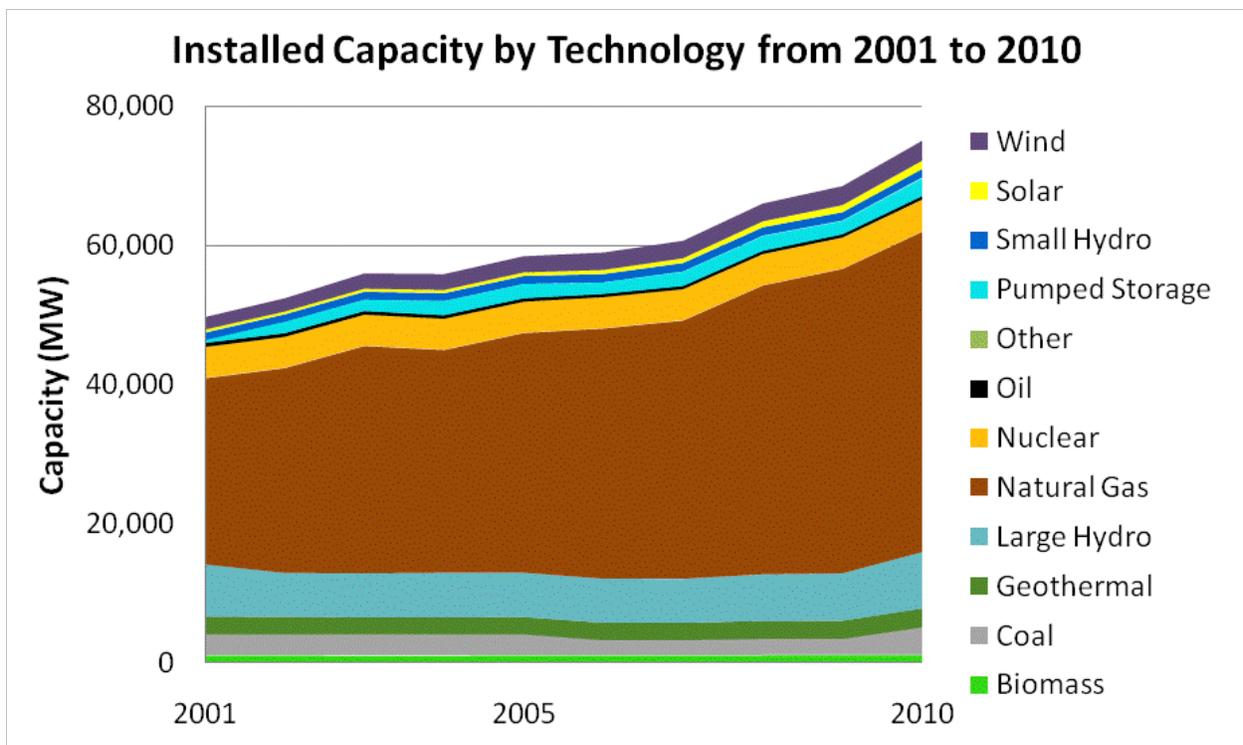


Figure 2 shows installed large-scale RPS-eligible renewables, renewable distributed generation 20 MW and smaller (customer self-generation and wholesale), and pumped hydropower storage from 2001 to 2010. This figure also shows the goals in Governor Brown's Clean Energy Jobs Plan for 8,000 MW of large-scale renewables, 12,000 MW of renewable localized generation, and the California Clean Energy Future goal to add 1,000 MW of energy storage by 2020.

Figure 2: Governor's Goals for Large-Scale Renewables and Renewable DG and CCEF Goal for Storage

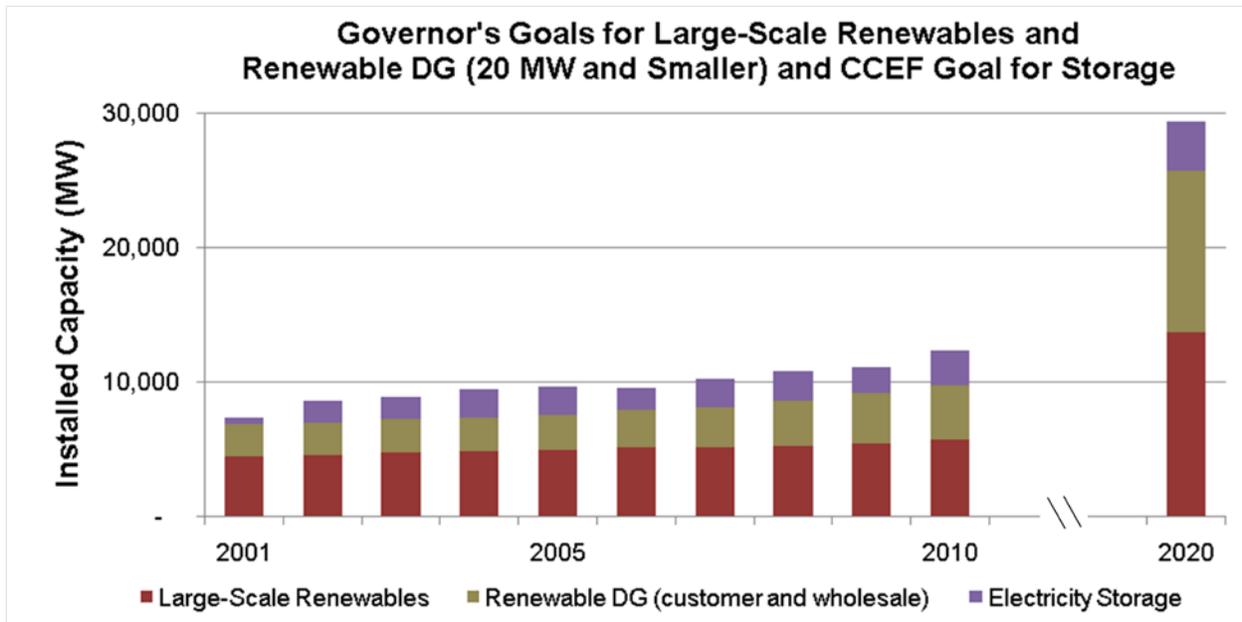


Figure 3 shows installed capacity compared to the Governor's goal to add 8,000 MW of large-scale RPS Resources in California by 2020. Figure 4 shows installed capacity for renewable DG compared to the 12,000 MW goal for renewable, localized generation.

Figure 3: Large-Scale RPS Resources in California

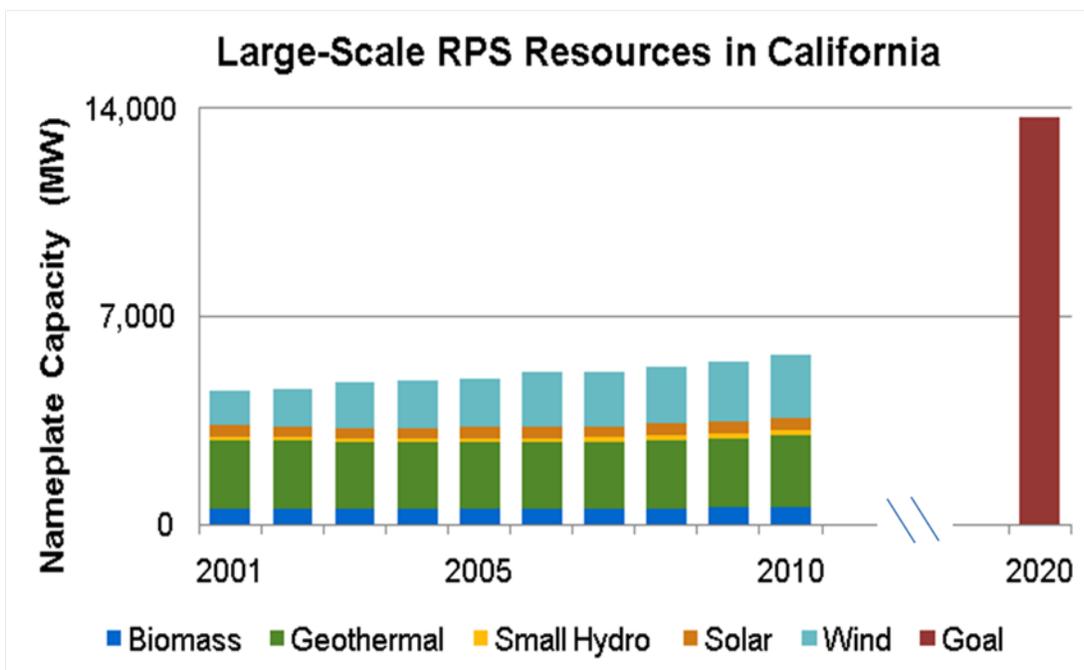
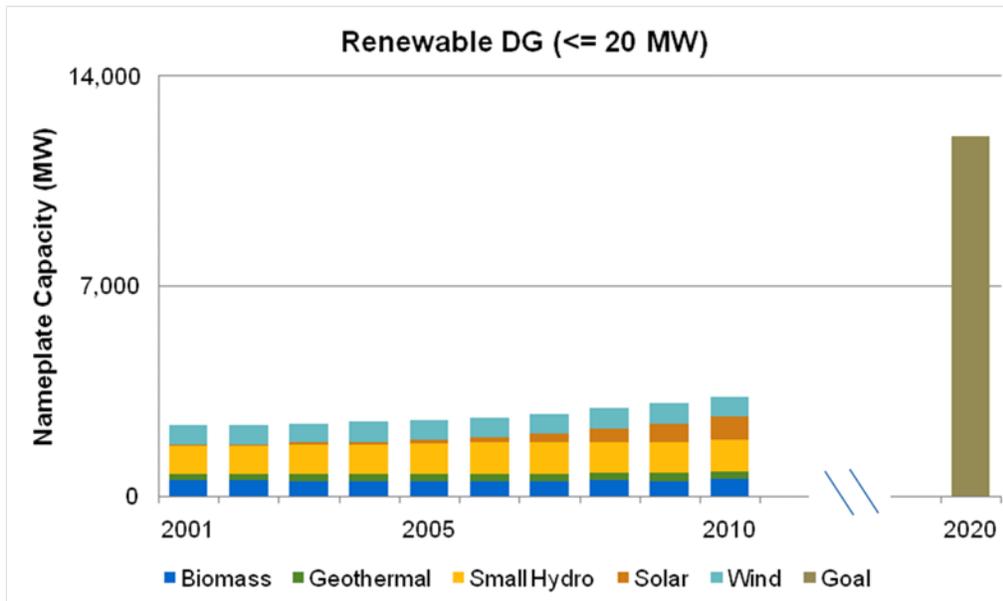


Figure 4: Renewable Distributed Generation (<= 20 MW)



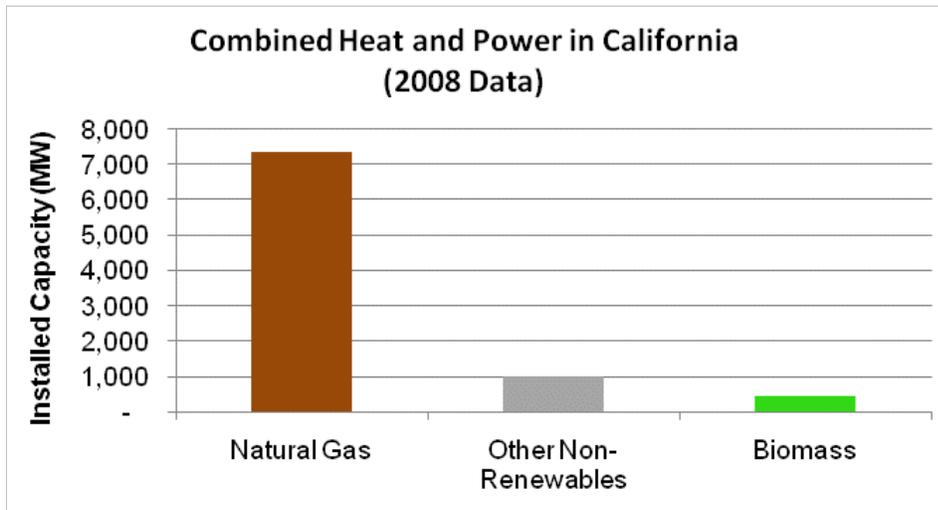
Information for installed capacity is derived from the following sources:

- 1) Quarterly Fuels and Energy Report (QFER)
http://energyalmanac.ca.gov/electricity/web_qfer/
- 2) Renewables Portfolio Standard Eligibility Database
http://www.energy.ca.gov/portfolio/documents/list_RPS_certified.html
- 3) New Solar Homes Partnership <http://www.gosolarcalifornia.org/about/ns hp.php>
- 4) California Solar Initiative http://www.californiasolarstatistics.ca.gov/current_data_files/
- 5) Emerging Renewables Program
http://www.energy.ca.gov/renewables/emerging_renewables/index.html
- 6) Publicly Owned Utilities' SB1 Solar Program Status Reports
http://www.energy.ca.gov/sb1/pou_reports/index.html

Figure 5 shows installed capacity of combined heat and power for 2008 according to an ICF study published in 2010. Natural gas provides the largest part of California's combined heat and power. Biomass provides about 450 MW.

For information on combined heat and power potential at wastewater treatment plants, see <http://www.energy.ca.gov/2009publications/CEC-200-2009-014/CEC-200-2009-014-SF.PDF>. This 2009 report states that there could be as much as 450 MW of market potential for CHP at wastewater treatment plants in California "by adding biodegradable waste from California dairies, food processing plants, and restaurants' oil and grease to the sludge in the anaerobic digesters." (p. 1).

Figure 5: Combined Heat and Power in California



Source: ICF (2010), <http://www.energy.ca.gov/2009publications/CEC-500-2009-094/CEC-500-2009-094-F.PDF>

The Governor set a goal of adding 6,500 MW of combined heat and power in the next 20 years. Focusing on fossil fuel CHP, a 2010 report by ICF provides information on programs encouraging combined heat and power resources that could be used to achieve this goal. A summary is provided in Table _____. The report is available at <http://www.energy.ca.gov/2009publications/CEC-500-2009-094/CEC-500-2009-094-F.PDF>.

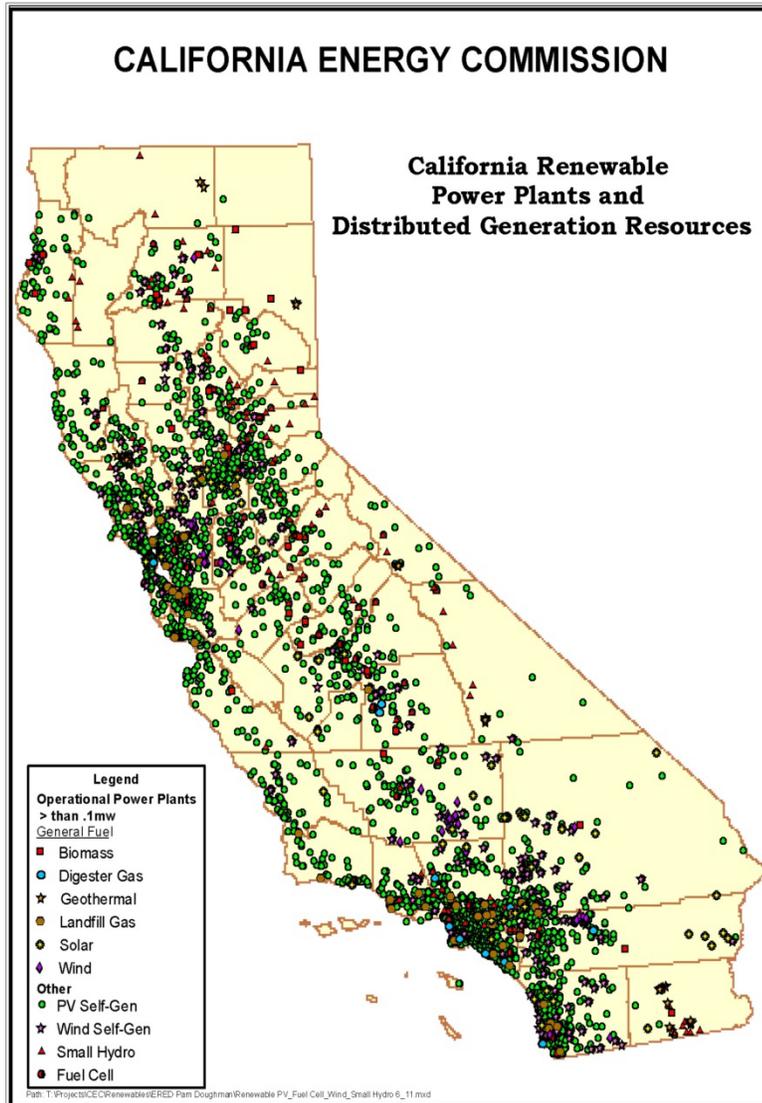
Table 1: ICF Study of Combined Heat and Power Potential: 2029 Cumulative Market Penetration by Market Type (MW)

Market Type	Base	CO ₂ Payment	Restore SGIP	Expanded Export	"All In"
On-Site	2,427	2,658	2,866	2,427	3,095
Export	304	304	316	1,745	3,100
Air Conditioning	267	281	314	267	325
Total	2,998	3,242	3,496	4,439	6,519

Source: ICF (2010), <http://www.energy.ca.gov/2009publications/CEC-500-2009-094/CEC-500-2009-094-F.PDF>

The location of renewable energy plants in California in 2009 is shown in Figure ____.

2009 Map of California Renewable Power Plants and Distributed Generation Resources



The following data sources were used to prepare Figure ____:

- 1) Quarterly Fuels and Energy Report (QFER): http://energyalmanac.ca.gov/electricity/web_qfer/
- 2) Self-Generation Incentive Program <http://www.cpuc.ca.gov/PUC/energy/DistGen/sgip/>
- 3) New Solar Homes Partnership <http://www.gosolarcalifornia.org/about/nsdp.php>
- 4) California Solar Initiative: http://www.californiasolarstatistics.ca.gov/current_data_files/
- 5) Emerging Renewables Program: http://www.energy.ca.gov/renewables/emerging_renewables/index.html
- 6) Power Source Disclosure Program Annual Reports: <http://www.energy.ca.gov/sb1305/index.html>