

# Wind is the Lowest Cost Way to Generate Electricity

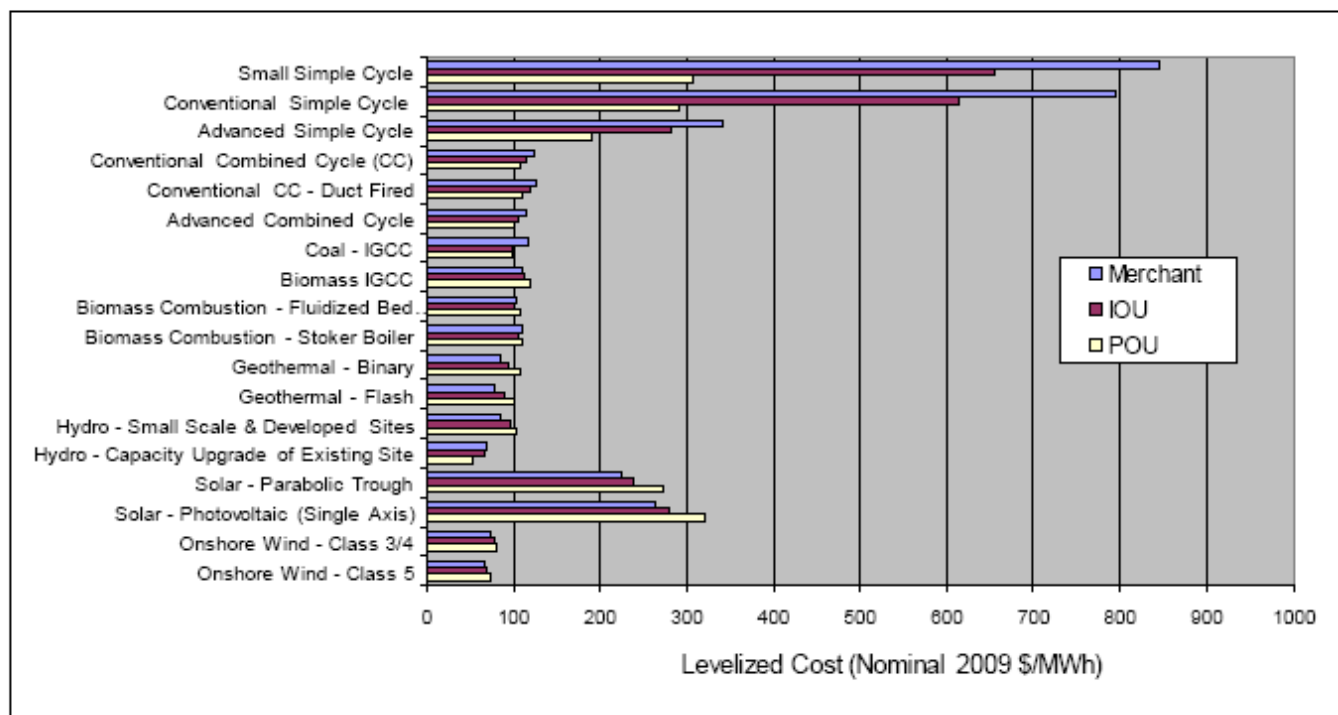
## California Energy Commission Revises Levelized Costs Across Generation Technologies

A California Energy Commission (CEC) report titled "Comparative Costs of California Central Station Electricity Generation Technologies" finds that wind is the cheapest way to generate electricity, when costs are levelized.

The report updates the levelized cost of generation estimates originally prepared for California's Integrated Energy Policy Report. The electricity-generating technologies studied include simple- and combined-cycle gas-fired, coal-integrated gasification combined cycle, wind, solar PV, solar thermal, biofuel, geothermal, hydro and nuclear. The only cheaper-than-wind method of generating electricity would be to upgrade existing hydro facilities.

Levelized costs are derived using a constant cost per unit of generation to compare one unit's generation cost with other electricity resources over similar periods. Levelized costs enable comparison of the financial feasibility of different electricity generation technologies.

Figure 1: Summary of Average Levelized Costs—In-Service in 2009



Source: Energy Commission

Levelized costs are shown for three classes of project developer: Merchant Facilities, financed by private investors and selling to the wholesale market; Investor-Owned Utilities (IOU), and Publicly Owned Utilities (POU).

The report assesses some of the fundamental project attributes used when evaluating the cost of building and operating electricity generation plants. Levelized costs are necessarily nominal values, not precise estimates, and don't capture every system, environmental, or other relevant factor that would be considered in planning a new electricity-generating plant. Good estimates of levelized costs however are essential for new generation and transmission planning. Sound estimates are a necessity since plant characteristics, capital costs, plant operations, financing arrangements, and tax assumptions vary widely from generation technology to generation technology, as well as from project to project.

The cost variables considered include "instant" cost: the initial capital expenditure. The effect of instant cost on levelized cost depends on complicated and unpredictable assumptions of financing, operational costs, and tax credits.

This study finds that there is little or no expected improvement in instant costs over the 20-year period analyzed, except for two of the renewable technologies that are important to California's and many other state's electricity resource development: wind and solar, whose initial capitalization requirements "show a significant cost decline."

The complete report can be found at:

- <http://www.energy.ca.gov/2009publications/CEC-200-2009-017/CEC-200-2009-017-SF.PDF>