



Energy Efficiency in New Construction: Bill Analysis

This analysis shows the expected average energy usage for four different scenarios:

- (1) A home built to code 10 years ago;
- (2) A home built to California's 2005 Energy Efficiency (Title 24) standards;
- (3) A home built 35% more energy efficient than the 2005 Standards;

(4) A home built 45% more energy efficient than the 2005 standards.

Based on the analysis, a home that is 45% more efficient that also has a solar power system will have an average monthly utility bill that is \$163 less** than a 10 year old home, a savings of almost 60%.

California's building efficiency standards (Title 24) have saved more than \$56 billion in electricity and natural gas costs since 1978.

Source: www.energy.ca.gov/title24

HOME SIZE: 3,050 SQUARE FEET				
	10 Year Old Home	5 Year Old Home (built to 2005 CA Energy Efficiency Standards)	35% More Efficient Home	45% More Efficient Home
Kilowatt Hours (kWh) needed for Space Cooling	2,771	238	100	64
Percentage of High Efficacy Lighting installed	0%	50%	100%	100%
kWh needed for lighting and appliances	10,392	9,453	8,514	8,514
Total kWh (Space Cooling, Lighting, and Appliances)	13,163	9,691	8,614	8,578
Annual Electric Bill (\$0.20 kWh ^{**})	\$2,633	\$1,938	\$1,723	\$1,716
Average Monthly Electric Bill (\$0.20 kWh ^{**})	\$219	\$162	\$144	\$143
Therms needed for space heating and hot water	606	460	305	265
Annual Natural Gas Bill (\$1 therm ^{**})	\$606	\$460	\$305	\$265
Average Monthly Natural Gas Bill (\$1 therm ^{**})	\$51	\$38	\$25	\$22
Total Annual Utility Bill	\$3,239	\$2,398	\$2,028	\$1,981
Average Monthly Utility Bill	\$270	\$200	\$169	\$165
Difference from the 10 Year Old Home[†]	\$0	-\$70	-\$101	-\$105

What happens when you add a solar photovoltaic (PV^{**}) system?

Annual kWh Production	3,487	3,487	3,487	3,487
Annual kWh Use	9,676	6,204	5,127	5,091
Annual Electric Bill with PV (\$0.20 kWh ^{**})	\$1,935	\$1,241	\$1,025	\$1,018
Average Monthly Electric Bill with PV	\$161	\$103	\$85	\$85
Total Annual Utility Bill with PV	\$2,541	\$1,701	\$1,330	\$1,283
Average Monthly Utility Bill with PV	\$212	\$142	\$111	\$107
Difference from the 10 Year Old Non-Solar Home[†]	-\$58	-\$128	-\$159	-\$163

* Lighting and Appliances Calculation From the LEED® for Homes Calculator ** PV Calculations based on a 2.3 kW DC system
[†] Savings may vary depending on usage by occupant. ** \$/kwh and \$/therm are average estimates only, based on rates as of January 2010.

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