

Construction industry gears up for new standards

California Energy Commission's green building regulations meet little resistance despite added costs

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Beginning in 2014, all new homes built in California must meet tough new energy efficiency standards. Many recently constructed homes, such as Tapestri Square in midtown Sacramento, already include energy-efficient features because consumers are demanding them.

With an update that takes effect in 2014, California energy standards will increase efficiency demands by 25 percent, hiking construction costs and becoming the most restrictive in the nation.

“If this were a mile race, we just lapped the rest of the country” said Bob Raymer, technical director of the California Building Industry Association.

California Energy Commission officials say the upgrades will add about \$2,290 to the cost of building a new home, but will return more than \$6,200 in energy savings over 30 years. Based on a 30-year mortgage, the new standards will add \$11 per month to the price of a new house, but save property owners \$27 a month in heating and cooling costs, the energy commission says.

The regulation, which increases energy-efficiency standards for new and renovated residential and commercial property, didn't draw the opposition that some previous updates did, in part because the BIA and energy commission officials worked together to put some more onerous measures aside, and, an industry consultant said, because builders know energy efficiency is a strong marketing tool.

“Builders came to realize that newer homes are more efficient than existing homes, and they can market that,” said Ken Nittler, an engineer who consults on building codes. “Consumers respond favorably to the green message.”

That’s not to say the tougher requirements didn’t have critics. This is the biggest jump in standards ever, and the Asphalt Roofing Manufacturers Association had some sharp words, contending the energy commission used “flawed data and poor science” to justify the new mandates.

The association “is deeply concerned about the recent action by the California Energy Commission,” vice president Reed Hitchcock said in a prepared statement. “Variations in climate, building use, construction, insulation, and energy use make for a complex scenario that deserves careful study before enacting legal requirements that threatens increased costs to consumers without well-founded justification.”

Raymer said the BIA, which represents home builders, was initially opposed to the stricter mandates because early projections calculated an increase of up to \$10,000 per new house, an additional cost that builders said they couldn’t justify in the worst real estate downturn since the Great Depression.

But the energy commission agreed to sideline three requirements:

- Increasing insulation in the “V” shaped portions of roofs;
- Using 2-by-6-foot studs instead of traditional 2-by-4 studs so more insulation could be applied to wall cavities;
- Requiring third-party inspectors to check insulation.

Energy commissioner Karen Douglas said about 70 workshops were held with members of the industry. “We worked with a broad coalition of stakeholders, and worked hard to address technical issues that were brought forward ... In this cycle, we were able to identify significant cost-effective improvements to buildings.” she said.

“It was a long road,” Raymer added. “We ended up in support and grateful the CEC made those cuts.”

Working toward ‘net zero’

The BIA estimates the changes will add \$2,700 to the average new-home cost, which is more than the energy commission’s \$2,290 estimate. The BIA projects monthly savings to homeowners at about \$12 per month, which is less than the energy commission calculations.

But the savings don’t stop at the front door.

Energy Commission officials say the tighter regulations will save millions of gallons of water annually and nearly 14,000 megawatt hours of electricity over 30 years, which equates to 1.7 million homes.

Two energy policy goals are driving the current standards: the so-called “loading order,” which mandates that growing energy demand be met first with cost-effective energy efficiency then with renewable generation; and “zero net energy” objectives for new houses by 2020 and commercial buildings by 2030. Zero net energy means new structures must use a combination of improved efficiency and distributed renewable power to meet all their energy needs.

The new requirements include installing whole-house fans in the hotter inland portions of California, and verifying new air conditioners are installed correctly. They don’t require that new air conditioners be rated at 14 seer (a “seer” is a measure of cooling efficiency), because federal law requires 14 seer in the South and Southwest in 2015. “California’s standards always defer to federal standards for the federally covered products,” said Energy Commission spokesman Adam Gottlieb.

Air conditioners and heaters are among the chief energy guzzlers, consuming up to 60 percent of a building’s total use. Commissioner Douglas said the new requirement mandating third-party verification of installation is crucial because surveys show that many air conditioners do not provide enough air flow. She sees that verification as complementary to the new federal 2015 requirement.

But Francis Dietz of the American Air Conditioning, Heating and Refrigeration Institute wonders if stricter energy mandates wind up achieving their goal because higher costs will cause property owners to delay remodels that install more efficient equipment.

“The cost keeps going up, and no one disputes that,” he said. “But it can get to the point where they can’t afford new equipment and keep it longer.”

The whole-house fan mandate is new, but likely won’t be a huge burden in the Sacramento region.

“Many new homes in the Sacramento area already incorporate this feature. I suspect it will be more of a significant change for builders in the Fresno/Bakersfield area,” Raymer said.

Nittler said the new mandates will require more efficient window coatings, continuous insulation across the outside of the framing and a clear space of 250 square feet on rooftops to accommodate solar panels, when applicable. Commercial developers also are encouraged to use cool roof technology, which, Nittler said, reflects the heat. For many developers, these don’t require many changes.

“All these things do add costs, but in a lot of cases builders would already be doing that. This pushes them to go a bit further,” he said.

Green marketing

Scott Kingston, vice president of Colliers International in Sacramento and an office specialist, said the costs of incorporating the tighter standards in new buildings could be offset by making the buildings more competitive in a tough economic climate. Tenants likely won't pay a premium for the upgrades, but landlords will be able to differentiate their properties from the competition. And the changes will lower their operating costs.

Kingston cites an office building at 26th Street and Capitol as an example. "That is green certified and fully leased because they were able to market it as green," he said.

Looking forward, industry officials wonder how much more efficient buildings can become — and still say reasonably priced. "You run into the law of diminishing returns," Raymer said.

Commissioner Douglas says her agency is not nearly done; technological advances will see to that.

"A lot of savings in this one comes from better windows ... Window coatings insulate much better, and reduce heat gain from the outside and reduce heat loss from the inside."

Developers also strive for better quality. "We have a lot of activity where people build above code, and will continue to do so. Many of the innovations are coming from people trying to build green in excess of code requirements," she said.

"There absolutely are more efficiency measures that can come."