

August 5, 2011
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Via Electronic and U.S. Mail to docket@energy.state.ca.us

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 10-BSTD-01
1516 Ninth Street
Sacramento, CA 95814-5512

DOCKET
10-BSTD-01

DATE	AUG 05 2011
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**Re: Docket No. 10-BSTD-01, July 15, 2011 Staff Workshop – SMUD
Comments on 2013 Building Energy Efficiency Standards**

SMUD appreciates the opportunity to provide feedback on the July 15th, Staff Workshop on the California Energy Commission's (CEC) 2013 Building Energy Efficiency Standards. The proposal presented by Staff represents a significant improvement in the Building Energy Efficiency Standards which will go far in helping the State reach its 2020 Net Zero Energy Goal for residential new construction. SMUD is working closely with its builder customers to realize net zero new homes through a variety of new home construction programs, including SMUD's SolarSmart Home program. This is the only utility residential new construction program that requires solar photovoltaics and high efficiency, and currently exceeding the Title-24 energy standards by 20%. SMUD also sponsors a Home of the Future research and development program that achieves 80% annual source energy reduction in new single-family and multi-family homes. Based on our research and practices, SMUD would like to offer the following comments on the topics and issues raised at the workshop, specifically Staff's proposal for the 2013 Prescriptive Package.

In general, SMUD supports the simplification and standardization of the Prescriptive Packages across California's climate zones. Standardization of the Prescriptive Packages should make it easier for production builders who build across the state to build new homes across climate zones and in different utility service territories, reducing confusion and making it easier to meet the standards. Moreover, we believe it will also lead to standardization of utility new construction programs, simplifying the process of compliance for builders and ensuring that utilities are working toward the common state goals. This should lead to lower costs, a reduction in design and construction timelines, and greater market acceptance.

More specifically, SMUD supports Staff Proposal Package A3 with modifications. While additional, cost-effective measures are available for inclusion in the standards for 2013, the Staff recommendations appropriately target many areas in which current practice and technology allow for more efficient construction. We believe that Package A3 represents a significant improvement in the Building Energy Efficiency Standards, which will eventually lead to meeting the State's 2020 Net Zero Energy goal.

We offer a recommended change to Package A3 relative to Duct Insulation, Infiltration (ACH50 requirements), QII, and Ventilation Cooling (Whole House Fan) Package requirements. Our recommendation would improve the overall efficiency of the code requirements without a substantial increase in cost, and each of the components recommended below has been shown to have widespread acceptance in the new home construction market.

SMUD supports improving Duct Insulation to R-8, rather than Staff's R-6 proposal. Builders in Climate Zone 12 have largely adopted R-8 Duct Insulation as standard practice, and the standard would be beneficial across the State because a tighter building envelope will reduce heat or cooling losses, as needed across State climate zones. Furthermore, the cost differential is minor and CEC data shows the practice to be cost-effective over the life of the measure.

Also, SMUD supports adoption of the 4 ACH50 infiltration level rather than Staff's 7.6 ACH50 level. ASHRAE standard 62.2 sets the minimum infiltration level requiring mechanical ventilation at 7.6 ACH50. The benefits of a tightly sealed home are well documented and are reflected in the Commission's own "loading order" rulings. While there are concerns over the lower 4 ACH50 infiltration level relative to fear of legal liability over poor indoor air quality levels, current construction practice has homes being built to infiltration levels below the 7.6 ACH50. Lower ACH50 standards exist elsewhere without such concerns, and adequate ventilation is a more appropriate response to these concerns than a lesser infiltration standard. We believe that builders should address indoor air quality issues by incorporating properly designed and installed mechanical ventilation systems into their new home products. This affords the builder assurance of indoor air quality without compromising the integrity of the building envelope. The goal of most of the changes called for in Package A3 is to tighten the building envelope, and this is a critical component of achieving zero net energy residential buildings. Addressing these concerns through ventilation rather than lower infiltration standards is a more prudent and appropriate response.

Regarding Quality of Installation of Insulation credit (QII), SMUD believes that the QII credit should be discontinued and that insulation should be correctly installed per manufacturer specifications as common practice. It is our understanding the QII credit was originally provided to help the building industry transition to a point where installation standards met manufacturer specifications. In short, credit should not be given to meet minimum specifications or construction practices. The building industry has had several years to adapt to QII, and the standards should focus on pushing the industry towards

the next generation of energy efficiency. With the value of such credits increasing with efficiency standards, now is the time to change the credit to a standard that provides credits only to those measures that exceed code requirements. This change would promote achievement of the Net Zero Energy Goal.

Finally, SMUD supports the use of whole house fans as an energy efficiency practice. However, the assumptions used in the Prescriptive Package will not result in energy savings, especially during critical peak periods when energy savings count most. It is our understanding that the whole house fan (WHF) used in the Package is a "standard" belt driven, attic floor mounted fan whose use is dependent on occupant behavior relative to fan and window operation. We do not believe that energy savings can be counted on for energy efficiency measures so dependent on "occupant behavior." For example, the Commission's own studies show that most homeowners do not open windows, negating the WHF's energy savings potential. Moreover, our own studies show that while WHFs can provide significant night ventilation and cooling to a home if properly operated, they provide no cooling benefits during "heat storms" (SMUD defines a heat storm as 3 consecutive 100 degree Fahrenheit days). Should the Commission include the standard WHF as a component of the standards update, then additional requirements must be added to ensure properly designed and installed insulation around the fans. The installation of such units in existing and new homes typically leads to large gaps in insulation, unfilled cavity openings, and a significant loss in efficiency from the lack of attention paid to the installation.

To achieve a zero net energy home, the standards will have to begin to focus on the most efficient technologies available, and then supplement the standards with educational programs to homeowners and renters. The 2013 Update has the potential to address more of the energy efficiency measures that do not require homeowner behavior change, and thus capture a much higher percentage of energy savings. As a result, SMUD believes the "standard" WHF be replaced by an "advanced" WHF in Package A3, such as a WHF that is attached to the roof trusses or is incorporated into the central HVAC system (an "economizer") with a variable speed fan motor that is automatically operated by a thermostat.

We thank the Commission for their hard work and dedication in the 2013 Building Energy Efficiency Standards Update, and look forward to the adoption of these critical improvements to Title 24.

Respectfully submitted,

A handwritten signature in blue ink that reads "Mr. W. Westerfield, III". The signature is written in a cursive style with a horizontal line at the end.

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cc: Corporate Files