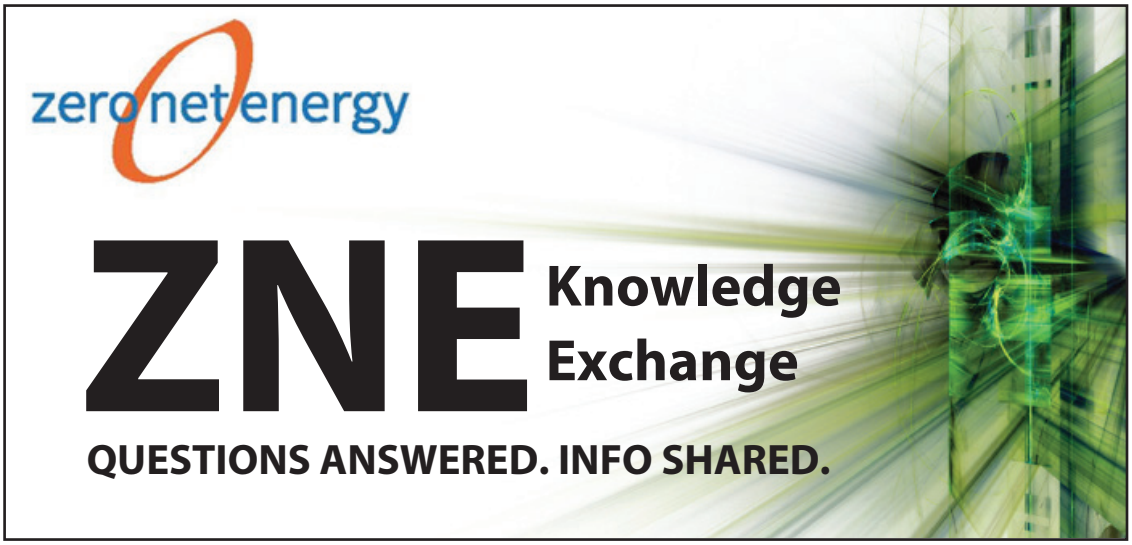

THIRD IN A SERIES OF ARTICLES ON ZNE

Controversy Continues as the State of California Revises and Refines Requirements

By Wayne Alldredge, VCA GREEN

This is the third in our ZNE Knowledge Exchange where we discuss applicable sustainability information related to Zero Net Energy. We invite you to contribute or ask questions regarding ZNE, building codes like CALGreen, technology and design, and other sustainability subjects.

Zero Net Energy controversy continues as California further revises and refines definitions and goals. While zero net energy seems self-explanatory, the state has revised expectations more than a few times.

We all know that green "bling" products like home automation, automatic photochromic windows, motorized roofs and walls, and the like are exciting to read about and inspiring technology, but these are unlikely to see acceptance in a traditional tract home or condo.

The ZNE technologies most likely to become ubiquitous are ones like air sealants, thermal-pane windows, high R-value insulation, and photo-voltaic panels.

Energy Modelers are searching for those winning combinations that create excellent energy performance at an affordable price.

Our process of running several modeling variations to find the best value is beneficial to all projects instead of being reserved for "high end" customers.

Design Update: The California Energy Commission is considering using an Energy Design Rating (EDR) as an alternate way to express energy performance of a building where 100 points represents meeting Title 24 Energy Code minimum.

Our process of running several modeling variations to find the best value is beneficial to all projects.

A score of zero or less means the building has used a combination of energy efficient design and renewable energy to achieve "Net Zero" time dependent value (TDV). The EDR will include all end uses in the simulation. This score will be shown on compliance report outputs in programs such as EnergyPro. The EDR could be the Net Zero Energy metric used by the State in 2020.

Code Update: A solar credit can be taken for certain climate zones for up to 5.0 kW.

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For 2017, all new projects going into plan check must meet 2016 code which, on average is 5% more efficient for non-residential projects and 25% more efficient for residential projects over last year's energy code (2013 code cycle).

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Anything over 5.0 kW cannot be factored into helping a project achieve or exceed energy performance.

For 2017, all new projects going into plan check must meet 2016 code which, on average is 5% more efficient for non-residential projects and 25% more efficient for residential projects over last year's energy code (2013 code cycle).

The City of Lancaster started requiring solar on new homes back in 2014, but their latest "Zero Net Energy" policy passed last week, mandates that those rooftop arrays contain 2 watts per square foot of real estate and stipulates that those rooftop arrays meet the energy needs of those homes. Builders have an option to pay an in-lieu fee of $1.40 per square foot of the constructed home, or a combination of installing solar panels and paying a reduced fee for homes that still cannot meet the solar production ordinance.

Construction Update: Nationally, February 2017's existing home sales pace was still 5.4% above a year ago and 6.1% for new homes. Single family home starts rose 4.4% in February, but multi-family construction fell 3.7% to 416,000 units. Applications to build SFHs annualized to 1.29 million, the strongest in about a decade. By the end of 2017, interest rates for 30-year fixed SFH mortgages are expected to rise to 4.6% from a current rate of about 4.1%.

Sales Update: Solar installations in California jumped over 55% from 3.266 MW in 2015 to 5.096 MW in 2016, and with 35% market share, easily retains the national capacity ranking of #1 according to SEIA Research. In fact, California passed a milestone by providing more than half the power needs of the entire state through solar power for a few hours on March 11, 2017.

More good news, costs of commercial Solar PV systems have dropped 16% in the last year alone. The biggest cost-decline opportunity in the solar industry exists in soft costs, including labor, supply chain and overhead considerations. In residential installations, soft costs account for 67% of total cost at a 4Q 2016 average of $2.85/W. The installation trend shows no sign of slowing down.

In the News: The California Energy Commission provided a $1.2 million grant to Biodico Inc. to develop an energy solution for farmers that helps reduce greenhouse gas emissions. The Zero Net Energy Farm, or "ZNEF" located at Red Rock Ranch in Five Points, California is being designed to generate all electrical and heating power needs from on-site renewable resources, including solar, wind and biomass.

The U.S. Department of Energy (DOE) Better Buildings program launched a Zero Energy Schools Accelerator program in December 2016 with the goal of making zero energy K-12 schools "more mainstream." Participants include State of California Schools, LA Unified School District, and Hermosa Beach City School District. ■

Wondering how ZNE will affect current and future projects? We welcome your questions.

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