

# CALIFORNIA'S 2019 ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL BUILDINGS

Residential buildings account for a third of California's electricity use, and the building sector is the **second largest** source of greenhouse gas (GHG) emissions in the state. Every three years, the California Energy Commission considers changes to permitting rules to reduce this energy use and associated emissions. The California Building Energy Efficiency Standards, known as Title 24, affect all new residential and commercial construction and major renovations throughout the state.

This journalist's guide provides context for the proposed language for the 2019 residential building energy efficiency rules, which will be adopted this year and will go into effect on January 1, 2020. In this guide you will find:

- An overview of the Title 24 building energy efficiency standards
- A preview of what's expected in the 2019 residential update
- A list of experts who can speak to this issue

## What are Title 24 Building Energy Efficiency Standards?

In 1978, the California Energy Commission developed energy efficiency standards for commercial and residential buildings in accordance with the **Warren-Alquist Act** of 1974 – the same law that created the Energy Commission. By law, the commission updates building codes every three years to incorporate new cost-effective, energy efficiency technologies and construction methods. The up-front compliance costs of the updated standards must be less than the savings the standards generate over the 30-year lifespan of a home or a 15-year period for commercial buildings.

In 2007, the California Public Utilities Commission (CPUC) and the California Energy Commission set the bold goal that all new residential buildings will be **Zero Net Energy (ZNE) by 2020**. Although the 2019 standards would not require buildings to be fully ZNE, they would be a significant step toward that goal.

The standards are designed to save energy and water, reduce pollutant emissions, boost the reliability of the state's electricity-supply system, and reduce the need for new power plants. The Commission must also consider the impact of the standards on indoor air quality (**Public Resources Code, Section 25402**).

## What's expected for the proposed 2019 update?

### ⇒ MOVE CLOSER TO ZERO NET ENERGY

California set a goal calling for all new residential buildings to be **Zero Net Energy** by 2020; that is, they have the potential to produce enough energy on-site to offset their projected annual energy use. Though the 2019 standards do not require full Zero Net Energy, they do require buildings to be efficient enough that their annual electricity use can be offset by a modestly sized solar array. That requirement does not include natural gas use, which is responsible for over **40 percent** of building-sector-related GHG emissions. The new standards, however, will put California on the **path towards** achieving our ZNE goal, and ultimately, zero emissions buildings.

California cities and counties that want to accelerate the transition to clean energy will be able to adopt local “reach codes” that could go all the way to Zero Net Energy or Zero Net Carbon. Palo Alto, Lancaster and **Santa Monica**, for example, are among the cities that go beyond the state’s current requirements.

### ⇒ REQUIRE SOLAR POWER

New solar power standards would require all residential buildings and homes to have access to on-site or community renewable energy resources, such as rooftop solar, which would provide additional savings on utility bills. This would apply to all new residential buildings and major renovations unless extenuating circumstances prevent installation.

### ⇒ PROVIDE SOLAR + STORAGE CREDIT

The standard currently in effect provides a compliance credit for solar panels, allowing a trade-off between solar power and efficiency. With solar becoming mandatory in the 2019 code, this credit will be limited to when solar capacity is combined with on-site energy storage.

Sunsetting the 2016 solar-only trade-off credit with the 2019 code ensures that more owners and ratepayers benefit from highly efficient building walls, windows and attics that save money even when the sun isn’t shining. The update would also help keep buildings more comfortable and safe during power grid outages.

On-site energy storage is an essential tool for achieving emission reductions via renewable energy. The new solar + storage credit incentivizes the deployment of on-site energy storage at market scale, which will also accelerate the development of improved storage technologies.

#### IMPORTANT DATES:

##### **January 19, 2018:**

California Energy Commission publishes proposed language for new residential building energy efficiency rules. This begins the 45-day public comment period.

##### **February 5-6, 2018:**

Energy Commission leads commissioner hearing – a public workshop on proposed language.

##### **March 5, 2018:**

Public comment period ends.

## Building energy efficiency standards projected to save Californians \$1.6 billion

Thanks to building energy efficiency standards, Californians are projected to save **\$1.6 billion** on energy costs over the next 30 years. Single-family homes built to the 2016 building energy efficiency standards use about 28 percent less energy than those built to 2013 standards. For individual homeowners, the 2016 standards, which went into effect in 2017, reduce energy and maintenance costs that will result in a net savings of \$7,400 over 30 years. When factored into a 30-year mortgage with a 5 percent interest rate, the standards translate into a net savings of \$20 a month for the average homeowner on heating, cooling and lighting bills (**Energy Commission**).

## WHO BENEFITS FROM BUILDING ENERGY EFFICIENCY STANDARDS?

### ⇒ HOMEOWNERS

Due to the state's growing population and rising temperatures driven by climate change, residential electricity demand in California is likely to grow. L.A. County, for example, could see as much as a 47 to 87 percent increase in its electricity demand between 2020 and 2060 without policy intervention (Reyna & Chester, 2017). Average demand for cooling is projected to double in many parts of California by mid-century (Cal-Adapt, 2018; Petri & Caldeira, 2015). By living in more energy efficient buildings, homeowners could save on energy costs associated with cooling. Alleviating the ongoing costs of homeownership is an important factor in maintaining and increasing homeownership.

### ⇒ UTILITY CUSTOMERS

Across the nation, energy costs can add more than 50 percent to annual housing costs. Thanks to energy efficiency standards, several of our metro areas top the list of lowest energy cost relative to the cost of housing—beyond what could be attributed to our high housing costs (Redfin). Strong energy efficiency standards can help save bill payers money and help avoid costly upgrades and power outages for utility companies.

### ⇒ LOW-INCOME COMMUNITIES

According to a 2016 study of major cities, the median percentage of income spent on energy costs in low-income households in California was about twice the city-wide median and state-wide average. This is on top of the fact that low-income homes are generally much smaller and less thermally comfortable than average homes. If low-income housing were to become just as efficient as the average U.S. home, low-income households' energy burden would be reduced by 20 percent.

“The likelihood that [low-income households'] energy bills will exceed their means is determined more by the condition of their home than by their income.”

THE WEATHERIZATION  
LEVERAGING PARTNERSHIP  
PROJECT

### ⇒ HOME SELLERS

California homes with an energy efficiency certification sell at a premium of 2 to 5.3 percent higher than homes without a certification. Energy efficient homes also sell an average of 18 to 89 days faster (DOE).

### ⇒ LOCAL ECONOMIES

Money spent on energy tends to leave the community. According to Stone Energy Associates, if you spend a dollar on energy, only \$0.28 stays in the local community, whereas on average \$0.75 of a dollar spent on other expenses remains in the local economy. Spending less on energy can improve community self-reliance, save consumers and citizens money, create local “main street” jobs and catalyze local economic investment (ACEEE).

## Expert Resources

### Pierre Delforge

*Director, Building Decarbonization | Natural Resources Defense Council (NRDC)*

Pierre Delforge joined NRDC in 2010 after spending 20 years in the information technology industry. At NRDC, he focuses on reducing the carbon pollution of buildings and of the equipment within them. Delforge was lead energy and climate strategist for Hewlett Packard's sustainability group. He holds computer science and engineering degrees from Cambridge University and L'Ecole Centrale Paris.

**CONTACT:**

[pdelforge@nrdc.org](mailto:pdelforge@nrdc.org) | (415) 875-6100

### Brandon De Young

*Executive Vice President | De Young Properties*

Brandon De Young is the Executive Vice President for De Young Properties, a homebuilding company pushing the envelope when it comes to energy efficient and sustainable design. Brandon De Young led De Young Properties' initiative to build Zero Energy homes. In 2017, Brandon unveiled the company's latest community, De Young EnVision at Loma Vista. The community is Central California's first Zero Energy community and the largest in the entire state. Every home at EnVision will be designed with the potential to produce as much energy as they consume in a year.

**CONTACT:**

[cbd@deyoungproperties.com](mailto:cbd@deyoungproperties.com) | (559) 435-0900

### Nehemiah Stone

*Principal | Stone Energy Associates*

Nehemiah Stone is an expert in energy efficiency and renewable energy with extensive experience in the design, implementation, management and evaluation of utility programs, third party programs, and state and NGO policies. Stone's areas of special expertise include affordable housing, multifamily building design, and the integration of the economics of efficiency at all levels of the program design process. Stone is especially interested in finding new, sustainable solutions to long-standing problems of efficiency, comfort, affordability, business success, and equity.

**CONTACT:**

[nehemiah@stoneenergyassoc.com](mailto:nehemiah@stoneenergyassoc.com) | (916) 663-1225

### Thomas J. Phillips

*Principal | Healthy Building Research, Davis, CA*

Phillips has spent over 35 years working at the intersection of research and policy addressing human health, pollution, and buildings. He has worked on landmark R&D on indoor environmental quality in California and the U.S. He has advised national, state, and local agencies, NGOs, and private firms on how to assess and reduce health risks in indoor and outdoor environments. Phillips helped develop health-based specifications for green, sustainable, and resilient buildings. His current focus is on climate adaptation, passive survivability, and energy efficiency for healthy buildings and communities.

**CONTACT:**

[tjp835@sbcglobal.net](mailto:tjp835@sbcglobal.net)

### V. John White

*Executive Director | CEERT*

V. John White has been a writer, commentator, advocate, and leader of the green energy movement in California for 35 years. He is executive director of the Center for Energy Efficiency and Renewable Technologies (CEERT), Legislative Director for Clean Power Campaign (CPC), and principal of the environmental and energy lobbying practice, V. John White Associates, representing public interest environmental and local government organizations, and new energy technology companies.

White works closely with the legislature and state regulatory agencies, primarily the Public Utilities Commission, the Air Resources Board, the California Energy Commission, and the Independent System Operator. White's career has been devoted to air quality improvement and clean energy development.

**CONTACT:**

[vjw@ceert.org](mailto:vjw@ceert.org) | (916) 442 7785