



The California Energy Commission Achieving Energy Efficiency

Since 1975, the California Energy Commission has been responsible for reducing the state's electricity and natural gas demand primarily by adopting new *Building and Appliance Energy Efficiency Standards* that have contributed to keeping California's per capita electricity consumption relatively low.

These standards – coupled with the Energy Commission's programs to reduce energy consumption in existing buildings – reduce greenhouse gases; make businesses more competitive; allow consumers to save money and improve health; and create clean energy jobs in California.

Under the Clean Energy and Pollution Reduction Act, the Energy Commission established targets to achieve a cumulative doubling of energy efficiency savings for consumers by 2030. Although California is poised to come close to the targets with existing and end expected programs, a small gap exists. Strategies to ensure the goal are reached include assisting low-income customers in accessing energy efficiency and weatherization funding, including those in disadvantaged communities.

Leading Energy Efficiency Standards: Residential and Nonresidential Buildings

Every three years the Energy Commission establishes minimum standards of efficiency for new building design, construction, and operation that are technically and economically feasible. The Building Energy Efficiency Standards were first adopted in 1978 and are developed through a public process

to solicit stakeholder input and reach consensus on proposed efficiency measures.

Once developed, the Energy Commission continues to work with stakeholders on implementation, which includes training contractors, builders, architects, and consultants on the latest standards, compliance approaches and software, and verification protocols and procedures using the Home Energy Rating System (HERS) and Nonresidential Acceptance Testing.

The Energy Commission also engages in public and targeted education and outreach to ensure that accurate and timely information is available for consumer use. In addition, the Commission supports compliance and enforcement of local building departments by providing online resources and tools.

California's leading *Building Energy Efficiency Standards* are moving the state closer to achieving its zero-net energy (ZNE) goals, whereby all newly constructed low-rise residential buildings are to be ZNE by 2020 and all new commercial buildings by 2030. Achieving these goals is a decisive change in the construction industry's building practices and presents building occupants with energy and costs savings and GHG reduction opportunities. Though the state's ZNE goals are a major step forward for Californians, they represent only a fraction of the energy and cost savings and GHG reductions that are achievable from buildings.

Leading Energy Efficiency Standards: Appliances

The Energy Commission is mandated to create energy efficiency standards for all new appliances not covered by federal energy efficiency standards. To develop these standards, the Energy

Commission seeks information from manufacturers, industry associations, energy efficiency advocates, and other stakeholders. Public workshops are held to solicit comments about the scope of new *Appliance Energy Efficiency Standards*. The Energy Commission develops appliance test procedures to ensure compliance and labeling requirements to inform consumers about the efficiency of appliances covered under these standards.

Once approved, they are included within the state's *Appliances Energy Efficiency Database* that contains listings for all appliances certified by the Energy Commission as meeting current standards. To ensure compliance, the Energy Commission conducts statewide surveys among retailers and has the authority to fine retailers that sell appliances that do not meet federal and state energy efficiency standards.

California's *Appliance Energy Efficiency Standards* are critically important to reducing energy consumption in buildings, saving Californians money and reducing GHG emissions. For example, electric appliances use more than half the electricity consumed in buildings. Thus, reducing the consumption of these plug loads will be necessary if California is to reach its ZNE goals.

Upgrading California's Existing Buildings

Energy efficiency measures are an inexpensive alternative to investing in new generation resources and infrastructure. The Energy Commission has the authority to develop and implement a comprehensive energy efficiency program for existing buildings

For example, to reduce energy consumption in existing single-family homes, the Energy Commission created the HERS program to provide homeowners with qualified and trained professional home energy auditors. The Commission approves, regulates, and monitors third-party HERS providers who train and certify home energy auditors, also known as HERS raters. These raters conduct energy audits for single-family homes. In addition, HERS raters conduct verification and diagnostic testing for new residential buildings to ensure compliance with the lat-

est *Building Energy Efficiency Standards*.

The Energy Commission developed the first-in-the-nation statewide building energy use benchmarking and public disclosure program for existing commercial and multi-family buildings. This program allows building owners during time of sale, lease, finance, or refinance to access and analyze the energy consumption of their building-as-a-system, thereby encouraging building owners to pursue energy efficiency upgrades.

Furthermore, the Energy Commission administers various energy efficiency incentive programs. The Energy Efficiency Financing Program is a revolving loan fund that provides zero- and low-interest-rate loans to local governments, schools, and public institutions (including hospitals) for the installation of cost-effective energy efficiency and clean energy projects. To assist with project planning, the Commission Bright Schools Program and Energy Partnership Program offers energy audits and other technical assistance to help schools (K-12), local governments and public institutions become more energy efficient.

Finally, the Energy Commission is the lead administrator for implementing the Proposition 39: The Clean Energy Jobs Act program for schools (K-12) by providing grant money to local education agencies for energy efficiency upgrades and clean energy projects.

Despite activities to encourage energy efficiency upgrades in California's existing building stock, additional policies and actions will be necessary to grow this market and achieve deep, cost-effective energy efficiency upgrades. These policies and actions may include financing programs, more public outreach and education and other activities to get additional energy savings that help California achieve its climate and energy goals.

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