

CALIFORNIA  
ENERGY  
COMMISSION

**PROGRESS REPORT TO THE CALIFORNIA  
LEGISLATURE IN RESPONSE TO  
ASSEMBLY BILL 1561  
(KELLEY, STATUTES OF 2002)**

**WATER EFFICIENCY STANDARDS FOR  
RESIDENTIAL CLOTHES WASHERS**

**COMMISSION REPORT**

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Arnold Schwarzenegger, *Governor*

# CALIFORNIA ENERGY COMMISSION

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**FOR**

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# Background

## ***California Energy Commission***

California is the world's fifth largest consumer of energy. California has also long been at the forefront in energy efficiency and is a world leader in renewable energy resources. Guiding how the state uses and conserves its energy has been the purpose of the State Energy Resources Conservation and Development Commission for more than 30 years.

The Energy Commission was established by the Legislature in 1974 to address the energy challenges facing the state. Created by the Warren-Alquist Act (Assembly Bill 1575, Statutes of 1974), which was signed into law by then-Governor Ronald Reagan, the Energy Commission is the state's principal energy policy and planning organization. Since 1974, successive administrations with bipartisan legislative support have enacted more than 100 separate laws to assist the Energy Commission in implementing state energy policy.

The Governor appoints the five members of the Energy Commission to staggered five-year terms, and selects a chair and vice chair from among the members every two years. The appointments require Senate approval. The Energy Commissioners represent the fields of engineering / physical science, economics, environmental protection, and law. By law, the remaining Commission member represents the public at large.

The Warren-Alquist Act also requires all Commission decision making to be done in public meetings. The Energy Commission nominates and the Governor also appoints a Public Adviser who is responsible for ensuring that the public and other interested parties are adequately represented at all Energy Commission proceedings. This very open public process affords the citizens of California a unique opportunity to be a part of the energy decision-making process.

## **Organization and Responsibilities**

The California Energy Commission's mission is to assess, advocate and act through public/private partnerships to improve energy systems that promote a strong economy and a healthy environment. Staff implements the Energy Commission's mission in five basic areas:

1. Forecasting future statewide electricity needs and keeping historical data on energy
2. Licensing power plants to meet those needs
3. Promoting energy efficiency and conservation
4. Developing renewable energy resources and alternative energy technologies
5. Planning for and directing state response to energy emergencies

The Energy Commission receives its funding from an electricity consumption surcharge collected by the electric utilities through customers' bills and then transferred to the state treasury. During calendar year 2004 the surcharge was 3/10 of a mil, or \$0.0003, per kilowatt/hour (kWh) of electricity consumed. An average residential customer using 600 kWh of electricity per month in 2004 paid 18 cents per month. The surcharge was reduced to 2.2/10 of a mil (\$0.00022) for calendar year 2005. An average residential customer will pay 13 cents per month in 2005. Federal money for specific energy efficiency programs supplements the Energy Commission's surcharge funding.

## **Energy Efficiency and Demand Analysis Division**

The Energy Efficiency and Demand Analysis Division is committed to making California's businesses, homes, and appliances more energy efficient. This commitment is achieved by:

- Developing and implementing energy efficiency standards for buildings and appliances
- Assisting public agencies and schools to recognize and fund energy efficiency improvements
- Identifying and developing ways to streamline energy use in agriculture, manufacturing, water systems, and industrial processes
- Informing Californians that using energy wisely is a good investment in the economy and the environment
- Analyzing demand and consumption trends to assist in policy decisions

## ***Appliance Efficiency Standards***

Section 25402(c)(1) of the California Public Resources Code, enacted as part of the Warren-Alquist Act in 1974, requires the Energy Commission in order to reduce wasteful, uneconomic, inefficient, or unnecessary consumption of energy to:

Prescribe, by regulation, standards for minimum levels of operating efficiency, based on a reasonable use pattern ... to promote the use of energy efficient appliances whose use, as determined by the Energy Commission, requires a significant amount of energy on a statewide basis. The minimum levels of operating efficiency shall be based on feasible and attainable efficiencies or feasible improved efficiencies which will reduce the electrical energy consumption growth rate. The standards shall become effective no sooner than one year after the date of adoption or revision. No new appliance manufactured on or after the effective date of the standards may be sold or offered for sale in the state, unless it is certified by the manufacturer thereof to be in compliance with the standards. The standards shall be drawn so that they do not result in any added total costs to the consumer over the designed life of the appliances concerned.

The Energy Commission's Appliance Program has been setting appliance efficiency standards since 1976. These appliance efficiency standards, in conjunction with the Energy Commission's building energy efficiency standards (first effective in 1978), have been highly successful. They have saved California citizens more than \$36 billion in electricity and natural gas costs since 1978. It is estimated these appliance and building standards will save an additional \$43 billion by 2013. The standards have been a major part of California's successful energy conservation efforts since 1975. The total savings of these efforts have been more than 10,000 MW and 35,000 GWhs through 2001. These savings are equivalent to the output of 20 500-MW powerplants.<sup>1</sup> The appliance and building standards account for more than half of the total California savings. A report by RAND Corporation<sup>2</sup> found that the energy intensity (e.g., energy use per Gross State Product) dropped in California as a result of the state's vigorous standards and other energy efficiency initiatives while at the same time energy intensity steadily increased in the rest of the U.S. California's reduction in energy intensity resulted in increased buying power and higher demand for goods and services. The RAND study concluded that reductions in energy intensity in California resulted in a 3 percent growth in the state's economy between 1977 and 1995. This translates to a societal benefit (above the direct savings mentioned above) of about \$1000 per capita.

Both building and appliance efficiency standards are updated periodically. The California appliance efficiency standards also have triggered actions by the federal government to adopt federal appliance efficiency standards (when federal standards are adopted for specific appliances, those standards preempt further state standards updates for products that are "covered" by the federal standards). Key events in the history of the appliance efficiency standards development both in California and at the national level are summarized below.

**1976:** The Energy Commission adopted efficiency standards for refrigerators, freezers, room air conditioners, and residential size central air conditioners.

**1977:** The Energy Commission adopted standards for all types of gas space heating equipment, electric heat pumps, gas and electric water heaters, showerheads and faucets.

The United States Congress directed the U.S. Department of Energy (DOE) to develop federal standards that were technologically feasible and economically justified for consumer appliances.

**1978 and 1979:** DOE published test methods for consumer appliances.

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<sup>1</sup> California Energy Commission. 2003. *Public Interest Energy Strategies Report*. 100-03-012D. Sacramento, California: California Energy Commission, pp. 39,40.

[http://www.energy.ca.gov/energypolicy/documents/2003-10-10\\_100-03-012D.PDF](http://www.energy.ca.gov/energypolicy/documents/2003-10-10_100-03-012D.PDF)

<sup>2</sup> Bernstein, Mark, Robert Lempert, David Loughran, and David Ortiz. 2000. *The Public Benefit of California's Investments in Energy Efficiency*. MR-1212.0-CEC. Prepared for the California Energy Commission by the RAND Corporation. Santa Monica, California: RAND Corporation.

**1982:** DOE published the "No-Standard Standards." This was a determination by DOE in response to Congressional direction that there was no level of standards for consumer appliances that was economically justified. This determination, if upheld, would have preempted all state standards for consumer appliances. However, as a result of legal action brought by California and other states and environmental organizations, DOE's determination was overturned in court.

**1982:** The Energy Commission adopted efficiency standards for fluorescent lamp ballasts.

**1983:** The Energy Commission expanded the scope of its standards for central air conditioners to include small commercial equipment.

**1984 and 1985:** The Energy Commission substantially upgraded its efficiency standards for refrigerators, freezers, and central air conditioners.

**1987:** Congress adopted the National Appliance Energy Conservation Act (NAECA), which imposed most of the California standards on residential appliances sold throughout the United States. NAECA preempted further updates of state standards for the covered appliances.

**1988:** Congress added fluorescent lamp ballasts to NAECA

**1990:** The Energy Commission adopted in regulation most of the standards for commercial space heating, cooling and water heating equipment contained in the national consensus American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 90.1-1989, which was voluntary throughout the rest of the U.S.

**1992:** The Energy Commission adopted in regulation the standards for commercial water heaters that were contained in ASHRAE Standard 90.1b-1991.

**Later in 1992:** Congress passed the Energy Policy Act of 1992 (EPAAct), which included most of the efficiency standards for commercial equipment adopted by the Energy Commission in 1990 and 1992, as well as showerheads and faucets.

**1997:** DOE published tougher standards for room air conditioners (effective 10/1/2000) and refrigerators, refrigerator-freezers and freezers (effective 7/1/2001).

**2001:** In January, DOE published a new energy efficiency standard for residential central air conditioners, adopted under the Clinton administration, establishing a requirement for a Seasonal Energy Efficiency Ratio (SEER) 13 standard level. All new equipment sold in the United States would have to comply with this standard by January 2006. Beginning in February 2001, the Bush administration took action to roll back this standard to a SEER 12 level.

**2002:** In February, the Energy Commission adopted efficiency standards for a wide range of appliances which were never previously regulated. Most of these standards took effect in March 2003, with other standards taking effect later in 2003, and more stringent standards taking effect in 2004. The appliances for which new standards were set included commercial refrigerators, ground water-source heat pumps, ground-source heat pumps, computer room air conditioners, exit signs, traffic signals, torchieres, commercial clothes washers, and distribution transformers. These standards will save 1,023 GWh/year in electricity and 3.4 million therms/year in natural gas.

In May, DOE adopted federal regulations that rolled back the residential air conditioner standard to the SEER 12 level. The National Resources Defense Council, plus the states of California, New York, Vermont, Connecticut, and other stakeholders, sued DOE over this action on the grounds that federal law expressly prohibits DOE from rolling back previously adopted standards to weaker levels.

**2003:** In September, the Energy Commission initiated a proceeding to adopt water efficiency standards for residential clothes washers.

**2004:** In January, the 2<sup>nd</sup> Circuit Court of Appeals restored the federal residential air conditioner standard to the SEER 13 level. In March, the Air Conditioning and Refrigeration Institute announced it would not appeal the Court's ruling. In April, DOE also announced it would not appeal the 2<sup>nd</sup> Circuit Court of Appeals ruling, clearing the way for the SEER 13 standard to take effect on January 23, 2006. These standards will save 4.2 quads of electricity nationally over 25 years.

In February, the Energy Commission adopted water efficiency standards for residential clothes washers. The Office of Administrative Law withheld approval of the standards due to a procedural error. The Energy Commission re-opened the proceeding to correct the deficiency and re-adopted these standards on May 19, 2004. These standards will save as much as 42.8 GWh/year in electricity and 3.6 million therms/year in natural gas.

## **Report to the Legislature**

The report to the Legislature of the Energy Commission's progress in meeting the requirements of AB 1561 is presented herein. Although it has not been possible to meet the deadlines in the bill, water efficiency standards substantially more efficient than anticipated by the bill were adopted that once in effect will result in important water and energy savings. These standards were enthusiastically supported by many California stakeholders, including the water agencies that supported AB 1561. The Energy Commission has organized a project in collaboration with these water agencies to prepare a thorough petition to DOE for waiver from preemption. The Energy Commission and the California stakeholders anticipate that to meet the difficult approval criteria mandated by federal statute, the petition must fully demonstrate the unique and compelling need for these standards, and that the Energy Commission and supporters must be fully prepared to show in the DOE rulemaking proceeding that the Standards will not result in significant impact on manufacturers or result in a reduction in the

features of residential clothes washers. The Energy Commission is making good progress in collaboration with this team of water agencies in preparation for submission of the petition for waiver of preemption.

## **Assembly Bill 1561**

### ***Legislative Background:***

Assembly Bill 1561 (Kelley, Statutes of 2002) required the Energy Commission to adopt water efficiency standards for residential clothes washers. This bill found and declared that significant amounts of energy are consumed in the state through the process of pumping water, water treatment, and sewage treatment, and that the conservation of water could greatly reduce this energy use. It further stated that a significant portion of urban water use is a result of residential clothes washer use. The bill was sponsored by various water agencies in California.

### ***Legislative Bill Discussion***

Assembly Bill 1561 required the Energy Commission to take the following three actions:

1. Standards Adoption. No later than January 1, 2004, amend the existing regulations pertaining to energy efficiency standards for residential clothes washers to require residential clothes washers manufactured on or after January 1, 2007 be at least as [water use] efficient as commercial clothes washers.
2. Waiver Petition. No later than April 1, 2004, petition the DOE for an exemption from any federal regulations governing energy efficiency standards that are applicable to residential clothes washers, and
3. Report to the Legislature. No later than January 1, 2005, report to the Legislature on the Energy Commission's progress with respect to the requirements listed in numbers 1 and 2 above.

### ***Standards Adoption***

In 2002, the Energy Commission adopted both energy and water efficiency standards for commercial clothes washers. The measure of clothes washer water efficiency is the water factor, which is the total per-cycle water consumption in gallons divided by the capacity of the clothes washer in cubic feet. A smaller water factor number means that less water is used. The water factor standard adopted for commercial clothes washers was 9.5.

A 9.5 water factor means that no more than 9.5 gallons of water per cubic foot of clothes washer capacity can be used for a washing cycle. For example, for a clothes

washer with a 3 cubic foot capacity, the total water use would be limited to 9.5 X 3, or 28.5 gallons per washing cycle.

AB 1561 required the Energy Commission to develop a water efficiency standard for residential clothes washers that is at least as efficient as the standard that the Commission adopted for commercial clothes washers. During the rulemaking that the Commission conducted for residential clothes washers, the Commission determined that a more stringent water factor standard for residential clothes washers would meet the Warren-Alquist Act criteria for feasibility and cost effectiveness.

In September 2003, the Energy Commission provided public notice that it would consider adoption of the more stringent residential clothes washer standard in November 2003. The standard established two tiers of requirements for minimum water factors. The first tier, which would go into effect January 1, 2007, required a water factor of 8.5 gallons per cubic foot of capacity per washing cycle. The second tier, which would go into effect January 1, 2010, required a water factor of 6.0 gallons per cubic foot of capacity per washing cycle. The Energy Commission estimated that the 8.5 water factor standard would result in 15.9 million kWh of energy savings and 3.6 billion gallons of water savings per year, and the 6.0 water factor standard would result in 26.9 million kWh of energy savings and 6.3 billion gallons of water savings per year.

In November 2002, Governor Schwarzenegger was elected. As one of the first acts of the new administration, the Governor released Executive Order S-2-03 requiring reassessment of the economic impact on California business of all pending regulations. The Energy Commission immediately complied with the Executive Order by completing the reassessment for the residential clothes washer standard. The reassessment re-confirmed the cost effectiveness of the proposed residential clothes washer standards.

After adoption by the Energy Commission, standards must be submitted to the Office of Administrative Law (OAL) for review and approval. The residential clothes washer standards were first submitted to OAL on February 11, 2004. OAL withheld approval of the standards due to a procedural error. The Energy Commission re-opened the rulemaking proceeding, made the necessary corrections and then re-adopted the standards on May 19, 2004. The standards were re-submitted to OAL on July 9, 2004. OAL approved the standards on July 29, 2004.

### ***Waiver Petition***

Federal appliance standards law sets difficult tests that DOE must use to consider whether or not to approve standards adopted by a state for waiver of preemption. No state has ever attempted a petition for waiver. To obtain a waiver, a state must show that: there are unusual and compelling state energy or water interests that are different in nature or magnitude that those of the United States in general, and the state standards are preferable to alternatives in terms of costs, benefits, burdens and reliability. State energy standards and alternatives thereto must be evaluated within the context of the state's energy plan and forecast. State water standards and alternatives thereto must be evaluated within the context of the water supply and groundwater

management plan, water quality program, and comprehensive plan (if any) of the state for improving, developing, or conserving water supply.

DOE cannot grant a waiver if it finds either one of the following:

- The state standards would significantly burden manufacturing, distribution, sale or servicing of the affected appliance on a national basis. DOE must consider the following potential burdens: increased manufacturing and distribution costs, disadvantages to smaller manufacturers, distributors or dealers, reduced sales competition in the state, reductions in the models that could be shipped to the state and in the nation, reductions in the current or projected sales of the appliance in the state and the nation, the contribution of the state standard to a proliferation of state appliance standards and the effects of that proliferation.
- The state standards are likely to result in an unavailability of the following features of the appliance: performance characteristics including but not limited to reliability, sizes, capacities, volume, other features provided to consumers.

DOE must complete the rulemaking within 12 months of the time when the state submits the petition. If DOE decides to approve the petition, DOE can decide to have the state standards go into effect either three years after DOE's decision or five years after DOE's decision. If DOE approves the waiver petition, the effective date is likely to be either in early 2009 or 2011.

Since completion of the adoption process for the residential clothes washer standards, the Energy Commission has been working with some of the key water agencies that supported the bill to prepare the petition to the DOE for waiver of preemption. Those agencies include the California Urban Water Conservation Council, the San Diego Water Authority, and the California Department of Water Resources. The work also is assisted by Pacific Gas and Electric Company and its contractor, Energy Solutions, and by the Oregon State Energy Office that is concerned about and knowledgeable regarding western regional water issues. This energy-water agency partnership group has very strong expertise and access to the detailed information needed to prepare the waiver petition and for direct involvement in the rulemaking preceding that DOE must conduct.

Several meetings of this group have been conducted and specific data and information has been developed and to respond to the criteria that must be addressed in the waiver petition. The materials supporting the waiver petition are nearly complete. The Energy Commission anticipates that all work will be completed and the petition will be filed with DOE during the first quarter of 2005.