



Appliance Unit

Compliance Assistance Tutorial





CALIFORNIA ENERGY COMMISSION

Title 20 Appliance Efficiency Compliance Assistance Tutorial

Efficiency Division – Appliances Unit

WEBINAR BEGINS SOON

**UPDATES TO THE
WATER EFFICIENCY REGULATIONS**

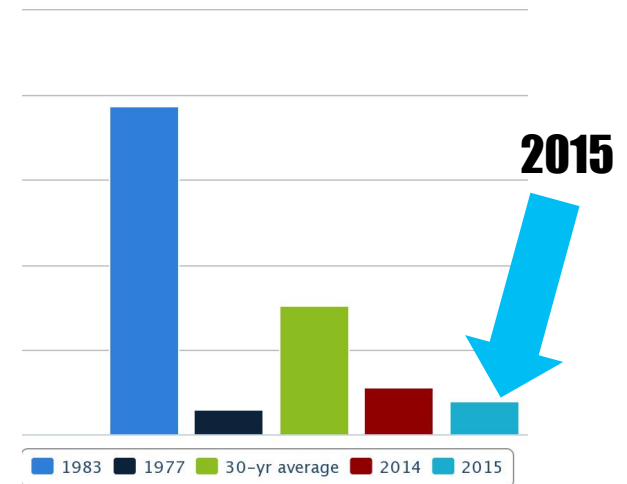


California faces a drought and water emergency

- 2014 third driest and warmest year on record
- Sierra snowpack at 5 percent of average
- Reservoir levels less than 50 percent of average



Folsom Lake, CA, Winter 2013-2014



Annual CA Runoff (USGS)

All Californians must act to conserve water



Water Conserving Appliance Standards

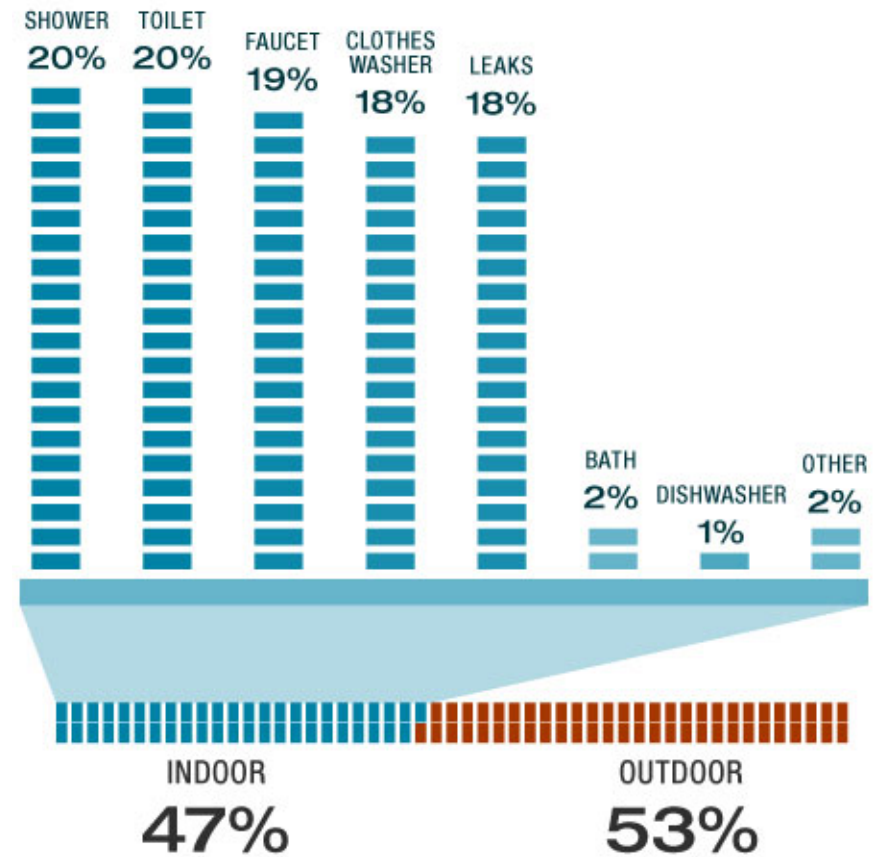
- **January 17, 2014**
 - Governor Brown proclaimed a state of emergency.
- **April 1, 2015**
 - Governor Brown issued Executive Order B-29-15.
 - Authorizes Energy Commission to adopt emergency regulations to establish standards that improve efficiency of water appliances.
- **April 8, 2015**
 - Energy Commission adopted emergency water efficiency standards for toilets, wall-mounted urinals, kitchen and lavatory faucets.
 - Standards were to become effective January 1, 2016.
- **August 12, 2015**
 - Energy Commission amended standards for lavatory faucets and adopted emergency water efficiency standards for showerheads.
 - Standards become effective in tiers, with the first standard going into effect on September 1, 2015.

Energy Commission granted emergency powers to respond to unprecedented drought conditions



CALIFORNIA ENERGY COMMISSION

- California consumes approximately 2.9 trillion gallons per year for urban uses (indoor and outdoor)
 - 2.6 terawatt hours of embedded electricity
- Showers are one of largest residential indoor water uses
 - 20% of indoor uses
 - 73% of shower water is hot water
Water heating accounts for largest share of natural gas usage in California homes

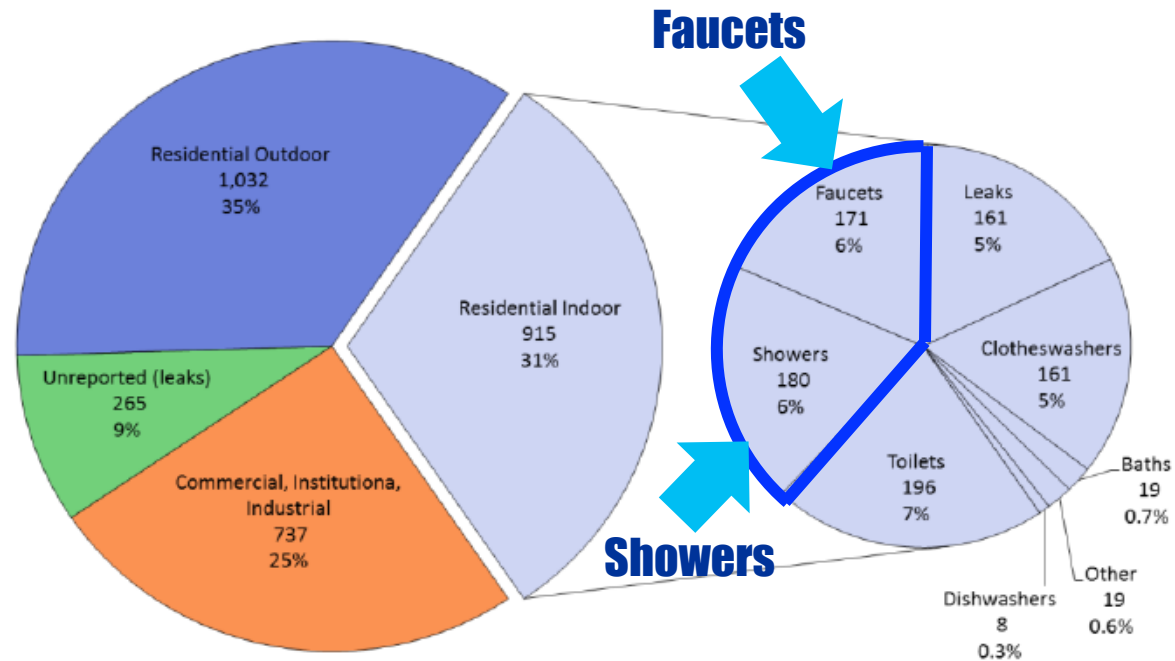


Source: CEC. <http://www.energy.ca.gov/drought/rebate/>



Faucets and showerheads account for more than one third of all residential indoor water use

California Urban Water Use 2005
(billion gallons per year)
2,949 billion gallons per year total



Source: Christian-Smith, Heberger, Luch (2012)
http://www.pacinst.org/reports/urban_water_demand_2100/full_report.pdf

Faucets and showerheads represent significant opportunity for water savings.



Definitions from Title 20, Section 1602(h)

“Kitchen faucet” means a faucet designed for **discharge into a kitchen sink**.

“Kitchen replacement aerator” means an aerator sold as a replacement, separate from the kitchen faucet to which it is intended to be attached.

“Lavatory” means a basin or bowl designed for washing the face and hands.

“Lavatory faucet” means a plumbing fitting designed for **discharge into a lavatory**.

“Lavatory replacement aerator” means an aerator sold as a replacement, separate from the lavatory faucet to which it is intended to be attached.

“Public lavatory faucet” means a fitting intended to be installed in non-residential bathrooms that are exposed to walk-in traffic.

“Showerhead” means a device through which **water is discharged for a shower bath** and includes a body sprayer and handheld showerhead but does not include a safety showerhead.



New Standards for Plumbing Fittings and Fixtures and their Trigger Dates

Regulated water appliances in California under Title 20	Previous CA Title 20 Regulation	Effective date for this standard is September 1, 2015	Effective date for this standard is January 1, 2016	Effective date for this standard is July 1, 2016	Effective date for this standard is July 1, 2018	Comment
Showerhead	2.5gpm at 80 psi			2.0gpm at 80 psi	1.8gpm at 80 psi	New tiered regulation.
Lavatory Faucet and aerator	2.2gpm at 60 psi	1.5gpm at 60 psi		1.2gpm at 60 psi		New tiered regulation.
Public Lavatory Faucet	2.2gpm at 60 psi		0.5gpm at 60 psi			New regulation. No sell through is permitted after January 1, 2016.
Kitchen (Sink) Faucet	2.2gpm at 60 psi		1.8gpm, optional temporary flow of 2.2gpm, at 60 psi			New regulation; no sell through is permitted after January 1, 2016.
Non Wall Mount Urinal	0.5gpf max.		0.5gpf max.			CEC standard catch up to CA Health and Safety Code standard.
Wall Mounted Urinal	0.5gfp max.		0.125gpf max.			New regulation; no sell through permitted after January 1, 2016.
Water Closet (Toilet)	1.28gpf max.		1.28gpf max.			CEC standard catch up to CHSC standard; no sell through permitted. Water closets sold or offered for sale on or after January 1, 2016, shall pass the Waste Extraction Test (Section 7.10) of ASME A112.19.2.



Scope of Showerhead Standard

- Showerhead definition remains unchanged in scope.
- Applies to fixed and handheld showerheads, and body sprayers.



Existing Showerhead Standards

Code/Standard	Section	Maximum Flow Rate (GPM)	Pressure (psi)
Title 20	1605.1(h)(1)	2.5	80
CALGreen	4.303.1.3.1	2.0	80
CA Plumbing Code	CA 408.2	2.0	80
WaterSense	3.1.1	2.0	80



Lavatory Faucets and Showerheads

Appliance	Maximum Flow Rate		
	Manufactured on or after January 1, 1994 and prior to July 1, 2016	Manufactured on or after July 1, 2016 and prior to July 1, 2018	Manufactured on or after July 1, 2018
Showerheads	2.5 gpm at 80 psi	2.0 gpm at 80 psi	1.8 gpm at 80 psi

- All showerheads shall have a *minimum* flow rate of 60 percent of the maximum flow rate at 20 psi.
- All showerheads shall have a *minimum* flow rate of 75 percent of the maximum flow rate at 45 psi.

Appliance	Maximum Flow Rate		
	Manufactured prior to September 1, 2015	Manufactured on or after September 1, 2015, and prior to July 1, 2016	Manufactured on or after July 1, 2016
Lavatory faucets and aerators	2.2 gpm at 60 psi	1.5 gpm at 60 psi	1.2 gpm at 60 psi



Toilets, Urinals, and Faucets

Appliance	Maximum Gallons per Flush		
	Sold or offered for sale before January 1, 2014	Sold or offered for sale on or after January 1, 2014	Sold or offered for sale on or after January 1, 2016
Toilets	1.6 gpf	1.28 gpf	1.28 gpf
Wall-mounted urinals	1.0	0.5	0.125
Other urinals	1.0	0.5	0.5
Trough-type urinals	$\frac{\text{trough length (inches)}}{16}$	$\frac{\text{trough length (inches)}}{16}$	$\frac{\text{trough length (inches)}}{16}$

Appliance	Maximum Flow Rate	
	Sold or offered for sale before January 1, 2014	Sold or offered for sale on or after January 1, 2016
Kitchen faucets & aerators	2.2 gpm at 60 psi	1.8 gpm with optional temporary flow of 2.2 gpm at 60 psi
Public lavatory faucets	2.2 gpm at 60 psi	0.5 gpm at 60 psi



Applicable Test Procedures for Plumbing Fittings and Fixtures from Title 20 Section 1604

Tested Item	Measured Quantity	Federal Mandated Test Procedure	California Mandated Test Procedure	Watersense Voluntary Test Procedure
Showerhead	Water flowrate	ANSI/ASME A112.18.1-2012	ANSI/ASME A112.18.1-2012	ASME A112.18.1/CSA B125.1
Lavatory Faucet	Water flowrate	ANSI/ASME A112.18.1-2012	ANSI/ASME A112.18.1-2012	ASME A112.18.1/CSA B125.1 NSF/ANSI Standard 61
Public Lavatory Faucet	Water flowrate	ANSI/ASME A112.18.1-2012	ANSI/ASME A112.18.1-2012	None-product not covered by Watersense
Kitchen (Sink) Faucet	Water flowrate	ANSI/ASME A112.18.1-2012	ANSI/ASME A112.18.1-2012	None-product not covered by Watersense
Urinal (wall mount and non-wall mount)	Water flush volume	ASME A112.19.6-2008	ASME A112.19.6-2008	ASME A112.19.2/CSA B45.1 (Ceramic Urinal) ASME A112.19.3/CSA B45.4 (Stainless Urinal) IAPMO Z124.9 (Plastic Urinal)
Water Closet (Toilet)	Water flush volume	ASME A112.19.6-2008	ASME A112.19.6-2008	ASME A112.19.2/CSA B45.1-2013
Water Closet (Toilet)	Flushing performance	None	ASME A112.19.2/CSA B45.1-2013	ASME A112.19.2/CSA B45.1-2013

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SELL THROUGH CLARIFICATION

Sell through of **kitchen faucets and aerators, public lavatory faucets and aerators, urinals, and toilets** that do not comply with the new standards is **not permitted** after January 1, 2016, regardless of the date of manufacture.

Lavatory faucets and showerheads, if marked with a date of manufacture prior to the trigger date of the new standard, may be sold through indefinitely. This is consistent with other appliance efficiency standards.

The date specific hard stop for the sale for kitchen faucets and aerators, public lavatory faucets and aerators, urinals, and toilets is a departure from typical Energy Commission practice.



Faucets that are not regulated under Title 20



Laundry faucet



Mop utility faucet

These faucets do not meet the definition of “faucet” under Title 20. “Faucet” means a lavatory faucet, kitchen faucet, metering faucet, or replacement aerator for a lavatory or kitchen faucet.



Certification, Compliance, & Enforcement

- Manufacturers must certify that regulated appliances meet the applicable standards before they are sold or offered for sale in California.
- Certified appliances can be found in the Commission's Appliance Efficiency Database: <https://cacertappliances.energy.ca.gov/Login.aspx>
- Beginning July 1, 2015, the Commission may impose monetary penalties for failure to comply with the Appliance Efficiency Regulations.



Title 20 Enforcement Authority

- SB 454 (9/2011) gave Energy Commission the authority to assess administrative civil penalties for violations of the appliance efficiency regulations.
- Title 20, Section 1609. Administrative Civil Penalties.
- “Any person, including a **retailer, manufacturer, contractor, importer or distributor**, that sells or offers for sale an appliance, which is not listed in the Appliance Efficiency Database, is in violation of Section 1608(a)(1) and may be subject to an administrative civil penalty for each unit of the appliance that was sold or is offered for sale.”
- Four violation types: failure to certify, sub-performance, failure to mark properly, and providing material false information.



Section 1608. Compliance, Enforcement, and General Administrative Matters.

General Requirements for the Sale or Installation of All Appliances.

Any unit of any appliance within the scope of Section 1601 may be sold or offered for sale in California only if:

- (1) the appliance model number appears in the appliance efficiency database.
- (2) the manufacturer has:
 - (a) **tested** the appliance as required by Sections 1603 and 1604;
 - (b) **marked** the unit as required by Section 1607;
 - (c) for any appliance for which there is an applicable standard, **certified to the Energy Commission** that the appliance complies with the standard.



April 8, 2015 Appliance Standard Rulemaking

CALIFORNIA HAS



45+ MILLION
FAUCETS
30 MILLION
TOILETS
1 MILLION
URINALS

CALIFORNIA CONSUMES

443 BILLION
GALLONS
of water per year
USING TOILETS, URINALS, AND FAUCETS

NEW WATER STANDARDS WILL SAVE

105.6 BILLION
GALLONS
per year

THAT'S NEARLY **ONE OUT OF EVERY FOUR** GALLONS



Savings equal to

1.4 TRILLION
GLASSES
of water



Savings from Proposed Standards

- Showerhead standards save:
 - **24 billion gallons of water under Tier 1**
 - **An additional 14 billion gallons under Tier 2**
 - 202 Mtherm natural gas
 - 1,322 GWh electricity (embedded and heat)
- Resulting in \$702 million in savings after Tier 2 after full stock turnover.
- Combined lavatory faucet and showerhead standards save **154 billion gallons of water** over the next 10 years.
- Immediate energy, water, and monetary savings to consumers with early effective dates.



Questions?





Resources - Listservers

Methods for communicating with Title 20 staff:

- MAEDBS Assistance (database questions)
Toll free inside California **(888) 838-1467**
From outside of California **(916) 651-7100**
- Compliance Assistance or Technical Questions
appliances@energy.ca.gov



California sets more stringent standards than U.S. DOE

Federal Register / Vol. 75, No. 245 / Wednesday, December 22, 2010 / Rules and Regulations

The provisions in 42 U.S.C. 6295(j)(3)(C) and 6295(k)(3)(C) represent a choice by Congress to deviate from the general rule of Federal preemption, where the relevant industry consensus body has failed to act to improve water efficiency for a significant period of time.

ASME/ANSI last made a substantive amendment to its standards:

- for faucets on May 29, **1996**, and
- for water closets and urinals on April 19, **1996**.

Because more than five years have passed since ASME/ANSI last amended the water efficiency requirements in either of these standards, California may set more stringent standards than the U.S. Department of Energy standards for most water-consuming appliances (75 Fed. Reg. 80289 [Dec. 22, 2010]).