



California Energy Commission

**DOCKETED**

**14-AAER-1**

**TN 73158**

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June 5, 2014

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 14-AAER-1  
1516 Ninth Street  
Sacramento, CA 95814-5512

**RE: CEC DOCKET NO. 14-AAER-1, APPLIANCE EFFICIENCY PRE-RULEMAKING**

Dear Commissioners:

Plumbing Manufacturers International (PMI) appreciates this opportunity to provide comments to the California Energy Commission (CEC) in its current rulemaking on water closets, urinals and faucets under Docket No. 14-AAER-1. PMI is an international, U.S.-based trade association representing 90% of U. S. plumbing products sold in the United States. It has made the promotion of water efficiency and safety a top priority and has included it in its mission statement<sup>1</sup>. PMI's members are industry leaders in producing safe, reliable and innovative water efficient plumbing technologies and have supported water efficiency legislation and codes in California, as well as the voluntary US EPA WaterSense program.

PMI acknowledges and appreciates the ultimate goal of this rulemaking (as set forth in the Order Instituting the Rulemaking Proceeding) – to reduce excessive energy and water consumption by regulated appliances in the state. PMI has been consistent in our message that water efficiency levels should be consistent with industry standards, such as EPA WaterSense, that have been vetted through a consensus process to ensure that plumbing products function safely and effectively. This is why PMI supports the recommendations, below, of the CEC staff as outlined in their analysis, "Staff Analysis for Toilets, Urinals, and Faucets," as they are based on both CALGreen and AB 715; which are in turn based on EPA WaterSense Specifications:

- All toilets, except those designed for prisons or mental health facilities, shall have a maximum consumption, or effective flush volume for dual-flush toilets<sup>2</sup>, of 1.28 gpf, and shall have a 350 gram performance threshold.
- All urinals, except trough-type and those designed for prisons or mental health facilities, shall not consume more than 0.5 gpf.
- All residential lavatory faucets shall not exceed a flow rate of 1.5 gpm at 60 psi and shall have a minimum flow rate of 0.8 gpm at 20 psi.

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<sup>1</sup>PMI's Mission: To promote the water efficiency, health, safety, quality and environmental sustainability of plumbing products while maximizing consumer choice and value in a fair and open marketplace. To provide a forum for the exchange of information and industry education. To represent openly the members' interests and advocate for sound environmental and public health policies in the regulatory/legislative processes. To enhance the plumbing industry's growth and expansion.

<sup>2</sup>A dual flush water closet with an effective flush volume that does not exceed 1.28 gallons, where effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush.

- All kitchen faucets shall not exceed a flow rate of 1.8 gpm and may have the capability to increase to 2.2 gpm momentarily for filling pots and pans.
- All public lavatory faucets shall not exceed a flow rate of 0.5 gpm at 60 psi.

Furthermore, CEC staff recommendations would save about 8.2 billion gallons of water, 24.6 million therms of natural gas, and 169 gigawatt hours per year the first year the recommendations were in effect. By the year that the toilet stock turns over (2039), the proposed recommendations would have a combined annual savings of about 86.6 billion gallons of water, 223 million therms of natural gas, and 1,660 gigawatt hours. This equates to roughly \$1.12 billion in savings to California businesses and individuals. In addition, the proposed standards would reduce greenhouse gas emissions by 1.9 million tons of carbon dioxide equivalents annually.

On the other hand, PMI is greatly concerned with the recommendations of the investor-owned utilities (IOUs), as outlined in their CASE Reports, as they do not take into account the effects on the entire plumbing system that would present a potential danger to public health and safety. These recommendations are absent of any technical data to support such unprecedented statewide standards, and they do not take into account the behavior of the typical consumer when using a plumbing fixture. In some cases, water usage will actually increase and negate the goal of this important effort. Our concerns with each of the specific recommendations of the IOUs are outlined below:

**PMI opposes the recommendation for a maximum flush volume of 1.28 gpf for dual-flush toilets.**

- A move to only consider the maximum flush volume will only work to ban this innovation from the marketplace. Current California law established by AB 715 [Chapter 499, Statutes of 2007] establishes a weighted average approach for dual flush toilets and is the model that should be followed.
- The decision to use the 2 small flushes and 1 large flush for dual-flush toilets was made several years ago with the concurrence of manufacturers, regulators, and non-government organizations. While the variation of use runs from 1:1 to 3:1 for the few available documented studies, the fact is that the 2:1 is set as the reference for tank type WaterSense ratings and legislation in California, Texas, Georgia, Florida, Colorado, New York City, Los Angeles and green plumbing codes. Any change to this established ratio would be detrimental to existing, preceding legislation as well as codes.
- Considerable resources have gone into the design, marketing and installation of dual-flush toilets to inform and promote this considerable water savings innovation in the residential and commercial markets and cannot be disregarded.

**PMI opposes the recommendation for a minimum 600 gram extraction requirement for toilets.**

- The EPA's WaterSense High Efficiency Toilet Specification, and 350 gram threshold, has proven to be very effective since its introduction in 2006.
- PMI toilet fixture member companies concur that clogging is not a concern as a result of designing to a 350 gram specification.
- The 350 gram limit was set based on a thorough vetting from industry experts based not only on medical studies, but research, lab performance and industry know-how.
- Any requirement above 350 grams does not help the consumer nor decrease double flushing. Instead it encourages manufacturers to focus unduly on solids and not sufficiently on other attributes like cleaning and scouring the bowl. Going to 600 grams will result in products that are less effective in meeting consumer needs, not more effective.
- The IOU proposal adds burdensome labeling requirements as well as testing at 600, 800 and 1000 grams which is completely unnecessary and arbitrary.
- No technical data has been submitted to show that toilets that meet the 350 gram extraction requirement of ASME A112.19.2/CSA B45.1 (2013 version) result in double flushing.

- Consumer choice will be negatively impacted as many high-efficient products will be unfairly removed from the marketplace.
- Manufacturers will be required to retest most, if not all, models to the new 600 gram threshold at great cost.

**PMI opposes the recommendation for a maximum flush volume of 0.125 gpf for urinals.**

- A mandatory reduction of 87.5% in urinal flush volume over federal baseline is too excessive and would restrict fixture compatibility with plumbing systems.
- Not having a wider selection of fixture flush volumes to offer also impacts manufacturing inventory levels and availability.
- 0.125 gpf urinals are not proven to be effective in all installation situations, which may lead to clogged drain lines, especially when it comes to existing construction. Thus, having an alternative of 0.5 gpf is desirable.
- To reference Los Angeles as a success story is premature as 0.125 gpf urinals were only enacted a few years ago. Furthermore, there has been no evidence submitted to demonstrate that those who maintain 0.125 gpf urinals and plumbing systems throughout Los Angeles (ex: facility managers, building owners, etc.) have been solicited for their input; which is a critical step before proceeding with a statewide implementation.

**PMI opposes the recommendation for a maximum flow rate of 1.0 gpm at 80 psi and 0.5 gpm at 20 psi for residential lavatory faucets.**

- This proposal has no supporting technical justification or economic impact, and only rationalizes itself in terms of water, energy and carbon savings. There is no supporting research to look at the unintended consequences and impact on health, safety or sanitation.
- There are unintended consequences for lowering lavatory flow rates below those of EPA WaterSense and CALGreen:
  - Increased sediment buildup within the trap and drain lines, thereby resulting in an increase in clogged lavatories.
  - Increased wait time for hot water.
  - Increased time in washing hands, thereby resulting in more water usage.
- Due to recent reductions in flow rate and consumption levels of plumbing fixtures, fixture fittings, and appliances, potable water piping in most existing structures is significantly oversized. Reducing the maximum flow rate of residential lavatory faucets to 1.0 gpm will reduce scouring action by 50% from the already low levels mandated in CALGreen. This is concerning considering that many researchers and forensic engineers cite reductions in water velocities within potable water pipes as a contributing factor to the alarming increase in legionellosis outbreaks throughout the world<sup>3</sup>.

In closing, PMI strongly encourages the Commission to adopt the water consumption recommendations of CEC staff as outlined in their analysis, “Staff Analysis for Toilets, Urinals, and Faucets” along with PMI’s technical edits (submitted within a separate letter). Furthermore, PMI would like to thank the California Energy Commission for the opportunity to provide comments for the rulemaking being promulgated for Title 20 through Docket No. 14-AAER-1 on appliance efficiency. Our partnership with the regulatory and stakeholder communities in the State of California will continue to promote water efficiency that will produce safe, sanitary, efficient and reliable products.

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<sup>3</sup>Source: Presentation by Dr. Marc Edwards, Professor of Civil and Environmental Engineering, Virginia Tech at 2014 PMI Spring Conference.

Sincerely,



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**PMI MEMBERS INCLUDE:**

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