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Docket Number:	22-AAER-05
Project Title:	Appliance Efficiency Regulations for Water Closets
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Document Title:	Request for Information and Invitation to Submit Proposals on Appliance Efficiency Regulations for Water Closets
Description:	The California Energy Commission seeks information from the public and invites interested parties to submit proposals as it considers updating efficiency standards, test procedures, marking requirements, certification requirements, and any other appropriate regulations for gravity tank-type water closets. Comments and proposals due February 13, 2023.
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CEC-057 (Revised 1/21)

Request for Information (RFI)
and
Invitation to Submit Proposals (ITSP)
Appliance Efficiency Regulations for Water Closets
Docket 22-AAER-05
Written Comments and Proposals Due: February 13, 2023

The California Energy Commission (CEC) seeks information from the public and invites interested parties to submit proposals as it considers updating efficiency standards, test procedures, marking requirements, certification requirements, and any other appropriate regulations for gravity tank-type water closets.

Background

The CEC continues to work toward a clean and equitable energy future for California through the implementation of innovative energy policies, including establishing and amending water efficiency standards for indoor and outdoor appliances.

On October 12, 2022, the CEC issued an order instituting rulemaking (OIR) to consider efficiency standards, test procedures, marking requirements, and other efficiency measures for gravity tank-type water closets. Any measures resulting from the OIR will be incorporated into California Code of Regulations (CCR), Title 20, sections 1601–1609, the Appliance Efficiency Regulations.

Water closets (also known as toilets) are sanitation plumbing fixtures used to dispose of human waste. There are two types of toilets: siphoning and blowout. As the name implies, a siphoning toilet uses a siphon action to remove the waste, and a blowout toilet uses high-pressure, high-volume water to flush the waste out of the bowl. Siphoning toilets are most common in homes, offices, and commercial facilities, while blowout toilets are used primarily in locations subject to high use, such as airports, stadiums, and prisons, due to their durability. Siphoning toilets are further classified as tank-type (gravity-flush, pressure-assisted, or vacuum-assisted) or valve-type,

according to the method used to deliver water to the bowl. Blowout toilets commonly use a flushing valve to deliver water for flushing instead of a water tank.[1]

Given the various types of water closets California regulates, staff has identified gravity tank-type water closets as a potential opportunity for improved water efficiency standards. This proceeding will therefore focus on gravity tank-type siphoning water closets – more specifically, single-flush and dual-flush gravity tank-type water closets.

Request for Information

This request for information (RFI) provides interested parties an opportunity to submit for consideration written technical information and comments on the development of amended efficiency standards for water closets. Proposed regulatory standards will be based on the proceeding record, which may include data and technical information provided by CEC staff and the public.

Where feasible, comments should be as specific as possible and include examples and recommendations with supporting references. CEC staff will review written comments in-depth and may use the information provided to develop regulatory proposals for water closets.

Staff has identified the following appliance types and examples to be included in this scope of water closets:

Table 1: Scope

Appliance	Classifications

Water Closets	• Gravity tank-type water closets
	  ○ Single-flush water closets
	  ○ Dual-flush water closets

Source: California Energy Commission

The CEC seeks information for updating efficiency standards on water closets that focus on the following:

- Product definition and scope
- Existing test procedures and test procedures under development
- Sources of test data
- Existing standards and standards under development
- Product lifetime
- Operations, functions, and modes
- Energy-saving technologies, components, and features
- Per-unit energy or water savings

[1] Singh, Harinder, Ken Rider, and Tuan Ngo. 2015. Staff Analysis of Water Efficiency Standards for Toilets, Urinals, and Faucets. California Energy Commission. Publication Number: CEC-400-2015-008-SD.

- Incremental cost
- Market characteristics and market share
- Installed base characteristics
- Design and sales cycles
- Product development trends
- Market competition for efficient products
- Health and safety
- Impact to small businesses if efficiency standards are updated
- Impact to low-income consumers and disadvantaged communities if efficiency standards are updated

The CEC will review and consider all information received through the docket. Interested parties are encouraged to provide input in the development of the proposed appliance efficiency standards for water closets.

Feedback and Public Input – Specific Questions

The following questions are examples of information for which staff is seeking feedback in relation to the topics listed above for water closets:

1) Based on **Table 1**, are there additional examples that should be considered in scope or out-of-scope? Based on what factors?
2) Is it necessary to update existing terms and definitions for water closets for added clarification or to align with existing terminology from other entities? For example, should the definition of water closets as defined in section 1602, CCR, Title 20, align with the federal definition of water closets as defined in section 420.2, Code of Federal Regulations, Title 10?
3) Are there additional terms that should be considered and defined in section 1602, CCR, Title 20 for water closets to cover new features in the current market or for added clarification?
4) Are there new efficient technologies available on the market? Are there new upcoming developments?
5) Are there new technologies or features available on the market that extend the lifetime of the product or that allows for less maintenance during the lifetime of the product?
6) Have design improvements been made to reduce toilet leaks? If so, can any of these design improvements be included in amended performance standards for gravity tank-type water closets?
7) Are there any other technology-specific issues to consider?
8) For dual-flush water closets, can design improvements be made to encourage end users to use the low-flush option more often?
9) Are there any sanitation issues or plumbing issues with existing water closets? If so, what are they? Do those issues vary in residential settings versus commercial settings?

10) Do low-flush toilets and low-flow appliances contribute to drain line blockages? Are blockages of particular concern for commercial applications where the slope of the drain line may be low? Are drain line blockages currently a significant issue in California? What remedies are available for people or businesses experiencing drain line blockages?
11) Are there other regulatory or voluntary approaches available? Please include references to publicly available sources.
12) Is there current research or advancements in standards for water closets?
13) What is the market share of each identified classification in **Table 1**?
14) What is the market share of gravity tank-type water closets based on flush volume?
15) What sources of information are available to estimate current and projected stock in California?
16) What are the retail costs per unit or differences in costs among the various types of water closets listed in **Table 1**?
17) What are the installation costs? What are the repair costs versus replacement costs?
18) Staff estimates the product lifetime of water closets is 25 years. Are there alternative assumptions for product lifetime that staff should consider and why? How do product lifetimes vary by product type? Please provide sources of information for those alternative assumptions.
19) Which sources should be considered to estimate commercial water and electricity utility rates?
20) Do some manufacturers provide broad product offerings while others focus on specialty products?
21) How many small businesses are involved in the manufacturing, sale, or installation of these products in California? And how might small businesses be affected by any changes to existing water closets?
22) What are the potential impacts and benefits that proposed standards may have on low-income customers and disadvantaged communities?

Invitation to Submit Proposals

Interested parties are also invited to submit fully-developed proposals for potential standards along with technical information or comments. This invitation to submit proposals (ITSP) provides an opportunity to submit efficiency measures on water closets for staff to consider and evaluate. Staff will consider these proposals, along with the data and information received through the RFI, as they draft recommendations for the CEC's consideration as part of the rulemaking process.

The CEC is seeking proposals for efficiency measures that meet the following criteria:

- Efficiency improvements are technologically feasible and attainable.
- Efficiency improvements will reduce energy or water consumption growth rates.

- Proposed measures do not result in any added total costs for consumers over the designed life of the appliances (i.e., the measures are cost-effective).
- Proposed measures are supported by information or data in the CEC's record for this proceeding or submitted as part of the proposal.

Proposal Format

The following is a guide stakeholders should use to prepare proposals for improving the water efficiency of water closets. The information outlined is critical for CEC staff to evaluate proposed changes to the CEC's Appliance Efficiency Regulations (Title 20, CCR, sections 1601-1609). These proposals could include any type of action the CEC could take to reduce energy or water consumption in products, including mandatory minimum efficiency standards, voluntary efforts, consumer education, legislation, or labeling.

Reviewing CEC staff reports and analyses can be helpful to stakeholders trying to understand the types of information used to analyze energy or water efficiency standards. The most recent appliance efficiency Staff Analysis of Water Efficiency Standards for Toilets was published on February 20, 2015. [2] The staff analysis was posted to Docket No. 15-AAER-1 is available online to download at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=15-AAER-01, TN#203718.

The proposal(s) shall include the following sections, as described below:

A. Product Description and Scope: Provide information and details of product classes intended to be covered by the proposals as well as those that should be excluded (be specific). Generally, products are classified based on features, functionality, or other unique market characteristics.

B. Summary of Proposal: Describe the framework of the proposal, its goals, and the expected market transformation. Also, discuss alternate approaches to achieving energy/water savings and why the proposed approach is superior.

C. Proposed Test Procedure(s): If the proposal includes the measurement of product performance or market transformation, describe how these would be measured. Describe why the methodology is the best available, necessary, and the least-cost approach that produces the necessary information.

D. Proposed Regulatory Language: Please include drafted proposed language if the proposal would require a new regulation, memorandum of understanding, or legislation. To enhance the clarity of such a proposal, define both the scope of what products or entities would be covered and provide definitions for any terms that differ from the dictionary definition or are critical to the proposal. For proposed appliance efficiency standards, also include which types of data the CEC should require for certification.

[2] Singh, Harinder, Ken Rider, and Tuan Ngo. 2015. Staff Analysis of Water Efficiency Standards for Toilets, Urinals, and Faucets. California Energy Commission. Publication Number: CEC-400-2015-008-SD. TN#203718. Docket No. 15-AAER-01.

E. Implementation Plan: Describe how the proposal would be implemented.

For each section above, stakeholders are expected to cite or include information, data, or analyses to support their proposed action. The following sections provide guidance on the type of support each proposal should include. The CEC will accept information and data at any time during its rulemaking proceeding. But the more comprehensive a proposal is when originally proposed, the better the CEC can evaluate its merit and align with its recommendations.

The proposal(s) should include the following analysis:

1) Technical Feasibility Analysis
   a. Describe the efficient options or features and their impact on the operation of the product. Provide information on whether any voluntary measures are in place to accelerate market transformation.
   b. Discuss the feasibility of improving products that are currently less efficient than those that would result from the proposed measures. Which technologies are available for manufacturers to improve existing products? Which technologies are proprietary, and which are not? How would the improvements impact other aspects of product quality and performance? How long would it take manufacturers to implement these improvements across their affected product line?
   c. Provide information related to consumer acceptance of efficiency products in the market or products that would result from the proposal. Provide solutions to issues and problems identified.

2) Economic Analysis
   a. Market Saturation and Sales
      - Provide an estimate of the number of models, the number of units, or market share per model, with efficient features that are currently sold in the market.
      - Provide a projected annual growth rate and any other pertinent information that will impact stock or sales.
   b. Baseline Energy and Water Usage (Per unit and Statewide)
      - Provide an estimate about unit energy/water usage by product class, efficiency level, capacity, or any other characteristic that drives energy/water use.
      - Provide an estimate of current statewide energy/water usage of products within the proposal's scope by multiplying unit energy/water consumption by market saturation and sales.
   c. Energy and Water Savings (Per unit and Statewide)
      - Provide an estimate about unit energy/water lifecycle savings to the consumer.

- Estimate the California energy/water savings and peak demand reduction that would result from implementing the proposal. Please be clear on the time-period methodology (e.g., savings for first-year sales, after entire stock turnover, savings in 2024, etc.)

d. Provide the estimated incremental cost to improve the product's efficiency to meet the proposal. Explain in detail how that incremental cost figure was developed, and which specific products or product baselines were used to compare costs. Please disaggregate incremental costs associated with non-efficiency improvements. Incremental first costs should be focused on the price to the final purchaser (e.g., the change in retail price for the product)
e. Provide the estimated incremental operating costs or savings of products with improved efficiency. Incremental operating costs or savings should be focused on the costs or savings to the consumer. These costs or savings may include costs or savings associated with maintenance (if maintenance will change due to the proposed standard) or costs or savings from reduced or increased energy/water consumption. Include any costs or savings from reduced or improved product efficacy resulting from the proposal. Please disaggregate incremental costs associated with non-efficiency improvements.
f. Provide the lifecycle cost and cost-to-benefit ratio of the proposed recommendation as it relates to the consumer. If possible, please also include wider societal lifecycle cost and benefit.

3) Environmental and Societal Impacts

a. Provide information related to any potential beneficial or adverse environmental impacts from implementing the proposal. Does the proposal impact indoor-outdoor air quality or otherwise affect indoor-outdoor environmental quality? Does the proposal affect atmospheric emissions (including greenhouse gas emissions and ozone-depleting gases), and if so, by how much (million metric tons of CO_2 equivalents)?
b. Are there environmental impacts associated with material extraction, manufacturing, packaging, shipping to the point-of-sale, or other activities associated with implementing the measure?
c. What are the impacts on the health and welfare of California residents, worker safety, and the state's environment?
d. Estimate how the proposal would: create or eliminate jobs in the state, create or eliminate businesses in the state, provide competitive advantages or cause competitive disadvantages for businesses currently doing business in the state, increase or decrease investments in the state, and/or provide incentives for innovation in products, materials, or processes.
e. If possible, include wider societal lifecycle costs and benefits. Such as potential impacts and benefits that proposed standards may have on low-income customers and disadvantaged communities.

4) Methodology
   a. Describe the methodology and approach used in the development of the proposed measures. Typically, this section will contain the assumptions used for the analysis of the proposal, a description of the base case (current standards or current practice), and the proposed measure. The proposal should also exhibit the methodology used to calculate the savings and incremental cost of efficiency improvement.

5) References
   a. List and describe each of the research studies, reports, and personal communications that provide background for this research. Identify all resources that have been pursued to further this measure. Identify all "experts" that were involved in further developing the change, all research and analysis reports and documents that were reviewed, and all industry standards that were consulted (e.g., ASTM, UL, ASHRAE test procedures, etc.). Include research that is underway that addresses the measure/change. Provide a full citation of sources.

Where feasible, proposals should be as specific as possible and include examples and recommendations with supporting references. CEC staff will review the proposals in depth and may use the information provided to develop regulatory proposals for water closets. Proposed regulatory standards will be based on the proceeding record, which may include data and technical information provided by CEC staff and stakeholders.

The CEC will accept and review all proposals received during its proceeding, regardless of its format or elements.

Submitting Comments, Proposals, and Other Materials to the CEC Docket
Participation in the RFI and ITSP is encouraged because public input is essential to ensure a complete record for this rulemaking.

Written comments, proposals, and other technical material must be submitted to the Docket Unit by **February 13, 2023**. Written comments, attachments, and associated contact information (for example, address, telephone number, email address) will become part of the public record of this proceeding, with access available via any internet search engine. One or more public hearings and public input periods will follow on the proposed draft text of regulations.

The CEC encourages use of its electronic commenting system. Visit the e-commenting page, https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=22-AAER-05, which links to the comment page for this docket. Enter your contact information and a comment title describing the subject of your comment(s). Comments

may be included in the "Comment Text" box or attached in a format consistent with CCR, Title 20 section, 1208.1. The maximum file size is 10 MB.

Written materials may also be submitted by email. Include the docket number **22-AAER-05** and "Water Closets RFI/ITSP" in the subject line and send to docket@energy.ca.gov.

If preferred, a paper copy may be submitted to:

California Energy Commission
Docket Unit
Re: Docket No. 22-AAER-05
715 P Street
Sacramento, CA 95814

If interested parties wish to maintain the confidentiality of specific data or information, they should submit an application for confidentiality and the confidential documents directly to the Docket Unit through the e-filing system. For information on applying for confidentiality, interested parties should contact the Docket Unit in the CEC's Chief Counsel's Office before submitting a response to this RFI and ISTP. Otherwise, all responses received will become publicly available. Visit the Docket Unit page, https://www.energy.ca.gov/about/divisions-and-offices/chief-counsels-office/docket-unit, which links the application for confidentiality.

Questions regarding submitting comments to the docket, including inquiries regarding confidentiality, should be referred to the Docket Unit at docket@energy.ca.gov or (916) 654-5076.

Public Advisor and Other Commission Contacts
The CEC's Public Advisor assists the public with participating in CEC proceedings. To request interpreting services, reasonable modification or accommodations, and other modifications, contact the Public Advisor at publicadvisor@energy.ca.gov or by phone at (916) 957-7910. Requests should be made as soon as possible but at least five days in advance. The CEC will work diligently to meet all requests based on the availability of service or resource needed.

Direct questions on the subject matter of this RFI or ITSP to Jessica Lopez at jessica.lopez@energy.ca.gov or call (916) 903-4165, or Peter Strait at peter.strait@energy.ca.gov or call (916) 980-7976.

Media
Direct media inquiries to the Media and Public Communications Office at mediaoffice@energy.ca.gov or call (916) 654-4989.

Subscribing to E-mail List Servers
Interested parties who would like to follow or participate in this proceeding should subscribe to the "Appliance Efficiency Standards" subscription list found at the CEC's subscriptions webpage, https://www.energy.ca.gov/subscriptions. By subscribing to this list, interested parties are consenting to receive information, notices, and other communications, including information associated with CEC's efficiency-related rulemaking proceedings, by electronic mail.

Availability of Documents
All records for the process will be accessible in the Appliance Efficiency Regulations for Water Closets docket 22-AAER-05, https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-AAER-05. When new information is posted, an email will be sent to those on the Appliances subscription list. To receive these notices, subscribe at the Appliance Efficiency Proceedings webpage, at https://www.energy.ca.gov/rules-and-regulations/appliance-efficiency-regulations-title-20/appliance-efficiency-proceedings.