**DEPARTMENT OF ENERGY**

**10 CFR Part 430**

**[EERE-2017-BT-STD-0014]**

**RIN 1904-AD98**

# Energy Conservation Program: Energy Conservation Standards for Residential Clothes Washers, Webinar and Availability of the Preliminary Technical Support Document

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notification of a webinar and availability of preliminary technical support document.

**SUMMARY:** The U.S. Department of Energy ("DOE") will hold a webinar to discuss and receive comments on the preliminary analysis it has conducted for purposes of evaluating energy conservation standards for consumer (residential) clothes washers ("RCWs"). The meeting will cover the analytical framework, models, and tools that DOE is using to evaluate potential standards for this product; the results of preliminary analyses performed by DOE for this product; the potential energy conservation standard levels derived from these analyses that DOE could consider for this product should it determine that proposed amendments are necessary; and any other issues relevant to the evaluation of energy conservation standards for RCWs. In addition, DOE encourages written comments on these subjects. To inform interested parties and to facilitate this process, DOE has prepared an agenda, a preliminary technical support document, and briefing materials, which are available on the DOE website at: *www.regulations.gov/docket/EERE-2017-BT-STD-0014*.

**DATES:** *Meeting:* DOE will hold a webinar on Wednesday, November 10, 2021, from 10:00 a.m. to 3:00 p.m. See section IV, "Public Participation," for webinar registration information, participant instructions and information about the capabilities available to webinar participants.

*Comments:* Written comments and information will be accepted on or before **[INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

**ADDRESSES:** Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *www.regulations.gov*. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE–2017–BT–STD–0014, by any of the following methods:

1. *Federal eRulemaking Portal*: *www.regulations.gov*. Follow the instructions for submitting comments.

2. *E-mail*: to *ConsumerClothesWasher2017STD0014@ee.doe.gov*. Include docket number EERE–2017–BT–STD–0014 in the subject line of the message.

No telefacsimiles ("faxes") will be accepted. For detailed instructions on submitting comments and additional information on this process, see section IV of this document.

Although DOE has routinely accepted public comment submissions through a variety of mechanisms, including postal mail and hand delivery/courier, the Department has found it necessary to make temporary modifications to the comment submission process in light of the ongoing corona virus 2019 ("COVID-19") pandemic. DOE is currently suspending receipt of public comments via postal mail and hand delivery/courier. If a commenter finds that this change poses an undue hardship, please contact Appliance Standards Program staff at (202) 586-1445 to discuss the need for alternative arrangements. Once the COVID-19 pandemic health

emergency is resolved, DOE anticipates resuming all of its regular options for public comment submission, including postal mail and hand delivery/courier.

*Docket:* The docket for this activity, which includes *Federal Register* notices, comments, public meeting transcripts, and other supporting documents/materials, is available for review at *www.regulations.gov*. All documents in the docket are listed in the *www.regulations.gov* index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket web page can be found at *www.regulations.gov/docket/EERE-2017-BT-STD-0014*. The docket web page contains instructions on how to access all documents, including public comments in the docket. See section IV for information on how to submit comments through *www.regulations.gov*.

**FOR FURTHER INFORMATION CONTACT:** Mr. Bryan Berringer, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies, EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. E-mail: *ApplianceStandardsQuestions@ee.doe.gov.*

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For further information on how to submit a comment, review other public comments and the docket, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by e-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

**SUPPLEMENTARY INFORMATION:**

**Table of Contents**



## I. Introduction

### *A. Authority*

The Energy Policy and Conservation Act, as amended ("EPCA"),[1] authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B[2] of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles. These products include consumer (residential) clothes washers,[3] the subject of this document. (42 U.S.C. 6292(a)(7))

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[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116-260 (Dec. 27, 2020).

[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

[3] DOE uses the "residential" nomenclature and "RCW" abbreviation for consumer clothes washers in order to distinguish from the "CCW" abbreviation used for commercial clothes washers, which are also regulated equipment under EPCA.

EPCA prescribed energy conservation standards for these products (42 U.S.C. 6295(g)(2) and (9)(A)), and directed DOE to conduct rulemakings to determine whether to amend the statutorily established standards. (42 U.S.C. 6295(g)(4) and (9)(B)) EPCA further provides that, not later than 6 years after the issuance of any final rule establishing or amending a standard, DOE must publish either a notification of determination that standards for the product do not need to be amended, or a notice of proposed rulemaking ("NOPR") including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(1)) Not later than 3 years after issuance of a final determination not to amend standards, DOE must publish either a notice of determination that standards for the product do not need to be amended, or a NOPR including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(3)(B))

Under EPCA, any new or amended energy conservation standard must be designed to achieve the maximum improvement in energy efficiency that DOE determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) Furthermore, the new or amended standard must result in a significant conservation of energy. (42 U.S.C. 6295(o)(3)(B))

DOE is publishing this preliminary analysis to collect data and information to inform its decision consistent with its obligations under EPCA.

*B. Rulemaking Process*

DOE must follow specific statutory criteria for prescribing new or amended standards for covered products, including RCWs. As noted, EPCA requires that any new or amended energy conservation standard prescribed by the Secretary of Energy ("Secretary") be designed to achieve the maximum improvement in energy efficiency (or water efficiency for certain products specified by EPCA) that is technologically feasible and economically justified. (42 U.S.C.

6295(o)(2)(A)) Furthermore, DOE may not adopt any standard that would not result in the significant conservation of energy. (42 U.S.C. 6295(o)(3)) The Secretary may not prescribe an amended or new standard that will not result in significant conservation of energy, or is not technologically feasible or economically justified. (42 U.S.C. 6295(o)(3))

On February 14, 2020, DOE published an update to its procedures, interpretations, and policies for consideration in new or revised energy conservation standards and test procedure, *i.e.,* "Procedures, Interpretations, and Policies for Consideration of New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Certain Commercial/Industrial Equipment" (see 10 CFR part 430, subpart C, appendix A ("Process Rule,")).[4] 85 FR 8626. In the updated Process Rule, DOE established a significance threshold for energy savings under which DOE employs a two-step approach that considers both an absolute site energy savings threshold and a threshold that is a percent reduction in the energy use of the covered product. Section 6(b) of the Process Rule.

DOE first evaluates the projected energy savings from a potential maximum technologically feasible ("max-tech") standard over a 30-year period against a 0.3 quadrillion British thermal units ("quads") of site energy savings threshold. Section 6(b)(2) of the Process Rule. If the 0.3 quad-threshold is not met, DOE then compares the max-tech savings to the total

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[4] On January 20, 2021, the President issued Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. Exec. Order No. 13990, 86 FR 7037 (Jan. 25, 2021) ("E.O. 13990"). E.O. 13990 affirms the Nation's commitment to empower our workers and communities; promote and protect our public health and the environment; and conserve our national treasures and monuments. To that end, the stated policies of E.O. 13990 include: improving public health and protecting our environment; ensuring access to clean air and water; and reducing greenhouse gas emissions. E.O. 13990 section 1. Section 2 of E.O. 13990 directs agencies, in part, to immediately review all existing regulations, orders, guidance documents, policies, and any other similar agency actions ("agency actions") promulgated, issued, or adopted between January 20, 2017, and January 20, 2021, that are or may be inconsistent with, or present obstacles to, the policy set forth in the Executive Order. E.O. 13990 section 2. In addition, section 2(iii) of E.O. 13990 specifically directs DOE to, as appropriate and consistent with applicable law, publishing for notice and comment a proposed rule suspending, revising, or rescinding the updated Process Rule. In response to this directive, DOE has undertaken a review of the updated Process Rule. See, 86 FR 18901 (Apr. 12, 2021) and 86 FR 35668 (July 7, 2021).

energy usage of the covered product to calculate a percentage reduction in energy usage. Section 6(b)(3) of the Process Rule. If this comparison does not yield a reduction in site energy use of at least 10 percent over a 30-year period, the analysis will end and DOE will propose to determine that no significant energy savings would likely result from setting new or amended standards. Section 6(b)(4) of the Process Rule. If either one of the thresholds is reached, DOE will conduct analyses to ascertain whether a standard can be prescribed that produces the maximum improvement in energy efficiency that is both technologically feasible and economically justified and still constitutes significant energy savings at the level determined to be economically justified. Section 6(b)(5) of the Process Rule. This two-step approach allows DOE to ascertain whether a potential standard satisfies EPCA's significant energy savings requirements in 42 U.S.C. 6295(o)(3)(B) to ensure that DOE avoids setting a standard that "will not result in significant conservation of energy."

EPCA defines "energy efficiency" as the ratio of the useful output of services from a consumer product to the *energy use* of such product, measured according to the Federal test procedures. (42 U.S.C. 6291(5), *emphasis added*) EPCA defines "energy use" as the quantity of energy directly consumed by a consumer product at point of use, as measured by the Federal test procedures. (42 U.S.C. 6291(4)) Further, EPCA uses a household energy consumption metric as a threshold for setting standards for new covered products. (42 U.S.C. 6295(l)(1)) Given this context, DOE relies on site energy as the appropriate metric for evaluating the significance of energy savings.

To determine whether a standard is economically justified, EPCA requires that DOE determine whether the benefits of the standard exceed its burdens by considering, to the greatest extent practicable, the following seven factors:

(1) The economic impact of the standard on the manufacturers and consumers of the products subject to the standard;

(2) The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered products that are likely to result from the standard;

(3) The total projected amount of energy (or as applicable, water) savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the products likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

(6) The need for national energy and water conservation; and

(7) Other factors the Secretary of Energy (Secretary) considers relevant.

(42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII))

DOE fulfills these and other applicable requirements by conducting a series of analyses throughout the rulemaking process. Table I.1 shows the individual analyses that are performed to satisfy each of the requirements within EPCA.

**Table I.1 EPCA Requirements and Corresponding DOE Analysis**

| EPCA Requirement | Corresponding DOE Analysis |
|---|---|
| **Significant Energy Savings** | • Shipments Analysis<br>• National Impact Analysis<br>• Energy and Water Use Analysis |
| **Technological Feasibility** | • Market and Technology Assessment<br>• Screening Analysis<br>• Engineering Analysis |
| **Economic Justification:** | |
| 1. Economic impact on manufacturers and consumers | • Manufacturer Impact Analysis<br>• Life-Cycle Cost and Payback Period Analysis<br>• Life-Cycle Cost Subgroup Analysis<br>• Shipments Analysis |
| 2. Lifetime operating cost savings compared to increased cost for the product | • Markups for Product Price Analysis<br>• Energy and Water Use Analysis<br>• Life-Cycle Cost and Payback Period Analysis |
| 3. Total projected energy savings | • Shipments Analysis<br>• National Impact Analysis |
| 4. Impact on utility or performance | • Screening Analysis<br>• Engineering Analysis |
| 5. Impact of any lessening of competition | • Manufacturer Impact Analysis |
| 6. Need for national energy and water conservation | • Shipments Analysis<br>• National Impact Analysis |
| 7. Other factors the Secretary considers relevant | • Employment Impact Analysis<br>• Utility Impact Analysis<br>• Emissions Analysis<br>• Monetization of Emission Reductions Benefits<br>• Regulatory Impact Analysis |

Further, EPCA establishes a rebuttable presumption that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii))

EPCA also contains what is known as an "anti-backsliding" provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6295(o)(1)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States. (42 U.S.C. 6295(o)(4))

Additionally, EPCA specifies requirements when promulgating an energy conservation standard for a covered product that has two or more subcategories. DOE must specify a different standard level for a type or class of product that has the same function or intended use, if DOE determines that products within such group: (A) consume a different kind of energy from that consumed by other covered products within such type (or class); or (B) have a capacity or other performance-related feature which other products within such type (or class) do not have and such feature justifies a higher or lower standard. (42 U.S.C. 6295(q)(1)) In determining whether a performance-related feature justifies a different standard for a group of products, DOE must consider such factors as the utility to the consumer of the feature and other factors DOE deems appropriate. *Id*. Any rule prescribing such a standard must include an explanation of the basis on which such higher or lower level was established. (42 U.S.C. 6295(q)(2))

Finally, pursuant to the amendments contained in the Energy Independence and Security Act of 2007 ("EISA 2007"), Pub. L. 110-140, any final rule for new or amended energy conservation standards promulgated after July 1, 2010, is required to address standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)) Specifically, when DOE adopts a standard for a

covered product after that date, it must, if justified by the criteria for adoption of standards under EPCA (42 U.S.C. 6295(o)), incorporate standby mode and off mode energy use into a single standard, or, if that is not feasible, adopt a separate standard for such energy use for that product. (42 U.S.C. 6295(gg)(3)(A)–(B)) DOE's current test procedures for RCWs address standby mode and off mode energy use. In this rulemaking, DOE intends to continue to incorporate such energy use into any amended energy conservation standards it adopts in the final rule.

Before proposing a standard, DOE typically seeks public input on the analytical framework, models, and tools that DOE intends to use to evaluate standards for the product at issue and the results of preliminary analyses DOE performed for the product.

DOE is examining whether to amend the current standards pursuant to its obligations under EPCA. This notification announces the availability of the preliminary technical support document ("TSD"), which details the preliminary analyses and summarizes the preliminary results of DOE's analyses. In addition, DOE is announcing a public meeting to solicit feedback from interested parties on its analytical framework, models, and preliminary results.

## II. Background

### *A. Current Standards*

The current energy conservation standards for RCWs were established in a direct final rule published on May 31, 2012. 77 FR 32308 ("May 2012 Final Rule").[5] These standards are

[5] DOE published a confirmation of effective date and compliance date for the direct final rule on October 1, 2012. 77 FR 59719.

based on a joint proposal submitted to DOE by interested parties representing manufacturers, energy and environmental advocates, and consumer groups.[6]

The May 2012 Final Rule established two sets of amended standards, which are both based on a minimum allowable integrated modified energy factor ("IMEF"), measured in cubic feet per kilowatt-hour per cycle ("$ft^3$/kWh/cycle"), and maximum allowable integrated water factor ("IWF"), measured in gallons per cycle per cubic foot ("gal/cycle/$ft^3$"). *Id.* The May 2012 Final Rule established four classes of RCW: top-loading, compact (less than 1.6 cubic feet ("$ft^3$") capacity); top-loading, standard (1.6 $ft^3$ or greater capacity); front-loading, compact (less than 1.6 $ft^3$ capacity); and front-loading, standard (1.6 $ft^3$ or greater capacity). 77 FR 32308, 32316–32320. One set of amended standards applies to all RCWs manufactured on or after March 7, 2015. 77 FR 32308, 32380. The second set of amended standards applies to the two top-loading product classes manufactured on or after January 1, 2018. *Id.*

The current energy conservation standards for RCWs are provided at 10 CFR 430.32(g)(4) and repeated in Table II.1. These standards are based on the current test procedure for RCWs at 10 CFR part 430, subpart B, appendix J2 ("Appendix J2").

**Table II.1 Federal Energy Conservation Standards for Residential Clothes Washers**

| **Product Class** | **Minimum Integrated Modified Energy Factor** *($ft^3$/kWh/cycle)* | **Maximum Integrated Water Factor** *(gal/cycle/$ft^3$)* |
|---|---|---|
| Top-loading, Compact (less than 1.6 $ft^3$ capacity) | 1.15 | 12.0 |
| Top-loading, Standard (1.6 $ft^3$ or greater capacity) | 1.57 | 6.5 |
| Front-loading, Compact (less than 1.6 $ft^3$ capacity) | 1.13 | 8.3 |
| Front-loading, Standard (1.6 $ft^3$ or greater capacity) | 1.84 | 4.7 |

[6] Available at: *www.regulations.gov/document/EERE-2008-BT-STD-0019-0032.*

On December 16, 2020, DOE published a final rule ("December 2020 Final Rule") establishing separate product classes for top-loading, standard clothes washers with an average cycle time of less than 30 minutes and front-loading, standard clothes washers with an average cycle time of less than 45 minutes. 85 FR 81359. DOE is re-evaluating the analysis in the short-cycle product class determination in light of Executive Order 13990 and published a NOPR on August 11, 2021, proposing to revoke the December 2020 Final Rule and reinstate the prior product classes and applicable standards for RCWs. 86 FR 43970.

*B. Current Process*

On August 2, 2019, DOE published a request for information ("RFI") to initiate an effort to determine whether to amend the current energy conservation standards for RCWs. 84 FR 37794 ("August 2019 RFI"). Specifically, through the August 2019 RFI, DOE sought data and information that could enable the agency to determine whether DOE should propose a "no new standard" determination because a more stringent standard: (1) would not result in a significant savings of energy; (2) is not technologically feasible; (3) is not economically justified; or (4) any combination of foregoing. *Id.* On August 26, 2019, DOE extended the comment period for the August 2019 RFI and on October 3, 2019, reopened the comment period for an additional 14 days. 84 FR 44557 and 84 FR 52818, respectively.

Comments received to date as part of the current process have helped DOE identify and resolve issues related to the preliminary analyses. Chapter 2 of the preliminary TSD summarizes and addresses the comments received.

*C. Test Procedure*

DOE published a test procedure NOPR on September 1, 2021 proposing to establish a new test procedure at 10 CFR part 430, subpart B, appendix J ("Appendix J"), which would

define new energy efficiency metrics: an energy efficiency ratio ("EER") and a water efficiency ratio ("WER"). 86 FR 49140. As proposed, EER would be defined as the weighted-average load size in pounds ("lbs") divided by the sum of (1) the per-cycle machine energy, (2) the per-cycle water heating energy, (3) the per-cycle drying energy, and (4) the per-cycle standby and off mode energy consumption, in kWh. *Id*. at 86 FR 49172. As proposed, WER would be defined as the weighted-average load size in lbs divided by the total weighted per-cycle water consumption for all wash cycles, in gallons. *Id*. at 86 FR 49173. For both EER and WER, a higher value would indicate more efficient performance. *Id.*

As the basis for this preliminary analysis, DOE used the per-cycle energy and water consumption values and resulting EER and WER metrics as determined using the proposed appendix J. In order to assist interested parties in understanding how the analysis based on the proposed appendix J metrics compares to performance as measured under the current appendix J2 test procedure (*i.e.,* how the proposed efficiency levels based on EER and WER metrics align with the existing IMEF and IWF metrics), DOE has defined each potential efficiency level according to both sets of efficiency metrics. See chapter 5 of the preliminary TSD for additional details on the proposed test procedure.

## III. Summary of the Analyses Performed by DOE

For the products covered in this preliminary analysis, DOE conducted in-depth technical analyses in the following areas: (1) engineering; (2) markups to determine product price; (3) energy and water use; (4) life-cycle cost ("LCC") and payback period ("PBP"); and (5) national impacts. The preliminary TSD that presents the methodology and results of each of these analyses is available at *www.regulations.gov/docket/EERE-2017-BT-STD-0014*.

DOE also conducted, and has included in the preliminary TSD, several other analyses that support the major analyses or are preliminary analyses that will be expanded if DOE determines that a NOPR is warranted to propose amended energy conservation standards. These analyses include: (1) the market and technology assessment; (2) the screening analysis, which contributes to the engineering analysis; and (3) the shipments analysis, which contributes to the LCC and PBP analysis and the national impact analysis ("NIA"). In addition to these analyses, DOE has begun preliminary work on the manufacturer impact analysis and has identified the methods to be used for the consumer subgroup analysis, the emissions analysis, the employment impact analysis, the regulatory impact analysis, and the utility impact analysis. DOE will expand on these analyses in the NOPR should one be issued.

*A. Market and Technology Assessment*

DOE develops information in the market and technology assessment that provides an overall picture of the market for the products concerned, including general characteristics of the products, the industry structure, manufacturers, market characteristics, and technologies used in the products. This activity includes both quantitative and qualitative assessments, based primarily on publicly available information. The subjects addressed in the market and technology assessment include: (1) a determination of the scope of the rulemaking and product classes, (2) manufacturers and industry structure, (3) existing efficiency programs, (4) shipments information, (5) market and industry trends, and (6) technologies or design options that could improve the energy efficiency of the product.

See chapter 3 of the preliminary TSD for further discussion of the market and technology assessment.

*B. Screening Analysis*

DOE uses the following five screening criteria to determine which technology options are suitable for further consideration in an energy conservation standards rulemaking:

(1) *Technological feasibility*. Technologies that are not incorporated in commercial products or in working prototypes will not be considered further.

(2) *Practicability to manufacture, install, and service*. If it is determined that mass production and reliable installation and servicing of a technology in commercial products could not be achieved on the scale necessary to serve the relevant market at the time of the projected compliance date of the standard, then that technology will not be considered further.

(3) *Impacts on product utility or product availability*. If it is determined that a technology would have a significant adverse impact on the utility of the product for significant subgroups of consumers or would result in the unavailability of any covered product type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as products generally available in the United States at the time, it will not be considered further.

(4) *Adverse impacts on health or safety*. If it is determined that a technology would have significant adverse impacts on health or safety, it will not be considered further.

(5) *Unique-pathway proprietary technologies*. If a design option utilizes proprietary technology that represents a unique pathway to achieving a given efficiency level, that technology will not be considered further due to the potential for monopolistic concerns.

10 CFR part 430, subpart C, appendix A, sections 6(c)(3) and 7(b).

If DOE determines that a technology, or a combination of technologies, fails to meet one or more of the listed five criteria, it will be excluded from further consideration in the engineering analysis.

See chapter 4 of the preliminary TSD for further discussion of the screening analysis.

*C. Engineering Analysis*

The purpose of the engineering analysis is to establish the relationship between the efficiency and cost of RCWs. There are two elements to consider in the engineering analysis; the selection of efficiency levels to analyze (*i.e.*, the "efficiency analysis") and the determination of product cost at each efficiency level (*i.e.*, the "cost analysis"). In determining the performance of higher-efficiency products, DOE considers technologies and design option combinations not eliminated by the screening analysis. For each analyzed product class, DOE estimates the manufacturer production cost ("MPC") for the baseline as well as higher efficiency levels.

The output of the engineering analysis is a set of cost-efficiency "curves" that are used in downstream analyses (*i.e.*, the LCC and PBP analyses and the NIA). As noted in section II.C of this document, the cost-efficiency curves are presented based on both sets of efficiency metrics: EER and WER metrics as they would be determined using the proposed appendix J test procedure, and IMEF and IWF based on the existing appendix J2 test procedure, to facilitate comparison between both sets of metrics.

See chapter 5 of the preliminary TSD for additional detail on the engineering analysis.

*D. Markups Analysis*

The markups analysis develops appropriate markups (*e.g.*, manufacturer markups, retailer markups, distributor markups, contractor markups) in the distribution chain and sales taxes to convert MPC estimates derived in the engineering analysis to consumer prices, which are then used in the LCC and PBP analysis. At each step in the distribution channel, companies mark up the price of the product to cover business costs and profit margin.

DOE converts the MPC to the manufacturer selling price ("MSP") by applying a manufacturer markup. The MSP is the price the manufacturer charges its first customer, when selling into the product distribution channels. The manufacturer markup accounts for manufacturer non-production costs and profit margin. DOE developed the manufacturer markup by examining publicly available financial information for manufacturers of the covered product.

DOE further develops baseline and incremental markups for each actor in the distribution chain (after the product leaves the manufacturer). Baseline markups are applied to the price of products with baseline efficiency, while incremental markups are applied to the difference in price between baseline and higher-efficiency models (the incremental cost increase). The incremental markup is typically less than the baseline markup and is designed to maintain similar per-unit operating profit before and after new or amended standards.[7]

Chapter 6 of the preliminary TSD provides details on DOE's development of markups for RCWs. Chapter 12 of the preliminary TSD provides additional detail on the manufacturer markup.

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[7] Because the projected price of standards-compliant products is typically higher than the price of baseline products, using the same markup for the incremental cost and the baseline cost would result in higher per-unit operating profit. While such an outcome is possible, DOE maintains that in markets that are reasonably competitive it is unlikely that standards would lead to a sustainable increase in profitability in the long run.

*E. Energy and Water Use Analysis*

The purpose of the energy and water use analysis is to determine the annual energy and water consumption of RCWs at different efficiencies in representative U.S. single-family homes, multi-family, and mobile home residences, and to assess the energy and water savings potential of increased RCW efficiency. The energy and water use analysis estimates the range of energy and water use of RCWs in the field (*i.e.*, as they are actually used by consumers). The energy and water use analysis provides the basis for other analyses DOE performed, particularly assessments of the energy savings and the savings in consumer operating costs that could result from adoption of amended or new standards.

Chapter 7 of the preliminary TSD addresses the energy and water use analysis.

*F. Life-Cycle Cost and Payback Period Analyses*

The effect of new or amended energy conservation standards on individual consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE used the following two metrics to measure consumer impacts:

- The LCC is the total consumer expense of an appliance or product over the life of that product, consisting of total installed cost (MSP, distribution chain markups, sales tax, and installation costs) plus operating costs (expenses for energy and water use, maintenance, and repair). To compute the operating costs, DOE discounts future operating costs to the time of purchase and sums them over the lifetime of the product.

- The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost at higher efficiency levels by the change in annual operating cost for the year that amended or new standards are assumed to take effect.

Chapter 8 of the preliminary TSD addresses the LCC and PBP analyses.

*G. National Impact Analysis*

The NIA estimates the national energy savings ("NES") and the net present value ("NPV") of total consumer costs and savings expected to result from amended standards at specific efficiency levels (referred to as candidate standard levels).[8] DOE calculates the NES and NPV for the potential standard levels considered based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses. For the present analysis, DOE projected the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of RCWs sold from 2027 through 2056.

DOE evaluates the impacts of new or amended standards by comparing a case without such standards with standards-case projections ("no-new-standards case"). The no-new-standards case characterizes energy and water use and consumer costs for each product class in the absence of new or amended energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of

[8] The NIA accounts for impacts in the 50 states and U.S. territories.

efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each product class if DOE adopted new or amended standards at specific efficiency levels for that class. For each efficiency level, DOE considers how a given standard would likely affect the market shares of product with efficiencies greater than the standard.

DOE uses a spreadsheet model to calculate the energy savings and the national consumer costs and savings from each efficiency level. Interested parties can review DOE's analyses by changing various input quantities within the spreadsheet. The NIA spreadsheet model uses typical values (as opposed to probability distributions) as inputs. Critical inputs to this analysis include shipments projections, estimated product lifetimes, product installed costs and operating costs, product annual energy and water consumption, the no-new-standards case efficiency projection, and discount rates.

DOE estimates a combined total of 1.31 quads of site energy savings at the max-tech efficiency levels for RCWs. Therefore, DOE has determined the potential available energy savings for RCWs are more than the 0.3 quads of site energy threshold established by the Process Rule and thus are considered significant under EPCA. (42 U.S.C. 6295(o)(3)(B))

Chapter 10 of the preliminary TSD addresses the NIA.

## IV. Public Participation

DOE invites public participation in this process through participation in the webinar and submission of written comments and information. After the webinar and the closing of the comment period, DOE will consider all timely-submitted comments and additional information obtained from interested parties, as well as information obtained through further analyses. Following such consideration, the Department will publish either a determination that the

standards for RCWs need not be amended or a NOPR proposing to amend those standards. The NOPR, should one be issued, would include proposed energy conservation standards for the products covered by that rulemaking, and members of the public would be given an opportunity to submit written and oral comments on the proposed standards.

*A. Participation in the Webinar*

The time and date of the webinar meeting are listed in the **DATES** section at the beginning of this document. Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE's website: *www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=68*. Participants are responsible for ensuring their systems are compatible with the webinar software.

*B. Procedure for Submitting Prepared General Statements for Distribution*

Any person who has an interest in the topics addressed in this document, or who is representative of a group or class of persons that has an interest in these issues, may request an opportunity to make an oral presentation at the webinar. Such persons may submit such request to *ApplianceStandardsQuestions@ee.doe.gov*. Persons who wish to speak should include with their request a computer file in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format that briefly describes the nature of their interest in this rulemaking and the topics they wish to discuss. Such persons should also provide a daytime telephone number where they can be reached.

Persons requesting to speak should briefly describe the nature of their interest in this rulemaking and provide a telephone number for contact. DOE requests persons selected to make an oral presentation to submit an advance copy of their statements at least two weeks before the

webinar. At its discretion, DOE may permit persons who cannot supply an advance copy of their statement to participate, if those persons have made advance alternative arrangements with the Building Technologies Office. As necessary, requests to give an oral presentation should ask for such alternative arrangements.

*C. Conduct of the Webinar*

DOE will designate a DOE official to preside at the webinar and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336 of EPCA (42 U.S.C. 6306). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the webinar. There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. After the webinar and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The webinar will be conducted in an informal, conference style. DOE will present summaries of comments received before the webinar, allow time for prepared general statements by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will permit, as time permits, other participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of

participants concerning other matters relevant to this rulemaking. The official conducting the webinar will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules or modification of the above procedures that may be needed for the proper conduct of the webinar.

A transcript of the webinar will be included in the docket, which can be viewed as described in the *Docket* section at the beginning of this document. In addition, any person may buy a copy of the transcript from the transcribing reporter.

*D. Submission of Comments*

DOE invites all interested parties, regardless of whether they participate in the public meeting, to submit in writing by [**INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN *FEDERAL REGISTER***], comments and information on matters addressed in this notification and on other matters relevant to DOE's consideration of amended energy conservations standards for RCWs. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document.

*Submitting comments via www.regulations.gov*. The *www.regulations.gov* webpage will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. If this instruction is followed, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information ("CBI")). Comments submitted through *www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

*Submitting comments via email*. Comments and documents submitted via email also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments

Include contact information each time you submit comments, data, documents, and other information to DOE. No faxes will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

*Campaign form letters*. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

*Confidential Business Information*. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email to *ConsumerClothesWasher2017STD0014@ee.doe.gov* two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

**V. Approval of the Office of the Secretary**

The Secretary of Energy has approved publication of this notification of a webinar and availability of preliminary technical support document.

**Signing Authority**

This document of the Department of Energy was signed on September 22, 2021, by Kelly Speakes-Backman, Principal Deputy Assistant Secretary and Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on September 23, 2021.

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Treena V. Garrett

Federal Register Liaison Officer,
U.S. Department of Energy

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