[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 430

[EERE-2019-BT-STD-0039]

RIN 1904-AF60

Energy Conservation Program: Energy Conservation Standards for Dishwashers

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

ACTION: Notice of proposed rulemaking.

SUMMARY: The Energy Policy and Conservation Act, as amended ("EPCA"), prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including dishwashers. In this notice of proposed rulemaking, the U.S. Department of Energy ("DOE") proposes amended energy conservation standards for dishwashers identical to those set forth in a direct final rule published elsewhere in this issue of the *Federal Register*. If DOE receives adverse comment and determines that such comment may provide a reasonable basis for withdrawal of the direct final rule, DOE will publish a notice of withdrawal and will proceed with this proposed rule.

DATES: DOE will accept comments, data, and information regarding this NOPR no later than [**INSERT DATE 110 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***]. Comments regarding the likely competitive impact of the proposed standard should be sent to the Department of Justice contact listed in the

ADDRESSES section on or before [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***].

ADDRESSES: See section IV of this document, "Public Participation," for details. If DOE withdraws the direct final rule published elsewhere in this issue of the *Federal Register*, DOE will hold a public meeting to allow for additional comment on this proposed rule. DOE will publish notice of any meeting in the *Federal Register*.

Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *www.regulations.gov* under docket number EERE-2019-BT-STD-0039. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2019-BT-STD-0039, by any of the following methods:

(1) Email: *ApplianceStandardsQuestions@ee.doe.gov*. Include the docket number EERE–2019–BT–STD-0039 in the subject line of the message.

(2) Postal Mail: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-1445. If possible, please submit all items on a compact disc ("CD"), in which case it is not necessary to include printed copies.

(3) Hand Delivery/Courier: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 1000 Independence Ave, SW,

Washington, DC, 20585-0121. Telephone: (202) 287-1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

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

Docket: The docket for this activity, which includes *Federal Register* notices, comments, 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, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

The docket webpage can be found at *www.regulations.gov/docket/EERE-2019-BT-STD-0039*. The docket webpage contains instructions on how to access all documents, including public comments, in the docket. See section VII of this document for information on how to submit comments through *www.regulations.gov*.

EPCA requires the Attorney General to provide DOE a written determination of whether the proposed standard is likely to lessen competition. The U.S. Department of Justice Antitrust Division invites input from market participants and other interested persons with views on the likely competitive impact of the proposed standard. Interested persons may contact the Antitrust Division at *energy.standards@usdoj.gov* on or before the date specified in the **DATES** section. Please indicate in the "Subject" line of your email the title and Docket Number of this proposed rulemaking.

FOR FURTHER INFORMATION CONTACT:

Dr. Carl Shapiro, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-5649. Email: *ApplianceStandardsQuestions@ee.doe.gov*.

Ms. Amelia Whiting, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (240) 306-7097. Email: *Amelia.Whiting@hq.doe.gov*.

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

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Synopsis of the Proposed Rule

The Energy Policy and Conservation Act, Public Law 94-163, 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 of EPCA[2] established the Energy Conservation Program for Consumer Products Other Than Automobiles. (42 U.S.C. 6291–6309) These products include dishwashers, the subject of this proposed rulemaking. (42 U.S.C. 6292(a)(6))

Pursuant to EPCA, any new or amended energy conservation standard must, among other things, 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 significant conservation of energy. (42 U.S.C. 6295(o)(3)(B))

In light of the above and under the authority provided by 42 U.S.C. 6295(p)(4)(A)(i), DOE is proposing this rule amending the energy conservation standards for dishwashers and

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Public Law 116-260 (Dec. 27, 2020), which reflect the last statutory amendments that impact Parts A and A-1 of EPCA.
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

is concurrently issuing a direct final rule elsewhere in this issue of the *Federal Register*. DOE will proceed with this notice of proposed rulemaking ("NOPR") only if it determines it must withdraw the direct final rule pursuant to the criteria provided in 42 U.S.C. 6295(p)(4). The amended standard levels in the proposed rule and the direct final rule were recommended in a letter submitted to DOE jointly by groups representing manufacturers, energy and environmental advocates, consumer groups, and a utility. This letter, titled "Energy Efficiency Agreement of 2023" (hereafter, the "Joint Agreement"[3]), recommends specific energy conservation standards for dishwashers that, in the commenters' view, would satisfy the EPCA requirements in 42 U.S.C. 6295(o). DOE subsequently received letters of support for the Joint Agreement from States including New York, California, and Massachusetts[4] and utilities including San Diego Gas and Electric and Southern California Edison[5] advocating for the adoption of the recommended standards. As discussed in more detail in the accompanying direct final rule and in accordance with the provisions at 42 U.S.C. 6295(p)(4), DOE has determined that the recommendations contained in the Joint Agreement comply with the requirements of 42 U.S.C. 6295(o).

In accordance with these and other statutory provisions discussed in this document, DOE proposes amended energy conservation standards for dishwashers. The standards are expressed in terms of maximum estimated annual energy use ("EAEU") in kilowatt hours per year ("kWh/yr"), and maximum per cycle water consumption in gallons per cycle ("gal/cycle"), as determined in accordance with DOE's dishwashers test procedure codified

[3] This document is available in the docket at: *www.regulations.gov/comment/EERE-2019-BT-STD-0039-0055*.
[4] This document is available in the docket at: *www.regulations.gov/comment/EERE-2019-BT-STD-0039-0056*.
[5] This document is available in the docket at: *www.regulations.gov/comment/EERE-2019-BT-STD-0039-0057*.

at title 10 of the Code of Federal Regulations ("CFR") part 430, subpart B, appendix C2 ("appendix C2").

Table I.1 presents the proposed amended standards for dishwashers. The proposed standards are the same as those recommended by the Joint Agreement. These standards would apply to all products listed in Table I.1 and manufactured in, or imported into, the United States starting on [**INSERT DATE 3 YEARS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE *FEDERAL REGISTER***], as recommended in the Joint Agreement.

Table I.1 Proposed Energy Conservation Standards for Dishwashers (Compliance Starting 3 Years After the Publication of the Final Rule)

Product Class	**Maximum Estimated Annual Energy Use** *(kWh/year)*	**Maximum Per-Cycle Water Consumption** *(gal/cycle)*
PC 1: Standard-size Dishwasher*	223	3.3
PC 2: Compact-size Dishwasher	174	3.1

* The energy conservation standards in this table do not apply to standard-size dishwashers with a cycle time for the normal cycle of 60 minutes or less.

II. Introduction

The following section briefly discusses the statutory authority underlying this proposed rule, as well as some of the relevant historical background related to the establishment of standards for dishwashers.

A. Authority

EPCA authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part B of EPCA established the Energy

Conservation Program for Consumer Products Other Than Automobiles. These products include dishwashers, the subject of this document. (42 U.S.C. 6292(a)(6)) EPCA prescribed energy conservation design standards for these products (42 U.S.C. 6295(g)(1) and (10)(A)), and directed DOE to conduct future rulemakings to determine whether to amend these standards. (42 U.S.C. 6295(g)(4) and (10)(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 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)(1))

In establishing energy conservation standards with both energy and water use performance standards for dishwashers manufactured after January 1, 2010, Congress directed DOE to "determine[e] whether to amend" those standards. (42 U.S.C. 6295(g)(10)(B) Congress's directive, in section 6295(g)(10)(B), to consider whether "to amend the standards in effect for dishwashers" refers to "the standards" established in the immediately preceding section, 6295(g)(10)(A). There, Congress established energy conservation standards with *both* energy and water use performance standards for dishwashers. Indeed, the energy and water use performance standards for dishwashers (both standard and compact size) are contained within a single paragraph. *See id.* Everything in section 6295(g) suggests that Congress intended both of those twin standards to be evaluated when it came time, "[n]ot later than January 1, 2015," to consider amending them. (*Id.* 6295(g)(10)(B)(i)) Accordingly, DOE understands its authority, under section 6295(g)(10)(B), to include consideration of amended energy and water use performance standards for dishwashers.

DOE similarly understands it authority under 42 U.S.C. 6295(m) to amend "standards" for covered products to include amending both the energy and water use performance standards for dishwashers. Neither section 6295(g)(10)(B) nor section 6295(m) limit their application to "energy use standards." Rather, they direct DOE to consider amending "the standards," 42 U.S.C. 6295(g)(10)(B), or simply "standards," *id.* 6295(m)(1)(B), which may include both energy use standards and water use standards.

Finally, DOE is proposing these standards in this companion NOPR to a direct final rule pursuant to 42 U.S.C. 6295(p)(4). That section also extends broadly to any "energy or water conservation standard" without qualification. Thus, pursuant to section 6295(p)(4), DOE may, so long as other relevant conditions are satisfied, promulgate a direct final rule that includes water use performance standards for a covered product like dishwashers, where Congress has already established energy and water use performance standards.

DOE is aware that the definition of "energy conservation standard," in section 6291(6), expressly references water use only for four products specifically named: showerheads, faucets, water closets, and urinals. *See id.* However, DOE does not read the language in 6291(6) as fully delineating the scope of DOE's authority under EPCA. Rather, as is required of agencies in applying a statute, individual provisions, including section 6291(6) of EPCA, must be read in the context of the statute as a whole.

The energy conservation program was initially limited to addressing the energy use, meaning electricity and fossil fuels, of 13 covered products (*See* sections 321 and 322 of the Energy and Policy Conservation Act, Pub. L. 94–163, 89 Stat 871 (December 22,

1975)) Since its inception, Congress has expanded the scope of the energy conservation program several times, including by adding covered products, prescribing energy conservation standards for various products, and by addressing water use for certain covered products. For example, in the Energy Policy Act of 1992, Congress amended the list of covered products in 42 U.S.C. 6292 to include showerheads, faucets, water closets and urinals and expanded DOE's authority to regulate water use for these products. (*See* Sec. 123, Energy Policy Act of 1992, Pub. L. 102–486, 106 Stat 2776 (Oct. 24, 1992)). When it did so, Congress also made corresponding changes to the definition of "consumer product" (42 U.S.C. 6291(1)), the definition of "energy conservation standard" (42 U.S.C. 6291(6)), the section governing the promulgation of test procedures (42 U.S.C. 6293), the criteria for prescribing new or amended energy conservation standards (42 U.S.C. 6295(o)), and elsewhere in EPCA.

Later, Congress further expanded the scope of the energy conservation program several times. For instance, Congress added products and energy conservation standards directly to 42 U.S.C. 6295, the section of EPCA that contains statutorily prescribed standards as well as DOE's standard-setting authorities. *See* 42 U.S.C. 6295(a) (stating that the "purposes of this section are to— (1) provide Federal energy conservation standards applicable to covered products; and (2) authorize the Secretary to prescribe amended or new energy conservation standards for each type (or class) of covered product.")). When Congress added these new standards and standard-setting authorities to 42 U.S.C. 6295 after the Energy Policy Act of 1992, it often did so without making any conforming changes to sections 6291 or 6292. For example, in the Energy Policy Act of 2005, Congress prescribed

standards by statute, or gave DOE the authority to set standards for, battery chargers, external power supplies, ceiling fans, ceiling fan light kits, beverage vending machines, illuminated exit signs, torchieres, low voltage dry-type distribution transformers, traffic signal modules and pedestrian modules, certain lamps, dehumidifiers, and commercial prerinse spray valves ("CPSVs") in 42 U.S.C. 6295 without updating the list of covered products in 42 U.S.C. 6292. (*See* Sec. 135, Energy Policy Act of 2005, 119 Stat 594 (Aug. 8, 2005))

Congress also expanded the scope of the energy conservation program by directly adding water use performance standards for certain products to 42 U.S.C. 6295. For example, in the Energy Policy Act of 2005, Congress added a water use performance standard (but no energy use performance standard) for commercial prerinse spray valves ("CPSVs") and did so without updating the list of covered products in 42 U.S.C. 6292 to include CPSVs and without adding CPSVs to the list of enumerated products with water use performance standards in the "energy conservation standard" definition in 42 U.S.C. 6291(6). In the Energy Independence and Security Act of 2007 ("EISA 2007"), Congress amended 42 U.S.C. 6295 by prescribing energy conservation standards for residential clothes washers and dishwashers that included both energy and water use performance standards. (*See* Sec. 301, EISA 2007, Pub. L. 110–140, 121 Stat 1492 (Dec. 19, 2007)). Again, when it did so, Congress did not add these products to the list of enumerated products with water use performance standards in the definition of "energy conservation standard" in 42 U.S.C. 6291(6).

In considering how to treat these products and standards that Congress has directly added to 42 U.S.C. 6295 without making conforming changes to the rest of the statute,

including the list of covered products in 42 U.S.C. 6292, and the water-use products in the definition of an "energy conservation standard," DOE construes the statute as a whole. When Congress added products and standards directly to 42 U.S.C. 6295, it must have meant those products to be covered products and those standards to be energy conservation standards, given that the purpose of 42 U.S.C. 6295 is to provide "energy conservation standards applicable to covered products" and to "authorize the Secretary to prescribe amended or new energy conservation standards for each type (or class) of covered product." Elsewhere in EPCA, the statute's references to covered products and energy conservation standards can only be read coherently as including the covered products and energy conservation standards Congress added directly to section 6295, even if Congress did not make conforming edits to 6291 or 6292. For example, manufacturers are prohibited from "distribut[ing] in commerce any new *covered product* which is not in conformity with an applicable *energy conservation standard.*" (42 U.S.C. 6302(a)(5) (emphasis added)) It would defeat congressional intent to allow a manufacturer to distribute a product, *e.g.*, a CPSV or ceiling fan, that violates an applicable energy conservation standard that Congress prescribed simply because Congress added the product directly to 42 U.S.C. 6295 without also updating the list of covered products in 42 U.S.C. 6292(a). In addition, preemption in EPCA is based on "the effective date of an *energy conservation standard* established in or prescribed under section 6295 of this title for any *covered product.*" (42 U.S.C. 6297(c)(emphasis added)) Nothing in EPCA suggests that standards Congress adopted in 6295 lack preemptive effect, merely because Congress did not make conforming amendments to 6291, 6292, or 6293.

It would similarly defeat congressional intent for a manufacturer to be permitted to distribute a covered product, *e.g.*, a clothes washer or dishwasher, that violates a water use

performance standard because Congress added the standard to 42 U.S.C. 6295 without also updating the definition of energy conservation standard in 42 U.S.C. 6291(6). By prescribing directly, in 6295(g)(10), energy conservation standards for dishwashers that include both energy and water use performance standards, Congress intended that energy conservation standards for dishwashers include both energy use and water use.

DOE recognizes that some might argue that Congress's specific reference in section 6291(6) to water standards for showerheads, faucets, water closets, and urinals could "create a negative implication" that energy conservation standards for other covered products may not include water use standards. *See Marx v. Gen. Revenue Corp.,* 568 U.S. 371, 381 (2013). "The force of any negative implication, however, depends on context." *Id.*; *see also NLRB v. SW Gen., Inc.,* 580 U.S. 288, 302 (2017) ("The *expressio unius* canon applies only when circumstances support a sensible inference that the term left out must have been meant to be excluded." (alterations and quotation marks omitted)). In this context, the textual and structural cues discussed above show that Congress did not intend to exclude from the definition of energy conservation standard the water use performance standards that it specifically prescribed, and directed DOE to amend, in section 6295. To conclude otherwise would negate the plain text of 6295(g)(10). Furthermore, to the extent the definition of energy conservation standards in section 6291(6), which was last amended in the Energy Policy Act of 1992, could be read as in conflict with the energy and water use performance standards prescribed by Congress in EISA 2007, any such conflict should be resolved in favor of the more recently enacted statute. *See United States v. Estate of Romani,* 523 U.S. 517, 530-31 (1998) ("[A] specific policy embodied in a later federal state should control our construction of the priority statute, even though it had not been expressly amended.")

Accordingly, based on a complete reading of the state, DOE has determined that products and standards added directly to 42 U.S.C. 6295 are appropriately considered "covered products" and "energy conservation standards" for the purposes of applying the various provisions in EPCA.

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) the establishment of Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6291), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297(a)–(c)) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions set forth under EPCA. (See 42 U.S.C. 6297(d))

Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of each covered product. (42 U.S.C. 6295(r)) Manufacturers of covered products must use the prescribed DOE test procedure as the basis for certifying to DOE that their products comply with the applicable energy conservation standards adopted under EPCA and when making representations to the public regarding the energy use or efficiency of those products. (42

U.S.C. 6293(c) and 42 U.S.C. 6295(s)) Similarly, DOE must use these test procedures to determine whether the products comply with standards adopted pursuant to EPCA. (42 U.S.C. 6295(s)) The DOE test procedures for dishwashers appear at title 10 of the CFR part 430, subpart B, appendix C1 ("appendix C1") and appendix C2.

DOE must follow specific statutory criteria for prescribing new or amended standards for covered products, including dishwashers. Any new or amended standard for a covered product must be designed to achieve the maximum improvement in energy efficiency that the Secretary of Energy ("Secretary") determines 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)(B))

Moreover, DOE may not prescribe a standard if DOE determines by rule that the standard is not technologically feasible or economically justified. (42 U.S.C. 6295(o)(3)(B)) In deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens. (42 U.S.C. 6295(o)(2)(B)(i)) DOE must make this determination after receiving comments on the proposed standard, and by considering, to the greatest extent practicable, the following seven statutory factors:

(1) The economic impact of the standard on 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 covered 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 considers relevant.

(42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII))

Further, EPCA, as codified, 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, as codified, 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))

EPCA specifies requirements when promulgating an energy conservation standard for a covered product that has two or more subcategories. A rule prescribing an energy conservation standard for a type (or class) of product must specify a different standard level for a type or class of products 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))

Additionally, pursuant to the amendments contained in EISA 2007, 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 dishwashers address standby mode and off mode energy use. The standards proposed in this rule incorporate standby mode and off mode energy use.

Finally, EISA 2007 amended EPCA, in relevant part, to grant DOE authority to directly issue a final rule (*i.e.,* a "direct final rule") establishing an energy conservation standard on receipt of a statement submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates), as determined by the Secretary, that contains recommendations with respect to an energy or water conservation standard. (42 U.S.C. 6295(p)(4)) Pursuant to 42 U.S.C. 6295(p)(4), the Secretary must also determine whether a jointly-submitted recommendation for an energy or water conservation standard satisfies 42 U.S.C. 6295(o) or 42 U.S.C. 6313(a)(6)(B), as applicable.

A NOPR that proposes an identical energy or water conservation standard must be published simultaneously with the direct final rule, and DOE must provide a public comment period of at least 110 days on this proposal. (42 U.S.C. 6295(p)(4)(A)–(B)) Based on the comments received during this period, the direct final rule will either become effective, or

DOE will withdraw it not later than 120 days after its issuance if (1) one or more adverse comments is received, and (2) DOE determines that those comments, when viewed in light of the rulemaking record related to the direct final rule, may provide a reasonable basis for withdrawal of the direct final rule under 42 U.S.C. 6295(o). (42 U.S.C. 6295(p)(4)(C)) Receipt of an alternative joint recommendation may also trigger a DOE withdrawal of the direct final rule in the same manner. (*Id*.) After withdrawing a direct final rule, DOE must proceed with the NOPR published simultaneously with the direct final rule and publish in the *Federal Register* the reasons why the direct final rule was withdrawn. (*Id.*)

DOE has previously explained its interpretation of its direct final rule authority. In a final rule amending the Department's "Procedures, Interpretations and Policies for Consideration of New or Revised Energy Conservation Standards for Consumer Products" at 10 CFR part 430, subpart C, appendix A, DOE noted that it may issue standards recommended by interested persons that are fairly representative of relative points of view as a direct final rule when the recommended standards are in accordance with 42 U.S.C. 6295(o) or 42 U.S.C. 6313(a)(6)(B), as applicable. 86 FR 70892, 70912 (Dec. 13, 2021). But the direct final rule provision in EPCA, under which this proposed rule is issued, does not impose additional requirements applicable to other standards rulemakings, which is consistent with the unique circumstances of rules issued through consensus agreements under DOE's direct final rule authority. *Id.* DOE's discretion remains bounded by its statutory mandate to adopt a standard that results in the maximum improvement in energy efficiency that is technologically feasible and economically justified—a requirement found in 42 U.S.C.

6295(o). *Id*. As such, DOE's review and analysis of the Joint Agreement is limited to whether the recommended standards satisfy the criteria in 42 U.S.C. 6295(o).

B. Background

1. Current Standards

In a direct final rule published on May 30, 2012 ("May 2012 Direct Final Rule"), DOE adopted the current energy conservation standards for dishwashers manufactured on or after May 30, 2013, consistent with the levels proposed in a letter submitted to DOE by groups representing manufacturers, energy and environmental advocates, and consumer groups on July 30, 2010. 77 FR 31918, 31918-31919. This collective set of comments, titled "Agreement on Minimum Federal Efficiency Standards, Smart Appliances, Federal Incentives and Related Matters for Specified Appliances" (the "July 2010 Joint Petition"),[6] recommended specific energy conservation standards for dishwashers that, in the commenters' view, would satisfy the EPCA requirements in 42 U.S.C. 6295(o). 77 FR 31918, 31919. The July 2010 Joint Petition proposed energy conservation standard levels for the standard-size and compact-size dishwasher product classes based on the same capacity definitions that existed at that time. 77 FR 31918, 31926. These product classes are the same as the two current product classes for dishwashers. In the May 2012 Direct Final Rule, DOE analyzed the benefits and burdens of multiple standard levels for dishwashers, including a standard level that corresponded to the recommended levels in the July 2010 Joint Petition,

[6] DOE Docket No. EERE–2011–BT–STD–0060-0001.

and determined that the levels recommended in the Joint Petition satisfied the EPCA requirements set forth under 42 U.S.C. 6295(o). 77 FR 31918, 31921, 31924.

In a final determination published on December 13, 2016 ("December 2016 Final Determination"), DOE concluded that amended energy conservation standards would not be economically justified at any level above the standards established in the May 2012 Direct Final Rule, and therefore determined not to amend the standards. 81 FR 90072. The current energy and water conservation standards are set forth in DOE's regulations at 10 CFR part 430, §430.32(f), and are repeated in Table II.1. The currently applicable DOE test procedure for dishwashers appears at appendix C1.

Table II.1 Federal Energy Conservation Standards for Dishwashers

Product Class	**Maximum Estimated Annual Energy Use*** *(kWh/year)*	**Maximum Per-Cycle Water Consumption*** *(gal/cycle)*
Standard-Size Dishwasher	307	5.0
Compact-Size Dishwasher	222	3.5

* Using appendix C1

The regulatory text at 10 CFR 430.32(f) references the Association of Home Appliance Manufacturers ("AHAM") standard AHAM DW–1–2020[7] to define the items in the test load that comprise the serving pieces and each place setting. The number of serving pieces and place settings help determine the capacity of the dishwasher, which is used to determine the applicable product class.

[7] Uniform Test Method for Measuring the Energy Consumption of Dishwashers. AHAM DW–1–2020. Copyright 2020.

2. Current Test Procedure

On December 22, 2021, DOE published a test procedure NOPR ("December 2021 TP NOPR") proposing amendments to the dishwasher test procedure at appendix C1 and a new test procedure at appendix C2. 86 FR 72738. On January 18, 2023, DOE published a final rule amending the test procedure at appendix C1 and establishing a new test procedure at appendix C2 ("January 2023 TP Final Rule"). 88 FR 3234. The new appendix C2 specifies updated annual cycles and low-power mode hours, both of which are used to calculate the EAEU metric, and introduces a minimum cleaning performance threshold to validate the selected test cycle. 88 FR 3234, 3236.

Subsequently, on July 27, 2023, DOE published a final rule adding clarifying instructions to the dishwasher test procedure at appendix C1 regarding the allowable dosing options for each type of detergent; clarifying the existing detergent reporting requirements; and adding an enforcement provision for dishwashers to specify the detergent and dosing method that DOE would use for any enforcement testing of dishwasher models certified in accordance with the applicable dishwasher test procedure prior to July 17, 2023 (*i.e.*, the date by which the January 2023 TP Final Rule became mandatory for product testing). 88 FR 48351.

EPCA authorizes DOE to design test procedures that measure energy efficiency, energy use, water use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use. (42 U.S.C. 6293(b)(3)) In general, a consumer-acceptable level of cleaning performance (*i.e.,* a representative average use cycle) can be easier to achieve through the use of higher amounts of energy and water use during

the dishwasher cycle. Conversely, maintaining acceptable cleaning performance can be more difficult as energy and water levels are reduced. Improving one aspect of dishwasher performance, such as reducing energy and/or water use as a result of energy conservation standards, may require a trade-off with one or more other aspects of performance, such as cleaning performance. 88 FR 3234, 3250–3251. As discussed, the currently applicable energy conservation standards for dishwashers are based on appendix C1, which does not prescribe a method for testing dishwasher cleaning performance.

The January 2023 TP Final Rule established a new test procedure at appendix C2, which includes provisions for a minimum cleaning index threshold of 70 to validate the selected test cycle. 88 FR 3234, 3261. The cleaning index is calculated based on the number and size of particles remaining on each item of the test load at the completion of a dishwasher cycle as specified in AHAM DW–2–2020.[8] Items that do not have any soil particles are scored 0 (*i.e.*, completely clean). No single item in the test load can exceed a score of 9. Individual scores for each item in the test load are combined as a weighted average to calculate the per cycle cleaning index. A cleaning index of 100 indicates a completely clean test load. *Id.* at 3255. In the January 2023 TP Final Rule, DOE specified that the cleaning index is calculated by only scoring soil particles on all items in the test load and that spots, streaks, and rack contact marks on glassware are not included in the cleaning index calculation.[9] *Id.* at 3248. Manufacturers must use the results of testing under the new

[8] Household Electric Dishwashers. AHAM DW–2–2020. Copyright 2020.
[9] In the December 2021 TP NOPR, DOE proposed a cleaning index threshold of 65 calculated by scoring soil particles on all items as well as spots, streaks, and rack contact marks on glassware. 86 FR 72738, 72756, 72758. In the January 2023 TP Final Rule, DOE noted that the specified cleaning index threshold of 70 is equivalent to the cleaning index threshold of 65 that was proposed in the December 2021 TP NOPR. 88 FR 3234, 3261.

appendix C2 to determine compliance with the energy conservation standards proposed in this NOPR. Accordingly, DOE used appendix C2 as finalized in the January 2023 TP Final Rule as the basis for the analysis in the direct final rule accompanying this NOPR. *Id.* at 3234.

DOE adopted a minimum cleaning performance threshold in appendix C2 to determine if a dishwasher, when tested according to the DOE test procedure, "completely washes a normally soiled load of dishes," so as to better represent consumer use of the product (*i.e.*, to produce test results that are more representative of an average consumer use cycle). 88 FR 3234, 3253, 3255. Based on the data available, DOE determined that the cleaning performance threshold provides a reasonable proxy for when consumers are likely to be dissatisfied with performance on the normal cycle. 88 FR 3234, 3261. The cleaning index threshold established as part of the new appendix C2 ensures that energy and water savings are being realized for products that comply with the energy conservation standards for dishwashers proposed in this NOPR. 88 FR 3234, 3253, 3254.

The standards proposed in this NOPR are expressed in terms of the EAEU and water consumption metrics as measured according to the newly established test procedure contained in appendix C2.

3. The Joint Agreement

On September 25, 2023, DOE received a joint statement (*i.e.*, the Joint Agreement) recommending standards for dishwashers, that was submitted by groups representing

manufacturers, energy and environmental advocates, consumer groups, and a utility.[10] In addition to the recommended standards for dishwashers, the Joint Agreement also included separate recommendations for several other covered products.[11] And, while acknowledging that DOE may implement these recommendations in separate rulemakings, the Joint Agreement also stated that the recommendations were recommended as a complete package and each recommendation is contingent upon the other parts being implemented. DOE understands this to mean the Joint Agreement is contingent upon DOE initiating rulemaking processes to adopt all the recommended standards in this agreement. That is distinguished from an agreement where issuance of an amended energy conservation standard for a covered product is contingent on issuance of amended energy conservation standards for the other covered products. If the Joint Agreement were so construed, it would conflict with the anti-backsliding provisions in 42 U.S.C. 6295(o)(1), because it would imply the possibility that, if DOE were unable to issue an amended standard for a certain product, it would have to withdraw a previously issued standard for one of the other products. The anti-backsliding provision, however, prevents DOE from withdrawing or amending an energy conservation standard to be less stringent. As a result, DOE will be proceeding with individual

[10] The signatories to the Joint Agreement include the AHAM, American Council for an Energy Efficient Economy, Alliance for Water Efficiency, ASAP, Consumer Federation of America, Consumer Reports, Earthjustice, National Consumer Law Center, Natural Resources Defense Council, Northwest Energy Efficiency Alliance, and Pacific Gas and Electric Company. Members of AHAM's Major Appliance Division that make the affected products include: Alliance Laundry Systems, LLC; Asko Appliances AB; Beko US Inc.; Brown Stove Works, Inc.; BSH Home Appliances Corporation; Danby Products, Ltd.; Electrolux; Elicamex S.A. de C.V.; Faber; Fotile America; GE Appliances, a Haier Company; L'Atelier Paris Haute Design LLG; LG Electronics; Liebherr USA, Co.; Midea America Corp.; Miele, Inc.; Panasonic Appliances Refrigeration Systems (PAPRSA) Corporation of America; Perlick Corporation; Samsung Electronics America, Inc.; Sharp Electronics Corporation; Smeg S.p.A; Sub-Zero Group, Inc.; The Middleby Corporation; U-Line Corporation; Viking Range, LLC; and Whirlpool Corporation.

[11] The Joint Agreement contained recommendations for 6 covered products: refrigerators, refrigerator-freezers, and freezers; clothes washers; clothes dryers; dishwashers; cooking products; and miscellaneous refrigeration products.

rulemakings that will evaluate each of the recommended standards separately under the applicable statutory criteria.

A court decision issued after DOE received the Joint Agreement is also relevant to today's rule. On March 17, 2022, various States filed a petition seeking review of a final rule revoking two final rules that established product classes for dishwashers with a cycle time for the normal cycle of 60 minutes or less, top-loading residential clothes washers and certain classes of consumer clothes dryers with a cycle time of less than 30 minutes, and front-loading residential clothes washers with a cycle time of less than 45 minutes (collectively, "short-cycle product classes"). The petitioners argued that the final rule revoking the short-cycle product classes violated EPCA and was arbitrary and capricious. On January 8, 2024, the United States Court of Appeals for the Fifth Circuit granted the petition for review and remanded the matter to DOE for further proceedings consistent with the Fifth Circuit's opinion. *See Louisiana v. United States Department of Energy*, 90 F.4th 461 (5th Cir. 2024).

On February 14, 2024, following the Fifth Circuit's decision in *Louisiana v. United States Department of Energy,* DOE received a second joint statement from this same group of stakeholders in which the signatories reaffirmed the Joint Agreement, stating that the recommended standards represent the maximum levels of efficiency that are technologically feasible and economically justified.[12] In the letter, the signatories clarified that "short-cycle" product classes for residential clothes washers, consumer clothes dryers, and dishwashers did not exist at the time that the signatories submitted their recommendations and it is their

[12] This document is available in the docket at: *www.regulations.gov/comment/EERE-2019-BT-STD-0039-0059.*

understanding that these classes also do not exist at the current time. Accordingly, the parties clarified that the Joint Agreement did not address short-cycle product classes. The signatories also stated that they did not anticipate that the recommended energy conservation standards in the Joint Agreement will negatively affect features or performance, including cycle time, for dishwashers.

The Joint Agreement recommends amended standard levels for dishwashers as presented in Table II.2. (Joint Agreement, No. 55 at p. 5) Details of the Joint Agreement recommendations for other products are provided in the Joint Agreement posted in the docket.[13]

Table II.2 Recommended Amended Energy Conservation Standards for Dishwashers

Product Class	Standard Levels Using Test Procedure Appendix C2		Compliance Date
	Estimated Annual Energy Use *(kWh/year)*	**Per-Cycle Water Consumption** *(gal/cycle)*	
Standard-Size Dishwasher (≥ 8 place settings plus 6 serving pieces)	223	3.3	3 years after publication of the direct final rule published elsewhere in this issue of the *Federal Register*
Compact-Size Dishwasher (< 8 place settings plus 6 serving pieces)	174	3.1	3 years after publication of the direct final rule published elsewhere in this issue of the *Federal Register*

[13] The Joint Agreement is available in the docket at *www.regulations.gov/comment/EERE-2019-BT-STD-0039-0055*.

DOE has evaluated the Joint Agreement and believes that it meets the EPCA requirements for issuance of a direct final rule. As a result, DOE published a direct final rule amending energy conservation standards for dishwashers elsewhere in this issue of the *Federal Register*. If DOE receives adverse comments that may provide a reasonable basis for withdrawal and withdraws the direct final rule, DOE will consider those comments and any other comments received in determining how to proceed with this proposed rule.

For further background information on these proposed standards and the supporting analyses, please see the direct final rule published elsewhere in this issue of the *Federal Register*. That document and the accompanying technical support document ("TSD") contain an in-depth discussion of the analyses conducted in evaluating the Joint Agreement, the methodologies DOE used in conducting those analyses, and the analytical results.

When the Joint Agreement was submitted, DOE was conducting a rulemaking to consider amending the standards for dishwashers. As part of that process, on May 19, 2023, DOE published a NOPR and announced a public meeting ("May 2023 NOPR") seeking comment on its proposed amended standard to inform its decision consistent with its obligations under EPCA and the Administrative Procedure Act ("APA"). 88 FR 32514. DOE held a public meeting on June 8, 2023, to discuss and receive comments on the NOPR and NOPR TSD. The NOPR TSD is available at: *https://www.regulations.gov/document/EERE-2019-BT-STD-0039-0032*.

III. Proposed Standards

When considering new or amended energy conservation standards, the standards that DOE adopts for any type (or class) of covered product must be designed to achieve the maximum improvement in energy efficiency that the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) In determining whether a standard is economically justified, the Secretary must determine whether the benefits of the standard exceed its burdens by, to the greatest extent practicable, considering the seven statutory factors discussed previously. (42 U.S.C. 6295(o)(2)(B)(i)) The new or amended standard must also result in significant conservation of energy. (42 U.S.C. 6295(o)(3)(B))

DOE considered the impacts of amended standards for dishwashers at each trial standard level ("TSL"), beginning with the maximum technologically feasible ("max-tech") level, to determine whether that level was economically justified. Where the max-tech level was not justified, DOE then considered the next most efficient level and undertook the same evaluation until it reached the highest efficiency level that is both technologically feasible and economically justified and saves a significant amount of energy. DOE refers to this process as the "walk-down" analysis.

To aid the reader as DOE discusses the benefits and/or burdens of each TSL, tables in this section present a summary of the results of DOE's quantitative analysis for each TSL. In addition to the quantitative results presented in the tables, DOE also considers other burdens and benefits that affect economic justification. These include the impacts on identifiable

subgroups of consumers who may be disproportionately affected by a national standard and impacts on employment.

DOE also notes that the economics literature provides a wide-ranging discussion of how consumers trade off upfront costs and energy savings in the absence of government intervention. Much of this literature attempts to explain why consumers appear to undervalue energy efficiency improvements. There is evidence that consumers undervalue future energy savings as a result of (1) a lack of information; (2) a lack of sufficient salience of the long-term or aggregate benefits; (3) a lack of sufficient savings to warrant delaying or altering purchases; (4) excessive focus on the short term, in the form of inconsistent weighting of future energy cost savings relative to available returns on other investments; (5) computational or other difficulties associated with the evaluation of relevant tradeoffs; and (6) a divergence in incentives (for example, between renters and owners, or builders and purchasers). Having less than perfect foresight and a high degree of uncertainty about the future, consumers may trade off these types of investments at a higher than expected rate between current consumption and uncertain future energy cost savings.

In DOE's current regulatory analysis, potential changes in the benefits and costs of a regulation due to changes in consumer purchase decisions are included in two ways. First, if consumers forego the purchase of a product in the standards case, this decreases sales for product manufacturers, and the impact on manufacturers attributed to lost revenue is included in the manufacturing impact analysis ("MIA"). Second, DOE accounts for energy and water savings attributable only to products actually used by consumers in the standards case; if a standard decreases the number of products purchased by consumers, this decreases the

potential energy and water savings from an energy conservation standard. DOE provides estimates of shipments and changes in the volume of product purchases in chapter 9 of the direct final rule TSD[14] available in the docket for this rulemaking. However, DOE's current analysis does not explicitly control for heterogeneity in consumer preferences, preferences across subcategories of products or specific features, or consumer price sensitivity variation according to household income.[15]

A. Benefits and Burdens of TSLs Considered for Dishwasher Standards

Table III.1 and Table III.2 summarize the quantitative impacts estimated for each TSL for dishwashers. The national impacts are measured over the lifetime of dishwashers purchased in the 30-year period that begins in the anticipated year of compliance with amended standards (2027–2056). The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle ("FFC") results. The consumer operating savings are inclusive of energy and water. DOE is presenting monetized benefits of greenhouse gas ("GHG") emissions reductions in accordance with the applicable Executive Orders and DOE would reach the same conclusion presented in this notice in the absence of the social cost of greenhouse gases, including the Interim Estimates presented by the Interagency Working Group. The efficiency levels contained in each TSL are described in section V.A of the direct final rule published elsewhere in this issue of the *Federal Register*.

[14] The TSD is available in the docket for this rulemaking at *www.regulations.gov/docket/EERE-2019-BT-STD-0039.*

[15] P.C. Reiss and M.W. White. Household Electricity Demand, Revisited. *Review of Economic Studies*. 2005. 72(3): pp. 853–883. doi: *10.1111/0034-6527.00354*.

Table III.1 Summary of Analytical Results for Dishwaters TSLs: National Impacts

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
Cumulative FFC National Energy Savings					
Quads	0.05	0.08	0.31	0.34	1.28
Cumulative Water Savings					
Trillion gallons	0.09	0.11	0.24	0.26	0.92
Cumulative FFC Emissions Reduction					
CO_2 *(million metric tons)*	2.34	3.18	9.48	10.33	38.89
CH_4 *(thousand tons)*	26.70	35.53	98.97	107.80	406.30
N_2O *(thousand tons)*	0.01	0.01	0.06	0.06	0.23
NO_X *(thousand tons)*	6.09	8.09	22.37	24.37	91.86
SO_2 *(thousand tons)*	0.16	0.28	1.41	1.53	5.73
Hg *(tons)*	0.00	0.00	0.01	0.01	0.03
Present Value of Monetized Benefits and Costs (*3% discount rate, billion 2022$*)					
Consumer Operating Cost Savings	0.43	0.63	3.16	3.36	1.75
Climate Benefits*	0.13	0.18	0.54	0.58	2.20
Health Benefits**	0.22	0.31	0.94	1.02	3.85
Total Benefits†	0.79	1.12	4.64	4.97	7.80
Consumer Incremental Product Costs‡	0.26	0.41	0.26	0.41	21.87
Consumer Net Benefits	0.17	0.22	2.90	2.95	(20.12)
Total Net Benefits	0.53	0.71	4.38	4.56	(14.08)
Present Value of Monetized Benefits and Costs (*7% discount rate, billion 2022$*)					
Consumer Operating Cost Savings	0.18	0.27	1.38	1.46	0.68
Climate Benefits*	0.13	0.18	0.54	0.58	2.20
Health Benefits**	0.09	0.12	0.37	0.40	1.52
Total Benefits†	0.41	0.57	2.29	2.45	4.40
Consumer Incremental Product Costs‡	0.15	0.24	0.15	0.24	12.86
Consumer Net Benefits	0.03	0.03	1.23	1.23	(12.18)
Total Net Benefits	0.25	0.33	2.13	2.21	(8.46)

Note: This table presents the costs and benefits associated with dishwashers shipped during the period 2027−2056. These results include benefits to consumers which accrue after 2056 from the products shipped during the period 2027−2056.

* Climate benefits are calculated using four different estimates of the SC-CO_2, SC-CH_4 and SC-N_2O. Together, these represent the global SC-GHG. For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3-percent discount rate are shown; however, DOE emphasizes the importance and value of considering the benefits calculated using all four sets of SC-GHG estimates. To monetize the benefits of reducing GHG emissions, this analysis uses the interim estimates presented in the *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under Executive Order 13990* published in February 2021 by the IWG.

** Health benefits are calculated using benefit-per-ton values for NO_X and SO_2. DOE is currently only monetizing (for NO_X and SO_2) $PM_{2.5}$ precursor health benefits and (for NO_X) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct $PM_{2.5}$ emissions. The health benefits are presented at real discount rates of 3 and 7 percent. *See* section IV.L of the direct final rule published elsewhere in this issue of the *Federal Register* for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate.

‡ Costs include incremental equipment costs as well as installation costs.

Table III.2 Summary of Analytical Results for Dishwashers TSLs: Manufacturer and Consumer Impacts

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
Manufacturer Impacts					
Industry NPV (million 2022$) (No-new-standards case INPV = 735.8)	680.8 to 729.7	673.7 to 723.3	587.1 to 639.1	579.9 to 632.8	334.4 to 414.6
Industry NPV (% change)	(7.5) to (0.8)	(8.4) to (1.7)	(20.2) to (13.1)	(21.2) to (14.0)	(54.5) to (43.7)
Consumer Average LCC Savings (2022$)					
PC 1: Standard-size dishwashers	$5	$5	$17	$17	($145)
PC 2: Compact-size dishwashers	$32	$4	$32	$4	$4
Shipment-Weighted Average*	$5	$4	$17	$16	($142)
Consumer Simple PBP (years)					
PC 1: Standard-size dishwashers	4.9	4.9	3.9	3.9	15.9
PC 2: Compact-size dishwashers	0.0	5.5	0.0	5.5	5.5
Shipment-Weighted Average*	4.8	4.9	3.8	3.9	15.7
Percent of Consumers that Experience a Net Cost					
PC 1: Standard-size dishwashers	4%	4%	3%	3%	97%
PC 2: Compact-size dishwashers	0%	54%	0%	54%	54%
Shipment-Weighted Average*	4%	5%	3%	4%	96%

Parentheses indicate negative (-) values. The entry "n.a." means not applicable because there is no change in the standard at certain TSLs.
* Weighted by shares of each product class in total projected shipments in 2027.

DOE first considered TSL 5, which represents the max-tech efficiency levels for both product classes. Specifically, for a standard-size dishwasher, this efficiency level includes design options considered at the lower efficiency levels (*i.e.*, electronic controls, soil sensors, multiple spray arms, improved water filters and control strategies, separate drain pump, tub insulation, hydraulic system optimization, water diverter assembly, temperature sensor, 3-

phase variable-speed motor, and flow meter) and condensation drying, including use of a stainless steel tub; flow-through heating implemented as an in-sump integrated heater; and control strategies. The majority of these design options reduce both energy and water use together.[16] For a compact-size dishwasher, this efficiency level includes the design options considered at the lower efficiency levels (*i.e.*, improved control strategies) and additionally includes the use of permanent magnet motor, improved filters, hydraulic system optimization, heater incorporated into base of tub, and reduced sump volume. Similar to standard-size dishwashers, the majority of these design options reduce both energy and water use together. TSL 5 would save an estimated 1.28 quads of energy and 0.92 trillion gallons of water, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit (inclusive of both energy and water) would be -$12.18 billion using a discount rate of 7 percent, and -$20.12 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 would be 38.89 Mt of CO_2, 5.73 thousand tons of SO_2, 91.86 thousand tons of NO_X, 0.03 tons of Hg, 406.30 thousand tons of CH_4, and 0.23 thousand tons of N_2O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 5 would be $2.20 billion. The estimated monetary value of the health benefits from reduced SO_2 and NO_X emissions at TSL 5 would be $1.52 billion using a 7-percent discount rate and $3.85 billion using a 3-percent discount rate.

[16] As discussed previously in section IV.A.2 of the direct final rule published elsewhere in this issue of the *Federal Register*, because the energy used to heat the water consumed by the dishwasher is included as part of the EAEU energy use metric, technologies that decrease water use also inherently decrease energy use.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO_2 and NO_X emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 5 would be -$8.46 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 5 would be -$14.08 billion. The estimated total NPV is provided for additional information; however, DOE primarily relies upon the NPV of consumer benefits when determining whether a proposed standard level is economically justified.

At TSL 5, the average LCC impact would be a loss of $145 for standard-size dishwashers and a $4 savings for compact-size dishwashers. The simple payback period would be 15.9 years for standard-size dishwashers and 5.5 years for compact-size dishwashers. The fraction of consumers experiencing a net LCC cost would be 97 percent for standard-size dishwashers and 54 percent for compact-size dishwashers. Notably, for the standard-size product class, which as discussed represents 98 percent of the market, TSL 5 (which includes EL 4 for this product class) would increase the first cost by $178. This associated increase in first cost at TSL 5 for standard-size dishwashers could impact the number of new shipments by approximately less than 2 percent annually due to consumers shifting to extending the lives of their existing dishwashers beyond their useful life, repairing instead of replacing, or handwashing their dishes. In the national impact analysis, DOE modeled a scenario where part of this 2-percent of consumers forgoing the purchase of a new dishwasher due to price increases would substitute to handwashing. This results in a small increase in energy and water use, which is then subtracted from the energy and water savings projected to result from the proposed amended standards at TSL5.

For the low-income consumer group, the average LCC impact would be a loss of $29 for standard-size dishwashers and a savings of $62 for compact-size dishwashers. The simple payback period would be 6.6 years for standard-size dishwashers and 2.3 years for compact-size dishwashers. The fraction of low-income consumers experiencing a net LCC cost would be 46 percent for standard-size dishwashers and 26 percent for compact-size dishwashers. For the senior-only households consumer group, the average LCC impact would be a loss of $159 for standard-size dishwashers and a loss of $14 for compact-size dishwashers. The simple payback period would be 19.8 years for standard-size dishwashers and 6.8 years for compact-size dishwashers. The fraction of senior-only consumers experiencing a net LCC cost would be 98 percent for standard-size dishwashers and 62 percent for compact-size dishwashers. For the consumer sub-group of well-water households, the average LCC impact would be a loss of $162 for standard-size dishwashers and a loss of $19 for compact-size dishwashers. The simple payback period would be 21.4 years for standard-size dishwashers and 6.9 years for compact-size dishwashers. The fraction of well-water consumers experiencing a net LCC cost would be 98 percent for standard-size dishwashers and 63 percent for compact-size dishwashers.

At TSL 5, the projected change in INPV ranges from a decrease of $334.4 million to a decrease of $414.6 million, which corresponds to decreases of 54.5 percent and 43.7 percent, respectively. Industry conversion costs could reach $681.0 million at this TSL, as manufacturers work to redesign their portfolios of model offerings, transition their standard-size dishwasher platforms entirely to stainless steel tubs, and renovate manufacturing facilities to accommodate changes to the production line and manufacturing processes.

DOE estimates that less than 1 percent of dishwasher shipments currently meet the max-tech levels. Standard-size dishwashers account for approximately 98 percent of annual shipments. Of the 19 standard-size dishwasher original equipment manufacturers ("OEMs"), only one OEM, which accounts for approximately 2 percent of basic models in the CCD, currently offers products that meet the max-tech efficiencies that would be required. All manufacturers interviewed, which together account for approximately 90 percent of the industry shipments, expressed uncertainty as to whether they could reliably meet the standard-size dishwasher max-tech efficiencies and the cleaning performance threshold and noted meeting max-tech would require a platform redesign and significant investment in tooling, equipment, and production line modifications. Many manufacturers would need to increase production capacity of stainless steel tub designs. Some manufacturers noted that a max-tech standard could necessitate new tub architectures.

For compact-size dishwashers, which account for the remaining 2 percent of annual shipments, DOE estimates that 14 percent of shipments currently meet the required max-tech efficiencies. Of the five compact-size dishwasher OEMs, two OEMs currently offer compact-size products that meet max-tech. At TSL 5, compact-size countertop dishwashers with four or more place settings and in-sink dishwashers with less than four place settings are not currently available in the market. Meeting TSL 5 is technologically feasible for those products; however, DOE expects that it would take significant investment relative to the size of the compact-size dishwasher market to redesign products to meet the max-tech efficiencies.

Based on the above considerations, the Secretary tentatively concludes that at TSL 5 for dishwashers, the benefits of energy and water savings, emissions reductions, and the estimated monetary value of the health benefits and climate benefits from emissions reductions would be outweighed by the negative NPV of consumer benefits and the impacts on manufacturers, including the large potential reduction in INPV. At TSL 5, a majority of standard-size dishwasher consumers (97 percent) would experience a net cost and the average LCC loss is $145 for this product class. Additionally, at TSL 5, manufacturers would need to make significant upfront investments to redesign product platforms and update manufacturing facilities. Some manufacturers expressed concern that they would not be able to complete product and production line updates within the 3-year conversion period. Consequently, the Secretary has tentatively concluded that TSL 5 is not economically justified.

DOE next considered TSL 4, which represents the highest efficiency levels providing positive LCC savings. TSL 4 comprises the gap-fill efficiency level between the ENERGY STAR V. 7.0 level and the ENERGY STAR V. 6.0 level (EL 2) for standard-size dishwashers and the max-tech efficiency level for compact-size dishwashers. Specifically, for a standard-size dishwasher, this efficiency level includes design options considered at the lower efficiency levels (*i.e.*, electronic controls, soil sensors, multiple spray arms, improved water filters, separate drain pump, and tub insulation) and additionally includes the use of improved control strategies. For a compact-size dishwasher, this efficiency level includes the design options considered at the lower efficiency levels (*i.e.*, improved control strategies) and additionally includes the use of a permanent magnet motor, improved filters, hydraulic system optimization, heater incorporated into base of tub, and reduced sump volume. The

majority of these design options for both standard-size and compact-size dishwashers reduce both energy and water use together. TSL 4 would save an estimated 0.34 quads of energy and 0.26 trillion gallons of water, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit (inclusive of energy and water) would be $1.23 billion using a discount rate of 7 percent, and $2.95 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 would be 10.33 Mt of CO_2, 1.53 thousand tons of SO_2, 24.37 thousand tons of NO_X, 0.01 tons of Hg, 107.80 thousand tons of CH_4, and 0.06 thousand tons of N_2O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 4 would be $0.58 billion. The estimated monetary value of the health benefits from reduced SO_2 and NO_X emissions at TSL 4 would be $0.40 billion using a 7-percent discount rate and $1.02 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO_2 and NO_X emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 4 would be $2.21 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 4 would be $4.56 billion. The estimated total NPV is provided for additional information; however, DOE primarily relies upon the NPV of consumer benefits when determining whether a proposed standard level is economically justified.

At TSL 4, the average LCC impact would be a savings of $17 for standard-size dishwashers and $4 for compact-size dishwashers. The simple payback period would be 3.9

years for standard-size dishwashers and 5.5 years for compact-size dishwashers. The fraction of consumers experiencing a net LCC cost would be 3 percent for standard-size dishwashers and 54 percent for compact-size dishwashers.

For the low-income consumer group, the average LCC impact would be a savings of $21 for standard-size dishwashers and $62 for compact-size dishwashers. The simple payback period would be 1.6 years for standard-size dishwashers and 2.3 years for compact-size dishwashers. The fraction of low-income consumers experiencing a net LCC cost would be 2 percent for standard-size dishwashers and 26 percent for compact-size dishwashers. For the senior-only households consumer group, the average LCC impact would be a savings of $13 for standard-size dishwashers and a loss of $14 for compact-size dishwashers. The simple payback period would be 4.9 years for standard-size dishwashers and 6.8 years for compact-size dishwashers. The fraction of senior-only consumers experiencing a net LCC cost would be 4 percent for standard-size dishwashers and 62 percent for compact-size dishwashers. For the consumer sub-group of well-water households, the average LCC impact would be a savings of $12 for standard-size dishwashers and a loss of $19 for compact-size dishwashers. The simple payback period would be 5.5 years for standard-size dishwashers and 6.9 years for compact-size dishwashers. The fraction of well-water consumers experiencing a net LCC cost would be 4 percent for standard-size dishwashers and 63 percent for compact-size dishwashers.

At TSL 4, the projected change in INPV ranges from a decrease of $155.9 million to a decrease of $103.1 million, which corresponds to decreases of 21.2 percent and 14.0 percent, respectively. Industry conversion costs could reach $137.2 million at this TSL as

some manufacturers of standard-size dishwashers would redesign products to enable improved controls and better design tolerances and manufacturers of certain compact-size dishwashers would redesign products to meet max-tech.

DOE estimates that approximately 10 percent of dishwasher shipments currently meet the TSL 4 efficiencies, of which approximately 9 percent of standard-size dishwasher shipments and 14 percent of compact-size dishwasher shipments meet the required efficiencies. Compared to max-tech, more manufacturers offer standard-size dishwashers that meet the required efficiencies. Furthermore, since the May 2023 NOPR, more manufacturers now offer standard-size dishwasher models that meet the TSL 4 efficiencies. DOE believes that the recent introduction of more high-efficiency standard-size dishwashers is largely in response to ENERGY STAR V. 7.0, which went into effect in July 2023. Of the 19 OEMs offering standard-size products, 16 OEMs offer products that meet the efficiency level that would be required. For compact-size dishwashers, TSL 4 represents the same efficiency level as for TSL 5. Just as with TSL 5, compact-size countertop dishwashers with four or more place settings and in-sink dishwashers with less than four place settings are not currently available in the market at TSL 4 levels. Meeting TSL 4 is technologically feasible for those products; however, DOE expects that it would take significant investment (nearly $11 million) relative to the size of the compact-size dishwasher market (no-new-standards case INPV of $15.4 million) for them to meet the max-tech efficiencies.

Based upon the above considerations, the Secretary tentatively concludes that at TSL 4 for dishwashers, the benefits of energy and water savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the health benefits and

climate benefits from emissions reductions would be outweighed by negative LCC savings for the senior-only households for the compact-size dishwasher product class and the high percentage of consumers with net costs for the compact-size dishwasher product class. Consequently, the Secretary has tentatively concluded that TSL 4 is not economically justified.

DOE then considered the Recommended TSL (*i.e.*, TSL 3), which comprises the gap-fill efficiency level between the ENERGY STAR V. 7.0 level and the ENERGY STAR V. 6.0 level (EL 2) for standard-size dishwashers and the ENERGY STAR V. 6.0 level (EL 1) for compact-size dishwashers. Specifically, for a standard-size dishwasher, this efficiency level includes design options considered at the lower efficiency levels (*i.e.*, electronic controls, soil sensors, multiple spray arms, improved water filters, separate drain pump, and tub insulation) and additionally includes the use of improved control strategies. For a compact-size dishwasher, this efficiency level represents the use of improved controls. The majority of these design options for both standard-size and compact-size dishwashers reduce both energy and water use together. The Recommended TSL would save an estimated 0.31 quads of energy and 0.24 trillion gallons of water, an amount DOE considers significant. Under the Recommended TSL, the NPV of consumer benefit (inclusive of energy and water) would be $1.23 billion using a discount rate of 7 percent, and $2.90 billion using a discount rate of 3 percent.

The cumulative emissions reductions at the Recommended TSL would be 9.48 Mt of CO_2, 1.41 thousand tons of SO_2, 22.37 thousand tons of NO_X, 0.01 tons of Hg, 98.97 thousand tons of CH_4, and 0.06 thousand tons of N_2O. The estimated monetary value of the

climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at the Recommended TSL would be $0.54 billion. The estimated monetary value of the health benefits from reduced SO_2 and NO_X emissions at the Recommended TSL would be $0.37 billion using a 7-percent discount rate and $0.94 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO_2 and NO_X emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at the Recommended TSL would be $2.13 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at the Recommended TSL would be $4.38 billion. The estimated total NPV is provided for additional information; however, DOE primarily relies upon the NPV of consumer benefits when determining whether a proposed standard level is economically justified.

At the Recommended TSL, the average LCC impact would be a savings of $17 for standard-size dishwashers and $32 for compact-size dishwashers. The simple payback period would be 3.9 years for standard-size dishwashers and 0.0 years for compact-size dishwashers. The fraction of consumers experiencing a net LCC cost would be 3 percent for standard-size dishwashers and 0 percent for compact-size dishwashers.

For the low-income consumer group, the average LCC impact would be a savings of $21 for standard-size dishwashers and $39 for compact-size dishwashers. The simple payback period would be 1.6 years for standard-size dishwashers and 0.0 years for compact-size dishwashers. The fraction of low-income consumers experiencing a net LCC cost would

be 2 percent for standard-size dishwashers and 0 percent for compact-size dishwashers. For the senior-only households consumer group, the average LCC impact would be a savings of $13 for standard-size dishwashers and $26 for compact-size dishwashers. The simple payback period would be 4.9 years for standard-size dishwashers and 0.0 years for compact-size dishwashers. The fraction of senior-only consumers experiencing a net LCC cost would be 4 percent for standard-size dishwashers and 0 percent for compact-size dishwashers. For the consumer sub-group of well water households, the average LCC impact would be a savings of $12 for standard-size dishwashers and $23 for compact-size dishwashers. The simple payback period would be 5.5 years for standard-size dishwashers and 0.0 years for compact-size dishwashers. The fraction of well water consumers experiencing a net LCC cost would be 4 percent for standard-size dishwashers and 0 percent for compact-size dishwashers.

At the Recommended TSL, the projected change in INPV ranges from a decrease of $148.8 million to a decrease of $96.7 million, which corresponds to decreases of 20.2 percent and 13.1 percent, respectively. Industry conversion costs could reach $126.9 million at this TSL as some manufacturers would redesign standard-size products to enable improved controls and better design tolerances.

DOE estimates that approximately 11 percent of dishwasher shipments currently meet the Recommended TSL efficiencies, of which approximately 9 percent of standard-size dishwasher shipments and 87 percent of compact-size dishwasher shipments meet the required efficiencies. At this level, the decrease in conversion costs compared to TSL 4 would be entirely due to the lower efficiency level required for compact-size dishwashers, as

the efficiency level that would be required for standard-size dishwashers is the same as for TSL 4 (EL 2). All the compact-size dishwasher OEMs currently offer products that meet the Recommended TSL. At this level, DOE expects manufacturers of compact-size dishwashers would implement improved controls, which would likely require minimal upfront investment.

After considering the analysis and weighing the benefits and burdens, the Secretary has tentatively concluded that a standard set at the Recommended TSL for dishwashers would be economically justified. At this TSL, the shipments weighted-average LCC savings for both product classes would be $17. The shipments weighted-average share of consumers with a net LCC cost for both product classes would be 3 percent. For all consumer sub-groups, the LCC savings would be positive and the net share of consumers with a net LCC cost would be below 5 percent for both product classes. The FFC national energy and water savings would be significant and the NPV of consumer benefits would be $2.90 billion and $1.23 billion using both a 3-percent and 7-percent discount rate respectively. Notably, the benefits to consumers would vastly outweigh the cost to manufacturers. At the Recommended TSL, the NPV of consumer benefits, even measured at the more conservative discount rate of 7 percent, is over eight times higher than the maximum estimated manufacturers' loss in INPV. The standard levels at the Recommended TSL would be economically justified even without weighing the estimated monetary value of emissions reductions. When those emissions reductions are included—representing $0.54 billion in climate benefits (associated with the average SC-GHG at a 3-percent discount rate), and $0.94 billion (using a 3-percent discount rate) or $0.37 billion (using a 7-percent discount rate) in health benefits—the rationale becomes stronger still.

The proposed standards would be applicable to the regulated cycle type (*i.e.*, normal cycle); manufacturers could continue to provide currently available additional, non-regulated cycle types (*e.g.*, quick cycles, pots and pans, heavy, delicates, *etc.*). Specifically, DOE expects quick cycles, many of which clean a load within 1 hour or less, and existing drying options would still be available on dishwasher models that currently offer such cycle types. DOE has no information suggesting that any aspect of this NOPR would limit the other cycle options, especially quick cycles. Additionally, in the January 2022 Preliminary TSD, DOE provided data from its investigatory testing sample that determined cycle time is not substantively correlated with energy and water consumption of the normal cycle.[17] Based on these results, DOE has tentatively determined that the NOPR would not have any substantive impact to normal cycle durations.

The test procedure in appendix C2, which includes provisions for a minimum cleaning index threshold of 70 to validate the selected test cycle, will go into effect at such time as compliance would be required with any amended energy conservation standards. At the Recommended TSL, both standard-size and compact-size dishwasher models achieving the efficiencies, as measured by appendix C2, including the cleaning performance threshold, are readily available on the market.

As stated, DOE conducts the walk-down analysis to determine the TSL that represents the maximum improvement in energy efficiency that is technologically feasible and economically justified as required under EPCA. The walk-down is not a comparative

[17] *See* section 5.5.1 of the January 2022 Preliminary TSD. Available at *www.energy.gov/sites/default/files/2022-01/dw-tsd.pdf*.

analysis, as a comparative analysis would result in the maximization of net benefits instead of energy savings that are technologically feasible and economically justified, which would be contrary to the statute. 86 FR 70892, 70908. Although DOE has not conducted a comparative analysis to select the proposed amended energy conservation standards, DOE considers amended standard levels for dishwashers by grouping the efficiency levels for each product class into TSLs and evaluates all analyzed efficiency levels in its LCC analysis and all efficiency levels with positive LCC savings for the NIA and MIA. For both standard-size and compact-size dishwashers, the proposed standard level represents the maximum energy savings that would not result in a large percentage of consumers experiencing a net LCC cost. The efficiency levels at the proposed standard level would result in positive LCC savings for both product classes, significantly reduce the number of consumers experiencing a net cost, and reduce the decrease in INPV and conversion costs to the point where DOE has tentatively concluded they are economically justified, as discussed for the Recommended TSL in the preceding paragraphs.

At the Recommended standard level for the standard-size product class, the average LCC savings would be $17, the percentage of consumers experiencing a net cost would be 3 percent (see Table V.3 of the direct final rule published elsewhere in this issue of the *Federal Register*), and the FFC energy savings would be 0.3 quads. At the Recommended standard level for compact-size product class, the average LCC savings would be $32 and there are no consumers that would experience a net cost. DOE tentatively concludes that there is economic justification to propose the standards for standard-size and compact-size dishwashers independent of each other.

Therefore, based on the previous considerations, DOE proposes the energy conservation standards for dishwashers at the Recommended TSL.

While DOE considered each potential TSL under the criteria laid out in 42 U.S.C. 6295(o) as discussed in the preceding paragraphs, DOE notes that the Recommended TSL for dishwashers proposed in this NOPR is part of a multi-product Joint Agreement covering six rulemakings (refrigerators, refrigerator-freezers, and freezers; miscellaneous refrigeration products; consumer conventional cooking products; residential clothes washers; consumer clothes dryers; and dishwashers). The signatories indicate that the Joint Agreement for the six rulemakings should be considered as a joint statement of recommended standards, to be adopted in its entirety. As discussed in section V.B.2.e of the direct final rule published elsewhere in this issue of the *Federal Register,* many dishwasher OEMs also manufacture refrigerators, refrigerator-freezers, and freezers, miscellaneous refrigeration products, consumer conventional cooking products, residential clothes washers, and consumer clothes dryers. Rather than requiring compliance with five amended standards in a single year (2027),[18] the negotiated multi-product Joint Agreement staggers the compliance dates for the five rulemakings over a 4-year period (2027–2030). DOE understands that the compliance dates recommended in the Joint Agreement would help reduce cumulative regulatory burden. These compliance dates help relieve concern on the part of some manufacturers about their ability to allocate sufficient resources to comply with multiple concurrent amended standards, about the need to align compliance dates for products that are typically designed

[18] The refrigerators, refrigerator-freezers, and freezers (88 FR 12452); consumer conventional cooking products (88 FR 6818); residential clothes washers (88 FR 13520); consumer clothes dryers (87 FR 51734); and dishwashers (88 FR 32514) utilized a 2027 compliance year for analysis at the proposed rule stage. Miscellaneous refrigeration products (88 FR 12452) utilized a 2029 compliance year for the NOPR analysis.

or sold as matched pairs, and about the ability of their suppliers to ramp up production of key components. The Joint Agreement also provides additional years of regulatory certainty for manufacturers and their suppliers while still achieving the maximum improvement in energy efficiency that is technologically feasible and economically justified.

The proposed energy conservation standards for dishwashers, which are expressed in EAEU and per-cycle water consumption, shall not exceed the values shown in Table III.3.

Table III.3 Proposed Energy Conservation Standards for Dishwashers

Product Class	**Estimated Annual Energy Use** *(kWh/year)**	**Per-Cycle Water Consumption** *(gal/cycle)*
PC 1: Standard-size Dishwashers (≥ 8 place settings plus 6 serving pieces)	223	3.3
PC 2: Compact-size Dishwashers (< 8 place settings plus 6 serving pieces)	174	3.1

* Based on appendix C2.

B. Annualized Benefits and Costs of the Proposed Standards

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The annualized net benefit is (1) the annualized national economic value (expressed in 2022$) of the benefits from operating products that meet the proposed standards (consisting primarily of operating cost savings from using less energy and water, minus increases in product purchase costs, and (2) the annualized monetary value of the climate and health benefits.

Table III.4 shows the annualized values for dishwashers under the recommended TSL, expressed in 2022$. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and NO_X and SO_2 reductions, and the 3-percent discount rate case for GHG social costs, the estimated cost of the standards proposed in this rule would be $14.0 million per year in increased equipment costs, while the estimated annual benefits would be $127.2 million in reduced equipment operating costs, $29.0 million in GHG reductions, and $34.3 million in reduced NO_X and SO_2 . In this case, the net benefit would amount to $176.4 million per year.

Using a 3-percent discount rate for all benefits and costs, the estimated cost of the proposed standards would be $14.0 million per year in increased equipment costs, while the estimated annual benefits would be $171.2 million in reduced operating costs, $29.0 million in climate benefits, and $50.8 million in health benefits. In this case, the net benefit would amount to $237.0 million per year.

Table III.4 Annualized Benefits and Costs of Proposed Standards for Dishwashers

	Million 2022$/year		
	Primary Estimate	**Low-Net-Benefits Estimate**	**High-Net-Benefits Estimate**
3% discount rate			
Consumer Operating Cost Savings	171.2	164.1	175.8
Climate Benefits*	29.0	28.3	29.3
Health Benefits**	50.8	49.6	51.3
Total Benefits†	251.0	242.0	256.4
Consumer Incremental Product Costs‡	14.0	17.0	13.2
Net Monetized Benefits	237.0	224.9	243.1
Change in Producer Cashflow (INPV)‡‡	(14) – (9)	(14) – (9)	(14) – (9)
7% discount rate			
Consumer Operating Cost Savings	127.2	122.5	130.5
Climate Benefits* (3% discount rate)	29.0	28.3	29.3
Health Benefits**	34.3	33.5	34.5
Total Benefits†	190.5	184.3	194.3
Consumer Incremental Product Costs‡	14.0	16.7	13.3
Net Monetized Benefits	176.4	167.6	181.0
Change in Producer Cashflow (INPV)‡‡	(14) – (9)	(14) – (9)	(14) – (9)

Note: This table presents the costs and benefits associated with dishwashers shipped in 2027−2056. These results include consumer, climate, and health benefits that accrue after 2056 from the products shipped in 2027−2056. The Primary, Low Net Benefits, and High Net Benefits Estimates utilize projections of energy prices from the *AEO2023* Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental equipment costs reflect a medium decline rate in the Primary Estimate, a low decline rate in the Low Net Benefits Estimate, and a high decline rate in the High Net Benefits Estimate. The methods used to derive projected price trends are explained in sections IV.F and IV.H of the direct final rule published elsewhere in this issue of the *Federal Register*. Note that the Benefits and Costs may not sum to the Net Benefits due to rounding.

* Climate benefits are calculated using four different estimates of the global SC-GHG (*see* section IV.L of the direct final rule published elsewhere in this issue of the *Federal Register*). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3-percent discount rate are shown, but DOE does not have a single central SC-GHG point estimate, and it emphasizes the importance and value of considering the benefits calculated using all four sets of SC-GHG estimates. To monetize the benefits of reducing GHG emissions, this analysis uses the interim estimates presented in the *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under Executive Order 13990* published in February 2021 by the IWG.

** Health benefits are calculated using benefit-per-ton values for NO_X and SO_2. DOE is currently only monetizing (for SO_2 and NO_X) $PM_{2.5}$ precursor health benefits and (for NO_X) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct

$PM_{2.5}$ emissions. *See* section IV.L of the direct final rule published elsewhere in this issue of the *Federal Register* for more details.

† Total benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but DOE does not have a single central SC-GHG point estimate.

‡ Costs include incremental equipment costs as well as installation costs.

‡‡ Operating Cost Savings are calculated based on the life-cycle cost analysis and national impact analysis as discussed in detail below. *See* sections IV.F and IV.H of the direct final rule published elsewhere in this issue of the *Federal Register*. DOE's national impacts analysis includes all impacts (both costs and benefits) along the distribution chain beginning with the increased costs to the manufacturer to manufacture the product and ending with the increase in price experienced by the consumer. DOE also separately conducts a detailed analysis on the impacts on manufacturers (*i.e.*, MIA). *See* section IV.J of the direct final rule published elsewhere in this issue of the *Federal Register*. In the detailed MIA, DOE models manufacturers' pricing decisions based on assumptions regarding investments, conversion costs, cashflow, and margins. The MIA produces a range of impacts, which is the rule's expected impact on the INPV. The change in INPV is the present value of all changes in industry cash flow, including changes in production costs, capital expenditures, and manufacturer profit margins. The annualized change in INPV is calculated using the industry weighted-average cost of capital value of 8.5 percent that is estimated in the MIA (*see* chapter 12 of the direct final rule TSD for a complete description of the industry weighted-average cost of capital). For dishwashers, the change in INPV ranges from -$14 million to -$9 million. DOE accounts for that range of likely impacts in analyzing whether a trial standard level is economically justified. *See* section V.C of the direct final rule published elsewhere in this issue of the *Federal Register*. DOE is presenting the range of impacts to the INPV under two manufacturer markup scenarios: the Preservation of Gross Margin scenario, which is the manufacturer markup scenario used in the calculation of Consumer Operating Cost Savings in this table; and the Tiered scenario, which models a reduction of manufacturer markups due to reduced product differentiation as a result of amended standards. DOE includes the range of estimated annualized change in INPV in the above table, drawing on the MIA explained further in section IV.J of the direct final rule published elsewhere in this issue of the *Federal Register* to provide additional context for assessing the estimated impacts of this proposed rule to society, including potential changes in production and consumption, which is consistent with OMB's Circular A-4 and E.O. 12866. If DOE were to include the INPV into annualized the net benefit calculation for this proposed rule, the annualized net benefits would range from $223 million to $228 million at 3-percent discount rate and would range from $163 million to $168 million at 7-percent discount rate. Parentheses () indicate negative values.

IV. Public Participation

A. Submission of Comments

DOE will accept comments, data, and information regarding this proposed rule until the date provided in the **DATES** section at the beginning of this proposed rule. 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. Comments relating to the direct final rule published elsewhere in this issue of the *Federal Register*, should be submitted as instructed therein.

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. Otherwise, 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, hand delivery/courier, or postal mail. Comments and documents submitted via email, hand delivery/courier, or postal mail 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. If you submit via postal mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles ("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 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).

B. Public Meeting

As stated previously, if DOE withdraws the direct final rule published elsewhere in this issue of the *Federal Register* pursuant to 42 U.S.C. 6295(p)(4)(C), DOE will hold a public meeting to allow for additional comment on this proposed rule. DOE will publish notice of any meeting in the *Federal Register*.

V. Severability

DOE proposes adding a new paragraph (3) into section 10 CFR 430.32(f) to provide that each energy and water conservation for each dishwasher category is separate and severable from one another, and that if any energy or water conservation standard is stayed or determined to be invalid by a court of competent jurisdiction, the remaining standards shall continue in effect. This severability clause is intended to clearly express the Department's intent that should an energy or water conservation standard for any product class be stayed or invalidated, the other conservation standards shall continue in effect. In the event a court were to stay or invalidate one or more energy or water conservation standards for any product class as finalized, the Department would want the remaining energy conservation standards as finalized to remain in full force and legal effect.

VI. Procedural Issues and Regulatory Review

The regulatory reviews conducted for this proposed rule are identical to those conducted for the direct final rule published elsewhere in this issue of the *Federal Register*. Please see the direct final rule for further details.

A. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis ("IRFA") and a final regulatory flexibility analysis ("FRFA") for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial

number of small entities. As required by E.O. 13272, "Proper Consideration of Small Entities in Agency Rulemaking," 67 FR 53461 (Aug. 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's website (*www.energy.gov/gc/office-general-counsel*). DOE has not prepared an IRFA for the products that are the subject of this proposed rulemaking.

DOE reviewed this proposed rule under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003. DOE certifies that the proposed rule, if adopted, would not have significant economic impact on a substantial number of small entities. The factual basis of this certification is set forth in the following paragraphs.

For manufacturers of dishwashers, the SBA has set a size threshold, which defines those entities classified as "small businesses" for the purposes of the statute. DOE used the SBA's small business size standards to determine whether any small entities would be subject to the requirements of the rule. (*See* 13 CFR part 121.) The size standards are listed by North American Industry Classification System ("NAICS") code and industry description and are available at *www.sba.gov/document/support--table-size-standards*. Manufacturing of dishwashers is classified under NAICS 335220, "Major Household Appliance

Manufacturing." The SBA sets a threshold of 1,500 employees or fewer for an entity to be considered as a small business for this category.[19]

DOE conducted a focused inquiry into small business manufacturers of the products covered by this rulemaking. DOE reviewed its Compliance Certification Database,[20] California Energy Commission's Modernized Appliance Efficiency Database System,[21] and ENERGY STAR's Product Finder dataset[22] to create a list of companies that import or otherwise manufacture the products covered by this proposal. DOE then consulted publicly available data to identify OEMs selling dishwashers in the United States. DOE relied on public data and subscription-based market research tools (*e.g.,* Dun & Bradstreet[23]) to determine company location, headcount, and annual revenue. DOE screened out companies that do not offer products covered by this rulemaking, do not meet SBA's definition of a "small business," or are foreign-owned and operated.

DOE identified 21 dishwasher OEMs. Of the 21 OEMs identified, DOE determined no companies qualify as a small domestic business.

[19] U.S. Small Business Administration. "Table of Small Business Size Standards." (Effective March 17, 2023). Available at *www.sba.gov/document/support-table-size-standards* (last accessed Dec. 22, 2023).
[20] U.S. Department of Energy Compliance Certification Database, available at *www.regulations.doe.gov/certification-data/products.html#q=Product_Group_s%3A** (last accessed Aug. 23, 2023).
[21] California Energy Commission Modernized Appliance Efficiency Database System, available at *cacertappliances.energy.ca.gov/Pages/Search/AdvancedSearch.aspx* (last accessed Aug. 23, 2023).
[22] ENERGY STAR Product Finder data set, available at *www.energystar.gov/productfinder* (last accessed Aug. 23, 2023).
[23] The Dun & Bradstreet Hoovers subscription login is accessible at *app.dnbhoovers.com* (last accessed Dec. 22, 2023).

Based on the initial finding that there are no dishwasher manufacturers who would qualify as small businesses, DOE certifies that the proposed rule, if finalized, would not have a significant economic impact on a substantial number of small entities and has not prepared an IRFA for this rulemaking. DOE will transmit the certification and supporting statement of factual basis to the Chief Counsel for Advocacy of the Small Business Administration for review under 5 U.S.C. 605(b).

The following standard appears in the proposed amendatory text of this document and was previously approved for the locations in which it appears: AHAM DW–1–2020.

VII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notice of proposed rulemaking.

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements, and Small businesses.

Signing Authority

This document of the Department of Energy was signed on April 12, 2024, by Jeffrey Marootian, Principal Deputy 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 April 12, 2024.

X Jeffrey M. Marootian Digitally signed by Jeffrey M. Marootian Date: 2024.04.12 09:45:34 -04'00'

Jeffrey Marootian
Principal Deputy Assistant Secretary for
Energy Efficiency and Renewable Energy
U.S. Department of Energy

For the reasons set forth in the preamble, DOE proposes to amend part 430 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, as set forth below:

PART 430 - ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

1. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291-6309; 28 U.S.C. 2461 note.

2. Amend § 430.32 by revising paragraph (f) to read as follows:

:

§ 430.32 Energy and water conservation standards and their compliance dates.

* * * * *

(f) *Dishwashers.*

(1) All dishwashers manufactured on or after May 30, 2013, shall meet the following standard –

(i) Standard size dishwashers shall not exceed 307 kwh/year and 5.0 gallons per cycle. Standard size dishwashers have a capacity equal to or greater than eight place settings plus six serving pieces as specified in AHAM DW-1-2020 (incorporated by reference, see §4300.3) using the test load specified in section 2.3 of appendix C1 or section 2.4 of appendix C2 to subpart B of this part, as applicable.

(ii) Compact size dishwashers shall not exceed 222 kwh/year and 3.5 gallons per cycle. Compact size dishwashers have a capacity less than eight place settings plus six serving pieces as specified in AHAM DW-1-2020 (incorporated by reference, see §430.3) using the test load specified in section 2.3 of appendix C1 or section 2.4 of appendix C2 to subpart B of this part, as applicable.

(2) All dishwashers manufactured on or after **[INSERT DATE 3 YEARS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER]**, shall not exceed the following standard –

Product Class	**Estimated Annual Energy Use** *(kWh/year)*	**Maximum Per-Cycle Water Consumption** *(gal/cycle)*
Standard-size* (≥8 place settings plus 6 serving pieces)**	223	3.3
Compact-size (<8 place settings plus 6 serving pieces)**	174	3.1

* The energy conservation standards in this table do not apply to standard-size dishwashers with a cycle time for the normal cycle of 60 minutes or less.
** Place settings are as specified in AHAM DW–1–2020 (incorporated by reference, see § 430.3) and the test load is as specified in section 2.4 of appendix C2 to subpart B of this part.

(3) The provisions of paragraph (f)(2) of this section are separate and severable from one another. Should a court of competent jurisdiction hold any provision(s) of this section to be stayed or invalid, such action shall not affect any other provision of this section.

* * * * *