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DEPARTMENT OF HOMELAND SECURITY

8 CFR Parts 214 and 274a

[CIS No. 2719–22]

RIN 1615–AC79

DEPARTMENT OF LABOR

Employment and Training Administration

20 CFR Part 655

[DOL Docket No. ETA–2022–0004]

RIN 1205–AC10

Exercise of Time-Limited Authority To Increase the Numerical Limitation for Second Half of FY 2022 for the H–2B Temporary Nonagricultural Worker Program and Portability Flexibility for H–2B Workers Seeking To Change Employers; Correction

AGENCY: U.S. Citizenship and Immigration Services (USCIS), Department of Homeland Security (DHS), and Employment and Training Administration and Wage and Hour Division, U.S. Department of Labor (DOL).

ACTION: Temporary rule; correction.

SUMMARY: On May 18, 2022, the Department of Homeland Security and Department of Labor jointly published a temporary rule titled ''Exercise of Time-Limited Authority to Increase the Numerical Limitation for Second Half of FY 2022 for the H–2B Temporary Nonagricultural Worker Program and Portability Flexibility for H–2B Workers Seeking to Change Employers.'' This is the second correction. The first correction was published in the **Federal Register** on May 23, 2022. The **ADDRESSES** section contained an incorrect regulatory information numbers (RIN). This document corrects the RIN.

DATES: Effective on May 18, 2022.

FOR FURTHER INFORMATION CONTACT: Pamela Peters, Acting Director, Office of Regulatory and Programmatic Policy, Office of the Assistant Secretary for Policy, U.S. Department of Labor, 200 Constitution Avenue NW, Washington, DC 20210; telephone 202–693–5959 (this is not a toll-free number).

SUPPLEMENTARY INFORMATION: On May 18, 2022, the Department of Homeland Security and Department of Labor jointly published a temporary rule. This is the second correction. The first correction was published in the **Federal Register** on May 23, 2022 (87 FR 31095).

Correction

In the temporary rule, FR Doc. 2022–10631, beginning on page 30334 in the issue of Wednesday, May 18, 2022, make the following correction in the **ADDRESSES** section. On page 30334 in the second column, lines 5 and 12 the RIN is corrected to read ''1205–AC10.''

Christina E. McDonald,

Federal Register Liaison, U.S. Department of Homeland Security.

Laura Dawkins,

Federal Register Liaison, U.S. Department of Labor.

[FR Doc. 2022–11989 Filed 6–3–22; 8:45 am]

BILLING CODE 4510–FP–P

DEPARTMENT OF ENERGY

10 CFR Part 431

[EERE–2019–BT–STD–0034]

RIN 1904–AE56

Energy Conservation Program: Energy Conservation Standards for Commercial Prerinse Spray Valves

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

ACTION: Final determination.

SUMMARY: The Energy Policy and Conservation Act (''EPCA''), as amended, prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including commercial prerinse spray valves (''CPSVs'') equipment. EPCA also requires the U.S. Department of Energy (''DOE'' or ''the Department'') to periodically determine whether more stringent, amended standards would be technologically feasible and economically justified, and would result in significant energy savings. In this final determination, DOE has determined that amended energy conservation standards for commercial prerinse spray valves are not needed.

DATES: The effective date of this rule is July 6, 2022.

ADDRESSES: The docket for this rulemaking, which includes **Federal Register** notices, public meeting attendee lists and transcripts, 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 web page can be found at *www.regulations.gov/docket/EERE-2019-BT-STD-0034.* The docket web page contains instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the docket, contact the Appliance and Equipment Standards Program staff at (202) 287–1445 or by email: *ApplianceStandardsQuestions@ee.doe.gov.*

FOR FURTHER INFORMATION CONTACT: Mr. Bryan Berringer, 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) 586–0371. Email: *ApplianceStandardsQuestions@ee.doe.gov.*

Ms. Kathryn McIntosh, U.S. Department of Energy, Office of the General Counsel, GC–33, 1000 Independence Avenue SW, Washington, DC 20585–0121. Telephone: (202) 586–2002. Email: *Kathryn.McIntosh@hq.doe.gov.*

SUPPLEMENTARY INFORMATION:

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I. Synopsis of the Final Determination

Title III, Part B [1] of EPCA,[2] established the Energy Conservation Program for Consumer Products Other Than Automobiles. (42 U.S.C. 6291–6309) These products include CPSVs, the subject of this final determination.[3]

DOE is issuing this final determination pursuant to the EPCA requirement that, not later than 6 years after issuance of any final rule establishing or amending a standard, DOE must publish either a notification of determination that standards for the product do not need to be amended, or a notice of proposed rulemaking (''NOPR'') including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m))

For this final determination, DOE analyzed CPSVs subject to standards specified in title 10 of the Code of Federal Regulations (''CFR'') part 431, section 266.

DOE first analyzed the technological feasibility of more energy (water) efficient CPSVs and CPSVs with lower energy use. For those CPSVs for which DOE determined higher standards to be technologically feasible, DOE estimated energy savings that would result from potential energy conservation standards by conducting a national impacts analysis (''NIA''). DOE evaluated whether higher standards would be cost effective by conducting life-cycle cost (''LCC'') and payback period (''PBP'') analyses and estimated the net present value (''NPV'') of the total costs and benefits experienced by consumers.

Based on the results of the analyses, summarized in section V of this document, DOE has determined that current standards for CPSVs do not need to be amended because any potential benefits are outweighed by the risk of increased energy and water usage due to the increased risk of product type switching, costs, and additional burden to manufacturers.

II. Introduction

The following section briefly discusses the statutory authority underlying this final determination, as well as some of the historical background relevant to the establishment of standards for CPSVs.

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 CPSVs, the subject of this document. (42 U.S.C. 6291(33)). EPCA prescribed energy conservation standards (in terms of flow rate) for these products (42 U.S.C. 6295(dd)) and directs DOE to conduct future rulemakings to determine whether to amend these standards. (42 U.S.C. 6295(m)).

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 (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).

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(o)(3)(A) and 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

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

[2] 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.

[3] Because Congress included commercial prerinse spray valves in Part B of Title III of EPCA, the consumer product provisions of Part B (not the industrial equipment provisions of Part C) apply to CPSVs. However, because CPSVs are commonly considered to be commercial equipment, as a matter of administrative convenience and to minimize confusion among interested parties, DOE placed the requirements for CPSVs into subpart O of 10 CFR part 431. Part 431 contains DOE regulations for commercial and industrial equipment. DOE refers to CPSVs as either ''products'' or ''equipment.''

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 commercial prerinse spray valves appear at 10 CFR 431.264.

Federal energy conservation requirements generally supersede State laws or regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297(a)–(c)) California, however, has a statutory exemption to preemption for CPSV standards adopted by the California Energy Commission before January 1, 2005. (42 U.S.C. 6297(c)(7)) As a result, while Federal CPSV standards apply in California, California's CPSV standards also apply for standards adopted by January 1, 2005, as they are exempt from preemption. In 2018, California revised its regulations so that the maximum flow rate requirements align with those implemented by DOE for CPSVs. 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))

Pursuant to the amendments contained in the Energy Independence and Security Act of 2007 (''EISA 2007''), Public Law 110–140, any final rule for new or amended energy conservation standards promulgated after July 1, 2010, is required to address standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)) Specifically, when DOE adopts a standard for a covered product after that date, it must, if justified by the criteria for adoption of standards under EPCA (42 U.S.C. 6295(o)), incorporate standby mode and off mode energy use into a single standard, or, if that is not feasible, adopt a separate standard for such energy use for that product. (42 U.S.C. 6295(gg)(3)(A)–(B)) Because CPSVs only consume energy and water in active mode, DOE's test procedures for CPSVs do not address standby mode and off mode energy use as they are not applicable for this product.

DOE must periodically review its already established energy conservation standards for a covered product no later than 6 years from the issuance of a final rule establishing or amending a standard for a covered product. (42 U.S.C. 6295(m)) This 6-year look-back provision requires that DOE publish either a determination that standards do not need to be amended or a NOPR, including new proposed standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(1)(A)–(B)) EPCA further provides that, not later than 3 years after the issuance of a final determination not to amend standards, DOE must publish either a notification of determination that standards for the product do not need to be amended, or a NOPR including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(3)(B)). DOE must make the analysis on which a determination is based publicly available and provide an opportunity for written comment. (42 U.S.C. 6295(m)(2)).

A determination that amended standards are not needed must be based on consideration of whether amended standards will result in significant conservation of energy, are technologically feasible, and are cost effective. (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)) Additionally, any new or amended energy conservation standard prescribed by the Secretary of Energy (''Secretary'') for any type (or class) of covered product shall 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)). Among the factors DOE considers in evaluating whether a proposed standard level is economically justified is whether the proposed standard at that level is cost effective, as defined under 42 U.S.C. 6295(o)(2)(B)(i)(II). Under 42 U.S.C. 6295(o)(2)(B)(i)(II), an evaluation of cost effectiveness requires DOE to consider 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. (42 U.S.C. 6295(n)(2) and 42 U.S.C. 6295(o)(2)(B)(i)(II)).

DOE is publishing this final determination in satisfaction of the 6-year review requirement in EPCA.

B. Background

1. Current Standards

In a final rule published on January 27, 2016, (''January 2016 Final Rule''), DOE prescribed the current energy conservation standards for CPSVs manufactured on and after January 28, 2019. 81 FR 4748. These standards prescribe a maximum flow rate in gallons per minute (''gpm'') for each product class and are set forth in DOE's regulations at 10 CFR 431.266 and repeated in Table II.1.

TABLE II.1—FEDERAL ENERGY CONSERVATION STANDARDS FOR COMMERCIAL PRERINSE SPRAY VALVES

Product class (spray force in ounce-force, ozf)	Flow rate (gpm)
Product Class 1 (≤5.0 ozf)	1.00
Product Class 2 (>5.0 ozf and ≤8.0 ozf)	1.20
Product Class 3 (>8.0 ozf)	1.28

2. History of Standards Rulemakings for Commercial Prerinse Spray Valves

In support of the present review of the CPSV energy conservation standards, on June 10, 2020, DOE published a request for information (''RFI'') that identified various issues on which DOE sought comment to inform its determination of whether the standards need to be amended. 85 FR 35383 (''June 2020 RFI''). Then, on August 18, 2021, DOE published a notice of proposed determination (''August 2021 NOPD'') in which DOE initially determined that amended energy conservation standards for CPSVs were not needed. 86 FR 46330. On September 1, 2021, DOE held a public webinar in which it presented the methods and analysis in the August 2021 NOPD and solicited public comment.[4]

DOE received written comments in response to the August 2021 NOPD from the interested parties listed in Table II.2.

TABLE II.2—AUGUST 2021 NOPD WRITTEN COMMENTS

Organization(s)	Reference in this final determination	Organization type
Appliance Standards Awareness Project, Natural Resources Defense Council.	Efficiency Advocates	Efficiency Organization.

[4] Webinar transcript available at *www.regulations.gov/document/EERE-2019-BT-STD-0034-0015.*

TABLE II.2—AUGUST 2021 NOPD WRITTEN COMMENTS—Continued

Organization(s)	Reference in this final determination	Organization type
Northwest Energy Efficiency Alliance	NEEA	Efficiency Organization.
Pacific Gas and Electric Company, San Diego Gas and Electric, and Southern California Edison.	CA IOUs	Utilities.
Plumbing Manufacturers Inc	PMI	Trade Association.

A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record.[5]

III. General Discussion

DOE developed this final determination after considering comments, data, and information from interested parties that represent a variety of interests. This document addresses issues raised by these commenters.

A. Product Classes and Scope of Coverage

When evaluating and establishing energy conservation standards, DOE divides covered products into product classes by the type of energy used or by capacity or other performance-related features that justify differing standards. In making a determination whether a performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE determines are appropriate. (42 U.S.C. 6295(q)) The CPSV product classes for this final determination are discussed in further detail in section IV.B.3 of this document. This determination covers CPSVs, which are defined as handheld devices that have a release-to-close valve and are suitable for removing food residue from food service items before cleaning them in commercial dishwashing or ware washing equipment. 10 CFR 431.262. DOE may determine that a device is suitable for removing food residue from food service items before cleaning them in commercial dishwashing or ware washing equipment based on any or all of the following:

(1) Equipment design and representations (*e.g.,* whether equipment is represented as being capable of rinsing dishes as compared to equipment that is represented exclusively for washing walls and floors or animal washing),

(2) Channels of marketing and sales (*e.g.,* whether equipment is marketed or sold through outlets that market or sell to food service entities), and/or

(3) Actual sales (including whether the end-users are restaurants or commercial or institutional kitchens, even if those sales are indirectly through an entity such as a distributor).[6]

Id.

The scope of coverage is discussed in further detail in section IV.A.1. of this document.

B. Test Procedure

EPCA sets forth generally applicable criteria and procedures for DOE's adoption and amendment of test procedures. (42 U.S.C. 6293) Manufacturers of covered products must use these test procedures to certify to DOE that their product complies with energy conservation standards and to quantify the efficiency of their product. (42 U.S.C. 6295(s) and 42 U.S.C. 6293(c)). DOE's current energy conservation standards for CPSVs are expressed in terms of gpm. 10 CFR 431.266.

On March 11, 2022, DOE published a test procedure final rule for CPSVs that amended the definition of ''commercial prerinse spray valve'' to codify existing guidance for determining whether a device is suitable for removing food residue from food service items that did not change the scope of products covered, updated references to the reaffirmed ASTM International (''ASTM'') Standard (ASTM F2324–13 (2019)), and explicitly permitted voluntary representations at water pressures other than 60 pounds per square inch (''psi'') in manufacturer literature. 87 FR 13901 (''March 2022 TP Final Rule''). DOE determined that the amendments to the test procedure adopted in the March 2022 TP Final Rule will not alter the measured efficiency of CPSVs or require retesting or recertification solely as a result of DOE's adoption of the amendments to the test procedures. 87 FR 13901, 13903.

C. Technological Feasibility

1. General

In evaluating potential amendments to energy conservation standards, DOE conducts a screening analysis based on information gathered on all current technology options and prototype designs that could improve the efficiency of the products or equipment that are the subject of the determination. As the first step in such an analysis, DOE develops a list of technology options for consideration in consultation with manufacturers, design engineers, and other interested parties. DOE then determines which of those means for improving efficiency are technologically feasible. DOE considers technologies incorporated in commercially available products or in working prototypes to be technologically feasible. Sections 6(b)(3)(i) and 7(b)(1) of appendix A to 10 CFR part 430, subpart C (''appendix A'').

After DOE has determined that particular technology options are technologically feasible, it further evaluates each technology option in light of the following additional screening criteria: (1) Practicability to manufacture, install, and service; (2) adverse impacts on product utility or availability; (3) adverse impacts on health or safety; and (4) unique pathway proprietary technologies. Sections 6(b)(3)(ii)–(v) and 7(b)(2)–(5) of appendix A. Section IV.B of this document discusses the results of the screening analysis for CPSVs, particularly the designs DOE considered, those it screened out, and those that are the basis for the standards considered in this determination. For further details on the screening analysis for this final determination, see chapter 4 of the final determination technical support document (''TSD'').

2. Maximum Technologically Feasible Levels

As when DOE proposes to adopt an amended standard for a type or class of covered product, it must determine the maximum improvement in energy efficiency or maximum reduction in

[5] The parenthetical reference provides a reference for information located in the docket. (Docket No. EERE-2019-BT-STD-0034, which is maintained at *www.regulations.gov/docket/EERE-2019-BT-STD-0034).* The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

[6] The definition of commercial prerinse spray valve was recently amended in the March 2022 test procedure final rule, 87 FR 13901, 13905 (March 11, 2022). In that final rule, DOE stated that the amended definition only codified existing guidance and did not change the scope of the definition. Id.

energy use that is technologically feasible for such a product. (42 U.S.C. 6295(p)(1)). Accordingly, in the engineering analysis, DOE determined the maximum technologically feasible (''max-tech'') improvements in energy efficiency for CPSVs using the design parameters for the most efficient products available on the market or in working prototypes. The max-tech levels that DOE determined for this analysis are described in section IV.C of this document and in chapter 5 of the final determination TSD.

D. Energy Savings

1. Determination of Savings

For each efficiency level (''EL'') evaluated, DOE projected energy savings from application of the efficiency level to the CPSVs purchased in the 30-year period that begins in the assumed year of compliance with the potential standards (2027–2056). The savings are measured over the entire lifetime of the CPSVs purchased in the previous 30-year period. DOE quantified the energy savings attributable to each efficiency level as the difference in energy consumption between each standards case and the no-new-standards case. The no-new-standards case represents a projection of energy consumption that reflects how the market for a product would likely evolve in the absence of amended energy conservation standards.

DOE used its NIA spreadsheet model to estimate national energy savings (''NES'') from potential amended or new standards for CPSVs. The NIA spreadsheet model (described in section IV.H of this document) calculates energy savings in terms of site energy, which is the energy directly consumed by products at the locations where they are used. For electricity, DOE reports NES in terms of primary energy savings, which is the savings in the energy that is used to generate and transmit the site electricity. DOE also calculates NES in terms of full-fuel-cycle (''FFC'') energy savings. The FFC metric includes the energy consumed in extracting, processing, and transporting primary fuels (*i.e.,* coal, natural gas, petroleum fuels), and thus presents a more complete picture of the impacts of energy conservation standards.[7] DOE's approach is based on the calculation of an FFC multiplier for each of the energy types used by covered products or equipment. For more information on FFC energy savings, see section IV.H of this document.

2. Significance of Savings

In determining whether amended standards are needed, DOE must consider whether such standards will result in significant conservation of energy. (42 U.S.C. 6295(m)(1)(A)) The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific circumstances surrounding a given rulemaking.[8] For example, the United States rejoined the Paris Agreement on February 19, 2021. As part of that agreement, the United States has committed to reducing greenhouse gas (''GHG'') emissions in order to limit the rise in mean global temperature.[9] As such, energy savings that reduce GHG emissions have taken on greater importance. Accordingly, DOE evaluates the significance of energy savings on a case-by-case basis (as discussed in section V.D.3).

E. Cost Effectiveness

In making a determination of whether amended energy conservation standards are needed, EPCA requires DOE to consider the cost effectiveness of amended standards in the context of the savings in operating costs throughout the estimated average life of the covered product compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered product that are likely to result from a standard. (42 U.S.C. 6295(m)(1)(A), 42 U.S.C. 6295(n)(2), and 42 U.S.C. 6295(o)(2)(B)(i)(II)).

In determining cost effectiveness of amending standards for CPSVs, DOE conducted LCC and PBP analyses that estimate the costs and benefits to users from potential standards. To further inform DOE's consideration of the cost effectiveness of potential amended standards, DOE considered the NPV of total costs and benefits estimated as part of the NIA. The inputs for determining the NPV of the total costs and benefits experienced by consumers are (1) total annual installed cost, (2) total annual operating costs (energy costs and repair and maintenance costs), and (3) a discount factor to calculate the present value of costs and savings.

F. Further Considerations

As stated previously, pursuant to EPCA, absent DOE publishing a notification of determination that energy conservation standards for CPSVs do not need to be amended, DOE must issue a NOPR that includes new proposed standards. (42 U.S.C. 6295(m)(1)(B)). The new proposed standards in any such NOPR must be based on the criteria established under 42 U.S.C. 6295(o) and follow the procedures established under 42 U.S.C. 6295(p). (42 U.S.C. 6295(m)(1)(B)). The criteria in 42 U.S.C. 6295(o) require that standards be designed to achieve the maximum improvement in energy efficiency, which the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)). 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 for, or maintenance expenses of 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))

As discussed in the January 2016 Final Rule, DOE found that amended standards at a level more stringent than those adopted would not be economically justified under the considerations of the seven factors prescribed in EPCA. 81 FR 4748, 4794 (Jan. 27, 2016). Specifically, the Secretary concluded that at the more stringent standards levels, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the reduction in manufacturer industry value. *Id.* Consequently, the Secretary concluded that standards more stringent than those adopted were not economically justified. *Id.* For the determination in

[7] The FFC metric is discussed in DOE's statement of policy and notice of policy amendment. 76 FR 51282 (Aug. 18, 2011), as amended at 77 FR 49701 (Aug. 17, 2012).

[8] *See* 86 FR 70892, 70901 (Dec. 13, 2021).

[9] *See* Executive Order 14008, 86 FR 7619 (Feb. 1, 2021), ''Tackling the Climate Crisis at Home and Abroad''.

this document, DOE has considered potential manufacturer impacts associated with amended energy conservation standards (*See* section IV.I of this document).

IV. Methodology and Discussion of Related Comments

This section addresses the analyses DOE has performed for this final determination regarding CPSVs. Separate subsections address each component of DOE's analyses. DOE used several analytical tools to estimate the impact of potential energy conservation standards. The first tool is a spreadsheet that calculates the LCC savings and PBP of potential energy conservation standards. The NIA uses a second spreadsheet set that provides shipments projections and calculates NES and NPV of total consumer costs and savings expected to result from potential energy conservation standards. These spreadsheet tools are available on the website: *www.regulations.gov/docket/EERE-2019-BT-STD-0034.*

In response to the August 2021 NOPD, PMI commented generally that they support DOE's proposed determination that amended energy conservation standards are not needed. (PMI, No. 16 at p. 1)

A. Market and Technology Assessment

DOE develops information in the market and technology assessment that provides an overall picture of the market for the products concerned, including the purpose of the products, the industry structure, manufacturers, market characteristics, and technologies used in the products. This activity includes both quantitative and qualitative assessments, based primarily on publicly available information. The subjects addressed in the market and technology assessment for this final determination include (1) a determination of the scope and product classes, (2) manufacturers and industry structure, (3) existing efficiency programs, (4) shipments information, (5) market and industry trends, and (6) technologies or design options that could improve the energy efficiency of commercial prerinse spray valves. The key findings of DOE's market assessment are summarized in the following sections. See chapter 3 of the final determination TSD for further discussion of the market and technology assessment.

1. Scope of Coverage

In this analysis, DOE relied on the definition of CPSVs in 10 CFR 431.262, which defines CPSV as a handheld device that has a release-to-close valve and is suitable for removing food residue from food service items before cleaning them in commercial dishwashing or ware washing equipment. DOE may determine that a device is suitable for removing food residue from food service items before cleaning them in commercial dishwashing or ware washing equipment based on any or all of the following: (1) equipment design and representations (*e.g.,* whether equipment is represented as being capable of rinsing dishes as compared to equipment that is represented exclusively for washing walls and floors or animal washing); (2) channels of marketing and sales (*e.g.,* whether equipment is marketed or sold through outlets that market or sell to food service entities); and/or (3) actual sales (including whether the end-users are restaurants or commercial or institutional kitchens, even if those sales are indirectly through an entity such as a distributor). 10 CFR 431.262. Any product meeting the definition of CPSV is included in DOE's scope of coverage.

2. Technology Options

In the August 2021 NOPD, DOE identified several technology options that would be expected to improve the efficiency of CPSVs, as measured by the DOE test procedure. 86 FR 46330, 46336. The complete list of technology options identified are as follows:

- Addition of flow control insert,
- Smaller spray hole area,
- Aerators,
- Additional valves,
- Changing spray hole shape, and
- Venturi meter to orifice plate nozzle geometries. [10]

DOE also discussed use of a pressure compensating aerator (''PCA'') as a technology to potentially improve efficiency. 86 FR 46330, 46336. DOE stated that PCAs typically use an O-ring that compresses and relaxes in response to system pressure. When there is no pressure, the O-ring is relaxed and allows the aerator to be fully opened. As the pressure increases, the O-ring is compressed into the aerator opening to partially block water passage. This establishes an inverse relationship between the area of the aerator opening and the water pressure, and can be designed such that the water flow rate is approximately constant with pressure. *Id*

Further, DOE stated that the Federal test procedure measures flow rate and spray force at a singular, representative water pressure and adding a PCA would not change the flow rate or spray force at DOE's test pressure. *Id.* DOE requested comment on its determination that PCAs would not change the flow rate or spray force at DOE's test pressure. *Id.*

In response to the August 2021 NOPD, the CA IOUs agreed that PCAs would not change the flow rate or spray force under DOE's test procedure. (CA IOUs, No. 18 at p. 2) The CA IOUs recommended DOE require testing at two test pressures, 40 psi and 60 psi, so that PCAs can be included in the engineering analysis. (*Id.* at p. 2) Similarly, NEEA recommended DOE require testing at both 60 psi and 40 psi and include PCAs as a technology option to increase customer satisfaction. (NEEA, No. 19 at pp. 3–4) NEEA asserted that under DOE's existing test procedure there is limited opportunity for efficiency improvements and that requiring testing at more pressures could prevent product class switching and encourage PCAs as a technology option. (NEEA, No. 19 at p. 1) NEEA commented that DOE amending the test procedure to require testing at lower pressures would encourage technologies, such as PCAs, that increase customer satisfaction at lower flow rates. (NEEA, No. 19 at p. 1–2)

In the March 2022 TP Final Rule, DOE amended its test procedure to explicitly permit voluntary testing at alternative pressures in addition to testing at 60 psi. 87 FR 13901, 13906. This amendment permits manufacturers to market any potential benefits of PCAs at alternate pressures. DOE notes, however, the test pressure specified in 10 CFR 431.264 is based on ASTM F2324, which is an industry consensus standard that includes input from a wide variety of national stakeholders and was corroborated with the data compiled for a prior test procedure rulemaking. *Id.* DOE noted that it has not received any new data indicating that an alternative test pressure would be more representative. *Id.*

Moreover, relative to a CPSV without a PCA, a CPSV with a PCA would have greater water usage at pressures below 60 psi and lesser water usage at pressures above 60 psi. As such, PCAs may not represent a technology option that saves any water because low-pressure applications would consume more water than applications at the representative pressure of 60 psi. Accordingly, DOE does not consider PCAs as a technology option that would save energy or water.

In summary, for this analysis, DOE considers the technology options shown

[10] A venturi meter is a nozzle where the fluid accelerates through a converging cone of 15–20 degrees. An orifice plate is a flat plate with a circular hole drilled in it.

in Table IV.1. Detailed descriptions of these technology options can be found in chapter 3 of the final determination TSD.

TABLE IV.1—COMMERCIAL PRERINSE SPRAY VALVES TECHNOLOGY OPTIONS

Technology option
Addition of Flow Control Insert.
Smaller Spray Hole Area.
Aerators.
Additional Valves.
Changing Spray Hole Shape.
Venturi Meter to Orifice Plate Nozzle Geometries.

B. Screening Analysis

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

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

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

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

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

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

Sections 6(b)(3) and 7(b) of appendix A to 10 CFR part 430, subpart C.

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

1. Screened Out Technologies

In the August 2021 NOPD, DOE proposed to screen out the same technology options from the January 2016 Final Rule, which were addition of flow control insert, aerators, and additional valves. 86 FR 46330, 46336. DOE's review of the market continues to support DOE's prior determination that these technologies are not suitable for further consideration because they are not included in any commercially available products or working prototypes and therefore do not meet the screening criteria for technologically feasibility, as discussed in chapter 4 of the final determination TSD. DOE did not receive any comment suggesting including any of these technology options. Therefore, DOE has maintained the proposed August 2021 NOPD conclusions and has screened out the same technology options as presented in Table IV.2.

TABLE IV.2—SCREENED OUT TECHNOLOGY OPTIONS

Screened technology option	Screening criteria (X = basis for screening out)				
	Technological feasibility	Practicability to manufacture, install, and service	Adverse impact on product utility	Adverse impacts on health and safety	Unique pathway proprietary technologies
Addition of Flow Control Insert	X				
Aerators	X				
Additional Valves	X				

2. Remaining Technologies

After reviewing each technology, DOE did not screen out the following technology options and considers them as design options in the engineering analysis, consistent with the August 2021 NOPD:

- smaller spray hole area,
- changing spray hole shape, and
- venturi meter to orifice plate nozzle geometries.

DOE determined that these technology options are technologically feasible because they are being used or have previously been used in commercially available products or working prototypes. Also, these remaining technology options meet the other screening criteria (*i.e.,* practicable to manufacture, install, and service and do not result in adverse impacts on consumer utility, product availability, health, or safety). For additional details, see chapter 4 of the final determination TSD.

3. Product Classes

In general, when evaluating and establishing energy conservation standards, DOE divides the covered product into classes by (1) the type of energy used, (2) the capacity of the product, or (3) any other performance-related feature that affects energy efficiency and justifies different standard levels, considering factors such as consumer utility. (42 U.S.C. 6295(q))

For CPSVs, the current energy conservation standards specified in 10 CFR 431.266 are based on three product classes determined according to spray force, which is a performance-related feature that provides utility to the consumer. ''Spray force'' is defined as the amount of force exerted onto the spray disc, measured in ounce-force (''ozf''). 10 CFR 431.262. Table IV.3 lists the current three product classes for CPSVs.

TABLE IV.3—CURRENT COMMERCIAL PRERINSE SPRAY VALVE PRODUCT CLASSES

Product class	Spray force in ounce-force (ozf)
Product Class 1	≤5.0 ozf.
Product Class 2	>5.0 ozf and ≤8.0 ozf.
Product Class 3	>8.0 ozf.

These product classes were based on previous market research that identified three distinct end-user applications requiring differing amounts of spray force: (1) cleaning delicate glassware and removing loose food particles from dishware (which requires the least amount of spray force), (2) cleaning wet food, and (3) cleaning baked-on foods (which requires the greatest amount of spray force). 81 FR 4748, 4758–4759.

In the August 2021 NOPD, DOE proposed to maintain the existing product class structure for the analysis conducted. 86 FR 46330, 46337. In response, DOE received comments from the CA IOUs and Efficiency Advocates suggesting DOE consider an alternate approach using an equation-based standard where the maximum water flow rate of a product is calculated based on its measured spray force. (CA IOUs, No. 18 at pp. 1–2; Efficiency Advocates, No. 17 at pp. 1–2) Upon further review, DOE has determined that an equation-based standard would limit the design flexibility regarding nozzle and valve characteristics for consumers and manufacturers while not yielding any water or energy savings. Further discussion on this topic is provided in section IV.C.1.b of this document.

In this final determination, DOE continues to conclude that the current three product class structure is appropriate and has maintained the same approach.

4. Market Assessment

For this final determination, DOE relied on government databases, retail listings, and industry publications (*e.g.,* manufacturer catalogs) to assess the overall state of the industry. DOE used this market analysis to generate the shipments analysis, discussed in section IV.G. of this document. DOE maintained the nearest neighbor switching assumptions [11] proposed in the August 2021 NOPD, as discussed in section IV.G.

C. Engineering Analysis

The purpose of the engineering analysis is to establish the relationship between the efficiency and cost of CPSVs. There are two elements to consider in the engineering analysis: the selection of efficiency levels to analyze (*i.e.,* the ‘‘efficiency analysis’’) and the determination of product cost at each efficiency level (*i.e.,* the ‘‘cost analysis’’). In determining the performance of more efficient products, DOE considers technologies and design option combinations not eliminated by the screening analysis. For each product class, DOE estimates the baseline cost, as well as the incremental cost for the product at efficiency levels above the baseline. The output of the engineering analysis is a set of cost efficiency ‘‘curves’’ that are used in downstream analyses (*i.e.,* the LCC and PBP analyses and the NIA).

1. Efficiency Analysis

DOE typically uses one of two approaches to develop energy efficiency levels for the engineering analysis: (1) relying on observed efficiency levels in the market (*i.e.,* the efficiency level approach), or (2) determining the incremental efficiency improvements associated with incorporating specific design options to a baseline model (*i.e.,* the design option approach). Using the efficiency level approach, the efficiency levels established for the analysis are determined based on the market distribution of existing products (in other words, based on the range of efficiencies and efficiency level ‘‘clusters’’ that already exist on the market). Using the design option approach, the efficiency levels established for the analysis are determined through detailed engineering calculations and/or computer simulations of the efficiency improvements from implementing specific design options that have been identified in the technology assessment. DOE may also rely on a combination of these two approaches. For example, the efficiency level approach (based on actual products on the market) may be extended using the design option approach to interpolate to define ‘‘gap fill’’ levels (to bridge large gaps between other identified efficiency levels) and/or to extrapolate to the max-tech level (particularly in cases where the ‘‘max-tech’’ level exceeds the maximum efficiency level currently available on the market).

In this final determination, just like what was proposed in the August 2021 NOPD and the January 2016 Final Rule, DOE is adopting a design option approach. The analysis is performed in terms of incremental increases in efficiency (decreases in flow rate) due to implementation of selected design options.

a. Baseline Efficiency Levels

For each product class, DOE generally selects a baseline model as a reference point for each class, and measures changes resulting from potential energy conservation standards against the baseline. The baseline model in each product class represents the characteristics of a product typical of that class (*e.g.,* capacity, physical size). Generally, a baseline model is one that just meets current energy conservation standards, or, if no standards are in place, the baseline is typically the most common or least efficient unit on the market.

The current minimum energy conservation standards represent the baseline efficiency levels for each product class. The current standards for each product class are based on flow rate in gpm.

b. Higher Efficiency Levels

As part of DOE’s analysis, the maximum available efficiency level is the highest efficiency (*i.e.,* lowest water use in a given product class) unit currently available on the market. DOE also defines a max-tech efficiency level to represent the maximum possible efficiency for a given product.

In the August 2021 NOPR, DOE presented the max-tech CPSV for each product class. 86 FR 46330, 46338. DOE noted that product class 2 and product class 3 were consistent with the max-tech values used in the January 2016 Final Rule, while a new max-tech had been identified for product class 1.[12] DOE did not receive any comment suggesting the max-tech values were inappropriate. DOE has used the max-tech efficiency level flow rates presented in Table IV.4 in this analysis.

TABLE IV.4—MAXIMUM EFFICIENCY LEVELS CURRENTLY AVAILABLE

Product class	Flow rate (gpm)
Product Class 1	0.45
Product Class 2	0.73
Product Class 3	1.13

In the January 2016 Final Rule, DOE presented a theoretical linear relationship between CPSV flow rate and spray force, derived from both Bernoulli’s principle of incompressible flow and the concept of conservation of mass in a fluid system. 81 FR 4748, 4762. DOE had verified this linear relationship through market testing of available products and close matching between the theoretical relationship and the flow rates and spray forces of available products. *Id.* In the August 2021 NOPD, DOE stated that it continued to use the linear relationship between CPSV flow rate and spray force in its engineering analysis. 86 FR 46330, 46339. Specifically, in chapter 5 of the August 2021 NOPD TSD,[13] DOE discusses that while DOE generally

[11] In this scenario, consumers would choose the product with the flow rate that is closest to their current product flow rate, even if it has a higher spray force (thus product class switching). Under the nearest neighbor scenario, DOE assumed 100 percent of consumers would choose the closest flow rate. 86 FR 46330, 64344.

[12] The new max-tech model utilizes a smaller spray hole area to further reduce flow rate. This is not a new technology option; rather, it is further utilizing a technology option considered during the January 2016 Final Rule.

[13] Chapter 5 of the August 2021 NOPD TSD is available at *www.regulations.gov/document/EERE-2019-BT-STD-0034-0010.*

relied on manufacturer reported spray force data and prior DOE testing to characterize the range of spray forces available on the market, DOE used the linear relationship to inform how various technology options that reduce flow rate would impact spray force. The relationship between flow rate and spray force is given below:

$$[\text{Flow Rate (gpm)}] = 0.15 * [\text{Spray Force (ozf)}]$$ [14]

Equation 1

In response to the August 2021 NOPD, both the Efficiency Advocates and CA IOUs commented that there are spray valves in the DOE Compliance Certification Database (''CCD'') with similar flow rate and a range of spray forces, suggesting manufacturers may be able to reduce flow rate without losing spray force. Accordingly, both recommended that DOE consider setting maximum flow rate standard based on a linear relationship that incorporates spray force. (Efficiency Advocates, No. 17 at pp. 1–2; CA IOUs, No. 18 at pp. 1–2)

DOE notes that the equation relating spray force and flow rate is theoretical and while it aligns well with what DOE has observed in the industry, there is going to be some amount of deviation observed in industry as the theoretical relationship does not perfectly translate to the real world. The theoretical relationship includes assumptions about ideal flow through a nozzle, which assumes certain factors are constant (*i.e.,* uniform velocity profile, viscosity, turbulence, etc.). While these terms can generally be treated as constant in modeling and estimating, they are present in real world applications. Therefore, the linear equation is approximately accurate for modeling what the theoretical spray force would be for a given flow rate. As discussed previously, DOE used the equation in the engineering analysis only to inform how various technology options that reduce flow rate would impact spray force.

Setting an efficiency standard based on the equation, however, would allow for very little freedom in manufacturer designs and little tolerance for deviations beyond the theoretical linear relationship between spray force and flow rate. DOE has previously acknowledged that other characteristics beyond spray force, including spray shape and the amount of splash back, could also affect consumer utility of CPSVs. 81 FR 4748, 4759. An equation-based standard could run the risk of only permitting certain spray shapes and splash back characteristics to meet this theoretical equation-based standard. In other words, an equation-based standard could require spray valve designs that have minimal deviation from the ideal flow assumptions included in the derivation of Equation 1. In effect, an equation-based approach could force all CPSVs to look exactly the same. Conversely, keeping the proposed approach of one flow rate standard per product class continues to allow for some flexibility and tolerance in design.

The CA IOUs and Efficiency Advocates further suggested that an equation-based efficiency standard would encourage products that deliver a higher spray force while reducing flow rate (and in turn, reducing water consumption). (Efficiency Advocates, No. 17 at p. 1; CA IOUs, No. 18 at p. 1) The Efficiency Advocates also suggested that an equation-based approach would reduce the likelihood of product switching. (Efficiency Advocates, No. 17 at p. 1)

DOE does not agree that an equation-based standard would reduce product switching. A CPSV could be designed to achieve the hypothetical equation-based standard by either changing the spray force, or by changing the flow rate. The Efficiency Advocates' suggestion is premised on consumers selecting products based on spray force (*i.e.,* under an equation-based standard consumers would select the lowest flow rate that provides the desired spray force). DOE's review of the market indicates that manufacturers typically advertise only flow rate, suggesting that in selecting CPSVs, flow rate is the more determinative characteristic. Accordingly, DOE's analysis assumes that consumers switch to the nearest flow rate, not nearest spray force (*i.e.,* nearest neighbor, as discussed in section IV.H of this document).

With an equation-based approach, consumers would continue to choose the product with the flow rate that is closest to the desired flow rate; therefore, there would be zero water savings. DOE has previously relied on the nearest neighbor assumption and requested comment on it several times. 86 FR 46330, 46344–46345; 80 FR 39486, 39538 (Jul. 9, 2015). DOE has not received comment to the contrary. DOE sees no advantage in an equation-based standard for CPSVs and therefore has maintained the existing product class structure in the analysis supporting this final determination.

2. Cost Analysis

The cost analysis portion of the engineering analysis is conducted using one cost approach or a combination of cost approaches. The selection of cost approach depends on a suite of factors, including the availability and reliability of public information, characteristics of the regulated product, and the availability and timeliness of purchasing the product on the market. The cost approaches are summarized as follows:

- *Physical teardowns:* Under this approach, DOE physically dismantles a commercially available product, component-by-component, to develop a detailed bill of materials (''BOM'') for the product.
- *Catalog teardowns:* In lieu of physically deconstructing a product, DOE identifies each component using parts diagrams (available from manufacturer websites or appliance repair websites, for example) to develop the BOM for the product.
- *Price surveys:* If neither a physical nor catalog teardown is feasible (*e.g.,* for tightly integrated products such as fluorescent lamps, which are infeasible to disassemble and for which parts diagrams are unavailable) or cost-prohibitive and otherwise impractical (*e.g.,* large commercial boilers), DOE conducts price surveys using publicly available pricing data published on major online retailer websites and/or by soliciting prices from distributors and other commercial channels.

In the August 2021 NOPD, DOE stated that it did not observe any new technology options since the January 2016 Final Rule, and therefore, updated the cost analysis from the January 2016 Final Rule to be representative of the market in 2020. 86 FR 46330, 46339. DOE updated the material prices of each component of the previously torn down CPSVs and updated the labor,

[14] *See* chapter 5 of the August 2021 NOPD TSD.

depreciation, utilities, maintenance, tax, and insurance costs. DOE did not include any CPSVs that have exited the market or had their design modified since they were torn down. The resulting BOM provided the basis for the manufacturer production cost (''MPC'') estimates. The updated costs reaffirmed that there are differences in manufacturing costs between units from different manufacturers. However, none of the differences are directly related to the efficiency of a CPSV. Rather, the differences were primarily due to differences in the type and amount of material used (*e.g.,* plastic versus brass or stainless steel spray nozzles). Therefore, DOE concluded that MPC was unaffected by efficiency level, both within product classes and across product classes. *Id.*

In the August 2021 NOPD, DOE requested comment and data regarding any changes in MPC that would not be accounted for by updating the cost analysis of the previously conducted product teardowns. Further, DOE requested any data that would contradict its determination of no incremental cost associated with improvements in efficiency of CPSVs. *Id.*

DOE did not receive any comments regarding the cost analysis conclusions presented in the August 2021 NOPD. DOE continues to conclude that MPC is unaffected by efficiency level, same as the conclusion from the August 2021 NOPD and the January 2016 Final Rule (*i.e.,* MPC remains constant across all product classes). As such, the resulting cost analysis provided the basis for the MPC estimates.

To account for manufacturers' non-production costs and profit margin, DOE applies a non-production cost multiplier (the manufacturer markup) to the MPC. The resulting manufacturer selling price (''MSP'') is the price at which the manufacturer distributes a unit into commerce. DOE developed an average manufacturer markup by examining the annual Securities and Exchange Commission (''SEC'') 10–K reports filed by publicly traded manufacturers primarily engaged in appliance manufacturing and whose combined product range includes CPSVs. The manufacturer markup is discussed in more detail in section IV.I.2.d of this document.

3. Cost Efficiency Results

The results of the engineering analysis are reported as cost efficiency data and indicate that manufacturing production costs are unaffected by efficiency level within a product class and across product classes. Therefore, DOE determined the final MPC as the average MPC of all CPSVs. The summary of the cost efficiency relationships for product classes 1, 2, and 3 are presented in Table IV.5, Table IV.6, and Table IV.7, respectively. See chapter 5 of the final determination TSD for additional detail on the engineering analysis and complete cost efficiency results.

TABLE IV.5—COST EFFICIENCY RELATIONSHIP FOR PRODUCT CLASS 1

[Spray force ≤5.0 ozf]

Efficiency level	Efficiency level description	Flow rate (*gpm*)	Manufacturer production cost (*2020$*)	Incremental cost over baseline (*$*)
Baseline	Current Federal standard	1.00	$26.91	$0.00
Level 1	15% improvement over Federal standard	0.85	26.91	0.00
Level 2	25% improvement over Federal standard	0.75	26.91	0.00
Level 3	Maximum technologically feasible (max-tech)	0.45	26.91	0.00

TABLE IV.6—COST EFFICIENCY RELATIONSHIP FOR PRODUCT CLASS 2

[Spray force >5.0 ozf and ≤8.0 ozf]

Efficiency level	Efficiency level description	Flow rate (*gpm*)	Manufacturer production cost (*2020$*)	Incremental cost over baseline (*$*)
Baseline	Current Federal standard	1.20	$26.91	$0.00
Level 1	15% improvement over Federal standard	1.02	26.91	0.00
Level 2	25% improvement over Federal standard	0.90	26.91	0.00
Level 3	Maximum technologically feasible (max-tech)	0.73	26.91	0.00

TABLE IV.7—COST EFFICIENCY RELATIONSHIP FOR PRODUCT CLASS 3

[Spray force >8.0 ozf]

Efficiency level	Efficiency level description	Flow rate (*gpm*)	Manufacturer production cost (*2020$*)	Incremental cost over baseline (*$*)
Baseline	Current Federal standard	1.28	$26.91	$0.00
Level 1	Maximum technologically-feasible (max-tech)	1.13	26.91	0.00

See chapter 5 of the final determination TSD for additional detail on the engineering analysis and complete cost efficiency results.

D. Markups Analysis

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

DOE requested comment in the June 2020 RFI regarding markups per distribution channel as well as the portion of equipment sold via each distribution channel. 85 FR 35383, 35390 (Jun. 10, 2020). DOE did not receive any comments related to markups per distribution channel.

For commercial prerinse spray valves, the main parties in the distribution chain are manufacturers, distributors, retailers, and service companies. Each party in the distribution chain sells to the final consumer. Table IV.8 provides the portion of equipment passing through different distribution channels that DOE included in the August 2021 NOPD. 86 FR 46330, 46340.

TABLE IV.8—COMMERCIAL PRERINSE SPRAY VALVE DISTRIBUTION CHANNELS

Channel	Pathway	Percentage through channel
A	Manufacturer → Final Consumer (Direct Sales)	17
B	Manufacturer → Authorized Distributor → Final Consumer	33
C	Manufacturer → Retailer → Final Consumer	17
D	Manufacturer → Service Company → Final Consumer	33

DOE developed baseline markups for each entity in the distribution chain. Baseline markups are multipliers that convert the MSP of equipment at the baseline efficiency level to consumer purchase price. Incremental markups are multipliers that convert the incremental increase in MSP for a product at each higher efficiency level (compared to the MSP at the baseline efficiency level) to the corresponding purchase price. In the analysis for the August 2021 NOPD, DOE used only baseline markups, as the engineering analysis indicated that there is no price increase with improvements in efficiency for commercial prerinse spray valves.

DOE relied on annual reports and SEC 10–K reports from public companies in the different distribution channels to estimate average baseline markups. Table IV.9 provides the markups for each distribution channel that DOE used in the NOPD analysis. 86 FR 46330, 46340–46341.

TABLE IV.9—COMMERCIAL PRERINSE SPRAY VALVE BASELINE CHANNELS

Channel	Pathway	Baseline markup
A	Manufacturer → Final Consumer (Direct Sales)	1.72
B	Manufacturer → Authorized Distributor → Final Consumer	1.72
C	Manufacturer → Retailer → Final Consumer	1.52
D	Manufacturer → Service Company → Final Consumer	1.87

DOE did not receive any comments regarding the markups presented in the August 2021 NOPD. DOE used these markup values in the final determination analysis.

Sales tax also factors into the mark-ups. DOE did not receive any comments related to sales tax in response to the August 2021 NOPD. However, DOE updated the sales tax to reflect the 2022 sales tax and weighted by 2022 population. The change in sales tax between the August 2021 NOPD and this final determination is a small increase in national average sales tax.

Chapter 6 of the final determination TSD provides details on DOE's development of markups for CPSVs.

E. Energy and Water Use Analysis

The purpose of the energy use analysis is to determine the annual energy consumption of CPSVs at different efficiencies in representative U.S. commercial buildings, and to assess the energy savings potential of increased CPSV efficiency. The energy use analysis estimates the range of energy use of CPSVs in the field (*i.e.,* as they are actually used by consumers). The energy use analysis provides the basis for other analyses DOE performed, particularly assessments of the energy savings and the savings in consumer operating costs that could result from adoption of amended or new standards. DOE proposed to the use the same energy and water use analysis process from the January 2016 Final Rule in the August 2021 NOPD. 86 FR 46330, 46341.

As discussed in section IV.C.1 of this document, DOE developed flow rates for each efficiency level analyzed in the engineering analysis. DOE calculated the energy and water use by determining the representative daily operating time of the product by major building types that contain commercial kitchens found in the 2012 Commercial Building Energy Consumption Survey (''CBECS'').[15] The daily CPSV operating time was annualized based on operating schedules for each building type. In the June 2020 RFI, DOE presented CPSV annual operating hours and requested comment on those hours. 85 FR 35383, 35390. DOE did not receive any comments related to operating hours. DOE also received no comments to the August 2021 NOPD related to operating hours. However, after the August 2021 NOPD was published, 2018 CBECS was released. For this final determination, DOE used operating hours from the 2018 CBECS. There were no major differences in operating hours or water usage between CBECS 2012 and CBECS 2018. However, the mixture of fuel type for water heaters changed between CBECS 2012 and CBECS 2018 to a slightly larger amount of natural gas water heaters in CBECS 2018 compared to CBECS 2012. Although the efficiency values did not change between the NOPD and this final determination, the energy and water use values slightly

[15] U.S. Department of Energy–Energy Information Administration. *Commercial Building Energy Consumption Survey.* 2020. Washington, DC. Available at *www.eia.gov/consumption/commercial/data/2012/.*

changed. The differences in energy and water use stem from the change in water heater mixture use as well as small reduction in operating hours from the update of CBECS 2018. Water use for each equipment class was determined by multiplying the annual operating time by the flow rate and operating pressure of 60 psi for each efficiency level. DOE requested comment in the June 2020 RFI requesting feedback related to the typical operating pressure of the water typically supplied to commercial prerinse spray valves and DOE's assumption of 60 psi. 85 FR 35383, 35390. PMI concurred with this operating pressure and stated that 60 ± 2 psi is representative of the average U.S. water pressure in commercial kitchens. (PMI, No. 4 at pp. 4–5)

DOE used 60 psi operating pressure in the August 2021 NOPD. 86 FR 46330, 46341. DOE did not receive any comments related to operating pressure and retained the 60 psi value for this final determination.

In the August 2021 NOPD, energy use was calculated by multiplying the annual water use in gallons by the energy required to heat each gallon of water to an end-use temperature of 108 °F. DOE requested comment in the June 2020 RFI related to the end-use water temperature of the water leaving the CPSVs and any related supporting data. 85 FR 35383, 35390. In response to the June 2020 RFI, PMI stated that it was not aware of any data or market information that suggested a different temperature than the 108 °F end-use temperature. (PMI, No. 4 at p. 5) In this final determination as DOE did in the NOPD, cold water supply temperatures used in the energy use calculation were derived for the nine U.S. census regions based on ambient air temperatures, and hot water supply temperature was assumed to be 140 °F based on American Society of Heating, Refrigerating, and Air-Conditioning Engineers (''ASHRAE'') Standard 12–2020.[16] DOE did not receive any comments related to the energy use methodology used in the August 2021 NOPD. DOE used the same process for energy and water use analysis with the exception of using the more current 2018 CBECS data for this final determination.

Chapter 7 of the final determination TSD provides details on DOE's energy use analysis for commercial prerinse spray valves.

F. Life-Cycle Cost and Payback Period Analysis

DOE conducted LCC and PBP analyses to evaluate the economic impacts on individual consumers of potential energy conservation standards for CPSVs.[17] The effect of new or amended energy conservation standards on individual consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE used the following two metrics to measure consumer impacts:

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

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

For any given efficiency level, DOE measures the change in LCC relative to the LCC in the no-new-standards case, which reflects the estimated efficiency distribution of CPSVs in the absence of new or amended energy conservation standards. In contrast, the PBP for a given efficiency level is measured relative to the baseline product.

Inputs to the calculation of total installed cost include the cost of the product—which includes MPCs, manufacturer markups, retailer and distributor markups, and sales taxes—and installation costs. Inputs to the calculation of operating expenses include annual energy consumption, energy prices and price projections, repair and maintenance costs, product lifetimes, and discount rates. DOE created distributions of values for product lifetime, discount rates, and sales taxes, with probabilities attached to each value, to account for their uncertainty and variability.

The computer model DOE uses to calculate the LCC and PBP relies on a Monte Carlo simulation to incorporate uncertainty and variability into the analysis. The Monte Carlo simulations randomly sample input values from the probability distributions and CPSV user samples. For this determination, the Monte Carlo approach is implemented in Microsoft Excel together with the Crystal Ball™ add-on.[18] The model calculated the LCC and PBP for products at each efficiency level for 10,000 CPSV users per simulation run. The analytical results include a distribution of 10,000 data points showing the range of LCC savings for a given efficiency level relative to the no-new-standards case efficiency distribution. The LCC savings are the summation of the differences in LCC between a given efficiency level and the standard level under consideration, weighted by the percent of consumers who are at that given efficiency level relative to all consumers who are affected. For product efficiencies greater than or equal to the efficiency of the standard level under consideration, the LCC and PBP calculations reveal that a consumer is not impacted by the standard level. By accounting for consumers who already purchase more efficient products, DOE avoids overstating the potential benefits from increasing product efficiency.

DOE calculated the LCC and PBP for all consumers of CPSVs as if each were to purchase a new product in the expected year of required compliance with new or amended standards. Any amended standards would apply to CPSVs manufactured 3 years after the date on which any new or amended standard is published, consistent with the 3-year compliance period used during the January 2016 Final Rule. 81 FR 4748, 4764–4765. For purposes of its analysis, DOE used 2027 as the first year of compliance with any amended standards for CPSVs.

Table IV.10 summarizes the approach and data DOE used to derive inputs to the LCC and PBP calculations. The subsections that follow provide further discussion. Details of the spreadsheet model, and of all the inputs to the LCC and PBP analyses, are contained in chapter 8 of the final determination TSD and its appendices.

[16] ASHRAE. 2020. *ASHRAE Standard 12–2020: Managing the Risk of Legionellosis Associated with Building Water Systems.*

[17] The original NOPD (86 FR 46330) published on August 18, 2021 accidentally omitted a few pages of this introductory section. The omitted text was addressed during the public meeting webinar held on September 1, 2021, (see EERE–2019–BT–STD–0034–0013) as well as via an email distributed on September 22, 2021.

[18] Crystal Ball™ is a commercially-available software tool to facilitate the creation of these types of models by generating probability distributions and summarizing results within Excel, available at *www.oracle.com/technetwork/middleware/crystalball/overview/index.html.*

TABLE IV.10—SUMMARY OF INPUTS AND METHODS FOR THE LCC AND PBP ANALYSIS *

Inputs	Source/Method
Product Cost	Derived by multiplying MPCs by manufacturer and retailer markups and sales tax, as appropriate.
Installation Costs	Baseline installation cost determined with data from U.S. Department of Labor and U.S. Bureau of Labor Statistics. Assumed no change with efficiency level.
Annual Energy Use	The energy use multiplied by the average hours per year. Average number of hours based on field data. Variability: Based on the 2018 CBECS.
Energy Prices	Electricity: Based on the U.S. Energy Information Administration (''EIA'') Form 861 data for 2020. Variability: Regional energy prices determined for 27 regions.
Energy Price Trends	Based on the *Annual Energy Outlook 2021* (''*AEO2021*'') price projections.
Repair and Maintenance Costs	Assumed no change with efficiency level.
Product Lifetime	Average: 5 years.
Discount Rates	Approach involves identifying all possible debt or asset classes that might be used to purchase the considered appliances or might be affected indirectly. Primary data source was the Federal Reserve Board's Survey of Consumer Finances.
Compliance Date	2027.

* References for the data sources mentioned in this table are provided in the sections following the table or in chapter 8 of the final determination TSD.

1. Product Cost

To calculate consumer product costs, DOE multiplied the MSPs developed in the engineering analysis by the distribution channel markups described in section IV.D of this document (along with sales taxes). As stated earlier in this document, DOE used baseline markups, but did not apply incremental markups because the engineering analysis indicated that there is no price increase with improvements in efficiency for CPSVs.

In prior energy conservation standards rulemakings, DOE estimated the total installed costs per unit for product and then assumed that costs remain constant throughout the analysis period. This assumption is conservative because product costs tend to decrease over time. In 2011, DOE published a notice of data availability (''NODA'') titled *Equipment Process Forecasting in Energy Conservation Standards Analysis.* 76 FR 9696 (Feb. 22, 2011). In the NODA, DOE proposed a methodology for determining whether equipment process have trended downward in real terms. The methodology examines so-called price or experimental learning, wherein, with ever-increasing experience with the production of a product, manufacturers are able to reduce their production costs through innovations in technology and process.

CPSVs are formed metal devices. Neither changes in technology nor process are expected to occur to change the price of the product in this analysis. For this analysis, DOE assumed that product costs remain constant over the analysis period. This is consistent with the January 2016 Final Rule. 81 FR 4748, 4767.

2. Installation Cost

Installation cost includes labor, overhead, and any miscellaneous materials and parts needed to install the product. DOE used data from the U.S. Department of Labor to estimate the baseline installation cost for CPSVs. In the August 2021 NOPD, DOE found no evidence that the installation costs would be affected by increased efficiency levels, which was consistent with the January 2016 Final Rule. 86 FR 46330, 46342. DOE received no comments related to installation costs. In this final determination, DOE did not vary installation costs with efficiency levels.

3. Annual Energy Consumption

For each sampled CPSV user, DOE determined the energy consumption for a CPSV at different efficiency levels using the approach described previously in section IV.E of this document.

4. Energy Prices

In the August 2021 NOPD, DOE derived average annual commercial electricity prices for 27 geographic regions using data from the U.S. Energy Information Administration (''EIA'') Form EIA–861 database (based on the ''Annual Electric Power Industry Report'').[19] DOE derived average natural gas prices using data from EIA's natural gas prices.[20]

To estimate energy prices in future years, DOE multiplied the average regional energy prices by a projection of annual change in national average commercial energy price in *AEO*2021.[21] *AEO2021* has an end year of 2050. To estimate price trends after 2050, DOE used the average annual rate of change in prices from 2040 through 2050.

DOE received no comments related to energy prices. DOE used the same methodology for this final determination.

5. Water and Wastewater Prices

For the analysis presented in the August 2021 NOPD, DOE obtained data on water and wastewater prices from the 2019 American Water Works Association (''AWWA'') surveys for this analysis.[22] For each State and the District of Columbia, DOE combined all individual utility observations within the State to develop one value for water and wastewater service. Because water and wastewater charges are frequently tied to the same metered commodity values, DOE combined the prices for water and wastewater into one total dollar per thousand gallons amount.

[19] Available at *www.eia.doe.gov/cneaf/electricity/page/eia861.html.*

[20] Available at *www.eia.gov/dnav/ng/ng_pri_sum_a_EPG0_PCS_DMcf_m.htm.*

[21] U.S. Department of Energy—Energy Information Administration. *Annual Energy Outlook 2021 with Projections to 2050.* 2021. Washington, DC (AEO2021). Available at *www.eia.gov/outlooks/aeo/.*

[22] American Water Works Association. *2019 Water and Wastewater Rate Survey.* 2019. Available at *www.awwa.org/Store/2019-Water-and-Wastewater-Rate-Survey--Digital-Set/ProductDetail/79004009.*

This amount is referred to as the combined water price. DOE used the consumer price index (''CPI'') data for water related consumption (1974–2019) in developing a real growth rate for combined water price forecasts. DOE requested comment in the June 2020 RFI whether a different water price dataset should be considered. 85 FR 35383, 35391. DOE received no comments related to water price datasets in response to either the June 2020 RFI or the August 2021 NOPD. DOE used the same methodology for this final determination.

Chapter 8 of the final determination TSD provides more detail about DOE's approach to developing water and wastewater prices.

6. Maintenance and Repair Costs

Repair costs are associated with repairing or replacing product components that have failed in an appliance; maintenance costs are associated with maintaining the operation of the product. Typically, small incremental increases in product efficiency produce no, or only minor, changes in repair and maintenance costs compared to baseline efficiency products. DOE requested comment in the June 2020 RFI on the assumption of zero maintenance and repair costs upon failure. DOE assumed that consumers would replace the CPSV upon failure rather than repairing the product. 85 FR 35383, 35391. DOE also requested comment if these changes would differ per efficiency level. *Id.* DOE received no comments related to maintenance nor repair costs.

For the analysis presented in the August 2021 NOPD, DOE modeled CPSVs as not being repaired, and no maintenance costs. Additionally, DOE modeled no changes in maintenance or repair costs between different efficiency levels. DOE received no comments related to this assumption in the August 2021 NOPD. In this final determination, DOE assumed CPSVs as not being repaired, and no maintenance costs.

7. Product Lifetime

For CPSVs, DOE used lifetime estimates from manufacturer datasheets and other published data sources. DOE requested comment in the June 2020 RFI regarding lifetime and lifetime distributions, and restated the values from the January 2016 Final Rule—an average lifetime of 5 years and maximum of 10 years. 85 FR 35383, 35391. DOE did not receive any comments related to lifetime of CPSVs in response to the June 2020 RFI.

For the analysis presented in the August 2021 NOPD, DOE developed a Weibull distribution with an average lifetime of 5 years and a maximum lifetime of 10 years. The use of a lifetime distribution for this analysis helps account for the variability in product lifetimes. DOE received no comments related to the lifetime values or distribution in response to the August 2021 NOPD. In this final determination, DOE assumed the same life values and distributions as in the August 2021 NOPD.

8. Discount Rates

In the calculation of LCC, DOE applies discount rates appropriate to CPSV users to estimate the present value of future operating costs. DOE estimated a distribution of commercial discount rates for CPSVs based on consumer financing costs and the opportunity cost of consumer funds.

DOE applies weighted-average discount rates calculated from consumer debt and asset data, rather than marginal or implicit discount rates.[23] DOE notes that the LCC does not analyze the appliance purchase decision, so the implicit discount rate is not relevant in this model. The LCC estimates NPV over the lifetime of the product, so the appropriate discount rate will reflect the general opportunity cost of commercial consumer funds, taking this time scale into account. Given the long-time horizon modeled in the LCC, the application of a marginal interest rate associated with an initial source of funds is inaccurate. Regardless of the method of purchase, consumers are expected to continue to rebalance their debt and asset holdings over the LCC analysis period, based on the restrictions consumers face in their debt payment requirements and the relative size of the interest rates available on debts and assets. DOE estimates the aggregate impact of this rebalancing using the historical distribution of debts and assets.

In the August 2021 NOPD, to establish commercial discount rates for the LCC analysis, DOE identified all relevant commercial consumer debt or asset classes in order to approximate a commercial consumer's opportunity cost of funds related to appliance energy cost savings. It estimated the average percentage shares of the various types of debt and equity by commercial consumer building type using data from Damodaran Online[24] for 1998–2019. Using Damodaran Online and the Federal Reserve, DOE developed a distribution of rates for each type of debt and asset by building type to represent the rates that may apply in the year in which amended standards would take effect. DOE assigned each sample building a specific discount rate drawn from one of the distributions. The average rate across all types of commercial consumer debt and equity, weighted by the shares of each type, given business size, is 7.0 percent.

DOE received no comments related to discount rate in response to the August 2021 NOPD. In this final determination, DOE uses the same analysis process for discount rates and values. However, the inputs for discount rates changed and this final determination uses a slightly lower discount rate for the LCC than compared to the August 2021 NOPD.

See chapter 8 of the final determination TSD for further details on the development of consumer discount rates.

9. Energy Efficiency Distribution in the No-New-Standards Case

To accurately estimate the share of consumers that would be affected by a potential energy conservation standard at a particular efficiency level, DOE's LCC analysis considered the projected distribution (market shares) of product efficiencies under the no-new-standards case (*i.e.,* the case without amended or new energy conservation standards).

To estimate the energy efficiency distribution of CPSVs for 2027 (the first year of the analysis period), DOE conducted general internet searches and examined manufacturer literature to understand the characteristics of the spray values currently offered on the market. DOE assumed that the no-new-standards case percentages in 2027 would stay the same through the analysis period. The estimated market shares by product class for the no-new-standards case for CPSVs DOE assumed in the August 2021 NOPD are shown in Table IV.11 of this document. The estimated market shares within each product class for the no-new-standards case for CPSVs DOE assumed in the August 2021 NOPD are shown in Table IV.12.

[23] The implicit discount rate is inferred from a consumer purchase decision between two otherwise identical goods with different first cost and operating cost. It is the interest rate that equates the increment of first cost to the difference in NPV of lifetime operating cost, incorporating the influence of several factors: transaction costs, risk premiums and response to uncertainty, time preferences, and interest rates at which a consumer is able to borrow or lend.

[24] Damodaran Online. Available at *pages.stern.nyu.edu/~adamodar/* (accessed April 2020).

TABLE IV.11—PRODUCT CLASS DISTRIBUTION IN NO-NEW-STANDARDS CASE

Product class	Portion of shipments (% of shipments)
1	10
2	70
3	20

TABLE IV.12—EFFICIENCY LEVEL DISTRIBUTION WITHIN EACH PRODUCT CLASS IN NO-NEW-STANDARDS CASE

Efficiency Level	Product class 1 (% of shipments)	Product class 2 (% of shipments)	Product class 3 (% of shipments)
0	3.1	74.2	86.0
1		24.2	14.0
2	87.5		
3	9.4	1.5	

DOE received no direct comments related to the August 2021 NOPD assumed efficiency distributions. However, both the CA IOUs and NEEA commented that the CCD database does not contain any models in product class 3, suggesting that the lack of product availability in product class 3 indicates a need for additional research as to consumer preferences in the CPSV market, including in-depth market and sales analysis to better inform DOE's product type switching methodology. NEEA stated that DOE should also account for market availability of products. (CA IOUs, No. 15 at pp. 18–19; NEEA, No. 19 at p. 3) DOE agrees that the CCD, when queried between March 2021 and March 2022, did not contain any models in product class 3. However, DOE has identified such products in manufacturer catalogs and on the market. The values in Table IV.11 are based on DOE's survey of the market indicating that 20 percent of products available are in product class 3. The values in Table IV.12 are partially based on data from the CCD as well as DOE's review of market data. The values in Table IV.12 indicate products exist for EL 0 and EL 1 in product class 3. Given the presence of CPSVs in product class three, there is not a need to account for market availability as suggested by NEEA.

DOE uses these same efficiency distributions from the August 2021 NOPD in this final determination.

See chapter 8 of the final determination TSD for further information on the derivation of the efficiency distributions.

10. Payback Period Analysis

The PBP is the amount of time it takes the consumer to recover the additional installed cost of more efficient products, compared to baseline products, through energy cost savings. The PBP is expressed in years. The PBP that exceeds the life of the product means that the increased total installed cost is not recovered in reduced operating expenses.

The inputs to the PBP calculation for each efficiency level are the change in total installed cost of the product and the change in the first-year annual operating expenditures relative to the baseline. The PBP calculation uses the same inputs as the LCC analysis, except that discount rates are not needed.

G. Shipments Analysis

DOE uses projections of annual product shipments to calculate the national impacts of potential amended or new energy conservation standards on energy use, NPV, and future manufacturer cash flows.[25] The shipments model takes an accounting approach in tracking market shares of each product class and the vintage of units in the stock. Stock accounting uses product shipments as inputs to estimate the age distribution of in-service product stocks for all years. The age distribution of in-service product stocks is a key input to calculations of both the NES and NPV, because operating costs for any year depend on the number of CPSVs in operation during that year.

In the August 2021 NOPD, historical CPSV shipment data were obtained from industry reports as well as DOE's CCD.[26] NEEA commented that the CCD does not contain any models in product class 3. (NEEA, No. 19 at p. 3) In this final determination, DOE consulted manufacturer catalogues to identify the product class 3 data. DOE also used the CCD to help inform some of the efficiency values reported in Table IV.12 of this document.

In the August 2021 NOPD, DOE used the commercial floorspace growth rate to make projections through 2056. PMI commented that at least 20,000 restaurants closed in 2020 as a result of the COVID–19 pandemic. (PMI, No. 4 at pp. 3–4) DOE modeled flat growth in 2020 through 2022 for CPSVs and assumed that growth would increase by the time the analysis period starts in 2027. 86 FR 46330, 46344.

H. National Impact Analysis

The NIA assesses the NES and the NPV from a national perspective of total consumer costs and savings that would be expected to result from new or amended standards at specific efficiency levels.[27] (''Consumer'' in this context refers to consumers of the equipment being regulated.) DOE calculates the NES and NPV for the potential standard levels considered based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses. For the present analysis, DOE projected the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of CPSVs sold from 2027 through 2056.

DOE evaluates the effects of new or amended standards by comparing a case without such standards with standards-case projections. The no-new-standards case characterizes energy use and consumer costs for each CPSV product class in the absence of new or amended

[25] DOE uses data on manufacturer shipments as a proxy for national sales, as aggregate data on sales are lacking. In general, one would expect a close correspondence between shipments and sales.

[26] Department of Energy—Office of Energy Efficiency and Renewable Energy. *U.S. Department of Energy's Compliance Certification Database.* Available at *www.regulations.doe.gov/certification-data/#q=Product_Group_s%3A*.*

[27] The NIA accounts for impacts in the 50 states and Washington, DC.

energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each CPSV product class if DOE adopted new or amended standards at specific energy efficiency levels (*i.e.,* the efficiency levels or standards cases) for that class. For the standards cases, DOE considers how a given standard would likely affect the market shares of CPSVs with lower flow rates than the standard.

DOE uses a spreadsheet model to calculate the energy savings and the national consumer costs and savings from each efficiency level. Interested parties can review DOE's analyses by changing various input quantities within the spreadsheet. The NIA spreadsheet model uses typical values (as opposed to probability distributions) as inputs.

Table IV.13 summarizes the inputs and methods DOE used for the NIA analysis for the final determination. Discussion of these inputs and methods follows the table. See chapter 10 of the final determination TSD for details.

TABLE IV.13—SUMMARY OF INPUTS AND METHODS FOR THE NATIONAL IMPACT ANALYSIS

Inputs	Method
Shipments	Annual shipments from shipments model.
Modeled Compliance Date of Standard	2027.
Efficiency Trends	No-new-standards case. Standards cases.
Annual Energy Consumption per Unit	Annual weighted-average values are a function of energy use at each EL.
Total Installed Cost per Unit	Annual weighted-average values are a function of cost at each EL.
Annual Energy Cost per Unit	Annual weighted-average values as a function of the annual energy consumption per unit and energy prices.
Repair and Maintenance Cost per Unit	Annual values do not change with efficiency level.
Energy Prices	*AEO2021* projections (to 2050) and extrapolation through 2056.
Energy Site-to-Primary and FFC Conversion	A time-series conversion factor based on *AEO2021*.
Discount Rate	3 percent and 7 percent.
Present Year	2022.

1. Product Efficiency Trends

A key component of the NIA is the trend in energy efficiency projected for the no-new-standards case and each of the standards cases. Section IV.F.9 of this document describes how DOE developed an energy efficiency distribution for the no-new-standards case (which yields a shipment weighted-average efficiency) for each of the considered product classes for the year of anticipated compliance with an amended or new standard.

For the standards cases, DOE considered three consumer choice scenarios to establish the shipment-weighted efficiency for the year that standards are assumed to become effective (2027). Further descriptions of the scenarios are provided in the following section.

2. Customer Choice Scenarios

In the January 2016 Final Rule, DOE acknowledged both the possibility that consumers would switch between product classes and the possibility that a subset of consumers would exit the CPSV market and purchase higher flow rate products (*e.g.,* faucets). 81 FR 4748, 4769. In the August 2021 NOPD, DOE included two scenarios of switching. In one scenario (nearest neighbor), some product class 2 consumers opted to purchase product class 3 equipment. In the second scenario (product type switch), some product class 3 consumers opted to purchase a faucet instead of another spray valve. 86 FR 46330, 46344. Therefore, the NIA model allows for evaluation of a no product switch scenario (''rolling-up'' within product class), as well as the nearest neighbor and product type switch scenarios.

NEEA recommended DOE conduct research to further explore customer satisfaction in the CPSV market. (NEEA, No. 19 at p. 2)

In the August 2021 NOPD, as well as in this final determination, DOE analyzed three permutations of consumer behavior in the analyses, which capture a range of consumer choice options. DOE analyzed the major options available to consumers if standards were amended including the following:

- ''*Rolling-up*'' *within product class.* Consumers purchase a device in the product class (no product class switch). This is a typical scenario when consumer demand for a utility feature of a product class limits consumers switching to another product class.
- *Nearest neighbor.* Consumers purchase a device with similar flow rate even if in a different product class (*i.e.,* nearest neighbor).
- *Product-type switching.* Consumers opt to purchase a different product type altogether (*e.g.,* consumers opt to purchase a higher flow product like a faucet).

NEEA stated that they believed that it is more likely that consumers would switch within the product classes in order to keep using a spray valve of any flow rate or spray force rather than leave the market. (NEEA, No. 19 at p. 3) NEEA also commented that product type switching was a valid scenario, but the reality of consumers opting for a faucet is not as regularly expected as presented in the August 2021 NOPD. (NEEA, No. 19 at p. 2).

Under the nearest neighbor scenario, if the current choices of product under the current regulations correspond to the consumers' optimal product, it is probable that some consumers would switch from product class 1 to product class 2 or from product class 2 to product class 3 in response to amended standards in order to maintain their satisfaction with the product. In more extreme cases, consumers may also opt to exit the CPSV market and purchase a different type of product (*e.g.,* a faucet) with a higher flow rate (*i.e.,* product type switch). The Federal standard for faucets established a maximum flow rate of 2.2 gpm. 10 CFR 430.32(o). The economics resulting from nearest neighbor and product-type switching may result in lower optimal efficiency levels and reduced estimates of water and energy savings, as compared to the case without class switching.

DOE is not aware of any other consumer preference scenarios that should be evaluated. DOE did not receive any specific comments on alternate consumer preference scenarios that are possible and that should be evaluated. Therefore, DOE has maintained the same scenarios from the August 2021 NOPD. DOE presents the nearest neighbor scenario as the

Reference case in the final determination but presents results from each of the scenarios in Chapter 10 of the final determination TSD.

In the nearest neighbor scenario, consumers would choose the product with the flow rate that is closest to their current product flow rate, even if it has a higher spray force (product class switching). Under the nearest neighbor scenario, DOE assumed 100 percent of consumers would choose the closest flow rate. Table IV.14 lists the flow rate for the potential efficiency levels evaluated in the August 2021 NOPD. 86 FR 46330, 46344.

TABLE IV.14—COMMERCIAL PRERINSE SPRAY VALVE FLOW RATES

Efficiency level	Product class 1	Product class 2	Product class 3
	Flow rate (gpm)	Flow rate (gpm)	Flow rate (gpm)
Baseline	1.00	1.20	1.28
Level 1	* 0.85	1.02	1.13
Level 2	0.75	* 0.90	
Level 3	0.45	0.73	

* Market data do not indicate currently available product that meet this efficiency level.

In response to the August 2021 NOPD, NEEA commented that they believed that it is more likely that consumers would switch between product classes in order to keep using a spray valve of any flow rate or spray force rather than leave the market altogether (moving to a faucet), as CPSVs have performance features specifically tailored for commercial dishwashing applications that traditional faucets do not. (NEEA, No. 19 at p. 3) DOE agrees that is more likely consumers will switch between product classes and not opt to purchase faucets. For this reason, DOE uses the nearest neighbor scenario (switching between product classes while still purchasing spray valves) as the Reference case in this final determination, however DOE cannot rule out the potential of consumers leaving the CPSV market all together.

To the extent that customers would opt to leave the CPSV market, that scenario is more likely as a result of more stringent standards for this rulemaking than it was for the January 2016 Final Rule. As discussed, the availability of CPSVs that are in product class 3 may be limited and as such the lack of units available in product class 3 makes it more likely that consumers seeking the product utility associated with the spray force currently offered in product class 2 would exit the CPSV market. Therefore, the likelihood of consumers opting for alternative products outside of the CPSV market in response to amended standards in this rulemaking is more likely than presented in the January 2016 Final Rule. *See* 86 46330, 46344–46346 (August 11, 2021).

A detailed discussion of DOE's method to model this sensitivity analysis is contained in chapter 10 of the final determination TSD.

3. National Energy Savings

The NES analysis involves a comparison of national energy consumption of the considered product between each potential standards case (EL) and the case with no new or amended energy conservation standards. DOE calculated the national energy consumption by multiplying the number of units (stock) of each product (by vintage or age) by the unit energy consumption (also by vintage). DOE calculated annual NES based on the difference in national energy consumption for the no-new-standards case and for each higher efficiency standard case. DOE estimated energy consumption and savings based on site energy and converted the electricity consumption and savings to primary energy (*i.e.,* the energy consumed by power plants to generate site electricity) using annual conversion factors derived from *AEO2021.* Cumulative energy savings are the sum of the NES for each year over the timeframe of the analysis.

The use of a more efficient product is occasionally associated with a direct rebound effect, which refers to an increase in utilization of the product due to the increase in efficiency. For CPSVs, DOE did not use a rebound effect estimate. DOE does not include the rebound effect in the NPV analysis because it reasons that the increased service from greater use of the product has an economic value that is reflected in the value of the foregone energy savings.

In 2011, in response to the recommendations of a committee on ''Point-of-Use and Full-Fuel-Cycle Measurement Approaches to Energy Efficiency Standards'' appointed by the National Academy of Sciences, DOE announced its intention to use FFC measures of energy use and greenhouse gas and other emissions in the NIA and emissions analyses included in future energy conservation standards rulemakings. 76 FR 51281 (Aug. 18, 2011). After evaluating the approaches discussed in the August 18, 2011, notice, DOE published a statement of amended policy in which DOE explained its determination that EIA's National Energy Modeling System (''NEMS'') is the most appropriate tool for its FFC analysis and its intention to use NEMS for that purpose. 77 FR 49701 (Aug. 17, 2012). NEMS is a public domain, multi-sector, partial equilibrium model of the U.S. energy sector [28] that EIA uses to prepare its *AEO.* The FFC factors incorporate losses in production, and delivery in the case of natural gas, (including fugitive emissions) and additional energy used to produce and deliver the various fuels used by power plants. The approach used for deriving FFC measures of energy use and emissions is described in appendix 10B of the final determination TSD.

4. Net Present Value Analysis

The inputs for determining the NPV of the total costs and benefits experienced by consumers are (1) total annual installed cost, (2) total annual operating costs (energy costs and repair and maintenance costs), and (3) a discount factor to calculate the present value of costs and savings. DOE calculates net savings each year as the difference between the no-new-standards case and each standards case in terms of total savings in operating costs versus total increases in installed costs. DOE calculates operating cost savings over the lifetime of each product shipped during the projection period.

[28] For more information on NEMS, refer to *The National Energy Modeling System: An Overview 2009,* DOE/EIA–0581(2009), October 2009. Available at *www.eia.gov/analysis/pdfpages/0581(2009)index.php.*

The operating cost savings are energy cost savings, which are calculated using the estimated energy savings in each year and the projected price of the appropriate form of energy. To estimate energy prices in future years, DOE multiplied the average regional energy prices by the projection of annual national average commercial energy price changes in the Reference case from *AEO2021,* which has an end year of 2050. To estimate price trends after 2050, DOE used the average annual rate of change in prices from 2020 through 2050. As part of the NIA, DOE also analyzed scenarios that used inputs from variants of the *AEO2021* Reference case that have lower and higher economic growth. Those cases have lower and higher energy price trends compared to the Reference case. NIA results based on these cases are presented in appendix 10C of the final determination TSD.

In calculating the NPV, DOE multiplies the net savings in future years by a discount factor to determine their present value. For this final determination, DOE estimated the NPV of consumer benefits using both a 3-percent and a 7-percent real discount rate. DOE uses these discount rates in accordance with guidance provided by the Office of Management and Budget (''OMB'') to Federal agencies on the development of regulatory analysis.[29] The discount rates for the determination of NPV are in contrast to the discount rates used in the LCC analysis, which are designed to reflect a consumer's perspective. The 7-percent real value is an estimate of the average before-tax rate of return to private capital in the U.S. economy. The 3-percent real value represents the ''social rate of time preference,'' which is the rate at which society discounts future consumption flows to their present value.

I. Manufacturer Impact Analysis

1. Overview

DOE conducted an MIA for CPSVs to estimate the financial impacts of analyzed amended energy conservation standards on manufacturers of CPSVs. The MIA has both quantitative and qualitative aspects and includes analyses of projected industry cash flows, the industry net present value (''INPV''), investments in research and development and manufacturing capital, and domestic manufacturing employment. Additionally, the MIA seeks to determine how amended energy conservation standards might affect manufacturing employment, capacity, and competition, as well as how standards contribute to overall regulatory burden. Finally, the MIA serves to identify any disproportionate impacts on manufacturer subgroups, including small business manufacturers.

The quantitative part of the MIA relies on the Government Regulatory Impact Model (''GRIM''), an industry cash flow model customized for the CPSVs covered in this final determination. The key GRIM inputs are data on the industry cost structure, MPCs, and shipments, as well as assumptions about manufacturer markups and manufacturer conversion costs. The key MIA output is INPV, which is the sum of industry annual cash flows over the analysis period, discounted using the industry weighted-average cost of capital, and the impact to domestic manufacturing employment. The GRIM calculates annual cash flows using standard accounting principles. DOE used the GRIM to compare changes in INPV between the no-new-standards case and various efficiency levels, the standards cases. The difference in INPV between the no-new-standards case and the standards cases represents the financial impact of analyzed amended energy conservation standards on CPSV manufacturers. Different sets of assumptions (conversion cost scenarios) produce different INPV results. The qualitative part of the MIA addresses factors such as manufacturing capacity; characteristics of, and impacts on, any particular subgroup of manufacturers, including small manufacturers; the cumulative regulatory burden placed on CPSV manufacturers; and any impacts on competition.

2. GRIM Analysis and Key Inputs

DOE uses the GRIM to quantify the changes in cash flows over time due to the analyzed amended energy conservation standards. These changes in cash flows result in either a higher or lower INPV for the standards cases compared to the no-new-standards case. The GRIM uses a standard annual cash flow analysis that incorporates MPCs, manufacturer markups, shipments, and industry financial information as inputs. It then models changes in manufacturer investments that may result from the analyzed amended energy conservation standards. The GRIM uses these inputs to calculate a series of annual cash flows beginning with the reference year of the analysis (2022) and continuing to the terminal year of the analysis (2056). DOE computes INPV by summing the stream of annual discounted cash flows during the analysis period. DOE continued to use a real discount rate of 6.86 percent, the same discount rate used in the August 2021 NOPD, for CPSV manufacturers in this final determination. 86 FR 46330, 46346.[30] Many of the GRIM inputs come from the engineering analysis, the shipments analysis, and other research conducted during the MIA. The major GRIM inputs are described in detail in the following sections.

a. Manufacturer Product Costs

Manufacturing more efficient products is typically more expensive than manufacturing baseline products. However, as discussed in section IV.C.2 of this document, the MPCs for all CPSVs are constant at every efficiency level and for every product class. In the MIA, DOE used the MPCs calculated in the engineering analysis, as described in section IV.C.2 of this document and further detailed in chapter 5 of the final determination TSD.

b. Shipment Projections

INPV, the key GRIM output, depends on industry revenue, which depends on the quantity and prices of CPSVs shipped in each year of the analysis period. Industry revenue calculations require forecasts of (1) the total annual shipment volume of CPSVs, (2) the distribution of shipments across the product classes, and (3) the distribution of shipments across efficiency levels.

In the MIA, DOE used the shipments calculated as part of the shipments analysis discussion in section IV.G of this document and chapter 9 of the final determination TSD.

c. Product and Capital Conversion Costs

DOE expects the analyzed amended CPSV energy conservation standards would cause manufacturers to incur conversion costs to bring their production facilities and product designs into compliance with the analyzed amended standards. For the MIA, DOE classified these conversion costs into two groups: (1) capital conversion costs and (2) product conversion costs. Capital conversion costs are investments in property, plant, and equipment necessary to adapt or change existing production facilities so new product designs can be fabricated and assembled. Product conversion costs are investments in research, development, testing, marketing, certification, and other non-capitalized costs necessary to make product designs

[29] United States Office of Management and Budget. *Circular A–4: Regulatory Analysis.* September 17, 2003. Section E. Available at *www.whitehouse.gov/omb/memoranda/m03-21.html.*

[30] The August 2021 NOPD incorrectly stated that the discount rate used in the NOPD MIA was 6.89%. However, the value that was actually used in the GRIM file was 6.86%. 86 FR 46330, 46346.

comply with the analyzed amended standards.

In general, DOE assumes all conversion-related investments occur between the year of publication of a potential final rule and the year by which manufacturers must comply with potential amended standards. DOE created estimates of industry capital and product conversion costs using the engineering cost model and information gained during product teardowns. Product conversion costs depend on the number of CPSV models that need to be redesigned and retested as well as the number of manufacturers that need to update brochures and marketing materials. Capital conversion costs are based on the number of plastic spray patterns that would need to be fabricated by CPSV manufacturers. The conversion cost estimates are presented in section V.B of this document.

d. Manufacturer Markup

As discussed in section IV.I.2.a of this document, the MPCs for CPSVs are the manufacturers' costs for those products. The MPCs include materials, direct labor, depreciation, and overhead, which are collectively referred to as the cost of goods sold. The MSP is the price received by CPSV manufacturers from the first sale of those products, typically to a distributor, regardless of the downstream distribution channel through which the CPSVs are ultimately sold. The MSP is not the price the end-user pays for CPSVs because there are typically multiple sales along the distribution chain and various markups applied to each sale. The MSP equals the MPC multiplied by the manufacturer markup. The manufacturer markup covers all the CPSV manufacturer's non-production costs (*i.e.,* selling, general, and administrative expenses; research and development; and interest) as well as profit. Total industry revenue for CPSV manufacturers equals the MSPs at each efficiency level multiplied by the number of shipments at that efficiency level for all product classes. As previously discuss in section IV.C.2 of this document, the MPC for all CPSVs is the same at each efficiency level for all product classes. Therefore, total industry revenue equals the MSP multiplied by the number of shipments.

In the June 2020 RFI, DOE requested comment on whether the manufacturer markup of 1.30 from the January 2016 Final Rule is still appropriate to represent the market share weighted-average value. 85 FR 35383, 35389. DOE did not receive any comments on this topic in either the June 2020 RFI or the August 2021 NOPD. Therefore, DOE used the same manufacturer markup of 1.30 that was used in the August 2021 NOPD.

V. Analytical Results and Conclusions

The following section addresses the results from DOE's analyses with respect to the analyzed energy conservation standards for CPSVs. It addresses the efficiency levels examined by DOE and the projected impacts of each of these levels. Additional details regarding DOE's analyses are contained in the final determination TSD supporting this document.

In response to the August 2021 NOPD, NEEA commented that it is not clear what scenario was used for DOE's determination of the product switching methodology. (NEEA, No. 19 at p. 2) DOE's reference case in the NOPD was the nearest neighbor scenario, which is the same in this final determination. However, DOE also considered the effect of product-type switching for the determination. As discussed in section IV.H.2 of this document, DOE notes to the extent that customers would opt to leave the CPSV market, that scenario is more likely as a result of more stringent standards for this determination than it was for the January 2016 Final Rule. Therefore, the product-type switch scenario was also a consideration for the final determination.

A. Economic Impacts on Individual Consumers

DOE analyzed the cost effectiveness (*i.e.,* the savings in operating costs throughout the estimated average life of CPSVs compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the CPSVs) that is likely to result from the imposition of a standard at an efficiency level by considering the LCC and PBP at each efficiency level. These analyses are discussed in the following sections.

In general, a more efficient product can affect consumers in two ways: (1) purchase price increases and (2) annual operating costs decrease. In the case of CPSVs, there is no incremental cost associated with the more efficient product. Inputs used for calculating the LCC and PBP include total installed costs (*i.e.,* product price plus installation costs) and operating costs (*i.e.,* annual energy use, energy prices, energy price trends, repair costs, and maintenance costs). The LCC calculation also uses product lifetime and a discount rate. Chapter 8 of the final determination TSD provides detailed information on the LCC and PBP analyses.

Table V.1 shows the average LCC and PBP results for the efficiency levels considered for CPSVs in this analysis.

TABLE V.1—AVERAGE LCC AND PBP RESULTS BY EFFICIENCY LEVEL

Efficiency level	LCC savings *(2020$)*	Simple payback period *(years)*
EL 1	$371.02	0
EL 2	723.57	0
EL 3	735.58	0

The average LCC results in Table V.1 reflect the assumption of a consumer opting to stay within the same product class and not incorporating the switching between product classes or product types that is modeled when assessing national impacts. The results in Table V.1 also assume a consumer purchases a product from an efficiency level that exists in the market. As a result, product class 1 consumers at baseline efficiency level purchase EL 2 products in the LCC analysis, and product class 2 consumers at EL 1 purchase EL 3 in the LCC analysis.

B. Economic Impacts on Manufacturers

DOE performed an MIA to estimate the impact of potential amended energy conservation standards on manufacturers of CPSVs. DOE modeled MIA results using the reference case, Nearest Neighbor. The following sections describe the expected impacts on CPSV manufacturers at each efficiency level. Chapter 11 of the final determination TSD explains the MIA in further detail.

1. Industry Cash Flow Analysis Results

In this section, DOE provides MIA results from the analysis, which examines changes in the industry that could result from amended standards. Table V.2 and Table V.3 depict the estimated financial impacts (represented by changes in INPV) of potential amended energy conservation standards on CPSV manufacturers, as well as the conversion costs that DOE estimates manufacturers would incur at each efficiency level. To evaluate the range of cash flow impacts on the CPSV industry, DOE modeled two conversion cost scenarios that correspond to the range of potential manufacturer investments that may occur in responses to potential amended standards. Each conversion cost scenario results in a unique set of cash flows and corresponding industry values at each efficiency level.

In the following discussion, the INPV results refer to the difference in industry value between the no-new-standards case and the standards cases that result from the sum of discounted cash flows from the reference year (2022) through the end of the analysis period (2056). The results also discuss the difference in cash flows between the no-new-standards case and the standards cases in the year before the analyzed compliance date for potential amended energy conservation standards. This differential represents the size of the required conversion costs relative to the cash flow generated by the CPSV industry in the absence of amended energy conservation standards.

To assess the upper (less severe) end of the range of potential impacts on CPSV manufacturers, DOE modeled a sourced conversion cost scenario. This scenario assumes that the majority of CPSV manufacturers, but not all CPSV manufacturers, source components (including the nozzle) from component suppliers and simply assemble the CPSVs. In this scenario, the CPSV manufacturers that DOE assumed source components would not incur a capital conversion cost related to the fabrication of plastic nozzles if CPSV manufacturers must redesign nozzle molds due to the analyzed amended energy conservation standards.

To assess the lower (more severe) end of the range of potential impacts on CPSV manufacturers, DOE modeled a fabricated conversion cost scenario. This scenario assumes that all CPSV manufacturers currently selling products with plastic spray nozzles fabricate these nozzles in-house. In this scenario, all CPSV manufacturers incur capital conversion costs related to the fabrication of plastic nozzles if CPSV manufacturers must redesign nozzle molds due to analyzed amended energy conservation standards.

Table V.2 and Table V.3 present the projected results for CPSVs under the sourced and fabricated conversion cost scenarios. DOE examined results for all product classes together since most manufacturers sell products across a variety of the analyzed product classes.

TABLE V.2—MANUFACTURER IMPACT ANALYSIS FOR COMMERCIAL PRERINSE SPRAY VALVES—SOURCED CONVERSION COST SCENARIO

	Units	No-new-standards case	Efficiency level *		
			1	2	3
INPV	*2020$ millions*	11.6	10.7	10.7	10.7
Change in INPV	*2020$ millions*		(0.9)	(0.9)	(0.9)
	%		(8.0)	(8.0)	(8.0)
Product Conversion Costs	*2020$ millions*		1.3	1.3	1.3
Capital Conversion Costs	*2020$ millions*		0.1	0.1	0.1
Total Conversion Costs	*2020$ millions*		1.4	1.4	1.4

* Numbers in parentheses indicate negative numbers.

TABLE V.3—MANUFACTURER IMPACT ANALYSIS FOR COMMERCIAL PRERINSE SPRAY VALVES—FABRICATED CONVERSION COST SCENARIO

	Units	No-new-standards case	Efficiency level *		
			1	2	3
INPV	*2020$ millions*	11.6	10.5	10.5	10.4
Change in INPV	*2020$ millions*		(1.0)	(1.0)	(1.2)
	%		(9.0)	(9.0)	(10.1)
Product Conversion Costs	*2020$ millions*		1.3	1.3	1.3
Capital Conversion Costs	*2020$ millions*		0.3	0.3	0.4
Total Conversion Costs	*2020$ millions*		1.6	1.6	1.7

* Numbers in parentheses indicate negative numbers.

At EL 1, DOE estimates the impacts on INPV to range from −$1.0 million to −$0.9 million, or a change in INPV of −9.0 percent to −8.0 percent. At EL 1, industry free cash flow (operating cash flow minus capital expenditures) is estimated to decrease to $0.1 million, or a drop of up to 88.2 percent, compared to the no-new-standards case value of $0.7 million in 2026, the year leading up to the analyzed compliance date of potential amended energy conservation standards.

Percentage impacts on INPV are moderately negative at EL 1. DOE projects that in the analyzed year of compliance (2027), 97 percent of CPSV shipments in product class 1, 26 percent of CPSV shipments in product class 2, and 14 percent of CPSV shipments in product class 3 will meet EL 1. EL 1 represents max-tech for product class 3. DOE expects CPSV manufacturers to incur approximately $1.3 million in product conversion costs to update brochures and marketing material and retest and redesign CPSV models that would need to be redesigned if standards were set at EL 1. Additionally, CPSV manufacturers would incur between $0.3 million and $0.1 million in capital conversion costs to fabricate new plastic nozzle molds to accommodate spray patterns that could meet potential amended standards set at EL 1.

At EL 2, DOE estimates the impacts on INPV to range from −$1.0 million to −$0.9 million, or a change in INPV of −9.0 percent to −8.0 percent. At EL 2, industry free cash flow (operating cash flow minus capital expenditures) is estimated to decrease to $0.1 million, or a drop of up to 88.2 percent, compared to the no-new-standards case value of $0.7 million in 2026, the year leading up to the analyzed compliance date of potential amended energy conservation standards.

Percentage impacts on INPV are moderately negative at EL 2. DOE projects that in the analyzed year of compliance (2027), 97 percent of CPSV shipments in product class 1 and 2 percent of CPSV shipments in product class 2 will meet or exceed EL 2. Product class 3 is at max-tech (at EL 1) and 14 percent of product class 3 CPSV shipments will meet max-tech. DOE expects CPSV manufacturers to incur approximately $1.3 million in product conversion costs to update brochures and marketing material and retest and redesign CPSV models that would need to be redesigned if standards were set at EL 2 (and EL 1, which is max-tech, for product class 3). Additionally, CPSV manufacturers would incur between $0.3 million and $0.1 million in capital conversion costs to fabricate new plastic nozzle molds to accommodate spray patterns that could meet potential amended standards set at EL 2 (and EL 1, which is max-tech, for product class 3).

At EL 3, max-tech for all product classes, DOE estimates the impacts on INPV to range from −$1.2 million to −$0.9 million, or a change in INPV of −10.1 percent to −8.0 percent. At EL 3, industry free cash flow (operating cash flow minus capital expenditures) is estimated to decrease to less than $0.1 million, or a drop of up to 99.0 percent, compared to the no-new-standards case value of $0.7 million in 2026, the year leading up to the analyzed compliance date of potential amended energy conservation standards.

Percentage impacts on INPV are moderately negative at EL 3. DOE projects that in the analyzed year of compliance (2027), 9 percent of CPSV shipments in product class 1, 2 percent of CPSV shipments in product class 2, and 14 percent of CPSV shipments in product class 3 will meet max-tech. DOE expects CPSV manufacturers to incur approximately $1.3 million in product conversion costs to update brochures and marketing material and retest and redesign CPSV models that would need to be redesigned if standards were set at max-tech (EL 3 for product classes 1 and 2 and EL 1 for product class 3). Additionally, CPSV manufacturers would incur between $0.4 million and $0.1 million in capital conversion costs to fabricate new plastic nozzle molds to accommodate spray patterns that could meet potential amended standards set at max-tech (EL 3 for product classes 1 and 2 and EL 1 for product class 3).

2. Direct Impacts on Employment

The design option specified for achieving greater efficiency levels (*i.e.,* changing the total spray hole area of the CPSV nozzle) does not increase the labor content (measured in dollars) of CPSVs at any EL, nor does it increase total MPC or labor associated with manufacturing CPSVs. Additionally, total industry shipments are forecasted to be constant at all the analyzed standard levels. Therefore, DOE predicts no change in domestic manufacturing employment levels due to any of the analyzed standard levels.

3. Impacts on Manufacturing Capacity

Not every CPSV manufacturer makes CPSV models that could meet all the analyzed amended energy conservation standards for all product classes. However, DOE believes that manufacturers would not need to make substantial platform changes or significant investments for their CPSV products to meet any of the amended energy conservation standards analyzed in this rulemaking. Therefore, DOE does not foresee any significant impact on manufacturing capacity due to any of the analyzed amended energy conservation standards.

4. Impacts on Subgroups of Manufacturers

Using average cost assumptions to develop an industry cash flow estimate may not be adequate for assessing differential impacts among manufacturer subgroups. Small manufacturers, niche product manufacturers, and manufacturers exhibiting cost structures substantially different from the industry average could be affected disproportionately. DOE analyzed the impacts on small businesses in section VI.B of this document. DOE did not identify any other manufacturer subgroups for this rulemaking.

5. Cumulative Regulatory Burden

One aspect of assessing manufacturer burden involves looking at the cumulative impact of multiple DOE standards and the product-specific regulatory actions of other Federal agencies that affect the manufacturers of a covered product. While any one regulation may not impose a significant burden on manufacturers, the combined effects of several existing or impending regulations may have serious consequences for some manufacturers, groups of manufacturers, or an entire industry. Assessing the impact of a single regulation may overlook this cumulative regulatory burden. In addition to energy conservation standards, other regulations can significantly affect manufacturers' financial operations. Multiple regulations affecting the same manufacturer can strain profits and lead companies to abandon product lines or markets with lower expected future returns than competing products. For these reasons, DOE typically conducts an analysis of cumulative regulatory burden as part of its rulemakings pertaining to appliance efficiency. However, given the conclusion discussed in section V.D of this document, DOE did not conduct a cumulative regulatory burden analysis.

C. National Impact Analysis

This section presents DOE's estimates of the NES and the NPV of consumer benefits that would result from each of the efficiency levels considered as potential amended standards.

1. Significance of Energy Savings

To estimate the energy savings attributable to potential amended standards for CPSVs, DOE compared their energy consumption under the no-new-standards case to their anticipated energy consumption under each efficiency level. The savings are measured over the entire lifetime of the product purchased in the 30-year period that begins in the year of anticipated compliance with amended standards (2027–2056). Table V.4 presents DOE's projections of the NES for each efficiency level considered for CPSVs for all three scenarios considered (section IV.H.2 of this document).

TABLE V.4—CUMULATIVE NATIONAL ENERGY AND WATER SAVINGS FOR COMMERCIAL PRERINSE SPRAY VALVES; 30 YEARS OF SHIPMENTS

[2027–2056]

Efficiency level	National energy and water savings		
	Primary energy *(quads)*	FFC energy *(quads)*	National water savings *(billion gal)*
Scenario #1—"*Rolling-up*" *within product class*			
1	0.151	0.160	159.328
2	0.312	0.329	328.747

TABLE V.4—CUMULATIVE NATIONAL ENERGY AND WATER SAVINGS FOR COMMERCIAL PRERINSE SPRAY VALVES; 30 YEARS OF SHIPMENTS—Continued

[2027–2056]

Efficiency level	National energy and water savings		
	Primary energy *(quads)*	FFC energy *(quads)*	National water savings *(billion gal)*
3	0.279	0.295	294.188
Scenario #2—*Nearest Neighbor [REFERENCE CASE]*			
1	0.050	0.053	52.571
2	0.036	0.038	37.468
3	0.037	0.039	39.004
Scenario #3—*Product type switching*			
1	(0.098)	(0.103)	(102.905)
2	(0.112)	(0.108)	(118.009)
3	(0.110)	(0.117)	(116.473)

* Values in parenthesis indicate negative values.

OMB Circular A–4 [31] requires agencies to present analytical results, including separate schedules of the monetized benefits and costs that show the type and timing of benefits and costs. Circular A–4 also directs agencies to consider the variability of key elements underlying the estimates of benefits and costs. For this final determination, DOE undertook a sensitivity analysis using 9 years, rather than 30 years, of product shipments. The choice of a 9-year period is a proxy for the timeline in EPCA for the review of certain energy conservation standards and potential revision of and compliance with such revised standards.[32] The review timeframe established in EPCA is generally not synchronized with the product lifetime, product manufacturing cycles, or other factors specific to CPSVs. Thus, such results are presented for informational purposes only and are not indicative of any change in DOE's analytical methodology. Table V.5 presents DOE's 9-year projections of the NES for each efficiency level considered for CPSVs for all three scenarios considered (section IV.H.2 of this document). The impacts are counted over the lifetime of CPSVs purchased in 2027–2035.

TABLE V.5—CUMULATIVE NATIONAL ENERGY AND WATER SAVINGS FOR COMMERCIAL PRERINSE SPRAY VALVES; 9 YEARS OF SHIPMENTS

[2027–2035]

Efficiency level	National energy and water savings		
	Primary energy *(quads)*	FFC energy *(quads)*	National water savings *(billion gal)*
Scenario #1—"*Rolling-up*" *within product class*			
1	0.041	0.043	42.911
2	0.084	0.084	88.541
3	0.075	0.075	79.233
Scenario #2—*Nearest Neighbor [REFERENCE CASE]*			
1	0.003	0.013	14.159
2	0.002	0.010	10.091
3	0.003	0.010	10.505
Scenario #3—*Product-type switching*			
1	(0.026)	(0.028)	(27.715)
2	(0.030)	(0.032)	(31.783)

[31] U.S. Office of Management and Budget. *Circular A–4: Regulatory Analysis.* September 17, 2003. Available at *obamawhitehouse.archives.gov/omb/circulars_a004_a-4/.*

[32] Section 325(m) of EPCA requires DOE to review its standards at least once every 6 years, and requires, for certain products, a 3-year period after any new standard is promulgated before compliance is required, except that in no case may any new standards be required within 6 years of the compliance date of the previous standards. If DOE makes a determination that amended standards are not needed, it must conduct a subsequent review within three years following such a determination. As DOE is evaluating the need to amend the standards, the sensitivity analysis is based on the review timeframe associated with amended standards. While adding a 6-year review to the 3-year compliance period adds up to 9 years, DOE notes that it may undertake reviews at any time within the 6-year period and that the 3-year compliance date may yield to the 6-year backstop. A 9-year analysis period may not be appropriate given the variability that occurs in the timing of standards reviews and the fact that for some products, the compliance period is 5 years rather than 3 years.

TABLE V.5—CUMULATIVE NATIONAL ENERGY AND WATER SAVINGS FOR COMMERCIAL PRERINSE SPRAY VALVES; 9 YEARS OF SHIPMENTS—Continued

[2027–2035]

Efficiency level	National energy and water savings		
	Primary energy *(quads)*	FFC energy *(quads)*	National water savings *(billion gal)*
3	(0.030)	(0.032)	(31.369)

* Values in parenthesis indicate negative values.

2. Net Present Value of Consumer Costs and Benefits

DOE estimated the cumulative NPV for consumers that would result from the efficiency levels considered for CPSVs. In accordance with OMB's guidelines on regulatory analysis,[33] DOE calculated NPV using both a 7-percent and a 3-percent real discount rate. Table V.6 shows the consumer NPV results for each efficiency level considered for CPSVs for all three scenarios considered (*see* section IV.H.2 of this document). The impacts are counted over the lifetime of a product purchased in 2027–2056.

TABLE V.6—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR COMMERCIAL PRERINSE SPRAY VALVES; 30 YEARS OF SHIPMENTS

[2027–2056]

Efficiency level	Net present value (billion $2020) *	
	7-percent discount rate	3-percent discount rate
Scenario #1—"*Rolling-up*" *within product class*		
1	1.109	2.360
2	2.266	4.815
3	2.009	4.276
Scenario #2—*Nearest Neighbor [REFERENCE CASE]*		
1	0.335	0.740
2	0.239	0.527
3	0.249	0.549
Scenario #3—*Product type switching*		
1	(0.701)	(1.498)
2	(0.805)	(1.698)
3	(0.794)	(1.676)

* Values in parenthesis indicate negative values.

The NPV results based on the aforementioned 9-year analytical period for all three scenarios considered are presented in Table V.7. The impacts are counted over the lifetime of a product purchased in 2027–2035. As mentioned previously, such results are presented for informational purposes only and are not indicative of any change in DOE's analytical methodology or decision criteria.

TABLE V.7—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR COMMERCIAL PRERINSE SPRAY VALVES; 9 YEARS OF SHIPMENTS (2027–2035)

Efficiency Level	Net present value (billion $2020)*	
	7-percent discount rate	3-percent discount rate
Scenario #1—"*Rolling-up*" *within product class*		
1	0.501	0.778
2	1.028	1.562

[33] U.S. Office of Management and Budget. *Circular A–4: Regulatory Analysis.* September 17, 2003. Available at *obamawhitehouse.archives.gov/omb/circulars_a004_a-4/.*

TABLE V.7—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR COMMERCIAL PRERINSE SPRAY VALVES; 9 YEARS OF SHIPMENTS (2027–2035)—Continued

Efficiency Level	Net present value (billion $2020)*	
	7-percent discount rate	3-percent discount rate
3	0.913	1.388
Scenario #2—*Nearest Neighbor [REFERENCE CASE]*		
1	0.150	0.236
2	0.107	0.168
3	0.111	0.175
Scenario #3—*Product-type switching*		
1	(0.298)	(0.449)
2	(0.345)	(0.518)
3	(0.340)	(0.511)

* Values in parenthesis indicate negative values.

D. Final Determination

As required by EPCA, this final determination analyzes whether amended standards for CPSVs would result in significant conservation of energy, be technologically feasible, and be cost effective. (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)) Additionally, DOE also estimated the impact on manufacturers. The criteria considered under 42 U.S.C. 6295(m)(1)(A) and the additional analysis are discussed in the following subsections. Because an analysis of potential cost effectiveness and energy savings first requires an evaluation of the relevant technology, DOE first discusses the technological feasibility of amended standards. DOE then addresses the cost effectiveness and energy savings associated with potential amended standards.

1. Technological Feasibility

EPCA mandates that DOE consider whether amended energy conservation standards for CPSVs would be technologically feasible. (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)(B)) DOE has determined that there are technology options that would improve the efficiency of CPSVs. These technology options are being used in commercially available CPSVs and therefore are technologically feasible. (*See* section IV.A.2 for further information.) Hence, DOE has determined that amended energy conservation standards for CPSVs are technologically feasible.

2. Cost Effectiveness

EPCA requires DOE to consider whether energy conservation standards for CPSVs would be cost effective through an evaluation of the savings in operating costs throughout the estimated average life of the covered product compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered product which are likely to result from the imposition of an amended standard. (42 U.S.C. 6295(m)(1)(A), 42 U.S.C. 6295(n)(2)(C), and 42 U.S.C. 6295(o)(2)(B)(i)(II)). DOE conducted an LCC analysis to estimate the net costs/benefits to users from increased efficiency in the considered CPSVs. (*See* results in Table V.1 of this document). DOE then aggregated the results from the LCC analysis to estimate the NPV of the total costs and benefits experienced by the Nation for all three scenarios considered. (*See* results in Table V.6 of this document). As noted, the inputs for determining the NPV are (1) total annual installed cost, (2) total annual operating costs (energy costs and repair and maintenance costs), and (3) a discount factor to calculate the present value of costs and savings.

DOE considered each of the efficiency levels. All efficiency levels for the reference case scenario (*i.e.,* nearest neighbor) would result in a positive NPV at the 3-percent and 7-percent discount rates. DOE notes that the lack of incremental costs to consumers associated with more efficient products makes LCC and NPV values cost effective. However, in DOE's product type switch scenario, amended standards could result in a negative NPV (see section V.D.4 for further discussion).

3. Significant Conservation of Energy

EPCA also mandates that DOE consider whether amended energy conservation standards for CPSVs would result in significant conservation of energy. (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)(A)). To estimate the energy savings attributable to potential amended standards for CPSVs, DOE compared their energy consumption under the no-new-standards case to their anticipated energy consumption under each potential standard level. The savings are measured over the entire lifetime of product purchased in the 30-year period that begins in the year of anticipated compliance with amended standards (2027–2056).

DOE estimates that amended standards for CPSVs for the reference case scenario (*i.e.,* nearest neighbor) would result in maximum energy savings of 0.053 quads FFC energy savings at EL 1 over a 30-year analysis period (2027–2056). (*See* results in Table V.4 of this document.) However, in DOE's product type switch scenario, amended standards could result in an increase in FFC energy use (see section V.D.4 for further discussion).

4. Additional Consideration

EPCA lists certain additional factors for DOE to consider in deciding whether an amended energy conservation standard is economically justified. (42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII)).

As part of this analysis, DOE considers the economic impact of the standard on manufacturers of the products subject to an amended standard. (42 U.S.C. 6295(o)(2)(B)(i)(I). DOE investigated the manufacturer impacts of any potential amended standards and estimates that amended standards for CPSVs would result in a reduction in INPV between 10.1 and 8.0 percent. (*See* results in Table V.2 and Table V.3 of this document.)

In this analysis, DOE also considers any lessening of the utility or the performance of the covered products likely to result from the imposition of the standard. (42 U.S.C. 6295(o)(2)(B)(i)(IV)). As noted in section IV.G, spray force is a driving factor of consumer utility and consumer satisfaction. As discussed in section IV.C.1.b of this document, there is a direct relationship between flow rate and spray force. Therefore, the relationship between consumer satisfaction and spray force for CPSVs makes it possible that consumers may opt to switch product classes if they are unsatisfied with the spray force available to them in their current product class due to amended standards. In some cases, consumers react to amended standards by switching to an alternative product that consumes more water and energy than their current product. As discussed in section IV.H.2 of this document, the change in product availability since the January 2016 Final Rule makes it more likely that certain consumers would switch to higher flow rate products in response to amended standards. This shift increases the likelihood that amended standards could result in more energy and water use and a negative NPV. Accordingly, DOE accounted for this potential reduction in utility by considering the possibility of the product type switch scenario (section IV.H.2 of this document).

In DOE's sensitivity analysis, wherein a subset of consumers exit the CPSV market and switch to higher flow rate products such as faucets (product type switch scenario), all efficiency levels would result in a negative NPV at the 3-percent and 7-percent discount rates. Further, amended standards could result in an increase in FFC energy use between 0.103 (EL1) and 0.117 (EL3) quads over a 30-year analysis period (2027–2056).

Based on these additional considerations, DOE has determined that amended standards would not be economically justified at any efficiency level due to the increased likelihood of consumers switching products to higher flow rate products as a result of decreased consumer utility due to potential amended standards, and the corresponding negative NPV of this product type switch scenario and the negative INPV.

5. Summary

In this final determination, although energy and water savings are possible in the reference case analysis, there is risk that amended standards could result in increased energy and water consumption if consumers switch to products with higher flow rates, like faucets (as demonstrated in the product type switch scenario). Similarly, the product-type switch scenario would also result in a negative NPV for consumers. As discussed in section IV.H.2 of this document, the change in product availability since the 2016 Final Rule makes it more likely that consumers would switch to products with higher flow rates in the presence of amended standards. Therefore, it is more likely that amended standards could result in increases in water, energy, and costs. The risk of these potential increases outweigh the cost effectiveness of any amended standards.

As such, any potential benefits from amended standards are outweighed by the potential of increased energy and water use and the additional burden on manufacturers. DOE has determined, based on the estimated negative NPV values resulting from product type switching and the estimated additional burden on manufacturers, amended standards would not be economically justified. Therefore, DOE has determined that amended standards for CPSVs are not justified at this time.

VI. Procedural Issues and Regulatory Review

A. Review Under Executive Order 12866 and 13563

Executive Order (''E.O.'') 12866, ''Regulatory Planning and Review,'' as supplemented and reaffirmed by E.O. 13563, ''Improving Regulation and Regulatory Review,'' 76 FR 3821 (Jan. 21, 2011), requires agencies, to the extent permitted by law, to (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. DOE emphasizes as well that E.O. 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, the Office of Information and Regulatory Affairs (''OIRA'') has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, this final regulatory action is consistent with these principles.

Section 6(a) of E.O. 12866 also requires agencies to submit ''significant regulatory actions'' to OIRA for review. OIRA has determined that this final regulatory action does not constitute a ''significant regulatory action'' under section 3(f) of E.O. 12866. Accordingly, this action was not submitted to OIRA for review under E.O. 12866.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of 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 reviewed this final determination under the provisions of the Regulatory Flexibility Act and the policies and procedures published on February 19, 2003. DOE is not amending standards for CPSVs. This final determination would not result in any CPSV manufacturer, large or small, to incur any additional burden or significant economic impact because the current energy conservation standards would remain unchanged and in place. As a result, DOE concludes and certifies that the final determination has no significant economic impact on any small entities. Accordingly, DOE has not prepared a FRFA for this final determination.

C. Review Under the Paperwork Reduction Act

Manufacturers of commercial prerinse spray valves must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedures for commercial prerinse spray valves, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including commercial prerinse spray valves. (*See generally* 10 CFR part 429). The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (''PRA''). This requirement has been approved by OMB under OMB control number 1910–1400. Public reporting burden for the certification is estimated to average 35 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

Pursuant to the National Environmental Policy Act of 1969 (''NEPA''), DOE has analyzed this proposed determination in accordance with NEPA and DOE's NEPA implementing regulations (10 CFR part 1021). DOE has determined that this rule qualifies for categorical exclusion under 10 CFR part 1021, subpart D, appendix A4 because it is an interpretation or ruling in regards to an existing regulation and otherwise meets the requirements for application of a categorical exclusion. *See* 10 CFR 1021.410. Therefore, DOE has determined that promulgation of this rule is not a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA, and does not require an Environmental Assessment or Environmental Impact Statement.

E. Review Under Executive Order 13132

E.O. 13132, ''Federalism,'' 64 FR 43255 (Aug. 10, 1999), imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. The E.O. requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The E.O. also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this final determination and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this final determination. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297). Therefore, no further action is required by E.O. 13132.

F. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of E.O. 12988, ''Civil Justice Reform,'' imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity, (2) write regulations to minimize litigation, (3) provide a clear legal standard for affected conduct rather than a general standard, and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of E.O. 12988 specifically requires that executive agencies make every reasonable effort to ensure that the regulation (1) clearly specifies the preemptive effect, if any, (2) clearly specifies any effect on existing Federal law or regulation, (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction, (4) specifies the retroactive effect, if any, (5) adequately defines key terms, and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of E.O. 12988 requires executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this final determination meets the relevant standards of E.O. 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (''UMRA'') requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104–4, sec. 201 (codified at 2 U.S.C. 1531). For a regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of $100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a)–(b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a ''significant intergovernmental mandate,'' and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE's policy statement is also available at *www.energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf.*

This final determination contains neither an intergovernmental mandate nor a mandate that may result in the expenditure of $100 million or more in any year by State, local, and tribal governments, in the aggregate, or by the private sector. As a result, the analytical requirements of UMRA do not apply.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family

Policymaking Assessment for any rule that may affect family well-being. This final determination would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

Pursuant to E.O. 12630, ''Governmental Actions and Interference with Constitutionally Protected Property Rights,'' 53 FR 8859 (Mar. 15, 1988), DOE has determined that this final determination would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under the Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). Pursuant to OMB Memorandum M–19–15, Improving Implementation of the Information Quality Act (April 24, 2019), DOE published updated guidelines, which are available at *www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf.* DOE has reviewed this final determination under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

E.O. 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,'' 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any significant energy action. A ''significant energy action'' is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that (1) is a significant regulatory action under E.O. 12866, or any successor E.O.; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

This final determination, which does not amend energy conservation standards for CPSVs, is not a significant regulatory action under E.O. 12866. Moreover, it would not have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects.

L. Review Under the Information Quality Bulletin for Peer Review

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy (''OSTP''), issued its Final Information Quality Bulletin for Peer Review (''the Bulletin''). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal government, including influential scientific information related to agency regulatory actions. The purpose of the Bulletin is to enhance the quality and credibility of the Government's scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are ''influential scientific information,'' which the Bulletin defines as ''scientific information the agency reasonably can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions.'' 70 FR 2664, 2667 (Jan. 14, 2005).

In response to the Bulletin, DOE conducted formal peer reviews of the energy conservation standards development process and the analyses that are typically used and has prepared a Peer Review report pertaining to the energy conservation standards rulemaking analyses.[34] Generation of this report involved a rigorous, formal, and documented evaluation using objective criteria and qualified and independent reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. Because available data, models, and technological understanding have changed since 2007, DOE has engaged with the National Academy of Sciences to review DOE's analytical methodologies to ascertain whether modifications are needed to improve the Department's analyses. DOE is in the process of evaluating the resulting report.[35]

[34] Department of Energy—Office of Energy Efficiency and Renewable Energy. *Energy Conservation Standards Rulemaking Peer Review Report.* 2007. Available at *www.energy.gov/eere/buildings/downloads/energy-conservation-standards-rulemaking-peer-review-report-0.*

M. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule prior to its effective date. The report will state that it has been determined that the rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final determination.

Signing Authority

This document of the DOE was signed on May 31, 2022, by Kelly J. Speakes-Backman, 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 DOE. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on June 1, 2022.

Treena V. Garrett,

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

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[35] The report is available at *www.nationalacademies.org/our-work/review-of-methods-for-setting-building-and-equipment-performance-standards.*