6450-01-P

DEPARTMENT OF ENERGY

10 CFR Part 430

[Docket Number EERE-2011-BT-STD-0043]

RIN 1904-AC51

Energy Conservation Program: Energy Conservation Standards for Miscellaneous Refrigeration Products

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

ACTION: Notice of proposed rulemaking.

SUMMARY: The Energy Policy and Conservation Act of 1975 ("EPCA"), as amended, established the Energy Conservation Program for Consumer Products Other Than Automobiles. Based on provisions in EPCA that enable the Secretary of Energy to classify additional types of consumer products as covered products, the U.S. Department of Energy ("DOE") classified miscellaneous refrigeration products ("MREFs") as covered consumer products under EPCA. In determining whether to set standards for products, DOE must evaluate whether new standards would be technologically feasible and economically justified, and would save a significant amount of energy. In this proposed rule, DOE proposes new energy conservation standards for MREFs identical to those set forth in a direct final rule published elsewhere in this Federal Register. If DOE receives adverse comment and determines that such comment may provide a

reasonable basis for withdrawal, DOE will publish a notice withdrawing the final rule and will proceed with this proposed rule.

DATES: DOE will accept comments, data, and information regarding the proposed standards no later than [**INSERT DATE 110 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

Comments regarding the likely competitive impact of the proposed standard should be sent to the Department of Justice contact listed in the **ADDRESSES** section before [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

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

Any comments submitted must identify the proposed rule for Energy Conservation Standards for Miscellaneous Refrigeration Products, and provide docket number EERE-2011-BT-STD-0043 and/or regulatory information number (RIN) number 1904-AC51. Comments may be submitted using any of the following methods:

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

2. E-mail: WineChillers-2011-STD-0043@ee.doe.gov. Include the docket number and/or RIN in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or ASCII file format, and avoid the use of special characters or any form of encryption.

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

4. Hand Delivery/Courier: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L'Enfant Plaza, SW., 6th Floor, Washington, DC, 20024. Telephone: (202) 586-6636. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimilies (faxes) will be accepted. For detailed instructions on submitting comments and additional information on the rulemaking process, see section III of this document ("Public Participation").

Written comments regarding the burden-hour estimates or other aspects of the collection-of-information requirements contained in this proposed rule may be submitted to Office of Energy Efficiency and Renewable Energy through the methods listed above and by e-mail to Chad_S_Whiteman@omb.eop.gov.

EPCA requires the Attorney General to provide DOE a written determination of whether the proposed standard is likely to lessen competition. The U.S. Department of Justice Antitrust Division invites input from market participants and other interested persons with views on the likely competitive impact of the proposed standard. Interested persons may contact the Division at energy.standards@usdoj.gov before [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**]. Please indicate in the "Subject" line of your e-mail the title and Docket Number of this rulemaking notice.

DOCKET: The docket, 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, some documents listed in the index may not be publicly available, such as those containing information that is exempt from public disclosure.

A link to the docket web page can be found at: http://www.regulations.gov/#!docketDetail;D=EERE-2011-BT-STD-0043. This webpage contains a link to the docket for this notice on the www.regulations.gov site. The www.regulations.gov webpage contains simple instructions on how to access all documents, including public comments, in the docket. See section III, "Public Participation," for further information on how to submit comments through www.regulations.gov.

FOR FURTHER INFORMATION CONTACT:

Joseph Hagerman, 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) 586-6590. E-mail: refrigerators_and_freezers@ee.doe.gov.

For further information on how to submit a comment, review other public comments and the docket, or participate in the public meeting, contact the Appliance and Equipment Standards Program staff at (202) 586-6636 or by email: Appliance_Standards_Public_Meetings@ee.doe.gov.

SUPPLEMENTARY INFORMATION:

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I. Introduction and Legal Authority

A. Legal Authority

The Energy Policy and Conservation Act of 1975, as amended ("EPCA") (Public Law 94-163 (December 22, 1975)) includes provisions covering the products addressed by this notice. EPCA addresses, among other things, the energy efficiency of certain types of consumer products. Relevant provisions of the Act specifically include definitions (42 U.S.C. 6291), energy conservation standards (42 U.S.C. 6295), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

Under 42 U.S.C. 6292(a)(20), DOE may extend coverage over a particular type of consumer product provided that DOE determines that classifying products of such type as covered products is necessary or appropriate to carry out the purposes of EPCA and that the average annual per-household energy use by products of such type is likely to exceed 100 kilowatt-hours ("kWh") or its British thermal unit ("Btu") equivalent per year. See 42 U.S.C. 6292(b)(1). EPCA sets out the following additional requirements to establish energy conservation standards for a newly covered product: (1) the average per household domestic energy use by such products exceeded 150 kWh or its Btu equivalent for any 12-month period ending before such determination; (2) the aggregate domestic household energy use by such products exceeded 4.2 million kWh or its Btu equivalent for any such 12-month period; (3) substantial energy efficiency of the products is technologically feasible; and (4) applying a labeling rule is unlikely to be sufficient to induce manufacturers to produce, and consumers and

other persons to purchase, products of such type that achieve the maximum level of energy efficiency. See 42 U.S.C. 6295(l)(1).

Pursuant to EPCA, DOE's energy conservation program for covered products consists essentially of four parts: (1) testing; (2) labeling; (3) the establishment of Federal energy conservation standards; and (4) certification and enforcement procedures. The Federal Trade Commission ("FTC") is primarily responsible for labeling, and DOE implements the remainder of the program. 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 (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 6295(s)) Similarly, DOE must use these test procedures to determine whether the products comply with standards adopted pursuant to EPCA. (42 U.S.C. 6295(s)) The DOE test procedure for MREFs currently appears at title 10 of the Code of Federal Regulations ("CFR") part 430, subpart B, appendix A (appendix A).

DOE follows specific criteria when prescribing new or amended standards for covered products. As indicated above, any new or amended standard for a covered product must be designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A) and (3)(B)) Furthermore, DOE may not adopt any standard that would not result in the significant conservation of energy. (42 U.S.C. 6295(o)(3)) Moreover, DOE may not prescribe a standard: (1) for certain products,

including MREFs, if no test procedure has been established for the product, or (2) if DOE determines by rule that the new or amended standard is not technologically feasible or economically justified. (42 U.S.C. 6295(o)(3)(A)–(B)) In deciding whether a new or amended 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 considering, to the greatest extent practicable, the following seven factors:

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

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

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

4. Any lessening of the utility or the performance of the covered products likely to result from the imposition of 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 imposition of the standard;

6. The need for national energy and water conservation; and

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

(42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII))

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

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

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

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

DOE is also 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 the 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) and (B)) DOE's test procedures for MREFs address standby mode and off mode energy use, as do the new standards adopted in this notice of proposed rulemaking.

With particular regard to direct final rules, the Energy Independence and Security Act of 2007 ("EISA 2007"), Public Law 110-140 (December 19, 2007), amended EPCA, in relevant part, to grant DOE authority to issue a type of final rule (i.e., a "direct final rule") establishing an energy conservation standard for a product on receipt of a statement that is submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates), as determined by the Secretary, and that contains recommendations with respect to an energy or water conservation standard. In the context of consumer products, if the Secretary determines that the recommended standard contained in the statement is in accordance with 42 U.S.C. 6295(o), the Secretary may issue a final rule establishing the recommended standard. A notice of proposed rulemaking ("NOPR") that proposes an identical energy efficiency standard is published simultaneously with the direct final rule. A public comment period of at least 110 days is provided. See 42 U.S.C. 6295(p)(4). Not later than 120 days after the date on which a direct final rule issued under this authority is published in the Federal Register, the Secretary shall withdraw the direct final rule if the Secretary receives one or more adverse public comments relating to the direct final rule or any alternative joint recommendation and based on the rulemaking record relating to the direct final rule, the Secretary determines that such adverse public comments or alternative joint recommendation may provide a reasonable basis for withdrawing the direct final rule under subsection 42 U.S.C. 6295(o) or any other applicable law. On withdrawal of a direct final rule, the Secretary shall proceed with the NOPR published simultaneously with the direct final rule and publish in the Federal Register the reasons why the direct final rule was withdrawn. This direct final rule provision applies to the products at issue in the direct final rule published simultaneously with this NOPR. See 42 U.S.C. 6295(p)(4).

DOE also notes that it typically finalizes its test procedures for a given regulated product or equipment prior to proposing new or amended energy conservation standards for that product or equipment, see 10 CFR part 430, Subpart C, Appendix A, sec. 7(c) ("Procedures, Interpretations and Policies for Consideration of New or Revised Energy Conservation Standards for Consumer Products" or "Process Rule"). In this instance, although DOE has finalized its test procedure for MREFs, rather than issue a notice of proposed rulemaking to set standards for these products, DOE is moving forward with a direct final rule. As part of the negotiated rulemaking that led to the Term Sheet setting out the standards that DOE is proposing, Working Group members recommended (with ASRAC's approval) that DOE implement the test procedure that DOE recently finalized. See 81 FR 46768 (July 18, 2016). The approach laid out in that final rule is consistent with the approach agreed upon by the various Working Group members who participated in the negotiated rulemaking. Accordingly, in accordance with section 14 of the Process Rule, DOE tentatively concludes that deviation from the Process Rule is appropriate here.

B. Rulemaking History

DOE has not previously established energy conservation standards for MREFs. Consistent with its statutory obligations, DOE sought to establish regulatory coverage over these products prior to establishing energy conservation standards to regulate MREF efficiency. On November 8, 2011, DOE published a notice of proposed determination of coverage ("NOPD") to address the potential coverage of those refrigeration products that do not use a compressor-based refrigeration system. 76 FR 69147. Rather than employing a compressor/condenser-based system typically installed in the refrigerators, refrigerator-freezers, and freezers found in most

U.S. homes, these "non-compressor-based" refrigeration products use a variety of other means to introduce chilled air into the interior of the storage cabinet of the product. Two systems that DOE specifically examined were thermoelectric- and absorption-based systems.[1] The former of these systems is used in some wine chiller applications. With respect to the latter group of products, DOE indicated its belief that these types of products were used primarily in mobile applications and would likely fall outside of DOE's scope of coverage. See 42 U.S.C. 6292(a) (excluding from coverage "those consumer products designed solely for use in recreational vehicles and other mobile equipment").

On February 13, 2012, DOE published a notice announcing the availability of the framework document, "Energy Conservation Standards Rulemaking Framework Document for Wine Chillers and Miscellaneous Refrigeration Products," and a public meeting to discuss the proposed analytical framework for the energy conservation standards rulemaking. 77 FR 7547. In the framework document, DOE described the procedural and analytical approaches it anticipated using to evaluate potential energy conservation standards for four types of consumer refrigeration products: wine chillers, non-compressor refrigerators, hybrid refrigerators (i.e., a wine chiller combined with a refrigerator), and ice makers.

DOE held a public meeting on February 22, 2012, to present the framework document, describe the analyses DOE planned to conduct during the rulemaking, seek comments from interested parties on these subjects, and inform the public about, and facilitate public participation in, the rulemaking. At the public meeting and during the comment period, DOE

[1] Chapter 3 of the direct final rule technical support document provides a detailed description of each of these refrigeration technologies.

received multiple comments that addressed issues raised in the framework document and identified additional issues relevant to the rulemaking.

On October 31, 2013, DOE published in the Federal Register a supplemental notice of proposed determination of coverage (the "October 2013 SNOPD"), in which it tentatively determined that the four categories of consumer products addressed in the framework document (wine chillers, non-compressor refrigeration products, hybrid refrigerators, and ice makers) satisfy the provisions of 42 U.S.C. 6292(b)(1). 78 FR 65223.

DOE published a notice announcing a public meeting and the availability of the preliminary technical support document ("TSD") for the MREF energy conservation standards rulemaking on December 3, 2014. 79 FR 71705. The preliminary analysis considered potential standards for the products proposed for coverage in the October 2013 SNOPD. The preliminary TSD included the results of the following DOE preliminary analyses: (1) market and technology assessment; (2) screening analysis; (3) engineering analysis; (4) markups analysis; (5) energy use analysis; (6) LCC and PBP analyses; (7) shipments analysis; (8) national impact analysis ("NIA"); and (9) preliminary manufacturer impact analysis ("MIA").

DOE held a public meeting on January 9, 2015, during which it presented preliminary results for the engineering and downstream economic analyses and sought comments from interested parties on these subjects. At the public meeting and during the comment period, DOE received comments that addressed issues raised in the preliminary analysis and identified additional issues relevant to this rulemaking. After reviewing the comments received in response

to both the preliminary analysis and a test procedure NOPR published on December 16, 2014 (the "December 2014 Test Procedure NOPR," 79 FR 74894), DOE ultimately determined that the development of test procedures and potential energy conservation standards for MREFs would benefit from a negotiated rulemaking process.

On April 1, 2015, DOE published a notice of intent to establish an Appliance Standards and Rulemaking Federal Advisory Committee ("ASRAC") negotiated rulemaking working group for MREFs (the "MREF Working Group" or in context, the "Working Group") to discuss and, if possible, reach consensus on a recommended scope of coverage, definitions, test procedures, and energy conservation standards. 80 FR 17355. The MREF Working Group consisted of 15 members, including two members from ASRAC and one DOE representative. The MREF Working Group met in person during six sets of meetings in 2015: May 4–5, June 11–12, July 15–16, August 11–12, September 16–17, and October 20.

On August 11, 2015, the MREF Working Group reached consensus on a term sheet to recommend a scope of coverage, set of definitions, and test procedures for MREFs ("Term Sheet #1").[2] That document laid out the scope of products that the Working Group recommended that DOE adopt with respect to MREFs, the definitions that would apply to MREFs and certain other refrigeration products, and the test procedure that manufacturers of MREFs would need to use when evaluating the energy usage of these products. On October 20, 2015, the MREF Working Group reached consensus on a second term sheet embodying its recommended energy conservation standards for coolers and combination cooler refrigeration products ("Term Sheet

[2] The MREF Working Group term sheets are available in docket ID EERE-2011-BT-STD-0043 at http://regulations.gov.

#2"). ASRAC approved Term Sheet #1 during an open meeting on December 18, 2015, and Term Sheet #2 during an open meeting on January 20, 2016. ASRAC subsequently sent both term sheets to the Secretary for consideration.

In addition to these steps, DOE sought to ensure that it had obtained complete information and input regarding certain aspects related to manufacturers of thermoelectric refrigeration products. To this end, on December 15, 2015, DOE published a notice of data availability (the "December 2015 NODA") in which it requested additional public feedback on the methods and information used in the development of the MREF Working Group Term Sheets. 80 FR 77589. DOE noted in particular its interest in information related to manufacturers of thermoelectric refrigeration products. Id. at 77590.

After considering the MREF Working Group recommendations and comments received in response to the December 2015 NODA, DOE published an SNOPD and notice of proposed rulemaking (the "March 2016 SNOPD") on March 4, 2016. 81 FR 11454. The March 2016 SNOPD proposed establishing coverage, definitions, and terminology consistent with Term Sheet #1. It also proposed to determine that coolers and combination cooler refrigeration products—as defined under the proposal—would meet the requirements under EPCA to be considered covered products. Id. at 11456–11459.

On July 18, 2016, DOE published a final coverage determination and final rule (the "July 2016 Final Coverage Determination") to establish coolers and combination cooler refrigeration products as covered products under EPCA. Because DOE did not receive any comments in

response to the March 2016 SNOPD that would substantively alter its proposals, the findings of the final determination were unchanged from those presented in the March 2016 SNOPD. Moreover, DOE determined in the July 2016 Final Coverage Determination that MREFs, on average, consume more than 150 kWh/yr, and that the aggregate annual national energy use of these products exceeds 4.2 TWh. Accordingly, these data indicate that MREFs satisfy at least two of the four criteria required under EPCA in order for the Secretary to set standards for a product whose coverage is added pursuant to 42 U.S.C. 6292(b). See 42 U.S.C. 6295(l)(1)(A)–(D). 81 FR 46768. With respect to the remaining two criteria, as indicated in substantial detail in its accompanying direct final rule, DOE's analysis indicates that these two criteria are satisfied as well.

In addition to establishing coverage, the July 2016 Final Coverage Determination established definitions for "miscellaneous refrigeration products," "coolers," and "combination cooler refrigeration products" in title 10 of the Code of Federal Regulations ("CFR") § 430.2. The July 2016 Final Coverage Determination also amended the existing definitions for "refrigerator," "refrigerator-freezer," and "freezer" for consistency with the newly established MREF definitions. These definitions were generally consistent with the March 2016 SNOPD. Id.

DOE has considered the recommended energy conservation standards from the MREF Working Group and believes that they meet the EPCA requirements for issuance of a direct final rule. As a result, DOE has published a direct final rule establishing energy conservation standards for MREFs elsewhere in this Federal Register. If DOE receives adverse comments

that may provide a reasonable basis for withdrawal and withdraws the direct final rule, DOE will consider those comments and any other comments received in determining how to proceed with this proposed rule.

For further background information on these proposed standards and the supporting analyses, please see the direct final rule published elsewhere in this Federal Register. That document includes additional discussion on the EPCA requirements for promulgation of energy conservation standards, the history of the standards rulemakings establishing such standards, as well as information on the test procedures used to measure the energy efficiency of MREFs. The document also contains an in-depth discussion of the analyses conducted in support of this rulemaking, the methodologies DOE used in conducting those analyses, and the analytical results.

II. Proposed Standards

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

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

To aid the reader as DOE discusses the benefits and burdens of each TSL, DOE has included tables that present a summary of the results of DOE's quantitative analysis for each TSL. In addition to the quantitative results presented in the tables, DOE also considers other burdens and benefits that affect economic justification. These include the impacts on identifiable subgroups of consumers, such as low-income households and seniors, who may be disproportionately affected by a national standard. Section V.B.1.b of the direct final rule published elsewhere in this Federal Register presents the estimated impacts of each TSL for these subgroups.

A. TSLs Considered for Coolers

Table II.1 and Table II.2 summarize the quantitative impacts estimated for each TSL for coolers. The national impacts are measured over the lifetime of coolers purchased in the 30-year period that begins in the anticipated year of compliance with new standards (2019–2048 for TSL 2, and 2021–2050 for the other TSLs). The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle ("FFC") results. The efficiency levels contained in

each TSL are described in section V.A of the direct final rule published elsewhere in this Federal Register.

Table II.1 Summary of Analytical Results for Coolers: National Impacts

Category	TSL 1*	TSL 2*	TSL 3*	TSL 4*
Cumulative FFC National Energy Savings (quads)				
Quads	1.13	1.51	1.84	2.02
NPV of Consumer Costs and Benefits (2015$ billion)				
3% discount rate	8.34	11.02	12.19	6.83
7% discount rate	3.41	4.78	4.81	1.81
Cumulative FFC Emissions Reduction (Total FFC Emissions)				
CO_2 (million metric tons)	67.91	91.76	110.61	121.30
SO_2 (thousand tons)	39.38	54.04	64.13	70.26
NO_X (thousand tons)	122.38	163.86	199.36	218.79
Hg (tons)	0.15	0.20	0.24	0.26
CH_4 (thousand tons)	291.14	387.12	474.33	520.85
CH_4 (thousand tons CO_2eq)**	8151.79	10839.31	13281.37	14583.83
N_2O (thousand tons)	0.82	1.12	1.33	1.46
N_2O (thousand tons CO_2eq)**	217.02	296.92	353.41	387.24
Value of Emissions Reduction (Total FFC Emissions)				
CO_2 (2015$ billion) †	0.478 to 6.673	0.679 to 9.266	0.777 to 10.856	0.849 to 11.882
NO_X – 3% discount rate (2015$ million)	229.6 to 523.5	326.1 to 743.4	373.3 to 851.2	407.9 to 929.9
NO_X – 7% discount rate (2015$ million)	92.5 to 208.7	141.9 to 319.9	150.2 to 338.7	163.1 to 367.8

Parentheses indicate negative (-) values.

* For TSL 2, the results are forecasted over the lifetime of products sold from 2019-2048. For the other TSLs, the results are forecasted over the lifetime of products sold from 2021-2050.

** CO_2eq is the quantity of CO_2 that would have the same global warming potential ("GWP").

† Range of the economic value of CO_2 reductions is based on estimates of the global benefit of reduced CO_2 emissions.

Table II.2 Summary of Analytical Results for Coolers: Manufacturer and Consumer Impacts

Category	TSL 1*	TSL 2*	TSL 3*	TSL 4*
Manufacturer Impacts				
Industry NPV (2015$ million) (No-new-standards case INPV = 263.3)	244.3 to 264.0	208.5 to 253.3	168.4 to 226.5	110.5 to 283.8
Industry NPV (% change)	-7.2 to 0.3	-20.8 to -3.8	-36.0 to -14.0	-58.0 to 7.8
Consumer Average LCC Savings (2015$)				
Freestanding Compact Coolers	279	265	288	123
Built-in Compact Coolers	n.a.**	28	60	(230)
Freestanding Coolers	648	153	240	(121)
Built-in Coolers	n.a.	77	187	(254)
Consumer Simple PBP (years)				
Freestanding Compact Coolers	1.1	1.4	1.6	3.5
Built-in Compact Coolers	n.a.	4.6	4.4	14.8
Freestanding Coolers	1.0	1.8	1.8	4.8
Built-in Coolers	n.a.	6.1	4.7	17.7
% of Consumers that Experience Net Cost				
Freestanding Compact Coolers	6	9	12	51
Built-in Compact Coolers	0	29	27	93
Freestanding Coolers	0	22	9	78
Built-in Coolers	0	22	7	86

Parentheses indicate negative (-) values.
* For TSL 2, the results are forecasted over the lifetime of products sold from 2019-2048. For the other TSLs, the results are forecasted over the lifetime of products sold from 2021-2050.
** Calculation of savings and PBP is not applicable (n.a.) for an efficiency level that is already met or exceeded in the MREF market.

DOE first considered TSL 4, which represents the max-tech efficiency levels. TSL 4 would save 2.02 quads of energy, an amount DOE considers significant. Under TSL 4, the net present value ("NPV") of consumer benefit would be $1.81 billion using a discount rate of 7 percent, and $6.83 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 121.3 million metric tons ("Mt") of CO_2, 70.3 thousand tons of SO_2, 218.8 thousand tons of NO_X, 0.26 ton of Hg, 520.9 thousand

tons of CH_4, and 1.5 thousand tons of N_2O. The estimated monetary value of the CO_2 emissions reduction at TSL 4 ranges from $849 million to $11,882 million.

At TSL 4, the average LCC savings range from -$254 to $123. The simple payback period ranges from 3.5 years to 17.7 years. The fraction of consumers experiencing a net LCC cost ranges from 51 percent to 93 percent.

At TSL 4, the projected change in industry net present value ("INPV") ranges from a decrease of $152.8 million to an increase of $20.5 million, which correspond to a decrease of 58.0 percent to an increase of 7.8 percent, respectively. Manufacturer feedback during confidential interviews indicated that all cooler segments are highly price-sensitive, and therefore the lower bound of INPV impacts is more likely to occur. Additionally, at TSL 4, disproportionate impacts on low-volume manufacturers ("LVMs") of MREFs may be severe. This could have a direct impact on domestic manufacturing capacity and production employment in the cooler industry.

The Secretary concludes that at TSL 4 for coolers, 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 economic burden on some consumers, and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 4 is not economically justified.

DOE then considered TSL 3, which would save an estimated 1.84 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer benefit would be $4.81 billion using a discount rate of 7 percent, and $12.19 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 3 are 110.6 Mt of CO_2, 64.1 thousand tons of SO_2, 199.4 thousand tons of NO_X, 0.24 tons of Hg, 474.3 thousand tons of CH_4, and 1.33 thousand tons of N_2O. The estimated monetary value of the CO_2 emissions reduction at TSL 3 ranges from $777 million to $10,856 million.

At TSL 3, the average LCC savings range from $60 to $288. The simple payback period ranges from 1.6 years to 4.7 years. The fraction of consumers experiencing a net LCC cost ranges from 7 percent to 27 percent.

At TSL 3, the projected change in INPV ranges from a decrease of $94.8 million to a decrease of $36.8 million, which correspond to decreases of 36.0 percent and 14.0 percent, respectively. Manufacturer feedback from confidential interviews indicated that all cooler segments are highly price sensitive, and therefore the lower bound of INPV impacts is more likely to occur. Again, at TSL 3, disproportionate impacts on the LVMs may be severe. This could have a direct impact on domestic manufacturing capacity and production employment in the cooler industry.

The Secretary concludes that at TSL 3 for coolers, 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 impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a large reduction in INPV. Consequently, the Secretary has concluded that TSL 3 is not economically justified.

DOE then considered TSL 2, which reflects the standard levels recommended by the MREF Working Group. TSL 2 would save an estimated 1.51 quads of energy, an amount DOE considers significant. Under TSL 2, the NPV of consumer benefit would be $4.78 billion using a discount rate of 7 percent, and $11.02 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 2 are 91.8 Mt of CO_2, 54.0 thousand tons of SO_2, 163.9 thousand tons of NO_X, 0.20 tons of Hg, 387.1 thousand tons of CH_4, and 1.12 thousand tons of N_2O. The estimated monetary value of the CO_2 emissions reduction at TSL 2 ranges from $679 million to $9,266 million.

At TSL 2, the average LCC savings range from $28 to $265. The simple payback period ranges from 1.4 years to 6.1 years. The fraction of consumers experiencing a net LCC cost ranges from 9 percent to 29 percent.

At TSL 2, the projected change in INPV ranges from a decrease of $54.8 million to a decrease of $10.0 million, which represent decreases of 20.8 percent and 3.8 percent, respectively. Feedback from the LVMs indicated that TSL 2 would not impede their ability to maintain their current MREF product offerings.

After considering the analysis and weighing the benefits and burdens, DOE has determined that the recommended standards for coolers are in accordance with 42 U.S.C. 6295(o). Specifically, the Secretary has determined the benefits of energy savings, positive NPV of consumer benefits, emission reductions, the estimated monetary value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that could result in a reduction in INPV for manufacturers. Accordingly, the Secretary has concluded that TSL 2 would offer the maximum improvement in efficiency that is technologically feasible and economically justified, and would result in the significant conservation of energy.

Therefore, DOE proposes to adopt TSL 2 as the energy conservation standard for coolers. The proposed new energy conservation standards which are expressed as maximum annual energy use, in kWh/yr, as a function of adjusted volume ("AV"), in cubic feet ("ft^3"), are shown in Table II.3.

Table II.3 Proposed New Energy Conservation Standards for Coolers

Product Class	**Maximum Allowable AEU**[*] (kWh/yr)
Built-in Compact	$7.88AV^{\dagger} + 155.8$
Built-in	
Freestanding Compact	
Freestanding	

[†] AV = Adjusted volume, in ft^3, as calculated according to title 10 CFR part 430, subpart B, appendix A.

B. TSLs Considered for Combination Cooler Refrigeration Products.

Table II.4 and Table II.5 summarize the quantitative impacts estimated for each TSL for combination cooler refrigeration products. The national impacts are measured over the lifetime of products purchased in the 30-year period that begins in the anticipated year of compliance

with new standards (2019-2048 for TSL 1, and 2021-2050 for the other TSLs). The energy savings, emissions reductions, and value of emissions reductions refer to FFC results. The efficiency levels contained in each TSL are described in section V.A of the direct final rule published elsewhere in this Federal Register.

Table II.4 Summary of Analytical Results for Combination Cooler Refrigeration Products TSLs: National Impacts

Category	TSL 1*	TSL 2*	TSL 3*	TSL 4*
Cumulative FFC National Energy Savings (quads)				
Quads	0.00084	0.007	0.012	0.016
NPV of Consumer Costs and Benefits (2015$ billion)				
3% discount rate	0.0045	0.035	(0.06)	(0.14)
7% discount rate	0.0017	0.011	(0.04)	(0.09)
Cumulative FFC Emissions Reduction (Total FFC Emissions)				
CO_2 (million metric tons)	0.05	0.44	0.73	0.96
SO_2 (thousand tons)	0.03	0.25	0.42	0.55
NO_X (thousand tons)	0.09	0.80	1.32	1.73
Hg (tons)	0.00	0.00	0.00	0.00
CH_4 (thousand tons)	0.21	1.90	3.16	4.13
CH_4 (thousand tons CO_2eq)**	6.02	53.24	88.46	115.75
N_2O (thousand tons)	0.00	0.01	0.01	0.01
N_2O (thousand tons CO_2eq)**	0.16	1.40	2.34	3.05
Value of Emissions Reduction (Total FFC Emissions)				
CO_2 (2015$ billion) †	0.000 to 0.005	0.003 to 0.042	0.005 to 0.071	0.007 to 0.092
NO_X – 3% discount rate (2015$ million)	0.2 to 0.4	1.4 to 3.3	2.4 to 5.5	3.1 to 7.1
NO_X – 7% discount rate (2015$ million)	0.1 to 0.2	0.6 to 1.3	0.9 to 2.1	1.2 to 2.7

Parentheses indicate negative (-) values.

* For TSL 1, the results are forecasted over the lifetime of products sold from 2019-2048. For the other TSLs, the results are forecasted over the lifetime of products sold from 2021-2050.

** CO_2eq is the quantity of CO_2 that would have the same global warming potential (GWP).

† Range of the economic value of CO_2 reductions is based on estimates of the global benefit of reduced CO_2 emissions.

Table II.5 Summary of Analytical Results for Combination Cooler Refrigeration Products TSLs: Manufacturer and Consumer Impacts

Category	TSL 1*	TSL 2*	TSL 3*	TSL 4*
Manufacturer Impacts				
Industry NPV (2015$ million) (No-new-standards case INPV = 108.2)	107.4 to 107.6	103.7 to 107.5	101.6 to 117.7	100.1 to 128.5
Industry NPV (% change)	-0.7 to -0.5	-4.1 to -0.6	-6.0 to 8.9	-7.5 to 18.8
Consumer Average LCC Savings (2015$)				
C-3A	n.a.**	58	53	(209)
C-3A-BI	n.a.	66	59	(237)
C-9	n.a.	89	3	(182)
C-9-BI	n.a.	102	4	(205)
C-13A	32	17	(123)	(194)
C-13A-BI	n.a.	8	(151)	(232)
Consumer Simple PBP (years)				
C-3A	n.a.	4.1	6.8	25.3
C-3A-BI	n.a.	4.1	6.8	25.4
C-9	n.a.	2.6	12.1	23.3
C-9-BI	n.a.	2.6	12.0	23.2
C-13A	4.3	5.0	13.3	16.0
C-13A-BI	n.a.	6.5	21.6	24.6
% of Consumers that Experience Net Cost				
C-3A	0	4	26	92
C-3A-BI	0	4	26	92
C-9	0	0	62	90
C-9-BI	0	0	63	90
C-13A	6	44	94	96
C-13A-BI	0	49	97	98

Parentheses indicate negative (-) values.

* For TSL 1, the results are forecasted over the lifetime of products sold from 2019-2048. For the other TSLs, the results are forecasted over the lifetime of products sold from 2021-2050.

** Calculation of savings and PBP is not applicable (n.a.) for an efficiency level that is already met or exceeded in the MREF market.

DOE first considered TSL 4, which represents the max-tech efficiency levels. TSL 4 would save 0.016 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be -$0.09 billion using a discount rate of 7 percent, and -$0.14 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 0.96 Mt of CO_2, 0.55 thousand tons of SO_2, 1.73 thousand tons of NO_X, 0.0 ton of Hg, 4.13 thousand tons of CH_4, and 0.01 thousand tons of N_2O. The estimated monetary value of the CO_2 emissions reduction at TSL 4 ranges from $7 million to $92 million.

At TSL 4, the average LCC savings range from -$237 to -$182. The simple payback period ranges from 16.0 years to 25.4 years. The fraction of consumers experiencing a net LCC cost ranges from 90 percent to 98 percent.

Also at TSL 4, the projected change in INPV ranges from a decrease of $8.1 million to an increase of $20.3 million, which correspond to a decrease of 7.5 percent to an increase of 18.8 percent, respectively. Similar to coolers, detailed feedback from manufacturer interviews indicated that combination cooler refrigeration products are highly price sensitive, and therefore the lower bound of INPV impacts is more likely to occur. Additionally, in the context of new standards for coolers and other cumulative regulatory burdens, at TSL 4, disproportionate impacts on domestic LVMs of combination cooler refrigeration products may be severe. This could have a direct impact on the availability of certain niche combination cooler refrigeration products, as well as on competition, domestic manufacturing capacity, and production employment related to the combination cooler refrigeration product industry.

The Secretary concludes that at TSL 4 for combination cooler refrigeration products, the benefits of energy savings, emission reductions, and the estimated monetary value of the

emissions reductions would be outweighed by the negative NPV of consumer benefits, the economic burden on some consumers, and the disproportionate impacts on the LVMs, which could directly impact the availability of certain niche combination cooler products. Consequently, the Secretary has concluded that TSL 4 is not economically justified.

DOE then considered TSL 3, which would save an estimated 0.012 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer benefit would be -$0.04 billion using a discount rate of 7 percent, and -$0.06 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 3 are 0.73 Mt of CO_2, 0.42 thousand tons of SO_2, 1.32 thousand tons of NO_X, 0.00 tons of Hg, 3.16 thousand tons of CH_4, and 0.01 thousand tons of N_2O. The estimated monetary value of the CO_2 emissions reduction at TSL 3 ranges from $5 million to $71 million.

At TSL 3, the average LCC savings range from -$151 to $59. The simple payback period ranges from 6.8 years to 21.6 years. The fraction of consumers experiencing a net LCC cost ranges from 26 percent to 97 percent.

At TSL 3, the projected change in INPV ranges from a decrease of $6.5 million to an increase of $9.6 million, which represent a decrease of 6.0 percent and an increase of 8.9 percent, respectively. Again, manufacturers indicated that combination cooler refrigeration products are highly price sensitive, and therefore the lower bound of INPV impacts is more likely to occur. In the context of new standards for coolers and other cumulative regulatory burdens, at TSL 3,

disproportionate impacts on domestic LVMs of combination cooler refrigeration products may be severe. This could have a direct impact on the availability of certain niche combination cooler refrigeration products, as well as on competition, domestic manufacturing capacity and production employment related to the combination cooler refrigeration product industry.

The Secretary concludes that at TSL 3 for combination cooler refrigeration products, the benefits of energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the negative NPV of consumer benefits and disproportionate impacts on the LVMs, which could directly impact the availability of certain niche combination cooler products. Consequently, the Secretary has concluded that TSL 3 is not economically justified.

DOE then considered TSL 2, which reflects the efficiency levels with maximum consumer NPV at seven percent discount rate. TSL 2 would save an estimated 0.007 quads of energy, an amount DOE considers significant. Under TSL 2, the NPV of consumer benefit would be $0.011 billion using a discount rate of 7 percent, and $0.035 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 2 are 0.44 Mt of CO_2, 0.25 thousand tons of SO_2, 0.8 thousand tons of NO_X, 0.00 tons of Hg, 1.90 thousand tons of CH_4, and 0.013 thousand tons of N_2O. The estimated monetary value of the CO_2 emissions reduction at TSL 2 ranges from $3 million to $42 million.

At TSL 2, the average LCC savings range from $8 to $102. The simple payback period ranges from 2.6 years to 6.5 years. The fraction of consumers experiencing a net LCC cost ranges from zero percent to 49 percent.

At TSL 2, the projected change in INPV ranges from a decrease of $4.4 million to a decrease of $0.6 million, which represent decreases of 4.1 percent and 0.6 percent, respectively. Again, in the context of new standards for coolers and other cumulative regulatory burdens, at TSL 2, disproportionate impacts on domestic LVMs may be severe. This could have a direct impact on the availability of certain niche combination cooler refrigeration products, as well as on competition, domestic manufacturing capacity and production employment related to the combination cooler refrigeration product industry.

The Secretary concludes that at TSL 2 for combination cooler refrigeration products, the benefits of energy savings, positive NPV of consumer benefits, emission reductions, and the estimated monetary value of the emissions reductions would again be outweighed by the disproportionate impacts on the domestic LVMs, which could directly impact the availability of certain niche combination cooler products. Consequently, the Secretary has concluded that TSL 2 is not economically justified.

DOE then considered TSL 1, which reflects the standard levels recommended by the MREF Working Group. TSL 1 would save an estimated 0.00084 quads of energy, an amount DOE considers significant. Under TSL 1, the NPV of consumer benefit would be $0.0017 billion using a discount rate of 7 percent, and $0.0045 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 1 are 0.05 Mt of CO_2, 0.03 thousand tons of SO_2, 0.09 thousand tons of NO_X, 0.00 tons of Hg, 0.21 thousand tons of CH_4, and 0.00 thousand tons of N_2O. The estimated monetary value of the CO_2 emissions reduction at TSL 1 ranges from $0 million to $5 million.

At TSL 1, the combination cooler refrigeration products currently available on the market already meet or exceed the corresponding efficiency levels in all product classes except for C-13A. As a result, for five of the product classes, no consumers experience a net cost, and the LCC savings and simple payback period are not applicable. For product class C-13A, the average LCC savings is $32, the simple payback period is 4.3 years, and the fraction of consumers experiencing a net LCC cost is 6 percent.

At TSL 1, the projected change in INPV ranges from a decrease of $0.8 million to a decrease of $0.5 million, which represent decreases of 0.7 percent and 0.5 percent, respectively. DOE estimated that all combination cooler refrigeration products manufactured domestically by LVMs currently meet the standard levels corresponding to TSL 1. Therefore, at TSL 1, DOE believes that domestic manufacturers will continue to offer the same combination cooler refrigeration products as those they currently offer.

After considering the analysis and weighing the benefits and burdens, DOE has determined that the recommended standards for combination cooler refrigeration products are in accordance with 42 U.S.C. 6295(o). Specifically, the Secretary has determined the benefits of

energy savings, positive NPV of consumer benefits, emission reductions, the estimated monetary value of the emissions reductions, and positive average LCC savings would outweigh the negative impacts on some consumers and on manufacturers, including the conversion costs that could result in a reduction in INPV for manufacturers. Accordingly, the Secretary has concluded that TSL 1 would offer the maximum improvement in efficiency that is technologically feasible and economically justified, and would result in the significant conservation of energy.

Therefore, DOE proposes to adopt TSL 1 as the energy conservation standard for combination cooler refrigeration products. The proposed new energy conservation standards, which are expressed as maximum annual energy use, in kWh/yr, as a function of AV, in ft^3, are shown in Table II.6.

Table II.6 Proposed Energy Conservation Standards for combination Cooler Refrigeration Products

Product Class Description	**Product Class Designation**	**Maximum Allowable AEU** (kWh/yr)
Cooler with all-refrigerator—automatic defrost	C-3A	$4.57AV^{\dagger} + 130.4$
Built-in cooler with all-refrigerator—automatic defrost	C-3A-BI	5.19AV + 147.8
Cooler with upright freezers with automatic defrost without an automatic icemaker	C-9	5.58AV + 147.7
Built-in cooler with upright freezer with automatic defrost without an automatic icemaker	C-9-BI	6.38AV + 168.8
Cooler with upright freezer with automatic defrost with an automatic icemaker	C-9I	5.58AV + 231.7
Built-in cooler with upright freezer with automatic defrost with an automatic icemaker	C-9I-BI	6.38AV + 252.8
Compact cooler with all-refrigerator—automatic defrost	C-13A	5.93AV + 193.7
Built-in compact cooler with all-refrigerator—automatic defrost	C-13A-BI	6.52AV + 213.1

† AV = Adjusted volume, in ft^3, as calculated according to title 10 CFR part 430, subpart B, appendix A.

C. Summary of Benefits and Costs of the Proposed Standards

The benefits and costs of the adopted standards can also be expressed in terms of annualized values. The annualized net benefit is the sum of: (1) the annualized national economic value (expressed in 2015$) of the benefits from operating products that meet the adopted standards (consisting primarily of operating cost savings from using less energy, minus increases in product purchase costs, and (2) the annualized monetary value of the benefits of CO_2 and NO_X emission reductions.[3]

Table II.7 shows the annualized values for MREFs under TSL 2 for coolers and TSL 1 for combination cooler refrigeration products, expressed in 2015$. The results under the primary estimate are as follows. Using a 7-percent discount rate for benefits and costs other than CO_2 reduction, (for which DOE used a 3-percent discount rate along with the SCC series that has a value of $40.6/t in 2015),[4] the estimated cost of the standards in this rule is $153 million per year in increased equipment costs, while the estimated annual benefits are $593 million in reduced equipment operating costs, $165 million in CO_2 reductions, and $13.1 million in reduced NO_X emissions. In this case, the net benefit amounts to $619 million per year.

[3] To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2016, the year used for discounting the NPV of total consumer costs and savings. For the benefits, DOE calculated a present value associated with each year's shipments in the year in which the shipments occur (2020, 2030, etc.), and then discounted the present value from each year to 2016. The calculation uses discount rates of 3 and 7 percent for all costs and benefits except for the value of CO_2 reductions, for which DOE used case-specific discount rates. Using the present value, DOE then calculated the fixed annual payment over a 30-year period, starting in the compliance year that yields the same present value.

[4] DOE used a 3-percent discount rate because the SCC values for the series used in the calculation were derived using a 3-percent discount rate (see section IV.L of the direct final rule published elsewhere in this Federal Register).

Using a 3-percent discount rate for all benefits and costs and the SCC series has a value of $40.6/t in 2015, the estimated cost of the standards is $157 million per year in increased equipment costs, while the estimated annual benefits are $754 million in reduced operating costs, $165 million in CO_2 reductions, and $17.7 million in reduced NO_X emissions. In this case, the net benefit amounts to $779 million per year.

Table II.7 Annualized Benefits and Costs of Adopted Standards for MREFs*

	Discount Rate	Primary Estimate*	Low Net Benefits Estimate*	High Net Benefits Estimate*
		Million 2015$/year		
Benefits				
Consumer Operating Cost Savings	7%	593	545	649
	3%	754	686	839
CO_2 Reduction Value ($12.2/t)**	5%	49	46	53
CO_2 Reduction Value ($40.0/t)**	3%	165	155	179
CO_2 Reduction Value ($62.3/t)**	2.5%	242	227	263
CO_2 Reduction Value ($117/t)**	3%	502	471	546
NO_X Reduction Value†	7%	13.1	12.4	31.6
	3%	17.7	16.6	43.6
Total Benefits††	7% plus CO_2 range	655 to 1,108	603 to 1,028	733 to 1,226
	7%	771	712	860
	3% plus CO_2 range	820 to 1,273	748 to 1,173	935 to 1,428
	3%	937	857	1,062
Costs				
Consumer Incremental Product Costs	7%	153	145	118
	3%	157	148	116
Net Benefits				
Total††	7% plus CO_2 range	503 to 956	459 to 884	615 to 1,108
	7%	619	568	742
	3% plus CO_2 range	663 to 1,116	601 to 1,026	819 to 1,312
	3%	779	709	946

* This table presents the annualized costs and benefits associated with MREFs shipped in 2019–2048. These results include benefits to consumers which accrue after 2048 from the MREFs purchased from 2019–2048. The results account for the incremental variable and fixed costs incurred by manufacturers due to the standard, some of which may be incurred in preparation for the rule. The Primary, Low Benefits, and High Benefits Estimates utilize projections of energy prices and housing starts from the AEO 2015 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect constant price trend the Primary Estimate and the Low Benefits Estimate, and a high decline rate in the High Benefits Estimate. The methods used to derive projected price trends are explained in section IV.F of the direct final rule published

elsewhere in this Federal Register. Note that the Benefits and Costs may not sum to the Net Benefits due to rounding.

** The CO_2 values represent global monetized values of the SCC, in 2015$ per metric ton (t), in 2015 under several scenarios of the updated SCC values. The first three cases use the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The fourth case represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The SCC time series incorporate an escalation factor.

† DOE estimated the monetized value of NO_X emissions reductions associated with electricity savings using benefit per ton estimates from the "Regulatory Impact Analysis for the Clean Power Plan Final Rule," published in August 2015 by EPA's Office of Air Quality Planning and Standards. (Available at www.epa.gov/cleanpowerplan/clean-power-plan-final-rule-regulatory-impact-analysis.) See section IV.L of the direct final rule published elsewhere in this Federal Register for further discussion. For the Primary Estimate and Low Net Benefits Estimate, DOE used a national benefit-per-ton estimate for NO_X emitted from the Electric Generating Unit sector based on an estimate of premature mortality derived from the ACS study (Krewski et al. 2009). For DOE's High Net Benefits Estimate, the benefit-per-ton estimates were based on the Six Cities study (Lepuele et al. 2011), which are nearly two-and-a-half times larger than those from the ACS study.

†† Total Benefits for both the 3% and 7% cases are derived using the series corresponding to the average SCC with 3-percent discount rate ($40.6/t case). In the rows labeled "7% plus CO_2 range" and "3% plus CO_2 range," the operating cost and NO_X benefits are calculated using the labeled discount rate, and those values are added to the full range of CO_2 values. The value of consumer incremental product costs is lower in the high net benefits scenario than it is in the primary case because the high net benefits scenario uses a highly declining price trend that more than offsets the increase in shipments due to higher economic growth.

III. Public Participation

A. Submission of Comments

DOE will accept comments, data, and information regarding this proposed rule until the date provided in the **DATES** section at the beginning of this proposed rule. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this proposed rule.

Although DOE welcomes comments on any aspect of the proposal in this notice and the analysis as described in the direct final rule published elsewhere in this Federal Register, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

1. Whether the standards proposed in this notice would result in any lessening of utility for MREFs, including whether certain features would be eliminated from

these products. See sections III.H.1.d and IV.2 of the direct final rule published elsewhere in this Federal Register.

2. The incremental manufacturer production costs DOE estimated at each efficiency level. See section IV.C of the direct final rule published elsewhere in this Federal Register.

3. DOE's method to estimate MREF shipments under the no-new-standards case and under potential energy conservation standards levels. See section IV.G of the direct final rule published elsewhere in this Federal Register.

4. The assumption that installation, maintenance, and repair costs do not vary for MREFs at higher efficiency levels. See section IV.F of the direct final rule published elsewhere in this Federal Register.

5. The manufacturer conversion costs (both product and capital) used in DOE's analysis. See section V.B.2.d of the direct final rule published elsewhere in this Federal Register.

6. The cumulative regulatory burden to MREF manufacturers associated with the proposed standards and on the approach DOE used in evaluating cumulative regulatory burden, including the timeframes and regulatory dates evaluated. See

section V.B.2.e of the direct final rule published elsewhere in this Federal Register.

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

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

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

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Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles (faxes) will be accepted.

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

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

Confidential Business Information. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email, postal mail, or hand delivery/courier two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. Submit these documents via email or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) A description of the items; (2) whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally

known by or available from other sources; (4) whether the information has previously been made available to others without obligation concerning its confidentiality; (5) an explanation of the competitive injury to the submitting person that would result from public disclosure; (6) when such information might lose its confidential character due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

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

B. Public Meeting

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

IV. Procedural Issues and Regulatory Review

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

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this proposed rule.

List of Subjects in 10 CFR Part 430

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

Issued in Washington, DC, on October 4, 2016.

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David J. Friedman
Acting Assistant Secretary
Energy Efficiency and Renewable Energy

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

PART 430 - ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

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

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

2. Amend § 430.32 by adding paragraph (aa) to read as follows:

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

* * * * *

(aa) Miscellaneous refrigeration products. The energy standards as determined by the equations of the following table(s) shall be rounded off to the nearest kWh per year. If the equation calculation is halfway between the nearest two kWh per year values, the standard shall be rounded up to the higher of these values.

(1) Coolers manufactured starting on [*date three years after date of publication of the direct final rule in the federal register*] shall have Annual Energy Use (AEU) no more than:

Product Class	**AEU (kWh/yr)**
1. Built-in compact	7.88AV + 155.8
2. Built-in	
3. Freestanding compact	
4. Freestanding	

AV = Total adjusted volume, expressed in ft^3, as calculated according to appendix A of subpart B of this part.

(2) Combination cooler refrigeration products manufactured starting on [*date three years after date of publication of the direct final rule in the federal register*] shall have Annual Energy Use (AEU) no more than:

Product Class	AEU (kWh/yr)
C-3A. Cooler with all-refrigerator—automatic defrost.	4.57AV + 130.4
C-3A-BI. Built-in cooler with all-refrigerator—automatic defrost.	5.19AV + 147.8
C-9. Cooler with upright freezers with automatic defrost without an automatic icemaker.	5.58AV + 147.7
C-9-BI. Built-in cooler with upright freezer with automatic defrost without an automatic icemaker.	6.38AV + 168.8
C-9I. Cooler with upright freezer with automatic defrost with an automatic icemaker.	5.58AV + 231.7
C-9I-BI. Built-in cooler with upright freezer with automatic defrost with an automatic icemaker.	6.38AV + 252.8
C-13A. Compact cooler with all-refrigerator—automatic defrost	5.93AV + 193.7
C-13A-BI. Built-in compact cooler with all-refrigerator—automatic defrost	6.52AV + 213.1

AV = Total adjusted volume, expressed in ft^3, as calculated according to appendix A of subpart B of this part.

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