

Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF ENERGY

10 CFR Part 430

[Docket Number EERE-2007-BT-STD-0010]

RIN 1904-AA89

Energy Conservation Program: Energy Conservation Standards for Residential Clothes Dryers and Room Air Conditioners

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

ACTION: Proposed rule.

SUMMARY: The Energy Policy and Conservation Act (EPCA) prescribes energy conservation standards for various consumer products and commercial and industrial equipment, including residential clothes dryers and room air conditioners. EPCA also requires the U.S. Department of Energy (DOE) to determine if amended standards for these products are technologically feasible and economically justified, and would save a significant amount of energy. In this proposed rule, DOE proposes energy efficiency standards for residential clothes dryers and room air conditioners identical to those set forth in a direct final rule published elsewhere in today's **Federal Register**. If DOE receives adverse comment and determines that such comment may provide a reasonable basis for withdrawing the direct final rule, 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 August 9, 2011.

ADDRESSES: See section III, "Public Participation," for details. If DOE withdraws the direct final rule published elsewhere in today's **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 Residential Clothes Dryers and Room Air Conditioners, and provide docket number EERE-2007-BT-STD-0010 and/or regulatory information number (RIN) number 1904-AA89. Comments may be submitted using any of the following methods:

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

2. *E-mail:* home_appliance2.rulemaking@ee.doe.gov. Include the docket number and/or RIN in the subject line of the message.

3. *Mail:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. If possible, please submit all items on a CD. It is not necessary to include printed copies.

4. *Hand Delivery/Courier:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 950 L'Enfant Plaza, SW., Suite 600, Washington, DC 20024. Telephone: (202) 586-2945. If possible, please submit all items on a CD. It is not necessary to include printed copies. For detailed instructions on submitting comments and additional information on the rulemaking process, see section III of this document (Public Participation).

Docket: The docket is available for review at www.regulations.gov, including **Federal Register** notices, framework documents, public meeting attendee lists and transcripts, comments, and other supporting documents/materials. All documents in the docket are listed in the www.regulations.gov index. Not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure. A link to the docket Web page can be found at <http://www.regulations.gov>.

For further information on how to submit or review public comments or view hard copies of the docket in the Resource Room, contact Ms. Brenda Edwards at (202) 586-2945 or e-mail: Brenda.Edwards@ee.doe.gov.

FOR FURTHER INFORMATION CONTACT:

Stephen L. Witkowski, U.S. Department of Energy, Office of Energy Efficiency

and Renewable Energy, Building Technologies Program, EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121, (202) 586-7463, e-mail: stephen.witkowski@ee.doe.gov.

Ms. Elizabeth Kohl, U.S. Department of Energy, Office of General Counsel, GC-71, 1000 Independence Avenue, SW., Washington, DC 20585-0121, (202) 586-7796, e-mail: Elizabeth.Kohl@hq.doe.gov.

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I. Introduction and Legal Authority

Title III of EPCA sets forth a variety of provisions designed to improve energy efficiency. Part B of title III (42 U.S.C. 6291-6309) provides for the Energy Conservation Program for Consumer Products other than Automobiles.¹ The program covers consumer products and certain commercial equipment (referred to hereafter as "covered products"), including clothes dryers and room air conditioners (42 U.S.C. 6292(a)(2) and (8)), and EPCA prescribes energy conservation standards for certain clothes dryers (42 U.S.C. 6295(g)(3)) and for room air conditioners (42 U.S.C. 6295(c)(1)). EPCA further directs DOE to conduct two cycles of rulemakings to determine whether to amend these standards. (42 U.S.C. 6295(c)(2) and (g)(4)) This rulemaking represents the second round of amendments to both the clothes dryer and room air conditioner standards.

DOE notes that this rulemaking is one of the required agency actions in the consolidated Consent Decree in *State of New York, et al. v. Bodman et al.*, 05 Civ. 7807 (LAP), and *Natural Resources Defense Council, et al. v. Bodman, et al.*, 05 Civ. 7808 (LAP), DOE is required to

¹ For editorial reasons, upon codification in the U.S. Code, Part B was re-designated Part A.

complete a final rule for amended energy conservation standards for room air conditioners and clothes dryers that must be sent to the **Federal Register** by June 30, 2011.

The Energy Independence and Security Act of 2007 (EISA 2007; Pub. L. 110–140) amended EPCA, in relevant part, to grant DOE authority to issue a final rule (hereinafter referred to as a “direct final rule”) establishing an energy conservation standard for a covered product on receipt of a statement submitted jointly by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates) as determined by the Secretary, that contains recommendations with respect to an energy conservation standard that are in accordance with the provisions of 42 U.S.C. 6295(o). EPCA also requires that a notice of proposed rulemaking (NPR) that proposes an identical energy efficiency standard be published simultaneously with the direct final rule, and DOE must provide a public comment period of at least 110 days on this proposal. (42 U.S.C. 6295(p)(4)) Not later than 120 days after issuance of the direct final rule, if one or more adverse comments or an alternative joint recommendation are received relating to the direct final rule, the Secretary must determine whether the comments or alternative recommendation may provide a reasonable basis for withdrawal under 42 U.S.C. 6295(o) or other applicable law. If the Secretary makes such a determination, DOE must withdraw the direct final rule and proceed with the simultaneously published notice of proposed rulemaking. DOE must also publish in the **Federal Register** the reason why the direct final rule was withdrawn. *Id.*

In response to the preliminary analysis conducted during DOE’s consideration of amended standards for room air conditioners and clothes dryers, 75 FR 7987 (Feb. 23, 2010), DOE received the “Agreement on Minimum Federal Efficiency Standards, Smart Appliances, Federal Incentives and Related Matters for Specified Appliances” (hereinafter, the “Joint Petition”) ², a comment submitted by groups representing manufacturers (the Association of Home Appliance Manufacturers (AHAM), Whirlpool Corporation (Whirlpool), General Electric Company (GE), Electrolux, LG Electronics, Inc. (LG), BSH Home Appliances (BSH), Alliance Laundry

Systems (ALS), Viking Range, Sub-Zero Wolf, Friedrich A/C, U-Line, Samsung, Sharp Electronics, Miele, Heat Controller, AGA Marvel, Brown Stove, Haier, Fagor America, Airwell Group, Arcelik, Fisher & Paykel, Scotsman Ice, Indesit, Kuppersbusch, Kelon, and DeLonghi); energy and environmental advocates (American Council for an Energy Efficient Economy (ACEEE), Appliance Standards Awareness Project (ASAP), Natural Resources Defense Council (NRDC), Alliance to Save Energy (ASE), Alliance for Water Efficiency (AWE), Northwest Power and Conservation Council (NPCC), and Northeast Energy Efficiency Partnerships (NEEP)); and consumer groups (Consumer Federation of America (CFA) and the National Consumer Law Center (NCLC)) (collectively, the “Joint Petitioners”). The Joint Petitioners recommended specific energy conservation standards for residential clothes dryers and room air conditioners that they believed would satisfy the EPCA requirements in 42 U.S.C. 6295(o).

DOE has considered the recommended energy conservation standards 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 clothes dryers and room air conditioners elsewhere in today’s **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 today’s proposed rule.

For further background information on these proposed standards and the supporting analyses, please see the direct final rule published elsewhere in today’s **Federal Register**. That document includes additional discussion on the EPCA requirements for promulgation of energy conservation standards, the current standards for room air conditioners and clothes dryers, and the history of the standards rulemakings establishing such standards, as well as information on the test procedures used to measure the energy efficiency of clothes dryers and room air conditioners. 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 to the greatest extent practicable, in light of 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))

The Department considered the impacts of standards at each trial standard level considered by DOE, beginning with maximum technologically feasible 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 trial standard level, DOE has included tables that present a summary of the results of DOE’s quantitative analysis for each trial standard level (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 of the direct final rule published elsewhere in today’s **Federal Register** presents the estimated impacts of each TSL for these subgroups.

A. Benefits and Burdens of TSLs Considered for Clothes Dryers

Table II.1 and Table II.2 present a summary of the quantitative impacts estimated for each TSL for clothes dryers. The efficiency levels contained in each TSL are described in section V.A of the direct final rule.

² DOE Docket No. EERE–2007–BT–STD–0010, Comment 35.

TABLE II.1—SUMMARY OF RESULTS FOR CLOTHES DRYER TRIAL STANDARD LEVELS: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
National Energy Savings (<i>quads</i>)	0.00	0.062	0.37	0.39	1.45	3.14
NPV of Consumer Benefits (<i>2009\$ billion</i>):						
3% discount rate	0.00	0.62	3.00	3.01	0.22	(1.53)
7% discount rate	0.01	0.25	1.10	1.08	(2.60)	(6.72)
Cumulative Emissions Reduction:						
CO ₂ (<i>million metric tons</i>)	0.119	2.99	17.75	18.67	70.47	186.6
NO _x (<i>thousand tons</i>)	0.097	2.41	14.26	15.14	57.26	151.3
Hg (<i>ton</i>)	0.000	0.009	0.053	0.051	0.188	0.569
Value of Emissions Reduction:						
CO ₂ (<i>2009\$ million</i>)*	1 to 10	15 to 239	88 to 1,417	93 to 1,490	351 to 5,626	929 to 14,902
NO _x —3% discount rate (<i>2009 million</i>)	0.031 to 0.314	0.759 to 7.8	4.49 to 46.2	4.77 to 49.0	18.0 to 185	47.6 to 490
NO _x —7% discount rate (<i>2009\$ million</i>)	0.013 to 0.136	0.328 to 3.37	1.94 to 20.0	2.06 to 21.2	7.8 to 80.2	20.6 to 212
Generation Capacity Reduction (<i>GW</i>)**	0.002	0.060	0.358	0.345	1.27	2.27
Employment Impacts:						
Total Potential Change in Domestic Production Workers in 2014 (<i>thousands</i>)	0.00 to (3.96)	0.00 to (3.96)	0.41 to (3.96)	0.46 to (3.96)	1.08 to (3.96)	2.26 to (3.96)
Indirect Domestic Jobs (<i>thousands</i>)** ...	0.01	0.01	1.82	1.75	4.25	9.30

Parentheses indicate negative (–) values.

* Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

** Changes in 2043.

TABLE II.2—SUMMARY OF RESULTS FOR CLOTHES DRYER TRIAL STANDARD LEVELS: CONSUMER AND MANUFACTURER IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
Manufacturer Impacts						
Industry NPV (<i>2009\$ million</i>)	(2.5) to (2.5)	(3.6) to (4.9)	(41.1) to (55.5)	(64.5) to (80.6)	(176.5) to (397.4)	(303.9) to (730.0)
Industry NPV (% <i>change</i>)	(0.3) to (0.3)	(0.4) to (0.5)	(4.1) to (5.5)	(6.4) to (8.0)	(17.6) to (39.6)	(30.3) to (72.7)
Consumer Mean LCC Savings* (2009\$)						
Electric Standard	\$0	\$2	\$14	\$14	(\$30)	(\$146)
Compact 120V	\$0	\$14	\$14	\$14	(\$99)	(\$264)
Compact 240V	\$0	\$8	\$8	\$8	(\$99)	(\$246)
Gas	\$0	\$2	\$2	\$2	(\$100)	(\$100)
Ventless 240V	\$0	\$20	\$20	\$0	(\$42)	(\$177)
Ventless Combination Washer/Dryer	\$0	\$73	\$73	\$0	\$73	(\$166)
Consumer Median PBP (years)**						
Electric Standard	3.9	0.2	5.3	5.3	19.1	22.1
Compact 120V	n/a	0.9	0.9	0.9	36.1	40.1
Compact 240V	0.0	0.9	0.9	0.9	45.1	38.2
Gas	2.2	0.5	0.5	11.7	49.5	49.5
Ventless 240V	n/a	0.9	0.9	n/a	25.3	26.9
Ventless Combination Washer/Dryer	n/a	5.3	5.3	n/a	5.3	22.4
Distribution of Consumer LCC Impacts						
Electric Standard:						
Net Cost (%)	1%	0%	19%	19%	75%	81%
No Impact (%)	98%	79%	25%	25%	1%	0%
Net Benefit (%)	2%	21%	56%	56%	24%	19%
Compact 120V:						
Net Cost (%)	0%	4%	4%	4%	95%	95%
No Impact (%)	100%	0%	0%	0%	0%	0%
Net Benefit (%)	0%	96%	96%	96%	5%	5%
Compact 240V:						
Net Cost (%)	0%	2%	2%	2%	93%	95%
No Impact (%)	100%	41%	41%	41%	4%	0%
Net Benefit (%)	0%	56%	56%	56%	3%	5%
Gas:						
Net Cost (%)	1%	0%	0%	32%	95%	95%
No Impact (%)	93%	85%	85%	42%	1%	1%

TABLE II.2—SUMMARY OF RESULTS FOR CLOTHES DRYER TRIAL STANDARD LEVELS: CONSUMER AND MANUFACTURER IMPACTS—Continued

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
Net Benefit (%)	7%	15%	15%	26%	4%	4%
Ventless 240V:						
Net Cost (%)	0%	0%	0%	0%	92%	88%
No Impact (%)	100%	0%	0%	100%	0%	0%
Net Benefit (%)	0%	100%	100%	0%	8%	12%
Ventless Combination Washer/Dryer:						
Net Cost (%)	0%	21%	21%	0%	21%	82%
No Impact (%)	100%	0%	0%	100%	0%	0%
Net Benefit (%)	0%	79%	79%	0%	79%	18%

Parentheses indicate negative (–) values.

* For LCCs, a negative value means an increase in LCC by the amount indicated.

** In some cases the standard level is the same as the baseline efficiency level, so no consumers are impacted and therefore calculation of a payback period is not applicable.

DOE first considered TSL 6, which represents the max-tech efficiency levels. TSL 6 would save 3.14 quads of energy, an amount DOE considers significant. Under TSL 6, the NPV of consumer benefit would be –\$6.72 billion, using a discount rate of 7 percent, and –\$1.53 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 6 are 186.6 Mt of CO₂, 151.3 thousand tons of NO_x, and 0.569 ton of Hg. The estimated monetary value of the CO₂ emissions reductions at TSL 6 ranges from \$929 million to \$14,902 million. Total generating capacity in 2043 is estimated to decrease by 2.27 GW under TSL 6.

At TSL 6, the average LCC impact is a cost (LCC increase) of \$146 for electric standard clothes dryers, a cost of \$264 for 120V compact clothes dryers, a cost of \$246 for 240V compact clothes dryers, a cost of \$100 for gas clothes dryers, a cost of \$177 for ventless 240V clothes dryers, and a cost of \$166 for combination washer/dryers. The median payback period is 22.1 years for electric standard clothes dryers, 40.1 years for 120V compact clothes dryers, 38.2 years for 240V compact clothes dryers, 49.5 years for gas clothes dryers, 26.9 years for ventless 240V clothes dryers, and 22.4 years for combination washer/dryers. The fraction of consumers experiencing an LCC benefit is 19 percent for electric standard clothes dryers, 5 percent for 120V compact clothes dryers, 5 percent for 240V compact clothes dryers, 4 percent for gas clothes dryers, 12 percent for ventless 240V clothes dryers, and 18 percent for combination washer/dryers. The fraction of consumers experiencing an LCC cost is 81 percent for electric standard clothes dryers, 95 percent for 120V compact clothes dryers, 95 percent for 240V compact clothes dryers, 95 percent for gas clothes dryers, 88 percent for ventless 240V clothes dryers,

and 82 percent for combination washer/dryers.

At TSL 6, the projected change in INPV ranges from a decrease of \$303.9 million to a decrease of \$730.0 million. TSL 6 would effectively require heat pump clothes dryers for all electric clothes dryer product classes. Changing all electric models to use heat pump technology would be extremely disruptive to current manufacturing facilities and would require substantial product and capital conversion costs. In addition, the large cost increases would greatly harm manufacturer profitability if they were unable to earn additional operating profit on these additional costs. At TSL 6, DOE recognizes the risk of very large negative impacts if manufacturers' expectations concerning reduced profit margins and large conversion costs are realized. If the high end of the range of impacts is reached as DOE expects, TSL 6 could result in a net loss of 72.6 percent in INPV to clothes dryer manufacturers.

DOE concludes that at TSL 6 for residential clothes dryers, the benefits of energy savings, generating capacity reductions, emission reductions, and the estimated monetary value of the CO₂ emissions reductions would be outweighed by the negative NPV of consumer benefits, the economic burden on a significant fraction of consumers due to the large increases in product cost, and the conversion costs and profit margin impacts that could result in a very large reduction in INPV for the manufacturers. Consequently, the Secretary has concluded that TSL 6 is not economically justified.

DOE next considered TSL 5. TSL 5 would save 1.45 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be –\$2.60 billion, using a discount rate of 7 percent, and \$0.22 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 are 70.47 Mt of CO₂, 57.26 thousand tons of NO_x, and 0.188 tons of Hg. The estimated monetary value of the CO₂ emissions reductions at TSL 5 ranges from \$351 million to \$5,626 million. Total generating capacity in 2043 is estimated to decrease by 1.27 GW under TSL 5.

At TSL 5, the average LCC impact is a cost (LCC increase) of \$30 for electric standard clothes dryers, a cost of \$99 for 120V compact clothes dryers, a cost of \$99 for 240V compact clothes dryers, a cost of \$100 for gas clothes dryers, a cost of \$42 for ventless 240V clothes dryers, and a savings of \$73 for combination washer/dryers. The median payback period is 19.1 years for electric standard clothes dryers, 36.1 years for 120V compact clothes dryers, 45.1 years for 240V compact clothes dryers, 49.5 years for gas clothes dryers, 25.3 years for ventless 240V clothes dryers, and 5.3 years for combination washer/dryers. The fraction of consumers experiencing an LCC benefit is 24 percent for electric standard clothes dryers, 5 percent for 120V compact clothes dryers, 3 percent for 240V compact clothes dryers, 4 percent for gas clothes dryers, 8 percent for ventless 240V clothes dryers, and 79 percent for combination washer/dryers. The fraction of consumers experiencing an LCC cost is 75 percent for electric standard clothes dryers, 95 percent for 120V compact clothes dryers, 93 percent for 240V compact clothes dryers, 95 percent for gas clothes dryers, 92 percent for ventless 240V clothes dryers, and 21 percent for combination washer/dryers.

At TSL 5, the projected change in INPV ranges from a decrease of \$176.5 million to a decrease of \$397.4 million. While most changes at TSL 5 could be made within existing product design, redesigning units to the most efficient technologies on the market today would take considerable capital and product

conversion costs. At TSL 5, DOE recognizes the risk of very large negative impacts if manufacturers are not able to earn additional operating profit from the additional production costs to reach TSL 5. If the high end of the range of impacts is reached as DOE expects, TSL 5 could result in a net loss of 39.6 percent in INPV to clothes dryer manufacturers.

The Secretary concludes that at TSL 5 for residential clothes dryers, the benefits of energy savings, generating capacity reductions, emission reductions, and the estimated monetary value of the CO₂ emissions reductions would be outweighed by the negative NPV of consumer benefits, the economic burden on a significant fraction of consumers due to the large increases in product cost, and the conversion costs and profit margin impacts that could result in a large reduction in INPV for the manufacturers. Consequently, the Secretary has concluded that TSL 5 is not economically justified.

DOE then considered TSL 4. TSL 4 would save 0.39 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be \$1.08 billion, using a discount rate of 7 percent, and \$3.01 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 18.67 Mt of CO₂, 15.14 thousand tons of NO_x, and 0.051 ton of Hg. The estimated monetary value of the CO₂ emissions reductions at TSL 4 ranges from \$93 million to \$1,490 million. Total generating capacity in 2043 is estimated to decrease by 0.345 GW under TSL 4.

At TSL 4, DOE projects that the average LCC impact is a savings (LCC decrease) of \$14 for electric standard clothes dryers, a savings of \$14 for 120V compact clothes dryers, a savings of \$8 for 240V compact clothes dryers,

a savings of \$2 for gas clothes dryers, and no change for ventless 240V clothes dryers and combination washer/dryers. The median payback period is 5.3 years for electric standard clothes dryers, 0.9 years for 120V compact clothes dryers, 0.9 years for 240V compact clothes dryers, 11.7 years for gas clothes dryers, and is not applicable for ventless 240V clothes dryers and combination washer/dryers.³ The fraction of consumers experiencing an LCC benefit is 56 percent for electric standard clothes dryers, 96 percent for 120V compact clothes dryers, 56 percent for 240V compact clothes dryers, 26 percent for gas clothes dryers, zero percent for ventless 240V clothes dryers, and zero percent for combination washer/dryers. The fraction of consumers experiencing an LCC cost is 19 percent for electric standard clothes dryers, 4 percent for 120V compact clothes dryers, 2 percent for 240V compact clothes dryers, 32 percent for gas clothes dryers, zero percent for ventless 240V clothes dryers, and zero percent for combination washer/dryers.

At TSL 4, the projected change in INPV ranges from a decrease of \$64.5 million to a decrease of \$80.6 million. The design changes required at TSL 4 for the most common standard-size gas and electric products are incremental improvements that are well known in the industry but would still require moderate product and capital conversion costs to implement. At TSL 4, DOE recognizes the risk of negative impacts if manufacturers' expectations concerning reduced profit margins are realized. If the high end of the range of impacts is reached as DOE expects, TSL 4 could result in a net loss of 8.0 percent in INPV to clothes dryer manufacturers.

DOE concludes that at TSL 4 for residential clothes dryers, the benefits of energy savings, generating capacity

reductions, emission reductions and the estimated monetary value of the CO₂ emissions reductions, and positive NPV of consumer benefits outweigh the economic burden on some consumers due to the increases in product cost and the profit margin impacts that could result in a reduction in INPV for the manufacturers.

In addition, the efficiency levels in TSL 4 correspond to the recommended levels in the consensus agreement, which DOE believes sets forth a statement by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates) and contains recommendations with respect to an energy conservation standard that are in accordance with 42 U.S.C. 6295(o). Moreover, DOE has encouraged the submission of consensus agreements as a way to get diverse stakeholders together, to develop an independent and probative analysis useful in DOE standard setting, and to expedite the rulemaking process. DOE also believes that standard levels recommended in the consensus agreement may increase the likelihood for regulatory compliance, while decreasing the risk of litigation.

After considering the analysis, comments on the preliminary TSD, and the benefits and burdens of TSL 4, DOE concludes that this trial standard level will offer the maximum improvement in efficiency that is technologically feasible and economically justified, and will result in the significant conservation of energy. Therefore, DOE today adopts TSL 4 for clothes dryers. The proposed energy conservation standards for clothes dryers, expressed as combined energy factor (CEF) in pounds (lb) per kilowatt-hour (kWh), are shown in Table II.3.

TABLE II.3—PROPOSED AMENDED ENERGY CONSERVATION STANDARDS FOR CLOTHES DRYERS

Residential clothes dryers	
Product class	Minimum CEF levels lb/kWh
1. Vented Electric, Standard (4.4 ft ³ or greater capacity)	3.73
2. Vented Electric, Compact (120 V) (less than 4.4 ft ³ capacity)	3.61
3. Vented Electric, Compact (240 V) (less than 4.4 ft ³ capacity)	3.27
4. Vented Gas	3.30
5. Ventless Electric, Compact (240 V) (less than 4.4 ft ³ capacity)	2.55
6. Ventless Electric Combination Washer/Dryer	2.08

³ For these product classes, the efficiency level at TSL 4 is the same as the baseline efficiency level,

so no consumers are impacted and therefore calculation of a payback period is not applicable.

B. Benefits and Burdens of TSLs Considered for Room Air Conditioners

Table II.4 and Table II.5 present a summary of the quantitative impacts

estimated for each TSL for room air conditioners. The efficiency levels contained in each TSL are described in section V.A of the direct final rule.

TABLE II.4—SUMMARY OF RESULTS FOR ROOM AIR CONDITIONER TRIAL STANDARD LEVELS: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
National Energy Savings (<i>quads</i>)	0.105	0.205	0.218	0.305	0.477	0.665
NPV of Consumer Benefits (<i>2009\$ billion</i>):						
3% discount rate	0.75	1.30	1.51	1.47	1.46	(5.62)
7% discount rate	0.35	0.57	0.71	0.57	0.33	(4.44)
Cumulative Emissions Reduction:						
CO ₂ (<i>million metric tons</i>)	9.83	11.9	12.5	17.4	26.9	37.7
NO _x (<i>thousand tons</i>)	8.02	9.69	10.2	14.2	21.9	30.7
Hg (<i>ton</i>)	0.012	0.015	0.017	0.022	0.032	0.044
Value of Emissions Reduction:						
CO ₂ (<i>2009\$ million</i>) *	43 to 648	52 to 790	55 to 826	77 to 1164	118 to 1803	166 to 2541
NO _x —3% discount rate (<i>2009\$ million</i>)	2.34 to 24.0	2.83 to 29.1	2.99 to 30.7	4.16 to 42.7	6.40 to 65.8	8.96 to 92.1
NO _x —7% discount rate (<i>2009\$ million</i>)	1.25 to 12.9	1.50 to 15.4	1.61 to 16.6	2.2 to 22.6	3.35 to 34.4	4.64 to 47.7
Generation Capacity Reduction (<i>GW</i>) ** ..	0.348	0.429	0.436	0.632	1.01	1.46
Employment Impacts:						
Total Potential Changes in Domestic Production Workers in 2014 (<i>thousands</i>)	N/A	N/A	N/A	N/A	N/A	N/A
Indirect Domestic Jobs (<i>thousands</i>) **	0.74	0.73	0.74	1.16	1.94	3.07

Parentheses indicate negative (–) values.

* Range of the economic value of CO₂ reductions is based on estimates of the global benefit of reduced CO₂ emissions.

** Changes in 2043.

TABLE II.5—SUMMARY OF RESULTS FOR ROOM AIR CONDITIONER TRIAL STANDARD LEVELS: CONSUMER AND MANUFACTURER IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
Manufacturer Impacts						
Industry NPV (<i>2009\$ million</i>)	(44.2) to (84.9)	(65.4) to (112.7)	(65.7) to (112.4)	(111.3) to (177.6)	(86.6) to (184.4)	(80.2) to (344.5)
Industry NPV (% <i>change</i>)	(4.6) to (8.9)	(6.8) to (11.8)	(6.9) to (11.8)	(11.6) to (18.6)	(9.1) to (19.3)	(8.4) to (36.0)
Consumer Mean LCC Savings * (2009\$)						
< 6,000 Btu/h, with Louvers	\$9	\$11	\$9	\$7	\$7	(\$58)
8,000–13,999 Btu/h, with Louvers	16	16	22	22	22	(38)
20,000–24,999 Btu/h, with Louvers	6	6	0	6	0	(214)
> 25,000 Btu/h, with Louvers	1	1	0	1	0	(227)
8,000–10,999 Btu/h, without Louvers	4	4	13	13	20	(66)
> 11,000 Btu/h, without Louvers	5	5	11	11	11	(64)
Consumer Median PBP (years) **						
< 6,000 Btu/h, with Louvers	4.1	5.8	4.1	8.6	8.6	20.9
8,000–13,999 Btu/h, with Louvers	0.0	0.0	2.8	2.8	7.1	14.7
20,000–24,999 Btu/h, with Louvers	4.3	4.3	n/a	4.3	n/a	73.8
> 25,000 Btu/h, with Louvers	10.3	10.3	n/a	10.1	n/a	107.7
8,000–10,999 Btu/h, without Louvers	1.5	1.5	2.1	2.1	4.9	25.2
> 11,000 Btu/h, without Louvers	2.6	2.6	3.7	3.7	3.7	25.9
Distribution of Consumer LCC Impacts						
< 6,000 Btu/h, with Louvers:						
Net Cost (%)	21%	33%	21%	65%	65%	90%
No Impact (%)	31%	31%	31%	1%	1%	0%
Net Benefit (%)	48%	37%	48%	34%	34%	10%
8,000–13,999 Btu/h, with Louvers:						
Net Cost (%)	9%	9%	34%	34%	56%	77%
No Impact (%)	60%	60%	2%	2%	1%	0%
Net Benefit (%)	30%	30%	64%	64%	43%	22%
20,000–24,999 Btu/h, with Louvers:						

TABLE II.5—SUMMARY OF RESULTS FOR ROOM AIR CONDITIONER TRIAL STANDARD LEVELS: CONSUMER AND MANUFACTURER IMPACTS—Continued

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
Net Cost (%)	5%	5%	0%	5%	0%	98%
No Impact (%)	85%	85%	0%	85%	0%	2%
Net Benefit (%)	10%	10%	0%	10%	0%	0%
> 25,000 Btu/h, with Louvers:						
Net Cost (%)	11%	11%	0%	9%	0%	100%
No Impact (%)	85%	85%	0%	88%	0%	0%
Net Benefit (%)	4%	4%	0%	4%	0%	0%
8,000–10,999 Btu/h, without Louvers:						
Net Cost (%)	1%	1%	12%	12%	38%	92%
No Impact (%)	90%	90%	25%	25%	6%	2%
Net Benefit (%)	9%	9%	62%	62%	56%	6%
> 11,000 Btu/h, without Louvers:						
Net Cost (%)	2%	2%	23%	23%	23%	93%
No Impact (%)	90%	90%	31%	31%	31%	0%
Net Benefit (%)	8%	8%	47%	47%	47%	7%

Parentheses indicate negative (–) values.

* For LCCs, a negative value means an increase in LCC by the amount indicated.

** In some cases the standard level is the same as the baseline efficiency level, so no consumers are impacted and therefore calculation of a payback period is not applicable.

DOE first considered TSL 6, which represents the max-tech efficiency levels. TSL 6 would save 0.665 quads of energy, an amount DOE considers significant. Under TSL 6, the NPV of consumer benefit would be –\$4.44 billion, using a discount rate of 7 percent, and –\$5.62 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 6 are 37.7 Mt of CO₂, 30.7 thousand tons of NO_x, and 0.044 tons of Hg. The estimated monetary value of the CO₂ emissions reductions at TSL 6 ranges from \$166 million to \$2,541 million. Total generating capacity in 2043 is estimated to decrease by 1.46 GW under TSL 6.

At TSL 6, the average LCC impact is a cost (LCC increase) of \$58 for room air conditioners < 6,000 Btu/h, with louvers; a cost of \$38 for room air conditioners 8,000–13,999 Btu/h, with louvers; a cost of \$214 for room air conditioners 20,000–24,999 Btu/h, with louvers; a cost of \$227 for room air conditioners > 25,000 Btu/h, with louvers; a cost of \$66 for room air conditioners 8,000–10,999 Btu/h, without louvers; and a cost of \$64 for room air conditioners > 11,000 Btu/h, without louvers. The median payback period is 20.9 years for room air conditioners < 6,000 Btu/h, with louvers; 14.7 years for room air conditioners 8,000–13,999 Btu/h, with louvers; 73.8 years for room air conditioners 20,000–24,999 Btu/h, with louvers; 107.7 years for room air conditioners > 25,000 Btu/h, with louvers; 25.2 years for room air conditioners 8,000–10,999 Btu/h, without louvers; and 25.9 years for room air conditioners > 11,000 Btu/h, without

louvers. The fraction of consumers experiencing an LCC benefit is 10 percent for room air conditioners < 6,000 Btu/h, with louvers; 22 percent for room air conditioners 8,000–13,999 Btu/h, with louvers; zero percent for room air conditioners 20,000–24,999 Btu/h, with louvers; zero percent for room air conditioners > 25,000 Btu/h, with louvers; 6 percent for room air conditioners 8,000–10,999 Btu/h, without louvers; and 7 percent for room air conditioners > 11,000 Btu/h, without louvers. The fraction of consumers experiencing an LCC cost is 90 percent for room air conditioners < 6,000 Btu/h, with louvers; 77 percent for room air conditioners 8,000–13,999 Btu/h, with louvers; 98 percent for room air conditioners 20,000–24,999 Btu/h, with louvers; 100 percent for room air conditioners > 25,000 Btu/h, with louvers; 92 percent for room air conditioners 8,000–10,999 Btu/h, without louvers; and 93 percent for room air conditioners > 11,000 Btu/h, without louvers.

At TSL 6, the projected change in INPV ranges from a decrease of \$80.2 million to a decrease of \$344.5 million. At TSL 6, DOE recognizes the risk of large negative impacts if manufacturers' expectations concerning reduced profit margins are realized. If the high end of the range of impacts is reached as DOE expects, TSL 6 could result in a net loss of 36.0 percent in INPV to room air conditioner manufacturers.

The Secretary concludes that at TSL 6 for room air conditioners, the benefits of energy savings, generating capacity reductions, emission reductions, and the estimated monetary value of the CO₂ emissions reductions would be

outweighed by the negative NPV of consumer benefits, the economic burden on a significant fraction of consumers due to the large increases in product cost, and the capital conversion costs and profit margin impacts that could result in a large reduction in INPV for the manufacturers. Consequently, the Secretary has concluded that TSL 6 is not economically justified.

DOE next considered TSL 5. TSL 5 would save 0.477 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be \$0.33 billion, using a discount rate of 7 percent, and \$1.46 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 are 26.9 Mt of CO₂, 21.9 thousand tons of NO_x, and 0.032 ton of Hg. The estimated monetary value of the CO₂ emissions reductions at TSL 5 ranges from \$118 million to \$1,803 million. Total generating capacity in 2043 is estimated to decrease by 1.01 GW under TSL 5.

At TSL 5, the average LCC impact is a savings (LCC decrease) of \$7 for room air conditioners < 6,000 Btu/h, with louvers; a savings of \$22 for room air conditioners 8,000–13,999 Btu/h, with louvers; a savings of \$0 for room air conditioners 20,000–24,999 Btu/h, with louvers; a savings of \$0 for room air conditioners > 25,000 Btu/h, with louvers; a savings of \$20 for room air conditioners 8,000–10,999 Btu/h, without louvers; and a savings of \$11 for room air conditioners > 11,000 Btu/h, without louvers. The median payback period is 8.6 years for room air conditioners < 6,000 Btu/h, with louvers; 7.1 years for room air

conditioners 8,000–13,999 Btu/h, with louvers; not applicable for room air conditioners 20,000–24,999 Btu/h, with louvers or for room air conditioners > 25,000 Btu/h, with louvers;⁴ 4.9 years for room air conditioners 8,000–10,999 Btu/h, without louvers; and 3.7 years for room air conditioners > 11,000 Btu/h, without louvers. The fraction of consumers experiencing an LCC benefit is 34 percent for room air conditioners < 6,000 Btu/h, with louvers; 43 percent for room air conditioners 8,000–13,999 Btu/h, with louvers; zero percent for room air conditioners 20,000–24,999 Btu/h, with louvers; zero percent for room air conditioners > 25,000 Btu/h, with louvers; 56 percent for room air conditioners 8,000–10,999 Btu/h, without louvers; and 47 percent for room air conditioners > 11,000 Btu/h, without louvers. The fraction of consumers experiencing an LCC cost is 65 percent for room air conditioners < 6,000 Btu/h, with louvers; 56 percent for room air conditioners 8,000–13,999 Btu/h, with louvers; zero percent for room air conditioners 20,000–24,999 Btu/h, with louvers; zero percent for room air conditioners > 25,000 Btu/h, with louvers; 38 percent for room air conditioners 8,000–10,999 Btu/h, without louvers; and 23 percent for room air conditioners > 11,000 Btu/h, without louvers.

At TSL 5, the projected change in INPV ranges from a decrease of \$86.6 million to a decrease of \$184.4 million. At TSL 5, DOE recognizes the risk of moderately negative impacts if manufacturers' expectations concerning reduced profit margins are realized. If the high end of the range of impacts is reached as DOE expects, TSL 5 could result in a net loss of 19.3 percent in INPV to room air conditioner manufacturers.

The Secretary concludes that at TSL 5 for room air conditioners, the benefits of energy savings, positive NPV of consumer benefits, generating capacity reductions, emission reductions, and the estimated monetary value of the CO₂ emissions reductions would be outweighed by the economic burden on a significant fraction of consumers in some product classes due to the large increases in product cost, and the capital conversion costs and profit margin impacts that could result in a moderate reduction in INPV for the manufacturers. In particular, the fraction of consumers experiencing an LCC cost is 56 percent for room air

conditioners with 8,000–13,999 Btu/h, with louvers, which is the product class with the largest market share. Based on the above findings, the Secretary has concluded that TSL 5 is not economically justified.

DOE then considered TSL 4. TSL 4 would save 0.305 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be \$0.57 billion, using a discount rate of 7 percent, and \$1.47 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 17.4 Mt of CO₂, 14.2 thousand tons of NO_x, and 0.022 ton of Hg. The estimated monetary value of the CO₂ emissions reductions at TSL 4 ranges from \$77 million to \$1,164 million. Total generating capacity in 2043 is estimated to decrease by 0.632 GW under TSL 4.

At TSL 4, DOE projects that the average LCC impact is a savings (LCC decrease) of \$7 for room air conditioners < 6,000 Btu/h, with louvers; a savings of \$22 for room air conditioners 8,000–13,999 Btu/h, with louvers; a savings of \$6 for room air conditioners 20,000–24,999 Btu/h, with louvers; a savings of \$1 for room air conditioners > 25,000 Btu/h, with louvers; a savings of \$13 for room air conditioners 8,000–10,999 Btu/h, without louvers; and a savings of \$11 for room air conditioners > 11,000 Btu/h, without louvers. The median payback period is 8.6 years for room air conditioners < 6,000 Btu/h, with louvers; 2.8 years for room air conditioners 8,000–13,999 Btu/h, with louvers; 4.3 years for room air conditioners 20,000–24,999 Btu/h, with louvers; 10.1 years for room air conditioners > 25,000 Btu/h, with louvers; 2.1 years for room air conditioners 8,000–10,999 Btu/h, without louvers; and 3.7 years for room air conditioners > 11,000 Btu/h, without louvers. The fraction of consumers experiencing an LCC benefit is 34 percent for room air conditioners < 6,000 Btu/h, with louvers; 64 percent for room air conditioners 8,000–13,999 Btu/h, with louvers; 10 percent for room air conditioners 20,000–24,999 Btu/h, with louvers; 4 percent for room air conditioners > 25,000 Btu/h, with louvers; 62 percent for room air conditioners 8,000–10,999 Btu/h, without louvers; and 47 percent for room air conditioners > 11,000 Btu/h, without louvers. The fraction of consumers experiencing an LCC cost is 65 percent for room air conditioners < 6,000 Btu/h, with louvers; 34 percent for room air conditioners 8,000–13,999 Btu/h, with louvers; 5 percent for room air conditioners 20,000–24,999 Btu/h,

with louvers; 9 percent for room air conditioners > 25,000 Btu/h, with louvers; 12 percent for room air conditioners 8,000–10,999 Btu/h, without louvers; and 23 percent for room air conditioners > 11,000 Btu/h, without louvers.

At TSL 4, the projected change in INPV ranges from a decrease of \$111.3 million to a decrease of \$177.6 million. DOE recognizes the risk of moderately negative impacts if manufacturers' expectations concerning reduced profit margins are realized. If the high end of the range of impacts is reached as DOE expects, TSL 4 could result in a net loss of 18.6 percent in INPV to room air conditioner manufacturers.

The Secretary concludes that at TSL 4 for room air conditioners, the benefits of energy savings, generating capacity reductions, emission reductions and the estimated monetary value of the CO₂ emissions reductions, positive NPV of consumer benefits and positive average consumer LCC savings outweigh the economic burden on some consumers (a significant fraction for one product class but small to moderate fractions for the other product classes) due to the increases in product cost, and the capital conversion costs and profit margin impacts that could result in a moderate reduction in INPV for the manufacturers.

In addition, the efficiency levels in TSL 4 correspond to the recommended levels in the consensus agreement, which DOE believes sets forth a statement by interested persons that are fairly representative of relevant points of view (including representatives of manufacturers of covered products, States, and efficiency advocates) and contains recommendations with respect to an energy conservation standard that are in accordance with 42 U.S.C. 6295(o). Moreover, DOE has encouraged the submission of consensus agreements as a way to get diverse stakeholders together, to develop an independent and probative analysis useful in DOE standard setting, and to expedite the rulemaking process. DOE also believes that standard levels recommended in the consensus agreement may increase the likelihood for regulatory compliance, while decreasing the risk of litigation.

After considering the analysis, comments on the preliminary TSD, and the benefits and burdens of TSL 4, DOE concludes preliminarily that this trial standard level 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

⁴ In these cases the standard level is the same as the baseline efficiency level, so no consumers are impacted and therefore calculation of a payback period is not applicable.

adopt TSL 4 for room air conditioners. The proposed energy conservation standards for room air conditioners, expressed as combined energy efficiency ratio (CEER) in Btu per watt-hour (Wh), are shown in Table II.6.

TABLE II.6—PROPOSED AMENDED ENERGY CONSERVATION STANDARDS FOR ROOM AIR CONDITIONERS

Room air conditioners	
Product class	Minimum CEER levels Btu/Wh
1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h	11.0
2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h	11.0
3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h	10.9
4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h	10.7
5a. Without reverse cycle, with louvered sides, and 20,000 to 24,999 Btu/h	9.4
5b. Without reverse cycle, with louvered sides, and 25,000 Btu/h or more	9.0
6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h	10.0
7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h	10.0
8a. Without reverse cycle, without louvered sides, and 8,000 to 10,999 Btu/h	9.6
8b. Without reverse cycle, without louvered sides, and 11,000 to 13,999 Btu/h	9.5
9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h	9.3
10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more	9.4
11. With reverse cycle, with louvered sides, and less than 20,000 Btu/h	9.8
12. With reverse cycle, without louvered sides, and less than 14,000 Btu/h	9.3
13. With reverse cycle, with louvered sides, and 20,000 Btu/h or more	9.3
14. With reverse cycle, without louvered sides, and 14,000 Btu/h or more	8.7
15. Casement-only	9.5
16. Casement-slider	10.4

C. Summary of Benefits and Costs (Annualized) of the Standards

The benefits and costs of today's standards can also be expressed in terms of annualized values. The annualized monetary values are the sum of (1) the annualized national economic value, expressed in 2009\$, of the benefits from operating products that meet the proposed standards (consisting primarily of operating cost savings from using less energy, minus increases in equipment purchase costs, which is another way of representing consumer NPV), and (2) the monetary value of the benefits of emission reductions, including CO₂ emission reductions.⁵ The value of the CO₂ reductions, otherwise known as the Social Cost of Carbon (SCC), is calculated using a range of values per metric ton of CO₂ developed by a recent interagency process. The monetary costs and benefits of cumulative emissions reductions are reported in 2009\$ to permit comparisons with the other costs and benefits in the same dollar units.

Although combining the values of operating savings and CO₂ reductions provides a useful perspective, two issues should be considered. First, the national operating savings are domestic U.S. consumer monetary savings that

occur as a result of market transactions while the value of CO₂ reductions is based on a global value. Second, the assessments of operating cost savings and CO₂ savings are performed with different methods that use quite different time frames for analysis. The national operating cost savings is measured for the lifetime of products shipped in 2014–2043. The SCC values, on the other hand, reflect the present value of future climate-related impacts resulting from the emission of one ton of carbon dioxide in each year. These impacts go well beyond 2100.

Table II.7 and Table II.8 show the annualized values for clothes dryers and room air conditioners, respectively. Using a 7-percent discount rate and the SCC value of \$22.1/ton in 2010 (in 2009\$), the cost of the standards for clothes dryers in today's rule is \$52.3 million per year in increased equipment costs, while the annualized benefits are \$139.1 million per year in reduced equipment operating costs, \$25.0 million in CO₂ reductions, and \$0.9 million in reduced NO_x emissions. In this case, the net benefit amounts to \$112.7 million per year. Using a 3-percent discount rate and the SCC value of \$22.1/ton in 2010 (in 2009\$), the cost of the standards for clothes

dryers in today's rule is \$55.4 million per year in increased equipment costs, while the benefits are \$209.1 million per year in reduced operating costs, \$25.0 million in CO₂ reductions, and \$1.4 million in reduced NO_x emissions. In this case, the net benefit amounts to \$180.1 million per year.

Using a 7-percent discount rate and the SCC value of \$22.1/ton in 2010 (in 2009\$), the cost of the standards for room air conditioners in today's rule is \$107.7 million per year in increased equipment costs, while the annualized benefits are \$153.7 million per year in reduced equipment operating costs, \$19.5 million in CO₂ reductions, and \$0.999 million in reduced NO_x emissions. In this case, the net benefit amounts to \$66.4 million per year. Using a 3-percent discount rate and the SCC value of \$22.1/ton in 2010 (in 2009\$), the cost of the standards for room air conditioners in today's rule is \$111.0 million per year in increased equipment costs, while the benefits are \$186.2 million per year in reduced operating costs, \$19.5 million in CO₂ reductions, and \$1.20 million in reduced NO_x emissions. In this case, the net benefit amounts to \$95.9 million per year.

⁵ DOE used a two-step calculation process to convert the time-series of costs and benefits into annualized values. First, DOE calculated a present value in 2011, the year used for discounting the NPV of total consumer costs and savings, for the time-series of costs and benefits using discount

rates of three and seven percent for all costs and benefits except for the value of CO₂ reductions. For the latter, DOE used a range of discount rates, as shown in Table II.7. From the present value, DOE then calculated the fixed annual payment over a 30-year period, starting in 2011, that yields the

same present value. The fixed annual payment is the annualized value. Although DOE calculated annualized values, this does not imply that the time-series of costs and benefits from which the annualized values were determined would be a steady stream of payments.

TABLE II.7—ANNUALIZED BENEFITS AND COSTS OF AMENDED STANDARDS (TSL 4) FOR CLOTHES DRYERS SOLD IN 2014–2043

	Discount rate	Monetized (million 2009\$/year)		
		Primary estimate *	Low estimate *	High estimate *
Benefits				
Operating Cost Savings	7%	139.1	120.6	158.3
	3%	209.1	177.4	241.3
CO ₂ Reduction at \$4.9/t**	5%	6.0	6.0	6.0
CO ₂ Reduction at \$22.1/t**	3%	25.0	25.0	25.0
CO ₂ Reduction at \$36.3/t**	2.5%	39.8	39.8	39.8
CO ₂ Reduction at \$67.1/t**	3%	76.0	76.0	76.0
NO _x Reduction at \$2,519/ton**	7%	0.9	0.9	0.9
	3%	1.4	1.4	1.4
Total †	7% plus CO ₂ range	146.1 to 216.1	127.6 to 197.6	165.3 to 235.3
	7%	165.0	146.5	184.3
	3%	235.4	203.7	267.6
	3% plus CO ₂ range	216.5 to 286.5	184.8 to 254.8	248.7 to 318.7
Costs				
Incremental Product Costs	7%	52.3	48.8	55.9
	3%	55.4	51.2	59.6
Total Net Benefits				
Total †	7% plus CO ₂ range	93.7 to 163.7	78.7 to 148.7	109.4 to 179.4
	7%	112.7	97.7	128.3
	3%	180.1	152.5	208.1
	3% plus CO ₂ range	161.1 to 231.1	133.6 to 203.6	189.1 to 259.1

* The Primary, Low, and High Estimates utilize forecasts of energy prices and housing starts from the AEO2010 Reference case, Low Economic Growth case, and High Economic Growth case, respectively.

** The CO₂ values represent global values (in 2009\$) of the social cost of CO₂ emissions in 2010 under several scenarios. The values of \$4.9, \$22.1, and \$36.3 per ton are the averages of SCC distributions calculated using 5-percent, 3-percent, and 2.5-percent discount rates, respectively. The value of \$67.1 per ton represents the 95th percentile of the SCC distribution calculated using a 3-percent discount rate. The value for NO_x (in 2009\$) is the average of the low and high values used in DOE's analysis.

† Total Benefits for both the 3-percent and 7-percent cases are derived using the SCC value calculated at a 3-percent discount rate, which is \$22.1/ton in 2010 (in 2009\$). In the rows labeled as "7% plus CO₂ range" and "3% plus CO₂ 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 CO₂ values.

TABLE II.8—ANNUALIZED BENEFITS AND COSTS OF AMENDED STANDARDS (TSL 4) FOR ROOM AIR CONDITIONERS SOLD IN 2014–2043

	Discount rate	Monetized (million 2009\$/year)		
		Primary estimate *	Low estimate *	High estimate *
Benefits				
Operating Cost Savings	7%	153.7	145.1	161.9
	3%	186.2	174.2	197.3
CO ₂ Reduction at \$4.9/t**	5%	5.0	5.0	5.0
CO ₂ Reduction at \$22.1/t**	3%	19.5	19.5	19.5
CO ₂ Reduction at \$36.3/t**	2.5%	30.7	30.7	30.7
CO ₂ Reduction at \$67.1/t**	3%	59.4	59.4	59.4
NO _x Reduction at \$2,519/ton**	7%	0.999	0.999	0.999
	3%	1.197	1.197	1.197
Total †	7% plus CO ₂ range	159.6 to 214.0	151.1 to 205.5	167.9 to 222.3
	7%	174.1	165.5	182.4
	3%	206.8	194.9	218.0
	3% plus CO ₂ range	192.3 to 246.7	180.4 to 234.8	203.5 to 257.9
Costs				
Incremental Product Costs	7%	107.7	107.7	107.7
	3%	111.0	111.0	111.0
Total Net Benefits				
Total †	7% plus CO ₂ range	51.9 to 106.3	43.4 to 97.8	60.2 to 114.6
	7%	66.4	57.8	74.7
	3%	95.9	83.9	107.0

TABLE II.8—ANNUALIZED BENEFITS AND COSTS OF AMENDED STANDARDS (TSL 4) FOR ROOM AIR CONDITIONERS SOLD IN 2014–2043—Continued

	Discount rate	Monetized (million 2009\$/year)		
		Primary estimate *	Low estimate *	High estimate *
	3% plus CO ₂ range	81.4 to 135.8	69.4 to 123.8	92.5 to 146.9

* The Primary, Low, and High Estimates utilize forecasts of energy prices and housing starts from the AEO2010 Reference case, Low Economic Growth case, and High Economic Growth case, respectively.

** The CO₂ values represent global values (in 2009\$) of the social cost of CO₂ emissions in 2010 under several scenarios. The values of \$4.9, \$22.1, and \$36.3 per ton are the averages of SCC distributions calculated using 5-percent, 3-percent, and 2.5-percent discount rates, respectively. The value of \$67.1 per ton represents the 95th percentile of the SCC distribution calculated using a 3-percent discount rate. The value for NO_x (in 2009\$) is the average of the low and high values used in DOE's analysis.

† Total Benefits for both the 3-percent and 7-percent cases are derived using the SCC value calculated at a 3-percent discount rate, which is \$22.1/ton in 2010 (in 2009\$). In the rows labeled as "7% plus CO₂ range" and "3% plus CO₂ 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 CO₂ values.

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 notice.

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

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

Do not submit to *regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (CBI)). Comments submitted through *regulations.gov* cannot be claimed as

CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section below.

DOE processes submissions made through *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 *regulations.gov* provides after you have successfully uploaded your comment.

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

Include contact information each time you submit comments, data, documents, and other information to DOE. E-mail submissions are preferred. If you submit via mail or hand delivery/courier, please provide all items on a CD, if feasible. It is not necessary to submit printed copies. No facsimiles (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. According 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 e-mail, 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 e-mail 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 which 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 today's **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 today's **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 today's proposed rule.

List of Subjects in 10 CFR Part 430

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

Issued in Washington, DC, on April 8, 2011.

Kathleen Hogan,

Deputy Assistant Secretary for Energy Efficiency, Office of Technology Development, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, DOE proposes to amend

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. Revise § 430.32 paragraphs (b) and (h) to read as follows:

§ 430.32 Energy and water conservation standards and effective dates.

* * * * *

(b) *Room air conditioners.*

Product class	Energy efficiency ratio, effective from Oct. 1, 2000 to April 20, 2014	Combined energy efficiency ratio, effective as of April 21, 2014
1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h	9.7	11.0
2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h	9.7	11.0
3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h	9.8	10.9
4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h	9.7	10.7
5a. Without reverse cycle, with louvered sides, and 20,000 to 24,999 Btu/h	8.5	9.4
5b. Without reverse cycle, with louvered sides, and 25,000 Btu/h or more		9.0
6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h	9.0	10.0
7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h	9.0	10.0
8a. Without reverse cycle, without louvered sides, and 8,000 to 10,999 Btu/h	8.5	9.6
8b. Without reverse cycle, without louvered sides, and 11,000 to 13,999 Btu/h		9.5
9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h	8.5	9.3
10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more	8.5	9.4
11. With reverse cycle, with louvered sides, and less than 20,000 Btu/h	9.0	9.8
12. With reverse cycle, without louvered sides, and less than 14,000 Btu/h	8.5	9.3
13. With reverse cycle, with louvered sides, and 20,000 Btu/h or more	8.5	9.3
14. With reverse cycle, without louvered sides, and 14,000 Btu/h or more	8.0	8.7
15. Casement-Only	8.7	9.5
16. Casement-Slider	9.5	10.4

* * * * *

(h) *Clothes dryers.* (1) Gas clothes dryers manufactured after January 1, 1988 shall not be equipped with a constant burning pilot.

(2) Clothes dryers manufactured on or after May 14, 1994 and before [DATE 3 YEARS AFTER FINAL RULE **FEDERAL REGISTER PUBLICATION**], shall have an energy factor no less than:

Product class	Energy factor (lbs/kWh)
i. Electric, Standard (4.4 ft ³ or greater capacity)	3.01
ii. Electric, Compact (120V) (less than 4.4 ft ³ capacity)	3.13

Product class	Energy factor (lbs/kWh)
iii. Electric, Compact (240V) (less than 4.4 ft ³ capacity)	2.90
iv. Gas	2.67

(3) Clothes dryers manufactured on or after [DATE 3 YEARS AFTER FINAL RULE **FEDERAL REGISTER PUBLICATION**], shall have a combined energy factor no less than:

Product class	Combined energy factor (lbs/kWh)
i. Vented Electric, Standard (4.4 ft ³ or greater capacity)	3.73

Product class	Combined energy factor (lbs/kWh)
ii. Vented Electric, Compact (120V) (less than 4.4 ft ³ capacity)	3.61
iii. Vented Electric, Compact (240V) (less than 4.4 ft ³ capacity)	3.27
iv. Vented Gas	3.30
v. Ventless Electric, Compact (240V) (less than 4.4 ft ³ capacity)	2.55
vi. Ventless Electric, Combination Washer-Dryer	2.08

* * * * *

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