DEPARTMENT OF ENERGY

10 CFR Parts 429 and 430

[Docket Number EERE–2008–BT–STD–0019]

RIN 1904–AB90

Energy Conservation Program: Energy Conservation Standards for Residential Clothes Washers

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

ACTION: Proposed rule.

SUMMARY: The Energy Policy and Conservation Act of 1975 (EPCA), as amended, prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including residential clothes washers. EPCA also requires the U.S. Department of Energy (DOE) to determine whether amended standards would be technologically feasible and economically justified, and would save a significant amount of energy. In this proposed rule, DOE proposes amended energy conservation standards for residential clothes washers 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 September 18, 2012.

ADDRESSES: See section III, ''Public Participation,'' for details.

Any comments submitted must identify the proposed rule for Energy Conservation Standards for Residential Clothes Washers, and provide docket number EERE–2008–BT–STD–0019 and/or regulatory information number (RIN) number 1904–AB90. Comments may be submitted using any of the following methods:

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

2. *Email: RCW–2008–STD–0019@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.

Docket: The docket is available for review at *regulations.gov,* including **Federal Register** notices, framework documents, public meeting attendee lists and transcripts, comments, and other supporting documents/materials.

A link to the docket web page can be found at: *www.regulations.gov/#!docketDetail;D=EERE-2008-BT-STD-0019.*

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 email: *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, email: *stephen.witkowski@ee.doe.gov.*

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I. Introduction and Legal Authority

Title III, Part B of the Energy Policy and Conservation Act of 1975 (EPCA or the Act), Public Law 94–163 (42 U.S.C. 6291–6309, as codified) established the Energy Conservation Program for Consumer Products Other Than Automobiles,[1] a program covering most major household appliances (collectively referred to as ''covered products''), which includes the residential clothes washers that are the subject of this rulemaking. (42 U.S.C. 6292(a)(7)) EPCA, as amended by the Energy Information and Security Act of 2007 (EISA 2007; Pub. L. 110–140), prescribed the current energy conservation standards for residential clothes washers (42 U.S.C. 6295(g)(9), and directed DOE to publish a final rule no later than December 31, 2011, to determine whether to amend the standards in effect for clothes washers manufactured on or after January 1, 2015. (42 U.S.C. 6295(g)(9)(B)(i))

EISA 2007 also amended EPCA, in relevant part, to grant DOE authority DOE 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 (NOPR) that proposes an identical energy conservation 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.*

On July 30, 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

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

[2] DOE Docket No. EERE–2008–BT–STD–0019, Comment 32.

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 washers that they believed would satisfy the EPCA requirements in 42 U.S.C. 6295(o). Earthjustice submitted a comment affirming its support for the joint petition.[3]

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 washers 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 residential clothes washers, 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 washers. 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 (TSL) 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 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 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 Washers

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

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

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
National Energy Savings (*quads*)	1.56	1.46	2.04	2.87	3.32.
National Water Savings (*trillion gal.*)	1.11	1.05	3.03	5.33	6.89.
NPV of Consumer Benefits (*2010$ billion*)					
3% discount rate	20.2	18.5	31.29	41.60	50.48.
7% discount rate	8.7	7.77	13.01	16.42	19.92.
Cumulative Emissions Reduction					
CO_2 (*million metric tons*)	87.65	81.96	112.90	155.51	178.82.
NO_X (*thousand tons*)	73.46	68.07	94.16	130.10	149.70.
Hg (*tons*)	0.198	0.226	0.269	0.364	0.413.
Value of Cumulative Emissions Reduction					
CO_2 (*2010$ million*)*	410 to 6527	384 to 6112	530 to 8457	729 to 11613	838 to 13357.
NO_X—3% discount rate (*2010$ million*)	22 to 224	20 to 207	28 to 286	39 to 396	44 to 456.
NO_X—7% discount rate (*2010$ million*)	9 to 97	9 to 90	12 to 122	17 to 171	19 to 197.
Generation Capacity Reduction (*GW*)**	0.882	1.01	1.30	1.64	1.86.

Parentheses indicate negative (−) values.
* Range of the economic value of CO_2 reductions is based on estimates of the global benefit of reduced CO_2 emissions.
** Changes in 2044.

[3] DOE Docket No. EERE–2008–BT–STD–0019, Comment 38.

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

Category	TSL 1	TSL 2	TSL 3*	TSL 4	TSL 5
Manufacturer Impacts					
Industry NPV (2010$ million)	(56.3)–(64.0)	(14.3)–(490.3)	96.4–(858.8)	205.0–(1,256.4)	255.5–(1,335.3)
Industry NPV (% change)	(2.2)–(2.5)	(0.6)–(19.0)	3.7–(33.2)	7.9–(48.6)	9.9–(51.6)
Consumer Mean LCC Savings (2010$)					
Top-Loading Standard Clothes Washer	268	243	268/366	491	524
Front-Loading Standard Clothes Washer	**NA	2.2	37	35	102
Top-Loading Compact Clothes Washer	159	159	159/312	312	312
Front-Loading Compact Clothes Washer	54	54	54	54	54
Consumer Median PBP (years)					
Top-Loading Standard Clothes Washer	0.4	0.7	0.4/0.9	1.8	1.9
Front-Loading Standard Clothes Washer	**NA	0.9	1.3	9.2	5.2
Top-Loading Compact Clothes Washer	0.5	0.5	0.5/2.1	2.1	2.1
Front-Loading Compact Clothes Washer	0.8	0.8	0.8	0.8	0.8
Distribution of Consumer LCC Impacts					
Top-Loading Standard Clothes Washer					
Net Cost (%)	0.7	5.6	0.7/3.4	8.1	9.5
No Impact (%)	19.5	15.1	19.5/14.1	4.6	0.0
Net Benefit (%)	79.8	79.3	79.8/82.5	87.4	90.5
Front-Loading Standard Clothes Washer					
Net Cost (%)	0.0	0.1	1.5	45.1	29.6
No Impact (%)	100.0	96.0	72.4	11.6	0.0
Net Benefit (%)	0.0	3.9	26.1	43.3	70.4
Top-Loading Compact Clothes Washer					
Net Cost (%)	1.5	1.5	1.5/12.6	12.6	12.6
No Impact (%)	0.0	0.0	0.0	0.0	0.0
Net Benefit (%)	98.5	98.5	98.5/87.4	87.4	87.4
Front-Loading Compact Clothes Washer					
Net Cost (%)	0.0	0.0	0.0	0.0	0.0
No Impact (%)	0.0	0.0	0.0	0.0	0.0
Net Benefit (%)	100.0	100.0	100.0	100.0	100.0

Parentheses indicate negative (−) values.

* For top-loading clothes washers under TSL 3, the first number for consumer impacts refers to the standard in 2015, and the second number refers to the standard in 2018.

** 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 5, which represents the max-tech efficiency levels. TSL 5 would save 3.32 quads of energy and 6.89 trillion gallons of water, amounts DOE considers significant. Under TSL 5, the NPV of consumer benefit would be $19.92 billion, using a discount rate of 7 percent, and $50.48 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 are 179 Mt of CO_2, 150 thousand tons of NO_X, and 0.413 ton of Hg. The estimated monetary value of the CO_2 emissions reductions at TSL 5 ranges from $838 million to $13,357 million. Total generating capacity in 2043 is estimated to decrease by 1.86 GW under TSL 5.

At TSL 5, the average LCC impact is a savings (LCC decrease) of $524 for top-loading standard clothes washers, a savings of $102 for front-loading standard clothes washers, a savings of $312 for top-loading compact clothes washers, and a savings of $54 for front-loading compact clothes washers. The median payback period is 1.9 years for top-loading standard clothes washers, 5.2 years for front-loading standard clothes washers, 2.1 years for top-loading compact clothes washers, and 0.8 years for front-loading compact clothes washers. A significant fraction of consumers, however, experience an LCC increase or net cost under TSL 5 for all product classes except front-loading compact: 9.5 percent for top-loading standard clothes washers, 30 percent for front-loading standard clothes washers, and 13 percent for top-loading compact clothes washers. In addition, because TSL 5 significantly raises the first cost of both top-loading and front-loading clothes washers, DOE is concerned some low-income consumers may be compelled to delay or forgo new purchases, using commercial coin laundries or repairing their existing clothes washers instead.

At TSL 5, the projected change in INPV ranges from an increase of $255.5 million to a decrease of $1,335.3 million. At this TSL, manufacturers would have to overhaul both their front-loading and top-loading platforms by the 2015 compliance date to meet demand. Redesigning all units to meet the current max-tech efficiency levels would require considerable capital and product conversion expenditures. DOE believes that the scope of the redesigns necessary to meet TSL 5 by 2015 also heightens concerns over supply chain and operational risk. DOE estimates that complete platform redesigns would cost the industry over $700 million in product and capital conversion costs. These costs alone represent a substantial portion of the total value of the industry. In addition, manufacturers could face a substantial impact on

profitability at TSL 5. Because manufacturers earn a premium for ENERGY STAR products and additional profit for products that exceed the ENERGY STAR level, collapsing the market to one commodity product makes it unlikely that manufacturers could maintain their base-case profitability on these products after compliance with the standards is required. As a result, DOE expects that TSL 5 would yield impacts closer to the high end of the range of INPV impacts. If the high end of the range of impacts is reached, as DOE expects, TSL 5 could result in a net loss of 51.6 percent in INPV to clothes washer manufacturers.

The Secretary concludes that at TSL 5 for residential clothes washers, the benefits of energy savings, water savings, positive NPV of consumer benefits, generating capacity reductions, emission reductions, and the estimated monetary value of the CO_2 emissions reductions would be outweighed by the significant fraction of consumers that experience an increase in life-cycle cost and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a very large reduction in INPV for the manufacturers and the risk of manufacturer capacity constraints resulting from the necessary changes by 2015. Consequently, the Secretary has concluded that TSL 5 is not economically justified.

DOE next considered TSL 4. TSL 4 would save 2.87 quads of energy and 5.33 trillion gallons of water, amounts DOE considers significant. Under TSL 4, the NPV of consumer benefit would be 16.42 billion, using a discount rate of 7 percent, and $41.60 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 156 Mt of CO_2, 130 thousand tons of NO_X, and 0.364 tons of Hg. The estimated monetary value of the CO_2 emissions reductions at TSL 4 ranges from $729 million to $11,613 million. Total generating capacity in 2044 is estimated to decrease by 1.64 GW under TSL 4.

At TSL 4, the average LCC impact is a savings of $491 for top-loading standard clothes washers, a savings of $35 for front-loading standard clothes washers, a savings of $312 for top-loading compact clothes washers, and a savings of $54 for front-loading compact clothes washers. The median payback period is 1.8 years for top-loading standard clothes washers, 9.2 years for front-loading standard clothes washers, 2.1 years for top-loading compact clothes washers, and 0.8 years for front-loading compact clothes washers. A significant fraction of consumers, however, experience an LCC net cost for all product classes except for front-loading compact: 8 percent for top-loading standard clothes washers, 45 percent for front-loading standard clothes washers, and 13 percent for top-loading compact clothes washers. In addition, TSL 4 significantly raises the first cost of both top-loading and front-loading clothes washers, and DOE is concerned some low-income consumers may be compelled to delay or forgo new purchases.

At TSL 4, the projected change in INPV ranges from an increase of $205.0 million to a decrease of $1,256.4 million. At this TSL, manufacturers would be required to overhaul both front-loading and top-loading platforms by the 2015 compliance date to meet demand. DOE estimates that it would cost the industry approximately $692 million in product and capital conversion costs at TSL 4. These costs reflect substantial platform changes to both top-loading and front-loading clothes washers by 2015, represent a significant portion of the total value of the industry, and trigger capacity concerns in light of the magnitude and timing of the necessary changes. In addition, manufacturers could face a substantial impact on profitability at TSL 4. Because manufacturers earn a premium for ENERGY STAR products and additional profit for products that exceed the ENERGY STAR level, collapsing the market to a few commodity products without efficiency differentiators makes it unlikely that manufactures could maintain their base-case profitability on these products after standards. Because of the effect, DOE expects that TSL 4 would yield impacts closer to the high end of the range of INPV impacts. If the high end of the range of impacts is reached, as DOE expects, TSL 4 could result in a net loss of 48.6 percent in INPV to clothes washer manufacturers.

The Secretary concludes that at TSL 4 for residential clothes washers, the benefits of energy savings, water savings, positive NPV of consumer benefits, generating capacity reductions, emission reductions, and the estimated monetary value of the CO_2 emissions reductions would be outweighed by the economic burden on a significant fraction of consumers due to the large increase in product cost and the impacts on manufacturers, including the conversion costs and profit margin impacts that could result in a very large reduction in INPV for manufacturers and the risk of manufacturer capacity constraints resulting from the necessary changes by 2015. Consequently, the Secretary has concluded that TSL 4 is not economically justified.

DOE then considered TSL 3. TSL 3 would save 2.04 quads of energy and 3.03 trillion gallons of water, amounts DOE considers significant. Under TSL 3, the NPV of consumer benefit would be $13.01 billion, using a discount rate of 7 percent, and $31.29 billion, using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 3 are 113 Mt of CO_2, 94.2 thousand tons of NO_X, and 0.269 ton of Hg. The estimated monetary value of the CO_2 emissions reductions at TSL 3 ranges from $530 million to $8,457 million. Total generating capacity in 2045 is estimated to decrease by 1.30 GW under TSL 3.

At TSL 3, the average LCC impact is a savings of $268 in 2015 and $366 in 2018 for top-loading standard clothes washers, a savings of $37 for front-loading standard clothes washers, a savings of $159 in 2015 and $312 in 2018 for top-loading compact clothes washers, and a savings of $54 for front-loading compact clothes washers. The median payback period is 0.4 years in 2015 and 0.9 years in 2018 for top-loading standard clothes washers, 1.3 years for front-loading standard clothes washers, 0.5 years in 2015 and 2.1 years in 2018 for top-loading compact clothes washers, and 0.8 years for front-loading compact clothes washers. The fraction of consumers experiencing an LCC cost is small—less than 1 percent in 2015 and 3 percent in 2018 for top-loading standard clothes washers, 1.5 percent for front-loading standard clothes washers, and 1.5 percent in 2015 and 13 percent in 2018 for top-loading compact clothes washers. No consumers experience an LCC cost for front-loading compact clothes washers. The much lower first cost of washers meeting TSL 3, combined with the fact that the vast majority of consumers experience either net LCC benefits or no impacts at TSL 3, mitigates DOE's concern that some low-income consumers would be compelled to delay or forgo new purchases.

At TSL 3, the projected change in INPV ranges from an increase of $96.4 million to a decrease of $858.8 million. For most manufacturers, the efficiency levels for top-loading clothes washers at TSL 3 correspond to incremental product conversion by 2015 and a platform redesign by 2018. These compliance dates mitigate capacity risk to manufacturers and their supply chains and afford manufacturers the flexibility to spread capital requirements, engineering resources, and other conversion activities over a longer period of time depending on the

individual needs of each manufacturer. These factors at TSL 3 mitigate DOE's concerns about manufacturers' ability to match production capacity to market demand. At TSL 3, DOE recognizes the risk of negative impacts if manufacturers' expectations concerning reduced profit margins are realized. However, the additional flexibility of the compliance dates and range of efficiency levels above TSL 3 afford manufacturers room to maintain higher value products. Therefore, DOE expects impacts to be closer to the low end of the range of impacts.

The Secretary concludes that at TSL 3 for residential clothes washers, the benefits of energy savings, water savings, positive NPV of consumer benefits, generating capacity reductions, emission reductions, the estimated monetary value of the CO_2 emissions reductions, and favorable consumer LCC savings and payback period for more than 97 percent of consumers outweigh the LCC costs for less than 3 percent of consumers and the conversion costs and profit margin impacts that could result in a reduction in INPV for manufacturers.

In addition, the efficiency levels in TSL 3 correspond to the recommended levels in the Joint Petition, 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 for diverse interested parties to develop an independent and probative analysis useful in DOE standard setting and to expedite the rulemaking process. DOE also believes that the 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 framework document, and the benefits and burdens of TSL 3, the Secretary concludes that this TSL 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 proposes to adopt TSL 3 for residential clothes washers. The proposed amended energy conservation standards for residential clothes washers, which are a minimum allowable integrated modified energy factor (IMEF) and maximum allowable integrated water factor (IWF), are shown in Table II.3.

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

Product class	Effective March 7, 2015		Effective January 1, 2018	
	Minimum IMEF *	Maximum IWF †	Minimum IMEF *	Maximum IWF †
1. Top-loading, Compact (less than 1.6 ft^3 capacity)	0.86	14.4	1.15	12.0
2. Top-loading, Standard	1.29	8.4	1.57	6.5
3. Front-loading, Compact (less than 1.6 ft^3 capacity)	1.13	8.3	N/A	
4. Front-loading, Standard	1.84	4.7	N/A	

* IMEF (integrated modified energy factor) is calculated as the clothes container capacity in cubic feet divided by the sum, expressed in kilowatt-hours (kWh), of: (1) the total weighted per-cycle hot water energy consumption; (2) the total weighted per-cycle machine electrical energy consumption; (3) the per-cycle energy consumption for removing moisture from a test load; and (4) the per-cycle standby and off mode energy consumption.

† IWF (integrated water consumption factor is calculated as the sum, expressed in gallons per cycle, of the total weighted per-cycle water consumption for all wash cycles divided by the clothes container capacity in cubic feet.

B. 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 2010$, of the benefits from operating products that meet the proposed standards (consisting primarily of operating cost savings from using less energy and water, minus increases in product purchase costs, which is another way of representing consumer NPV), and (2) the monetary value of the benefits of emission reductions, including CO_2 emission reductions.[4] The value of the CO_2 reductions, otherwise known as the Social Cost of Carbon (SCC), is calculated using a range of values per metric ton of CO_2 developed by a recent interagency process.

Although combining the values of operating savings and CO_2 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 CO_2 reductions is based on a global value. Second, the assessments of operating cost savings and SCC 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 2015–2044. The SCC values, on the other hand, reflect the present value of all future climate-related impacts resulting from the emission of one ton of carbon dioxide in each year. These impacts continue well beyond 2100.

Table II.4 shows the annualized values for clothes washers. Using a 7-percent discount rate for benefits and costs other than CO_2 reductions, for which DOE used a 3-percent discount rate along with the SCC series corresponding to a value of $22.3/ton in 2010, the cost of the standards for clothes washers in today's rule is $185 million per year in increased equipment costs, while the annualized benefits are $1,234 million per year in reduced equipment operating costs, $141.7 million in CO_2 reductions, and $5.4 million in reduced NO_X emissions. In this case, the net benefit amounts to $1.20 billion per year. Using a 3-percent discount rate and for all benefits and

[4] 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 3 and 7 percent for all costs and benefits except for the value of CO_2 reductions. For the latter, DOE used a range of discount rates, as shown in Table II.4. From the present value, DOE then calculated the fixed annual payment over a 30-year period 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 cost and benefits from which the annualized values were determined would be a steady stream of payments.

costs and the SCC series corresponding to a value of $22.3/ton in 2010, the cost of the standards for clothes washers in today's rule is $212 million per year in increased equipment costs, while the benefits are $1,808 million per year in reduced operating costs, $141.7 million in CO_2 reductions, and $8.0 million in reduced NO_X emissions. In this case, the net benefit amounts to $1.75 billion per year.

TABLE II.4—ANNUALIZED BENEFITS AND COSTS OF PROPOSED AMENDED STANDARDS (TSL 3) FOR RESIDENTIAL CLOTHES WASHERS

	Discount rate	Monetized (million 2010$/year)		
		Primary estimate*	Low net benefits estimate*	High net benefits estimate*
Benefits				
Operating Cost Savings	7%	1234	1101	1379.
	3%	1808	1587	2042.
CO_2 Reduction at $4.9/t**	5%	34.5	31.7	37.4.
CO_2 Reduction at $22.3/t**	3%	142	130	154.
CO_2 Reduction at $36.5/t**	2.5%	226	207	246.
CO_2 Reduction at $67.6/t**	3%	431	396	469.
NO_X Reduction at $2,537/t**	7%	5.40	5.03	5.82.
	3%	8.01	7.39	8.68.
Total†	7% plus CO_2 range	1274 to 1671	1137 to 1502	1423 to 1854.
	7%	1381	1236	1539.
	3% plus CO_2 range	1851 to 2248	1626 to 1991	2089 to 2520.
	3%	1958	1725	2205.
Costs				
Incremental Product Costs	7%	185	258	200.
	3%	212	309	230.
Total Net Benefits				
Total†	7% plus CO_2 range	1088 to 1485	880 to 1244	1223 to 1654.
	7%	1196	978	1339.
	3% plus CO_2 range	1639 to 2036	1317 to 1682	1859 to 2291.
	3%	1746	1416	1976.

* The Primary, Low Benefit, and High Benefit Estimates utilize forecasts of energy prices and housing starts (which affect product shipments) from the *AEO2010* Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, incremental product costs reflect a declining trend using the default product price trend in the Primary Estimate and High Benefits Estimate, and constant product prices in the Low Benefits Estimate. Because product prices are constant in the Low Benefits Estimate, the incremental product costs are higher than in the other two estimates. Although the price trends in the Primary Estimate and the High Benefits Estimate are the same, the incremental product costs are higher in the High Benefits Estimate because this case assumes High Economic Growth and thus has more product shipments. The approach used for forecasting product prices is explained in section IV.F.1.

** The CO_2 values represent global values (in 2010$) of the social cost of CO_2 emissions in 2010 under several scenarios. The values of $4.9, $22.3, and $36.5 per ton are the averages of SCC distributions calculated using 5%, 3%, and 2.5% discount rates, respectively. The value of $67.6 per ton represents the 95th percentile of the SCC distribution calculated using a 3% discount rate. The value for NO_X (in 2010$) is the average of the low and high values used in DOE's analysis.

† Total Benefits for both the 3% and 7% cases are derived using the SCC value calculated at a 3% discount rate, which is $22.3/ton in 2010 (in 2010$). In the rows labeled as "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.

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.

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 Web site 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 email, 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, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. Email 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 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 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

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**.

C. Issues on which DOE seeks Comment

As stated previously, pursuant to 42 U.S.C. 6295(p)(4), DOE promulgated a direct final rule establishing standards for residential clothes washers elsewhere in today's **Federal Register**. The standards established in the direct final rule are the same standards proposed in today's NOPR. In promulgating the direct final rule, DOE carefully considered the Joint Petition submitted to DOE, which contained a consensus recommendation for amended energy conservation standards for residential clothes washers. For the reasons stated in the direct final rule, the Secretary determined that the ''Consensus Agreement'' was submitted by interested persons who are fairly representative of relevant points of view on this matter. The Secretary also determined, for the reasons set forth in the direct final rule, that the standards contained in the Consensus Agreement comport with the standard-setting criteria set forth under 42 U.S.C. 6295(o). Therefore, the Secretary promulgated the direct final rule establishing the amended energy conservation standards for residential clothes washers.

(1) As required by the same statutory provision, DOE is also simultaneously publishing this NOPR and providing for a 110-day public comment period. Should DOE determine to proceed with this NOPR, or to gather additional data for future energy conservation standards activities for residential clothes washers, DOE will consider any comments and data received on these proposed standards. Although comments are welcome on all aspects of this rulemaking, DOE is particularly interested in comments on the following:

(1) Impacts of the standards that may lessen or improve the utility or performance of the covered products. These impacts may include increased cycle times to wash clothes, ability to achieve good wash performance (*e.g.,* cleaning and rinsing), increased longevity of clothing, improved ergonomics of washer use, increase in noise, and other potential impacts.

(2) The 2015 and 2018 compliance dates for the proposed standards and whether these compliance dates adequately consider the typical clothes washer model design cycle for manufacturers.

(3) Whether repair costs for residential clothes washers would increase at the efficiency levels indicated in today's rule due to any changes in the design and materials and components used in order to comply with the new efficiency standards.

(4) Where there would be any anticipated changes in the consumption of complementary goods (*e.g.,* laundry detergent, stain removers, fabric softeners) that may result from the proposed standards.

(5) Whether DOE should incorporate the cost of risers or storage drawers (also referred to as pedestals) into the baseline installation costs for front-loading machines.

Changes in the Utility of the Products

DOE has prepared a technical support document (TSD) that analyzed the effect of this rule on, among other things, life cycle costs, payback periods and other consumer-related impacts. However, there are other facets of consumer welfare that are not explicitly captured in this analysis, including washing performance, increased longevity of clothing, and noise. While information

gathered in the course of this rulemaking did not demonstrate a linkage between these topics and efficiency standards, DOE is seeking comment and information on how consumers value changes in these attributes and if those values should be incorporated into DOE analysis.

Also, although it is outside the scope of this rule, DOE may consider seeking information on whether to account for wash performance and fabric care in test procedures for clothes washers.

2015 and 2018 Compliance Dates

DOE is seeking comment on redesign timelines anticipated by the manufacturers and how the 2015 and 2018 compliance dates may affect those timelines. DOE's manufacturer impact analysis is based on information provided by the manufacturer and supports the positions that manufacturers will need to make only minor redesign to comply with the 2015 standards, though the 2018 standards could require more substantial redesigns. Accepting that manufacturers fully considered their cost implications prior to entering voluntarily the consensus agreement, DOE assumes that manufacturers would not have agreed to compliance dates they could not meet or that imposed prohibitive costs. However, depending on how the redesign timeline and the compliance dates coincide, the cost estimates may be affected, for example, due to sunk cost, as well as the anticipated market shares of front-loading versus top-loading clothes washers.

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

10 CFR Part 429

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

10 CFR Part 430

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

Issued in Washington, DC, on May 11, 2012.

David Danielson,

Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, DOE proposes to amend parts 429 and 430 of title 10 of the Code of Federal Regulations, as set forth below:

PART 429—CERTIFICATION, COMPLIANCE, AND ENFORCEMENT FOR CONSUMER PRODUCTS AND COMMERCIAL AND INDUSTRIAL EQUIPMENT

1. The authority citation for part 429 continues to read as follows:

Authority: 42 U.S.C. 6291–6317.

2. In § 429.20 revise paragraph (b)(2) to read as follows:

§ 429.20 Residential clothes washers.

* * * * *

(b) * * *

(2) Pursuant to § 429.12(b)(13), a certification report shall include the following public product-specific information:

(i) For residential clothes washers manufactured before March 7, 2015: The modified energy factor (MEF) in cubic feet per kilowatt hour per cycle (cu ft/kWh/cycle) and the capacity in cubic feet (cu ft). For standard-size residential clothes washers, a water factor (WF) in gallons per cycle per cubic feet (gal/cycle/cu ft).

(ii) For residential clothes washers manufactured on or after March 7, 2015: The integrated modified energy factor (IMEF) in cu ft/kWh/cycle, the integrated water factor (IWF) in gal/cycle/cu ft, the capacity in cu ft and the type of loading (top-loading or front-loading).

* * * * *

PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

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

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

4. In § 430.32 revise paragraph (g) to read as follows:

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

* * * * *

(g) *Clothes washers.* (1) Clothes washers manufactured on or after January 1, 2007 shall have a Modified Energy Factor no less than:

Product class	Modified energy factor (cu.ft./kWh/cycle)
i. Top-loading, Compact (less than 1.6 ft^3 capacity)	0.65.
ii. Top-loading, Standard (1.6 ft^3 or greater capacity)	1.26.
iii. Top-Loading, Semi-Automatic	[1] Not Applicable.
iv. Front-loading	1.26.
v. Suds-saving	[1] Not Applicable.

[1] Must have an unheated rinse water option.

(2) All top-loading or front-loading standard-size residential clothes washers manufactured on or after January 1, 2011, and before March 7, 2015, shall meet the following standard—

(i) A Modified Energy Factor of at least 1.26; and

(ii) A Water Factor of not more than 9.5.

(3) Clothes washers manufactured on or after March 7, 2015, and before January 1, 2018, shall have an Integrated Modified Energy Factor no less than, and an Integrated Water Factor no greater than:

Product class	Integrated modified energy factor (cu.ft./kWh/cycle)	Integrated water factor (gal/cycle/cu.ft.)
i. Top-loading, Compact (less than 1.6 ft^3 capacity)	0.86	14.4
ii. Top-loading, Standard (1.6 ft^3 or greater capacity)	1.29	8.4
iii. Front-loading, Compact (less than 1.6 ft^3 capacity)	1.13	8.3
iv. Front-loading, Standard (1.6 ft^3 or greater capacity)	1.84	4.7

(4) Clothes washers manufactured on or after January 1, 2018 shall have an Integrated Modified Energy Factor no less than, and an Integrated Water Factor no greater than:

Product class	Integrated modified energy factor (cu.ft./kWh/cycle)	Integrated water factor (gal/cycle/cu.ft.)
i. Top-loading, Compact (less than 1.6 ft^3 capacity)	1.15	12.0
ii. Top-loading, Standard (1.6 ft^3 or greater capacity)	1.57	6.5
iii. Front-loading, Compact (less than 1.6 ft^3 capacity)	1.13	8.3
iv. Front-loading, Standard (1.6 ft^3 or greater capacity)	1.84	4.7

* * * * *

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