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WASHINGTON, DC

Public Interest Comment<sup>1</sup> on

The Department of Energy's Proposed Rule

Energy Conservation Program: Energy Conservation Standards for Residential  
Central Air Conditioners and Heat Pumps

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The George Washington University Regulatory Studies Center

The George Washington University Regulatory Studies Center improves regulatory policy through research, education, and outreach. As part of its mission, the Center conducts careful and independent analyses to assess rulemaking from the perspective of the public interest. This comment on the Department of Energy's direct final rule amending the energy efficiency standards for residential central air conditioners and heat pumps does not represent the views of any particular affected party or special interest, but is designed to evaluate the effect of DOE's rulemaking on overall consumer welfare.

## Introduction

The Department of Energy's (DOE) direct final rule amends the existing energy efficiency standards for residential central air conditioners (CACs), specifically split-system CACs, and split-system heat pumps. This direct final rule (DFR) follows a negotiated rulemaking process with the Appliance Standards and Rulemaking Advisory Committee (ASRAC), which reached a

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<sup>1</sup> This comment reflects the views of the author, and does not represent an official position of the GW Regulatory Studies Center or the George Washington University. The Center's policy on research integrity is available at <http://regulatorystudies.columbian.gwu.edu/policy-research-integrity>.

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consensus regarding increased efficiency standards for CACs and heat pumps that is codified in this DFR.

## Regulatory Benefits & Costs

Consumers are faced with a tradeoff between upfront price and long-term operating expenses when they purchase an energy efficient appliance. DOE typically forecasts that its energy efficiency standards will increase the price of new appliances, but expects that some consumers will recoup this upfront cost over time through lower utility bills from efficiency gains. The benefit of reduced operating expenses is a large component of the overall benefit that DOE expects from its energy efficiency standards.<sup>3</sup>

DOE's statutory authority to regulate appliance efficiency stems from the Energy Policy and Conservation Act of 1975 (EPCA), as amended. EPCA allows DOE to establish or amend efficiency standards for appliances only when doing so is technically feasible and economically justified.<sup>4</sup> EPCA creates a "rebuttable presumption" that a standard is presumed to be "economically justified" if it causes a product's purchase price to increase by less than three times the value of first year energy cost savings.

### Rebuttable Presumption

In its DFR, DOE describes the rebuttable presumption as follows:

EPCA, as codified, establishes a rebuttable presumption that a standard is economically justified if the Secretary [of Energy] finds that the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure... DOE generally considers these criteria as part of its analysis but consistently conducts a more thorough analysis of a given standard's projected impacts that extends beyond this presumption.<sup>5</sup>

DOE's analysis quantifies the life cycle cost (LCC) savings experienced by consumers and the payback period, which is how long on average it will take households to recoup the upfront price increase of their appliance via energy savings. DOE calculates that the EPCA rebuttable

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<sup>3</sup> Sofie E. Miller. "Whose Benefits Are They, Anyway? Examining the Benefits of Energy Efficiency Rules 2007 – 2014." *The George Washington University Regulatory Studies Center*. September 2, 2015. <https://regulatorystudies.columbian.gwu.edu/whose-benefits-are-they-anyway-examining-benefits-energy-efficiency-rules-2007-2014>

<sup>4</sup> 42 U.S.C. 6295(o)(2)(A)

<sup>5</sup> 82 FR 1793

presumption is equivalent to a payback period of 1.8 years for split-system heat pumps;<sup>6</sup> DOE does not provide a similar analysis for split-system central air conditioners. According to DOE’s projections, none of the standards outlined in the DFR qualify for the rebuttable presumption outlined in the statute: the payback periods for the standards range from 4.9 years for heat pumps to 10.5 years for CACs in northern regions. These payback periods are illustrated in the below table from DOE’s DFR.<sup>7</sup>

TABLE I-2—IMPACTS OF AMENDED ENERGY CONSERVATION STANDARDS ON CONSUMERS OF RESIDENTIAL CENTRAL AIR CONDITIONERS AND HEAT PUMPS (RECOMMENDED TSL)

Product class	Average LCC savings (2015\$)	Simple payback period (years)
Split-System Air Conditioners *	N: \$43 HD: \$150 HH: \$39	N: 10.5 HD: 7.6 HH: 7.7
Split-System Heat Pumps	\$131	4.9
Packaged Air Conditioners **	N/A	N/A
Packaged Heat Pumps **	N/A	N/A
Space-Constrained Air Conditioners **	N/A	N/A
Small-Duct High-Velocity Air Conditioners **	N/A	N/A

\* N = Northern region; HD = Hot-dry region; HH = Hot-humid region.

\*\* The standard levels for Packaged Air Conditioners, Packaged Heat Pumps, Space-Constrained Air Conditioners, and Small-Duct High-Velocity Air Conditioners are at the baseline level in the Recommended TSL, so there is no impact on consumers.

While the payback period for each product is, as DOE notes, below the average product lifetimes of 21 years and 15 years for CACs and heat pumps, respectively,<sup>8</sup> they all exceed the standard established in the EPCA’s rebuttable presumption. Further, the simple payback period for low-income households is even higher, at 5 to 11.7 years,<sup>9</sup> putting those households even further out of reach of EPCA’s rebuttable presumption of being economically justified.

### Net Costs for Many Households

As DOE makes clear throughout its rulemaking, the agency relies on other economic indicators than the rebuttable presumption in making a determination as to whether the standards at hand are economically justified. Two considerations which the agency must consider in making this determination are listed below from the DFR:

- (1) The economic impact of the standard on manufacturers and consumers of the products subject to the standard;
- (2) The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price,

<sup>6</sup> 82 FR 1835, Table V-14: Rebuttable Presumption Payback Period for Central Air Conditioners and Heat Pumps

<sup>7</sup> 82 FR 1788

<sup>8</sup> 82 FR 1793

<sup>9</sup> 82 FR 1834, Tables V-12 and V-13.

initial charges, or maintenance expenses for the covered products that are likely to result from the standard...<sup>10</sup>

However, DOE’s standards for CACs and heat pumps fall short of these considerations as well.

In addition to failing to meet the rebuttable presumption, the DFR’s standards for split-system central air conditioners specifically will leave a significant share of households bearing a net burden. DOE projects that between 25% and 45% of households will bear a net cost as a result of the efficiency standards, depending on the affected region. The most adversely affected regions are the hot-dry region and the hot-humid region, which together comprise 19 states.<sup>11</sup> These regions include six of the nation’s 15 most populous states which alone have a combined 29.6% of the total U.S. population.

TABLE V-3—LCC IMPACTS RELATIVE TO THE NO-NEW-STANDARDS CASE FOR SPLIT-SYSTEM CENTRAL AIR CONDITIONERS

TSL	Region	SEER	Average LCC savings	% of net cost
Baseline .....	North .....	13	N/A	N/A
	Hot-Dry .....	14	N/A	N/A
	Hot-Humid .....	14	N/A	N/A
1 .....	North .....	14	\$43	25
	Hot-Dry .....	14.5	169	14
	Hot-Humid .....	14.5	82	15
Recommended .....	North .....	14	43	25
	Hot-Dry* .....	15/14.5	150	42
	Hot-Humid* .....	15/14.5	39	45
3 .....	National .....	16	(122)	63
4 .....	National** .....	17/16.5/16.5	(304)	75

\* 15 SEER for 2 and 3 ton units, 14.5 SEER for 5 ton units.  
 \*\* Max-Tech SEER is different for 2, 3, and 5 ton units.

In addition to the net costs borne by a significant number of households, it is clear from DOE’s analysis that consumers would experience greater savings under less stringent energy efficiency standards than the ones being promulgated.

In the DFR under consideration, the projected outcomes for the final standards are listed under the “Recommended” heading (seen in Table V-3 above), and projected outcomes for other potential standards are listed under different TSLs (trial standard levels). According to DOE’s analysis of split-system CACs, under the recommended standard consumers in all three regulated regions are expected on average to save \$232 in life cycle costs, or \$77 on average in each region. The same analysis shows that under a less stringent standard, TSL 1, DOE expects

<sup>10</sup> 82 FR 1792

<sup>11</sup> “The Hot-Dry region is comprised of four states (CA, AZ, NV, and NM); the Hot-Humid region is comprised of 15 mid-Atlantic and Southern States (VA, DE, DC, MD, GA, NC, SC, FL, AL, KY, MS, TN, AR, LA, OK, and part of WV).” The U.S. Department of Energy, *TECHNICAL SUPPORT DOCUMENT: ENERGY EFFICIENCY PROGRAM FOR CONSUMER PRODUCTS: Residential Central Air Conditioners and Heat Pumps*. “Chapter 7: Energy Use Analysis,” Footnote c, page 7-4. August 2015.

consumers in all three regulated regions to save on average \$294 in life cycle costs, or \$98 on average in each region. In addition, far fewer consumers are expected to experience net costs under TSL 1 than under DOE's recommended standard.

## **Appropriateness of using a Direct Final Rule**

DOE should be particularly cautious before enacting new efficiency standards via direct final rule given the significant economic burden they pose to U.S. households, and the lack of a consumer voice in the negotiated rulemaking process. Although DOE determined that the negotiated rulemaking committee's recommendations on which this DFR is based "was submitted jointly by interested persons that are fairly representative of relevant points of view,"<sup>12</sup> there is no point of view within the negotiated rulemaking committee that represents the interest of consumers who are directly burdened by this rule. As such, DOE should not pursue this rulemaking via a direct final rule, which also shortcuts consumer participation.

## **Conclusion**

- DOE's own analysis suggests that up to 45% of households in some regions will bear net costs as a result of these standards. In addition to these net costs, none of the product standards in this direct final rule meet EPCA's rebuttable presumption for being economically justified.
- In addition to the net costs outlined above, DOE's own analysis finds that consumers would experience greater savings under less stringent energy efficiency standards than the ones in this direct final rule: if DOE chose to mandate TSL 1 instead, fewer consumers would bear net costs and consumers would on average gain greater life cycle cost savings.
- Due to a lack of consumer input in the negotiated rulemaking process—and the significant burdens that consumers are likely to bear from this standard—DOE should not pursue this standard via direct final rule.

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<sup>12</sup> 82 FR 1791