

## Setting the Wrong Standard DOE's Latest Appliance Efficiency Rules

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The Department of Energy recently issued a [direct final rule](#) setting energy efficiency standards for an appliance that is used in most American residences: dishwashers. These standards, effective in September, are intended to reduce American energy consumption, decrease global greenhouse gas emissions, and lower American consumers' energy bills long-term. However, examining the Department's regulatory impact analysis raises questions as to whether the rule is economically justified, as required by statute.

When issuing energy efficiency standards for residential appliances DOE is statutorily required by the Energy Policy and Conservation Act of 1975 (EPCA) to achieve the maximum improvement in energy efficiency that is both technologically feasible and economically justified, while also resulting in "significant conservation of energy." This statutory language gives the Department important guidelines when issuing energy efficiency standards, especially for appliances—such as air conditioners, dishwashers, clothes dryers, and furnaces—that are a part of everyday life in many American households.

The rule in question establishes both a maximum per-year energy consumption standard and a per-cycle water use standard, requiring all standard residential dishwashers manufactured in (or imported into) the United States after May, 2013 to use fewer than 307 kilowatt hours of energy per year and limiting the amount of water used per cycle to five gallons. The benefits expected to result from these standards fall into two categories: consumer savings from reduced appliance operating costs, and the monetized value of reduced global carbon emissions.

DOE estimates that these standards will cost dishwasher manufacturers \$84.6 million, 13.3 percent of their industry net present value. The Department puts the [total cost](#) of the standards at between \$522 million and \$881 million dollars at discount rates of 7 and 3 percent, respectively. For consumers, the efficiency standards are expected to raise the price of standard residential dishwashers by about [\\$44 per unit](#), increasing unit costs by about 13 percent, while resulting in net savings of [\\$3](#) in lifecycle costs for the average consumer. The Department estimates that for standard residential dishwashers, it will take consumers nearly 12 years of steady use to recover the higher upfront product cost through lower energy bills. However, [separate estimates](#) put the average [lifespan](#) of a dishwasher at between 9 and 12 years, meaning many American households will pay the higher appliance cost without feeling the benefit of lower long-term energy bills. This is especially important because the majority of the economic benefits anticipated from this rule come from consumer savings resulting from reduced costs of operation.

In calculating the benefits anticipated to result from this rule, DOE also monetizes the reduction in carbon emissions using the social cost of carbon (SCC), which places a value on the benefit of reduced carbon dioxide emissions. Between 2013 and 2047, DOE estimates that greenhouse gas emissions can be reduced by 4.06 million tons through the implementation of the dishwasher efficiency standards; the Department monetizes the global benefit of this reduction at anywhere between \$16 million and \$242 million, or between \$4 and \$59 per ton of reduced emissions.

Since between 17 and 35 percent of the total benefits of this rule accrue from monetized reductions in carbon emissions, it is concerning that the benefit of reducing these emissions varies by \$226 million. While the costs will be felt by the American consumers and businesses that are directly affected by the rule, the reduction in carbon emissions resulting from this rule is monetized based on its global, rather than localized, value. That is, the Department weighs not only domestic but international benefits from this rule against entirely domestic costs, which swings the analysis in favor of stricter efficiency standards.

The economic analysis provided by the Department is not persuasive enough to justify the higher upfront appliance costs that will be borne by most consumers, especially considering that dishwashers for nearly half of consumers may not last long enough for consumers to reap the benefits of reduced operating costs. The problems with DOE's calculation of both consumer benefits and monetized global emissions reduction instead indicate that the Department may be falling short of its statutory requirement to issue *economically justified* regulations that result in significant energy conservation.