ASAP | APPLIANCE STANDARDS AWARENESS PROJECT

State Appliance Efficiency Standards

Focus on: Air Purifiers

Air purifiers (or room air cleaners) are portable units that remove fine particles (such as dust and pollen) and even unpleasant odors from indoor air. Demand for air purifiers is growing as consumers contend with the COVID-19 pandemic, air pollution from intensifying wildfires, and concern about ambient pollution and contaminants. Research conducted for the California Air Resources Board[1] estimated that the number of units sold in California would increase 45% between 2017 and 2023, from 726,000 to nearly 1.1 million.

Air purifiers serve an important purpose, but some are both ineffective and highly inefficient at the same time. According to Consumer Reports, the worst-performing products may not be worth the investment, due to high operating costs and poor air filtration.

According to ASAP research, the least efficient air purifiers typically use more than 500 kWh per year on average, equivalent to the annual energy consumption of an average new refrigerator.

Appliance standards are the best energy policy you've never heard of

Many of the products in our homes and businesses are covered by efficiency standards that reduce energy and/or water waste. Appliance standards can cover any energy- or water-using device, including home appliances, plumbing products, lighting products, and commercial and industrial equipment. In general, states can set standards for any products that are not subject to national standards. State standards are set by legislatures or state agencies and apply to products sold or installed in a state.

Proposed air purifier standard will cut energy waste by 40%

An air purifier that meets the efficiency levels recommended by the Appliance Standards Awareness Project (ASAP) will use 40% less energy relative to its least efficient counterpart on the market today. The average lifetime of an air purifier is 9 years, and the average per-unit annual savings are just over 200 kWh. That means nearly 2,000 kWh of electricity can be saved over the lifetime of an air purifier by switching from a low-efficiency product to a product meeting the proposed standard (for context, the average monthly electricity use is just over 900 kWh).

Standards will lower consumer costs

Standards would reduce monthly energy bills, benefitting all customers but especially low-income households that have high energy burdens and/or health risks such as asthma. The average U.S. consumer would save about $30 a year, or nearly $270 over the typical 9-year life of an air purifier.

If enough states adopt air purifier standards such that only compliant products were sold nationally, by 2025 annual electricity savings would reach 1.7 billion kWh and consumers would save $250 million on their annual electricity bills. The projected annual electricity savings in 2025 would be equivalent to the annual electricity use of about 140,000 US households. Carbon dioxide emissions would be reduced by about 500,000 metric tons in 2025, which is equivalent to the emissions from about 110,000 cars in one year.

National savings from air purifier standards

Consumers would save about $30 a year on utility bills

Annual electricity savings by 2025 are enough to power about 140,000 households for a year

Annual CO_2 emissions reductions are equivalent to the emissions from about 110,000 cars in one year

Energy	Money	Emissions
1.7	250	500,000
Billion kWh saved annually by 2025	Million dollars saved annually by 2025	Metric tons of CO_2 avoided annually by 2025

[1] California Air Cleaning Units Market by Category Type, Competition, Forecast, & Opportunities; TechSci Research. Published February 2019.

The standard is based on ENERGY STAR

ASAP based the recommended standard on ENERGY STAR Version 1.2, which took effect in 2004, while incorporating important aspects of the 2020 updated ENERGY STAR specification Version 2.0. Almost all air purifiers that meet ENERGY STAR Version 1.2 would also meet our recommended standard levels. In addition, the proposed standards include separate efficiency levels for three different capacity ranges, allowing more of the smaller capacity air purifiers to meet the standard. The standard also limits ozone emissions on models that produce ozone as a byproduct.

Low-cost efficient models are readily available now

While the price of air purifiers can vary tremendously, basic models that meet the proposed efficiency standards often cost no more than those that do not. An internet search in January 2021 of ENERGY STAR-certified models turned up at least ten models selling for less than $100 at retailers such as Bed Bath & Beyond, Best Buy, Home Depot, Lowe's, and Walmart. Based on ENERGY STAR data, ASAP estimates that about 47% of air purifier models already on the market today would meet the proposed standards.

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