



April 17, 2018
Via Electronic Mail

U.S. Environmental Protection Agency Office of Air and Radiation
1200 Pennsylvania Avenue NW
Washington, D.C. 20460
RoomAirCleaners@energystar.gov

Subject: ENERGY STAR® Room Air Cleaners Version 2.0 Discussion Questions

Dear Mr. Burchard,

This letter is submitted on behalf of the Northwest Energy Efficiency Alliance (NEEA) and the Pacific Gas & Electric Company (PG&E) in response to the request for comments on the Room Air Cleaners Version 2.0 Draft 1 Specification. NEEA is a non-profit organization representing an alliance of more than 140 Northwest utilities and energy efficiency organizations working on behalf of more than 13 million energy consumers. PG&E is an investor-owned utility, focused on providing safe, reliable, clean and affordable energy to 16 million Californians. Consolidated Edison Company of New York is an investor-owned utility, providing reliable electric, gas and steam service to 10 million people in New York City and Westchester County.

These organizations encourage the development and adoption of energy-efficient products and services.

We strongly support EPA's ENERGY STAR program. ENERGY STAR is a critically important federal program created with bi-partisan support that annually delivers billions of dollars of energy savings to consumers and business. As such, ENERGY STAR's leadership in setting appropriate product specifications plays a critical role in advancing the efficiency of consumer products by recognizing those products that meet consumer's experiential expectations as well as save them energy and money.

NEEA and PG&E are founding organizations of the ENERGY STAR Retail Products Portfolio (ESRPP) program, a national collaborative of utilities and efficiency organizations working with retailers to advance the energy efficiency of retail products in the market. The ESRPP program funders work with major retailers that serve roughly 18% of the US population. As part of the ESRPP program, NEEA and PG&E routinely analyze the retail sales data and online product information to understand the air cleaners market and how it is evolving over time. The ESRPP sales data show all brick-and-mortar sales of air cleaner products within sponsor regions from seven major national retailers. The online web-scraped data includes thousands of products

from retail websites and includes important product features such as ENERGY STAR qualification, air cleaner size, product filter type, product dimensions, and brand. Web-scraped data includes all models offered in the online catalogues of twelve major national retailers, including two online only retailers.

We thank EPA for developing this draft specification after seeking stakeholder input in the discussion guide. After review of the Version 2.0 Draft 1 Specification, we submit the following comments.

Scope and Product Reporting

We support EPA's updated definitions and urge EPA to consider reporting requirements for efficient product technologies, such as DC motors and network connectivity, that will help inform future specification revisions.

As efficiency advocates, we appreciate ENERGY STAR's efforts to update this specification. It is vital to update the definitions in the specification to keep this document consistent with products on the market and latest industry terminology. We support EPA's choice to update the ENERGY STAR product definitions to align with industry. This helps to provide clarity so that only products that fit the scope of the specification are reported. Further, we are pleased to see that ENERGY STAR will be referencing the Version 2.0 scope in the unit shipment data form. We believe this will help to ensure that only products within the scope of the specification are reported, therefore helping to give a better sense of the market share of efficient products when considering future specification revisions.

As a program continually advocating for market transformation toward greater energy efficiency, the ESRPP team is interested in how future ENERGY STAR product specifications will be developed to match the growing number of innovative and efficient technologies like DC motors and network connectivity. We believe that more product information is helpful and urge EPA to consider reporting requirements that may help inform future specifications. We continue to recommend EPA include a reporting requirement in product listing forms to better understand the prevalence and efficiency impacts of DC motors. If reporting information such as this is not an undue burden to those submitting product information to ENERGY STAR, we think this will greatly help in future specification revisions.

In addition, we support adding a reporting field to note if a product is network connected. Understanding how many products have this functionality will help in future determinations of the savings potential for demand response programs. Though EPA is not developing connected functionality criteria for this product now, future knowledge about market share of these products will help to show the savings potential and demonstrate a need for this criteria. The ESRPP team continues to support EPA in establishing connected criteria/active load management criteria.

Smoke CADR Metric

We support EPA’s choice to base the specification on smoke CADR as it is most in line with consumer usage of the product and is typically the most energy intensive particle to remove.

The ESRPP team is supportive of EPA’s choice to focus on the greatest health risks to all populations and therefore update the specification metric to smoke CADR. The comparison of the smoke CADR/W and dust CADR/W metrics in Figure 1 below and the associated trendline equation confirms that the smoke CADR/W metric is slightly more stringent than the dust CADR/W metric. For ESRPP sales, the smoke CADR/W averages roughly 0.2 CADR/W lower than the dust CADR/W, which is consistent with EPA’s consideration that these smaller smoke particles require more energy to remove. We support EPA’s use of the smoke CADR because it represents the minimum threshold of efficiency that consumers should expect to achieve when using these products.

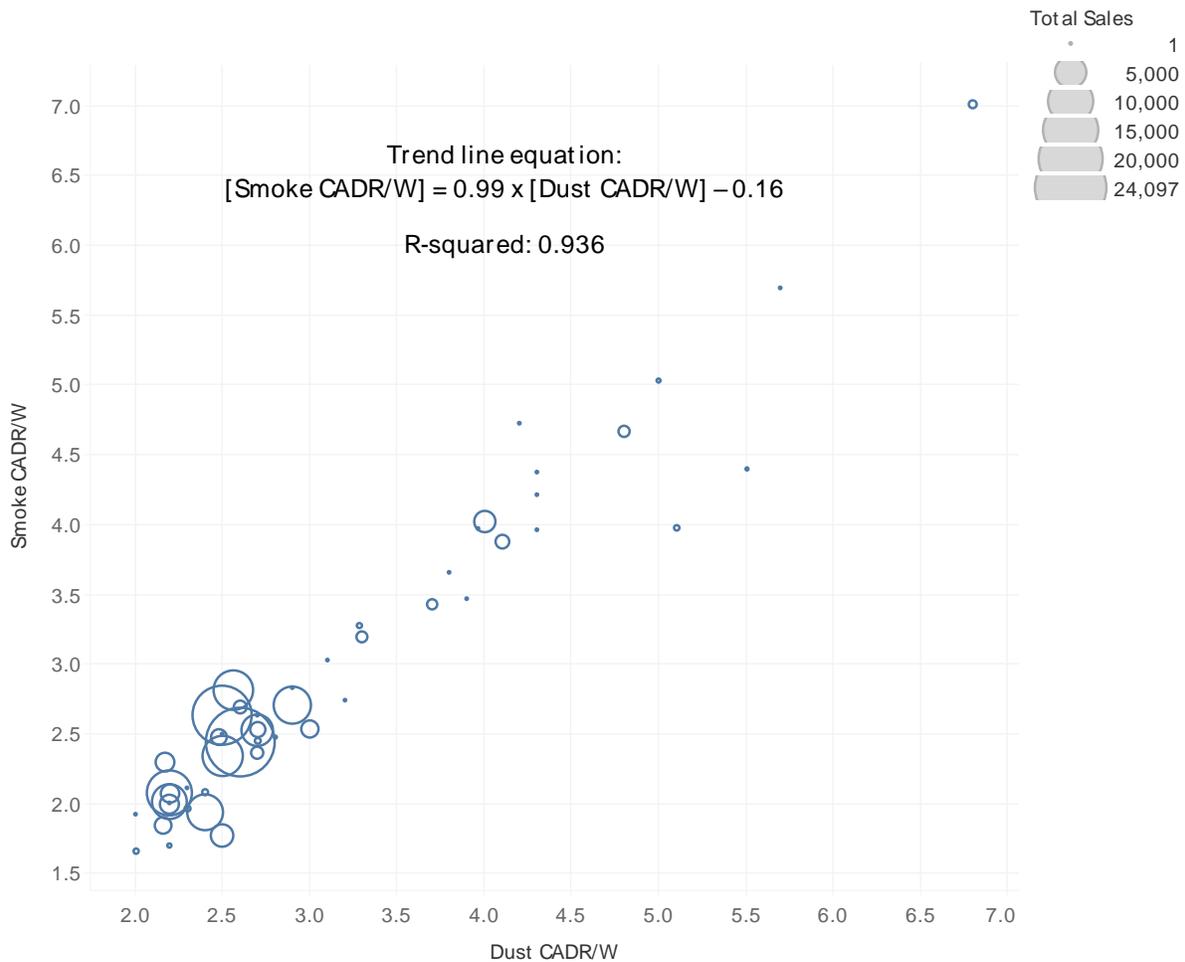


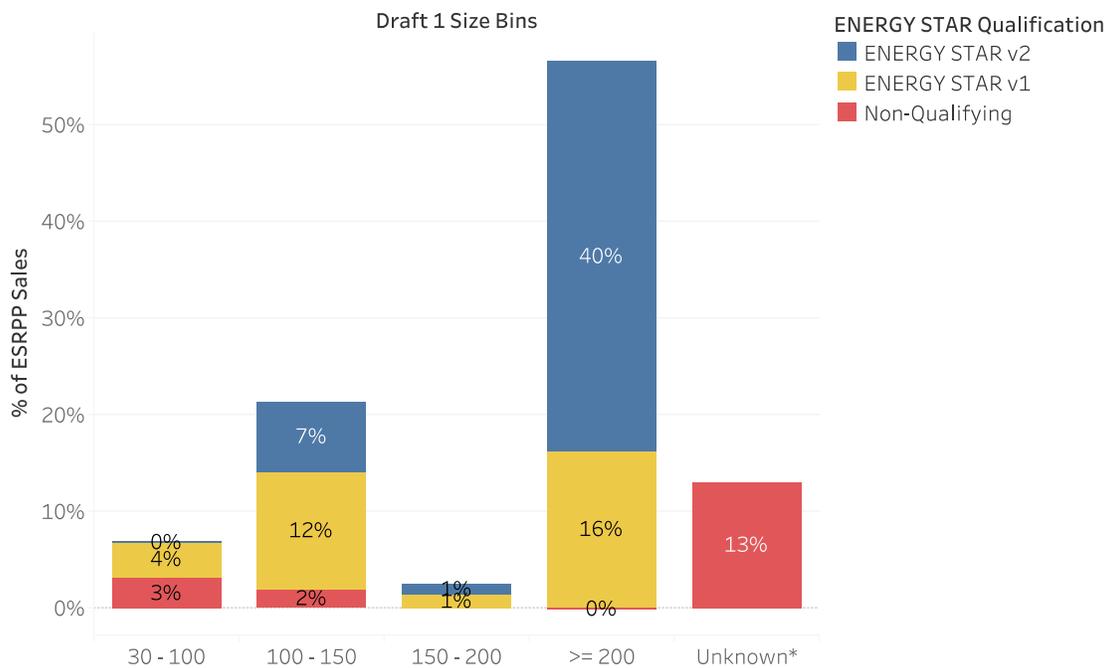
Figure 1: Smoke and Dust CADR per Watt Relationship from NEEA and PG&E ESRPP Sales, 2015-2019

Size Bins by CADR

We are pleased to see that EPA has adopted size bins for CADR to reflect inherent differences in efficiency associated with size. However, we believe the size bins identified in the Draft 1 Specification should be altered slightly to better reflect sales data in the market.

Based on analyzing over fifty thousand recent ESRPP sales from 2018 and the beginning of 2019, we found very few units in the 150 – 200 CADR range, and the qualification criterion is 2.9 CADR/W for both the 150 – 200 and the 200+ CADR size ranges. We suggest that EPA consider combining the two large-CADR size bins for simplicity.

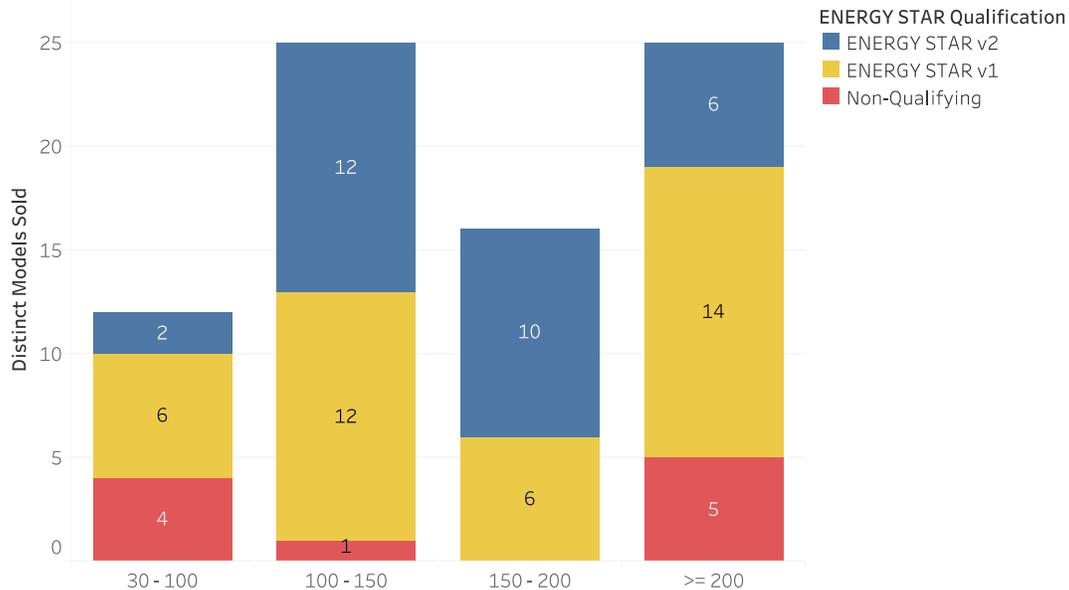
In the smallest-CADR bin, there are very few models sold through ESRPP that would meet the version 2.0 requirements, and they have fairly low sales. Figure 2 below shows that almost no sales in the 30-100 CADR bin meet the version 2 criteria. Figure 3 shows that there is a larger share of v2 qualifying models in this bin when looking at distinct models, even if the sales are low. This discrepancy of models available vs. models sold creates some risk.



The chart shows the distribution of 54,265 total sales.

* These models do not qualify for ENERGY STAR v1, and they did not match to the non-comprehensive AHAM list of models, so we cannot effectively determine the smoke CADR.

Figure 2: Qualification Status by CADR for ESRPP Sales, 2018-2019



We were unable to determine the smoke CADR of 87 models that do not qualify for ENERGY STAR v1 and did not match to the non-comprehensive AHAM list of models. These were left off the chart.

Figure 3: Qualification Status by CADR for ESRPP Models, 2018-2019

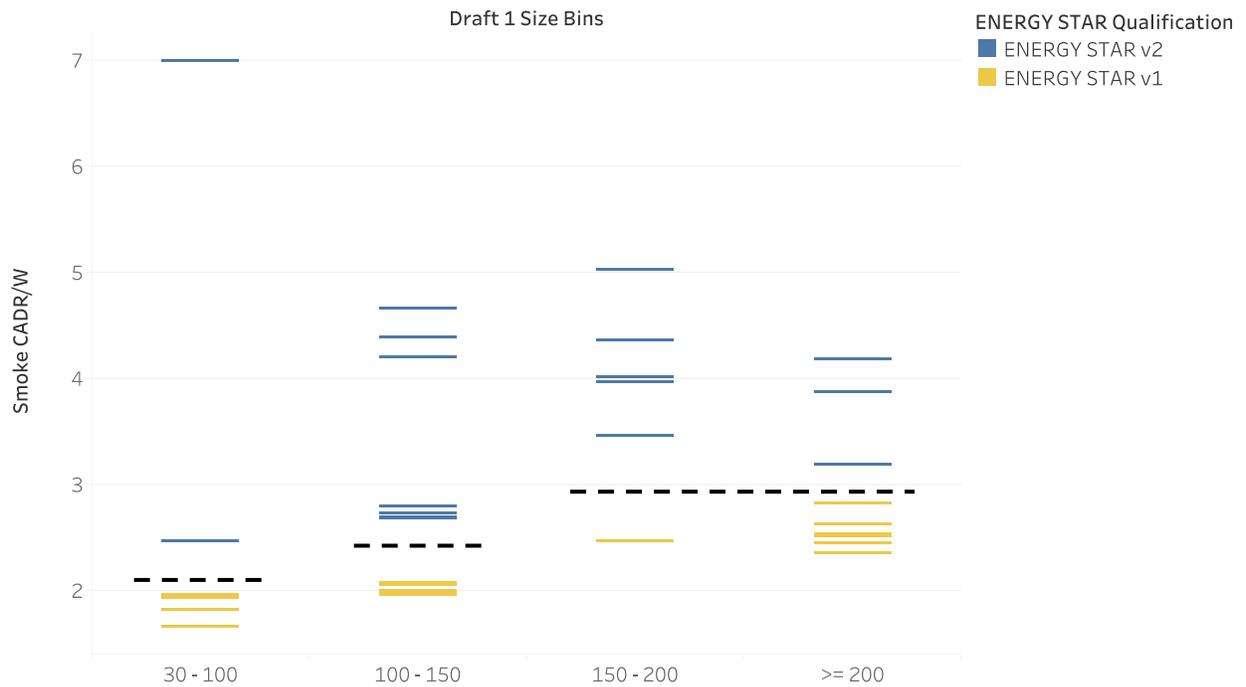
There is a possibility that this specification update may push consumers to choose larger CADR units, which might have a higher CADR/W ratio, but are likely to still use more energy in total. However, we believe more small models that could qualify at the Version 2.0 level are listed on the ENERGY STAR QPL and this specification updates may increase the sales of these models. We support EPA’s choice to set the 30-100 CADR bin at a CADR/W level of 2.1. We do suggest that the specification change be clearly communicated to retailers as soon as possible to ensure consumers are not pushed towards larger units.

Developing an ENERGY STAR: Most Efficient Tier

We recommend that EPA also consider an ENERGY STAR: Most Efficient tier to create additional recognition for top performing products.

Higher efficiency products can be found at every size range. Considering the range of smoke CADR/W values seen in the ENERGY STAR models sold through ESRPP in 2018-2019, Figure 4 indicates that there are many products being sold that are twice as efficient than the proposed v2 specification, and one product is more than three times as efficient as the proposed specification requirement.

Smoke CADR/W Distribution, ENERGY STAR Models Sold through ESRPP 2018-2019



-- Indicates the proposed requirement for each size bin

Figure 4: Smoke CADR/W Distribution, ENERGY STAR Models Sold through ESRPP, 2018-2019

Based on this existing sales data, we are confident that consumers will have ample choice in meeting the new specification requirements. Further, we urge EPA to consider establishing a Most Efficient tier for this product category, as there are high efficiency products on the market that greatly exceed the Draft 1 specification levels and enable energy conscious consumers to identify the Top Tier of energy efficient products.

Standby Power Allowances

We support EPA’s decision to lower the partial on mode power requirement based upon its feasibility, while also providing an allowance for Wi-Fi network connectivity.

In our previous comments submitted in response to the air cleaners discussion guide, ESRPP provided the data below in Figure 5 to show that a majority of products sold from all the ESRPP Program participating stores for these sponsors have a standby power draw of 0.5 W or less.

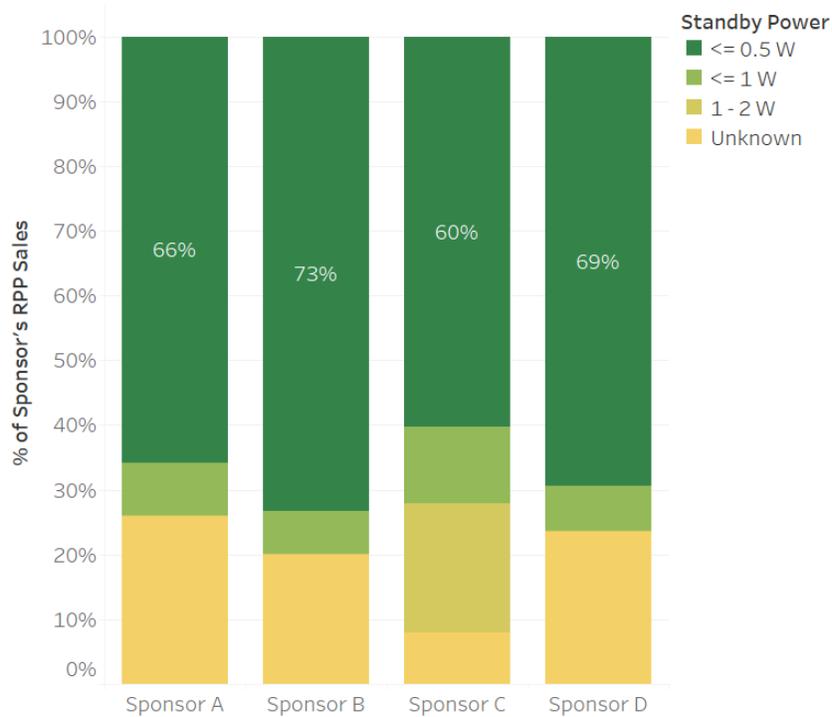


Figure 5: Percent of ESRRP Sales for Each Standby Power Rating

We are pleased to see that EPA has lowered the partial on mode power allowance to 1 Watt from 2 Watts. We also support EPA's decision to provide an additional power allowance for network connected devices, considering their potential for other energy benefits such as demand flexibility.

In summary, we thank EPA for updating the draft room air cleaners specification and publishing for stakeholder input. We support the direction that this specification is heading and hope the EPA will consider the suggestions in this letter.

Sincerely,

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