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AHAM Comments on CEC Proposed Portable Air Conditioners Appliance Efficiency Standards Rulemaking _18-AAER-04

Additional submitted attachment is included below.



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Via E-mail

Commissioner Andrew McAllister
California Energy Commission
Docket No. 18-AAER-04
Docket Unit
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Sacramento, CA 95814-5504

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Re: Docket No. 18-AAER-04 – *Proposed Regulatory Language – Portable Air Conditioners Appliance Efficiency Rulemaking and Initial Statement of Reasons*

Dear Commissioner McAllister:

The Association of Home Appliance Manufacturers (AHAM) respectfully submits the following comments to the California Energy Commission’s (CEC) *Proposed Regulatory Language – Portable Air Conditioners Appliance Efficiency Rulemaking and Initial Statement of Reasons* (Docket 18-AAER-04).

AHAM represents manufacturers of major, portable, and floor care home appliances, and suppliers to the industry. AHAM’s membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM understands CEC’s efforts to pursue energy efficiency improvements for California residents and supports its efforts to harmonize with Federal regulations where possible. However, at this time, AHAM does not support CEC moving forward with a state-specific energy efficiency rulemaking for portable air conditioners (PACs), especially if they differ from DOE or Vermont’s law setting energy conservation standards for PACs.

Although DOE has not yet published its final energy conservation standards for PACs and there is a pending legal challenge, in which California is a party, seeking to require that publication—we are hopeful that the court proceeding will end soon and will require DOE to publish the final rule.¹ We have

¹ See Energy Conservation Program: Energy Conservation Standards for Portable Air Conditioners; Docket No. EERE-2013-BT-STD-0033; RIN 1904-AD02 (Issued Dec. 28, 2016); *NRDC v. Perry*, No. 18-15380 (9th Cir.).

also been actively encouraging DOE and the Office of Management and Budget to publish DOE's final rule.

Importantly, for newly covered products such as PACs, Federal law provides manufacturers with a five-year lead-in period to make the needed redesigns to their products and transition their supply chains.² Earlier this year, Vermont recognized this five-year lead-in period by enacting into law a bill (HB 410) that creates minimum energy standards for PACs, which are the same as the DOE published final rule. Further, compliance with this new standard is when the products are required to comply with the DOE rule, if the rule is published in the Federal Register prior to January 1, 2019.³ If DOE does not publish the final rule by then, the compliance date would be February 1, 2022.

AHAM appreciates CEC aligning its proposed regulation with the DOE's issued final rule with regard to the proposed efficiency level and opposes adoption of a more stringent level out of alignment with DOE. However, the effective date, the added definitions, and the corresponding reporting requirements are major areas of concern and misalignment as discussed more fully below.

Section 1602. Definitions; the inclusion of additional definitions are already in the Test Procedure and are unnecessary for the standard

AHAM opposes the inclusion of the below definitions into any eventual CEC standard. These definitions are all test procedure related. Reporting this data to CEC would be burdensome and not provide any substantive benefit. If CEC proposes to require data to be submitted, then there should be supporting evidence that people actually use this data enough to justify the cost, time and resources of CEC and manufacturers to keep this data updated.

- a) "Adjusted cooling capacity at 83F conditions"
- b) "Adjusted cooling capacity at 95F conditions"
- c) "Annual energy consumption in cooling mode"
- d) "Annual energy consumption in cooling mode at 83F"
- e) "Annual energy consumption in cooling mode at 95F"
- f) "Annual energy consumption in inactive or off mode"
- g) "Annual energy consumption in off-cycle mode"

The Federal test procedure requires the measurements these definitions describe to complete certain measurements that determine the seasonally adjusted cooling capacity (SACC) and combined energy efficiency ratio (CEER). These definitions exist in the test procedure for that reason. And reporting of these individually is unnecessary as they are simply inputs to the final measurement. It appears that CEC is only including the above definitions in order to require manufacturers to report this additional information in the MAEDbS under Section 1606.

Inclusion of these additional definitions can also create a misalignment within the CEC in the future. The current version of the DOE test procedure cites these definitions; however, it may be the case that future iterations of this test procedure require edits or the replacing of these definitions. CEC will have an issue where definitions will not be consistent and as a result will have to go through the regulatory process to update definitions. Moreover, CEC and DOE have been discussing ways to minimize reporting burdens for manufacturers who must submit compliance reports to both DOE and CEC. One way CEC can work

² See 42 U.S.C. § 6295(l)(2).

³<https://legislature.vermont.gov/assets/Documents/2018/WorkGroups/Senate%20Natural%20Resources/Bills/H.410/H.410~Aaron%20Adler~Draft%20No.%204.1;4-12-2018,%204-13-2018~4-13-2018.pdf>

toward that goal is not to require additional data points. Different reporting requirements for California and DOE adds burden—manufacturers must keep track of different data points, which can require different internal databases.

Accordingly, AHAM urges CEC remove these definitions if it finalizes a rule on standards for PACs.

AHAM also recognizes that CEC is updating the SACC definition to acknowledge product classes and referencing the DOE test procedure in Section 1604(d). AHAM does not oppose this update so long as the definition and test procedure remain aligned with the DOE regulations.

Section 1606. Filing by Manufacturers; Listing Appliances in the MAEDbS – Reporting of Adjusted Cooling Capacity

In connection to the above comments on definitions, AHAM strongly opposes the new reporting requirements proposed under Section 1606 regarding cooling capacity and annual energy consumption at 83°F and 95°F. This reporting requirement will misrepresent the true performance and energy savings of PAC models. The measurements taken at these set ambient temperatures are ancillary and are only part of the recorded result that demonstrates a product’s performance. It is the determination of both SACC and CEER that accurately represent the performance of a PAC, which use the cooling capacity results measured at these temperatures.

It is likely that in the future, manufacturers will be required to affix an EnergyGuide label to PACs in order to show consumers the annual cost to operate each model and allow consumers to compare PACs on the basis of energy efficiency. This could include displaying both the SACC and CEER ratings. SACC is a rating in BTU/hour that represents the weighted average performance of a unit in a number of test conditions, some of which may be more than the average use case. CEER takes into account the energy used while the air conditioner is running, as well as the standby power used when the unit is not running but still on. Both of these final ratings depict the proper overall performance of a PAC, not the ratings at various test procedure set temperatures.

Requiring manufacturers to report cooling capacity values at 83°F and 95°F indirectly forces confusing representation of energy use of their products. AHAM understands the possibility of reporting of SACC, as this information is useful to consumers and users of the database and aligns with DOE requirements.

Section 1605.3. State Standards for Non-Federally Regulated Appliances; the effective date of February 1, 2020 conflicts with the Energy Policy Conservation Act (EPCA) and (pre-published) Federal Energy Standard

AHAM strongly opposes the proposed effective date of February 1, 2020. This date conflicts with the Federal statutory requirement that provides a 5-year “lead-in” period for manufacturers to comply with a new standard.⁴ This lead-in time provides an adequate timeframe to transition existing product models, through redesign or component upgrades, to meet a brand new standard in a cost effective way.

For newly covered products, Federal law requires that newly established Federal energy conservation standards not apply to products manufactured within 5 years after the publication date of the final rule (42 U.S.C. 6295(1) (2)). As such, the DOE final energy conservation standards for PACs issued on December 28, 2016, states “in accordance with this requirement, compliance with the energy conservation standards established in a final rule will be required 5 years after the date of publication of a standards final rule in

⁴ 42 U.S.C. § 6295(l)(2).

the Federal Register.”⁵ DOE discusses the intention for the 5-year period is to provide manufacturers with time to assess their product designs and implement any necessary modifications to meet new standards.⁶

AHAM is rigorously working to have the DOE final rule published in the Federal Register, making the PAC energy conservation standard a Federal requirement. AHAM supports Federal energy conservation standards in lieu of state standards. A single, uniform standard throughout the U.S., and even throughout US and Canada, is vastly preferable to a patchwork of disconnected state-by-state standards. Federal appliance standards based on data-driven decisions is a path to more responsible regulations and protection of consumer interest in a full diversity of products by manufacturer, brand, features and price points. Rational standards with sufficient lead-time, when coupled with incentive programs, can also minimize the damage to U.S. employment. Even if the final DOE rule were published in February 2017, as originally planned, this would have given manufacturers a compliance date in February 2022. **Yet CEC is proposing an earlier compliance date despite having only recently proposed its state standard for these products.**

The 5-year lead-in period is necessary considering the complexity manufacturers face using the DOE test procedure to meet the standard. The development of the PAC test procedure proved to be ambiguous and strenuous for manufacturers. Among its numerous flaws, were incorrect data sources, inconsistent calculations, and fundamental repeatability and reproducibility issues. The DOE rushed through the entire regulatory process and did not provide key stakeholders with adequate time to evaluate the test procedure and provide feedback. Supplemental comments by AHAM requesting guidance on test procedure interpretation remain unanswered.

A majority of AHAM members source PACs from other overseas manufacturers. Communicating the specifics of a new final test procedure is a complex process, especially one that is as complicated and involved as the PAC test procedure. Additionally, most PAC testing occurs in lab facilities outside the U.S. Third party labs outside the U.S. have little interest or incentive to invest in changes to their labs before a standards rule is finalized. Some manufacturers are still building lab capability; others are seeking third party labs with sufficient expertise or capability to conduct the test and have yet to find any that are sufficiently up to speed to conduct reliable testing. An assumption that manufacturers “know this is coming” and should have been making the transition is a flawed assumption based on a complete lack of understanding of how for-profit companies operate in a competitive environment with fiduciary responsibilities to their shareholders.

An effective date that is too soon could result in the discontinuation of certain product model offerings in the state until their transition can occur in a responsibly cost effective manner. This could include basic models, which California residents purchase because no other cooling system is feasible for their dwelling.

Additionally, DOE’s own analysis demonstrates the significant burden on manufacturers. At TSL 2 / EL 2, the projected change in industry net present value (INPV) ranges from a decrease of 30.6 percent and 28.1 percent. DOE estimated that only about 23 percent of available platforms and 21 percent of shipments will meet the proposed levels by 2020 and, thus, manufacturers would need to upgrade 77 percent of platforms by their projected compliance date.⁷ A redesign of this magnitude will take manufacturers time and such redesign likely has not yet fully begun, given that DOE’s standard has not

⁵ Energy Conservation Program: Energy Conservation Standards for Portable Air Conditioners. (2016). Department of Energy. 10 CFR Parts 429 and 430, Docket Number EERE-2013-BT-STD-0033, pg. 46

⁶ *Id.*, pg. 47

⁷ Energy Conservation Program: Energy Conservation Standards for Portable Air Conditioners. (2016). Department of Energy. 10 CFR Parts 429 and 430, Docket Number EERE-2013-BT-STD-0033, pg. 9

yet been published and manufacturers have been expecting a five-year lead in period to comply with an eventual PAC energy conservation standard.

Importantly, in the pending *NRDC v. Perry*, the Petitioners, including California, have taken the position that DOE's energy conservation standards for PACs were final as of the issuance date. Inherent in that position is that those standards also preempt state standards under 42 U.S.C. § 6297. Thus, it is inconsistent for CEC to propose to impose its own PAC energy conservation standards with a different, much earlier, compliance date than the Federal standards. Instead, it would be prudent for CEC to wait for the Ninth Circuit to decide the case, particularly given that oral argument has already taken place and a decision should be imminent, before moving forward with regulating PACs.

AHAM recommends CEC implement an effective date of five years after the standard is final.

Codes and Standards (CASE) Enhancement Initiative Study – Portable Air Conditioners

AHAM would like to highlight a number of differences between the CASE study and the DOE Technical Support Document (TSD) analysis. CASE recommended a more stringent standard to CEC based on its analysis. While the CASE study does tailor its analysis to the state of California, a number of assumptions made result in generalized cost and payback periods. The CASE study also supports a number of technology options to improve efficiency; however, DOE provides adequate reasons to abandon these options. Referenced in Appendix A are differences between the CASE study and the DOE TSD and these differences highlight a lack of support for the more stringent level DOE proposed.

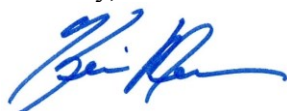
AHAM supports CEC in referencing the DOE test procedure and use of the DOE TSD in determining an appropriate standards level should CEC move forward with its proposed regulation. EL / TSL 2 aligns with the DOE final rule.

Moreover, CEC's proposed level aligns with the levels promulgated by Vermont in HB 410. CEC should not impose stricter standards than another state and cause a patchwork of state standards. Not only will this be burdensome for manufacturers, but because manufacturers may not be able to meet the more stringent levels and the levels would differ from other areas of the country, it could lead to a lack of availability of these products in California, or at a minimum, decreased choices for Californians.

It would be particularly troubling for CEC to adopt more stringent levels than Vermont and DOE because CEC has proposed a significantly earlier compliance date than DOE's compliance date would have been even if published in 2016. This date is also out of alignment with the compliance date provisions in the Vermont law. If CEC moves forward with the proposed standards, it must not require levels that are more stringent and an abbreviated timeframe. This would put it entirely out-of-synch with the Federal determination, other state laws already promulgated.

AHAM appreciates the opportunity to comment on the proposed language amendments to the Appliance Efficiency regulations and is glad to discuss these matters further with the Commission.

Sincerely,



Kevin Messner
Senior Vice President, Policy & Government Relations

APPENDIX A: CASE Study Comparison to DOE Technical Support Document

The following difference highlight a lack of support for a more stringent level than DOE proposed:

Measure	CASE	DOE TSD	Explanation / Importance
Performance Rating (PR)	CASE suggests removing the DOE rating of 1.04 and substituting it with a “PR” variable that can be adjusted	DOE utilized test data (combined DOE and AHAM data) to measure CEER and calculate nominal CEER to establish PR levels	Each efficiency level developed by DOE uses a distinct PR derived by actual tested units. EL 2 corresponds to the maximum available efficiency across a full range of capacities.
Technology option for improved efficiency: alternative refrigerants	CASE indicates DOE is too conservative in using this as an efficiency alternative i.e. switching from R-410A to R-32	DOE screened out alternative refrigerants for its potential adverse impacts on health and safety	R-32 is permitted in the UL standard; however, it is based on the elevation of the product. PACs are on the floor and the standard did not specifically assess use of R-32 in PACs. DOE also noted manufacturers are unable to sell those products in the U.S. market while complying with the ninth edition of UL 484.
Technology option for improved efficiency: ducting insulation	CASE indicates this feature could improve heat loss via the ducts	DOE screened out ducting insulation because it was not practical / portable enough to incorporate with a PAC unit for sale	In the absence of a collapsible design, such an insulated duct would need to be packaged / shipped in its fully expanded configuration, significantly increasing the package size. An AHAM Home Comfort survey found the size and portability of a PAC ranks high in importance for PAC owners (73 percent of respondents).
Technology option for improved efficiency: improved duct connections	CASE claims this option is technologically feasible but not considered due to lack of information	DOE did not observe any units in the test sample that provided additional sealing in the duct connections. DOE also did not observe any significant gaps in any of the duct connections	Leakage rates and potential savings associated with reducing condenser air leakage to the room cannot be measured consistently to determine efficiency improvements
Technology option for improved efficiency: improved case insulation	CASE claims this option is technologically feasible but not considered due to lack of information	DOE is not aware of any portable ACs that use additional insulation on the external product case to limit heat transfer to the room	DOE observed that the average case surface temperature for products in its test sample was 82 °F, which is only 2 °F higher than the indoor room test condition in appendix CC. DOE expects that adding insulation to the product case would result in little or no improvement compared to existing product cases.

Measure	CASE	DOE TSD	Explanation / Importance
Technology option for improved efficiency: increased heat-transfer coefficients	CASE claims this option is technologically feasible but not considered due to lack of information	DOE is not aware of any portable ACs that incorporate microchannel heat exchangers, likely due to the much higher investment cost required for the equipment needed to fabricate these heat exchangers as compared with equipment used for fabrication of conventional heat exchangers.	In its teardown sample, DOE observed that units already incorporate many of the design options that would improve heat transfer coefficients, such as slit fins, grooved refrigerant tubes, and condensate spray over the condenser. PACs already include many design options to improve heat transfer in the evaporator and condenser.
Technology option for improved efficiency: part-load technology improvement	CASE claims this option is technologically feasible but not considered due to lack of information	DOE assessed thermostatic expansion valves (TXV) and electronic expansion valves (EEV) as part-load technology improvements.	DOE did not observe any units with either TXVs or EEVs. Given the cost of TXVs and EEVs, it is unlikely that manufacturers would implement them in portable ACs
Retail price	CASE uses an average retail price based on 160 models advertised online by one retailer in California. Average price = \$393.30	DOE uses the retail prices of 251 models from 36 brands from 5 retailers by product class and model weighted. Average price = \$446	The DOE model weights retail prices to determine a more accurate price of PACs on the market, factoring in product classes. This is critical for measuring the installation cost for the LCC and PBP
Payback Period	CASE determines PBP by using an incremental cost (percentage) based on the average price and average energy savings EL 2 = 1.4 years EL 3 = 1.7 years	DOE uses the ratio of the change in installed cost over the change in the first year operating cos, comparing the EL level to the baseline. EL 2 = 2.6 years EL 3 = 3.2 years	The DOE analysis is more robust in that the sample size is larger and there are more input variables determined. The CASE study does factor in DOE calculated percentages and averages, but only generalizes outcomes further.