



DENSO Products and Services Americas, Inc.
3900 Via Oro Avenue
Long Beach, California 90810

May 26, 2021

Mr. Richard W. Corey
Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: DENSO Comments on the California Air Resources Board 15-Day Notice Proposing Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants and Foam End-Uses Regulation

Dear Mr. Corey,

These comments are submitted by DENSO Products and Services Americas, Inc. (hereinafter referred as DENSO) in response to the California Air Resources Board's (CARB) 15-day notice proposing amendments to the prohibitions on use of certain hydrofluorocarbons in stationary refrigeration, chillers, aerosols-propellants and foam end-uses regulation.

DENSO is a leading manufacturer of commercial and industrial portable air conditioners. We support CARB's initiative to reduce the use of high global warming potential (GWP) refrigerants in California and the transition to the 750 GWP limit. However, DENSO will not be able to transition to a lower GWP refrigerant by January 1, 2023 and recommend that the effective date for commercial/industrial portable air conditioners be postponed to January 1, 2025. As explained below, we feel that all portable air conditioners should not be lumped into a single category and that CARB should draw a clear distinction between residential and commercial portable air conditioners both in terms of definitions and prohibition dates.

DENSO spot coolers are commercial products that are significantly different from typical residential portable air conditioners

DENSO introduced the world's first portable cooling unit in 1982. Our products are intended to provide emergency cooling in construction sites, telecommunication shelters, hospitals, warehouses and storage facilities. These units are significantly different from residential portable air conditioners in both size and functionality. They are bigger in size and are manufactured in small quantities. But most importantly, both the cool air and hot air (from the condenser) is rejected into the same space. In other words, there are no physical boundaries separating the air discharges. These units are commonly called spot coolers.

On the other hand, typical residential portable air conditioners are used in residential facilities, such as single or multifamily homes, nursing homes etc. These units are smaller in size and are manufactured in large quantities. Usually, they are available in either single-duct or dual-duct configurations that affect product performance. Single-duct units draw all of the condenser inlet air from the conditioned space without the means of a duct, and discharge the hot



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condenser outlet air to the unconditioned space through a duct. Dual-duct units draw some or all of the condenser inlet air from the unconditioned space through a duct, and may draw additional condenser inlet air from the conditioned space. The condenser outlet air is discharged to the unconditioned space by means of a separate duct.

CARB should establish separate definitions for single-duct and dual-duct portable air conditioners

For the reasons outlined above, both the U.S. Department of Energy¹ (DOE) and the California Energy Commission² (CEC) are regulating DENSO's portable air conditioners (i.e. spot coolers) differently from residential portable air conditioners. We urge CARB to do the same and establish definitions for single-duct and dual-duct portable air conditioners consistent with the DOE definitions listed in 10 CFR part 430.2 as shown below:

Single-duct portable air conditioner means a portable air conditioner that draws all of the condenser inlet air from the conditioned space without the means of a duct, and discharges the condenser outlet air outside the conditioned space through a single duct attached to an adjustable window bracket.

Dual-duct portable air conditioner means a portable air conditioner that draws some or all of the condenser inlet air from outside the conditioned space through a duct attached to an adjustable window bracket, may draw additional condenser inlet air from the conditioned space, and discharges the condenser outlet air outside the conditioned space by means of a separate duct attached to an adjustable window bracket.

CARB should postpone the compliance date for spot coolers to January 1, 2025

As previously mentioned, spot coolers are usually larger in size than typical residential portable air conditioners. On average, they have a larger refrigerant charge which is comparable to small commercial stationary air conditioners. Spot coolers are subject to the same safety standards as these commercial stationary air conditioners. Manufacturers like DENSO face the same challenges as commercial stationary air conditioner manufacturers and therefore should be treated the same way.

The transition to lower GWP refrigerants will take more than two years to complete. Products will have to be entirely redesigned. In addition, time will be needed to certify these products to the appropriate UL safety standards and test them to develop performance ratings (i.e. energy efficiency, cooling capacity etc.). The redesign and certification processes will take significantly longer than two years. That is why DENSO will not be ready to transition to lower GWP refrigerants by January 1, 2023.

The fact that there are some residential portable air conditioners using A2L refrigerants on the market today does not justify lumping all portable air conditioners into one category. We urge

¹ 10 CFR part 430, subpart B, appendix CC

² California Code of Regulation Title 20. Public Utilities and Energy, Section 1602



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CARB to limit the compliance date of January 1, 2023 to single-duct and dual-duct portable air conditioners. More specifically, DENSO proposes amendments to §95373 and §95374 as shown in underline and ~~strikethrough~~ below:

- Add in §95373 a definition for single-duct and dual duct portable air conditioners consistent with 10 CFR part 430.2.

“Single-duct portable air conditioner” means a portable air conditioner that draws all of the condenser inlet air from the conditioned space without the means of a duct, and discharges the condenser outlet air outside the conditioned space through a single duct attached to an adjustable window bracket.

“Dual-duct portable air conditioner” means a portable air conditioner that draws some or all of the condenser inlet air from outside the conditioned space through a duct attached to an adjustable window bracket, may draw additional condenser inlet air from the conditioned space, and discharges the condenser outlet air outside the conditioned space by means of a separate duct attached to an adjustable window bracket.

- Delete portable air-conditioner from the definition of “Other Air-conditioning” or “Other Air-conditioning Equipment” in §95373 and add single-duct and dual-duct air conditioner in its place.

“Other Air-conditioning” or “Other Air-conditioning Equipment” means any residential or non-residential air-conditioning equipment or air-conditioning system not otherwise defined as room air conditioner, wall air conditioner, window air conditioner, packaged terminal air conditioner (PTAC), packaged terminal heat pump (PTHP), portable air-conditioner, single-duct portable air conditioner, dual-duct portable air conditioner, residential dehumidifier, or variable refrigerant flow (VRF) system.

- Delete portable air-conditioning equipment from Table 3 in §95374 of the proposed regulation order and add single-duct portable and dual-duct portable air-conditioning equipment in its place.

Table 3: End-use and Prohibited Substances.

General End-Use	Specific End-Use	Prohibited Substances	Effective Date
Air-conditioning Equipment, Stationary			



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Air-conditioning Equipment	Room/wall/window air-conditioning equipment, PTACs, PTHPs, portable air-conditioning equipment, <u>single-duct portable air-conditioning equipment</u> , <u>dual-duct portable air-conditioning equipment</u> , and residential dehumidifiers (new)	Refrigerants with a GWP of 750 or greater	Prohibited as of January 1, 2023
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These proposed changes to the regulation order will result in spot coolers falling under the “Other air-conditioning (new) equipment residential and non-residential” specific end-use with the proposed effective compliance date of January 1, 2025.

Summary

DENSO supports CARB’s efforts to reduce HFC emissions in the state of California. However, our spot coolers are commercial products that do not meet the typical definition of residential portable air conditioners. We believe that spot coolers should be treated like other commercial air conditioners and be required to meet the same compliance date of January 1, 2025. The changes we proposed to the 15-Day language classify spot coolers as commercial air conditioners and will have no impact on the state of California obligations to meet its HFC reduction objectives. We strongly recommend that CARB implement our proposal in the final regulation order.

We thank you for the opportunity to submit these comments. If you have questions, please do not hesitate to contact me.

Sincerely

Sang Lee
Manager, Heat Management Engineering
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