

Updated Informative Digest

Proposed Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation

Sections Affected:

This action amended the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation. Sections 95371, 95372, 95373, 95374, 95375, 95376, and 95377, 95378 were amended and section 95379 was added to Article 4, Subarticle 5, Chapter 1, Division 3, Title 17 of the California Code of Regulations

Documents Incorporated by Reference (Cal. Code Regs., tit. 1, § 20, subd. (c)(3)):

In the interest of completeness and in accordance with Government Code section 11347.1, subdivision (a), staff also added the following documents to the rulemaking record:

- Appendix A to 40 CFR Part 82, Subpart F – Specifications for Refrigerants,” effective January 1, 2017
- Updated Costs and Benefits Analysis
- The Environmental Investigation Agency (EIA) and International Institute of Ammonia Refrigeration (IIR) Letter to Chair Mary Nichols, <150 GWP Refrigerants for Ice Rink Refrigeration Systems (September 10, 2020)
- Underwriters Laboratories (UL) Standard 60335-2-40, Edition 3, for Household and Similar Electrical Appliances: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers (Published November 01, 2019)
- Northeast Energy Efficiency Partnerships Inc. (NEEP), Variable Refrigerant Flow (VRF) Market Strategies Report (September 2019)
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 15-2019, Safety Standard for Refrigeration Systems (2019)
- ASHRAE Standard 34-2019, Safety Standard for Designation and Safety Classification of Refrigerants (2019)
- Heating, Air-conditioning and Refrigeration Distributors International (HARDI), Historical R22 Sales and Margins Data Spreadsheet (May 19, 2021)

- U.S. Environmental Protection Agency (U.S. EPA), Summary of Refrigerant Reclamation Trends-U.S. EPA ODS and HFC Refrigerant Reclamation Table (July 10, 2020)

Background and Effect of the Proposed Regulatory Action:

Hydrofluorocarbons (HFCs) are among the most harmful greenhouse gases (GHG) emitted today. While they remain in the atmosphere for a much shorter time than carbon dioxide (CO₂), their relative climate forcing (how effectively they heat the atmosphere) can be tens, hundreds or even thousands of times greater than CO₂. The importance of HFC mitigation was identified in the early 2000s, and several early action measures were proposed as part of a comprehensive ongoing program to reduce GHG emissions in California. The California Air Resources Board (CARB) adopted the Refrigerant Management Program¹ as one of the early action measures to address HFC refrigerant use. Further recognizing the importance of reducing HFCs, the Legislature enacted Senate Bill 1383 (SB 1383)² in 2016, requiring a 40 percent reduction of HFC emissions below 2013 levels by 2030. California continued working to develop additional regulatory efforts to reduce HFC emissions and meet this goal.

One of the existing federal regulations that California was partially relying on to meet its HFC reduction mandates was the federal Significant New Alternatives Policy (SNAP) Program,³ which prohibited use of certain refrigerants in certain end-uses. Unfortunately, beginning in 2017 – Rules 20⁴ and 21⁵ under the SNAP Program were partially vacated by the D.C. Circuit Court of Appeals.⁶ To prevent the harmful impacts of the litigation, in 2018, California adopted some prohibitions on use of certain HFCs in certain end-uses (taken from SNAP Rules 20 and 21) – known as its HFC Regulation.⁷ That same year, the California Legislature enacted the “California Cooling Act” or Senate Bill 1013 (SB 1013),⁸ which adopted Appendices U and V of SNAP Rules 20 and 21 into statute. To provide clarity to the regulated industry, in 2019, CARB incorporated all of the SB 1013’s statutory provisions into its HFC Regulation and revised the name of

¹ Management of High Global Warming Potential Refrigerants for Stationary Sources, Cal. Code Regs., tit. 17, § 95380 et seq.

² SB 1383 (Lara, Stat. 2016, Ch. 395); Health & Saf. Code § 39730.5.

³ 42 U.S.C. § 7671k; 40 C.F.R. Pt. 82, Subpt. G.

⁴ 40 C.F.R. Pt. 82, Subpt. G, App. U; 80 Fed. Reg. 42870-01 (July 20, 2015); 81 Fed. Reg. 86778-01 (Dec. 1, 2016).

⁵ 40 C.F.R. Pt. 82, Subpt. G, App. V; 81 Fed. Reg. 86778-01 (Dec. 1, 2016).

⁶ *Mexichem Fluor, Inc. v. Environmental Protection Agency* (D.C. Cir. 2017) 866 F. 3d 451 (Mexichem I) and *Mexichem Fluor, Inc. v. Environmental Protection Agency* (D.C. Cir. 2019) Case No. 17-1024 (Mexichem II) (collectively the “*Mexichem decisions*”).

⁷ *Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration and Foam End Uses*, Cal. Code Regs., tit. 17, §§ 95371, et seq.

⁸ SB 1013 (Lara, Stat. 2018, Ch. 375); Health & Saf. Code § 39734.

the regulation to reflect the expanded end-uses.⁹ Despite these current rules, California statutory mandates for HFC reduction require CARB to take further actions to reduce HFC emissions.

Under Senate Bill 1383 (SB 1383), California is required to reduce HFC emissions by 40 percent below 2013 levels by 2030. Senate Bill 32 (SB 32) also requires California to reduce statewide GHG emissions by 40 percent below 1990 levels by 2030. CARB's strategy to reduce HFC emissions in California is outlined in the Short-Lived Climate Pollutant (SLCP) Strategy, which was adopted by the Board in March 2017. The measures included in the SLCP Strategy include establishing global warming potential (GWP) limits for new refrigeration and air conditioning (AC) equipment, limiting sales of high GWP refrigerants, financial incentives for early adoption of low-GWP technologies, and a phasedown of HFCs.

The majority of HFC emissions in the State come from their use as refrigerants in stationary refrigeration and AC equipment – collectively known as RAC. In this rulemaking, CARB staff proposes to address these emission sources by amending the existing California HFC Regulation (hereinafter “Proposed Amendments”) with a primary effect being to (1) impose further limits on HFCs used in non-residential (e.g. commercial) stationary refrigeration equipment, (2) to regulate new AC equipment used for both residential and non-residential purposes, and (3) to implement a new program to promote the recovery reclaim and reuse of high-GWP refrigerants. Additionally, some administrative changes are proposed for the purposes of enhancing clarity of the existing regulation. A variance process has also been added to address impossibility and force majeure events.

Description of Regulatory Action:

Overview of Process

On October 20, 2020, CARB released the Notice of Public Hearing (45-Day Notice) and *Staff Report: Initial Statement of Reasons for Rulemaking* (Staff Report or ISOR), titled “*Public Hearing to Consider the Proposed Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation,*” for public review. The Staff Report contains a description of the rationale for the Proposed Amendments. On October 20, 2020, all references relied upon and identified in the Staff Report were made available to the public.

On December 10, 2020, in Resolution 20-37, the Board approved the adoption of the proposed amendments and found that an additional compliance pathway

⁹ *Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End Uses*, Cal. Code Regs., tit. 17, §§ 95371, et seq.

for air conditioner (AC) manufacturers was appropriate.¹⁰ The Board directed the Executive Officer to determine if additional conforming modifications to the regulation were appropriate and to make any proposed modified regulatory language available for public comment, with any additional supporting documents and information, for a period of at least 15 days in accordance with Government Code section 11346.8. The Board further directed the Executive Officer to consider written comments submitted during the public review period and make any further modifications that are appropriate available for public comment for at least 15 days. The Executive Officer was directed to evaluate all comments received during the public comment periods, including comments raising significant environmental issues, and prepare written responses to such comments as required by CARB's certified regulations at California Code of Regulations, Title 17, Sections 60000-60007 and Government Code Section 11346.9, subdivision (a).

After the hearing, CARB released a *Notice of Public Availability of Modified Text and Availability of Additional Documents and Information* (First 15-Day Notice) on May 13, 2021. The first 15-day comment period commenced on May 13, 2021 and closed on May 28, 2021. CARB then released a *Second Notice of Public Availability of Modified Text and Availability of Additional Documents and Information* (Second 15-Day Notice) on August 03, 2021. The second 15-Day comment period commenced on August 03, 2021 and closed on August 18, 2021.

The text of the proposed regulation, ISOR, economic analysis, as well both 15-Day Notices and all relevant documents that were incorporated into the record were posted on CARB's website at <https://ww2.arb.ca.gov/rulemaking/2020/hfc2020>, and accessible to all stakeholders and interested parties.

Staff subsequently prepared written responses to the comments received during the 45-Day and two 15-Day comment periods, as set forth in the *Final Statement of Reasons* (FSOR). The Executive Officer adopted the regulatory amendments after addressing all appropriate modifications.

Synopsis of all Proposed Amendments:

The following is a summary of the Proposed Amendments:

- Establishes GWP limits with specific compliance effective dates:
 - New refrigeration systems containing more than 50 pounds of refrigerant and used in new facilities (as defined in the regulatory text) will be required to contain refrigerants with a GWP less than 150, effective January 1, 2022.

¹⁰ See State of California, Air Resources Board, Board Hearing Transcript, December 10, 2020. Available online at: <https://ww3.arb.ca.gov/board/mt/2020/mt121020.pdf>.

- Companies owning existing systems containing more than 50 pounds of refrigerant in retail food facilities will be required to achieve company-wide HFC reductions – either through a reduction in their company-wide weighted-average GWP to less than 1,400 by 2030, or, in the alternative, reduce their Greenhouse Gas Emission Potential or GHGp by 55 percent below 2019 levels by 2030.
- Non-retail food refrigeration facilities installing new systems must meet GWP limits ranging from 750 to 2,200, depending on the end use.
- New AC equipment used for both residential and non-residential purposes must use refrigerants with a GWP less than 750. The effective date depends on the specific AC equipment category:
 - New room/wall/window air-conditioning equipment, PTACs, PTHPs, portable air-conditioning equipment, and residential dehumidifiers have a January 1, 2023 prohibition date;
 - All other air conditioning equipment have a January 1, 2025 prohibition date; and
 - New Variable Refrigerant Flow (VRF) have a January 1, 2026 prohibition date.
- Creates a “Refrigerant Recovery, Reclaim, and Re-use Requirements,” or R4 Program.
- Adds a variance process to address impossibility and force majeure events.
- Adds recordkeeping, reporting, registration, and labeling requirements.
- Creates new definitions and modifies existing definitions.
- Fixes other grammatical and typographical errors and reorganized the numbering.

Summary of 15-Day Changes:

Pursuant to Government Code Section 11346.8, CARB conducted two 15-Day supplemental comment periods on changes to the initially proposed amendments, in addition to those adopted by the Board in December 2020. They further the overall objectives and benefits of the proposal. The following summarizes the substantive modifications. Additional non-substantive changes were made to correct typographical or grammatical errors, change numbering or formatting, and to improve clarity.

These modifications do not change implementation of the regulation in any way that affects the conclusions of the environmental analysis included in the Staff Report. The proposed modifications consist primarily of definitions and provisions to ensure clarity of aspects of the rulemaking and consist of a provision that requires manufacturers to use a specified minimum amount of reclaimed refrigerant in new AC equipment or in the servicing of existing equipment. The proposed modifications to other definitions and provisions do not alter the compliance responses.

Both the first and second “*Notice of Public Availability of Modified Text*” and all supplemental documents are accessible on CARB’s website at: <https://ww2.arb.ca.gov/rulemaking/2020/hfc2020>.

Summary of First 15-Day Modifications

In response to Board direction and comments received on the original regulatory proposal, staff published proposed modifications to the originally proposed regulation and supporting documents on May 13, 2021. These modifications included:

- (1) *Modification to Definitions (Cal. Code Regs., tit. 17, § 95373)*. CARB staff added several new definitions and modified existing definitions as described in the First 15-Day Notice.
- (2) *Modification to Effective Dates in Table 3 (Cal. Code Regs., tit. 17, § 95374, subd. (c)) and Table 4 (Cal. Code Regs., tit. 17, § 95374, subd. (d))*. CARB staff broke up the AC compliance effective dates into three categories (a) “Room/wall/window air-conditioning equipment, PTACs, PTHPs, portable air-conditioning equipment, and residential dehumidifiers (new)” (January 1, 2023 prohibition date); (b) “Other air conditioning (new) equipment, residential and non-residential” (January 1, 2025 prohibition date); and (c) “Variable Refrigerant Flow (VRF) (new)” (January 1, 2026 prohibition date). In addition, the interim compliance deadline for companies owning and/or operating 20 or more retail food facilities in California and national supermarket chains to achieve company-wide emissions reductions targets was changed from January 1, 2026, to December 31, 2026.
- (3) *Establishing the Refrigerant Recovery, Reclaim, and Reuse Requirements (R4 Program) (Cal. Code Regs., tit. 17, § 95376)*. The R4 Program requires AC and VRF manufacturers to use a specified minimum amount of reclaimed refrigerant in new AC equipment or in the servicing of existing equipment by January 1, 2025 for AC equipment and by January 1, 2026 for VRF. It also establishes a minimal reclaim use percentage. For AC manufacturers, there is a 10 percent refrigerant reclaim use requirement annually, for 2023 and 2024. For VRF manufacturers, there is a 15 percent refrigerant reclaim use requirement annually, for 2023 and 2024 and a 25 percent refrigerant reclaim use requirement for 2025. Also, it adds an “Optional Early Action Credit” that can be applied to fulfill reclaimed refrigerant use requirements. Each pound of refrigerant with a GWP less than 750 used in new AC and VRF equipment before the regulation’s effective date will be credited one pound of certified reclaimed refrigerant. Only equipment entered into commerce in California are eligible.

The modifications and supplemental documents were posted on May 13, 2021, on CARB’s website through a “*Notice of Public Availability of Modified Text and*

Availability of Additional Documents and Information" (First 15-Day Notice) and were made available to all stakeholders and interested parties.

Summary of Second 15-Day Modifications

In response to comments received during the first 15-day period proposal, CARB staff published additional proposed modifications and supporting documents on August 03, 2021. These modifications included:

- (1) Modification to Definitions (Cal. Code Regs., tit. 17, § 95373). CARB staff modified several definitions ("Air-conditioning Equipment" or "Air-conditioning System," "Date of Manufacture," "Full Charge," and "Residential Dehumidifier").
- (2) Modification to Table 3 (Cal. Code Regs., tit. 17, § 95374, subd. (c)). CARB staff modified the headings in the table to split up the AC Chillers from Industrial Process Chillers. CARB staff modified the language in the "Specific End-Use" categories for all IPR chillers and corrected an inadvertent temperature conversion error for the IPR chillers. The compliance requirements did not change but this was meant to provide clarity in response to stakeholder comments.
- (3) Modifications to the Refrigerant Recovery, Reclaim, and Reuse Requirements (R4 Program) (Cal. Code Regs., tit. 17, § 95376). CARB staff added the words "Other Air-Conditioning" to the "Optional Early Action Credit" to clarify the types of equipment that are eligible for the credit, added the words "Baseline Average Pounds of Refrigerant in 2018 and 2019 =" to section 95376(b)(1); and made changes to language in the AC/VRF Final R4 Reports Requirements (removed the words "Type and" from sections 95376 (c)(2)(C)(1) and (2); added the words "or sold for use" to section 95376(c)(2)(C)(2); added a heading "Optional Early Action Credit" to sections 95376(c)(2)(C)(3) and (4)); and made changes to AC/VRF Recordkeeping Requirements (added in the word "Estimated" in section 95376(d)(2); removed the words "(where available)" and added the words "first" in front of "sold" and removed the word "or distributed" from that same sentence in section 95376(d)(3)); and changed several incorrect cross references.

The modifications and supplemental documents were posted on August 03, 2021, on CARB's website through a "Second Notice of Public Availability of Modified Text and Availability of Additional Documents and Information" (Second 15-Day Notice) and were made available to all stakeholders and interested parties.

After the close of the Second 15-day comment period and review of the public comments on the 15-Day Public Notice, the Executive Officer determined that no additional modifications should be made to the Regulation, with the exception of non-substantial changes, including punctuation and formatting corrections and

corrections of typographical errors, which are fully described in the Final Statement of Reasons for the Rulemaking.

Objectives and Benefits of the Proposed Regulatory Action:

The objectives and benefits of the Proposed Amendments remain largely unchanged from the 45-Day Notice as released to the public on October 20, 2020 (available at <https://ww2.arb.ca.gov/rulemaking/2020/hfc2020>). The primary benefits of the Proposed Amendments are emissions reductions that will help California meet its HFC reduction mandates. There are three main objectives of the Proposed Amendments: (1) curb emissions of HFCs from the largest end-use sectors, namely AC and refrigeration end-uses; (2) provide additional clarity to the regulated industry; and (3) support growth in technologies that lower HFC emissions.

Updates to the Assessment of Benefits and Economic Impacts:

Updated Benefits

Compared to CARB's originally proposed amendments in the ISOR, the delay in the effective dates for AC equipment decreased the expected GHG emission reductions and associated benefits. Between 2022 and 2040, the average annual reduction in HFC emissions from the refrigeration and AC sectors combined decreased from 3.8 MMTCO₂e to 3.3 MMTCO₂e. Cumulative emissions reductions through 2040 decreased from 72 MMTCO₂e to 62 MMTCO₂e. The benefit of HFC reductions are estimated using the social cost of carbon, which provides a dollar valuation of the damages caused by one ton of carbon pollution and represents the monetary benefit today of reducing carbon emissions in the future. The social cost of carbon benefits vary depending on the discount rate and expressed as a range. The range of cumulative benefits through 2040 decreased from \$1.7 – \$7.2 billion to \$1.5 – \$6.3 billion.

CARB expects benefits from creating a refrigerant reuse and reclaim program. A robust reclaim program can help enhance recovery of refrigerants from equipment during its lifetime and at end of life, and prevent those refrigerants from being leaked into the atmosphere. As with other recycling programs, a program for reclamation of refrigerants also promotes a more resource-efficient circular economy. With the establishment of the R4 program, CARB has laid the groundwork for building more comprehensive reclaim requirements via future rulemakings. In the long term, a robust recovery and reclamation program is expected to be an important tool in California's strategy towards achieving a low-carbon future.

Updated Direct Costs

The direct costs for the modified Proposed Amendments are estimated to be lower than those described in the ISOR. The Proposed Amendments would have required manufacturers to produce and sell all AC equipment that use a refrigerant with a GWP value less than 750 starting January 1, 2023. Under the Modified Proposed Amendments, the effective date for this 750 GWP limit will vary from 2023 to 2026, depending on the type of equipment. The baseline and incremental costs per unit for new AC equipment are the same as those discussed in the ISOR. However, since all new AC equipment will not be required to use lower-GWP refrigerants starting 2023, the statewide costs are expected to decrease compared to the originally estimated costs in the ISOR. Some additional costs are expected to be incurred from the R4 program.

Under the modified Proposed Amendments, the average annual direct cost are expected to decrease from \$201 million to \$164 million for the AC end-use sector through 2040. There are no changes in the costs estimated for the refrigeration sector (annual average costs, \$26 million). Due to the reduction in AC costs, the combined annual direct costs for AC and refrigeration are expected to decrease from \$227 million to \$190 million through 2040. The direct costs comprise costs related to equipment, installation, maintenance, refrigerant replenishment, electricity, retrofit of manufacturing facilities, and the additional costs due to the R4 program.

Updated Fiscal Costs

Under the modified Proposed Amendments, costs for the State government are expected to decrease from \$93.8 million to \$80.5 million over the regulatory horizon, while fiscal impacts to local governments are expected to decrease from \$81 million to \$67.7 million.

Comparable Federal Regulations:

Currently, there are no comparable federal regulations that impose global warming limits on refrigerants used in stationary refrigeration and air-conditioning. Below is a description of other federal laws that regulate different aspects related to HFCs.

Significant New Alternatives Policy (42 U.S.C. § 7671k; 40 C.F.R. Subpart G, 82.170 et seq.)

Under section 612 of the federal Clean Air Act, the U.S. Environmental Protection Agency (U.S. EPA) implements the Significant New Alternatives Policy (SNAP) program, which makes it unlawful to replace any ozone depleting Class I Substance (e.g. chlorofluorocarbon or CFC) or Class II Substance (hydrochlorofluorocarbon or HCFC) with any substitute that U.S. EPA

determines may present adverse effects to human health or the environment. It also requires U.S. EPA to publish a list of (a) substitutes prohibited for specific uses; and (b) safe alternatives. 42 U.S.C. § 7671k(c)(2).

Some prohibitions on the use of certain refrigerants for the stationary refrigeration sector were present in U.S. EPA's SNAP Rules 20 (40 CFR Part 82, Subpart G, Appendix U) and 21 (40 CFR Part 82, Subpart G, Appendix V). However, these are prohibitions on specific refrigerants and do not impose global warming potential limits. Furthermore, they were partially vacated when the D.C. Circuit Court of Appeals held U.S. EPA did not have authority to require replacement of HFCs where the manufacturer has already replaced an ozone depleting substance.¹¹ Thus, the Proposed Amendments do not conflict with the SNAP Program.

American Innovation and Manufacturing Act of 2020 (42 U.S.C. § 7675)

On December 27, 2020, Congress enacted the American Innovation and Manufacturing (AIM) Act.¹² The AIM Act directs U.S. EPA to engage in a rulemaking to phase down *production* and *consumption* of HFCs, maximizing reclamation and minimizing releases from equipment, and facilitating the transition to next-generation technologies through sector-based restrictions. U.S. EPA released a proposed rule to regulate a phase down of the production and consumption of HFCs.¹³ The AIM Act is different from what is being proposed in the Proposed Amendments because it addresses *production* and *consumption* of HFCs, not the *use* and *global warming potential* of HFCs. Therefore, the Proposed Amendments do not conflict with the AIM Act.

Federal Appliance Energy Efficiency Standards (42 U.S.C. § 6291 et seq.):

The federal Energy Policy and Conservation Act of 1975 (EPCA) establishes the federal energy conservation program for consumer products and appliances (e.g. air conditioning equipment and heat pumps) (See 42.U.S.C. § 6295(o)(2)(A)). Where the federal government does not regulate energy efficiency in appliances, states may set energy efficiency standards for those unregulated appliances. The Proposed Amendments do not conflict with the federal or state energy efficiency standards because they do not regulate the energy efficiency of the appliance. Rather, they regulate the refrigerant that is used in the appliance and only set performance standards prohibiting refrigerants with a certain GWP, which varies depending on the end-use. Therefore, the Proposed Amendments do not conflict with the EPCA.

¹¹ *Mexichem Fluor, Inc. v. Environmental Protection Agency* (D.C. Cir. 2017) 866 F. 3d 451.

¹² 42 U.S.C. § 7675, Pub. L. 116-260, § 103.

¹³ Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act, 86 Fed. Reg. 27150 (May 19, 2021).

Federal Transportation and Storage Requirements (49 C.F.R. Parts 107 et seq., 171-180, 397 et seq.):

The U.S. Department of Transportation regulations place certain requirements on motor carriers transporting materials that may qualify as “hazardous” (explosive), including weight limits, safety permit, registration, and recordkeeping requirements, amongst other requirements. See 49 C.F.R. Parts 171 et seq., 385.403, 397 et seq. These requirements place limits on how much potentially hazardous materials can be transported and stored. This is different from the Proposed Amendments in that the Proposed Amendments do not impose any requirements on transportation of potentially flammable refrigerants and do not require use of flammable refrigerants. Rather, the Proposed Amendments only place GWP limits on refrigerants. Therefore, the Proposed Amendments are consistent with federal transportation and storage laws.

Hence, there are no comparable federal laws.

An Evaluation of Inconsistency or Incompatibility with Existing State Regulations (Gov. Code, § 11346.5, subd. (a)(3)(D)):

During the process of developing the proposed regulatory action, CARB conducted a search of any similar regulations on this topic and concluded these regulations are neither inconsistent nor incompatible with existing state laws.

Codes and Standards (Cal. Code Regs., tit. 24, Part 4):

The term “Codes and Standards” is industry speak for a combination of safety standards and building codes that govern the safe use of appliances and systems in buildings. There is a multi-step national and international collaborative process in place to develop and implement safety standards and building codes. The first step in the process begins with the development of safety standards by standard setting organizations. Safety standards are incorporated into model building codes that are developed by regional code bodies. Model codes are adopted by states into state-specific building codes.

Safety standards are typically developed by organizations that are accredited by the American National Standards Institute (ANSI). Safety standards pertaining to refrigerants and refrigerant-containing systems are predominantly developed by the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) and Underwriters Laboratory (UL). ASHRAE and UL are both ANSI-accredited organizations. The two primary model code bodies in the U.S. are the International Association of Plumbing and Mechanical Officials (IAPMO) and the International Code Council (ICC). The California Building Standards Code, like other state-specific codes, consists of a series of model codes such as the electrical code, mechanical code, fire code among others and is designed to

protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures.

The California Building Standards Code, or California building code, is located in the California Code of Regulations, Title 24. The California Mechanical Code is one section of the California Building Standards (Part 4 specifically) and includes safety requirements for refrigeration and air conditioning equipment, making it directly relevant for the Proposed Amendments. Both the California Building Standards Code and its subsection, the California Mechanical Code are law. California adopts the Uniform Mechanical Code (UMC), the model code that is developed by IAPMO. ASHRAE Standard 15-2019 refers to the latest version of the safety standard for refrigeration and air-conditioning systems developed by ASHRAE. ASHRAE 34-2019 refers to the latest version of the safety standard for the designation and safety classification of refrigerants. UL-60335-2-40 3rd Edition refers to the latest version of the safety standard for air conditioning equipment developed by UL. Safety standards such as those developed by ASHRAE and UL, model building codes and state-specific building codes continually evolve and are updated to reflect technological advancements in the field while ensuring safe use of new technologies. Safety standards are enforced through California Building Standards Codes.

Codes and Standards are relevant to the Proposed Amendments because updates are needed to some of the relevant safety standards and the California building code to allow the safe use of certain next-generation refrigerants in some types of AC equipment. However, the Proposed Amendments do not require OEMs to use any specific refrigerant types and in fact, the Proposed Amendments are meant to be technology pushing to encourage innovation in the industry. The Proposed Amendments set performance standards prohibiting refrigerants above a certain GWP, which varies depending on the end-use – industry is free to comply with the regulation using any refrigerant that meets the requirements. Furthermore, the California building code is anticipated to be finalized in 2023 and released by January 1, 2024 with an effective date of July 1, 2024, in advance of the 2025 deadline for AC equipment. VRF equipment has a compliance date of January 1, 2026, which is aligned with the effective date of the next California building code update, following the July 1, 2024 update. In the event there is no new technology, or the Codes and Standards are not updated, CARB has a variance process that allows for extension in the effective date, provided all requirements are met. Hence, the Proposed Amendments do not conflict with the Codes and Standards.

California Building Energy Efficiency Standards (Pub. Res. Code § 25402 et seq. and Cal. Code Regs., tit. 24, Parts 6 and 11):

California Building Energy Efficiency Standards (BEES), under the Warren-Alquist Act (Energy Code), are developed to reduce energy consumption in newly constructed and existing buildings by prescribing energy efficiency and

conservation standards throughout the entire building. These standards do not prohibit any specific refrigerants but rather regulate the overall energy consumption of the entire building.

The Proposed Amendments do not conflict with the BEES because they do not regulate the building or the energy efficiency of the appliances used in the building. Rather, they regulate the refrigerant that is used in the appliance and only set performance standards prohibiting refrigerants with a certain GWP, which varies depending on the end-use. This is different from the BEES, which regulates the overall building energy consumption. The regulated community can comply with both the BEES and the Proposed Amendments. The Proposed Amendments do not conflict with the BEES.

California Appliance Efficiency Standards (Cal. Code Regs., tit. 20 § 1601 et seq.):

The California Appliance Efficiency Standards (CAES) establishes energy efficiency standards for consumer products and appliances that are not regulated under federal energy efficiency standards (see Cal. Code Regs., tit. 20 1601(b)). The Proposed Amendments do not conflict with the CAES because they do not regulate the energy efficiency or energy consumption of the appliances. Rather, they regulate the refrigerant that is used in the appliance and only set performance standards prohibiting refrigerants with a certain GWP, which varies depending on the end-use. This is different from the CAES, which regulates the actual appliance. The Proposed Amendments do not conflict with the CAES.

State Transportation and Storage Requirements (Veh. Code, §§ 353, 2402.7, 31301 et seq.; Cal. Code Regs., tit. 13, § 1202.1):

State regulations place requirements on motor carriers transporting materials that may qualify as “hazardous” (explosive), including inspection requirements, safety permit, registration, and recordkeeping requirements, amongst other requirements. See Cal. Code Regs., tit. 13, § 1202.1. The Proposed Amendments do not regulate transportation or storage of potentially flammable refrigerants. Rather, the Proposed Amendments only place GWP limits on refrigerants. Therefore, the Proposed Amendments are consistent with State transportation and storage laws.

Hence, there are no state laws that are inconsistent with or in conflict with the Proposed Amendments.