

TITLE 17. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE PROHIBITIONS ON USE OF CERTAIN HYDROFLUOROCARBONS IN STATIONARY REFRIGERATION, CHILLERS, AEROSOLS-PROPELLANTS, AND FOAM END-USES REGULATION

The California Air Resources Board (CARB or Board) will conduct a public hearing at the time noted below to consider approving for adoption the Proposed Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants and Foam End-Uses (Title 17, California Code of Regulations, section 95371 et seq.). The Proposed Amendments are part of the effort by CARB to reduce emissions of hydrofluorocarbons (HFC), a class of highly potent greenhouse gases, as required by Senate Bill 1383.¹

DATE: December 10, 2020

TIME: 9:00 A.M.

Please see the Public Agenda which will be posted ten days before the December 10, 2020, Board Meeting for any appropriate direction regarding a possible remote-only Board Meeting. If the meeting is to be held in person, it will be held at the California Air Resources Board, Byron Sher Auditorium, 1001 I Street, Sacramento, California 95814.

This item may be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 10, 2020, and may continue at 8:30 a.m., December 11, 2020. Please consult the agenda for the meeting, which will be available at least ten days before December 10, 2020, to determine the day on which this item will be considered.

Written Comment Period and Submittal of Comments

In accordance with the Administrative Procedure Act, interested members of the public may present comments orally or in writing at the hearing and may provide comments by postal mail or by electronic submittal before the hearing. The public comment period for this regulatory action will begin on October 23, 2020. Written comments not physically submitted at the hearing must be submitted on or after October 23, 2020, and received **no later than** December 7, 2020. Comments submitted outside that comment period are

¹ SB 1383 (Lara, Stat. 2016, Ch. 395); Health & Saf. Code § 39730.5.

considered untimely. CARB may, but is not required to, respond to untimely comments, including those raising significant environmental issues. CARB requests that when possible, written and email statements be filed at least ten days before the hearing to give CARB staff and Board members additional time to consider each comment. The Board also encourages members of the public to bring to the attention of CARB staff in advance of the hearing any suggestions for modification of the proposed regulatory action. Comments submitted in advance of the hearing must be addressed to one of the following:

Postal mail: Clerks' Office, California Air Resources Board
1001 I Street, Sacramento, California 95814

[Electronic submittal](https://www.arb.ca.gov/lispub/comm/bclist.php): <https://www.arb.ca.gov/lispub/comm/bclist.php>

Please note that under the California Public Records Act (Gov. Code, § 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

Additionally, the Board requests but does not require that persons who submit written comments to the Board reference the title of the proposal in their comments to facilitate review.

Authority and Reference

This regulatory action is proposed under the authority granted in California Health and Safety Code, sections 38510, 38598, 38560, 38562, 38566, 38580, 39600, 39601, 39730, 39730.5, 39734, and 41511. This action is proposed to implement and interpret, sections 38510, 38598, 38560, 38562, 38566, 38580, 39600, 39601, 39730, 39730.5, 39734, and 41511 of the Health and Safety Code.

Informative Digest of Proposed Action and Policy Statement Overview (Gov. Code, § 11346.5, subd. (a)(3))

Sections Affected:

Proposed Amendments to California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, sections 95371, 95372, 95373, 95374, 95375, 95376, and 95377.

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 trap heat in the atmosphere) can be tens, hundreds or even thousands of times greater than CO₂. CARB identified the importance of HFC mitigation in the early 2000s, and proposed several

early action measures as part of a comprehensive, ongoing program to reduce GHG emissions in California. CARB adopted the Refrigerant Management Program² 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)³ in 2016, requiring a 40 percent reduction of HFC emissions below 2013 levels by 2030. California took into account existing national HFC regulations and continued working to develop additional regulatory efforts to reduce HFC emissions to meet this goal. Unfortunately, beginning in 2017 – the United States Environmental Protection Agency’s (U.S. EPA) key HFC prohibitions – Rules 20⁴ and 21,⁵ under the Significant New Alternatives Policy (SNAP) Program,⁶ were partially vacated by the D.C. Circuit Court of Appeals.⁷ To prevent the harmful impacts of the litigation, in 2018, California incorporated both SNAP Rules 20 and 21—first through adopting an HFC Regulation⁸ and then the Legislature enacted the “California Cooling Act” or Senate Bill 1013 (SB 1013).⁹ In 2019, CARB incorporated SB 1013’s statutory provisions into its HFC Regulation to provide clarity to the regulated industry.¹⁰ Despite these current rules, CARB must undertake further actions to meet its statutory mandates for HFC reduction.

Summary of the Proposed Amendments:

CARB staff proposes amending the existing California HFC Regulation (hereinafter “Proposed Amendments”). A summary of the Proposed Amendments are as follows:

- New refrigeration systems containing more than 50 pounds of refrigerant and used in newly constructed and fully remodeled facilities will be required to contain refrigerants with a global warming potential (GWP) less than 150, effective January 1, 2022. This includes the following end-uses: retail food refrigeration, industrial process refrigeration (IPR) (except chillers), cold storage, and ice rinks.
- Companies owning existing systems containing more than 50 pounds of refrigerant in retail food facilities will be required to meet a GWP-Based Company-wide standard – either through a reduction in their company-wide

² Management of High Global Warming Potential Refrigerants for Stationary Sources, Cal. Code Regs., tit. 17, § 95380 et seq.

³ SB 1383 (Lara, Stat. 2016, Ch. 395); Health & Saf. Code § 39730.5.

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

⁷ *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*”).

⁸ Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration and Foam End-Uses, Cal. Code Regs., tit. 17, §§ 95371, et seq.

⁹ SB 1013 (Lara, Stat. 2018, Ch. 375) ; Health & Saf. Code § 39734.

¹⁰ Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End Uses, Cal. Code Regs., tit. 17, §§ 95371, et seq.

weighted-average GWP to less than 1,400 GWP by 2030, or, in the alternative, reduce their Greenhouse Gas Emission Potential or GHGp by 55 percent by 2030. All non-retail food facilities installing new systems must meet the GWP limit of less than 1,500 or 2,200, depending on the end use.

- New air conditioning (AC) equipment used for both residential and non-residential purposes must use refrigerants with a GWP less than 750, effective January 1, 2023.
- A variance provision was added to address the issue of impossibility and force majeure events including the feasibility of the phase-in schedule.
- Recordkeeping, reporting, registration, and labeling requirements were added as enforcement mechanisms. The existing disclosure statement was modified to reduce regulatory burden.
- New definitions were added and existing definitions were modified to add clarity and align with U.S.EPA definitions.
- Other grammatical and typographical errors were fixed and the numbering was reorganized for clarity and flow.

Summary of Potential Additional Compliance Pathway Under Consideration

While some AC manufacturers and stakeholders have conveyed support for the 2023 compliance date, several stakeholders have requested that CARB delay the effective date for the 750 GWP limit for new AC equipment from January 1, 2023 to January 1, 2025. The reasons put forth for this request include: (1) allowing additional time for AC manufacturers to transition refrigerants, (2) the A1 alternative (R-466A) may require more time to be ready as a substitute refrigerant, and (3) the California Building Standards Code may not have the necessary updates to allow A2L refrigerants to be used in 2023. These stakeholders have provided ideas for incorporating an additional compliance pathway in addition to the 2023 compliance pathway.

AC manufacturers and other stakeholders have proposed achieving needed emissions reductions through use of refrigerant reclaim in new equipment, servicing existing equipment, refrigerant destruction, as well as potential crediting system based on type of refrigerant used to account for charge and GWP reduction. For a complete description of their proposals, please see Appendix D to the Initial Statement of Reasons (ISOR), which is incorporated herein. Any revisions may be incorporate through a 15-day notice and will be an outgrowth of these proposals.

In response to these proposals, CARB staff are considering incorporating a compliance pathway as part of subsequent proposed 15-day changes. CARB staff intend to keep the 2023 date for those that can comply with that date. An additional compliance pathway for ACs manufacturers and other regulated entities could include the allowance of a two-year delay or temporary exemption from the 750 GWP requirement for AC manufacturers if the manufacturer is able to offset the CO₂ equivalent amount of refrigerant equal to the initial refrigerant charge size through the purchase and use of reclaimed refrigerant in equipment placed on the market in California during the delay. If reclaimed refrigerant is not used in equipment during

the delay then manufacturers would need to offset the initial charge plus the anticipated additional service gas for the lifetime of the exempted equipment within five years. In addition, manufacturers would need to show the following:

- Contractual agreements to purchase reclaimed refrigerants for use or distribution with reclaimers or distributors.
- All activities related to the exemption or delay are subject to verification and reporting. CARB staff is considering this verification being done through a third-party audit, reporting on an annual basis to CARB, or annual self-certification to CARB.
- Non-compliance is subject to strict liability penalties equivalent to the California cost of carbon estimates per CO_{2e} offset not met.

CARB is evaluating the feasibility of these additional compliance pathways as well as a hybrid of them, from the standpoint of enforcement, implementation, and emissions benefits and may incorporate changes through a 15-day notice. CARB may consider needs for collecting research and development information for specialized systems. CARB may also consider other changes to the sections affected during the course of this rulemaking process. Any changes to the proposal would be presented to the Board for consideration during the Board Hearing scheduled for December 10 – 11, 2020.

Objectives and Benefits of the Proposed Amendments:

There are three main objectives of the Proposed Amendments: (1) curb the emissions of HFCs from the largest end-use sectors, namely AC and refrigeration end-uses; (2) provide additional clarity and convenience to the regulated industry; and (3) support growth in technologies that lower HFC emissions.

The primary benefits of the Proposed Amendments are emissions reductions that will help California meet its HFC reduction mandates. It is anticipated that the Proposed Amendments will reduce HFC emissions from the refrigeration and AC sectors by nearly 40 and 50 percent below baseline by 2040, respectively. Cumulatively, from 2022 through 2040, the Proposed Amendments are expected to yield 72 million metric tons of carbon dioxide equivalent (MMTCO_{2e}) in GHG reductions. Using 20-year GWP values, the Proposed Amendments are expected to yield cumulative GHG emissions reductions of nearly 140 MMTCO_{2e} by 2040. The total benefits in avoided harms range between \$1.7 billion to \$7.2 billion through 2040, depending on the discount rate. These numbers are underestimated because of the lack of official social costs of HFCs. Reducing climate change protects the environment as well as public health and safety.

While direct health benefits cannot be quantified using present methodologies, there is mounting evidence that climate change can impact local air quality. For example, atmospheric warming can lead to an increase in the formation of ground-level ozone and photochemical smog. Thus, there are co-benefits of controlling global warming by removing GHG emissions. The direct impacts of climate change are becoming

clearer and have a disproportionate impact on the sensitive age groups as well as disadvantaged communities. Wildfires are becoming more frequent and severe and in addition to the death and injury from the fires, millions are exposed to harmful smoke. The number of extreme heat days is increasing. The highest ever number of extreme heat days was recorded in 2019. Illnesses and deaths from extreme heat events will likely increase, causing heatstroke and other heat-related illnesses, particularly for vulnerable individuals such as the elderly and those who are more isolated.

Millions of residents across the state live in disadvantaged communities that experience a combination of increased vulnerability to adverse health effects from air pollution and increased exposure to pollution sources. These communities are also extremely vulnerable to the health effects of climate change. For these residents, actions to reduce GHG pollution is even more critical. Health, equity, and resiliency are integrally related. Those individuals and communities that are at a social and financial disadvantage are less able to deal with stresses caused by climate change such as food and water scarcity, high temperatures, and wildfires, and they are more likely to suffer physical and psychological harm.

In addition, some refrigerated facilities that will switch to using low-GWP alternative refrigerants are expected to experience savings related to increased energy efficiency, particularly for the cold storage and industrial process refrigeration (IPR) sectors. Additionally, supermarkets and grocery stores retrofitting to lower-GWP refrigerants are also expected to benefit from improved energy efficiency of systems undergoing the retrofits. These benefits are discussed in detail in the Initial Statement of Reasons (ISOR), Section VIII.

Comparable Federal Regulations:

Currently, there are no federal regulations that limit the global warming impacts of refrigerants used in stationary air conditioning. Some prohibitions 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 were partially vacated as discussed above. Currently there are proposed national bills that would phasedown HFCs nationwide. The proposals are S.2754 (American Innovation and Manufacturing Act of 2019); HR.5544 (American Innovation and Manufacturing Leadership Act of 2020); and more recent proposals such as H.R.4447 (Clean Economy Jobs and Innovation Act), amongst others. These proposals require a phasedown in consumption and production of HFCs. However, as of this time, these are just proposals.

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 the Proposed Amendments are neither inconsistent nor incompatible with existing State regulations.

Disclosure Regarding the Proposed Regulation

Fiscal Impact/Local Mandate Determination Regarding the Proposed Action (Gov. Code, § 11346.5, subds. (a)(5)&(6)):

The determinations of the Board's Executive Officer concerning the costs or savings incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulatory action are presented below.

Under Government Code sections 11346.5, subdivision (a)(5) and 11346.5, subdivision (a)(6), the Executive Officer has determined that the proposed regulatory action would create costs or savings to any State agency, would not create costs or savings in federal funding to the State, would not create costs or mandate to any local agency or school district, or other nondiscretionary cost or savings to State or local agencies.

Cost to any Local Agency or School District Requiring Reimbursement under section 17500 et seq.:

None. Because the regulatory requirements apply equally to all reporting categories and unique requirements are not imposed on local agencies, the Executive Officer has determined that the proposed regulatory action imposes no costs on local agencies that are required to be reimbursed by the State pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, and does not impose a mandate on local agencies that is required to be reimbursed pursuant to Section 6 of Article XIII B of the California Constitution. The proposed regulatory action would not create costs to any school district reimbursable by the state pursuant to Part 7 (commencing with section 17500), division 4, title 2 of the Government Code.

Cost or Savings for State Agencies:

Over the regulatory lifetime, the State government is estimated to incur incremental costs of about \$23 million resulting from AC and refrigeration systems used by State government facilities and \$13 million for CARB staffing and resources. The State government is also estimated to see a direct increase in sales tax revenue of \$131 million and a decrease in revenue from the Energy Resource Fee of \$1 million. On net, the total fiscal impact (revenues – costs) is estimated to be \$12 million over the first three years and \$94 million through 2040.

Other Non-Discretionary Costs or Savings on Local Agencies:

Over the regulatory lifetime, Local Governments are estimated to incur incremental costs of about \$64 million resulting from AC and refrigeration systems used by local

government facilities. Local Governments are also estimated to see a direct increase in sales tax revenue of \$154 million and a decrease in revenue from the Utility User Fee of \$9.2 million. On net, the total fiscal impact (revenues – costs) is estimated to be \$15 million over the first three years and \$81 million through 2040.

Cost or Savings in Federal Funding to the State:

There are no costs or savings in federal funding to the state.

Housing Costs (Gov. Code, § 11346.5, subd. (a)(12)):

The Executive Officer has made the initial determination that the proposed regulatory action will not have a significant effect on housing costs. Individuals who purchase new AC systems will incur incremental costs beginning in 2023. The cost to own and operate AC equipment is an important part of the cost of homeownership. CARB analyzed the impact of the Proposed Amendment on housing costs as a part of the direct costs to individuals, including homeowners and landlords for single and multifamily housing units. The incremental cost for residential ACs is estimated to be \$28.50 per year, which is \$422 on average per AC for the lifetime cost. With increased market adoption, these costs are expected to decrease.

Significant Statewide Adverse Economic Impact Directly Affecting Business, Including Ability to Compete (Gov. Code, §§ 11346.3, subd. (a), 11346.5, subd. (a)(7), 11346.5, subd. (a)(8)):

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons. The Economic Impact Analysis analyzes the costs from the first compliance date out to one average equipment lifetime for regulated refrigeration and AC equipment i.e., 2022 to 2040.

Results of The Economic Impact Analysis/Assessment (Gov. Code, § 11346.5, subd. (a)(10)):

CARB staff determined that the Proposed Amendments is a major regulation as the analysis shows a greater than \$50 million economic impact over a 12-month period after full implementation. The first equipment prohibitions under the Proposed Amendments will become effective January 1, 2022 and will be fully implemented the following year for new equipment and in 2030 for the existing retail food facilities.

Major Regulation: Statement of the Results of the Standardized Regulatory Impact Analysis (SRIA) (Gov. Code, § 11346.3, subd. (c))

In March 2020, CARB submitted a Standardized Regulatory Impact Analysis (SRIA) to the Department of Finance (DOF) for its review. CARB has updated the SRIA since the original submittal. The revisions are discussed below and in the ISOR, Section VIII.

The Creation or Elimination of Jobs within the State:

The overall jobs and output impacts of the Proposed Amendments are very small relative to the total California economy. The Proposed Amendments are estimated to result in a change in the growth of jobs, State gross domestic product (GDP), and output that is projected to not exceed 0.01 percent of the baseline.

The Creation of New Businesses or the Elimination of Existing Businesses within the State:

Impacts to directly affected industries are also very small relative to the baseline, with only one industry exceeding 0.07 percent. The industry with the largest absolute decrease in employment and output is retail trade; this is a large and varied sector consisting of many different types of businesses. The industry with the largest absolute increase in employment and output is the construction sector; this could lead to an expansion or creation of businesses over time.

The Competitive Advantages or Disadvantages for Businesses Currently Doing Business within the State:

The AC equipment manufacturers that must comply with requirements of the Proposed Amendments are based outside of California and therefore do not present any competitiveness impacts for this industry inside California. The incremental costs are anticipated to be incurred generally across business end-users and are not anticipated to result in any competitive advantages or disadvantages within industries.

The incremental costs of compliance with the refrigeration requirements are assumed to be passed on to end-users in California, primarily in the sectors of retail and wholesale trade. The incremental costs are anticipated to be incurred generally across business end-users and are not anticipated to result in any competitive advantages or disadvantages within industries.

The Increase or Decrease of Investment in the State:

Private domestic investment consists of purchases of residential and nonresidential structures and of equipment and software by private businesses and nonprofit institutions. It is used as a proxy for impacts on investments in California because it provides an indicator of the future productive capacity of the economy.

The relative changes to growth in private investment for the Proposed Amendments show a decrease of private investment of about \$90 million in 2030 and \$66 million in 2040, or less than 0.01 percent of baseline investment.

The Incentives for Innovation in Products, Materials, or Processes:

The Proposed Amendments sets performance standards for achieving the requirements across both AC and refrigeration sectors. These standards provide an incentive for manufacturers to find innovative methods to achieve them in a low cost manner in order to mitigate compliance costs. CARB staff anticipates that these requirements will result in a growing market for new low-GWP refrigerants and technologies such as CO₂ transcritical and cascade systems, microdistributed hydrocarbon systems as well low-GWP hydrofluoroolefin (HFO) systems. Manufacturers who invest and gain experience in these technologies will benefit as the market expands. Not only is the demand for air conditioning and refrigeration increasing, but the demand for climate friendly technologies is also increasing.

Other U.S. states have committed to taking action on lowering emissions of high-GWP HFCs. In addition, both chemical manufacturers who produce refrigerants and manufacturers of refrigeration and AC equipment are global corporations. The manufacturers producing compliant refrigerants and equipment for California also participate in global markets, which include markets where existing policies are already driving adoption of next generation technologies, markets where new measures are driving near-term transformation, as well the worldwide transition that is occurring over a longer term because of the Kigali Agreement to phasedown HFCs under the global Montreal Protocol. There is an incentive to commercially deploy and gain experience with these technologies, which is bolstered by the Proposed Amendments.

The Benefits of the Regulations, Including, but Not Limited to, Benefits to the Health, Safety, and Welfare of California Residents, Worker Safety, and the State's Environment and Quality of Life, Among Any Other Benefits Identified by the Agency:

As discussed previously, annual GHG reductions are estimated to be up to 4 MMTCO₂e in the year 2030, with cumulative reductions of 72 MMTCO₂e by the year 2040. Using the social cost of carbon estimates, these emission reductions are equivalent to avoiding damages caused by carbon pollution ranging between \$1.7 billion to \$7.2 billion through 2040, depending on the discount rate.

Across some refrigerated facilities, prohibiting the use of high-GWP refrigerants is expected to result in increased energy efficiency, particularly for the cold storage and IPR sectors. Additionally, supermarkets and grocery stores retrofitting to lower-GWP refrigerants are also expected to benefit from improved energy efficiency of systems undergoing the retrofits. Similarly, many of the alternative refrigerants that may be used to comply with the Proposed Amendments pertaining to AC equipment have better energy efficiency or refrigerant performance characteristics. Manufacturers may elect to use more efficient refrigerants to comply with the Proposed Amendments. It is speculative to predict the market share of these refrigerants and refrigerant choice is only one factor for how manufacturer's choose to meet minimum efficiency

requirements set by the U.S. Department of Energy. Therefore, CARB does not quantify air quality benefits from less electricity generated resulting from the Proposed Amendments.

Department of Finance Comments and Responses:

As indicated above, in March 2020, CARB submitted a SRIA to DOF for its review. CARB has updated the Proposed Amendments and the SRIA since the original submittal, and updated the economic and emissions analysis to address DOF comments. DOF generally concurs with the methodology used to estimate impacts of the Proposed Amendments but had two main comments for CARB:

DOF Comment 1:

The baseline should include a description and breakdown of affected populations by business types and by household income in order to augment the analysis of disparate impacts. The SRIA assumes that costs and benefits are the same for small businesses and typical businesses, however no justification is provided and it is unclear how many small businesses fall into each regulatory category and compliance timeline. Moreover, the SRIA does not discuss disparate impacts on individuals. An analysis of compliance costs as a proportion of business revenue and household income would help support CARB's assessment of no differential impacts on regulated entities.

Response to DOF Comment 1:

In the subsequent sections, CARB includes a description and breakdown of the affected populations by business type (for both the refrigeration and AC requirements) and also by household income (for AC). In addition, CARB includes additional information about the costs and benefits for small versus typical businesses as well as an analysis of disparate impacts on individuals. This analysis includes compliance costs as a proportion of business revenues and household income. For refrigeration, on average, the annualized cost of compliance is less than 0.1 percent of the average business revenue. Additionally, the impact on small businesses is lower than that on typical businesses. For AC, the incremental cost for a compliant AC ranges from less than 0.01 percent to less than 0.002 percent of the annual revenue from a typical small business in California.

DOF Comment 2:

Second, the SRIA should include a discussion of how impacts will change under different growth and emissions scenarios. We recognize that economic data tends to lag, however, given current circumstances and uncertainties, future impact assessments for this regulation should incorporate the most up to date forecast issued by Finance, to the extent possible, as well as sensitivity analysis to model how impacts may vary in case of deviations from the assumed baseline.

Response to DOF Comment 2:

The emissions and cost analysis in the ISOR has been updated to reflect the newly released 2020 population forecast from DOF, that CARB uses to project refrigeration and AC growth. The average population growth rate from 0.7 percent from 2022 to 2040 to an average of 0.5 percent. This changes (reduces) the total cost of the regulation and the associated emissions benefits by less than approximately 5 percent. In addition, CARB staff considered the most recent recession in the late 2000s. During that time, AC sales reported by Air-Conditioning, Heating, and Refrigeration Institute (AHRI) declined an average of 10 percent from 2005 to 2010 before returning to a pre-recession growth rate. CARB conducted a sensitivity analysis in which a 10 percent decline in AC sales occurs from the period of 2020 to 2025. This would reduce the cost and the emissions benefits of the regulation by over 50 percent. This may represent a worst case scenario as in current conditions, home sales and construction has not been as affected as in the previous recession. In this worst-case scenario the cost would decrease from \$3.8 billion to \$1.6 billion. The annual emissions reductions decrease from 2.3 MMTCO_{2e} in 2030 to 1.2 MMTCO_{2e} and the cumulative reductions decrease 50 MMTCO_{2e} from to 24 MMTCO_{2e}. However, the change in sales would also have a corresponding impact on the baseline. Therefore, the relative emissions reductions compared to baseline would remain unchanged as would the cost-effectiveness.

Business Report (Gov. Code, §§ 11346.5, subd. (a)(11); 11346.3, subd. (d)):

In accordance with Government Code sections 11346.5, subdivisions (a)(11) and 11346.3, subdivision (d), the Executive Officer finds the reporting requirements of the proposed regulatory action which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

Cost Impacts on Representative Private Persons or Businesses (Gov. Code, § 11346.5, subd. (a)(9)):

In developing this regulatory proposal, CARB staff evaluated the potential economic impacts on representative private persons or businesses. The cost to typical businesses for complying with the Proposed Amendments as they pertain to refrigeration and AC equipment are discussed briefly below. The cost impact methodology and full details for estimating the cost impacts are given in Section VIII of the ISOR.

Refrigeration:

The Proposed Amendments for refrigeration affect retail food facilities such as supermarkets, grocery stores, warehouse clubs, supercenters and discount department stores followed distantly by industrial process refrigeration (IPR) facilities including wineries and breweries, and refrigerated warehouses and storage facilities. A typical retail food company is expected to incur an annualized cost of compliance of \$635,000 per year. This includes the cost of opening new facilities and retrofitting

existing ones. For IPR and cold storage facilities, the Proposed Amendments will require refrigerants with GWP values less than 150 for new systems in newly constructed/fully remodeled facilities. Large systems containing more than 2,000 pounds typically serve very large warehouses and processing facilities. Total costs or savings will depend on how many systems are used by a facility.

Air Conditioning:

Seven large manufacturers supply over 95 percent of the central ACs and heat pumps market in the United States, including California. While there are no AC manufacturers building systems in California, CARB estimates the cost to a typical manufacturer to be approximately \$20 million per year.

The Proposed Amendments is also expected to result in incremental costs to businesses who purchase a new commercial AC systems compliant with the Proposed Amendments. All businesses either installing an AC in new construction or replacing an AC will experience higher costs beginning in 2023. On average, compliant AC equipment is expected to cost owners and operators of commercial systems an average of 5 to 7 percent above the baseline cost over the lifetime of the equipment. This corresponds to an average incremental cost for a typical commercial business of \$1,000 per year. As stated under "Housing Costs," individuals who purchase new AC systems will incur incremental costs beginning in 2023. The incremental cost for residential ACs is estimated to be \$28.50 per year. As under baseline conditions, the majority of cost to own and operate an AC is the energy use.

Effect on Small Business (Cal. Code Regs., tit. 1, § 4, subds. (a) and (b)):

The Executive Officer has also determined under California Code of Regulations, title 1, section 4, that the proposed regulatory action would affect small businesses. The cost are identified below. The cost impact methodology and full details for estimating the cost impacts are given in Section VIII of the ISOR.

Refrigeration:

For refrigeration end-users, compliance costs for small businesses are not expected to be different from those experienced by typical businesses on a per-system basis. However, CARB took the following factors into account to help minimize the overall cost impacts to small businesses:

- The 50 pound system threshold for the Proposed Amendments for refrigeration systems automatically exempts most small businesses like convenience and corner stores which generally use smaller refrigeration systems.
- Independent grocery store owners/operators are not expected to open new facilities at the same rate as the large supermarket chains. Thus, CARB staff assume the costs for new facilities to comply with the GWP limit of 150 will be borne by the large/typical businesses.

- For the purposes of this rule, companies with fewer than 20 retail food facilities in California are deemed as small businesses and have a more relaxed compliance period. While all businesses have to comply by 2030, the small businesses do not have an interim progress step giving them a full 8-year period to comply with the company-wide targets starting in 2022.
- In the future, California and all of the United States may be affected by the global HFC phasedown resulting from the Kigali Amendment to the Montreal Protocol. One reason to have all businesses, large and small reduce their use of high-GWP HFCs is to prepare them for a future domestic HFC phasedown and/or a virgin refrigerant sales or service ban.

Air Conditioning:

The costs per AC are not expected to be different for small businesses compared to the costs experienced by typical businesses. However, the average square foot per facility is smaller for small business than a typical business. This means lower impacts because less cooling power is needed and that translates to either fewer AC units and/or smaller ACs compared to a typical business. CARB staff estimates an incremental cost of \$140 per year on average for small businesses that install a new AC after 2023. As with residential equipment, the cost to own and operate a commercial AC is dominated by the energy use.

Consideration of Alternatives (Gov. Code, § 11346.5, subd. (a)(13)):

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board, or that has otherwise been identified and brought to the attention of the Board, would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law.

CARB considered two alternatives to the Proposed Amendments. The first alternative would have been less stringent and the second alternative would have been more stringent. As explained in Section IX of the ISOR, no alternative proposal was found to be less burdensome and equally effective in achieving the purposes of the regulation in a manner than ensures full compliance with the authorizing law. The Board has not identified any reasonable alternatives that would lessen any adverse impact on small business.

Environmental Analysis

CARB has determined that the Proposed Amendments are categorically exempt from the requirements of the California Environmental Quality Act (CEQA) under Class 1, Class 2, and Class 8 exemptions. (Cal. Code Regs., tit. 14, §§ 15301, 15302, 15308). A brief explanation of the basis for reaching this conclusion is included in Section VI of the

ISOR. If the Proposed Amendments are finalized, a Notice of Exemption will be filed with the Office of the Secretary for the Natural Resources Agency for public inspection.

Special Accommodation Request

Consistent with California Government Code section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language; and
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerks' Office at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than ten business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia;
- Documentos disponibles en un formato alternativo u otro idioma; y
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 10 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

Agency Contact Persons

Inquiries concerning the substance of the proposed regulatory action may be directed to the agency representative Pamela Gupta, Manager, at pamela.gupta@arb.ca.gov, or (designated back-up contact) Kathryn Kynett, Air Pollution Specialist, at kathryn.kynett@arb.ca.gov, both in the F-gas Reduction Strategy Section.

Availability of Documents

CARB staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The report is entitled: "Staff Report: Initial Statement of Reasons – Public Hearing to Consider Amendments to The Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses."

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations may be accessed on CARB's website listed below, or may be obtained from the Public Information Office, California Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, on October 20, 2020. The Board staff has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons. Because of current travel, facility, and staffing restrictions, the California Air Resources Board's offices may have limited public access. Please contact Bradley Bechtold, Regulations Coordinator, at bradley.bechtold@arb.ca.gov or (916) 322-6533 if you need physical copies of the documents and for all nonsubstantive inquiries concerning the proposed administrative action.

Hearing Procedures

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Government Code, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340).

Following the public hearing, the Board may take action to approve for adoption the regulatory language as originally proposed, or with non-substantial or grammatical modifications.

The Board may also approve for adoption the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice and that the regulatory language as modified could result from the proposed regulatory action. If this occurs, the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15-days before final adoption.

Board may also direct the Executive Officer to: make any proposed modified regulatory language that is sufficiently related to the originally proposed text that the public was adequately placed on notice and that the regulatory language as modified could result from the proposed regulatory action, and any additional supporting documents and information, available to the public for a period of at least 15 days; consider written comments submitted during this period; and make any further modifications as may be appropriate in light of the comments received available for further public comment. The Executive Officer may present the regulation to the Board for further consideration if warranted, and if not, the Executive Officer shall take final action to adopt the regulation after addressing all appropriate conforming modifications.

Final Statement of Reasons Availability

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on CARB's website listed below.

Internet Access

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on CARB's website for this rulemaking at <https://ww2.arb.ca.gov/rulemaking/2020/hfc2020>.

CALIFORNIA AIR RESOURCES BOARD



Richard W. Corey
Executive Officer

Date: October 6, 2020

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see [CARB's website \(www.ARB.ca.gov\)](http://www.ARB.ca.gov).