

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Air Quality Control Commission

REGULATION NUMBER 22

Colorado Greenhouse Gas Reporting and Emission Reduction Requirements

5 CCR 1001-26

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

Outline of Regulation

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Pursuant to Colorado Revised Statutes Section 24-4-103 (12.5), materials incorporated by reference are available for public inspection during normal business hours, or copies may be obtained at a reasonable cost from the Air Quality Control Commission (the Commission), 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530. The material incorporated by reference is also available through the United States Government Printing Office, online at www.gpo.gov/fdsys. Materials incorporated by reference are those editions in existence as of the date indicated and do not include any later amendments.

Unless otherwise indicated, any incorporation by reference of provisions of Title 40, Part 98, of the Code of Federal Regulations (CFR) are to the edition effective as of July 1, 2019.

PART A Greenhouse Gas Reporting

- I. General Provisions
 - I.A. This regulation establishes mandatory greenhouse gas (GHG) monitoring, recordkeeping and reporting requirements for owners and operators of certain facilities that directly emit GHGs, and retail or wholesale electric service providers.
 - I.B. Suppliers will be required to report GHGs based upon the quantity that would be associated with combustion or use of the products supplied.
- II. Definitions
 - II.A. "Anaerobic process" means a procedure in which organic matter in wastewater, wastewater treatment sludge, or other material is degraded by microorganisms in the absence of oxygen, resulting in the generation of carbon dioxide (CO₂) and methane (CH₄). This source category consists of the following: anaerobic reactors, anaerobic lagoons, anaerobic sludge digesters, and biogas destruction devices (for example, burners, boilers, turbines, flares, or other devices).

- II.B. "Carbon Dioxide Equivalent (CO₂e)" means a metric measure used to compare the emissions from various GHG based upon their global warming potential (GWP). CO₂e is determined by multiplying the mass amount of emissions (metric tons per year), for each GHG constituent by that gas's GWP, and summing the resultant values to determine CO₂e (metric tons per year).
- II.C. "CFR" means Code of Federal Regulations.
- II.D. "Designated representative" means an individual selected by an agreement binding on the owners and operators of such facility or supplier and acting in accordance with the certification statement in Section IV.B.6.
- II.E. "Domestic Wastewater Treatment Plant" has the same meaning as defined by the Water Quality Control Commission in 5 Code of Colo. Regs. (CCR) 1002-22 (September 30, 2009).
- II.F. "Electric service provider" or "electric utility" means any corporation, agency, or other legal entity that generates electricity for sale through combustion of fossil fuels or sells electricity for retail or wholesale use, including imported, exported, or in-state electricity, in the State of Colorado. Electric service provider or electric utility does not include an entity that generates electricity which is consumed solely at the facility or complex where the generation occurs
- II.G. "Emergency generator" means a stationary combustion device, such as a reciprocating internal combustion engine or turbine that serves solely as a secondary source of mechanical or electrical power whenever the primary energy supply is disrupted or discontinued during power outages or natural disasters that are beyond the control of the owner or operator of a facility. An emergency generator operates only during emergency situations, for training of personnel under simulated emergency conditions, as part of emergency demand response procedures, or for standard performance testing procedures as required by law or by the generator manufacturer. A generator that serves as a back-up power source under conditions of load shedding, peak shaving, power interruptions pursuant to an interruptible power service agreement, or scheduled facility maintenance is not considered an emergency generator.
- II.H. "Exported electricity" means electricity generated inside the State of Colorado and delivered to serve load located outside the State of Colorado. Exported electricity does not include electricity that is generated outside the State of Colorado, is transmitted through the State of Colorado, and with the final point of delivery outside the State of Colorado.
- II.I. "Facility" means any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right of way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.
- II.J. "Food processing" means an operation used to manufacture or process meat, poultry, fruits, and/or vegetables as defined under NAICS 3116 (Meat Product Manufacturing) or NAICS 3114 (Fruit and Vegetable Preserving and Specialty Food Manufacturing). For information on NAICS codes, see <http://www.census.gov/eos/www/naics/> (as published January 30, 2020).

- II.K. "Global warming potential" or "GWP" means the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas, i.e., (CO₂). For the GHG emissions calculations requirements of this rule, the GWP values that must be used are as specified in Table A-1 to Subpart A of Title 40 CFR Part 98.
- II.L. "Greenhouse gas" or "GHG" means carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆) and Nitrogen Trifluoride (NF₃).
- II.M. "Hydrofluorocarbons (HFCs)" means a class of GHGs consisting of hydrogen, fluorine, and carbon.
- II.N. "In-state electricity" means electricity generated inside the State of Colorado and delivered to serve load within the State of Colorado. In-state electricity does not include electricity that is generated outside the State of Colorado, is transmitted through the State of Colorado, and with the final point of delivery outside the State of Colorado.
- II.O. "Industrial waste landfill" means a landfill other than a municipal solid waste landfill, a Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste landfill, or a Toxic Substance Control Act (TSCA) hazardous waste landfill, in which industrial solid waste, such as RCRA Subtitle D wastes (non-hazardous industrial solid waste, defined in 40 CFR § 257.2 (May 30, 2017)), commercial solid wastes, or conditionally exempt small quantity generator wastes, is placed. An industrial waste landfill includes all disposal areas at the facility.
- II.P. "Industrial wastewater treatment" means use of anaerobic processes to treat industrial wastewater and industrial wastewater treatment sludge at pulp and paper manufacturing, food processing, ethanol production and petroleum refining facilities. Industrial wastewater treatment does not include municipal wastewater treatment plants or separate treatment of sanitary wastewater at industrial sites.
- II.Q. "Imported electricity" means electricity generated outside the State of Colorado and delivered to serve load within the State of Colorado. Imported electricity does not include electricity that is generated outside the State of Colorado, is transmitted through the State of Colorado, and with the final point of delivery outside the State of Colorado.
- II.R. "Local distribution company" or "LDC" means a company that owns or operates distribution pipelines, not interstate pipelines or intrastate pipelines, that physically deliver natural gas to end users and that are within a single state that are regulated as separate operating companies by State public utility commissions or that operate as independent municipally-owned distribution systems. LDCs do not include pipelines (both interstate and intrastate) delivering natural gas directly to major industrial users and farm taps upstream of the local distribution company inlet.
- II.S. "Metric ton" means a common international measurement for mass equal to 1,000 kilograms, which is equivalent to 2204.6 pounds or 1.1 short tons.
- II.T. "Municipal solid waste landfill" or "MSW landfill" means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (40 CFR § 257.2 (May 30, 2017)) such as commercial solid waste, non-hazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads, public roadways, or other public right-of-ways. An MSW landfill may be publicly or privately owned.

- II.U. “Natural gas transmission and storage” has the same meaning as “natural gas transmission and storage segment” as defined in Air Commission Regulation Number 7, Part D, Section IV.A. (effective February 14, 2020).
 - II.V. “North American Industry Classification System (NAICS) code(s)” means the six-digit code(s) that represents the product(s)/activity(s)/service(s) at a facility or supplier as listed in the Federal Register and defined in “North American Industrial Classification System Manual 2007,” available from the U.S. Department of Commerce, National Technical Information Service, Alexandria, VA 22312 and <http://www.census.gov/eos/www/naics/> (as published January 30, 2020).
 - II.W. “Oil and natural gas operations and equipment” means the equipment and activities listed in AQCC Regulation Number 7, Part D, Section V.C. (effective February 14, 2020).
 - II.X. “Perfluorocarbons (PFCs)” means a class of greenhouse gases consisting on the molecular level of carbon and fluorine.
 - II.Y. “Research and development” means those activities conducted in process units or at laboratory bench-scale settings whose purpose is to conduct research and development for new processes, technologies, or products and whose purpose is not for the manufacture of products for commercial sale, except in a de minimis manner.
 - II.Z. “Responsible official” means the definition of that term found in the Air Quality Control Commission’s Common Provisions Regulation (effective January 14, 2016).
 - II.AA. “Retail utility” means an electric service provider or electric utility that sells electricity to end-use customers or ratepayers.
 - II.BB. “Supplier” means a producer, importer, or exporter in any supply category included in Table A-5 of Subpart A, 40 CFR Part 98, as defined by the appropriate subpart in 40 CFR Part 98.
 - II.CC. “Unspecified Energy” is electricity that is not traceable to a specific generating facility, such as electricity traded through open market transactions. This electricity is typically a mix of resource types, and may include renewables.
 - II.DD. “Wholesale utility” means an electric service provider or electric utility that sells electricity or energy to a retail utility or other wholesale utility.
 - II.EE. “Year” means calendar year.
- III. Applicability and Emissions Quantification for Affected Sources
- III.A. The GHG monitoring, recordkeeping, and reporting requirements of this rule apply to the owners and operators of any facility or entity that is located in the State of Colorado and that meets any of the following requirements:
 - III.A.1. Any electric service provider or electric utility, regardless of annual GHG emission quantities. GHGs reported must include all emissions from electricity generation and transmission and distribution equipment, not including emergency generators.
 - III.A.2. Any local distribution company distributing natural gas in the State of Colorado, regardless of annual GHG emission quantities.

- III.A.3. Any industrial waste landfill active at any point during the year, regardless of annual GHG emission quantities. Inert material facilities as defined under 6 CCR 1007-2, Part 1 (November 30, 2019), are exempt from the requirements of this regulation. The GHGs reported must include emissions from the landfill, landfill gas collection systems, and destruction devices for landfill gases
- III.A.4. Any industrial wastewater treatment, regardless of annual GHG emission quantities.
- III.A.5. Any underground coal mine meeting any of the conditions for an active underground coal mine in Subpart FF of 40 CFR, Part 98 at any point during the year and regardless of annual GHG emission quantities.
- III.A.6. Any facility or supplier not covered under Sections III.A.1. through III.A.5. or III.C. that is required to report under 40 CFR Part 98 as incorporated herein must report GHGs directly to the State of Colorado to the same extent as reported under 40 CFR Part 98. The requirement to report pursuant to 40 CFR, Part 98 as incorporated herein continues to apply regardless of future revisions to 40 CFR, Part 98.
- III.A.7. Any municipal solid waste landfill not required to report under 40 CFR Part 98 may voluntarily report GHGs. The GHGs reported must include emissions from the landfill, landfill gas collection systems, and destruction devices for landfill gases.
- III.A.8 Any domestic wastewater treatment plant may voluntarily report GHGs.
- III.A.9. Any agricultural operation may voluntarily report GHGs or operational information sufficient to allow the Division to determine GHGs.
- III.A.10. Research and development activities are excluded from GHG reporting requirements.
- III.B. To quantify GHG emissions for the reporting purposes of this rule, the owner or operator of a facility or an entity identified in Paragraph III.A of this section must calculate GHG emissions by year as described below, and any reporting requirement under 40 CFR, Part 98 and its Subparts as incorporated herein continue to apply regardless of future revisions to 40 CFR, Part 98.
 - III.B.1. For an electric service provider or electric utility identified in Section III.A.1, GHG emissions must be calculated using the applicable calculation methodologies and appropriate equations specified in Subparts C, D, and DD of 40 CFR, Part 98.
 - III.B.2. For a local distribution company identified in Section III.A.2., GHG emissions must be calculated using the applicable calculation methodologies specified in Subparts W and NN of 40 CFR, Part 98.
 - III.B.3. For an industrial waste landfill identified in Section III.A.3., GHG emissions must be calculated according to Subpart C, if applicable, and Subpart TT of 40 CFR, Part 98.
 - III.B.4. For industrial wastewater treatment identified in Section III.A.4., GHG emissions must be calculated according to Subpart C, if applicable, and Subpart II of 40 CFR, Part 98.

- III.B.5. For an underground coal mine identified in Section III.A.5., GHG emissions must be calculated according to Subpart C, if applicable, and Subpart FF of 40 CFR, Part 98.
 - III.B.6. For a facility or supplier included pursuant to Section III.A.6., GHG emissions must be calculated using the calculation methodologies specified in each applicable Subpart of 40 CFR, Part 98.
 - III.B.7. For a municipal solid waste landfill identified in Section III.A.7., GHG emissions must be calculated according to Subpart C, if applicable, and Subpart HH of 40 CFR, Part 98.
 - III.B.8. For a domestic wastewater treatment plant identified in Section III.A.8., GHG emissions must be calculated using GHG emission estimating protocols acceptable to the Division.
 - III.B.9. For an agricultural operation identified in Section III.A.9., reported GHG emissions or operational information must utilize emission calculation protocols that are acceptable to the Division and applicable to the specific activities or types of operations in the agricultural sector.
- III.C. Oil and Natural Gas Reporting Requirements:
- III.C.1. Oil and natural gas operations and equipment at or upstream of a natural gas processing plant are not subject to Sections III.A, III.B, IV, and V of this regulation and must report GHG emissions to the State of Colorado according to the requirements of AQCC Regulation Number 7, Part D, Section V. (effective February 14, 2020). Records of information included in reports submitted pursuant to AQCC Regulation Number 7, Part D, Section V. (effective February 14, 2020) must be maintained for a period of two (2) years and made available to the Division upon request.
 - III.C.2. Natural gas transmission and storage are not subject to Sections III.A, III.B, IV and V of this regulation and must report GHG emissions according to the requirements of AQCC Regulation Number 7, Part D, Section IV. (effective February 14, 2020).

IV. Reporting Requirements

- IV.A. Owners and operators of facilities or entities identified in Section III.A. must submit a report of all GHG emissions or supply in the previous calendar year. GHG emissions or supply must be reported utilizing Division-approved format or forms.
 - IV.A.1. The first report for owners and operators of facilities or entities required to report for calendar year 2020 pursuant to 40 CFR, Part 98 is due on or before March 31, 2021 (and by March 31 every year thereafter).
 - IV.A.2. Owners and operators of facilities or entities covered by Sections III.A.1 through III.A.5 must report to the Division even if their emissions are below the reporting thresholds of 40 CFR, Part 98. The first report for owners and operators of facilities or entities under Sections III.A.1. through III.A.5. that were not required to submit a federal report for calendar year 2020 pursuant to 40 CFR, Part 98 is due on or before March 31, 2022 for calendar year 2021 (and by March 31 every year thereafter).

IV.A.3. Owners and operators of facilities or entities under Sections III.A.7. through III.A.9. may report for any year. GHG emissions reported under this Section IV.A.3. must be submitted by March 31 for the prior year.

IV.B. GHG reports submitted must include the following:

IV.B.1. Individual GHG constituents (in metric tons per year) and aggregated CO₂e emissions.

IV.B.2. AIRS ID if assigned to a subject facility, along with the facility name, entity name or supplier name (as appropriate), and physical street address of the facility, entity or supplier, including the city, State, and zip code. If the facility does not have a physical street address, then the facility must provide the latitude and longitude representing the geographic centroid or center point of facility operations in decimal degree format. This must be provided in a comma-delimited "latitude, longitude" coordinate pair reported in decimal degrees to at least four digits to the right of the decimal point.

IV.B.3. NAICS code(s) that apply to the facility or supplier, including the primary NAICS code and any additional NAICS code(s).

IV.B.4. Year and months covered by the report.

IV.B.5. Date of submission.

IV.B.6. Certification statement signed and dated by a responsible official, or their designated representative, that identifies the individual's title and contact information and attests that the report being submitted is true, accurate and complete to the best of the certifying individual's knowledge.

IV.C. In addition to the information required under Section IV.B., electric service providers and electric utilities must also report the following information for the prior year using Division-approved forms by no later than June 30 of each year:

IV.C.1. Beginning June 30, 2022, data elements necessary for the Division to determine GHG emissions attributable to imported, exported, and in-state electricity. The reporting requirements in this subsection track the flow of electricity in order to attribute GHG emissions from electricity delivered to customers in the State of Colorado. Electricity flow also informs the development, assessment, and refinement of strategies to achieve the statewide greenhouse gas targets and may assist local organizations with GHG planning efforts.

IV.C.1.a. In reporting the requirements of this Section IV.C.1., the electric service provider or electric utility will:

IV.C.1.a.(i) Use the reporting form published by the Division to report annualized data.

IV.C.1.a.(ii) Use data readily available for business purposes including short or long term contracts, internal tracking systems, or for other regulatory reporting requirements to the Public Utilities Commission, US EPA, or Energy Information Administration.

IV.C.1.a.(iii) Use accepted methodologies for assigning GHG emissions to unspecified energy, electricity acquired through contract

obligations, market electricity purchased from a pooled group of generation resources, or renewable energy for which a renewable energy credit is not included. Accepted methods may include contractual requirements, facility specific or portfolio GHG emissions factors, published balancing authority or regional emissions intensity factors, or other methods approved by the Division.

IV.C.1.a.(iv) Not be required to report duplicative information from generation facilities, wholesale utilities, and retail utilities under common ownership of an electric service provider or electric utility.

IV.C.1.b. The data elements to be reported pursuant to Section IV.C.1. include but are not limited to:

IV.C.1.b.(i) For each fossil fuel fired generation facility, the Total Gross Megawatt-hours (MWh) generated at the facility and Net MWh received by each entity with an ownership stake in the facility, which must be reported by the entity with operational control.

IV.C.1.b.(ii) For each wholesale utility, the quantity of electricity imported directly from known generation facilities or supply contracts outside the State of Colorado and the associated GHG emissions, the quantity of electricity received directly from known generation facilities in the State of Colorado, the quantity of electricity imported from each wholesale utility outside the State of Colorado including associated GHG emissions, the quantity of electricity received from each wholesale utility in the State of Colorado, the quantity of electricity exported to wholesale or retail utilities outside the State of Colorado, and the quantity of electricity delivered to wholesale or retail utilities in the State of Colorado.

IV.C.1.b.(iii) For each retail utility, the quantity of electricity imported directly from known generation facilities or supply contracts outside the State of Colorado and the associated GHG emissions, the quantity of electricity received directly from known generation facilities in the State of Colorado, the quantity of electricity received from each wholesale utility, and the quantity of electricity delivered to customers in the State of Colorado.

IV.C.1.b.(iv) For each wholesale or retail utility, the quantity of renewable energy credits including vintage year acquired and transferred through energy transactions, sold, or retired to meet Colorado renewable energy standards.

IV.C.2. The data elements necessary for the Division to track the progress of GHG reductions from plans that have been approved by the Public Utilities Commission, including but not limited to Clean Energy Plans filed in accordance with § 40-2-125.5, C.R.S. (May 30, 2019). Progress tracking after a plan has been approved will inform development, assessment, and refinement of strategies to achieve the statewide greenhouse gas targets. Data collection pursuant to this Section IV.C.2. begins on January 1 of the year following approval of a plan, and the first report is due no later than June 30 of the year following the first year of data collection and annually thereafter.

IV.C.2.a. In reporting the requirements of this Section IV.C.2., the electric service provider or electric utility will:

IV.C.2.a.(i) Use the annual reporting form published by the Division, which is to be consistent with the methods, forms, or reports used for filings to the Public Utilities Commission.

IV.C.2.a.(ii) Use references to information submitted to the Public Utilities Commission as support for data elements reported on the form in lieu of submitting duplicative information to the Division.

IV.C.2.b. The data elements that must be reported pursuant to Section IV.C.2. include, but are not limited to:

IV.C.2.b.(i) Calculations of percent CO₂ and percent GHG reductions from the 2005 baseline emissions approved in the plan. For utilities that conduct both retail and wholesale sales, percent reduction calculations must be provided based on retail sales only as well as for total combined retail and wholesale sales.

IV.C.2.b.(ii) A statement of the GHG accounting methodology used in the approved plan and percent reduction calculations, and any changes to that methodology if they occur for the reporting year. If methodology changes occur, supporting data for both the reporting year and baseline year must be provided to verify the percent reduction calculations.

IV.C.2.b.(iii) Changes in service territory from that identified in the approved plan that may impact the baseline values and percent reduction calculations.

IV.C.2.b.(iv) Plan Revisions filed with the Public Utilities Commission that are awaiting approval.

IV.C.2.b.(v) The number of renewable energy credits used for compliance with a Clean Energy Plan with the same vintage as the reporting year, that are generated and retired during the year.

IV.D. Report Revisions Due to Substantive Errors

IV.D.1. A substantive error is an error that impacts the quantity of GHG emissions reported or otherwise prevents the reported data from being validated or verified.

IV.D.2. If one or more substantive errors as defined in Section IV.D.1. are discovered in a previously submitted GHG report by an entity responsible for preparing or submitting the report, or providing data for the report, the Division must be notified in writing of the errors within five (5) business days of discovery of the errors and a revised report that corrects the substantive errors must be submitted within forty-five (45) days of the discovery of the errors.

IV.D.3. If the Division identifies substantive errors in a submitted report, the Division may notify the entity responsible for the report of the errors and a revised report that corrects the substantive errors must be submitted within forty-five (45) days of the notification.

IV.D.4. The Division may provide reasonable extensions of the forty-five day (45) period for submission of a revised report on a case-by-case basis when requested in writing by the reporting entity. The extension request must include details on why the request is being made and the additional requested time needed to submit the revised report.

V. Recordkeeping Requirements

V.A. All data elements and reports listed below must be retained by the owners and operators of facilities or entities reporting under Section III.A. and be provided to the Division upon request:

V.A.1. All records of supporting documentation used to prepare and submit the GHG report, including but not limited to:

V.A.1.a. All units, operations, processes, and activities for which GHG emissions were calculated.

V.A.1.b. Operating data, fuel use records, or process information used for GHG emissions calculations.

V.A.1.c. GHG emissions calculations and methods used, including a written explanation if emission calculation methodologies used during the reporting period are changed.

V.A.1.d. Any records required to be retained pursuant to Subpart A of 40 CFR, Part 98 and the applicable Subparts of 40 CFR, Part 98 identified in Section III.B.

V.A.2. Reports submitted pursuant to the requirements of Section IV.

V.B. Records required under this Section V. must be maintained for five (5) years from the date of submission of the annual GHG report.

PART B Greenhouse Gas Emission Reduction Requirements

I. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End-Uses

I.A. Purpose and Applicability

I.A.1. The purpose of this regulation is to reduce hydrofluorocarbon (HFC) emissions in the State of Colorado by adopting United States Environmental Protection Agency (EPA) Significant New Alternatives Policy (SNAP) Program prohibitions for certain HFCs in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses. This regulation is designed to support greenhouse gas emission reductions identified in Colorado Revised Statutes, Section 25-7-102(2)(g).

I.A.2. This regulation applies to any person who sells, offers for sale, leases, rents, installs, uses, or manufacturers in the State of Colorado any product or equipment that uses or will use an HFC in end-uses listed in Section I.E.1.

I.B. Definitions

- I.B.1. "Aerosol Propellant" means a liquefied or compressed gas that is used in whole or in part, such as a cosolvent, to expel a liquid or other material from the same self-pressurized container or from a separate container.
- I.B.2. "Air Conditioning Equipment" means chillers, both centrifugal chillers and positive displacement chillers, intended for comfort cooling of occupied spaces.
- I.B.3. "Bunstock" or "bun stock" means a large solid box-like structure formed during the production of polyurethane, polyisocyanurate, phenolic, or polystyrene insulation.
- I.B.4. "Capital Cost" means an expense incurred in the production of goods or in rendering services including but not limited to the cost of engineering, purchase, and installation of components and/or systems, and instrumentation, and contractor and construction fees.
- I.B.5. "Centrifugal Chiller" means air conditioning equipment that utilizes a centrifugal compressor in a vapor-compression refrigeration cycle typically used for commercial comfort air conditioning. Centrifugal chiller in this definition is a chiller intended for comfort cooling and does not include cooling for industrial process cooling and refrigeration.
- I.B.6. "Cold Storage Warehouse" means a cooled facility designed to store meat, produce, dairy products, and other products that are delivered to other locations for sale to the ultimate consumer.
- I.B.7. "Component" means a part of a refrigeration system, including but not limited to condensing units, compressors, condensers, evaporators, and receivers; and all of its connections and subassemblies, without which the refrigeration system will not properly function or will be subject to failures.
- I.B.8. "Cumulatively Replaced" means the addition of, or change in, multiple components within a three-year period.
- I.B.9. "Date of Prohibition" means the applicable date after which the prohibition for use of HFCs in a specific end-use provided in Section I.E. goes into effect.
- I.B.10. "End-use" means processes or classes of specific applications within industry sectors, including but not limited to those listed in Section I.E.
- I.B.11. "Flexible Polyurethane" means a non-rigid synthetic foam containing polymers created by the reaction of isocyanate and polyol, including but not limited to that used in furniture, bedding, and chair cushions.
- I.B.12. "Foam" means a product with a cellular structure formed via a foaming process in a variety of materials that undergo hardening via a chemical reaction or phase transition.
- I.B.13. "Foam Blowing Agent" means a substance used to produce foam.
- I.B.14. "Household Refrigerators and Freezers" means refrigerators, refrigerator-freezers, freezers, and miscellaneous household refrigeration appliances intended for residential use. For the purposes of this regulation, "household refrigerators and freezers" does not include "household refrigerators and freezers - compact", or "household refrigerators and freezers - built-in."

- I.B.15. "Household Refrigerators and Freezers - Compact" means any refrigerator, refrigerator-freezer or freezer intended for residential use with a total refrigerated volume of less than 7.75 cubic feet (220 liters).
- I.B.16. "Household Refrigerators and Freezers - Built-in" means any refrigerator, refrigerator-freezer or freezer intended for residential use with 7.75 cubic feet or greater total volume and 24 inches or less depth not including doors, handles, and custom front panels; with sides which are not finished and not designed to be visible after installation; and that is designed, intended, and marketed exclusively to be: installed totally encased by cabinetry or panels that are attached during installation; securely fastened to adjacent cabinetry, walls or floor; and equipped with an integral factory-finished face or accept a custom front panel.
- I.B.17. "Hydrofluorocarbons" or "HFC" means a class of greenhouse gases (GHGs) consisting of hydrogen, fluorine, and carbon.
- I.B.18. "Integral Skin Polyurethane" means a synthetic self-skinning foam containing polyurethane polymers formed by the reaction of an isocyanate and a polyol, including but not limited to that used in car steering wheels and dashboards.
- I.B.19. "Manufacturer" means any person, firm, association, partnership, corporation, governmental entity, organization, or joint venture that produces any product that contains or uses HFCs or is an importer or domestic distributor of such a product.
- I.B.20. "Metered Dose Inhaler," or "Medical Dose Inhaler," or "MDI" means a device that delivers a measured amount of medication as a mist that a patient can inhale, typically used for bronchodilation to treat symptoms of asthma, chronic obstructive pulmonary disease (COPD), chronic bronchitis, emphysema, and other respiratory illnesses. An MDI consists of a pressurized canister of medication in a case with a mouthpiece.
- I.B.23. "Motor-bearing" means refrigeration equipment containing motorized parts, including compressors, condensers, and evaporators.
- I.B.24. "New" means products or equipment that are manufactured after the date of prohibition or equipment first installed for an intended purpose with new or used components after the date of prohibition, expanded by the addition of components to increase system capacity after the date of prohibition, or replaced or cumulatively replaced such that the cumulative capital cost of replacement after the date of prohibition exceeds 50% of the capital cost of replacing the whole system. For the purposes of this rule, a supermarket system is considered manufactured on the date upon which the refrigerant circuit is complete, the system can function, the system holds a full refrigerant charge, and the system is ready for use for its intended purposes.
- I.B.25. "Phenolic Insulation Board" means phenolic insulation including but not limited to that used for roofing and wall insulation.
- I.B.26. "Polyolefin" means foam sheets and tubes made of polyolefin.
- I.B.27. "Polystyrene Extruded Boardstock and Billet (XPS)" means a foam formed from predominantly styrene monomer and produced on extruding machines in the form of continuous foam slabs which can be cut and shaped into panels used for roofing, walls, and flooring.

- I.B.28. "Polystyrene Extruded Sheet" means polystyrene foam including that used for packaging. It is also made into food-service items, including hinged polystyrene containers (for "take-out" from restaurants); food trays (meat and poultry) plates, bowls, and retail egg containers.
- I.B.29. "Positive Displacement Chiller" means vapor compression cycle chillers that use positive displacement compressors, typically used for commercial comfort air conditioning. Positive displacement chiller in this definition is a chiller intended for comfort cooling and does not include cooling for industrial process cooling and refrigeration.
- I.B.30. "Refrigerant" or "Refrigerant Gas" means any substance, including blends and mixtures, which is used for heat transfer purposes.
- I.B.31. "Refrigerated Food Processing and Dispensing Equipment" means retail food refrigeration equipment that is designed to process food and beverages dispensed via a nozzle that are intended for immediate or near-immediate consumption, including but not limited to chilled and frozen beverages, ice cream, and whipped cream. This end-use excludes water coolers, or units designed solely to cool and dispense water.
- I.B.32. "Refrigeration Equipment" means any stationary device that is designed to contain and use refrigerant gas, including but not limited to retail or commercial refrigeration equipment, household refrigerators and freezers, and cold storage warehouses.
- I.B.33. "Remote Condensing Units" means retail refrigeration equipment or units that have a central condensing portion and may consist of compressor(s), condenser(s), and receiver(s) assembled into a single unit, which may be located external to the sales area. The condensing portion (and often other parts of the system) is located outside the space or area cooled by the evaporator. Remote condensing units are commonly installed in convenience stores, specialty shops (e.g., bakeries, butcher shops), supermarkets, restaurants, and other locations where food is stored, served, or sold.
- I.B.34. "Residential Use" means use by a private individual of a substance, or a product containing the substance, in or around a permanent or temporary household, during recreation, or for any personal use or enjoyment. Use within a household for commercial or medical applications is not included in this definition, nor is use in automobiles, watercraft, or aircraft.
- I.B.35. "Retail Food Refrigeration" or "Commercial Refrigeration" means equipment designed to store and display chilled or frozen goods for commercial sale including but not limited to stand-alone units, refrigerated food processing and dispensing equipment, remote condensing units, supermarket systems, and vending machines.
- I.B.36. "Retrofit" means to convert a system from one refrigerant to another refrigerant. Retrofitting includes the conversion of the system to achieve system compatibility with the new refrigerant and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, O-rings, or system components.
- I.B.37. "Rigid Polyurethane and Polyisocyanurate Laminated Boardstock" means laminated board insulation made with polyurethane or polyisocyanurate foam, including that used for roofing and wall insulation.

- I.B.38. "Rigid Polyurethane Appliance Foam" means polyurethane insulation foam in household appliances.
- I.B.39. "Rigid Polyurethane Commercial Refrigeration and Sandwich Panels" means polyurethane insulation for use in walls and doors, including that used for commercial refrigeration equipment, and used in doors, including garage doors.
- I.B.40. "Rigid Polyurethane High-pressure Two-component Spray Foam" means a foam product that is pressurized 800-1600 pounds per square inch (psi) during manufacture; sold in pressurized containers as two parts (i.e., A-side and B-side); and is blown and applied in situ using high-pressure pumps to propel the foam components, and may use liquid blowing agents without an additional propellant.
- I.B.41. "Rigid Polyurethane Low-pressure Two-component Spray Foam" means a foam product that is pressurized to less than 250 psi during manufacture; sold in pressurized containers as two parts (i.e., A-side and B-side); and are typically applied in situ relying upon a gaseous foam blowing agent that also serves as a propellant so pumps typically are not needed.
- I.B.42. "Rigid Polyurethane Marine Flotation Foam" means buoyancy or flotation foam used in boat and ship manufacturing for both structural and flotation purposes.
- I.B.43. "Rigid Polyurethane Slabstock and Other" means a rigid closed-cell foam containing urethane polymers produced by the reaction of an isocyanate and a polyol and formed into slabstock insulation for panels and fabricated shapes for pipes and vessels.
- I.B.44. "Stand-alone Unit" means retail refrigerators, freezers, and reach-in coolers (either open or with doors) where all refrigeration components are integrated and the refrigeration circuit may be entirely brazed or welded. These systems are fully charged with refrigerant at the factory and typically require only an electricity supply to begin operation.
- I.B.45. "Stand-alone Low-Temperature Unit" means a stand-alone unit that maintains food or beverages at temperatures at or below 32°F (0 °C).
- I.B.46. "Stand-alone Medium-Temperature Unit" means a stand-alone unit that maintains food or beverages at temperatures above 32°F (0 °C).
- I.B.47. "Substance" means any chemical intended for use in the end-uses listed in Section I.E of this regulation.
- I.B.48. "Supermarket Systems" means multiplex or centralized retail food refrigeration equipment systems designed to cool or refrigerate, which typically operate with racks of compressors installed in a machinery room and which includes both direct and indirect systems.
- I.B.49. "Use" means any utilization of any substance, including but not limited to utilization in a manufacturing process or product in the State of Colorado, consumption by the end-user in the State of Colorado, or in intermediate applications in the State of Colorado, such as formulation or packaging for other subsequent applications. For the purposes of this regulation, use excludes residential use, but it does not exclude manufacturing for the purpose of residential use.

I.B.50. "Vending Machine" means a self-contained unit that dispenses goods that must be kept cold or frozen.

I.C. Requirements

I.C.1. Prohibitions

I.C.1.a. No person may sell, lease, rent, install, use, or manufacture in the State of Colorado, any product or equipment using a prohibited substance for any air-conditioning, refrigeration, foam, or aerosol propellant end-use listed in Section I.E.1.

I.C.2. Exemptions.

I.C.2.a. Except where an existing system is retrofit after the date of prohibition, nothing in this regulation requires a person that acquired a product or equipment containing a prohibited substance prior to the applicable date of prohibition in Section I.E.1. to cease use of that product or equipment. Products or equipment manufactured prior to the applicable date of prohibition specified in Table 1 of Section I.E.1 (including spray foam systems not yet applied on site) may be sold, imported, exported, distributed, installed, serviced, and used after the specified date of prohibition.

I.C.2.b. End-uses that are exempted from Part B, Section I. of this regulation are provided for in Section I.E.2.

I.C.3. Alternative Compliance

I.C.3.a. This regulation does not prohibit a manufacturer of positive displacement chillers in the State of Colorado from the use of prohibited substances in Section I.E.1. provided that the manufacturer meets the following requirements:

I.C.3.a.(i) The manufacturer otherwise meets all other applicable requirements of Section I.D.

I.C.3.a.(ii) The manufacturer only uses the prohibited substances to manufacture or test positive displacement chillers designated for installation outside the State of Colorado.

I.C.3.a.(iii) The manufacturer submits a mitigation plan for emissions from prohibited substances from the manufacturing facility (including testing) to the Division no later than December 31, 2021 or prior to manufacturing or testing positive displacement chillers that use prohibited substances in the State of Colorado if no manufacturing or testing occurred on or before December 31, 2021. The plan must be approved by the Division and include:

I.C.3.a.(iii)(A) Details of emission mitigation efforts whether planned or implemented at the manufacturing facility, including dates of completion for any planned efforts.

- I.C.3.a.(iii)(B) Projections of annual emissions from prohibited substances from the manufacturing facility, including emissions associated with manufacturing and testing, covering at least ten (10) calendar years from the date the plan is submitted.
- I.C.3.a.(iv) The manufacturer must report actual emissions from prohibited substances to the Division on an annual basis for the prior calendar year no later than March 31st after the calendar year ends.
- I.C.3.a.(iv)(A) For manufacturers producing or testing positive displacement chillers in the State of Colorado on or before December 31, 2021, the first emissions report is due March 31, 2023 for calendar year 2022.
- I.C.3.a.(iv)(B) For manufacturers that first produce or test positive displacement chillers in the State of Colorado after December 31, 2021, the first emissions report is due March 31st following the first calendar year during which any emissions from prohibited substances occurred.
- I.C.3.a.(iv)(C) Annual emissions reporting must continue until the manufacturer has fully transitioned from use of prohibited substances for positive displacement chillers listed in Section I.E.1.
- I.C.3.a.(iv)(D) Emissions must be reported in metric tons for each prohibited substance.
- I.C.3.a.(v) The manufacturer must complete project(s) within the State of Colorado that reduce greenhouse gas emissions by an amount equal to or greater than any projected annual carbon dioxide equivalent (CO₂e) emissions not reduced for calendar years 2024 and beyond as part of the emissions mitigation plan identified in Section I.C.3.a.(iii).
- I.C.3.a.(v)(A) Proposals for projects required under this section may be submitted as part of the emissions mitigation plan but must be submitted no later than one (1) year after approval of the mitigation plan and must be approved by the Division prior to execution.
- I.C.3.a.(v)(B) Emission reductions from approved project(s) may be applied to multiple calendar years of unmitigated emissions when the projected reductions are greater than the projected unmitigated emissions on a CO₂e basis.
- I.C.3.a.(v)(C) A completion report for each project must be submitted to the Division no later than ninety (90) days after the project is completed and must include the details of project work completed, the amount of CO₂e emissions reduced or avoided over the lifetime of the

project, and any estimated benefits or co-benefits to the environment and community in which the project is located.

I.D. Disclosure Statement and Recordkeeping

I.D.1. Disclosure Statement

I.D.1.a. Any person who manufactures or sells in the State of Colorado a product or equipment in the air-conditioning, refrigeration, foam, or aerosol propellant end-uses listed in Section I.E.1., must provide a written disclosure to the buyer as part of the sales transaction and invoice or a label on the product or equipment as of the applicable date of prohibition for the end-use in Section 1.E.1.

I.D.1.a.(i) For motor-bearing refrigeration and air-conditioning equipment that is not factory-charged or pre-charged with refrigerant, the disclosure or label must state:

“This equipment is prohibited from using any substance on the “List of Prohibited Substances” for that specific end-use, in accordance with State regulations for hydrofluorocarbons.”

I.D.1.a.(ii) Except for products and equipment with existing labeling required by state or local building codes and safety standards which contain the information required in this subsection I.D.2.a.ii., the disclosure or label for refrigeration and air-conditioning equipment that are factory-charged or pre-charged with an HFC or HFC blend must include the date of manufacture and the refrigerant and foam blowing agent the product or equipment contains.

I.D.1.a.(iii) For foam, the disclosure or label must include the date of manufacture and hydrofluorocarbon the product contains or the hydrofluorocarbon used to make the product. Alternatively, the disclosure or label may state: “Where sold, compliant with State HFC regulations.”

I.D.1.a.(iv) For aerosol propellant products, the disclosure or label must include the date of manufacture and the hydrofluorocarbon the product contains or the hydrofluorocarbon used to make the product. Alternatively, the disclosure requirement may be met if the hydrofluorocarbon the product contains or the hydrofluorocarbon used to make the product is listed in a Safety Data Sheet for the product that complies with the requirements of 29 CFR 1910.1200 (effective February 8, 2013).

I.D.2. Recordkeeping

I.D.2.a. Any person who manufactures any product or equipment in the end uses listed in Section I.E.1. for sale or entry into commerce in the State of Colorado must maintain records sufficient to demonstrate that the product or equipment does not contain applicable prohibited substances

listed in Section I.E.1. as of the date of prohibition for that end-use or that the product or equipment is exempt in accordance with Section I.E.2.

I.D.2.b. Records must be maintained for five (5) years and made available to the Division upon request.

I.E. List of Prohibited Substances and Exemptions

I.E.1. Table 1 lists prohibited substances in specific end-uses and the date of prohibition for each end-use, unless an exemption is provided for in Section I.E.2.

Table 1: End-Use, Prohibited Substances, and Date of Prohibition

End-Use Category: Aerosol Propellants		
End-Use	Prohibited Substances	Date of Prohibition
Aerosol Propellants	HFC-125, HFC-134a, HFC-227ea and blends of HFC-227ea and HFC-134a	January 1, 2021
End-Use Category: Air Conditioning		
End-Use	Prohibited Substances	Date of Prohibition
Centrifugal Chillers (New)	FOR12A, FOR12B, HFC-134a, HFC-227ea, HFC-236fa, HFC245fa, R-125/ 134a/ 600a (28.1/70/1.9), R-125/ 290/ 134a/ 600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R-422B, R-422C, R-422D, R-423A, R-424A, R-434A, R438A, R-507A, RS-44 (2003 composition), THR-03	January 1, 2024
Positive Displacement Chillers (New)	FOR12A, FOR12B, HFC-134a, HFC-227ea, KDD6, R125/ 134a/ 600a (28.1/70/1.9), R-125/ 290/ 134a/ 600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R-422B, R-422C, R-422D, R-424A, R-434A, R-437A, R438A, R-507A, RS-44 (2003 composition), SP34E, THR-03	January 1, 2024
End-Use Category: Refrigeration		

End-Use	Prohibited Substances	Date of Prohibition
Cold Storage Warehouses (New)	HFC-227ea, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R404A, R-407A, R-407B, R-410A, R-410B, R-417A, R-421A, R421B, R-422A, R-422B, R-422C, R-422D, R-423A, R-424A, R428A, R-434A, R-438A, R-507A, RS-44 (2003 composition)	January 1, 2023
Household Refrigerators and Freezers (New)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2022
Household Refrigerators and Freezers—Compact (New)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2021
Household Refrigerators and Freezers—Built-in (New)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2023
Supermarket Systems (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R428A, R-434A, R-507A	January 1, 2021
Supermarket Systems (New)	HFC-227ea, R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021

Remote Condensing Units (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R428A, R-434A, R-507A	January 1, 2021
Remote Condensing Units (New)	HFC-227ea, R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021
Stand-alone Units (Retrofit)	R-404A, R-507A	January 1, 2021
Stand-alone Medium-Temperature Units (New)	FOR12A, FOR12B, HFC-134a, HFC-227ea, KDD6, R125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R407A, R-407B, R-407C, R-407F, R-410A, R-410B, R417A, R-421A, R-421B, R-422A, R-422B, R-422C, R422D, R-424A, R-426A, R-428A, R-434A, R-437A, R438A, R-507A, RS-24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2021
Stand-alone Low-Temperature Units (New)	HFC-227ea, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407A, R-407B, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R422A, R-422B, R-422C, R-422D, R-424A, R-428A, R434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation)	January 1, 2021
Refrigerated Food Processing and Dispensing Equipment (New)	HFC-227ea, KDD6, R-125/ 290/ 134a/ 600a (55.0/1.0/42.5/1.5), R-404A, R-407A, R-407B, R-407C, R-407F, R-410A, R-410B, R417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-428A, R-434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation)	January 1, 2021

Vending Machines (New)	FOR12A, FOR12B, HFC-134a, KDD6, R125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R407C, R-410A, R-410B, R-417A, R-421A, R-422B, R422C, R-422D, R-426A, R-437A, R-438A, R-507A, RS-24 (2002 formulation), SP34E	January 1, 2022
Vending Machines (Retrofit)	R-404A, R-507A	January 1, 2021
End-Use Category: Foams		
End-Use	Prohibited Substances	Date of Prohibition
Rigid Polyurethane and Polyisocyanurate Laminated Boardstock	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021
Flexible Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021
Integral Skin Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polystyrene Extruded Sheet	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Phenolic Insulation Board and Bunstock	HFC-143a, HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021

Rigid Polyurethane Slabstock and Other	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Appliance Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Commercial Refrigeration and Sandwich Panels	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polyolefin	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Marine Flotation Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polystyrene Extruded Boardstock and Billet (XPS)	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel B, Formacel Z-6	January 1, 2021
Rigid Polyurethane High-pressure Two-component Spray Foam	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021
Rigid Polyurethane Low-pressure Two-component Spray Foam	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021

Rigid Polyurethane One-component foam sealants	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021
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I.E.2. Table 2 lists exemptions to the prohibitions in Section I.E.1.

Table 2: Exemptions.

End-Use Category	Prohibited Substances	Acceptable Uses
Aerosol Propellants	HFC-134a	Cleaning products for removal of grease, flux and other soils from electrical equipment; refrigerant flushes; products for sensitivity testing of smoke detectors; lubricants and freeze sprays for electrical equipment or electronics; sprays for aircraft maintenance; sprays containing corrosion preventive compounds used in the maintenance of aircraft, electrical equipment or electronics, or military equipment; pesticides for use near electrical wires, in aircraft, in total release insecticide foggers, or in certified organic use pesticides for which EPA has specifically disallowed all other lower-GWP propellants; mold release agents and mold cleaners; lubricants and cleaners for spinnerettes for synthetic fabrics; duster sprays specifically for removal of dust from photographic negatives, semiconductor chips, specimens under electron microscopes, and energized electrical equipment; adhesives and sealants in large canisters; document preservation sprays; U.S. Food and Drug Administration (FDA)-approved MDIs for medical purposes; wound care sprays; topical coolant sprays for pain relief; products for removing bandage adhesives from skin; bear spray; and law enforcement pepper spray.
Aerosol Propellants	HFC-227ea and blends of HFC-227ea and HFC-134a	FDA-approved MDIs for medical purposes.
Air Conditioning	HFC-134a	Military marine vessels where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.

Air Conditioning	HFC-134a and R-404A	Human-rated spacecraft and related support equipment where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.
Foams – Except Rigid polyurethane spray foam	All substances	Military applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2022.
Foams – Except Rigid polyurethane spray foam	All substances	Space- and aeronautics-related applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2025.
Rigid polyurethane two-component spray foam	All substances	Military or space- and aeronautics-related applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2025.

PART C GENERAL PROVISIONS

I. Severability

If any section, clause, phrase, or standard contained in these regulations is for any reason held to be inoperative, unconstitutional, void, or invalid, the validity of the remaining portions thereof will not be affected and the Commission declares that it severally passed and adopted these provisions separately and apart.

PART D STATEMENTS OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE

I. Adopted: [date of the rulemaking hearing; if a multi-day hearing this would be the last day]

This Statement of Basis, Specific Statutory Authority, and Purpose complies with the requirements of the State Administrative Procedure Act, § 24-4-103(4), C.R.S., the Colorado Air Pollution Prevention and Control Act, §§ 25-7-110 and 25-7-110.5., C.R.S., and the Air Quality Control Commission’s (“Commission”) Procedural Rules, 5 Code Colo. Reg. §1001-1.

Basis

During the 2019 legislative session, Colorado’s General Assembly adopted House Bill 2019-1261 (concerning the reduction of greenhouse gas pollution) (HB 19-1261) amending the legislative declaration in §25-7-102 of the Act, and Senate Bill 2019-096 (concerning the collection of greenhouse gas emissions data) (SB 19-096) creating §25-7-140 of the Act. HB 19-1261 and SB 19-096 both define

greenhouse gas pollution (GHG) as including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆) and nitrogen trifluoride (NF₃).

In HB 19-1261, now codified in part at §§25-7-102(2) and -105(1)(e), C.R.S., the General Assembly declared that “climate change adversely affects Colorado’s economy, air quality and public health, ecosystems, natural resources, and quality of life[,]” acknowledged that “Colorado is already experiencing harmful climate impacts[,]” and that “many of these impacts disproportionately affect” certain disadvantaged communities. § 25-7-102(2), C.R.S. Consequently, the General Assembly updated Colorado’s statewide greenhouse gas pollution (GHG) reduction goals requiring the Commission to implement regulations to achieve a 26% reduction of statewide GHG by 2025; 50% reduction by 2030; and 90% reduction by 2050 as compared to 2005 levels. § 25-7-102(2) (g), C.R.S. To accomplish these important goals the legislature also passed SB 19-096, now codified as §25-7-140, C.R.S., directing the Air Quality Control Commission (Commission) to undertake two phases of rulemaking aimed first at requiring GHG emitters to monitor and report GHG emissions, § 25-7-140(2)(a)(I), C.R.S., and second to implement measures allowing the state to cost-effectively meet its GHG reduction goals. § 25-7-140(2)(a)(III), C.R.S.

With respect to GHG reporting and the statewide inventory, §25-7-140(2)(a)(I), C.R.S., requires the Commission to adopt rules by June 1, 2020, “requiring greenhouse gas-emitting entities to monitor and publicly report their emissions as the Commission deems appropriate to support Colorado’s [GHG] inventory efforts and to facilitate implementation of rules that will timely achieve Colorado’s greenhouse gas emission reduction goals.” Further, §25-7-140(2)(a), C.R.S., requires the Commission to consider what information is already being reported for Colorado under the United States Environmental Protection Agency’s (EPA) current federal GHG reporting rule, otherwise known as the Mandatory Greenhouse Gas Reporting Rule codified in Title 40 CFR Part 98 (Part 98), and tailor new reporting requirements to fill any gaps in data as determined to be appropriate to allow for a comprehensive and robust state GHG inventory.

Section 25-7-140(2)(a)(I), C.R.S., also requires these rules to “include requirements for providers of retail or wholesale electric service in the state of Colorado to track and report emissions from all generation sources within the state and elsewhere that electricity consumption by their customers in this state causes to be emitted.” Section 25-7-105, C.R.S., setting forth the duties of the Commission, also directs development of rules for evaluating how public utilities are meeting obligations under Clean Energy Plans with the Public Utility Commission through considerations of facility ownership and purchased power. Section 25-7-1051(e)(VIII)(E), C.R.S.

Sections 25-7-105(1)(e) and 140(2)(a)(III), C.R.S., further requires the Commission to implement GHG reduction strategies to achieve the reduction goals set forth in §25-7-102(2)(g), C.R.S. HFCs are highly potent GHGs generally used in aerosols, refrigeration and air conditioning, and foam blowing. Phasing out HFCs from most manufacturing processes and end-uses is adopted as a strategy towards accomplishing the mandated GHG reductions.

Regulation Number 22, Parts A and B, Section I. are intended to satisfy the requirements set forth by the General Assembly in §25-7-140(2)(a)(I), C.R.S., with respect to statewide GHG reporting and an initial GHG reduction strategy towards addressing statewide reductions required by §25-7-140(2)(a)(III), C.R.S., and 25-7-105(1)(e), C.R.S., by implementing the phase-out of HFCs in manufacturing and end-use products in Colorado.

Specific Statutory Authority

The Act, specifically §25-7-105(1), C.R.S., directs the Commission to promulgate such rules and regulations as are consistent with the legislative declaration set forth in Section 25-7-102, C.R.S., and that are necessary for the proper implementation and administration of the Act.

Section 25-7-102(2), C.R.S., declares that “climate change adversely affects Colorado’s economy, air quality and public health, ecosystems, natural resources, and quality of life” that reducing GHG is necessary “to limit the increase in the global average temperature” and that “reducing [GHG], Colorado will also reduce other harmful air pollutants, which will, in turn, improve public health, reduce health care costs, improve air quality, and help sustain the environment[.]” Further, §25-7-102(2), C.R.S., declares that reducing GHG will result in economic benefits to Colorado by creating new markets, spurring innovation, and driving investment in low-carbon technologies thus positioning Colorado’s “economy, technology centers, financial institutions, and businesses to benefit from national and international efforts to reduce [GHG.]” § 25-7-102(2)(f), C.R.S.

Section 25-7-106, C.R.S., provides the Commission maximum flexibility in developing an effective air quality program and promulgating such a combination of regulations as may be necessary or desirable to carry out that program. §25-7-106(6), C.R.S., further authorizes the Commission to require owners and operators of any air pollution source to monitor, record, and report emission data and other information as the Commission may require.

Section 25-7-140(2)(a)(I), C.R.S., specifically directs the Commission to, by June 1, 2020, “adopt rules requiring [GHG]-emitting entities to monitor and publicly report their emissions as the commission deems appropriate to support Colorado’s greenhouse gas emission inventory efforts and to facilitate implementation of rules that will timely achieve Colorado’s greenhouse gas emission reduction goals. The commission shall consider what information is already being publicly reported by the federal environmental protection agency and tailor new reporting requirements to fill any gaps in data, as it determines is appropriate, to allow for maintaining and updating state inventories that are sufficiently comprehensive and robust. The rules must include requirements for providers of retail or wholesale electric service in the state of Colorado to track and report emissions from all generation sources within the state and elsewhere that electricity consumption by their customers in this state causes to be emitted. The commission may require emitting entities to report the amount of emissions of each of the seven individual components of greenhouse gases as well as the carbon dioxide equivalent of those emissions.”

Section 25-7-140(2)(a)(III), C.R.S., requires the Commission to implement measures to cost-effectively allow the state to meet its GHG emission reduction goals, which includes reduction of HFCs as potent GHGs. §25-7-105(e), C.R.S., authorizes the Commission to promulgate implementing rules and regulations to achieve statewide GHG emission reduction goals, including emission reduction strategies that have been deployed by another jurisdiction to reduce multi-sector GHG emissions. §25-7-109(2), C.R.S., authorizes the Commission to adopt emission control regulations to reduce emissions of various pollutants, including chemical substances such as HFCs.

Purpose

The following section sets forth the Commission’s purpose in adopting Regulation Number 22, and includes the technological and scientific rationale for the adoption of Regulation Number 22:

Part A: Greenhouse Gas Reporting

Part A has been developed to allow the reporters and the Division to leverage existing EPA reporting tools that are currently used by the majority of sources covered by this regulation, as well as for consistency with other U.S. Climate Alliance states that have implemented GHG reporting regulations. The Division intends to develop a mechanism to receive XML files that are exported from EPA’s electronic GHG reporting tool, known as e-GGRT. The EPA tool can be used by entities with emissions below the federal reporting thresholds to compile, summarize, and export GHG emissions data in the XML file. The information contained in the XML files will then be uploaded into a database for use in future inventories and planning activities. Use of existing EPA reporting tools will allow for the GHG data reporting program in Colorado to begin as expeditiously as possible and minimize the burden on the regulated sources.

Additionally, consistency with EPA and other state data collection programs will be necessary if Colorado joins a regional program at some point in the future and will allow for a smooth transition if additional

federal legislation or regulation is adopted for GHGs. To ensure consistency and allow for comparison with other states, GHG data reporting by the affected sources under Part A, will be performed using the Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report, 100-year time horizon GWP values. Part A covers the collection of the GHG data pursuant to §25-7-140(2)(a)(I), C.R.S., and does not address how that data will be used in the Colorado GHG Inventory or other planning activities. Because the data will be collected for each individual GHG pollutant, the Division will be capable of converting and comparing reported data to CO₂e using other IPCC Assessment Reports' GWP values and/or time horizons as appropriate. The use of the 100-year time frame IPCC 4th Assessment report in these regulations is not intended to convey that those values should be used for planning purposes or are otherwise more appropriate than more recent analysis.

Consistent with the Federal Mandatory Reporting Rule (Part 98), emissions of each GHG constituent, as required and defined in §25-7-140, C.R.S., will be reported in metric tons of CO₂e. Where existing emissions reporting under Colorado regulations is used to meet the obligations of this regulation, emissions will be reported by the source in the unit of measure required by the referenced regulation. In addition, each GHG constituent will be reported individually, enabling the Division to convert reported data using more updated GWP values and/or time horizons, as appropriate, for developing the Colorado GHG inventory or other planning activities. The Division will convert the emissions to metric tons for use in the GHG inventory or other planning activities.

While Part A utilizes the reporting tools and protocols of Part 98, the Division is requiring reporting from certain source categories in Colorado regardless of the related federal reporting threshold in order to obtain a more complete and granular data set to inform the inventory and planning processes. More detailed data will also inform local governments as they pursue their own climate change goals. Source categories required to report all GHG emissions, regardless of reporting thresholds under Part 98, include all electricity generation and distribution (whether subject to PUC jurisdiction under § 40-1-103, C.R.S., or not), local distribution companies, industrial waste landfills, active underground coal mines, and industrial wastewater facilities.

GHG emissions reporting for oil and natural gas operations and equipment at or upstream of a natural gas processing plant and natural gas transmission and storage covered under Section III.C. will be gathered in accordance with Commission Regulation Number 7. These reporting requirements and protocols fill gaps in the federal reporting requirements by expanding the facilities required to report as well as the data reported under Regulation Number 7, Part D, Sections IV. and V. As such, the Commission recognizes that information reported under Regulation Number 7 may differ from that reported under Part 98 as the inventory required under Regulation Number 7 is more comprehensive, detailed and takes into account information relevant to Colorado operators.

Under Part A, suppliers engaged in activities covered by Subparts LL, MM, NN, OO, PP, and QQ of Part 98 are required to report GHGs based upon the quantity that would be associated with combustion or use of the products supplied. This differs from other reporting under Part 98 since the reported data does not always reflect a direct emission. Suppliers covered by Subparts LL (coal-to-liquid suppliers), MM (petroleum product suppliers), and NN (natural gas and natural gas liquids) report the GHGs that would result from total combustion or release of the product being supplied. The information obtained through these reports is important to developing a comprehensive statewide GHG inventory, however the nature of the data requires special attention to account for the type of supply and locus of GHG emissions, if any. For instance, under Subpart PP, carbon dioxide suppliers report carbon dioxide that is produced by mass, and not as emissions. The Commission acknowledges that carbon dioxide supply may not always equate directly to GHG emissions because it is not combusted by an end user and may not be released into the atmosphere depending on its end use. Likewise, Subpart NN suppliers are required to assume that all fractionated products are combusted as fuel despite the fact that a substantial quantity of those products are not combusted but used as chemical feedstocks. In fact, EPA's technical support document for Subpart NN indicates that fuel uses make up just under 30% of total natural gas liquids (NGL) product sales. As a result, the reporting under Subpart NN does not necessarily equate entirely to GHG emissions as provided in a Part 98 report. Thus, the Division will be required to analyze if and how GHGs

reported from these source categories are properly included in the statewide GHG inventory and reduction efforts.

EPA made advance determinations that certain elements of Part 98 reports are subject to federal Confidential Business Information (CBI) protections and has published those determinations at <https://www.epa.gov/ghgreporting/confidential-business-information-ghg-reporting> (updated April 8, 2020). As part of submissions pursuant to Part A, Section IV.B., a statement that the entity is following EPA's guidelines for Part 98 with respect to designation of information as CBI in the certification statement under Section IV.B.6. shall satisfy the company's obligation to identify information in the report as CBI. The Commission does not, however, intend that such statements be determinative of whether the information is CBI under Colorado law, but expects that information will be made available as required and permitted by the Colorado Open Records Act.

A significant gap in GHG reporting that is imperfectly captured by Part 98 relates to fuel supplied, consumed, and combusted in the state. While reporting from local distribution companies and suppliers required to report under Part A provide important pieces of the fuel supply chain, end-uses including where the fuel is actually combusted, such as in-state or out-of-state, are more difficult to accurately account for. Thus, the Division will utilize other sources of information to fill gaps necessary to fully inform the statewide GHG inventory related to the end use and combustion location of fuels. To accomplish this, the Division may use sources including, but not limited to, the Energy Information Administration's "prime supplier" reporting through its EIA-782C form and information obtained from the Colorado Department of Revenue regarding fuel distributors.

Having considered all relevant factors, including but not limited to, current federal GHG reporting under Part 98, statutory requirements under §§24-4-103(2.7) and 29-1-304.5, C.R.S., and feedback from stakeholders, the Commission has decided to provide for optional GHG reporting from domestic wastewater plants and active municipal solid waste landfills not otherwise required to report under Part 98.

Any facilities or operations for which GHG reporting is optional should report in accordance with the protocols and deadlines set forth in Part A, Sections III and IV. In doing so, these facilities and operations will enable the Commission to establish a more robust statewide GHG inventory and better inform future reduction strategies. The Commission recognizes the lack of universally accepted GHG calculation or reporting protocols for some voluntary reporting source categories, such as domestic wastewater treatment plants and agricultural operations. The Division will continue to consult with potential voluntary reporters in these categories to reach consensus on appropriate and acceptable protocols for reporting purposes.

For domestic wastewater treatment plants at Part A, Section III.B.8., examples of such protocols may include the "U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions" (Version 1.2, July 2019), at Appendix F: Wastewater and Water Emission Activities and Sources, published by ICLEI: Local Governments for Sustainability, and protocols developed by the IPCC or based on IPCC protocols. The Division expects that all direct GHG emissions from a domestic wastewater treatment plant will be calculated and reported by a voluntary reporter.

For an agricultural operation identified in Part A, Section III.A.9., examples of such protocols may include those specified in Subpart JJ of 40 CFR, Part 98 and developed by the IPCC and the U.S. Department of Agriculture (USDA) for the sector.

Part A will also quantify the GHG emissions associated with electricity imported into Colorado, as required by §25-7-140(2)(a)(I), C.R.S., and which is not covered by the federal mandatory reporting under Part 98 data submissions. This will be accomplished by requiring subject entities to submit supplemental data including generation, wholesale and retail sales, and emissions information to the Division, as appropriate for the business activities conducted in Colorado by the entity. The supplemental data form will be developed through a stakeholder process led by the Division. The reporting form is intended to consolidate data already collected by or available to the entities for business or other regulatory purposes

(i.e. contracts, internal tracking requirements, Energy Information Administration reporting, Public Utility Commission reporting, etc.) into a single reporting process so that the Division can document emissions associated with total electricity consumption in Colorado. The reporting form will include methodologies for determining GHG emissions when the generation source of the energy is unknown, which can occur through various market transaction mechanisms. Quantification of GHG emissions associated with electricity exported from Colorado will also be accomplished through the use of the form because understanding the complete energy flow through the transmission and distribution system is necessary to determine energy consumed in Colorado. Direct reporting of this information using a consistent form, rather than relying on summaries provided through the Department of Energy or other sources, will provide necessary completeness and granularity of the data for state and local GHG strategy development. Additionally, direct reporting to the Division will also allow for more timely incorporation into the Colorado GHG Inventory process and more detailed analysis and trending to assess the progress toward achieving the statewide GHG reduction goals.

Subpart A will also establish ongoing reporting for utilities that have received approval of a Clean Energy Plan by the Public Utilities Commission. Tracking of GHG reduction progress achieved by these plans will inform development, assessment, and refinement of strategies to achieve the statewide GHG targets.

Sources of Sulfur Hexafluoride (SF6) owning or operating electrical transmission and distribution equipment facilities located in more than one state that calculate SF6 emissions on a system-wide basis for recordkeeping and reporting under EPA's Part 98 may determine its Colorado SF6 emissions by estimating the Colorado portion of its system-wide emissions based on the percentage of its total transmission line miles that exist in Colorado.

Given recent and ongoing deregulation efforts by the federal government, and especially those focused on air quality and climate change, the Commission finds it necessary to protect Colorado's regulatory regime in these areas from potential federal deregulation or rollbacks. This must be balanced with the legislative directive in § 25-7-140(2)(a)(I), C.R.S., to "consider what information is already being publicly reported by the [EPA,]" which the Commission is doing by leveraging Part 98 reporting and tools available thereunder, including e-GGRT. In doing so, the Commission is cognizant that these programs and tools are subject to change in ways that may either improve or diminish their utility for Colorado's GHG emission reporting and inventory efforts. By incorporating by reference Part 98 and its related subparts as they are effective July 1, 2019, and by referencing applicable provisions of Part 98 in Part A, Sections III.A. and B of this Regulation Number 22, the Commission intends to protect against potential federal rollbacks by specifying those currently subject to federal GHG reporting will continue to report under the federal requirements as they currently stand in the event the federal GHG reporting rules are revised or rescinded. Should the EPA indicate, through public notice or otherwise, an intent in any way diminish or rollback the requirements of Part 98, its related subparts, or associated tools, including but not limited to e-GGRT, the Commission and Division will endeavor to promptly establish reporting requirements and tools necessary to maintain the GHG reporting and inventory regime adopted in this Regulation Number 22, Part A. However, the Commission also recognizes that some future changes might enhance GHG reporting, so the Commission may also choose to update the incorporation date if those future revisions align with and advance Colorado's goals

Part B, Section I.: Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End-Uses

The federal EPA adopted two rules under its Significant New Alternatives Policy (SNAP), Rule 20 in July 2015, and Rule 21 in December 2016, which require phasing out the use of high-GWP HFCs in retail and residential refrigeration and air conditioning (AC), aerosol products, and rigid and spray foam end-uses. Under SNAP Rule 20, the compliance dates for eliminating unacceptable HFCs ranged from July 2016 to January 2022, depending on the application. The compliance dates under SNAP Rule 21 ranged from January 2017 to January 2025. In August 2017, the D.C. Circuit of the United States Court of Appeals vacated SNAP Rule 20 to the extent it requires manufacturers to replace HFCs with a substitute substance finding the EPA had exceeded its authority under Section 612 of the Clean Air Act (42 U.S.C. § 7671k). However, the D.C. Circuit found that EPA's removal of HFCs from the list of safe substitutes

under SNAP was lawful thus enabling the EPA to prohibit or limit prospective use of HFCs in manufacturing and end uses. Yet, in 2018, EPA guidance advised that it would not be enforcing SNAP Rule 20 until it developed new rules based on the D.C. Circuit's ruling, which has not occurred. In April 2019, the D.C. Circuit vacated SNAP Rule 21 to the same extent and on the same grounds as SNAP 20.

Absent federal enforcement regulating use of these highly potent GHGs, individual states have adopted, or are in the process of adopting, statutes and regulations phasing out the use of HFCs in manufacturing and end-use products. The U.S. Climate Alliance has drafted a model framework to promote uniformity of HFC regulation across member states. Part B., Section I. is based upon the U.S. Climate Alliance's model framework as are proposed HFC rules under consideration in other states.

Based on stakeholder feedback and significant economic impacts, the Commission adopted an alternative requirement for positive displacement chillers that differs from the U.S. Climate Alliance's model framework. The purpose of this provision is to address GHG emissions associated with use of prohibited high-GWP HFCs in the manufacture of positive displacement chillers in lieu of phasing out the use of these HFCs in chillers destined for sale or installation outside of Colorado or other states with similar HFC prohibitions. This alternative approach requires GHGs associated with the use of prohibited high-GWP HFCs in this specific manufacturing process to be mitigated through best management practices at the manufacturing facility and any remaining emissions to be addressed through GHG reduction projects completed in the State of Colorado. Positive displacement chillers manufactured for sale or installation in Colorado after the January 1, 2024 prohibition date will still be restricted from using prohibited HFCs.

The Division, in considering emission reduction projects under Section I.C.3.a.(v), will give preference to projects that have environmental co-benefits or benefits to the local community. While projects can include those developed or owned by the manufacturer, such projects must be additional to any efforts planned or undertaken as part of an overall GHG emissions reduction program the manufacturer may have and must not be projects or activities that would be carried out in the ordinary course of business.

Additionally, based on public comment and stakeholder feedback, Part B., Section I. differs from the U.S. Climate Alliance's model framework in the treatment of bear spray and law enforcement pepper spray. These two products in the aerosol-propellant category have been exempted in Part B., Section I.

Additional Considerations

The following are additional findings of the Commission made in accordance with the Act:

Section 25-7-110.5(5)(b), C.R.S.

As these revisions exceed and may differ from the federal rules under the federal act, in accordance with § 25-7-110.5(5)(b), C.R.S., the Commission determines:

(1) Any federal requirements that are applicable to this situation with a commentary on those requirements;

Part A: In order to improve the nationwide inventory of GHG emissions, Part 98 sets forth the federal GHG reporting requirements for qualifying source categories in accordance with the Federal Clean Air Act. The Subparts to Part 98 establish the reporting protocols and methodologies for each source category. Part 98 effectively establishes three groups of source categories required to report annual GHG emissions: sources required to report regardless of emission volumes; sources only required to report if emissions meet or exceed specified thresholds (generally 25,000 metric tons of CO₂e in combined emissions from stationary sources); and fuel suppliers that import or export product equivalent to 25,000 metric tons of CO₂e or more. Through Part A the Commission builds upon established federal reporting requirements and closes reporting gaps by eliminating reporting thresholds for certain sources and

expanding certain other source categories to report GHG emissions in order to establish a more robust and accurate GHG inventory for Colorado.

Part B., Section I.: To the extent Part B., Section I. requires manufacturers to replace HFCs, there are no applicable federal requirements as a result of the D.C. Circuit Court's vacature of SNAP Rules 20 and 21 and EPA's lack of progress in further regulating HFCs. To the extent that Part B., Section I. prohibits or restricts prospective uses of prohibited HFCs (phases out), it does not conflict with any applicable current federal regulations.

(II) Whether the applicable federal requirements are performance-based or technology-based and whether there is any flexibility in those requirements, and if not, why not;

Part A: There are no control requirements associated with the Part A GHG reporting rule.

Part B., Section I.: To the extent SNAP Rules 20 and 21 remain in effect and are enforceable, the federal HFC rules are primarily technology-based in that the rules largely proscribe or severely limit the use of HFCs in certain manufacturing processes and end-uses thus requiring substitution or replacement with lower GWP substances.

(III) Whether the applicable federal requirements specifically address the issues that are of concern to Colorado and whether data or information that would reasonably reflect Colorado's concern and situation was considered in the federal process that established the federal requirements;

Part A: Colorado's General Assembly has determined that climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life and that reducing statewide GHG emissions can mitigate these impacts. § 25-7-102, C.R.S. While the EPA also indicated that its "mandatory GHG reporting program [set forth in Part 98] will provide EPA, other government agencies, and outside stakeholders with economy-wide data on facility-level (and in some cases corporate-level) GHG emissions," § 25-7-140, C.R.S. explicitly requires the Commission to adopt GHG reporting requirements to fill any gaps in the federal reporting requirements. To the extent that reporting under 40 CFR Part 98 establishes adequate GHG reporting to satisfy this legislative directive, those requirements and reporting protocols have been adopted. To the extent that the Commission has determined certain source categories may be underreporting due to reporting thresholds or exemptions of certain source categories, those thresholds or exemptions have been eliminated. Additionally, Part A establishes new reporting requirements for certain source categories for which there are no federal reporting requirements.

Part B., Section I.: To the extent Part B., Section I. requires manufacturers to replace HFCs, there are no current applicable federal requirements as contemplated in this regulation. As a result of the D.C. Circuit Court's vacature of SNAP Rules 20 and 21 and EPA's lack of progress in further regulating HFCs, there are no current applicable federal requirements relating to the phase-out of HFCs as contemplated in this regulation. To the extent that Part B., Section I. prohibits or restricts prospective uses of prohibited HFCs (phases out), it does not conflict with any current applicable federal regulations.

(IV) Whether the proposed requirement will improve the ability of the regulated community to comply in a more cost-effective way by clarifying confusing or potentially conflicting requirements (within or cross-media), increasing certainty, or preventing or reducing the need for costly retrofit to meet more stringent requirements later;

Part A: Part A will maintain reporting requirements for facilities already required to report under Part 98 and will require additional facilities to report under reporting protocols either set forth in Part 98 and related subparts or under state reporting requirements already in place (i.e. oil and natural gas operations reporting under Regulation Number 7). By leveraging existing protocols and reporting procedures, Part A minimizes inefficiencies while still accomplishing the legislative mandate set forth in § 25-7-140, C.R.S.

Part B., Section I: To the extent Part B., Section I. requires manufacturers to replace HFCs, there are no applicable federal requirements as contemplated in this regulation. As a result of the D.C. Circuit Court's partial vacature of SNAP Rules 20 and 21 and EPA's lack of progress in further regulating HFCs, there are no current applicable federal requirements relating to the phase-out of HFCs as contemplated in this regulation. However, Part B., Section I imposes restrictions on the same substances as those restricted under SNAP Rules 20 and 21 with which the regulated community had already started to comply before those rules were vacated. Absent federal progress in regulating use of these highly potent GHGs, individual states have adopted, or are in the process of adopting, statutes and regulations phasing out the use of HFCs in manufacturing and end-use products. The U.S. Climate Alliance has drafted a model framework to promote uniformity of HFC regulation. Part B., Section I. is based upon the U.S. Climate Alliance's model framework as are proposed HFC rules under consideration in other states. This consistency is intended to improve the regulated community's ability to comply in a more cost-effective manner.

(V) Whether there is a timing issue which might justify changing the time frame for implementation of federal requirements;

Part A: The March 31 annual reporting deadline is the same under Regulation Number 22 and Part 98 for all reporters. Regulation Number 22 does not affect federal GHG reporting requirements for those sources subject to federal reporting requirements. With respect to any sources required to report under Regulation Number 22 but not under federal requirements, there is no timing issue related to implementation of any federal requirements.

Part B., Section I.: To the extent Regulation Number 22, Part B., Section I., requires manufacturers to replace HFCs, there are no applicable federal requirements as a result of the D.C. Circuit Court's vacature of SNAP Rules 20 and 21 and EPA's lack of progress in further regulating HFCs. To the extent that Regulation Number 22, Part B., Section I., prohibits or restricts prospective uses of prohibited HFCs (phases out), there are no timing issues that justify changing the time frame for implementation of any federal requirements.

(VI) Whether the proposed requirement will assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth;

Part A: Part A's annual GHG reporting requirements are retrospective in that they are a report of past emissions and therefore are not subject to uncertainty and do not hinder or negatively affect future growth of facilities required to report past emissions.

Part B., Section I.: The HFC phase-out in Part B., Section I. allows a reasonable time to comply and permits the substitution of lower-GWP substances or retrofit of components. As such, affected businesses or industrial sectors are afforded a reasonable margin for accommodation of uncertainty and future growth.

(VII) Whether the proposed requirement establishes or maintains reasonable equity in the requirements for various sources;

Part A: With respect to any sources already required to report GHG emissions under the federal reporting requirements, Part A, maintains reasonable equity as reporting requirements are the same for each source type. With respect to any sources newly required to report GHG emissions under Part A, the rule establishes reasonable equity as reporting requirements are the same for each source type.

Part B., Section I.: Part B., Section I., phases-out the use of HFCs across specific end-uses and manufacturing processes, with only limited exemptions or alternative compliance requirements. Reasonable equity is established among these end-uses and processes by use of phase-out dates that are the same as those determined to be achievable with industry input in the development of the SNAP rules and the U.S. Climate Alliance's model framework. Part B., Section I. was also based upon the U.S.

Climate Alliance's model framework to allow those subject to the rule to avoid varying requirements across states to the extent possible while still addressing the serious climate change impacts these substances present.

(VIII) Whether others would face increased costs if a more stringent rule is not enacted;

Part A: No, it is not anticipated there would be increased direct costs to others if a more stringent rule is not enacted.

Part B., Section I.: The legislature has acknowledged that climate change impacts Colorado's economy and directed that GHG emissions should be reduced across the many sectors of our economy. Colorado has established specific GHG reduction goals. A more stringent HFC rule could achieve additional GHG reductions. Reductions not achieved in one sector will require measures in other sectors of the economy to achieve the state's GHG reduction goals. The HFC rule is drafted to strike a balance between the costs to the entities impacted under the rule and further measures that will need to be utilized in other sectors of the economy.

(IX) Whether the proposed requirement includes procedural, reporting, or monitoring requirements that are different from applicable federal requirements and, if so, why and what the "compelling reason" is for different procedural, reporting, or monitoring requirements;

Part A: Reporting requirements beyond those required under federal Part 98 are necessary to effectively quantify and measure Colorado's progress toward statewide GHG reductions and to achieve the public health, safety and welfare goals set forth in § 25-7-102, C.R.S., Section 25-7-140(2)(a)(I), C.R.S., dictates that the Commission tailor new [GHG] reporting requirements to fill any gaps in the existing federal reporting requirements and "allow for maintaining and updating state inventories that are sufficiently comprehensive and robust."

Through Part A, the Division proposes building upon established federal reporting requirements and closes reporting gaps by lowering or eliminating reporting thresholds for certain sources, expanding certain other source categories, and requiring new source categories to report GHG emissions in order to establish a more robust and accurate GHG inventory for Colorado. Filling gaps in emission data from those select sources not otherwise required to report under Part 98 in order to more accurately determine statewide GHG emissions and develop reduction strategies is a compelling reason to expand the reporting requirements. Additionally, under Part A, Section IV.C., electric service providers and electric utilities will be required to submit supplemental data necessary to verify GHG emissions attributable to imported and exported electricity and to verify plans submitted to the Public Utilities Commission. Under this requirement, owners and operators of these sources will be required to compile and report directly to the Division information collected by or available to them for business or other regulatory purposes. While this may overlap with some other federal reporting requirements, it is expected there will be reporting beyond what is required federally.

Part B., Section I: To the extent Part B., Section I., requires manufacturers to replace HFCs, there are no current applicable federal requirements as a result of the D.C. Circuit Court's vacature of SNAP Rules 20 and 21 and EPA's lack of progress in further regulating HFCs.

(X) Whether demonstrated technology is available to comply with the proposed requirement;

Part A: Part A maintains reporting requirements for facilities already required to report under Part 98 and will require additional facilities to report under reporting protocols either set forth in Part 98 and related subparts or under state reporting requirements already in place (i.e. oil and gas operations). Demonstrated technology exists to enable compliance with the reporting requirements of Regulation Number 22.

Part B., Section I.: Yes, non-HFC replacements with significantly lower GWP are generally available and widely used in manufacturing processes and end-uses phased out in Part B., Section I.

(XI) Whether the proposed requirement will contribute to the prevention of pollution or address a potential problem and represent a more cost-effective environmental gain;

Part A: Under Part A the Commission will develop a sufficiently comprehensive and robust GHG inventory to enable and inform future implementation strategies to cost-effectively reduce statewide GHG emissions to meet the legislative directive of § 25-7-102(2)(g), C.R.S.

Part B., Section I: The General Assembly has acknowledged that climate change impacts Colorado's economy and directed that GHG emissions should be reduced across the many sectors of our economy. Colorado has established specific GHG reduction goals. HFCs are a highly potent GHG such that small volumes of reduction can affect significant reductions of GHG emissions measured in CO₂e. A more stringent HFC rule could achieve additional GHG reductions. Reductions not achieved in one sector will require compensating measures in other sectors of the economy to achieve the state's GHG reduction goals. Part B., Section I. is drafted to strike a balance between the costs to the entities impacted under the rule and further measures that will need to be utilized in other sectors of the economy.

(XII) Whether an alternative rule, including a no-action alternative, would address the required standard.

Part A: Section 25-7-140, C.R.S., does not permit a no-action alternative and requires the Commission to adopt GHG reporting regulations "to allow for maintaining and updating state inventories that are sufficiently comprehensive and robust." Further, the statute requires the rules "include requirements for providers of retail and wholesale electric service in the state of Colorado to track and report emissions from all generation sources within the state and elsewhere that electricity consumption by their customers in this state causes to be emitted." While alternative requirements could address these mandates, the Commission has determined that the proposed reporting requirements are appropriate to establish statewide progress towards the GHG emission reduction goals mandated by the General Assembly in Section 25-7-102, C.R.S. To the extent alternative reporting thresholds and source categories were considered, they were determined to be inadequate to satisfy the directives set forth in § 25-7-140, C.R.S.

Part B., Section I.: Sections 25-7-105(1)(e) and -140(2)(a)(III),, C.R.S., require the Commission to implement GHG emission reduction strategies in order to accomplish the statewide GHG emission reduction goals set forth in § 25-7-102(g), C.R.S. HFCs are a highly potent GHG such that small volumes of reduction can affect significant reductions of GHG emissions measured in CO₂e. A more stringent HFC rule could achieve additional GHG reductions. Reductions not achieved in one sector will require compensating measures in other sectors of the economy to achieve the state's GHG reduction goals. Part B, Section I. rule is drafted to strike a balance between the costs to the entities impacted under the rule and further measures that will need to be utilized in other sectors of the economy. While the General Assembly has not explicitly required implementation of an HFC phase-out as a reduction strategy and therefore a no-action alternative is possible, given the statewide reduction goals and the potency of HFCs, no action on HFCs would require more stringent measures in other sectors in order to achieve the same GHG reductions.

Section 25-7-110.8, C.R.S.

To the extent that the § 25-7-110.8, C.R.S., requirements apply to this rulemaking, and after considering all the information in the record, the Commission hereby makes the determination that:

(a) These rules are based on reasonably available, validated, reviewed, and sound scientific methodologies and all validated, reviewed, and sound scientific methodologies and information made available by interested parties has been considered.

(b) Evidence in the record supports the finding that the rule shall result in a demonstrable reduction in emission of HFCs and will enable the Commission to establish sufficiently comprehensive and robust inventories of GHGs as required by § 25-7-140, C.R.S.

(c) Evidence in the record supports the finding that the rule shall bring about reductions in risks to human health and the environment that will justify the costs to government, the regulated community, and to the public to implement and comply with the rule.

(d) The rules are the most cost-effective to achieve the necessary and desired results and reduction in air pollution.

(e) The rule will maximize the air quality benefits of regulation in the most cost-effective manner.

Section 25-7-105(1)(e), C.R.S. - Statewide GHG Pollution Abatement

To the extent that the § 25-7-105(1)(e), C.R.S., requirements apply to this rulemaking, and after considering all the information in the record, the Commission hereby makes the determination that:

Any impacts to disproportionately impacted communities and (IV) Coordination with other state agencies, stakeholders, and the public:

The Commission carefully considered the concerns of and potential impacts on communities disproportionately impacted by climate change in the following ways:

Stakeholder engagement: The Division provided multiple ways for the public, local governments, industry, environmental groups, and other stakeholders to provide comment during the development of the proposed rules. Opportunities for input included email, remote stakeholder meeting participation, and in-person meeting participation. Public stakeholder meetings were held from early afternoon until after 6pm in both Denver and Glenwood Springs, to maximize access for working and busy individuals. Language interpretation services for stakeholder meetings were made available (though none were requested during this process).

Potential economic impacts: The Division conducted outreach to determine potential impacts to disproportionately impacted communities for Parts A and B., Section I. With respect to Part A, impacts on local governments and small rural operations were significant considerations in determining whether to require mandatory GHG reporting from domestic wastewater treatment facilities and municipal solid waste landfills with emissions below the reporting threshold in 40 CFR Part 98. Ultimately, in this rulemaking the Commission elected against mandatory reporting from these source categories, but to allow voluntary reporting. While more robust GHG data has the potential to enhance local climate efforts and ultimately reduce a variety of negative impacts on Colorado's communities, the Division recognizes that providing data can represent an administrative burden, particularly for small operations with fewer staff and serving smaller communities. For both domestic wastewater treatment and municipal solid waste landfill emissions (below the 40 CFR Part 98 threshold) reporting, the Division identified available reporting protocols to minimize the burden of the reporting process for any sources wishing to report voluntarily. In addition to public comments, the Division considered stakeholder comments from organizations representing local governments, local wastewater districts and the Wastewater Utility Council, and conducted outreach to the Solid Waste Association of North America's Colorado Chapter in the drafting of the proposed GHG reporting rule.

For Part B., Section I., Division outreach efforts sought to determine if any manufacturers (large or small) of equipment or small niche end-uses that might be impacted by the proposed HFC reduction rule exist in the state. Based on discussions with industry partners and trade groups, as well as online research and communication with the Colorado Department of Labor & Employment (CDLE), the Division was able to confirm that Trane has a chiller manufacturing facility in Pueblo, Colorado that employs approximately 500 individuals. The potential impacts of Part B., Section I. on this facility and area jobs was carefully

considered in the development of Part B, Section I. and the Commission has adopted an innovative solution to protect these important jobs while also achieving necessary climate benefits. Accordingly, the Commission has determined that the HFC-phase out in Part B., Section I. will not result in an accumulation of negative or lack of positive environmental, health, economic, or social conditions in a manner that disproportionately impacts certain communities within the state.

Coordination with other jurisdictions:

Absent federal enforcement regulating HFCs, individual states have adopted, or are in the process of adopting, statutes and regulations phasing out the use of HFCs in manufacturing and end-use products. The U.S. Climate Alliance has drafted a model framework to promote uniformity of HFC regulation. Part B., Section I. is based upon the U.S. Climate Alliance's model framework as are draft rules under consideration in other states.

Additional Considerations:

Having considered all relevant information in the record and those factors set forth in § 25-7-105(1)(e)(VI), C.R.S., the Commission has determined that Parts A and B., Section I. are appropriate measures necessary to implement statewide GHG pollution abatement. The Commission concludes that GHG reporting in Part A and the HFC phase-out in Part B., Section I. will either directly result in health, environmental, and air quality benefits or otherwise enable the Commission and General Assembly to better regulate GHG emissions in the future through a more robust inventory. Furthermore, based on the Division's Final Economic Impact Analysis, the costs of compliance with Parts A and B., Section I. and any negative impacts to Colorado's jobs and economy are considerably outweighed by these benefits. Based on the Division's analysis, Part B., Section I. is anticipated to result in statewide GHG reductions in Colorado of about 560 thousand metric tons CO₂e in 2025 and 1.15 million metric tons CO₂e in 2030. Additionally, as these regulations will lower GHG emissions and the General Assembly has determined that reducing GHG emissions will result in economic and jobs growth by creating new markets, spurring innovation, and driving investments in low-carbon technologies. The time necessary for compliance under Parts A and B., Section I. reflect consideration of existing state and federal requirements as well as feedback from stakeholders. As described in significant detail above, Part A will enable the Commission to better inventory analyze statewide GHG emission sources across diverse sectors and sources by utilizing existing federal reporting requirements in 40 CFR Part 98 and also expanding those requirements. Parts A and B., Section I. are therefore determined to be appropriate and cost-effective.