

Errata and Clarifications

METHODOLOGY FOR THE QUANTIFICATION, MONITORING, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSION REDUCTIONS AND REMOVALS FROM ADVANCED REFRIGERATION SYSTEMS

VERSION 3.0

2026-10-12

This Errata and Clarifications document is supplemental to the ACR Methodology *Advanced Refrigeration Systems, Version 3.0* (“the Methodology”) and applies to all projects registered under the Methodology. Each erratum and clarification contained herein is effective as of its posting date listed below. This document may be updated as supplemental information or clarifications are needed. Project Developers and Verification Bodies shall adhere to the errata and clarifications when implementing projects and conducting verification activities.

1. Erratum: Eligibility for Projects in California (2025-06-18)

This erratum adds the following new subsection **I.F.** to Chapter 2 (Eligibility Conditions) requiring projects in California to exceed regulatory requirements (Prohibitions on Use, 2021) for companies with refrigeration facilities to achieve increasingly lower company-wide GWP targets by the end of 2026 and the beginning of 2030, respectively. These additions ensure that projects exceed the 2026 GWP targets through limiting the period for which those projects are eligible from the effective date of the regulation through one year before the first GWP target deadline and limiting eligibility to facilities for which the company has already achieved the first GWP target. For the second GWP target deadline of 2030, limiting eligibility (starting in 2026, or one year before the first deadline) to facilities for which the company has already achieved the stricter GWP target ensures regulatory additionality.

“F. For projects with a vintage year of 2022–2025 in California, the following projects are eligible only if they meet one or more of criteria **A.** through **D.** (above) *and* they meet one of the following requirements:

- Occur at a facility owned or operated by a company owning and operating <20 retail food facilities in California, or
- Occur at a facility owned or operated by a company owning or operating ≥20 retail food facilities in California, or a facility owned or operated by a national supermarket chain

operating in California, if the company has already achieved a company-wide weighted-average GWP <2,500 or a ≥25% reduction in greenhouse gas potential below the company's 2019 baseline GWP potential.

For projects with a vintage year of 2026 and after in California, projects are eligible only if they meet one or more of criteria A. through D. (above) *and* the company owning or operating the facility has already achieved a company-wide weighted-average GWP <1,400 or achieved a ≥55% reduction in greenhouse gas potential below the company's 2019 baseline GWP potential.”

For the purpose of demonstrating compliance with California eligibility requirements, the definitions for several terms used above are also added to the Definitions section of the Methodology:

Baseline GHG potential	The greenhouse gas potential (GHGp) of a company's retail food facilities at the end of calendar year 2019. The baseline GHGp will be revised when any of the following occur: (1) Retail food facilities that are sold or transferred will be removed from the baseline GHGp. (2) Acquired retail food facilities will be added to the baseline GHGp using their 2019 GHGp levels, and the current GHGp of acquired stores will be used to calculate the current GHGp. This definition applies to projects in California.
California refrigeration equipment	Any stationary device in California that is designed to contain and use refrigerant gas, including cold storage warehouses, retail food refrigeration, and Remote-Condensing Units. For a device with multiple independent circuits, each independent circuit is considered a separate article of equipment.
Greenhouse gas potential (GHGp)	$GHGp = \sum (Charge \times GWP)$ Where: $\sum$ is the sum of the products of charge (in pounds) multiplied by the GWP for each separate type of refrigerant. This definition applies to projects in California.
National supermarket chain	A retail food chain, brand name, or business operating more than 100 retail food facilities in the United States.
Retail food facility	A facility that sells food and uses at least one retail food refrigeration equipment unit or refrigeration system with >22.7 kg of a refrigerant with a GWP value of 150 or greater. This includes supermarkets, grocery stores, and all other food merchandising stores. This definition applies to projects in California.

Weighted-average GWP

$\Sigma (\text{charge} \times \text{GWP}) / \Sigma \text{charge}$, where: charge (in pounds) = charge of each separate type of refrigerant, refrigerant blend, or heat transfer fluid used in California refrigeration equipment and systems. Σ in the numerator is the sum of the products of charge (in pounds) multiplied by the GWP for each separate type of refrigerant. Σ in the denominator is the sum of all pounds of refrigerant charge in all California refrigeration equipment with more than 50 pounds of refrigerant.

This erratum also adds the following requirements to Chapter 7 (Monitoring and Data Collection) of the Methodology.

- For projects in California, the following information reported to the California Air Resources Board (CARB), or required by CARB to be retained by the company owning the facility, pursuant to section 95375(d) (Prohibitions on Use, 2021) for each relevant company and vintage year as proof of attaining the requirements outlined in Chapter 2, section I.F.:
 - ◆ The business names and addresses of all retail food facilities located in California owned by the company;
 - ◆ The company's weighted-average GWP or GHGp, depending on which value was used to demonstrate eligibility pursuant to Chapter 2, section I.F.; and
 - ◆ The calculations and/or spreadsheets used to calculate the company's weighted-average GWP or GHGp (including the GHGp for 2019), depending on which value was used to demonstrate eligibility pursuant to Chapter 2, section I.F.

2. Erratum: Eligibility for Projects in New York and Washington (2025-06-18)

This erratum adds the following new subsection I.G. and section VIII. to Chapter 2 (Eligibility Conditions) regarding projects in New York and Washington to conform to regulatory requirements from Hydrofluorocarbon Standards (2024) and Hydrofluorocarbons and Other (2023):

- G. All new projects in New York state for which the refrigerant charge capacity is ≥ 90.7 kg are only eligible through vintage year 2025.^{3a}

The following activities are only eligible in New York through vintage year 2033:^{3b}

- Replacement and additional Large Commercial Refrigeration
- New Large Commercial Refrigeration facility with refrigerant charge capacity < 90.7 kg
- Replacement and additional Remote Condensing Units

^{3a} Starting in 2026, New York requires the use of ultra-low-GWP refrigerants in systems with charge capacities of 200 lb. (90.7 kg) and above (Hydrofluorocarbons and Other, 2023).

^{3b} Starting in 2034, New York requires the use of ultra-low-GWP refrigerants in these applications and system charge capacities (Hydrofluorocarbons and Other, 2023).

- New Remote Condensing Units with refrigerant charge capacity <90.7 kg
- All refrigerated food processing and dispensing equipment projects.

As noted in the definition for “retrofit or retrofit project,” starting with vintage year 2026, retrofit projects in New York are subject to the same eligibility and baseline GWP requirements as replacement and additional projects. Starting in vintage year 2025, projects in New York state are eligible only if they are *not* required by section 494-2.5 (Hydrofluorocarbon Standards 2024) to retire or retrofit the equipment^{3c} previously installed at that location.

...

- VIII. Starting in vintage year 2025, retrofit and replacement projects in New York state are eligible only if they are *not* required by section 494-2.5 (Hydrofluorocarbon Standards 2024) to retrofit or replace the equipment^{3c} previously installed at that location, and retrofit and replacement projects in Washington state are eligible only if they are *not* required by WAC 173-443-175 (Hydrofluorocarbons and Other, 2023) to retrofit or replace the equipment^{3c} previously installed at that location.

^{3c} On the basis of a refrigerant leak that has not been successfully repaired

3. Erratum: Table 6 (2025-06-18)

This erratum updates Table 6 to provide annual amortized emission rate values for projects in New York and Washington that align with regulatory leak detection and leak fix requirements (Hydrofluorocarbon Standards, 2024, and Hydrofluorocarbons and Other, 2023, respectively). Both New York and Washington adopted requirements for refrigeration facilities to install automated leak detection systems that can detect leaks down to a threshold of 50 lb. (22.7 kg) or 10%, whichever is less. The regulations additionally require facilities to fix these leaks within specified periods. Though the regulations phase in the installation of these leak detection systems over several years (2024–2028 for Washington, 2025–2028 for New York) depending on the charge size of the system (with larger systems being required to install them first and increasing smaller systems in later years), to ensure conservative emissions reduction calculations and for ease of implementation, this methodology implements the resulting annual amortized emission rates for all system sizes as of 2024, which is the first year that the rates are implemented in either state.

The annual amortized emission rates for Large Commercial Refrigeration: retail food refrigeration in Table 6 are also updated to simplify the table and implementation of Methodology calculation. The use of two different annual amortized emission rates for HFC refrigerants (with different vintage years) is replaced with the more conservative of the two values, and because the annual amortized emission rate for ODS refrigerants is the same as the updated annual amortized emission rate for HFC refrigerants (both 21%), the separate categorization for ODS refrigerant emission rates is removed from the Methodology.

The following table and (only modified) footnotes are from the methodology. Additions are underlined and deletions struck through.

Table 6: Annual Amortized Refrigerant Emission Rates

APPLICATION AND SUB-APPLICATION	LOCATION	LIFETIME (YEARS)	REFRIGERANT EMISSION RATES (%)			VINTAGE YEAR	ANNUAL AMORTIZED EMISSION RATE (%) ¹¹
			FIRST FILL	ANNUAL SERVICING & OTHER LEAKS	DISPOSAL		
Large Commercial Refrigeration – Retail Food Refrigeration (HFC Refrigerants)	<u>Canada</u> <u>Mexico</u> <u>U.S. States except New York and Washington</u>	18	2%	21% through 2025; 20% starting 2026 ¹²	10%	<u>Through 2025</u>	22% through 2025; 21% starting 2026
	<u>New York and Washington states</u>	<u>18</u>	<u>2%</u>	<u>20%</u>	<u>10%</u>	<u>Through 2023</u>	<u>21%</u>
		<u>18</u>	<u>2%</u>	<u>ALD1 (see below)</u>	10%	<u>2024 and beyond</u>	<u>ALD1 + 1 %</u>
Large Commercial Refrigeration – Retail Food		18	2%	20%	10%		21%

¹² U.S. EPA’s “Phasedown of Hydrofluorocarbons: Management of Certain Hydrofluorocarbons and Substitutes under Subsection (h) of the American Innovation and Manufacturing Act,” the pre-publication final version of which was made available late September 2024, restricts the annual emission rate of large commercial refrigeration equipment to 20% starting January 1, 2026 (U.S. EPA, 2024b). Additionally, per section 82.157 Appliance maintenance and leak repair of U.S. Code of Federal Regulation (CFR) 40, Part 82, Subpart F, commercial refrigeration equipment or system with full charge of 50 pounds or more of any Class I and II ODS refrigerants, or their blends, shall not exceed an annual refrigerant leak rate of 20%. The equipment or system must be repaired, retrofitted or retired if the annual leak rate of 20% is exceeded (Clean Air Act, 2024). R-22 is an example of applicable ODS refrigerant. This Methodology uses the lower emission rate from these regulation for projects of all vintage years for ease of implementation.

APPLICATION AND SUB-APPLICATION	LOCATION	LIFETIME (YEARS)	REFRIGERANT EMISSION RATES (%)			VINTAGE YEAR	ANNUAL AMORTIZED EMISSION RATE (%) ¹¹
			FIRST FILL	ANNUAL SERVICING & OTHER LEAKS	DISPOSAL		
Refrigeration (Ozone-Depleting Substance Refrigerants¹³)							
Large Commercial Refrigeration – Cold Storage Warehouses	<u>All equipment in U.S. States except New York and Washington</u>	23	1%	11%	10%	<u>All</u>	12%
	<u>New York and Washington states</u>	23	1%	<u>ALD2</u>	10%	<u>2024 and Beyond</u>	<u>ALD2 + 1 %</u>
Remote Condensing Units	<u>All equipment in U.S. States except New York and Washington</u> <u>Equipment <22.7 kg in New York and Washington states</u>	20	0.5%	11%	15%	<u>All</u>	12%
	<u>Equipment ≥22.7 kg in New York and Washington states</u>	<u>20</u>	<u>0.5%</u>	<u>ALD2</u>	<u>15%</u>	<u>2024 and Beyond</u>	<u>ALD2 + 1 %</u>

APPLICATION AND SUB-APPLICATION	LOCATION	LIFETIME (YEARS)	REFRIGERANT EMISSION RATES (%)			VINTAGE YEAR	ANNUAL AMORTIZED EMISSION RATE (%) ¹¹
			FIRST FILL	ANNUAL SERVICING & OTHER LEAKS	DISPOSAL		
Stand-Alone Commercial Refrigeration (Canada and Mexico)	<u>Canada and Mexico</u>	10	1%	1%	25%	<u>All</u>	3.6%
Stand-Alone Commercial Refrigeration – Refrigerated Food Processing and Dispensing (Canada, Mexico and U.S.)	<u>Canada, Mexico and U.S.</u>	10	1%	1%	68%	<u>All</u>	7.9%

ALD1 = automated leak detection-calculated annual leakage rate = 22.7 kg divided by full charge size (kg) x 4, up to a maximum of 20%.^{13a}

^{13a} New York and Washington regulations (Hydrofluorocarbon Standards, 2024, and Hydrofluorocarbons and Other, 2023, respectively) require the use of automated leak detection systems that can detect leaks down to a threshold of 50 lb. (22.7 kg) or 10%, whichever is less. Refrigeration systems can leak multiple times a year, so to translate these detection thresholds into annual leak rates, we must multiply them by the number of leaks that occur per year. Using the average leak amount (128 lb.) for Large Commercial Refrigeration: retail food refrigeration systems presented through the U.S. EPA GreenChill Program (2022) and combining that with U.S. EPA inventory (2024a) annual leakage rates (22%) and a conservative (low) estimate of average charge size (2,500 lb.) for these systems, we see that these systems leak about four times per year. (Charge size x leakage rate / average leak amount = 4.3.) Multiplying each of the leak detection threshold-calculated rates (22.7 kg divided by full charge size, and 10%) by the number of leaks per year results in one number

ALD2 = automated leak detection-calculated annual leakage rate = 22.7 kg divided by full charge size (kg) x 4, up to a maximum of 11%.^{13a}

Section 6.1 (Baseline GHG Emissions), Equation 1 is updated to align with updates to Table 6 to not differentiate between HFC and ODS refrigerants. Deletions are struck out.

$AER_{j,i}$

Annual amortized emission rate of refrigerant *j* used in baseline system *i* from Table 6 or historical records (%). ~~For Large Commercial Refrigeration projects, the annual amortized emission rate used shall be the one listed for HFC refrigerants unless a system with an ozone-depleting substance refrigerant is being replaced or added to, in which case the annual amortized emissions rate used shall be the one listed for ozone-depleting substances.~~

(40%) that exceeds the annual leak rates for the rest of the U.S., which is excessively large. Therefore, these annual leak rates are capped at the levels used for the rest of the U.S.: 20% for retail food refrigeration and 11% for cold storage warehouses and Remote Condensing Units.

4. Erratum: Table 8 (2025-06-18, updated 2026-04-16)

This erratum provides corrected baseline GWP values for new, additional, and replacement Large Commercial Refrigeration Systems and Remote Condensing Units in California and Washington for the years 2022-2025, and additional states for cold storage warehouses in 2022, to align with regulations in those states (especially Prohibitions on Use, 2021; Hydrofluorocarbons and Other, 2023), as well as new data sources considered for cold storage warehouses. The following text, table, and endnotes are from the methodology. Additions from 2025-06-18 are underlined, additions from 2026-04-16 are double-underlined, and deletions from 2026-04-16 are in double strikeout.

Table 8: Baseline GWPs for New, Additional, and Replacement Large Commercial Refrigeration Systems and Remote Condensing Units by Jurisdiction (through 2025)

APPLICATION	U.S. STATE(S)/ COUNTRIES	BASELINE GWP			
		2021	<u>2022</u>	<u>2023-2024</u>	2025
Large Commercial Refrigeration and Remote Condensing Units	<u>California</u>	1,923 (G)	<u>150</u> (all retail food refrigeration, cold storage warehouses containing >22.7 kg refrigerant, Remote Condensing Units containing >22.7 kg refrigerant, R) 1,507 <u>1,414</u> (cold storage warehouses containing ≤22.7 kg refrigerant, K) <u>1,794</u> (Remote Condensing Units containing ≤22.7 kg refrigerant, L)		

APPLICATION	U.S. STATE(S)/ COUNTRIES	BASELINE GWP			
		2021	2022	2023-2024	2025
	<u>Washington</u>	1,923	1,688 (retail food refrigeration, J) <u>1,923</u> (cold storage warehouses) 1,794 (Remote Condensing Units)	1,688 (retail food refrigeration) 1,507 <u>1,414</u> (cold storage warehouses, K) 1,794 (Remote Condensing Units)	<u>150 (all retail food refrigeration, cold storage warehouses containing >22.7 kg refrigerant, Remote Condensing Units containing >22.7 kg refrigerant, S)</u> 1,507 <u>1,414</u> (cold storage warehouses containing ≤22.7 kg refrigerant) <u>1,794 (Remote Condensing Units containing ≤22.7 kg refrigerant)</u>
	California, Washington, Colorado, Delaware, Maryland, Massachusetts, New Jersey, New York, Vermont	1,923	1,688 (retail food refrigeration) <u>1,923 (cold storage warehouses)</u> 1,794 (Remote Condensing Units)	1,688 (retail food refrigeration) 1,507 <u>1,414</u> (cold storage warehouses) 1,794 (Remote Condensing Units)	
	Maine, Rhode Island, Virginia	2,934 (H)			

APPLICATION	U.S. STATE(S)/ COUNTRIES	BASELINE GWP			
		2021	2022	2023-2024	2025
	All other U.S. states and territories	2,934	1,912 (retail food refrigeration, M) 1,640 1,487 (cold storage warehouses, N) 1,794 (Remote Condensing Units, O)		
	Canada	2,200 (I)			
	Mexico	2,934	3,952 (Large Commercial Refrigeration, P) 3,416 (Remote Condensing Units, Q)		

The following refrigerants²⁷ and market penetrations²⁸ ([ATMOsphere, 2024](#); [U.S. Census Bureau, 2022](#); and [U.S. EPA, 2024a and 2025](#) for U.S.; [ODSHAR, 2016](#) for Canada; and [Gobierno de Mexico, 2022](#) and [SEMARNAT, 2019](#) for Mexico) were used to calculate baseline GWPs for new, additional, and replacement Large Commercial Refrigeration and Remote Condensing Unit applications. Percentages may not add to 100% due to use of significant figures:

- (G) R-407A.
- (H) R-407A (50%) and R-404A (50%).
- (I) GWP limit for centralized refrigeration systems that are generally used for storing and displaying food, beverages, and other perishables in convenience stores and supermarkets, using HFCs as refrigerants (ODSHAR, 2016).
- (J) R-407F (94.29%) and R-407A (5.71%) (U.S. EPA, 2024a). R-404A is prohibited in states with SNAP regulations, and the market share of R-404A in the U.S. EPA Inventory for all states is 10%, so that market share is added to the market share of the SNAP-acceptable refrigerant (R-407F) with the lowest GWP (for conservativeness).
- (K) ~~R-407F (90.84%), and R-717 (10.13%), and CO₂ (2.5%) (ATMOsphere, 2024; U.S. Census Bureau, 2022; U.S. EPA, 2024a and 2025). R-507 is prohibited in states with SNAP regulations and is therefore not included in the baseline calculation, and the market share of R-507 in the U.S. EPA Inventory for all states is 3.33%, so that market share is added to the market share of the SNAP-acceptable refrigerant (R-717) with the lowest GWP (for conservativeness).~~
- (L) R-407A (79.21%) and R-134a (20.79%) (U.S. EPA, 2024a).
- (M) R-407F (84.43%), R-404A (9.85%), and R-407A (5.71%) (U.S. EPA, 2024a).
- (N) ~~R-407F (90.81%), R-717 (6.6713%), CO₂ (2.5%) and R-507 (3.33%) (ATMOsphere, 2024; U.S. Census Bureau, 2022; U.S. EPA, 2024a and 2025).~~
- (O) @R-407A (79.21%) and R-134a (20.79%) (U.S. EPA, 2024a).
- (P) R-404A (83%) and R-507A (17%). The use of each of these refrigerants is confirmed through Gobierno de Mexico (2022) and SEMARNAT (2019). Market penetrations are calculated as the remainder when the percentages of R-404A and R-507A in Stand-Alone Commercial Refrigeration and Remote Condensing Unit applications are subtracted from the percentage of each refrigerant's use in the three sub-applications in Mexico's commercial refrigeration sector²⁹ (see section 3.2, page 31 in SEMARNAT, 2019).
- (Q) R-134a (20%) and R-404A (80%). The use of each of these refrigerants is confirmed through Gobierno de Mexico (2022) and SEMARNAT (2019), and the market penetrations are assumed to be essentially the same (but rounded) as those noted in O (above) for the U.S.
- (R) (Prohibitions on Use, 2021).
- (S) (Hydrofluorocarbons and Other, 2023).

5. Erratum: Table 10 (2025-06-18, updated 2026-10-12)

The 2026-06-18 erratum adds baseline GWP values for Large Commercial Refrigeration and Remote Condensing Units for California, New York, and Washington for years 2026 and beyond. Additions from 2025-06-18 are underlined and deletions struck through. The updates to the erratum on 2026-10-12 are made to align with amendments to the U.S. Restrictions on the Use of Hydrofluorocarbons Regulation (U.S. EPA, 2026); these additions are double underlined and deletions are double struck through.

Table 10: Baseline GWPs for U.S. New, Additional, and Replacement Large Commercial Refrigeration Systems and Remote Condensing Units by Charge Size or Part of System (2026 through 2031~~and Beyond~~)

APPLICATION	SUB-APPLICATION	REFRIGERANT CHARGE SIZE (KG), AND/OR PART OF SYSTEM, AND/OR FACILITY TYPE	U.S. STATE	BASELINE GWP	
				2026	<u>2027 THROUGH 2031</u> AND BEYOND
Large Commercial Refrigeration	Retail food refrigeration	<u>All</u>	<u>California and Washington</u>		<u>150</u>
		<u><90.7 kg at new refrigeration facility^{32a} and at all additional and replacement projects</u>	<u>New York</u>		<u>146</u> ^{32b}

^{32a} New refrigeration facilities in New York with a charge size ≥ 90.7 kg are required to utilize ultra-low-GWP refrigerants starting in 2026 (Hydrofluorocarbon Standards, 2024, section 494-1.4(e)(3)(xviii)), and are therefore not eligible for crediting starting in 2026.

^{32b} New York (Hydrofluorocarbon Standards, 2024) uses the AR6 20-year GWP of 580 for Large Commercial Refrigeration units. Refrigerant R-454C has an AR6 20-year GWP of 580. The AR5 100-year GWP value for R-454C is 146. Since the ACR Standard requires the use of AR5 100-year GWP values, 146 is used for this baseline GWP.

		≥90.7 kg, excluding higher-temperature side of cascade system	States with SNAP regulations ³³	1,688 through <u>7/26/2026</u> 1,400 starting <u>7/27/2026</u>	150 1,400
			All other U.S. states and territories	1,912 through <u>7/26/2026</u> 1,400 starting <u>7/27/2026</u>	
		<90.7 kg, or higher-temperature side of cascade systems	States with SNAP regulations	1,688 through <u>7/26/2026</u> 1,400 starting <u>7/27/2026</u>	300 1,400
			All other U.S. states and territories	1,912 through <u>7/26/2026</u>	

³³ California, Colorado, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Rhode Island, Vermont, Virginia, Washington

				<u>1,400</u> <u>starting</u> <u>7/27/2026</u>	
	Cold storage warehouses	<u>All</u>	<u>California and Washington</u>		<u>150</u>
		<u><90.7 kg at new refrigeration facility and at all additional and replacement projects</u>	<u>New York</u>		<u>146</u>
		<u>≥90.7 kg, excluding higher- temperature side of cascade system</u>	<u>All other U.S. states and territories</u>	<u>150 through 7/26/2026</u> <u>700 starting 7/27/2026</u>	
		<u><90.7 kg, or higher-temperature side of cascade system</u>	<u>All other U.S. states and territories</u>	<u>300 through 7/26/2026</u> <u>700 starting 7/27/2026</u>	
Remote Condensing Units	n/a	<u>>22.7 kg</u>	<u>California and Washington</u>		<u>150</u>
		<u>≤22.7 kg, or higher-temperature side of cascade system</u>			<u>300</u>

		<u>≥22.7 and <90.7 kg at new refrigeration facility, and ≥22.7 kg at all additional and replacement projects</u>	<u>New York</u>	<u>146</u>
		<u><22.7 kg</u>		<u>237</u> ^{33a}
		≥90.7 kg, excluding higher-temperature side of cascade system	All <u>other</u> U.S. states and territories	150 <u>through 7/26/2026</u> 1,400 <u>starting 7/27/2026</u>
		<90.7 kg, or higher-temperature side of cascade systems	All <u>other</u> U.S. states and territories	300 <u>through 7/26/2026</u> 1,400 <u>starting 7/27/2026</u>

^{33a} New York (Hydrofluorocarbon Standards, 2024) uses the AR6 (IPCC, 2021) 20-year GWP value of 943 for Remote Condensing Units. Refrigerant R-454A has an AR6 20-year GWP value of 943. The AR5 (IPCC, 2013) 100-year GWP value for R-454A is 237. Since the ACR Standard requires the use of AR5 100-year GWP values, 237 is used for this baseline GWP.

6. Erratum: Sections 5, 6.1, and 7.1. Baselines for Retrofit Projects in Washington State Starting in 2029 (2025-06-18)

Section 5 is updated to align with Washington state legislation that requires a maximum refrigerant GWP of 150 for retrofits and to align the baselines for replacement projects with those of retrofit projects. Additions are underlined and removed text is struck through.

“Project Proponents that retrofit existing equipment shall use historical, system-specific data to establish these values, as described in Section 7.1. This historical data can be generated from manufacturer specifications, regulatory compliance reporting, and/or other verifiable operating documentation. Retrofit projects located in Washington state with a vintage year of 2029 or later shall use baseline GWP equal to 150 (Hydrofluorocarbons and Other, 2023).”

Section 6.1 is updated to require a specific baseline GWP for retrofit projects in Washington state starting in 2029.

“Project Proponents that retrofit existing equipment shall use historical, system-specific data as described in Section 7.1. Project Proponents that retrofit existing equipment in Washington state in vintage 2029 or later shall use a baseline GWP of 150 and the applicable amortized annual emission rate from Table 6.”

The text in Section 7.1 describing the “Potential Evidence/Source” for the parameter “Quantity of refrigerant j (i.e., charge size of equipment) used in baseline system i ” is updated to conform to these changes:

“Project Proponents that retrofit existing refrigeration systems shall use information from installer specifications of existing system or service technician reports. Project Proponents that retrofit existing equipment in Washington state in vintage year 2029 or later shall use a baseline GWP of 150 and the applicable amortized annual emission rate from Table 6.”

7. Clarification: Section 7. Updates to Monitoring and Data Collection Requirements (2025-06-18)

This clarification modifies the requirements to section 7 (Monitoring and Data Collection) of the Methodology to align with the definitions of “retrofit *or* retrofit project” and “replacement *or* replacement project” found below, as well as other clarifications. The last major bullet of this section is updated as follows, with additions underlined and deletions struck through:

- For projects in which existing refrigeration equipment is ~~replaced~~ decommissioned or retrofitted, documentation showing proof of recovery and management of the displaced refrigerant and replaced system parts and equipment (for replacement of Large Commercial Refrigeration systems, Remote Condensing Units, and Stand-Alone Commercial Refrigeration equipment). This documentation shall include the following:

- ◆ ~~Job order(s) or other technical report(s) submitted demonstrating that by the a~~ certified technician ~~that~~ recovered the refrigerant in accordance with relevant rules and regulations (see Chapter 2), including (for projects in the U.S.) but not limited to U.S. EPA Section 608; and a copy of the technician’s refrigerant recovery certification.; and
- ◆ ~~The J~~job order(s) or other technical report(s) referenced immediately above ~~submitted by the certified technician should~~ must include equipment name and type (per Methodology application and sub-applications); number of replaced evaporators and total evaporators; number of replaced and total compressor racks, condensers, and connected evaporator loads; equipment model number;; equipment refrigerant full charge size;; refrigerant name;; amount of refrigerant recovered, date of recovery, and what was done with the recovered refrigerant (e.g., stored at same location, transferred to a different location for same owner, sent/sold for reclamation to a certified reclaimers, or sent/sold for destruction).
- ◆ For replaced Large Commercial Refrigeration systems and Remote Condensing Units, proof that the system parts being replaced or removed have been scrapped.
- ◆ For replaced Stand-Alone Commercial Refrigeration equipment at an existing facility, proof that the refrigeration equipment being replaced was sent for destruction, decommissioning, or disposal.

8. Clarification: Section 10. Additional Definitions (2025-06-18, updated 2026-10-12)

This clarification distinguishes between additional, new, retrofit, and replacement projects; specifies that the Large Commercial Refrigeration application excludes Remote Condensing Units, which are a distinct application eligible under the Methodology; provides a definition for “connected evaporator load,” which is used in the definitions for “retrofit” and “replacement”; and provides new definitions for “charge or charge size or charge capacity” and “equipment,” both of which are terms used throughout the Methodology. New text from 2025-06-18 is underlined and new text from 2026-10-12 (to align with U.S. EPA, 2026) is double underlined:

Additional or Additional project

With respect to refrigeration equipment, a project that involves increasing the cooling capacity (in Btu/hr.), of an existing system, and/or increasing the square footage of an existing refrigeration facility. This term applies to Large Commercial Refrigeration and Remote Condensing Unit applications.

Charge or charge size or charge capacity

The amount of refrigerant (by mass or weight) contained in a refrigeration system. Charge is generally measured in grams, ounces, pounds, or kilograms.

<u>Connected evaporator load</u>	<u>A collection of refrigeration equipment that is physically connected to and cooled by a common evaporator. The sum of heat absorbed from this collection of refrigeration equipment equals the total load of the evaporator.</u>
<u>Equipment</u>	<u>Any stationary system, appliance or device designed to contain, circulate and utilize refrigerants to enable cooling or freezing. This includes both self-contained units and built-up systems operating with either direct or indirect (secondary loop) configurations. For a device with multiple independent refrigerant circuits, each circuit is considered a separate and distinct piece of equipment or appliance. For split systems, multiple indoor units may be connected to one circuit, representing one piece of equipment.</u>
Large Commercial Refrigeration	Equipment used to store and/or display chilled and frozen goods for commercial sale such as in food retailers, supermarkets, convenience stores, cold storage warehouses, bakeries, and restaurants. For the purposes of this Methodology, this includes commercial refrigeration units with an initial charge of 50 lbs. (22.7 kg) or more of refrigerant. This application includes the sub-applications of retail food refrigeration and cold storage warehouses. <u>This application excludes Remote Condensing Units.</u>
<u>New or New project</u>	<u>A project that involves new construction of a commercial refrigeration facility or the repurposing of an existing facility to contain commercial refrigeration equipment.</u>
Retrofit or Retrofit project	<p>A project that includes the conversion of an existing refrigeration system to achieve system compatibility and that may include changes in lubricants, gaskets, filters, driers, valves, o-rings, or equipment components for that purpose. The following actions disqualify a project as a retrofit:</p> <ul style="list-style-type: none">i. Assembling a system for the first time from used or new components;ii. Increasing the cooling capacity, in Btu/hr., of an existing supermarket system <u>by more than 15 percent or increasing the cooling capacity, in Btu/hr., of any other type of existing system;</u> or

iii. Replacing 75 percent or more of evaporators (by number) and 100 percent of the compressor racks, condensers, and connected evaporator loads of an existing system.

For retrofit projects, any SNAP-acceptable substitute refrigerant (U.S. EPA, 2024d) with 0 ozone-depleting potential and GWP less than 1,300 is considered lower-GWP. Starting with vintage year 2026, retrofit projects in New York are subject to the same eligibility and baseline GWP requirements as replacement and additional projects.

Replacement or
Replacement project

Replacing 75 percent or more of evaporators (by number) and 100 percent of the compressor racks, condensers, and connected evaporator loads of an existing system. This term applies to Large Commercial Refrigeration and Remote Condensing Unit applications.

9. Erratum: Appendix A. References (2025-06-18, updated 2026-04-16 and 2026-10-12)

This erratum adds the following references to Appendix A (References) of the Methodology because of the changes in Errata 1 through 6, Clarification 8 (U.S. EPA, 2026), and, in the case of ICF (2020), a cited source that was missing from the references.

ATMOsphere, ATMO Report, Natural Refrigerants: State of the Industry (2024).
<https://atmosphere.cool/atmo-market-report-2024/>

Hydrofluorocarbon Standards and Reporting, Express Terms. New York Codes, Rules and Regulations, 6 NYCRR Part 494. (2024). <https://dec.ny.gov/sites/default/files/2024-12/part494expressterms.pdf>

Hydrofluorocarbons and Other Fluorinated Greenhouse Gases. Washington Administrative Code, Chapter 173-443. (2023). <https://app.leg.wa.gov/WAC/default.aspx?cite=173-443>

ICF. (2020). Final Report: Supermarket Emission Reduction Analysis (Table 11, page 29).
<https://www.nrdc.org/sites/default/files/supermarket-emission-reduction-analysis.pdf>

IPCC. (2013). Fifth Assessment Report (AR5). Climate Change 2013: The Physical Science Basis. Chapter 8SM – Anthropogenic and Natural Radiative Forcing – Supplementary Material. Table 8.SM.16. https://www.ipcc.ch/site/assets/uploads/2018/07/WGI_AR5.Chap_.8_SM.pdf

IPCC. (2021). Sixth Assessment Report (AR6). Climate Change 2021: The Physical Science Basis. Chapter 7SM: The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity:

Supplementary Material. Table 7.SM.7.

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07_SM.pdf

Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning, and Other End-Uses. California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4. (2021).

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hfc2020/frorevised.pdf>

Regulation Substances Key. [No date]. <https://dec.ny.gov/sites/default/files/2025-01/regsubstancekey.pdf>. Linked to from <https://dec.ny.gov/environmental-protection/climate-change/statutes-regulations-policies/part-494/495-requirements-for-suppliers-and-owners-or-operators>

U.S. Census Bureau. (2022). Economic Census by Industry. <https://www.census.gov/programs-surveys/economic-census/data/tables/industry.html>

U.S. EPA GreenChill Program. April 12, 2022. Data Technology to Reduce Supermarket Refrigeration Leak Rates. https://www.epa.gov/system/files/documents/2022-04/gc-webinar-data-driven-leak-reduction-2022-04-12_0.pdf

U.S. EPA. (2025). Risk Management Program Rule and Regulated Substances List. Retrieved from <https://www.data-liberation-project.org/datasets/epa-risk-management-program-database/>

U.S. EPA. (2026, May 26). Amendments to Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under Subsection (i) of the American Innovation and Manufacturing Act of 2020. <https://www.federalregister.gov/documents/2026/05/26/2026-10387/phasedown-of-hydrofluorocarbons-reconsideration-of-certain-regulatory-requirements-promulgated-under>

10. Clarification: Eligibility for Retrofit Projects at Cold Storage Warehouses (2026-04-16)

This clarification amends subsection **I.D.** of Chapter 2 (Eligibility Conditions) for projects at cold storage warehouses (additions are underlined):

- D. The retrofit of an existing Large Commercial Refrigeration (described in Table 1 below) system at an existing facility to use lower-GWP refrigerant(s), except for cold storage warehouses, which are not eligible for retrofit projects. A retrofit or a retrofit project is a project that includes the conversion of an existing refrigeration system to achieve system compatibility and that may include changes in lubricants, gaskets, filters, driers, valves, o-rings, or equipment components for that purpose (see Definitions section for more details);

11. Erratum: Removal of Food Prep Table and Blast Chiller Equipment from the Methodology (2026-10-12)

This erratum removes the equipment categories of “food prep tables” and “blast chillers” from Tables 4 and 5 of the Methodology and removes their definitions from the list of definitions, effectively removing them from eligibility under the Methodology.