

# Errata and Clarifications

## METHODOLOGY FOR THE QUANTIFICATION, MONITORING, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSION REDUCTIONS AND REMOVALS FROM CERTIFIED RECLAIMED HFC REFRIGERANTS, PROPELLANTS, AND FIRE SUPPRESSANTS

### VERSION 2.0

2025-11-18

This Errata and Clarifications document is supplemental to the ACR Methodology *CERTIFIED RECLAIMED HFC REFRIGERANTS, PROPELLANTS, AND FIRE SUPPRESSANTS, Version 2.0* (“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: Start Date Requirements (2022-05-05)

Chapter 3, Table 2 of the ACR Standard details eligibility criteria for all projects, defines each criterion and articulates ACR requirements. Additional eligibility requirements for specific project types may be summarized in the relevant ACR sector standard and/or methodology.

Per this Erratum, additional eligibility requirements for start dates for this project date are specified.

Projects must be validated within two years of the start date with the following exception. A project must be validated within 3 years of its start date if it occurs at a facility that has been visited during a successful validation and verification for another project of this same type and registered on ACR by the same Project Proponent.

#### 2. Clarification: Project Locations in Multiple Countries (2024-03-14)

Per this Clarification, applicable to vintages 2021 and onwards, Project Proponents implementing project activities that result in GHG emission reductions or removals being generated within the geographic boundary of more than one country must independently quantify GHG emission reductions and/or removals achieved within each country and register them as separate projects.

Individual projects may not include HFC reclamation facilities located in more than one country and project activities must be split such that each project only includes reclamation facilities in a single country. For example, if an HFC reclaimer has reclamation facilities in the U.S. and Canada, two projects must be listed separately, one for the facilities in the U.S. and one for the facilities in Canada. This ensures accurate representation of the host countries associated with projects and credits for the purpose of facilitating use under the Paris Agreement.

### 3. Erratum: Baseline Virgin HFC Replacement Rate (RR<sub>BL</sub>) (2025-11-18)

Version 2.0 of the Methodology explains that the baseline virgin HFC replacement rate (RR<sub>BL</sub>) was calculated by averaging the annual HFCs virgin HFC replacement rate for the years that the United States (U.S.) Environmental Protection Agency (EPA) published data on reclaimed HFCs (2017–2020). This Erratum adjusts the calculation to use the most recent data. Starting in year 2022, U.S. EPA has published more detailed data on HFCs including net consumption of HFCs in metric tons. This has allowed for a more straightforward calculation of RR<sub>BL</sub> that eliminates the need to convert to MTCO<sub>2</sub>e as described on page 30 of the Methodology.

Table 4 (Appendix A, section A.1) in the Methodology provides information on the amount of reclaimed HFCs reported to the U.S. EPA for years 2017 through 2020. Per this Erratum, Table 4 is replaced with the following table to provide the latest U.S. EPA data as of the date of this Erratum, including reclaimed American Innovation and Manufacturing (AIM) Act-listed HFCs and the calculated consumption of HFCs through 2024:

**Table 4: Total Reclaimed and Consumption of HFCs Reported to U.S. EPA**

VINTAGE YEAR(S)	AMOUNT RECLAIMED IN METRIC TONS (MT)	CONSUMPTION IN MT	RR <sub>BL</sub> <sup>1</sup>
2022–2023	3,450.29 <sup>2</sup>	160,317.0 <sup>3</sup>	3%
2024+	5,027.1 <sup>4</sup>	123,202.2 <sup>5</sup>	5%

<sup>1</sup> Amount reclaimed in metric tons (MT) / net consumption in MT, rounded up to the nearest whole percent for conservatism.

<sup>2</sup> HFC Refrigerant Reclamation Totals by Year (pounds), 2022 Total converted to MT, from: U.S. EPA (2023). Refrigerant Reclamation Summary 2000 – 2022. [https://www.epa.gov/system/files/documents/2023-12/2022\\_reclamation\\_table.pdf](https://www.epa.gov/system/files/documents/2023-12/2022_reclamation_table.pdf)

<sup>3</sup> Montreal Protocol values from: U.S. EPA (2025). 2022 Calculated HFC Consumption. <https://www.epa.gov/climate-hfcs-reduction/2022-hfc-data-hub/expanded-hfc-data>

<sup>4</sup> See “Reclamation” tab from: U.S. EPA (2025). 2024 HFC Data. [https://www.epa.gov/system/files/documents/2025-09/2024\\_data\\_hub\\_dl\\_all\\_090525.xlsx](https://www.epa.gov/system/files/documents/2025-09/2024_data_hub_dl_all_090525.xlsx)

<sup>5</sup> Montreal Protocol values from: U.S. EPA (2025). Expanded HFC Data Hub. <https://www.epa.gov/climate-hfcs-reduction/hfc-data-hub/expanded-hfc-data#hfc-Consumption>

These  $RR_{BL}$  values apply to all projects in Mexico and the U.S. and non-refrigerant projects in Canada,<sup>6</sup> and replace references to the 2% baseline virgin HFC replacement rate on pages 19, 22, 24, and 30 of the Methodology. The data used to calculate penetration levels in the United States is not similarly available for Canada or Mexico. Because Canada has no requirement to reclaim HFCs that are not refrigerants and Mexico is early in their phasedown of HFCs, the reclamation rate of HFCs in these two countries is expected to be less than that in the United States. Therefore, applying the United States' reclamation rate to projects in Canada and Mexico is conservative.

#### 4. Erratum: Section 3.2—Additionality Assessment (2025-11-18)

Due to Canada's requirement<sup>6</sup> to recover and then reclaim or destroy refrigerants, including HFC refrigerants, and because there are no publicly available data that allow ACR to determine whether HFC refrigerant reclamation in Canada is common practice, the following updates are made to ensure that these projects exceed common practice.

Per this Erratum, the following text is modified in section 3.2 (Additionality Assessment; ~~strikeout~~ language is removed and underlined text added):

"Emission reductions from the project must be additional or deemed not to occur in the "business-as-usual" scenario. Assessment of the additionality of a project will be made based on passing the ~~two~~-tests cited below. These ~~two~~-tests require the project proponent to demonstrate that the project activity is surplus to regulations and reduces emissions below the level established in the Methodology.

- Regulatory Surplus Test, and
- Practice-Based Performance Standard or Three-Pronged Additionality Test."

The following underlined text is also added to the last sentence in section 3.2.2 (Practice-Based Performance Standard):

"Therefore, project activities within these sectors and segments qualify for offset credit creation under this Methodology, except for refrigerant HFC reclamation in Canada. HFC refrigerant reclamation projects in Canada are subject to the three-pronged additionality test (see section 3.2.3) because Canada's Notice Requiring the Preparation and Implementation of Pollution Prevention Plans in Respect of Halocarbons Used as a Refrigerant requires the development and implementation of plans to recover and either reclaim or destroy refrigerants, because there are no publicly available data on HFC refrigerant reclamation

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<sup>6</sup> Per the Canada Gazette, Part I, Volume 150, Number 21: SUPPLEMENT, pollution prevention plans for halocarbons and the reclamation or destruction requirements therein are not required for halocarbons found in fire suppressants and aerosols. <https://gazette.gc.ca/rp-pr/p1/2016/2016-05-21/html/sup2-eng.html>

rates, and because this requirement could cause HFC refrigerant reclamation to be common practice.”

The Methodology is further updated to add the following new section:

### **“3.2.3. THREE-PRONGED ADDITIONALITY TEST**

“Projects that do not qualify under the practice-based performance standard (i.e., HFC refrigerant reclamation projects in Canada) must use the three-pronged additionality test to determine whether project-based GHG emission reductions and removals are above and beyond the “business-as-usual” scenario and whether carbon market incentives were a significant factor. This methodology requires the Project Proponent to demonstrate that the project activity exceeds existing law, regulation, or other regulatory framework that mandates the project activity, exceeds common practice in the sector, and overcomes a financial implementation barrier. The regulatory and common practice additionality portions of the test shall, at a minimum, demonstrate that the project goes beyond the regulatory requirements and common practice established under the [Notice Requiring the Preparation and Implementation of Pollution Prevention Plans in Respect of Halocarbons Used as a Refrigerant](#). See section 3.2.1 for more information on the regulatory surplus test. The financial implementation barrier must be performed, must be supported by documentation, and must not be overestimated. Refer to the *ACR Standard* for a complete description of the ACR three-pronged additionality test.”

Finally, Appendix A, section A.1, paragraph 2, sentence 1 is updated as follows (strikeout language is removed and underlined text added):

“HFC production and consumption phase down ~~is in early stages in Canada and haven’t not yet begun in U.S. and Mexico~~ is in the implementation phase in Canada, Mexico, and the U.S. ACR will closely monitor reclamation rates and production and consumption phase-downs and update this Methodology as appropriate. ~~As such there are no significant restrictions on production of HFCs, and because of the additional costs to recover, transport, and separate/process back to virgin purity levels<sup>39</sup>—~~ unlike the strong incentive to reclaim CFCs and R-22—there is currently little incentive for recovery, reclamation, and re-sale of HFCs. In 2022, ACR ~~to~~ estimated the amount of HFC refrigerant that is reclaimed in the baseline scenario, using U.S. EPA HFC reclamation data for years 2017–2020 from the United States EPA is used as described below.”

## 5. Erratum: Acronyms and Definitions (2025-11-18)

Per this Erratum, the following term and definition are added to the Acronyms and Definitions section:

TERM	ACRONYM (if applicable)	DEFINITION
Project Location		The location of the project shall include the facility where reclamation of HFC refrigerant, propellant, or fire suppressant takes place. <sup>7</sup> If HFC refrigerant, propellant, or fire suppressants are partially reclaimed in one reclamation facility and the reclamation process is finished in another reclamation facility, both locations are to be included in project documentation.

## 6. Erratum: Regulatory Surplus Test and Common Practice (2025-11-18)

Per this Erratum, the following new paragraphs are added to Section 3.2.1 to align with California Senate Bill (SB) 1206,<sup>8</sup> Assembly Bill (AB) 663,<sup>9</sup> and California's HFC Regulation;<sup>10</sup> New York Codes, Rules, and Regulations (NYCRR) Part 494;<sup>11</sup> and Errata #7 through 9:

“On September 30, 2022, California signed into law [Senate Bill 1206 Hydrofluorocarbon gases: sale or distribution](#). This bill prohibits a person from offering for sale or distribution, or

<sup>7</sup> Projects where more than one reclamation facility is included must follow the Aggregation requirements in ACR Standard Section 6.F.1.

<sup>8</sup> California State Legislature. (2022.) Senate Bill 1206, Chapter 884, Skinner: Hydrofluorocarbon gases: sale or distribution. [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220SB1206](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1206)

<sup>9</sup> California State Legislature. (2025.) Assembly Bill 663, McKinnor: Hydrofluorocarbon gases: sale and distribution prohibition: exemptions. [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202520260AB663](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202520260AB663)

<sup>10</sup> California Air Resources Board. (2021, December 29.) Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-Conditioning, and Other End-Uses. <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hfc2020/frorevised.pdf>

<sup>11</sup> New York State Assembly. (2025). 6 New York Climate Change Regulation Revision Part 494: Hydrofluorocarbon Standards and Reporting. <https://dec.ny.gov/sites/default/files/2024-12/part494expressterms.pdf>

otherwise entering into commerce in the state, bulk hydrofluorocarbons or bulk blends containing hydrofluorocarbons that exceed a specified GWP limit beginning January 1, 2025. Specifically, the GWP of HFCs or blends containing HFCs offered for sale or distribution, or entered into commerce, in California shall not exceed 2,200 (100-year GWP from IPCC Fourth Assessment Report (AR4)<sup>12</sup>). This prohibition includes an exception for HFCs that are reclaimed, HFCs that are exclusively for use in metered dose inhalers approved by the U.S. Food and Drug Administration (FDA) for medical purposes and, as added by [Assembly Bill 663](#) in 2025, HFCs that are exclusively for use in very low temperature refrigeration or cooling designed to maintain temperatures below -58 °F (through vintage 2027 only). Additionally, [California's HFC Regulation](#) limits the GWPs of HFCs in equipment distributed in the state.

“In January 2025, New York State amended their [Part 494 Hydrofluorocarbon Standards and Reporting Regulation](#). This regulation prohibits the manufacture, sale and purchase, and distribution and receipt of virgin bulk HFCs that exceed a specific GWP. Specifically, beginning April 9, 2025, the GWP of HFCs or HFC blends shall not exceed 2,200 (100-year GWP from IPCC AR4). This prohibition includes an exception for HFCs that are reclaimed and HFCs that are exclusively for use in FDA-approved metered dose inhalers. The same regulation limits the GWPs of HFCs in equipment distributed in the state.

“Only activities that are surplus to regulations and common practice are eligible for crediting and therefore a GWP for relevant HFCs is set to align with California Senate Bill 1206 and HFC Regulation and New York Part 494 unless the Project Proponent can provide documentation demonstrating that reclaimed HFCs with AR4 GWPs greater than 2,200 included in the project were not ultimately sold or distributed in California or New York after January 1, 2025 and April 9, 2025, respectively, or can provide documentation of the following:

- “That the HFCs were used for metered dose inhalers approved by the U.S. Food and Drug Administration for medical purposes, or
- “Through vintage 2027 and in California only, that the HFCs were used exclusively in very low temperature refrigeration or cooling designed to maintain temperatures below -58 °F.”

## 7. Erratum: Refrigerant GWP (2025-11-18)

Per this Erratum, Table 3 (GWPs of Predominant HFCs and HFC Blends) is updated as follows to align with California's SB 1206, AB 663, and HFC Regulation; NYCRR Part 494; and Errata #6, #8, and #9:

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<sup>12</sup> Intergovernmental Panel on Climate Change (IPCC). (2007.) Working Group I: The Physical Science Basis. [https://archive.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/ch2s2-10-2.html](https://archive.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html)

HFC REFRIGERANT	GLOBAL WARMING POTENTIAL (GWP)	
	UP TO 2020 VINTAGES	FROM 2021 VINTAGES
HFC-152a	124	137
HFC-32	675	676
HFC-134a	1,430	1,301
R-407C	1,774	1,624
R-417C	1,820	1,643
R-410A	2,088	1,923
R-407A	2,107	1,923
R-422B <sub>1</sub>	2,525	2,289
R-422D <sub>1</sub>	2,730	2,473
R-422C <sub>1</sub>	3,085	2,794
HFC-125 <sub>1</sub>	3,500	3,169
HFC-227ea <sub>1</sub>	3,220	3,348
R-404A <sup>*,**</sup>	3,922	3,945
R-507A <sup>*,**</sup>	3,985	3,987
R-508B <sub>1</sub>	13,400	11,710
HFC-23 <sub>1</sub>	14,800	12,400

Per this Erratum, the following new footnotes to Table 3 are added:

“\*HFCs prohibited by California Senate Bill 1206 and New York Codes, Rules, and Regulations Part 494 starting January 1, 2025 and April 9, 2025, respectively. If a project includes one of these reclaimed HFCs sold January 1, 2025 or April 9, 2025, or later, the Project Proponent must either apply the GWP noted in Erratum #8/Equation 1 or demonstrate that the reclaimed HFC will not be sold or distributed in California or New York per the requirements outlined in Erratum #9. This requirement does not apply to HFCs exempted from the prohibition,

including those HFCs demonstrated to be used in metered dose inhalers approved by the U.S. FDA for medical purposes and, through 2027 and in California only, HFCs sold exclusively for use in very low temperature refrigeration or cooling designed to maintain temperatures below -58 °F.

“\*\*On July 21, 2025, the New York Department of Environmental Conservation published an Enforcement Discretion<sup>13</sup> which delayed enforcement of the ban on bulk R-404A and R-507A until March 31, 2026. If a project includes one of these reclaimed HFCs sold March 31, 2026 (or whatever is the final enforcement date of the ban), or later, the Project Proponent must either apply the GWP noted in Erratum #8/Equation 1 or demonstrate that the reclaimed HFC will not be sold or distributed in New York per the requirements outlined in Erratum #9. This requirement does not apply to HFCs exempted from prohibition including those demonstrated to be used in FDA-approved metered dose inhalers.”

## 8. Erratum: Equation 1 (2025-11-18)

Per this Erratum, the variable  $GWP_{HFC,j}$  in Equation 1: Baseline Emissions is updated as follows to align with California SB 1206, AB 663, and the HFC Regulation; NYCRR Part 494; and Errata #6–7 and #9:

$GWP_{HFC,j}$

The global warming potential of HFC or HFC Blend  $j$  (see Table 3). For HFCs denoted with an asterisk (\*) in Table 3 or any other HFC or HFC Blend with an AR4 100-year GWP >2,200,  $GWP_{HFC,j}$  shall be set to 2,048<sup>14</sup> for vintages after the effective dates of the regulations for those refrigerants (as noted in the footnotes to Table 3) unless the Project Proponent can demonstrate that the HFC was not ultimately sold or distributed in California or New York or is exempted per Sections 3.2.1 or 5.2.

## 9. Erratum: Data Collection and Parameters to be Monitored – Proof Required for HFCs with AR4 GWP >2,200 (2025-11-18)

Per this Erratum, the following two major bullets and two sub-bullets are added to Section 5.2 to align with California SB 1206 and AB 663, NYCRR Part 494, and Errata #6–8:

<sup>13</sup> New York Department of Environmental Conservation (NYDEP). (2025). RE: Enforcement Discretion Part 494, Hydrofluorocarbon Standards and Reporting. <https://dec.ny.gov/sites/default/files/2025-07/part494edletter.pdf>

<sup>14</sup> The IPCC Fifth Assessment Report (AR5) GWP value of HFC-410B (R-410B), which is the HFC with the lowest AR5 value that is over the SB 1206 AR4 limit of 2,200. Anthropogenic and Natural Radiative Forcing Supplementary Material in: IPCC (2013): Fifth Assessment Report: The Physical Science Basis. [https://www.ipcc.ch/site/assets/uploads/2018/07/WGI\\_AR5.Chap\\_8\\_SM.pdf](https://www.ipcc.ch/site/assets/uploads/2018/07/WGI_AR5.Chap_8_SM.pdf)



- “Where Project Proponents elect to demonstrate that reclaimed HFCs were not ultimately sold or distributed in California or New York, sufficient documentation may include invoices with addresses for sales to end-users, sales documentation from distributors and/or wholesalers that show that the reclaimed HFCs were not sold or distributed for use in California or New York, sales and additional documentation demonstrating that the reclaimed HFCs were sold to a distributor who distributes to end users (i.e., doesn’t distribute to other distributors) in regions that do not include California or New York, or other verifiable documentation demonstrating that the reclaimed HFCs were not sold or distributed for use in California or New York.
- “Project Proponents do not need to provide documentation proving that reclaimed HFCs were not sold or distributed in California or New York if they provide verifiable documentation demonstrating the following:
  - ◆ “That reclaimed HFCs were used exclusively for metered dose inhalers approved by the U.S. Food and Drug Administration for medical purposes. Such documentation may include invoices of sales to a metered dose inhaler manufacturer; or
  - ◆ “That reclaimed HFCs were used in very low temperature refrigeration or cooling designed to maintain temperatures below -58 °F. Such documentation may include invoices of sales to a manufacturer of very low temperature refrigerants or cooling equipment. This option is only applicable through vintage 2027.”

## 10. Clarification: Data Collection and Parameters to be Monitored (2025-11-18)

Per this Clarification, the following underlined language is added to section 5.2:

- “Where the HFC was recovered by service technicians in individual containers of 500 pounds gross weight or more, documentation of the point of origin of the reclaimed HFC including:
  - ...
  - ◆ “Attestation from EPA-certified (or equivalent for Canada and Mexico) reclaimer regarding the source of the HFC that is reclaimed. Specifically, this attestation must document whether the reclaimer has previously obtained—within the 2 years preceding the reporting period start date—recovered HFC from the source and, if so, the dates on which that HFC was acquired.”