

# Errata and Clarifications

## METHODOLOGY FOR THE QUANTIFICATION, MONITORING, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSIONS REDUCTIONS AND REMOVALS FROM THE TRANSITION TO ADVANCED FORMULATION BLOWING AGENTS IN FOAM MANUFACTURING AND USE

### VERSION 3.0

2024-08-28

This Errata and Clarifications document is supplemental to the ACR Methodology *The Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use, 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. Clarification: Definition of Global Warming Potential (2024-01-10)**

The Acronyms and Definitions section of the Methodology defines global warming potential (GWP). Per this clarification, the definition of GWP, as it applies for this Methodology, is modified as follows, with additions shown in underlined text:

“Global warming potential is a relative scale translating the global warming impact of any GHG into its CO<sub>2</sub>e over the same timeframe. This methodology references the 100-year GWPs in the IPCC Fourth Assessment Report (AR4) for credit vintages through 2020 and IPCC Fifth Assessment Report (AR5) for 2021 and later vintages. If neither AR4 nor AR5 list a 100-year GWP for a gas, the 100-year GWP cited by the U.S. EPA SNAP Program shall be applied. GWPs found in this Methodology (Tables 3, 4, and 10) shall be applied in the quantification of baseline and project emissions.”

## 2. Clarification: Table 3: GWPs of Common Baseline Blowing Agents (2024-01-10)

Table 3 in the Methodology provides GWP values for common baseline blowing agents (BAs). Per this clarification, Table 3 is replaced with the following table with updated headers to clarify which GWPs to use based on credit vintage, consistent with ACR Standard v. 8.0. Additions are shown in underlined text.

**Table 3: GWPs of Common Baseline BAs<sup>4</sup>**

BLOWING AGENT (BA)	GWP <u>THROUGH 2020 (AR4)</u>	GWP <u>FROM 2021 (AR5)<sup>5</sup></u>
HFC-152a	124	137
HFC-365mfc	794	805
HFC-245fa	1030	858
HFC-134a	1430	1301

<sup>4</sup> This is not an exhaustive list but rather a guidance for project proponents.

<sup>5</sup> IPCC, Fifth Assessment Report (100- year GWP time horizon), [Chapter 8, Supplementary Material, Table 8.SM.16, Page 8SM-24. 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)

## 3. Clarification: Table 4: Eligibility of Baseline BAs by State, Country, Year, and End-Use Category (2024-08-28)

Table 4 in the Methodology provides a breakdown of eligible baseline BAs for different end-use categories. These are segregated by U.S. states and countries (Canada, and Mexico) based on regulatory requirements and by calendar year. The table currently provides data for the years 2020 and 2021.

Per this clarification, baseline refrigerants for years 2022 through 2024 are added to Table 4. State regulations adopting United States Environmental Protection Agency's (U.S. EPA) Significant New Alternative Policy (SNAP) rules 20 and 21 came into effect in three new U.S. states – Maine, Rhode Island, and Virginia – on January 1, 2022. Unlike in previous years, where some U.S. states had regulations come into effect mid-year and only for some end-use categories, all twelve U.S. states with SNAP regulations have a lower GWP baseline BA (HFC-152a) for the entirety of the 2022-2024 calendar years for all five eligible end-use categories.

Additions to Table 4 are shown in underlined text below:

**Table 4: Eligibility of Baseline BAs by State, Country, Year, and End-Use Category**

COUNTRY/U.S. STATES	BASELINE BA				
	2020		2021		2022-2024
End-use Categories <sup>7</sup>	(A), (B), (C)	(D), (E)	(A), (B), (C)	(D), (E)	<u>(A), (B), (C), (D), (E)</u>
California, Washington New Jersey (from July 1, 2020 for categories A, B, C)		HFC- 152a, HFC- 365mfc, HFC- 245fa, HFC- 134a	HFC- 152a	HFC- 152a	<u>HFC-152a</u>
Colorado, New York, Vermont Delaware (from Sep 1, 2021 for all categories) Maryland (from July 1, 2021 for categories C, D, E) Massachusetts (from July 1, 2021 for category E)	HFC- 152a, HFC- 365mfc, HFC- 245fa, HFC- 134a	HFC- 152a, HFC- 365mfc, HFC- 245fa, HFC- 134a	HFC- 152a	HFC- 152a	<u>HFC-152a</u>
<u>Maine, Rhode Island, Virginia</u>	<u>HFC- 152a, HFC- 365mfc, HFC- 245fa, HFC- 134a</u>	<u>HFC- 152a, HFC- 365mfc, HFC- 245fa, HFC- 134a</u>	<u>HFC- 152a, HFC- 365mfc, HFC- 245fa, HFC- 134a</u>	<u>HFC- 152a, HFC- 365mfc, HFC- 245fa, HFC- 134a</u>	<u>HFC-152a</u>

All other U.S. states and territories	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	<u>HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a</u>
Canada <sup>8</sup>	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	150 (GWP)	150 (GWP)	<u>150 (GWP)</u>
Mexico	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a	<u>HFC-152a, HFC-365mfc, HFC-245fa, HFC-134a</u>

- (A) Rigid PUF: Residential refrigerators and freezers
- (B) Rigid PU Injected Foam
- (C) Two-component Rigid PU Spray Foam – High Pressure
- (D) Two-component Rigid PU Spray Foam – Low Pressure
- (E) XPS Boardstock

<sup>7</sup> This does not include all end-use categories listed by SNAP (EPA). See the full list [here](#).

<sup>8</sup> Canada has set limit of GWP < 150 from year 2021 [SOR-2016-137.pdf \(justice.gc.ca\)](#)

#### 4. Clarification: Table 10: GWPs for Selected Eligible BAs (2024-01-10)

Appendix B, Table 10 of the Methodology provides GWP values for selected eligible BAs. Per this clarification, Table 10 is replaced with the following table and its footnotes are replaced entirely to provide more complete references; footnote changes are shown in underlined text.

**Table 10: GWPs for Selected Eligible BAs**

ELIGIBLE BA	GWP
Methyl formate	5 <sup>20</sup>
HFO-1336mzz(Z)	2 <sup>21</sup>
HCFO-1233zd(E)	<u>1</u> <sup>22</sup>
CO <sub>2</sub>	1 <sup>23</sup>
Methylal	1 <sup>24</sup>
HFO-1234ze	1 <sup>25</sup>

<sup>20</sup> U.S. EPA (2023). Significant New Alternatives Policy (SNAP), Substitutes in Rigid Polyurethane: Appliance. <https://www.epa.gov/snap/substitutes-rigid-polyurethane-appliance>.

<sup>21</sup> HFO-1336mzz(Z) is represented as (Z)-HFC-1336 in these IPCC (2013) report sections: IPCC (2013). Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2013). Chapter 8 – Anthropogenic and Natural Radiative Forcing. Table 8.A.1. [https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5\\_Chapter08\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf). IPCC (2013). Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2013). Chapter 8.SM – Anthropogenic and Natural Radiative Forcing – Supplemental Material, Table 8.SM.16. [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).

<sup>22</sup> IPCC (2013) Chapter 8 Table 8.A.1 and Chapter 8.SM Table 8SM.16. HCFO-1233zd(E) is represented as (E)-1-Chloro-3,3,3-trifluoroprop-1-ene. See footnote 21 for full citations for IPCC (2013) Chapters 8 and 8.SM.

<sup>23</sup> IPCC (2013) Chapter 8 Table 8.A.1. See footnote 21 for full citation.

<sup>24</sup> U.S. EPA (2020). Protection of Stratospheric Ozone: Determination 36 for Significant New Alternatives Policy Program. <https://www.regulations.gov/document/EPA-HQ-OAR-2003-0118-1710>.

<sup>25</sup> IPCC (2013). Chapter 8.SM Table 8.SM.16. See footnote 21 for full citation.

#### 5. Clarification: Project Locations in Multiple Countries (2024-08-28)

Per this clarification, which is applicable to vintages 2021 and onwards, Project Proponents implementing project activities that result in GHG emissions reductions or removals being generated within the geographic boundary of more than one country must independently

quantify GHG emissions reductions and/or removals achieved within each country and register them as separate projects. Individual projects may not include foam product or foam blowing agent manufacturing facilities located in more than one country, and project activities must be split such that each project only includes manufacturing facilities in a single country. For example, if a foam product or foam blowing agent manufacturer has manufacturing facilities in the U.S. and Canada, two projects must be listed, one for the facilities in the U.S. and one for the facilities in Canada.