

Verification Report for Whirlpool Manufacturing Co., Inc.

American Carbon Registry

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1. Introduction

First Environment, Inc. (First Environment) provides this verification report to Whirlpool, Inc. (Whirlpool) as a deliverable of the American Carbon Registry (ACR) project verification process. It covers the verification of the following Projects and reporting periods:

Project Name	ACR Project ID	Reporting Period
Whirlpool HFO Amana 656	ACR656	1/1/2019 – 12/31/2019
Whirlpool HFO Amana 657	ACR657	1/1/2020 – 12/31/2020
Whirlpool HFO Ottawa 658	ACR658	1/1/2019 – 12/31/2019
Whirlpool HFO Ottawa 659	ACR659	1/1/2020 – 12/31/2020
Whirlpool HFO Ramos 660	ACR660	1/1/2019 – 12/31/2019
Whirlpool HFO Ramos 661	ACR661	1/1/2020 – 12/31/2020
Whirlpool HFO Supsa 662	ACR662	1/1/2020 – 12/31/2020

Each Project reports emission reductions for a single 10-year crediting period beginning on January 1 of the reporting year.

Whirlpool manufactures rigid PUF residential refrigerators and freezer equipment using the Solstice HFO, an eligible foam blowing agent (BA) under the Methodology. The Solstice HFO replaces the high global warming potential (GWP) BAs HFC-245fa or HCFC-141b, resulting in a net reduction in greenhouse gas (GHG) emissions during the foam blowing process and lifetime of manufactured foam materials. The BA transition occurs at four Whirlpool manufacturing facilities in the US and Mexico.

The GHG Project Plans provide additional details about the Projects.

2. Objectives

The purpose of this verification was, through review of appropriate evidence, to establish that:

- the objectives of the ACR Validation and Verification Standard Chapter 8.B are met;
- the Projects conforms to the requirements of the verification criteria discussed in Section 4 of this report; and
- the data reported are accurate, complete, consistent, transparent, and free of material error or omission.

3. Verification Scope

Specific scope metrics for the verification for each project are outlined in the table below:

Geographic Boundaries	Whirlpool manufacturing plants located in: <ul style="list-style-type: none"> • Amana, IA • Ottawa, OH • Ramos Arizpe, Coahuila, MX • Ciudad Apodaca, Nuevo Leon, MX
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Greenhouse Gases Verified	Emissions reductions (expressed in units of Carbon Dioxide equivalents (CO ₂ -e) resulting from blowing agent replacement; Project emissions from use of eligible BA (HCFO-1233zd(E)) ¹
Reporting Periods	1/1/2019 – 12/31/2019 1/1/2020 – 12/31/2020
Data Sources	Historical Whirlpool technical and accounting records
Level of Assurance	Reasonable assurance
Definition of Materiality	Misstatements greater than five percent of each Project's emission reductions assertion were considered material. Qualitative non-conformities with and discrepancies in the Monitoring Reports between and verification criteria were also considered material.

4. Verification Criteria

The following outlines the guidance and protocols used to conduct the verification:

Standards of Verification	<ul style="list-style-type: none"> • ACR Standard, Version 7.0, December 2020 (ACR Standard) • 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 2.1 (the Methodology), including Errata and Clarification issued August 13, 2021 • GHG Project Plans
Verification Process	<ul style="list-style-type: none"> • ACR Validation and Verification Standard, Version 1.1, May 2018 • ISO 14064-3: Specification with guidance for the validation and verification of greenhouse gas assertions, 2006

The ACR Monitoring Report prepared by Whirlpool for the reporting period was also used to inform the criteria applied to the verification process.

5. Overview of the Verification Process

To review the Projects' GHG information, the following verification process was used:

- conflict of interest review;
- selection of Audit Team;
- initial interaction and kickoff meeting with primary Whirlpool contact;
- development of the verification plan and sampling plan;
- review and evaluation of GHG information systems and data;
- follow-up interaction with Whirlpool contact for corrective action or supplemental data as needed; and
- final statement and report development.

¹ The trade name for the eligible BA is Solstice®.

The verification process was utilized to gain an understanding of the Projects' emission sources and reductions, to evaluate and verify the collection and handling of data, the calculations that lead to the results, and the means for reporting the associated data and results.

5.1 Conflict of Interest Review

Prior to beginning any third-party assessment, First Environment conducts an evaluation to identify any potential conflicts of interest associated with the engagement. No potential conflicts were found for these Projects. A project-specific conflict of interest form was also filed with the ACR for each Project.

5.2 Audit Team

First Environment's Audit Team consisted of the following individuals who were selected based on their verification experience, as well as familiarity with industrial gas operations:

Lead Verifier – Michael Carim
Verifier – Jeff Daley, Logan Simpson
Independent Reviewer – James Wintergreen

5.3 Audit Kick-off

The audit process was initiated with a kick-off conference call on September 15, 2021 with the primary Whirlpool contact. The meeting focused on confirming the audit scope, objectives, criteria, schedule, and the information required for the verification process.

5.4 Development of the Verification Plan

The team formally documented its verification plan as well as determined the data-sampling plan. The verification plan was developed based on the discussion of key elements of the verification process during the kick-off meeting. Whirlpool was afforded the opportunity to comment on the key elements of the plan for verification. Based on items discussed and agreed upon with Whirlpool, the plan identified the First Environment project team members, project level of assurance, materiality threshold, and standards of evaluation and reporting for the verification. It also provided an outline of the verification process and established project deliverables. A separate data-sampling plan was designed to review all project elements in areas of potentially high risk of inaccuracy or non-conformance.

5.5 Site Visit

Messrs. Michael Carim and Jeff Daley conducted a site visit at Whirlpool's Amana, Iowa manufacturing facility on November 4, 2021 to assess GHG project boundaries, site operations, data collection processes, and information management systems, as well as to conduct interviews with key project personnel. Because all records relevant to the ACR project reporting process are handled through a centralized data management system accessible from Whirlpool's corporate facilities, separate site visits to additional manufacturing facilities within the scope of validation were not deemed necessary by the strategic review process. As discussed in Section 6.6 below, ACR approved a deviation request to allow the site visit at the Amana facility to satisfy site visit requirements for all four facilities within the scope of verification.

During the verification process, First Environment also conducted interviews with the following key Whirlpool personnel:

- Bridget Cook
- Dakota Hopson

5.6 Emissions Reduction Data and Calculation Assessment

This assessment used information and insights gained during the previous steps to evaluate the collected data and the reported emissions reduction quantities and identify if either contained material or immaterial misstatements.

5.7 Corrective Actions and Supplemental Information

The Audit Team made requests for corrective action during the verification process. Whirlpool provided sufficient responses to all requests. These requests and Whirlpool's responses are described in Appendix A of this report.

5.8 Verification Reporting

Verification reporting, represented by this report, documents the verification process and identifies its findings and results. Verification reporting consists of this report for Whirlpool, along with a verification statement. Both the report and statement are submitted to ACR as part of the verification reporting process.

6. Project Conformance with Verification Criteria

6.1 Project Eligibility

First Environment completed the validation of the Projects' GHG Project Plans in November 2021. This demonstrates that the Project is eligible under the Methodology.

The Projects do not currently participate in any other GHG emission trading or compliance programme and has not previously been rejected by another GHG programme.

6.2 Offset Title

Whirlpool retains rights to GHG emission reductions associated with the BA transition. First Environment reviewed contracts between Whirlpool and the supplier of the BA to confirm that the latter does not retain offset title with respect to emission reductions achieved through the use of the low-GWP BA. Additionally, Whirlpool provided an attestation that confirms customers purchasing refrigeration units foamed with a low-GWP BA do not have title to associated emission reductions.

6.3 Regulatory Compliance

Whirlpool provided the required regulatory attestation to First Environment during the verification process. The attestation confirmed that the Projects complied with all laws and regulations for the duration of the reporting period and did not disclose any violations.

First Environment performed a check of the US EPA's ECHO database for the Whirlpool's US facilities to further inform the regulatory compliance assessment. Database search results for the facilities did not identify any violations or instances of non-compliance during the reporting period.

6.4 Project Monitoring and Management System

The Projects were implemented in conformity with the GHG Project Plan. The primary parameters monitored, and their associated monitoring methodologies, are presented in Table 1 below.

TABLE 1: Parameters Monitored

Monitoring Parameter	Method of Estimation	Frequency of Measurement	Unit of Measurement	Frequency of Recording
Blowing Agent Ratio (BAR)	Calculated	Once at validation	Dimensionless	N/A
Quantity of eligible BA used in the project (Q _{EBA})	BA purchase records	Continuous	Pounds	As purchased

The Monitoring Report includes complete descriptions of the frequency, responsibility, and procedures for recording, storing, monitoring, and measuring all input parameters for required emission reduction quantification. The monitoring procedures described in the Monitoring Report and implemented on-site are consistent with Section D of the GHG Project Plan and address all relevant monitoring requirements in the Methodology. The adequacy of the data management systems described in the monitoring plan was assessed during the verification site visit and through interviews and webinars with individuals holding responsibility for carrying out Project monitoring and data reporting.

6.5 Monitoring Instrument QA/QC

All monitored data for BA purchases is obtained from BA supplier billing records. Data reported in billing records is measured by weigh scales at the BA supplier that are certified for trade. Because all activity data used in emission reduction calculations originates from instruments used for financial transactions, monitoring methods are presumed to include appropriate QA/QC measures.

Data for BA inventories on hand at the beginning and end of each reporting period is maintained in Whirlpool's financial management software, which is subject to internal controls and external audits.

Due to the strong QA/QC procedures surrounding inventory and sales records, minimal data uncertainty is foreseen.

6.6 Approved Variance or Deviations

Whirlpool received approval of a deviation request to allow for a single site visit at the Amana, Iowa facility to fulfill site visit requirements for all Projects within the scope of verification.

The project start date for ACR658 and ACR660 is January 1, 2019; however, validation of the Projects was not completed within two years of this date. Whirlpool received approval from ACR during the validation process to complete validation activities for ACR658 and ACR660 by November 30, 2021. Validation activities were completed by the specified deadline.

7. Verification Results

During the verification process, First Environment reviewed the Projects' Monitoring Reports, GHG emission reduction assertions, and supporting documentation for the current reporting period to ensure consistency with the GHG Project Plans and the Methodology. Discrepancies between Project documentation and the verification criteria were considered material and identified for corrective action. Additionally, First Environment assessed the GHG emission reduction assertions and underlying monitored data to determine if either contained material or immaterial misstatements. The results of these assessments are discussed in greater detail below.

7.1 GHG Information Verified

Emission reduction calculations were reviewed to ensure accuracy in the formulas used and the raw data used as inputs. Formulae were tested to ensure they were consistent with the calculation methodology described in the Methodology and the GHG Project Plan.

The quantity of eligible BA consumed was determined from supplier invoices. Deliveries and invoiced totals are recorded in Whirlpool's financial management system. BA material inventories are also tracked in this data management system. The total quantity of BA consumed at each facility is determined by the sum of BA purchases and reporting period starting inventories less reporting period ending inventories.

Baseline emissions are quantified according to Equations 1 and 2 in the Methodology based on the quantity of eligible BA consumed and the Blowing Agent Ratio, the latter of which is used to determine the equivalent quantity of baseline BA that is required to produce a foam with equivalent thermal performance. The BAR applied in calculations was consistent with the value for the parameter confirmed at validation.

For emission reductions in the 2019 reporting periods, the GWP of the baseline BAs were determined correctly from Tables 3 and 4 in methodology. In the 2020 reporting periods, rigid PUF residential refrigerators and freezers shipped to California, Washington, and New Jersey are subject to regulatory requirements that restrict the use of specific BAs in this foam application. Accordingly, Whirlpool selected an alternate baseline BA of HFC-152a and associated GWP for shipments to these jurisdictions. The fraction of total eligible BA allocated to these jurisdictions was determined from shipment data stored in Whirlpool's financial management system. All other shipments in 2020 are reported using the actual baseline BA and its AR4 GWP.

Project emissions associated with foam manufacturing and the remaining years of foam use were quantified using Equation 3 from the Methodology. Project emissions are calculated based on the measured quantity of Eligible BA that is used in the project scenario.

No foam blowing equipment used in the baseline scenario was transferred to different foam blowing applications and/or facilities using a high-GWP blowing agent; therefore, there is no activity-shifting leakage associated with the Project and these emissions are assigned a value of zero in Equation 4 from the Methodology. Market-shifting leakage is not applicable to the Methodology.

Total emission reductions were computed using Equation 5 from the Methodology. All emission sources within the project boundary are properly accounted for in calculations.

7.2 Verification Assessment Techniques and Processes Employed

Copies of the sales data used in the calculations, including blowing agent purchase records and year start/end inventories, were compared with the data used in the final calculations and tested for transcription or mathematical errors. First Environment sampled all areas identified as being of high risk of inaccuracy, uncertainty, or misstatement and performed other data checks in order to assess whether Whirlpool sufficiently mitigated data uncertainty. The assessments performed on this data, as described above, confirmed the reliability of the evidence provided and verified the accuracy of the information flow. Additionally, First Environment performed recalculations of emission reductions for the entire reporting period to assess whether they were free of material misstatement. First Environment found the emission reduction calculations to be free of material misstatement.

The evidence provided was consistent with the requirements of the Methodology and the validated GHG Project Plan and meets generally accepted evidentiary standards for best practices in GHG accounting.

8. Audit Results

Whirlpool provided good documentation for its emissions estimates as well as its procedures surrounding the data collection process. To complete the verification process, First Environment issued corrective action requests. Through communications with the Audit Team, Whirlpool resolved all requests made by First Environment during the verification processes. The findings issued, as well as Whirlpool's responses, are summarized in Appendix A of this report.

9. Verification Conclusion

First Environment was retained to provide verification services for the Projects' GHG emission reductions assertions based on the following fundamentals:

- *Level of assurance:* Reasonable assurance.
- *Objectives of verification:* To assure project conformance with the verification criteria and that the requirements of the ACR Validation and Verification Standard, Chapter 8.B are met.
- *Verification criteria:* American Carbon Registry Standard, Version 7.0, December 2020; 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 2.1 (the Methodology), including Errata and Clarification issued August 13, 2021
- *Definition of materiality:* Misstatements of greater than five percent of the GHG reduction assertion and qualitative non-conformities with verification criteria are considered material.
- *Scope, including:*
 - *Boundaries of the assertion:* Whirlpool facilities where foam manufacture occurs and use phase of the manufactured foam product;
 - *The physical infrastructure, facilities, and activities within the assertion:* foam blowing equipment used in refrigeration equipment manufacture; and
 - *GHG sources, sinks, and reservoirs included within the assertion:* Emissions reductions (expressed in units of Carbon Dioxide equivalents)

(CO₂-e) resulting from blowing agent replacement in foam manufacturing and remaining years of foam use; Project emissions from use of eligible blowing agent (HCFO-1233zd(E)).

- *Crediting Periods:* January 1, 2019 to December 31, 2028 (ACR656, ACR658, ACR660) January 1, 2020 to December 31, 2029 (ACR657, ACR659, ACR661, ACR662).

Based on the assessments performed and the historical evidence collected, First Environment concludes that the Projects' GHG emissions reductions, due to the transitions to a low-GWP BA by the Whirlpool manufacturing plants for the above-referenced time periods, can be considered with a reasonable level of assurance:

- consistent with the GHG Project Plans,
- in conformance with the ACR standard and the Methodology, and
- without material discrepancy.

Verified results show:

ACR656

Reporting Period: January 1 through December 31, 2019	Total
Baseline Emissions (tCO ₂ e)	134,751
Project Emissions (tCO ₂ e)	435
Emissions Reductions (tCO ₂ e)*	134,315

*As measured and calculated in accordance with the Project Methodology

ACR657

Reporting Period: January 1 through December 31, 2020	Total
Baseline Emissions (tCO ₂ e)	106,540
Project Emissions (tCO ₂ e)	399
Emissions Reductions (tCO ₂ e)*	106,140

*As measured and calculated in accordance with the Project Methodology

ACR658

Reporting Period: January 1 through December 31, 2019	Total
Baseline Emissions (tCO ₂ e)	25,963
Project Emissions (tCO ₂ e)	76
Emissions Reductions (tCO ₂ e)	25,886

*As measured and calculated in accordance with the Project Methodology

ACR659

Reporting Period: January 1 through December 31, 2020	Total
Baseline Emissions (tCO ₂ e)	26,443
Project Emissions (tCO ₂ e)	84
Emissions Reductions (tCO ₂ e)*	26,358

*As measured and calculated in accordance with the Project Methodology

ACR660

Reporting Period: January 1 through December 31, 2019	Total
Baseline Emissions (tCO ₂ e)	91,741
Project Emissions (tCO ₂ e)	264
Emissions Reductions (tCO ₂ e)*	91,477

*As measured and calculated in accordance with the Project Methodology

ACR661

Reporting Period: January 1 through December 31, 2020	Total
Baseline Emissions (tCO ₂ e)	93,423
Project Emissions (tCO ₂ e)	313
Emissions Reductions (tCO ₂ e)*	93,109

*As measured and calculated in accordance with the Project Methodology

ACR662

Reporting Period: January 1 through December 31, 2020	Total
Baseline Emissions (tCO ₂ e)	130,094
Project Emissions (tCO ₂ e)	441
Emissions Reductions (tCO ₂ e)*	129,653

*As measured and calculated in accordance with the Project Methodology

10. Lead Verifier Signature

Michael M. Carim
Senior Associate

11. Independent Reviewer Signature

James Wintergreen
Senior Associate

APPENDIX A – Verification Findings

ID	Corrective Action Request	Summary of Participant Response	Verification Conclusion
1	Reported activity data for the parameter Q _{EBA} in each Project is not adjusted for the quantity of BA in inventory on the starting and ending dates of the reporting periods.	Activity data inputted into emission reduction calculations was revised to account for starting and ending BA quantities on hand at each facility in each reporting period.	Response is acceptable.
2	Total reported BA purchases are inconsistent with verification evidence provided. This results in a material misstatement in calculations of total emission reductions for the ACR657 and ACR658 projects.	Reported activity data was revised to be consistent with records provided and calculations were updated to resolve the material misstatements identified.	Response is acceptable.
3	The Monitoring Reports contain the following inconsistencies or do not address all the requirements from the ACR template: <ul style="list-style-type: none"> Relevant rows in the Monitoring Boxes in Section V.1 have not been updated to be consistent with the validated Project Plans. The final row in each Monitoring Box is incorrectly labeled “Measurement Frequency.” Section V.2 does not provide personnel names and their roles/responsibilities. 	The Monitoring Reports were revised to resolve the cited issues. Regarding the Monitoring Box row labeled “Measurement Frequency” in the Monitoring Reports, Whirlpool asserted and confirmed that the version of the Monitoring Report template downloaded from the ACR website contained this language.	Response is acceptable. Labeling of the “Measurement” row in Section V the Monitoring Reports is semantical in nature and does not affect the verification conclusion.
4	The language in Section VIII regarding whether the project is undergoing a full site visit verification or a desk review and the last full site visit date appears to be reversed between the Monitoring Reports for the Amana and Ottawa facilities (ACR656/ACR657 and ACR658/ACR659).	The Monitoring Reports for ACR656/ACR657 and ACR658/ACR659 were revised to resolve the issue.	Response is acceptable.

ID	Clarification Request	Summary of Participant Response	Verification Conclusion
<i>No formal requests for clarification were issued during the verification process.</i>			