



**PROPOSED NEW BASELINE AND MONITORING METHODOLOGY OR  
METHODOLOGICAL TOOL FORM FOR EMISSION REDUCTIONS  
ACTIVITIES  
(Version 02.0)**

**INFORMATION TO BE COMPLETED BY THE SECRETARIAT AND METHODOLOGIES EXPERT PANEL**

<b>Type of standard</b>	New baseline and monitoring methodology
<b>Unique reference number and title of the proposed new methodology or new methodological tool</b>	>>
<b>Date when this form was received at UNFCCC secretariat:</b>	Click or tap to enter a date.
<b>Date of posting in the UNFCCC A6.4 web site for global stakeholder consultation</b>	Click or tap to enter a date.

**INFORMATION TO BE COMPLETED BY THE SUBMITTER  
(READ BEFORE FILLING THE FORM)**

**THIS FORM IS REQUIRED AT THE “SUBMISSION OF PROPOSED NEW METHODOLOGY OR METHODOLOGICAL TOOL” STAGE AND IS SUBMITTED TOGETHER WITH ‘NEW BASELINE AND MONITORING METHODOLOGY AND METHODOLOGICAL TOOL PROPOSAL FORM (A6.4-FORM-METH-001)’.**

**Instructions for using this form**

In using this form, please follow the guidance established in the following documents:

- Fill out all relevant sections of the form in clear print or typing;
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**Formatting Instructions:**

- Do not modify any part of this form, including headings, logo, format or font;
- The form provides the formatted headings which should be used throughout the document;
- Please use word equation editor to write equations;
- Please format figures, tables and footnotes to update automatically;
- Please note the footnotes have a separate format (Times New Roman - size 10).<sup>1</sup>
- Please clearly distinguish between proper methodology text, tables and equations and explanatory notes, using the following colour coding:
  - Methodology text shall be written in **black** fonts.
  - Guidance from the UNFCCC is provided in **blue** fonts and can be deleted.
  - Explanatory notes shall be written in **grey** fonts. Please note that explanatory notes are solely for the sake of methodology submission and consideration. Do not include guidance to activity participant in explanatory notes. Please note upon methodology approval, explanatory notes will be deleted.

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<sup>1</sup> Format for footnotes.

**SECTION A. Summary and applicability of the baseline and monitoring methodology or methodological tool****A.1. Title, submission date and version**

Title: Recovery and plasma-based destruction of residual HFCs remaining in ISO tank containers

Submission date: 12/01/2026

Version: 01.0

**A.2. If this methodology or methodological tool is based on a previous submission or an approved Article 6.4 mechanism methodology or methodological tool, please state the reference numbers here. Explain briefly the main differences and their rationale.**

- >> This methodology is not derived from any previously submitted or approved methodologies under the Article 6.4 mechanism

**A.3. Summary description of the methodology or methodological tool, including major baseline and monitoring methodological steps.**

- >> This methodology presents standardized procedures for the quantification and monitoring of greenhouse gas emission reductions achieved by safely destroying residual HFCs recovered from ISO tank containers through the application of plasma destruction technology.
- The baseline reflects the existing practice in which residual HFCs are not recovered or destroyed but are released into the atmosphere, and applies a historical emissions-based approach. It incorporates uncertainty assessment and annual downward-adjustment rules to establish progressively more ambitious benchmarks over time.
- Project emissions include electricity consumption of the destruction facility, un-destroyed residual HFCs, CO<sub>2</sub> generated from the destruction process, and energy use associated with recovery devices and transport operations, while leakage emission sources are defined as not existing.
- Additionality must be demonstrated through regulatory analysis, investment analysis, and common practice analysis, recognizing only emission reductions that go beyond legal requirements.
- The methodology specifies the activity boundary, data measurement requirements, QA/QC procedures, and approaches for handling uncertainty so that baseline emissions, project emissions, and emission reductions for each year can be derived conservatively and transparently.

<b>SECTION B. Proposed new baseline and monitoring methodology or methodological tool</b>
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## 1. Introduction

1. The following table presents a summary of the key elements of a methodology:

**Table 1. Methodology key elements**

<b>Type of GHG mitigation measure(s)</b>	<input type="checkbox"/> Fuel/feedstock switch <input type="checkbox"/> Technology switch <input checked="" type="checkbox"/> GHG destruction <input type="checkbox"/> GHG formation avoidance <input type="checkbox"/> Engineered carbon dioxide removal <input type="checkbox"/> Nature based carbon dioxide removal
<b>Types of mitigation outcomes achieved under this methodology</b>	<input checked="" type="checkbox"/> Emission reductions <input type="checkbox"/> Removals
<b>Are the mitigation outcomes under this methodology at risk of reversal?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Typical projects eligible under the methodology</b>	the activity of recovering residual HFCs from ISO tank containers returned to HFC importers and destroying them through a plasma destruction reactor

## 2. Scope and entry into force

### 2.1. Scope

2. This methodology provides a standardized approach for quantifying greenhouse gas (GHG) emission reductions by recovering residual HFCs from ISO tank containers returned to HFC importers and destructing them through a plasma destruction reactor.

### 2.2. Entry into force

*[For the UNFCCC secretariat to complete - Leave blank]*

### 2.3. Applicability of sectoral scopes

3. Designated operational entities validating and verifying Article 6.4 activities that use this methodology shall apply sectoral scope(s):

*[For the UNFCCC secretariat to complete – leave blank]*

## 3. Definitions

4. In addition to the definitions contained in the 'Article 6.4 mechanism Glossary of Terms', the following definitions apply for the purpose of this methodology:

- (a) HFCs - a type of fluorinated greenhouse gas composed of hydrocarbons (HC) combined with fluorine (F).;

- (b) HFC importer - an entity that brings HFCs produced overseas into the country;
- (c) HFC destruction facility(reactor) - a facility(reactor) that destructs HFCs using technologies such as high-temperature destruction, plasma, catalytic combustion, or oxidation, converting high-GWP gases into substances with lower GWP;
- (d) HFC recovery device - a mechanical device used to recover residual HFCs from ISO tank containers into a recovery cylinder so that they are not released into the atmosphere;
- (e) ISO tank container - a portable tank container for transporting liquid or gaseous chemical substances that meets the specifications of the International Organization for Standardization (ISO);
- (f) Plasma destruction technology: a technology that destructs hard-to-decompose substances such as HFCs by converting them using high-temperature, high-energy plasma generated through electrical energy

#### **4. Normative references**

- 5. This proposed baseline and monitoring methodology is based on the following proposed new methodologies and/or approved or consolidated methodologies:
  
- 6. This methodology also refers to the latest approved versions of the following methodological tools:
  - (a) "A6.4-AMT-001: Common practice analysis" (hereinafter referred as "common practice tool");
  - (b) "A6.4-AMT-002: Investment analysis" (hereinafter referred as "investment analysis tool")
  
- 7. This methodology is based on the following sources of information:
  - (a) Intergovernmental Panel on Climate Change (2019). 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories;
  - (b) Intergovernmental Panel on Climate Change (2006). 2006 IPCC Guidelines for National Greenhouse Gas Inventories

#### **5. Applicability**

- 8. The methodology is applicable under the following conditions:

ISO tank containers returned to HFC importers must not have any inflow of other HFCs from external sources from the time the ISO tank containers are filled with HFCs and imported into the country, through their supply to users and use, and returned to the importer with residual gas, until the point at which they are fed into the destruction facility. This shall be verified during each monitoring validation;

The HFC destruction facility applied in this project is an HFC-dedicated destruction facility that applies plasma destruction technology, designed to convert fluorinated substances into CO<sub>2</sub> through a reaction with oxygen using only electrical energy, without any fossil-fuel combustion. During the operational period for project implementation, no substances other than the project-target HFCs shall be introduced into and treated in the same plasma destruction reactor. If this condition

cannot be ensured, an equivalent monitoring and control system must be in place. This shall be verified during each monitoring validation;

For the safe and stable treatment of HFCs, it shall be possible to verify whether the material to be treated is a single substance or a mixture before its injection into the destruction facility (this shall be verified during each monitoring validation), and pre-treatment and storage facilities shall be in place so that the HFCs can be homogenized and continuously supplied to the destruction reactor (this shall be verified at the start of the activity);

Prior to the implementation of the Article 6.4 activity, no HFC destruction facilities were installed at the project activity site, all HFC destruction facilities used in the Article 6.4 activity were newly installed facilities rather than relocated or retrofitted existing facilities, and prior to the implementation of the activity, residual HFCs in ISO tank containers returned to HFC importers were released into the atmosphere. This shall be verified at the start of the activity;

The implementation of the Article 6.4 activity does not generate cost savings or revenues other than revenues from A6.4ERs. This shall be verified at the start of the activity.

## **6. Avoidance of double-counting**

9. All activity participants shall demonstrate that the Article 6.4 activity will not result in double counting by:

Providing evidence, in each monitoring report, that the outcomes from the Article 6.4 activity for which they intend to request issuance of A6.4ERs are not also claimed in other environmental markets or accounting framework, except for outcomes not related to reducing greenhouse gases emissions.;

Demonstrating that the reported GHG emission reductions for which they intend to request issuance of A6.4ERs do not overlap with mandatory domestic mitigation schemes (e.g., emissions trading systems), or that measures are in place to ensure that any relevant impacts of the activity are not counted towards the achievement of targets or obligations under the mandatory domestic mitigation scheme if the overlap exists, by:

- (i) Declaring and providing evidence in each monitoring report that the Article 6.4 activity and the activities displaced in the baseline scenario do not fall within the scope of any mandatory domestic mitigation scheme; or
- (ii) Where the Article 6.4 activity or the activities displaced in the baseline scenario fall within the scope of a mandatory domestic mitigation scheme, activity participants may:

Provide evidence in each monitoring report that the mitigation outcomes of the Article 6.4 activity are not counted in the mandatory mitigation scheme to reduce the obligations by the entities covered by the scheme. For example, in the case of an emissions trading system, a confirmation from the operator of the emissions trading system may be sought that a number of allowances equal to the A6.4 ERs being requested for issuance were cancelled before the issuance of the A6.4 ERs; or

Demonstrate that project participants are not requesting the issuance of A6.4ERs for any emission reductions resulting from a component

of the Article 6.4 activity that falls within the scope of the mandatory domestic scheme.

- 10. Shall be demonstrated that double claiming is prevented by requiring agreements among various entities that may claim emission reductions arising from the production and use of goods or services (e.g., when both the HFC importer and the destruction operator claim the same amount of reductions), as well as among any institutions that may potentially claim carbon credits for the same emission reductions.

**7. Demonstration of alignment with the policies, options and implementation plans with regard to the NDC and LT-LEDS of the host Party and the long-term temperature goal of the Paris Agreement and long-term goals of the Paris Agreement**

- 11. Activity participants shall provide to the DOE responsible to perform the validation of the Article 6.4 project an assessment, undertaken by the DNA of the host Party, of the activity’s consistency with Decision 3/CMA.3 paragraph 40 (c) and paragraph 27 (a) as part of the host Party’s approval.

**8. Activity Boundary**

- 12. The activity boundary of this methodology includes the destruction reactor that applies plasma technology to destruct HFCs, all auxiliary equipment associated with its operation (including all air pollution control systems), the electricity consumption of the HFC recovery device at the HFC gas recovery site, and the transport vehicles used to transport the recovery cylinders.

**Table 2. Emissions sources and sinks included in or excluded from the activity boundary**

Source		GHG			Justification / Explanation
<b>BASELINE</b>	HFCs that are not destructed and are released into the atmosphere	CO <sub>2</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions
		CH <sub>4</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions
		N <sub>2</sub> O	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions
		HFCs	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included	<input checked="" type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Major emission source
<b>ACTIVITY</b>	Electricity consumption required for the operation of the HFC destruction facility	CO <sub>2</sub>	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included	<input checked="" type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Major emission source
		CH <sub>4</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	It is excluded as it is negligible compared to the CO <sub>2</sub> emissions
		N <sub>2</sub> O	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	It is excluded as it is negligible compared to the CO <sub>2</sub> emissions

Source		GHG			Justification / Explanation
CO <sub>2</sub> generated from the conversion of HFCs during destruction	CO <sub>2</sub>	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included	<input checked="" type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	The carbon atoms contained in the HFCs combine with the oxygen injected into the destruction reactor and are converted into CO <sub>2</sub> , constituting a key GHG emission source.	
	CH <sub>4</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions	
	N <sub>2</sub> O	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions	
emissions of un-destroyed HFCs	CO <sub>2</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions	
	CH <sub>4</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions	
	N <sub>2</sub> O	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Not affect this type of emissions	
	HFCs	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included	<input checked="" type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Major emission source	
Electricity consumption required for the operation of the recovery device for recovering HFCs	CO <sub>2</sub>	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included	<input checked="" type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Major emission source	
	CH <sub>4</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	It is excluded as it is negligible compared to the CO <sub>2</sub> emissions	
	N <sub>2</sub> O	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	It is excluded as it is negligible compared to the CO <sub>2</sub> emissions	
Emissions associated with the transport of HFCs	CO <sub>2</sub>	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included	<input checked="" type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	Major emission source	
	CH <sub>4</sub>	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	It is excluded as it is negligible compared to the CO <sub>2</sub> emissions	
	N <sub>2</sub> O	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Controlled <input type="checkbox"/> Related to <input type="checkbox"/> Affected by	It is excluded as it is negligible compared to the CO <sub>2</sub> emissions	

13. Activity participants shall include in the PDD the location of the Article 6.4 activity in the form of Keyhole Markup Language (KML) files or similar formats as one or more polygon(s), by specifying the coordinates of the geographic boundary using a known coordinate system or any other established method.

## 9. Demonstration of additionality

### 9.1. Regulatory analysis

14. The activity participant shall review the host Party's environmental legal requirements and the legal requirements related to the management of HFCs, and shall demonstrate and justify that the emission reductions resulting from the proposed Article 6.4 activity are not the result of compliance with such legal requirements. Legal provisions or regulations with low levels of enforcement may be excluded from consideration in the regulatory analysis.
- (a) HFCs shall be recovered and shall not be released into the atmosphere;
  - (b) HFCs shall be recovered and shall be reused or recycled;
  - (c) HFCs shall be recovered and shall be destructed/treated.
15. The activity participant shall demonstrate that there is no legal requirement to establish a support scheme that meets the following conditions:
- (a) Is designed to achieve a quantitative target or outcome for the relevant technologies or practices;
  - (b) Is applicable to the activity; and
  - (c) Would likely result in the same amount of emission reductions or net removals if the activity would not be implemented.
16. If one or more of the legal requirements listed in paragraph 13 applies to the Article 6.4 activity, then A6.4ERs cannot be claimed for emission reductions that result from meeting any such legal requirement(s). However, A6.4ERs may be claimed with respect to any emission reductions that are achieved in excess of legal requirement(s).
17. The activity participant shall analyse the regulations at the time of crediting period renewal to reflect any changes in legal requirements.

### 9.2. Avoidance of locking-in the level of emissions

18. The host Party may continue to benefit from the installed HFC destruction technology even after the crediting period of the Article 6.4 activity has ended.
19. The destruction facility does not use fossil fuels during operation, and no restrictions are placed on the use of electricity generated from fossil fuels.
20. No restrictions are placed on the types of fuels used, including fossil fuels.
21. This mechanism methodology has been developed in consideration of technologies that reduce emissions of HFCs. These technologies contribute to reducing emissions at both the national and global levels and support the achievement of the long-term goals of the Paris Agreement. Therefore, the Article 6.4 activity can be ensured not to hinder the host Party's achievement of its NDC and LT-LEDS.

### 9.3. Investment analysis, Barrier analysis and Common practice analysis

#### 9.3.1. Investment analysis

22. The activity participant shall conduct the investment analysis in accordance with the "Methodological tool: Investment analysis"(hereinafter referred to as the investment analysis tool).

23. The reasons for selecting a simple cost analysis in the investment analysis are as follows:
- (a) Under the applicable conditions, the Article 6.4 activity does not generate any cost savings or revenues other than revenues from A6.4ERs;
  - (b) According to Footnote 10 of the investment analysis tool, in the case of HFC destruction projects, there are no viable options for utilizing the recovered gas, and there are no alternatives other than the recovery and destruction of HFCs. The recovery and destruction of the gas do not generate cost savings or revenues and only incur expenditures such as fuel costs; therefore, a simple cost comparison analysis shall be applied.
24. The simple cost analysis shall be conducted in the following steps:
- (a) Describe the Article 6.4 activity scenario and the alternative scenarios to be considered in conducting the analysis;
  - (b) Determine the assessment period;
  - (c) Demonstrate that the Article 6.4 activity scenario does not generate any cost savings or revenues other than from A6.4ERs during the assessment period, and justify the analysis with appropriate evidence;
  - (d) Demonstrate that the alternative scenarios do not generate any cost savings or revenues during the assessment period, and justify the analysis with appropriate evidence;
  - (e) Document any public funding provided to the Article 6.4 activity. If the public funding, expressed in grant equivalents, is larger than the expected revenues from A6.4ERs (e.g., based on common market prices for A6.4ERs for the type of Article 6.4 activity), demonstrate that public funding would not have filled the funding gap of the Article 6.4 activity (considering capital expenditure (CAPEX) and operational expenditure (OPEX) and any revenues other than A6.4ERs of the activity) in the absence of revenues from A6.4ERs. This may, for example, apply to public funding schemes that are designed to pay for the funding gap of mitigation activities.
25. The simple cost analysis is concluded positively for any Article 6.4 activity that satisfies the requirements of paragraph 21 (i.e., it is demonstrated that the Article 6.4 activity is not financially viable without the incentives from the mechanism).

### **9.3.2. Common practice analysis**

26. Activity participants shall assess common practice, and may apply the “A6.4-AMT-001: Common practice analysis” (hereinafter referred to as the common practice tool) when conducting the assessment.
27. The Article 6.4 activity is only additional if it is demonstrated that:
- (a) Emission reductions or net removals resulting from an Article 6.4 activity would not occur as a result of the legal requirements, per section 9.1 above; and
  - (b) The Article 6.4 activity is not financially viable, per section 9.3.1 above; and
  - (c) The Article 6.4 activity is not common practice, per section 9.3.2 above.

### **9.4. Performance-based approach**

28. This methodology is not applicable in accordance with paragraph 61(a) of “A6.4-STAN-METH-003(Standard: Demonstration of additionality in mechanism methodologies)”.

## 10. Baseline scenario

### 10.1. Selection of the baseline approaches from paragraph 36 of the rules, modalities and procedures

29. The baseline for residual HFCs in ISO tank containers returned to HFC importers is determined using existing actual or historical emissions, in accordance with paragraph 36(iii) of the RMPs.
- Best available technologies that represent an economically feasible and environmentally sound course of action, where appropriate.
  - An ambitious benchmark approach where the baseline is set at least at the average emission level of the best performing comparable activities providing similar outputs and services in a defined scope in similar social, economic, environmental and technological circumstances.
  - An approach based on existing actual or historical emissions, adjusted downwards to ensure alignment with paragraph 33 of the RMP.
30. A baseline approach that downward-adjusts actual or historical emissions has been selected due to the following limitations.
- (a) There are limitations in standardizing data due to the diversity of HFC destruction technologies and the imbalance in their deployment across countries, and selecting the best available technology for HFC destruction is a complex task involving technological, economic, and policy considerations.
  - (b) HFCs are not emitted continuously on a large scale but are released only at the time of recovery and disposal as a temporary flow of substances, making continuous facility operation difficult. In addition, international data availability on HFC destruction technologies is low, resulting in insufficient justification for a benchmark approach.

### 10.2. Application of the selected approach, prior to implementation of a downward adjustment

#### 10.2.1. Procedure for the identification of the baseline scenario

31. Pursuant to paragraph 60 of Section 6.3.2 of the Baseline Setting Standard, the baseline scenario is identified based on existing actual or historical emissions, taking into account the following options:
- (a) (Continuation of the pre-activity scenario) – Selected as the default for this projects. Prior to the Article 6.4 activity, the residual HFCs in ISO tank containers returned to HFC importers are released into the atmosphere;
  - (b) (Baseline scenario over time) – This approach is applicable where evidence exists of a time-dependent phase-down in HFC consumption and production driven by national or subnational regulations or international agreements, such as the Kigali Amendment to the Montreal Protocol. These considerations are assessed in Section 10.4 on the identification of a conservative BAU scenario;
  - (c) (Retrofit or replacement of equipment) – Not applicable, not retrofit or replace existing equipment;
  - (d) (Delayed implementation of the Article 6.4 activity) – Not applicable; not a deferred technology adoption.

32. The baseline geographical reference area is the host country by default;
33. The activity participant shall define and justify the baseline geographical reference area as a specific geographical area (e.g., city, province, state, etc.) within the host Party of the activity.

**10.2.2. Calculation of baseline emissions prior to downward adjustment**

34. The pre-destruction emissions of HFCs recovered from ISO tank containers are determined by multiplying the amount of HFCs input into the destruction reactor in year y by their global warming potential.

$$BE_{act/hist,y} = \sum BE_{act/hist,x,y} \tag{Equation (1)}$$

$$BE_{act/hist,x,y} = QI_{HFC,x,y} \times GWP_{HFC,x} \tag{Equation (2)}$$

$$QI_{HFC,x,y} = CI_{HFC,x,y} \times FI_{HFC,x,y} \tag{Equation (3)}$$

Where :

- $BE_{act/hist,y}$  = Unadjusted existing actual or historical net baseline emissions in year y (tCO<sub>2</sub>e/year)
- $BE_{act/hist,x,y}$  = Existing actual or historical net baseline emissions of unadjusted HFCs(x) in year y (tCO<sub>2</sub>e/year)
- $QI_{HFC,x,y}$  = Amount of HFCs(x) input into the destruction reactor in year y (tHFCs/year)
- $CI_{HFC,x,y}$  = Concentration of HFCs(x) input into the destruction reactor in year y (tHFCs/Nm<sup>3</sup>)
- $FI_{HFC,x,y}$  = Flow of HFCs(x) input into the destruction reactor in year y (Nm<sup>3</sup>/year)

At this time,  $QI_{HFC,x,y}$  shall not exceed the recovered amount of HFCs collected from ISO tank containers in year y.

**10.3. Calculation of the downward adjusted baseline**

35. The downward adjustment of baseline emissions for the first year of the first credit period is determined as follows.

$$BE_{adj,UNC,y1} = BE_{act/hist,y1} \times (1 - UNC_{BE_{act/hist,y1}}) \tag{Equation (4)}$$

Where :

- $BE_{adj,UNC,y1}$  = Downward adjusted baseline emissions based on uncertainty for each baseline emission in year 1 of the crediting period (tCO<sub>2</sub>e/year)
- $BE_{act/hist,y1}$  = Unadjusted existing actual or historical net baseline emissions for each baseline emission in year 1 of the crediting period (tCO<sub>2</sub>e/year)

- $UNC_{BE_{act/hist,y1}}$  = Uncertainty of baseline emissions at the lower bound of the 95 per cent confidence interval relative to the central estimate of quantified unadjusted net baseline emissions for each baseline emission in year 1 of the crediting period (fraction)
- $y1$  = Calendar year of the start date of the first crediting period

36. The minimum downward adjustment baseline ( $BE_{adj,min,y1}$ ) is determined for the first year of the credit period for each baseline emission as follows.

$$BE_{adj,min,y1} = BE_{act/hist,y1} - (BE_{act/hist,y1} - AE_{y1}) \times 0.1 \quad \text{Equation (5)}$$

Where :

- $BE_{adj,min,y1}$  = Minimum downward adjusted baseline emissions for each baseline emission in year y (tCO<sub>2</sub>e/year)
- $BE_{act/hist,y1}$  = Unadjusted existing actual or historical net baseline emissions for each baseline emission in year 1 of the crediting period (tCO<sub>2</sub>e/year)
- $AE_{y1}$  = Activity emissions for each baseline emission in year 1 of the crediting period (tCO<sub>2</sub>e/year)
- $y1$  = Calendar year of the start date of the first crediting period

37. Compare the downward adjusted baseline emissions based on uncertainty ( $BE_{adj,UNC,y1}$ ) and the minimum downward adjusted baseline emissions ( $BE_{adj,min,y1}$ ) and select the lower as the downward adjusted baseline.

$$BE_{adj,y1} = \min (BE_{adj,min,y1}; BE_{adj,UNC,y1}) \quad \text{Equation (6)}$$

Where :

- $BE_{adj,y1}$  = Minimum downward adjusted baseline emissions for each baseline emission in year y (tCO<sub>2</sub>e/year)
- $BE_{adj,min,y1}$  = Minimum downward adjusted baseline emissions for each baseline emission in year y (tCO<sub>2</sub>e/year)
- $BE_{adj,UNC,y1}$  = Downward adjusted baseline emissions based on uncertainty for each baseline emission in year 1 of the crediting period (tCO<sub>2</sub>e/year)

38. The BAU emissions and baseline emissions shall be calculated using Option (iii) of RMP paragraph 36 and shall be downward-adjusted starting from the first year of the crediting period. The annual increase in the downward adjustment for subsequent years shall be applied by adding 1% to the previous year's downward-adjustment rate.

$$BE_{adj,y(n)} = BE_{act/hist,y1} \times (ADJ_{y(n-1)} + 1\%) \quad \text{Equation (7)}$$

Where :

- $BE_{adj,y(n)}$  = Downward-adjusted baseline emissions in year n of the crediting period (tCO<sub>2</sub>e/year)
- $BE_{act/hist,y1}$  = Unadjusted existing actual or historical net baseline emissions for each baseline emission in year 1 of the crediting period (tCO<sub>2</sub>e/year)
- $ADJ_{y(n-1)}$  = Downward-adjustment rate in year n-1 of the crediting period (%)
- $y(n)$  = The year of the start date of the credit period of year n

**10.4. Identification of the conservative BAU scenario**

- 39. Under the continuation of historical circumstances, the residual HFCs in ISO tank containers returned to HFC importers are released into the atmosphere.
- 40. In determining the BAU scenario and quantifying the BAU emissions, mechanism methodologies shall identify and incorporate into the BAU:
  - (a) Any policies that are active or scheduled to take effect within the crediting period, unless they refer to or formally integrate the mechanism as an instrument for implementation. All legal requirements shall be deemed to be enforced while recognizing that regulatory environments vary; and
  - (b) Any specific national or sub-national targets for the sector or the type of activity, as long as these are supported by policy frameworks for implementation, but not general goals that are not specific to the sector or type of activity.
- 41. The BAU scenario shall be redetermined at each crediting period renewal and the same analysis shall be carried out.

**10.4.1. New Calculation of the conservative BAU emissions**

- 42. The atmospheric emissions of residual HFCs in ISO tank containers shall be calculated using the values provided in the 2019 Refinement to the IPCC Guidelines. The Calculation of the BAU emissions follows:

$$BAU_y = \sum BAU_{HFC,x,y} \tag{Equation (8)}$$

$$BAU_{HFC,x,y} = M_{HFC,x,y} \times (1 - \gamma_{Policy,y}) \times GWP_{HFC,x} \times 6\% \tag{Equation (9)}$$

Where :

- $BAU_y$  = Business-as-usual emissions in year y (tCO<sub>2</sub>e/year)
- $BAU_{HFC,x,y}$  = Emissions to the atmosphere of residual HFCs(x) from ISO tank containers in year y (tCO<sub>2</sub>e/year)
- $M_{HFC,x,y}$  = Imports of HFCs(x) stored in ISO tank containers in year y (tHFCs/year)
- $\gamma_{Policy,y}$  = Adjustment factor reflecting national and subnational regulations and international agreements related to HFCs (adjustment factor determined by the activity participants and validated by the DOE on first verification) (fraction)

- (a) According to the 2019 Refinement to the IPCC Guidelines, 2–10% of the total refrigerant market volume is estimated to be emitted during the handling of refrigerant containers; therefore, a conservative average value of 6% from the IPCC recommended range is applied.
  - (b) An adjustment factor shall be established and justified by taking into account national and subnational regulations or international agreements related to HFCs (e.g., the Kigali Amendment to the Montreal Protocol). For example, if the host Party is a Party to the Montreal Protocol, an adjustment factor shall be established by considering the time-dependent phase-down targets for HFC consumption and production.
  - (c) Frequency of updates:
    - (i) Annual updates: Imports of HFCs(x) stored in ISO tank containers
    - (ii) Crediting period updates: Adjustment factor
43. The conservative BAU emissions ( $BE_{cons,UNC,y}$ ) based on uncertainty are determined as follows.
- (a) The 95% confidence interval for uncertainty shall be determined in accordance with the guidance in Chapter 3 of Volume 1 of the 2019 Refinement to the IPCC Guidelines, using either the error propagation method or Monte Carlo simulation, by considering the uncertainties of all parameters used to calculate the BAU emissions during the first crediting period.
  - (b) The uncertainty shall be traceable for each parameter, and there shall be clear values and assumptions for the uncertainty, along with relevant reference sources used to estimate the uncertainty of the parameters.
44. The conservative BAU emissions ( $BE_{cons,UNC,y}$ ) based on uncertainty are determined as follows.

$$BAU_{cons,UNC,y} = BAU_y \times (1 - UNC_{BAU_y}) \quad \text{Equation (10)}$$

Where :

- $BAU_{cons,UNC,y}$  = Conservative BAU baseline emissions based on the uncertainty in year y (tCO<sub>2</sub>e/year)
- $BAU_y$  = Most likely net BAU baseline emissions in year y (tCO<sub>2</sub>e/year)
- $UNC_{BAU_y}$  = Uncertainty at the lower bound of the uncertainty interval relative to the central estimate of the ex-ante quantified most likely net BAU baseline emissions during the first crediting period year y (fraction)

45. The minimum conservative value of the BAU baseline emissions( $BAU_{cons,min,y}$ ) during the first crediting period is determined as follows.

$$BAU_{cons,min,y} = BAU_y - (BAU_y - AE_y) \times 0.1 \quad \text{Equation (11)}$$

Where :

- $BAU_{cons,min,y}$  = Minimum conservative BAU baseline emissions in year y (tCO<sub>2</sub>e/year)
- $AE_y$  = Activity emissions in year y (tCO<sub>2</sub>e/year)
- $y$  = Relevant year or period

46. The conservative BAU baseline emissions shall be the lowest between  $BAU_{cons,UNC,y}$  and  $BAU_{cons,min,y}$ , as follows.

$$BAU_{cons,y} = \min (BAU_{cons,min,y}, BAU_{cons,UNC,y}) \quad \text{Equation (12)}$$

Where :

- $BAU_{cons,y}$  = Conservative BAU baseline emissions in year y (tCO<sub>2</sub>e/year)
- $y$  = Relevant year or period

### 10.5. Comparison of the downward adjusted baseline and the conservative business-as-usual baseline

- 47. The activity participants shall compare the downward-adjusted baseline emissions ( $BE_{adj,y}$ ) determined in the PDD with the conservative BAU baseline emissions ( $BAU_{cons,y}$ ).
- 48. If  $BAU_{cons,y}$  (the ex-ante determined conservative BAU baseline) is lower than  $BE_{adj,y}$  (the ex-ante determined downward-adjusted baseline), the activity participants shall revise the quantitative methods and coefficients so that  $BE_{adj,y}$  becomes lower than  $BAU_{cons,y}$  for both annual and cumulative values.
- 49. The activity participants shall also, for each year of the monitoring period, compare the ex-post calculated downward-adjusted baseline for that year with the ex-post calculated conservative BAU baseline for the same year, to confirm that the downward-adjusted baseline is lower than the conservative BAU baseline. If this is not the case, the conservative BAU baseline shall be used for that year.

## 11. Activity scenario

### 11.1. Calculation of activity emissions

50. Activity emissions are calculated as follows.

$$AE_y = AE_{EC,y} + AE_{HFC,x,y} + AE_{(CO_2/HFC,x),y} + AE_{Recovery,y} + AE_{Transport,y} \quad \text{Equation (13)}$$

Where :

- $AE_y$  = Activity emissions in year y (tCO<sub>2</sub>e/year)

- $AE_{EC,y}$  = Emissions from electricity consumption required for operating the HFC(x) destruction facility in year y (tCO<sub>2</sub>e/year)
- $AE_{HFC,x,y}$  = Emissions of un-destroyed HFCs(x) released from the destruction reactor in year y (tCO<sub>2</sub>e/year)
- $AE_{(CO_2/HFC,x),y}$  = CO<sub>2</sub> emissions generated from the conversion of HFCs(x) input into the destruction reactor in year y (tCO<sub>2</sub>e/year)
- $AE_{Recovery,y}$  = Emissions from electricity consumption during the operation of the recovery device used to recover the HFCs input in year y (tCO<sub>2</sub>e/year)
- $AE_{Transport,y}$  = Emissions generated from the transport of the HFCs input in year y from the recovery point to the HFC destruction facility (tCO<sub>2</sub>e/year)

(a) Emissions from electricity consumption required for operating the HFC(x) destruction facility

$$AE_{EC,y} = EC_{PJ,y} \times EF_{Electric} \quad \text{Equation (14)}$$

Where :

- $EC_{PJ,y}$  = Electricity consumption required for operating the destruction facility in year y (MWh/year)
- $EF_{Electric}$  = Electricity emission factor (tCO<sub>2</sub>e/MWh)

(b) Emissions of un-destroyed HFCs released from the destruction reactor

$$AE_{HFC,x,y} = \sum (QO_{HFC,x,y} \times GWP_{HFC,x}) \quad \text{Equation (15)}$$

$$QO_{HFC,x,y} = CO_{HFC,x,y} \times FO_{HFC,x,y} \quad \text{Equation (16)}$$

Where :

- $QO_{HFC,x,y}$  = Amount of HFCs(x) output from the destruction reactor in year y (tHFCs/year)
- $CO_{HFC,x,y}$  = Concentration of HFCs(x) output from the destruction reactor in year y (tHFCs/Nm<sup>3</sup>)
- $FO_{HFC,x,y}$  = Flow of HFCs(x) output from the destruction reactor in year y (Nm<sup>3</sup>/year)

(c) CO<sub>2</sub> emissions generated from the conversion of HFCs(x) input into the destruction reactor

$$AE_{(CO_2/HFCx),y} = \sum AE_{(CO_2/HFCx),y} \quad \text{Equation (17)}$$

$$AE_{(CO_2/HFCx),y} = \left\{ \sum QD_{HFC,x,y} \times CR_x \right\} \times \frac{44}{12} \quad \text{Equation (18)}$$

$$QD_{HFC,x,y} = QI_{HFC,x,y} - QO_{HFC,x,y} \quad \text{Equation (19)}$$

Where :

- $AE_{(CO_2/HFCx),y}$  = CO<sub>2</sub> emissions generated from the conversion of HFCs(x) input into the destruction reactor in year y (tCO<sub>2</sub>e/year)
- $QD_{HFC,x,y}$  = Amount of HFCs(x) destroyed in the destruction reactor in year y (tHFCs/year)
- $CR_x$  = Carbon mass fraction per mole of HFCs(x)
- $\frac{44}{12}$  = Mass ratio of 1 mole of CO<sub>2</sub> to 1 mole of carbon

- (d) Emissions from electricity consumption during the operation of the recovery device used to recover the HFCs input

$$AE_{Recovery,y} = EC_{Recovery,y} \times EF_{Electric} \quad \text{Equation (20)}$$

Where :

- $EC_{Recovery,y}$  = Electricity consumption required for operating the recovery device used to recover the HFCs input into the destruction reactor in year y (MWh/year)

Since the revision of the CDM TOOL “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” has not yet been finalized, the emissions related to electricity consumption will be included in the project’s emission calculation once the TOOL revision is finalized and each TOOL is adopted by the Supervisory Body.

- (e) Activity emissions from fossil-fuel, hydrogen-fuel, and electric vehicles used to transport HFCs from the recovery point to the destruction facility

$$AE_{Transport,y} = \sum_k Q_{fuel,k,y} \times NCV_{fuel,k} \times EF_{fuel,k} + AE_{e-Transport,y} \quad \text{Equation (21)}$$

Where :

- $Q_{fuel,k,y}$  = Fuel consumption by fuel type(k) for the vehicles transporting the recovered HFCs to the destruction facility in year y (kL/year, kg/year, MWh/year)
- $NCV_{fuel,k}$  = Net calorific value of fuel type(k) (TJ/L, TJ/Gg)
- $EF_{fuel,k}$  = Emission factor for fuel type(k) (tCO<sub>2</sub>e/TJ)
- $AE_{e-Transport,y}$  = Emissions generated from the transport of HFCs input in year y from the recovery point to the HFC destruction facility by electric vehicle (tCO<sub>2</sub>e/year)

k = Fuel type of the vehicles transporting the recovered HFCs to the destruction facility

The fuel consumption of transport vehicles by fuel type ( $Q_{fuel,k,y}$ ) may be determined using one of the following methods.

- (i) **Fuel purchase summation method:** When it can be demonstrated that the specific operating activity of the transport vehicle for HFCs is attributable to the Article 6.4 activity, the sum of the fuel purchased indicated on the fuel purchase receipts of the transport vehicle may be applied. However, if fuel purchase receipts are used as data, this method may only be applied when the results are validated as reasonable by comparing them with the distance-based method, which calculates fuel consumption using the distance between the HFC handover/takeover points recorded in the HFCs handover/takeover logbook and the fuel efficiency of the transport vehicle.
- (ii) **Distance-based method**

$$Q_{fuel,k,y} = \sum_v \frac{D_{k,v,y}}{V_{efficiency,v}} \tag{Equation (22)}$$

Where :

- $D_{k,v,y}$  = Distance traveled in year y by vehicles using fuel(k) to transport the HFCs input to the destruction facility from the recovery point (km/year)
- $V_{efficiency,v}$  = Fuel efficiency of transport vehicles(v) for HFCs (km/L, km/kg, km/MWh)

The transport distance refers to the distance traveled by the vehicle transporting the HFCs, starting from the vehicle’s starting point (e.g., depot), passing through the HFC handover point, and continuing to the HFC takeover point.

The distance used in the distance-based method may be determined either by the odometer reading summation method or by the address-based calculation method.

- i) **Odometer reading summation method:** The distance recorded in the handover verification form, which is prepared by the driver of each vehicle transporting the HFCs based on the vehicle’s odometer readings, shall be summed and applied. When applying the odometer reading summation method, the result must be cross-checked and validated against the distance calculated using the address-based method for the recovery site, and it shall be considered valid only if its reasonableness is confirmed.
- ii) **Address-based calculation method:** The distance shall be calculated using objective and appropriate sources (such as an online source), based on the addresses recorded in the handover verification form by the driver of each vehicle transporting the HFCs—specifically, the recovery location, the HFC handover point (either to another driver or to the final HFC handler), and the vehicle’s starting point (e.g., depot).

Since the revision of the CDM TOOL (“Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation”) has not yet been finalized,

the emissions from electricity consumption of electric vehicles will be included in the project emission calculation once the revision of the TOOL is finalized and each TOOL is adopted by the Supervisory Body.

## 12. Leakage

### 12.1. Identification of leakage emission sources

51. No potential leakage emission sources have been identified, as none of the types specified in Section 5.1 of the Standard: Addressing Leakage in Mechanism Methodologies are applicable to the activity.

### 12.2. Avoidance or minimization of leakage

52. Leakage is not applicable

### 12.3. Addressing leakage emissions

53. Leakage is not applicable

## 13. Emission reductions

54. Emission reductions are determined ex-ante as follows.

$$ER_y = BE_{adj,y} - AE_y - LE_y \quad \text{Equation (23)}$$

Where :

$ER_y$	=	Emission reductions in year y (tCO <sub>2</sub> e/year)
$BE_{adj,y}$	=	Downward adjusted baseline emissions in year y (tCO <sub>2</sub> e/year)
$AE_y$	=	Activity emissions in year y (tCO <sub>2</sub> e/year)
$LE_y$	=	Leakage emissions in year y (tCO <sub>2</sub> e/year)
$y$	=	Relevant year or period

## 14. Data and parameters not monitored

<b>Data/parameter</b>	>> $GWP_{HFC,x}$
Description	>> Global warming potential of HFCs(x)
Data unit	>> tCO <sub>2</sub> e/tHFCs(x)
Equations referred	>> (2), (9), (15)
Purpose of data	<input checked="" type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions
Value(s) applied	>> Variable (depends on the GHG)
Source of data	<input type="checkbox"/> Measured <input checked="" type="checkbox"/> Other sources
Choice of data or measurement methods and procedures	>> Default value and uncertainty from IPCC Fifth Assessment Report (AR5). Shall be updated according to any future CMA decisions.





Description	>> Concentration of HFCs(x) input into the destruction reactor in year y	
Data unit	>> tHFCs(x)/Nm <sup>3</sup>	
Equations referred	>> (3)	
Purpose of data	<input checked="" type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> Continuous measurement during the operation of the destruction facility	
Measurement methods and procedures	>> $CI_{HFC,x,y}$ : Weighted average concentration of HFCs(x) input into the destruction reactor during operation [Measurement methods] The FT-IR shall be used to electronically perform continuous measurements under identical analytical conditions during the operation of the destruction facility, and all concentration-related analytical data shall be recorded and retained.	
Entity/person responsible for the measurement	>> Activity participants	
Measuring instrument(s)	<i>Type of instrument</i>	>> FT-IR
	<i>Accuracy class</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements.
	<i>Calibration requirements</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements
	<i>Location</i>	>> Inlet pipeline of the destruction facility
QA/QC procedures	>> The measurement instrument shall undergo regular maintenance and testing in accordance with the requirements established by the equipment supplier and/or national specifications.	
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments.	
Additional comment	>> -	

<b>Data/parameter</b>	>> $FI_{HFC,x,y}$	
Description	>> Flow of HFCs(x) input into the destruction reactor in year y	
Data unit	>> Nm <sup>3</sup> /year	
Equations referred	>> (3)	
Purpose of data	<input checked="" type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> Continuous measurement during the operation of the destruction facility	
Measurement methods and procedures	>> $FI_{HFC,x,y}$ : Cumulative flow of HFCs(x) input into the destruction reactor during operation [Measurement methods] The gas volumetric flow under standard conditions shall be continuously measured using a Mass Flow Controller(MFC) or Mass Flow Meter (MFM), and the measured data shall be recorded and retained.	

Entity/person responsible for the measurement	>> Activity participants	
Measuring instrument(s)	<i>Type of instrument</i>	>> MFC or MFM
	<i>Accuracy class</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements.
	<i>Calibration requirements</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements.
	<i>Location</i>	>> Inlet pipeline of the destruction facility
QA/QC procedures	>> The measurement instrument shall undergo regular maintenance and testing in accordance with the requirements established by the equipment supplier and/or national specifications.	
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments.	
Additional comment	>> -	

<b>Data/parameter</b>	>> $CO_{HFC,x,y}$	
Description	>> Concentration of HFCs(x) output from the destruction reactor in year y	
Data unit	>> tHFCs(x)/Nm <sup>3</sup>	
Equations referred	>> (16)	
Purpose of data	<input type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> Continuous measurement during the operation of the destruction facility	
Measurement methods and procedures	>> $CO_{HFC,x,y}$ : Weighted average concentration of HFCs(x) output from the destruction reactor during operation [Measurement methods] The FT-IR shall be used to electronically perform continuous measurements under identical analytical conditions during the operation of the destruction facility, and all concentration-related analytical data shall be recorded and retained.	
Entity/person responsible for the measurement	>> Activity participants	
Measuring instrument(s)	<i>Type of instrument</i>	>> FT-IR
	<i>Accuracy class</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements.
	<i>Calibration requirements</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements.
	<i>Location</i>	>> Inlet pipeline of the destruction facility

QA/QC procedures	>> The measurement instrument shall undergo regular maintenance and testing in accordance with the requirements established by the equipment supplier and/or national specifications.
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments.
Additional comment	>> -

<b>Data/parameter</b>	>> $FO_{HFC,x,y}$	
Description	>> Flow of HFCs(x) output from the destruction reactor in year y	
Data unit	>> Nm <sup>3</sup> /year	
Equations referred	>> (16)	
Purpose of data	<input type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> Continuous measurement during the operation of the destruction facility	
Measurement methods and procedures	>> $FO_{HFC,x,y}$ :: Cumulative flow of HFCs(x) output from the destruction reactor during operation [Measurement methods] The gas volumetric flow under standard conditions shall be continuously measured using a Mass Flow Controller(MFC) or Mass Flow Meter (MFM), and the measured data shall be recorded and retained.	
Entity/person responsible for the measurement	>> Activity participants	
Measuring instrument(s)	<i>Type of instrument</i>	>> MFC or MFM
	<i>Accuracy class</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements.
	<i>Calibration requirements</i>	>> Determined according to the specifications of the measuring instrument supplier and/or according to the requirements set by the operator or national requirements.
	<i>Location</i>	>> Outlet pipeline of the destruction facility
QA/QC procedures	>> The measurement instrument shall undergo regular maintenance and testing in accordance with the requirements established by the equipment supplier and/or national specifications.	
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments.	
Additional comment	>> -	

<b>Data/parameter</b>	>> $EC_{P,j,y}$
Description	>> Electricity consumption required for operating the destruction facility in year y
Data unit	>> MWh/year
Equations referred	>> (14)

Purpose of data	<input type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> Continuous measurement	
Measurement methods and procedures	>> Directly measured using electricity meters	
Entity/person responsible for the measurement	>> Activity participants	
Measuring instrument(s)	<i>Type of instrument</i>	>> Electricity-meters
	<i>Accuracy class</i>	>> Regulated electricity-meters: in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements. Non-regulated electricity-meters: in accordance with the stipulation of the meter supplier or national requirements.
	<i>Calibration requirements</i>	>> Regulated electricity-meters: in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. Non-regulated electricity-meters: in accordance with national standards or requirements set by the meter supplier.
	<i>Location</i>	>> Installed at the electricity consumption source
QA/QC procedures	>> Electricity meters will be subject to regular maintenance and testing in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements.	
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments.	
Additional comment	>> -	

<b>Data/parameter</b>	>> $EC_{Recovery,y}$	
Description	>> Electricity consumption required for operating the recovery device used to recover the HFCs input into the destruction reactor in year y	
Data unit	>> MWh/year	
Equations referred	>> (20)	
Purpose of data	<input type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> Each time HFCs are recovered	
Measurement methods and procedures	>> Information on the recovery device used for recovering the HFCs, as well as the electricity consumption during the operation of the recovery device, shall be measured by the electricity meter installed on each recovery device, and corresponding records shall be maintained.	
Entity/person responsible for the measurement	>> Activity participants	
Measuring instrument(s)	<i>Type of instrument</i>	>> Electricity-meters

	<i>Accuracy class</i>	>> Regulated electricity-meters: in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements. Non-regulated electricity-meters: in accordance with the stipulation of the meter supplier or national requirements.
	<i>Calibration requirements</i>	>> Regulated electricity-meters: in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. Non-regulated electricity-meters: in accordance with national standards or requirements set by the meter supplier.
	<i>Location</i>	>> Installed at the electricity consumption source
QA/QC procedures	>> Electricity meters will be subject to regular maintenance and testing in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements	
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments.	
Additional comment	>> -	

<b>Data/parameter</b>	>> $D_{k,v,y}$	
Description	>> Distance traveled in year y by vehicles using fuel(k) to transport the HFCs input to the destruction facility from the recovery point	
Data unit	>> km/year	
Equations referred	>> (22)	
Purpose of data	<input type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> Each time the HFC recovery cylinder is transported	
Measurement methods and procedures	>> Distance measured through the odometer of the HFC transport vehicle or calculated using objective and appropriate sources such as an online source	
Entity/person responsible for the measurement	>> Activity participants or vehicle operator	
Measuring instrument(s)	<i>Type of instrument</i>	>> Vehicle odometer, other appropriate sources (e.g. online sources)
	<i>Accuracy class</i>	>> N/A
	<i>Calibration requirements</i>	>> N/A
	<i>Location</i>	>> N/A
QA/QC procedures	>> The measurement instrument shall undergo regular maintenance and testing in accordance with the requirements established by the equipment supplier and/or national specifications.	
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments	
Additional comment	>> -	

<b>Data/parameter</b>	>> $V_{efficiency,v}$	
Description	>> Fuel efficiency of transport vehicles(v) for HFCs	
Data unit	>> km/L, km/m <sup>3</sup> , km/kg, km/MWh	
Equations referred	>> (22)	
Purpose of data	<input type="checkbox"/> Baseline emissions <input checked="" type="checkbox"/> Project emissions <input type="checkbox"/> Leakage emissions	
Measurement and updating frequency	>> when the transport vehicle is changed	
Measurement methods and procedures	>> Values provided by the vehicle supplier or a nationally accredited measurement institution.	
Entity/person responsible for the measurement	>> The vehicle supplier or a nationally accredited measurement institution	
Measuring instrument(s)	<i>Type of instrument</i>	>> Vehicle odometer, other appropriate sources (e.g. online sources)
	<i>Accuracy class</i>	>> N/A
	<i>Calibration requirements</i>	>> N/A
	<i>Location</i>	>> N/A
QA/QC procedures	>> The measurement instrument shall undergo regular maintenance and testing in accordance with the requirements established by the equipment supplier and/or national specifications.	
Treatment of uncertainty	>> Uncertainties are determined based on the measuring instruments.	
Additional comment	>> -	

### 15.1. Frequency of submission of monitoring reports

55. N/A, since this requirement is only applicable for activities involving removals and for emission reduction activities with risks of reversals.

## 16. Methodologies principles

### 16.1. Encouraging ambition over time

56. The mechanism ensures consistency with the host Party's long-term mitigation objectives and decarbonization strategy by applying increasingly ambitious baselines during the crediting period.

### 16.2. Contributing to the equitable sharing of mitigation benefits between participating Parties

57. The validity period of HFC destruction extends beyond the recognition period of the Article 6.4 mitigation activity, and the host Party may continue to benefit from the installed HFC destruction technology even after the end of the activity's recognition period;
58. The use of the sustainable development tool during the design and implementation of the activity is mandatory, and it shall be demonstrated that the Article 6.4 mitigation activity

supports the host Party in achieving its sustainable development objectives and prevents adverse environmental or social impacts;

59. In addition, the activity participants shall verify whether the host Party's Designated National Authority (DNA) has specified conditions regarding the equitable sharing of mitigation benefits among project participants, and shall ensure that the host Party's share of benefits is maintained.

### **16.3. Encouraging broad participation**

60. This mechanism methodology encourages broad participation by achieving the following:

- (a) Simplicity and clarity: The mechanism methodology calculates baseline emissions, activity emissions and emission reductions using simple equations rather than complex modelling, and requires very few monitoring parameters;
- (b) Consideration of country-level flexibility: The mechanism methodology does not favour specific technologies, countries or economic conditions, and its data requirements and activity boundary definition are designed to be realistic and applicable even in developing countries;
- (c) Organisational accessibility: The mechanism methodology enables the systematic participation of dispersed HFC importers in the activity.

### **16.4. Attributability of emission reductions or net removals to the Article 6.4 activity**

61. This methodology establishes an independent and clearly defined attribution boundary for the emission reductions resulting from the recovery and destruction of HFCs, and the emission reductions are attributable only to the actual activity participants undertaking the HFC recovery and destruction activities.

### **16.5. Potential perverse incentives**

62. This methodology targets only the residual HFCs remaining after they have been used by consumers and subsequently recovered, in order to avoid any perverse incentive that could lead to unnecessary production or emissions of HFCs as a result of the HFC destruction activity.

### **16.6. Rebound effects**

63. The additionality demonstration has been designed to ensure that the HFC destruction activity does not replace activities related to the reuse or recycling of HFCs.

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
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