



VM0016

Recovery and Destruction of Ozone-Depleting Substances (ODS) from Products

Introduction to an approved methodology



Who's on this webinar?

VCSA:

Sam Hoffer, Program Officer

Energy Changes Projektentwicklung GmbH:

Clemens Plöchl, Managing Director

Bureau Veritas:

Witold Dżugan, CER Operations Manager

Agenda

1. Methodology Approval Process
2. Overview of VM0016
3. Perspective from the validation/verification body
4. Q&A

PART 1: Methodology Approval Process

Public comment period

First assessment

Second assessment

Final approval



Methodology Approval Process

- 30-day public comment period:
 - 5 May 2010 - 3 June 2010
 - 9 comments received
- First assessment
 - TÜV SÜD
 - First Assessment Report Issued: 25 August 2011
- Second assessment
 - Bureau Veritas
 - Second Assessment Report Issued: 16 August 2011
- Final VCS approval
 - 15 September 2011

PART 2: Overview of VM0016

Overview

Project boundary

Approach to baselines and additionality

Approach to quantification

Approach to monitoring



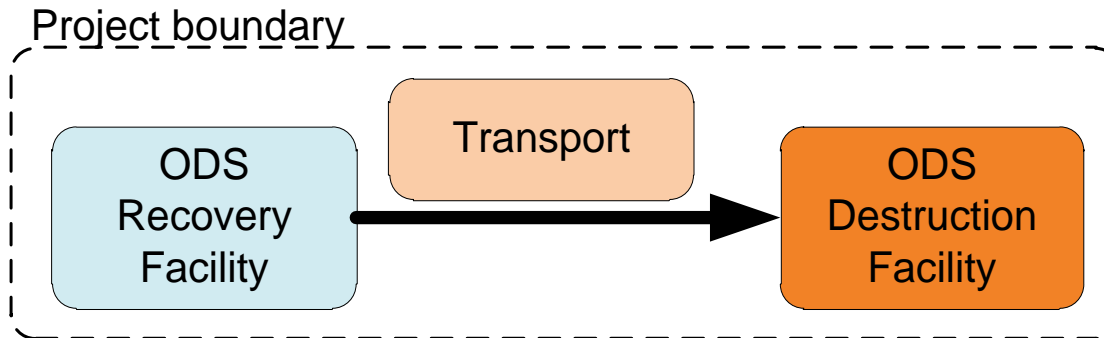
Overview

- Objective is to incentivize the recovery and destruction of Ozone-Depleting Substances (ODS) from products such as refrigeration, air conditioning or fire suppression equipment, systems or appliances, or thermal insulation foams.

Applicability Criteria

- This methodology is applicable to project activities recovering and destroying ODS from products where the baseline scenario is the partial or total atmospheric release of ODS.
- The methodology can be applied to either ODS refrigerants and/or ODS blowing agents. In the case of ODS blowing agents the methodology is only applicable to project activities recovering and destroying ODS blowing agents contained in insulation foam of end of life refrigerator appliances.
- The ODS blowing agent must be extracted from the foam to a concentrated form prior to destruction. This must be done under negative pressure to ensure that fugitive release of ODS cannot occur.

Project boundary



Approach to baselines and additionality

The methodology is only applicable for ODS refrigerants if the most plausible baseline scenario for the ODS refrigerant is either:

- Atmospheric release of the ODS refrigerant or partial capture and destruction
- Atmospheric release of the ODS refrigerant or partial capture and reuse in existing products
- or a combination of both

In respect of ODS blowing agents, the methodology is only applicable if the most plausible baseline scenario for ODS blowing agents from foam is:

- Before final disposal, the refrigerators containing foam are shredded. The foams are subsequently:
 - Disposed of at an incineration facility
 - Disposed of at a landfill/dump
 - Disposed of by open burning
 - Extracted and ODS blowing agents are partly captured and destroyed
 - or any combination of these scenarios

Approach to baselines and additionality

The additionality of project activities shall be demonstrated and assessed using the latest version of the CDM “Tool for the demonstration and assessment of additionality”.

Approach to quantification

Baseline Emissions

In the baseline, ODS refrigerants destroyed by the project activity could either be:

- vented
- reused
- destroyed

$$BE_{\text{ODS_refr},y} = \sum_{i=1}^n ((M_{\text{DESTR,refr},i,y} \times VR_{\text{refr},i,y} \times EF_{VR,i,y}) + (M_{\text{DESTR,refr},i,y} \times RR_{\text{refr},i,y} \times EF_{RR,refr,i,y}) + (M_{\text{DESTR,refr},i,y} \times DR_{\text{refr},i,y} \times EF_{DR,i,y})) \times GWP_{\text{refr},i}$$

ODS blowing agents contained in insulation foam of end of life refrigerator appliances:

$$BE_{\text{ODS_foam},y} = \sum_{i=1}^n ((M_{\text{APPLIANCE,foam},i,y} \times ER_{\text{foam},i,y} - (M_{\text{APPLIANCE,foam},i,y} - M_{\text{DESTR,foam},i,y})) \times GWP_{\text{foam},i})$$

Approach to quantification

Project Emissions:

- Emissions that are caused by the project activity due to energy consumption at the ODS recovery facility
- Emissions that are caused by the project activity due to ODS transportation
- Emissions that are caused by the project activity due to ODS destruction

$$PE_y = PE_{Energy-Consump,y} + PE_{ODS_Transport,y} + PE_{ODS_Destruction,y}$$

Leakage Emissions:

- Leakage emissions occur where in the baseline ODS refrigerant would have been re-used and in the project scenario must be substituted by other chemicals. Reuse may result in a gradual release of ODS over the project crediting period. When refrigerant ODS are destroyed, continued demand for refrigeration will lead to the production and consumption of other refrigerant chemicals whose production is still legally allowed.

Approach to monitoring

Composition and Quantity Analysis Requirements

Mass shall be determined by individually measuring the weight of each container of ODS at the destruction facility, prior to destruction (full and empty), and samples must be taken by a third party and analyzed by an (accredited) third party.

Determination of Recovery Efficiency of Blowing Agents Contained in Foam of Refrigeration Appliances

Annually test 1000 refrigeration appliances with ODS containing insulation materials. To compile a mass balance analysis, the total weight of all the appliances used in the test shall be determined and recorded. In addition, the weight of all material fractions recovered from the processing plant during the test shall be determined.

The gas cylinders used to store the recovered ODS are weighed when empty (i.e. before processing commences) and again when filled (i.e. after processing has been completed).

Destruction Facility Requirements

Operating parameters of the destruction unit while destroying ODS material shall be monitored and recorded as described in the Code of Good Housekeeping (as reproduced in full in Annex II) approved by the Montreal Protocol.

TEAP, Code of Good Housekeeping in *Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer - 7th Edition* (2006)

PART 3: Perspective from the VVB



Perspective from Bureau Veritas

- Application of the methodology
- General comments
 - Clear applicability criteria
 - Robust and clearly defined baseline approach
- Focus areas for validation/verification
 - Identification of host country disposal practice
 - Identification of ODS streams
 - Control of materials flow / Use of appropriately calibrated equipment
 - Strong reference to external documents such as RAL Quality Assurance and Test Specifications for the Demanufacture of Refrigeration

PART 4: Q & A

Send us your questions

We will consolidate and try to answer all questions right now

More questions after today?

shoffer@v-c-s.org

Thank you

Sam Hoffer

shoffer@v-c-s.org

VCS Association

1730 Rhode Island Avenue, NW

Suite 803

Washington, DC 20036

www.v-c-s.org

