Ozone Depleting Substances Technical Working Group

Meeting #3: May 17th

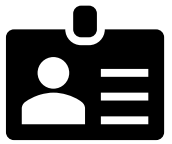
DEPARTMENT OF ECOLOGY
State of Washington

Agenda – Meeting #3

- Topic #1 Substitute emissions calculations
- Topic #2 ODS sourced from federal government
- Topic #3 Invalidation liability restriction
- Wrap up and next steps
  - Next meeting: June 4th
- Public comment opportunity

Zoom tips and tricks

Panelists please keep yourself muted unless you're speaking.



Please rename yourself with your affiliation: Click on 'Participants,' hover over your name Click 'More' then 'Rename.'

For panelists please keep your video on as bandwidth allows.

Reminder: Role of this Working Group

- This working group is not tasked with making consensus recommendations changes to Ecology rule or adopted protocols
- Ecology will consider multiple sources and perspectives, including the input collected through this working group, when deciding how to proceed with changes to this protocol
- Input provided by working group members, even if unanimous, should not be considered an indicator of the changes Ecology may or may not make

Topic #1

Topic: Revise substitute emissions calculation

- Current: Substitute emissions calculations are deducted from issued offset for refrigerant projects (not foams)
- Considered change: Revise substitute emissions calculations based on revised substitutes, updated GWP's
- Alternatives:
  - Remove substitute emissions (reflecting baseline of stockpiling)

Substitute emissions deduction

[2.1 tons CFC-11(=10,000 t CO2e) x 10-year cumulative emissions rate]

- [*Substitute Emissions* + *Emissions from transport and destruction]*

= Offsets Issued

Example:

[10,000 CO2e CFC-11 x 89%]

- [2.1 tons * 223 substitute emissions factor +Emissions from transport and destruction]

=8,400 Offsets Issued

Substitute Emissions Values in 2014 ODS Protocol

ODS Refrigerants	GWP (t CO2e/t ODS)	Substitute Emissions (t CO2e/t ODS)
CFC-11	4,750	223
CFC-12	10,900	686
CFC-13	14,400	7,144
CFC-113	6,130	220
CFC-114	10,000	659
CFC-115	7,370	1,139

CAR ODS 2.0 Calculation

Table D.3. Calculation of Substitute Emissions for CFC-11

Application	CFC-11 Recharge Market Share	ODS Substitute	Market Share Relative to Subsector (by weight)	Overall CFC-11 Market Share	GWP (CO_2e)	Relative Charge Size (lb Sub/lb ODS)	Sub Used to Replace One lb CFC-11 (lbs)	Loss Rate of Sub (%/yr)	10-year $lbCO_2e$/ODS Destroyed
Large Refrigeration	3%	HCFC-123	65%	2%	90	0.88	0.017	5%	1
		HFC-134a	35%	1%	1300	1.4	0.019	5%	8
Large AC	97%	HCFC-123	41%	33%	90	0.88	0.289	2%	7
		HFC-134a	59%	64%	1300	1.4	0.894	2%	186
							CFC-Sub Emissions ($lbCO_2e$/lbODS destroyed)		202

Substitute Emissions Values in CAR ODS 2.0 Protocol

ODS Refrigerants	Substitute
CFC-11	HCFC-123, HFC-134a
CFC-12	HCFC-123, HFC-134a, R-404a, R-410a, R-507a, R-407c
CFC-13	HFC-23
CFC-113	HCFC-123, HFC-134a
CFC-114	HFC-134a
CFC-115	R-404a, R-507a, Non-ODP

Treatment in Comparable Protocols

ACR ODS 1.2	ACR ODS 2.0	VM0016	CAR ODS 2.0
Align with CARB protocol + new values for R-22, halons, medical aerosols	No substitute emissions; baseline of stockpiling	Most recent CAR ODS values, or research provided by proponent	Values differ slightly from values adopted by CARB

Substitute Emissions change logistics

- Updating these values would require a change to table B.1 and B.2 of the adopted protocol
- Substitute emissions factor may also need to be updated
  - Calculations for substitute emissions are listed in CAR 2.0 protocol

Discussion: Topic 1 Context

- What additional context or considerations related to this topic should Ecology be aware of?
- Do substitute emissions factors reflect retrofitting of existing equipment or refrigerants in new replacement equipment?
- Should substitute emissions factors that assume substitution with a phased out refrigerant be updated?

Discussion: Topic 1 Current Practices

- Do the refrigerant use applications reflect current practices?

ODS Refrigerants	CFC Recharge Market Share	Substitute with
CFC-11	97% Large AC, 3% Large Refrig.	HCFC-123, HFC-134a
CFC-12	50% Mobile, 33% Large Refrig, 17% Large AC	HCFC-123, HFC-134a, R-404a, R-410a, R-507a, R-407c
CFC-13	100% Large Refrig.	HFC-23
CFC-113	100% Large AC	HCFC-123, HFC-134a
CFC-114	100% Large AC	HFC-134a
CFC-115	100% Refrig.	R-404a, R-507a, Non-ODP

Discussion: Topic 1 Programmatic Goals

- Does this change contribute to Ecology's programmatic goals of this rulemaking:
  - Reflect advances in policy and scientific understanding
  - Remove unnecessary project development barriers, inefficiencies, and exclusions
  - Increase methodological rigor

Topic #2

ODS Sourced from the Federal Government

- Current: “ODS sourced from federal government installations or stockpiles is not eligible under this protocol”.
- Considered change: Allow ODS sourced from federal governmental installation or stockpiles
- Alternatives:
  - Allow only ODS sourced from DoD auctions
  - Retain prohibition federal development of ODS projects

Background in CAR 2.0 protocol

- In CAR 1.0 protocol ODS sourced from federal installations was deemed ineligible, due to some ODS source from the federal government already being destroyed – however, following publication of the 1.0 protocol it was determined that this destruction was on a pilot basis and not common practice
- 2.0 protocol removes blanket prohibition but retains prohibition on all federal sourcing outside of DoD auctions
- The Dept. of Defense maintains a stockpile refrigerants for weapons use
- The federal government also seizes refrigerants as illegal material at U.S. Customs

CAR 2.0 protocol

- Neither the federal government nor a federal agency is eligible to be a project developer, but material sourced from the government may be eligible if it meets all protocol requirements
- Specifies that ODS sourced directly from federal government agencies or installations is not eligible under the protocol.
- Only eligible federal ODS is ODS sourced from US Defense Logistics Agency Disposition Auction (DLA)
- Specifies point of origin procedure for ODS purchases from a DLA (place of storage at time of auction)
- Refrigerants seized by US Customs are ineligible because the refrigerants were not produced in the US

Treatment in other protocols

- ACR 2.0
  - No restrictions on sourcing from federal government
  - Halons sourced from strategic stockpiles are ineligible

- VM0016
  - No restrictions on sourcing from federal government, some quantification assumptions (e.g leak rates) are different for government stockpiles

Discussion: Topic 2 Context

- What additional context or considerations related to this topic should Ecology be aware of?

Discussion: Topic 2

- Are there significant federal ODS sources outside of DLA and customs seizure? (e.g. installations at federal facilities)
- Without a specific prohibition on ODS from customs seizures, would these be eligible in the current protocol?
- Is a prohibition on ODS sourced from strategic stockpiles needed for substances besides halons?
- Are there reasons to specifically exclude the federal government as a project developer?
- Does this change have the potential to significantly increase the supply of ODS eligible for destruction?

Discussion: Topic 2 Programmatic Goals

- Does this change contribute to Ecology's programmatic goals of this rulemaking:
  - Reflect advances in policy and scientific understanding
  - Remove unnecessary project development barriers, inefficiencies, and exclusions
  - Increase methodological rigor

Topic #3

Invalidation

- An offset can be invalidated if:
  - An offset project data report contains errors that overstate the amount of GHG emissions reductions or removals by >5%
  - **The offset project activities or implementation of the offset project was not in accordance with all local, regional, state, or national health and safety laws in the jurisdiction where the offset project is located and that directly apply to the offset project**
  - Ecology determines that offset credits have been issued in any other voluntary or compliance programs within the same offset project boundary for the same reporting period

Invalidated Offsets

- If Ecology makes a final determination that an offset is invalid:
  - The offset will be removed from any holding, compliance, or forest buffer account
  - If an entity that has already used an offset for compliance, they must replace the invalidated offset with a valid compliance instrument within 6 months of notification by Ecology

Offset Invalidation Timeframe

- An offset may be invalidated within 8 years of issuance by Ecology
- This 8 year window may be reduced to 3 years if the project developer conducts a second independent 3rd party verification.

Offset Invalidation Market Dynamics

- In CARB's program offsets with a full 8 year invalidation window trade at a discount compared with offsets with a 3 year invalidation window, which in turn trade at a discount to offsets that have passed their invalidation window
- About 70% of CARB ODS projects have completed a 2nd verification to reduce invalidation window

Invalidation liability restriction

- Current: Non-compliance at any part of a destruction facility during the period of destruction may be considered grounds for invalidation
- Proposed: Restrict the liability for invalidation to only include ODS destruction facility regulatory non-compliance if the non-compliance events directly impact ODS handling, destruction, and emissions from ODS processing
  - Non-compliance events that have no impact on ODS processing would not be grounds for invalidation

Invalidation in practice

- CARB ODS project invalidation of credits from destruction event at a facility in Arkansas for a destruction event in 2012
- Destruction used a rotary kiln incinerator which produced, as a byproduct, several acidic gases
- These gases were passed through a multi-step process to produce calcium chloride brine, which was then sold for use as a drilling fluid
- This had been a long standing practice for the facility but was found to be a RCRA violation in a 2011 EPA inspection
- Upon the EPA's determination that this practice was a RCRA violation the practiced was ceased in Feb. 2012, shortly after completing of the destruction

Invalidation treatment in other protocols

- Invalidation is unique to WCI Compliance programs
- ACR 2.0 eligibility requirements
  - A destruction facility in the U.S. must meet all applicable monitoring and operational requirements under CAA and NESHAP standards, as well as all applicable federal, state, and local laws **that apply directly to ODS, high-GWP foam blowing agent, and high-GWP insulation foam destruction activities** during the time the ODS, high-GWP foam blowing agent or high GWP foam destruction occurs.

Change logistics

- Change to rule language, rather than protocol
- WAC 173-446-580(3)(b)
- "(3) Grounds for initial determination of invalidation. Ecology may determine that an ecology offset credit is invalid for the following reasons:
  - (b) The offset project activity(ies) or implementation of the offset project was not in accordance with all local, regional, state, and national environmental and health and safety laws and regulations that apply in the jurisdiction in which the offset project is located and that directly apply to the offset project, including as specified in the applicable compliance offset protocol during the reporting period for which the ecology offset credit was issued.
    - *(i)For offset projects using the ozone depleting substances protocol non-compliance events that do not directly impact ODS handling, destruction, and emissions from ODS processing will not be considered grounds for an initial determination of invalidation"*

Discussion: Topic 3 Context

- What additional context or considerations related to this topic should Ecology be aware of?

Discussion: Topic 3

- Is this a meaningful change in invalidation liability at ODS destruction facilities?
  - Are concurrent unrelated activities at destruction facilities common?
- Would this change impact project verification activities? (E.g. limit the scope of verifications)
- Would this change be anticipated to significantly impact either developer or buyer decisions? (E.g. less incentive for a 2nd verification, reduction in “discount” of offsets with a longer invalidation period)

Discussion: Topic 3 Programmatic Goals

- Does this change contribute to Ecology's programmatic goals of this rulemaking:
  - Reflect advances in policy and scientific understanding
  - Remove unnecessary project development barriers, inefficiencies, and exclusions
  - Increase methodological rigor

Planning for next meeting

Additional substances to consider

- Topic 1: Additional refrigerants
  - HCFC-22, HCFC-123*
- Topic 2: Additional foams
  - HCFC-142b, HFC-134a*, HFC-245fa*, HFC-365mfc*
- Topic 3: Medical Aerosols
  - CFC-11,CFC-12, CFC-114, HCFC-22, HCFC-142b
- Topic 4: Unused solvents
  - CFC-11, CFC-113, HCFC-123*, HCFC-141b, HCFC-225ca, HCFC-225cb
- Topic 5: Fire Suppressants
  - Halon 1211, Halon 1301

*Not yet fully phased out on a federal level

Discussion: Meeting 4 Agenda

- Is this an appropriate grouping of substances by topic?
- Are there any particular substance(s) within a topic category that have unique considerations?
- Are there any additional substances that we should consider?

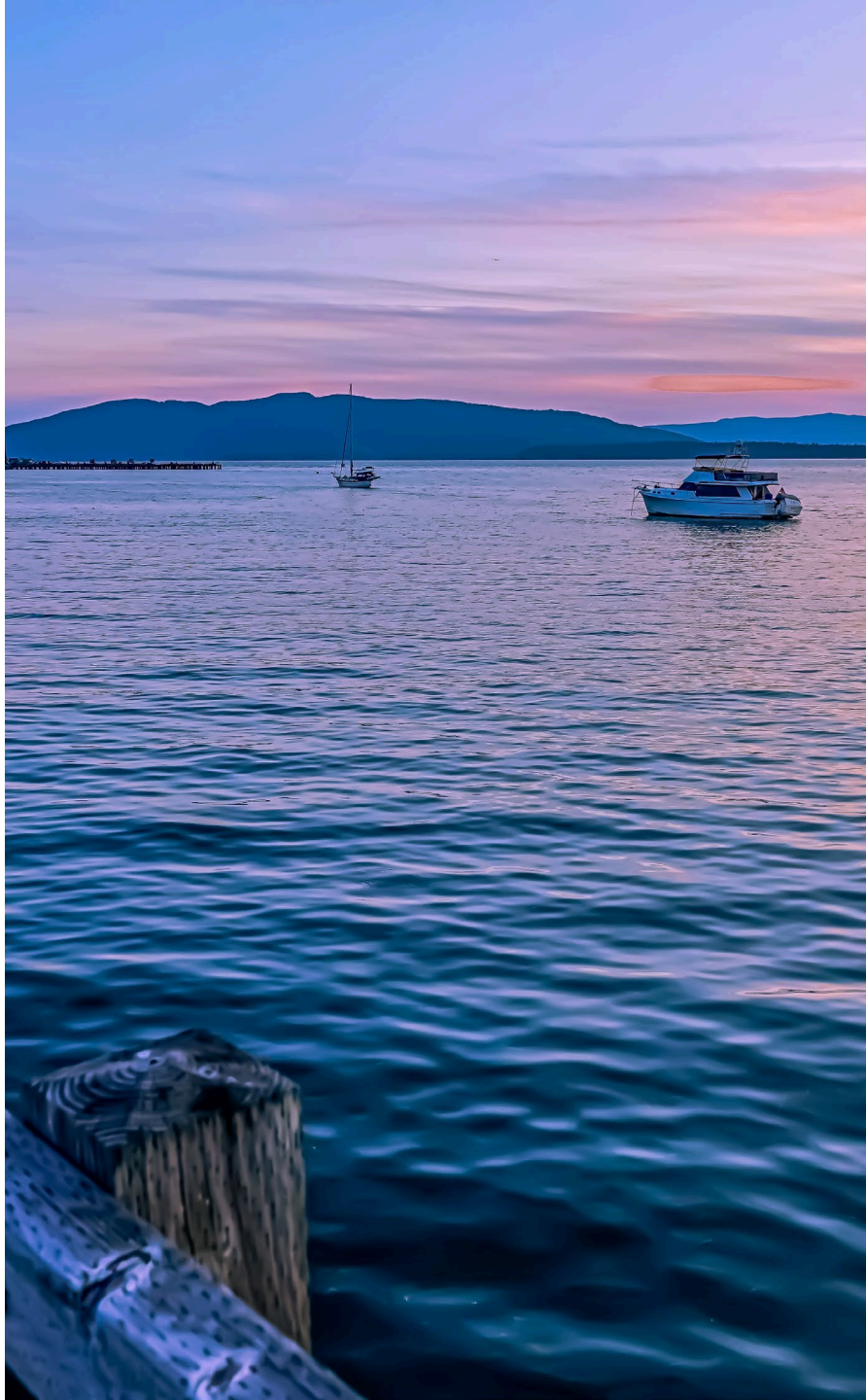
Next steps

- Review summary notes for Meeting #3
  - Respond to brief poll on topics discussed in today's meeting
- Meeting #4 is June 4th at 8:00 am PT

Public Comment Opportunity

Guidelines for providing public comment

- Up to two minutes per person
- Host will unmute you and begin timer
- Please keep the comments related to offsets and ozone depleting substances
- Ecology will not respond to comments in this meeting
- To submit written comments, use our digital comment platform
- Please use “raise hand” button to indicate that you wish to provide a comment



Thank you!

Contact:
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