CLIMATE ACTION RESERVE

ODS Destruction Protocol Stakeholder Meeting

Ontario and Quebec
March 3, 2017

Agenda

1. Background & introductions
2. Process overview
3. Draft ODS protocol
4. Audience questions
5. Next steps

Item 1

BACKGROUND

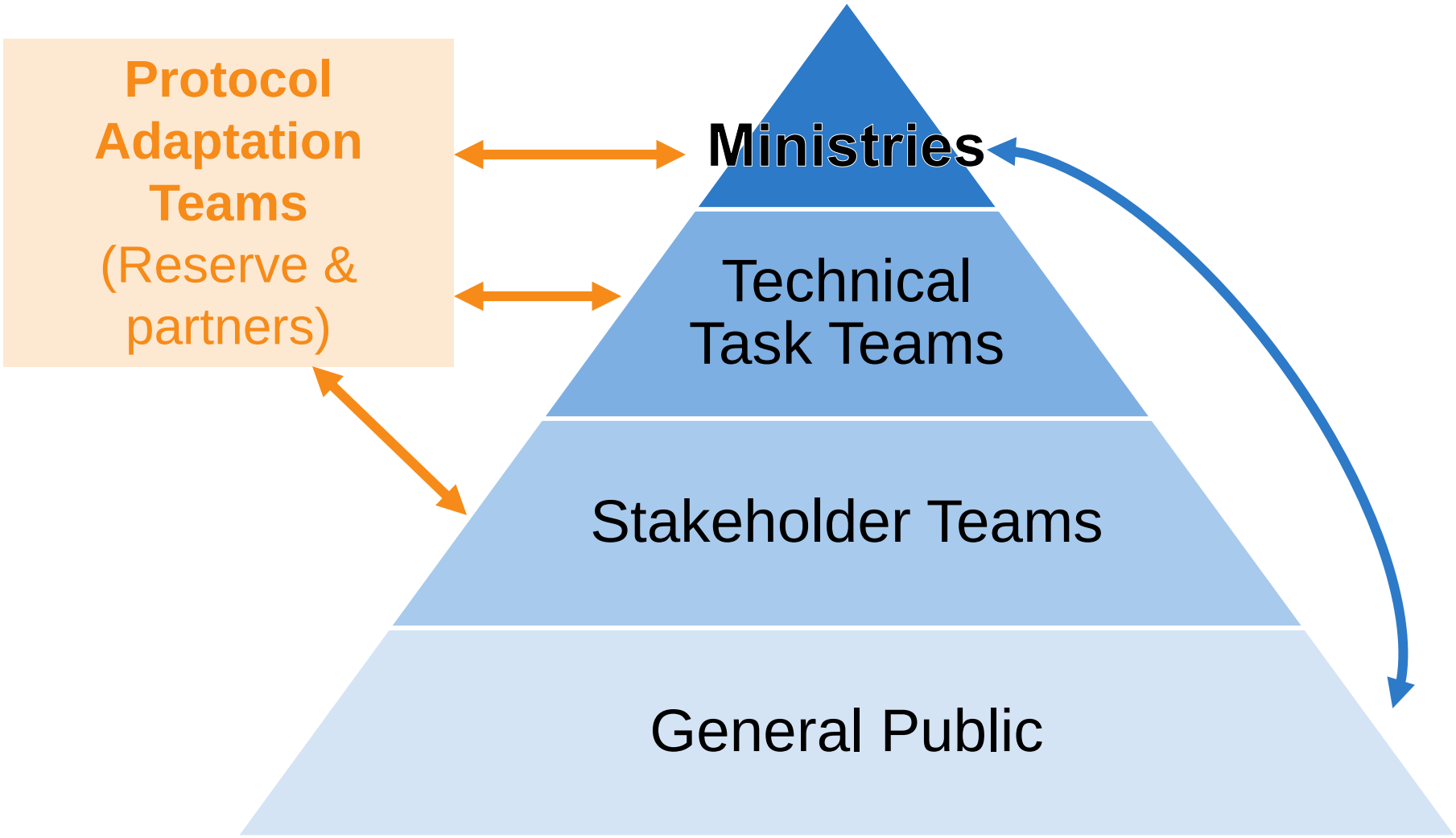
Background

- Ontario & Quebec have retained the Reserve to develop 13 offset project protocols to support cap-and-trade
- 3 protocols identified as high priority:
  - **Ozone Depleting Substances Destruction**
  - Landfill Gas Destruction
  - Mine Methane Destruction
- **MOECC** = Ontario Ministry of Environment and Climate Change
- **MDDELCC** = Quebec Ministry of Sustainable Development, Environment, and Fight Against Climate Change

Climate Action Reserve

- Nonprofit founded in 2001
- Developed GHG inventory & verification protocols for commercial and industrial entities
  - Operated a public registry for hundreds of entities in CA
- Launched offset project registry in 2008
  - Developed or adapted 18 project protocols for the US and Mexico
  - Work directly informed the CA and QC compliance protocols
  - Registered hundreds of voluntary and compliance projects, generating >87M tCO_2e in GHG reductions
- Partners: Viresco Solutions, Brightspot Climate, Cap-Op Energy, Green Analytics, and EcoRessources

Structure


Protocol Adaptation Teams (Reserve & partners)
Ministries
Technical Task Teams
Stakeholder Teams
General Public

ODS Protocol Adaptation Team

Organization	Primary Contact
Climate Action Reserve	Max DuBuisson *(Team Lead)* Stephen Holle
Brightspot Climate	Aaron Schroeder
Cap-Op Energy	Cooper Robinson Brain Sloof
EcoRessources	Mathieu Dumas Nathan De Baets

ODS Technical Task Team

Name	Title	Organization
Craig Mazin	Senior Policy Analyst	MOECC (Ontario)
Dushan Jojkic	Senior Program Advisor	MOECC (Ontario)
Dan Hahn	Senior Program Advisor	MOECC (Ontario)
Steve Doucet-Héon	Direction du marché du Carbone, Direction générale de la réglementation carbone et des données d'émission	MDDELCC (Quebec)
Pierre-Luc Rousseau	Direction générale de la réglementation carbone et des données d'émission	MDDELCC (Quebec)
Nancy Seymour	Ozone Protection Programs	Environment and Climate Change Canada

ODS Stakeholder Team

- Targeted group to provide feedback during the adaptation process
- 40 stakeholders from diverse sectors
  - Government
  - Industry
  - Consulting
  - Academia
  - NGOs

Item 2

PROCESS OVERVIEW

Process overview

- Quebec ODS protocol is the starting point
- All protocols will use a common template
- Specific changes are proposed to the QC protocol content
- Stakeholder draft incorporates feedback from Technical Task Team (TTT)
- After Stakeholder review, additional comments/feedback will be reviewed and incorporated

Work Plan

Timeline	Task
January	*PAT works with Ministries to develop task teams and coordinate outreach.*
February 17	*Initial meeting (webinar) of this TTT. Staff from the Reserve present the draft protocol and any proposed changes. TTT members are asked to submit feedback and comments.*
February 22	TTT comments are due to the Reserve.
Feb 23 – Mar 3	PAT will revise the protocol based on TTT comments.
March 3	Initial meeting (webinar) with the broader group of interested stakeholders. TTT members are encouraged to attend this meeting, as well.
March 9	Stakeholder & TTT comments due
March 9-14	PAT will revise the protocol based on stakeholder and TTT comments
March 17	Second meeting (webinar) with the stakeholder group, including TTT members, to discuss the revised protocol
March 20-22	PAT will revise the protocol based on stakeholder and TTT comments
March 22	Final, revised protocol will be submitted to the Ministry for approval
TBD	MOECC and MDDELCC will conduct formal public comment periods

Item 3

DRAFT ODS PROTOCOL

§2 Project definition

Destruction of eligible refrigerant and foam blowing agent, from eligible sources, at an eligible destruction facility

- Sources:
  - Canada
  - Appliances (refrigerant and blowing agent)
  - Stationary installations (refrigerant)
- Destruction facilities
  - Canada & USA
  - Destruction technologies approved under the Montreal Protocol
  - Single facility per project

§2.2 Eligible chemicals

Foam Blowing Agents	Refrigerants
CFC-11	CFC-11
CFC-12	CFC-12
HCFC-22	CFC-13
HCFC-141b	CFC-113
HFC-134a	CFC-114
HFC-245fa	CFC-115

§2.2 New foam ODS sources

- HFC-134a (GWP 1,430) and HFC-245fa (GWP 1,030) are not included in QC or CA protocols
- **Rationale**: these blowing agents are not reclaimed and resold, so their destruction should not impact production or importation of virgin HFC
- 2016 Kigali Amendments to Montreal Protocol began process of phase-down, but production will continue for decades
- *Is this a significant source in Canada?*
- *Do you have any concerns over inclusion of these chemicals?*

§2 Non-appliance foam sources

- Protocol only allows concentrated blowing agent from appliance foam
- There are other sources which could be included:
  - Buildings
  - Commercial equipment
  - Marine applications
- Protocol requirements would need to be added:
  - Foam must be transported and destroyed INTACT
  - The source of the foam would be considered the Point of Origin
  - Higher transportation emissions
- *Do stakeholders think that this is an important source, and the protocol should be expanded?*

§2 Non-appliance refrigerant

- Refrigerant from stationary sources **is currently eligible**
- Industry-led efforts under Refrigerant Management Canada began in 2001
  - Supported, but at a deficit, by a government levy on refrigerant wholesalers
  - Commercial/industrial refrigerant is collected and destroyed
  - Carbon offsets have been registered for destruction activities during 2011-2015 through the CSA Registries
- First carbon offset protocol for ODS adopted in 2010
- *Would commercial ODS destruction under this protocol represent emission reductions that would not have happened in the absence of the offset market?*

§3 Eligibility

- Project start date
  - Non-mixed projects, not aggregated at destruction facility, the start date is initial date of transportation for destruction
  - Non-mixed projects, aggregated at destruction facility, the start date is initial date of destruction
  - Mixed projects, the start date is initial date of mixing
- Eligible start dates are defined in the relevant offset program regulation for each province

§3 Duration and crediting period

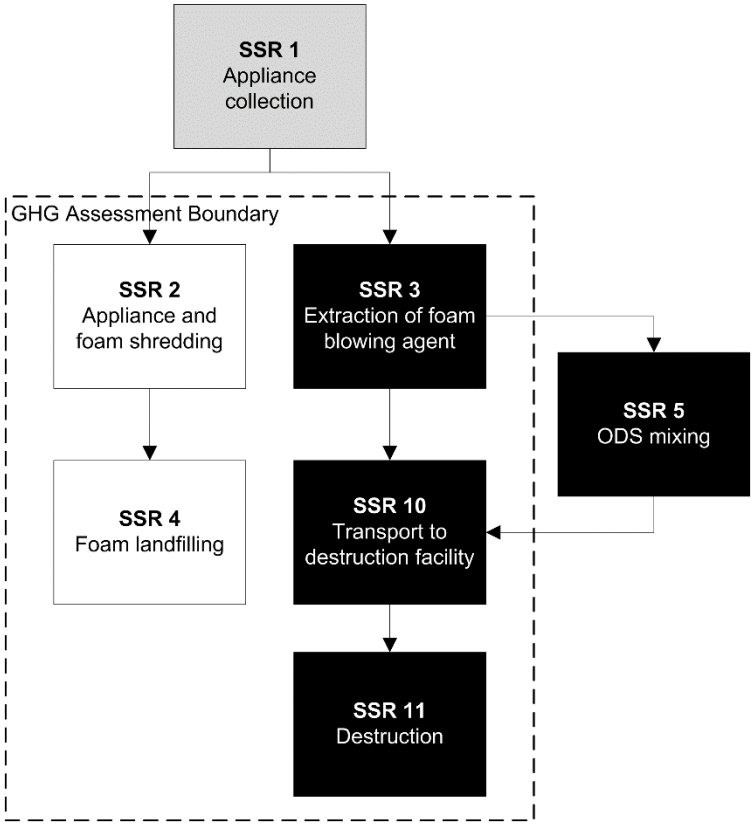
- Projects are no more than 12 months
- Crediting period is 10 years
  - Representing 10 years of avoided emissions following the destruction
  - If the project were greater than 12 months, it would exceed the 10 year crediting period

§3 Additionality

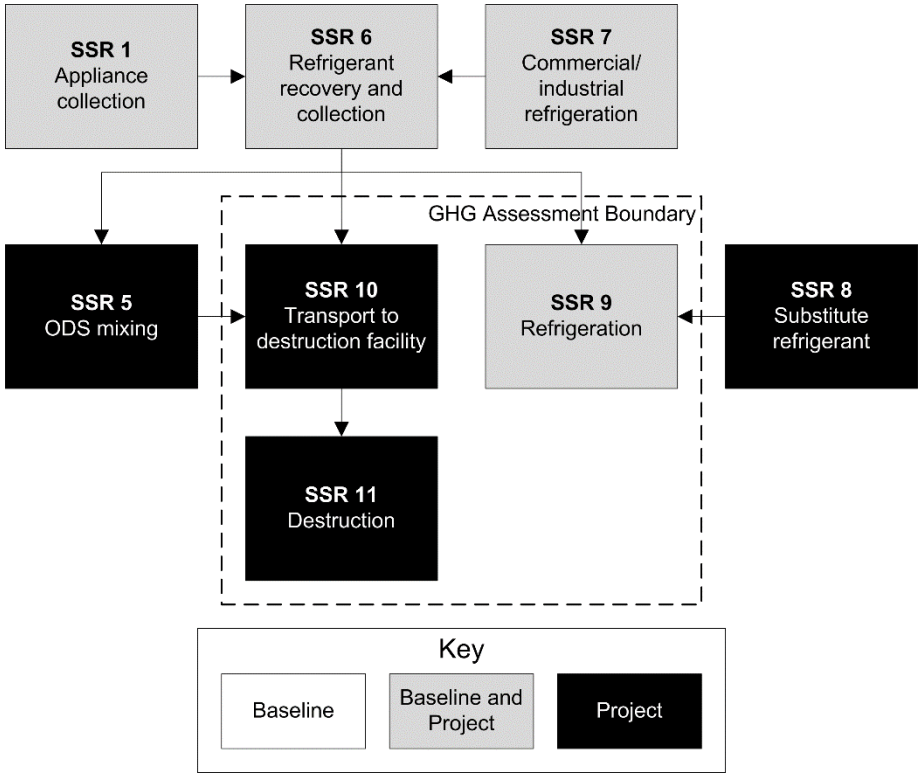
- ODS destruction must go above and beyond any legal mandates
- ODS destruction must go above and beyond common practice
  - Defined through the list of eligible sources and chemicals
- Project activities must be in regulatory compliance
  - Must disclose any violations that affect the reporting period

§4 GHG assessment boundaries

Foam Projects



Refrigerant Projects



§5 Quantification

- **Foam blowing agents:**
  - **Baseline emissions** = shredding and landfilling
  - **Project emissions** = blowing agent extraction, transportation and destruction
- **Refrigerants:**
  - **Baseline emissions** = leaks from reuse
  - **Project emissions** = leaks of substitutes, transportation and destruction

§5 Vapour risk deduction

- Certain mixtures of low and high pressure chemicals in partially-full tanks
- Risk of misstatement due to difference in liquid and vapour composition
- Determined by container at point of sampling

Table 5.2. Determining the Deduction for Vapour Composition Risk

If the value of $Fill_{liquid}$ is:	AND the concentration of eligible low pressure ODS is:	AND the concentration of ineligible high pressure chemical is:	Then the vapour risk deduction factor (VR) for that container shall be:
> 0.70	N/A	N/A	0
0.50 – 0.70	> 1%	> 10%	0.02
< 0.50	> 1%	> 5%	0.05

§6 Point of Origin

- **Foams**: Facility where the blowing agent is extracted
- **Refrigerant**:
  - **<225 kg container**: facility where the material is aggregated into >225 kg in a single container
  - **>225 kg container**: equipment or installation from which ODS was removed
- Must document chain of custody from Point of Origin through to destruction

§6.5 Quantity and composition

- Weighed at destruction facility within 2 days of destruction start and finish
  - Generate time-stamped weigh tickets
- Mixed ODS must be circulated prior to sampling and destruction
  - Must be conducted by a third party
  - Does not have to occur at a destruction facility

§6.5 Sampling and analysis

- **Non-mixed projects**: sample taken at destruction facility
- **Mixed projects**: 2 samples at mixing facility, plus additional sample at destruction facility
- Laboratory analysis
  - Lab accredited for AHRI 700
  - Quebec Centre d'Expertise en Analyse Environnementale
  - *Are there other laboratories or accreditations that we should consider?*

§6.5 Sampling and analysis

- High boiling residue must be less than 10%
- Moisture content must be <75% of the saturation point for the species with the lowest saturation point that is at least 10% by mass
  - Current draft requires either de-watering, or measurement of the free-floating water

Moisture removal

- CA and US ODS protocols require drying of the material to ensure there is no liquid water in the tank
  - Deduction of H_2O mass is based on moisture measured by laboratory
  - Moisture can be tested on-site prior to sending lab samples
- *Is there any concern about drying the ODS if the analysis shows high moisture content?*
- *Is there any way to measure the mass of free-floating liquid water in a tank?*

§7 and 8. Reporting & verification

- Reporting section details the documents and records which are involved
- Verification section offers a summary of verification activities, as well as specific verification items
- Verifiers need not visit the same facility more than once in a 12 month period

Appendix A and B

- GWP factors
- Emission factors
  - Foam emission rates
  - Refrigerant emission rates
  - Substitute refrigerant emission rates

Appendix C. Foam calculations

- The quantity of blowing agent collected can be measured directly
- Must determine initial quantity of blowing agent prior to extraction
- 2 options
  - Defaults based on appliance storage capacity; or
  - Analysis of samples from at least 10 appliances

Item 4

AUDIENCE QUESTIONS

Item 5

NEXT STEPS

Submit comments

- Stakeholder Team to review draft protocol and submit comments to the Reserve no later than:
  - **Thursday, March 9, 2017** (end of day)
  - max@climateactionreserve.org
- Microsoft Word document, organized by protocol section
- Any comments related to the regulation should be directed to the appropriate Ministry

Next meeting

- Next Stakeholder Team meeting:
  - **Friday, March 17th**
  - 2:00 – 3:00 pm Eastern
  - Watch for email announcement with registration link:

https://attendee.gotowebinar.com/register/5836322450446256386

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All documents posted here:
http://www.climateactionreserve.org/ozone-depleting-substances-capture-and-destruction/