CLIMATE ACTION RESERVE

Ontario and Quebec Forest & Reforestation/ Afforestation Offset Protocol Adaptation

Stakeholder Meeting

March 30, 2017
11am-12pm PST

Agenda

- Introductions
- Protocol Adaptation Process & Expectations for Stakeholders
- Candidate Protocols
  - Evaluation Process Overview
  - Review of Candidate Protocols
- Next Steps

The Climate Action Reserve

- Nonprofit founded in 2001
- Developed GHG inventory and 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
  - Registered hundreds of voluntary and compliance projects, generating over 89M tCO_2e in GHG reductions

Ontario & Quebec Carbon Offset Protocol Adaptation

Carbon Offset Protocol	
Landfill Gas Destruction	Organic Waste Digestion
ODS Destruction	Livestock Manure
Mine Methane Destruction	Livestock Enteric
Efficient Refrigeration Systems	Organic Waste Management
Afforestation and Reforestation	Conservation Cropping
Forest: IFM and AC	Fertilizer Management
Urban Forest	Grassland

Forest & Reforestation/Afforestation Protocol Adaptation Team

Organization	Name
Climate Action Reserve	John Nickerson Amy Kessler Sarah Wescott Jon Remucal
Green Analytics	Jeff Wilson Mike Kennedy
EcoResources	Nathan DeBaets
Viresco Solutions	Tanya Maynes

Ontario & Quebec Protocol Adaptation

Ministry Approval	
MDDELCC: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques	MOECC: Ministry of Environment and Climate Change Ontario

Project Management Team	
Organization	**Name**
Climate Action Reserve	Craig Ebert
Brightspot Climate	Aaron Schroeder
Viresco Solutions	Karen Haugen-Kozyra

Protocol Adaptation Timeline

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Forest Protocol												
Activities:												
Task Team Kickoff Webinar			■									
**Stakeholder Kickoff Webinar			■									
Candidate Protocol Selection			■	■								
Draft Preliminary Protocol- Reserve team				■	■	■	■					
Draft Protocol- review by TTT							■	■				
**Draft Protocol- Webinar to review with stakeholders								■	■			
Draft Protocol- public review process									■	■		
Draft Protocol- review by MOECC & QC										■	■	
**Final Protocol – Webinar to review with Stakeholders											■	■

Logistical Issues

- Future Webinars
- Sharing documents and drafts with stakeholders:
  - Forest Website
  - Afforestation Website

Division of Activities into Protocols: Forest Protocol

- Forest Protocol:
  - Improved Forest Management (IFM): involves management activities that maintain or increase carbon stocks on forested land relative to baseline levels of carbon stocks
  - Avoided Conversion (AC): consists of specific actions that prevent the conversion of privately owned forestland to a non-forest land use by dedicating the land to continuous forest cover through a conservation easement or transfer to public ownership

Division of Activities into Protocols: Afforestation & Reforestation Protocol

- **Reforestation:**
  - **Reserve**: restoration of tree cover on land that a) has had 10% or less tree canopy cover for a minimum of 10 years; or b) has been subject to a significant disturbance that has removed at least 20% of live biomass in trees
  - **Quebec**: reconstitution of forest cover by natural or artificial means such as planting or seeding; implemented on forest areas temporarily without forest, partially or totally, at the time of project planning (for at least 5 years)
- **Afforestation:**
  - **Reserve**: does not include
  - **Quebec**: human-induced conversion of land that has not been forested historically or has not contained forest for at least 10 years to forested land through planting, seeding and/or human-induced promotion of natural seed sources

Candidate Protocols

Candidate Protocols for Adaptation
ARB Compliance Offset Protocol US Forest Projects
CAR Forest Project Protocol V3.3
Offset Protocol for Carbon Sequestration Projects in Quebec Private Land Activities: Afforestation and Reforestation V0.1

Secondary List Protocols	Specific Policy/Methodology
Protocol for the Creation of Forest Carbon Offsets in British Columbia	Considerations for Crown Lands
CAR Mexico Forest Protocol	Tonne-year accounting approach
VCS British Columbia Forest Carbon Methodology	Inventory methodology

Additional Protocols Considered

Non-Candidate Protocols for Adaptation
ACR Improved Forest Management Methodology
ACR Afforestation and Reforestation Methodologies
Tree Canada Afforestation and Reforestation
CDM Afforestation and Reforestation Project Activities

Candidate Protocols: Criteria for Evaluation

Criterion Theme	WCI Criterion Requirement
Jurisdiction	Ontario & Quebec
Quantification	• Protocol clearly states project boundaries • Quantification methodology based on recognizable scientific sources • Emission factors are appropriate
Uncertainty & Accuracy	• Protocol provides guidelines to reduce uncertainty / bias • The protocol discounts to adjust for high uncertainty • Protocol requires that the proponent institute quality assurance measures in data management
Conservativeness	• Protocol provides a principle of conservatism • Parameter values are selected so as to underestimate rather than overestimate the calculation of emission reductions
Leakage	• Protocol identifies sources of leakage • If leakage is a concern, quantification / qualification and management of leakage are required • If leakage is qualified as opposed to quantified, the protocol justifies why quantification is not possible

Candidate Protocols:
Criteria for Evaluation (Continued)

Criterion Theme	WCI Criterion Requirement
Additionality	• Assessed via a performance test that is appropriate for the jurisdiction • Protocol requires that the project is not required by law • Protocol meets criteria for start date and crediting period
Permanence	• Protocol assesses the risk for reversal • Protocol establishes or requires that the project proponent establish: a monitoring system, a risk mitigation approach, and a contingency plan for a reversal • Protocol has the legal means to enforce the contingency plan • Requires that the plan is adequate for the risk of reversal over a 100 year time span
Verifiable	• Protocol requires documents, evidence and data be available for 3rd party verification
Criterion Theme	**Reserve Criterion Requirement**
Baseline Approach	• Protocol employs a baseline approach with a high degree of standardized elements.

Benefits of Standardization

- Clarity for verifier – reduced costs for verification
- Reduced difficulty in assessing on project by project basis
- Reduces potential for bias from project developer (standardized inventory methodology)
- Greater market clarity

Candidate Protocol: ARB Compliance Offset Protocol US Forest Projects

Criterion	Met	Analysis
Jurisdiction		• Needs adaptation for Ontario & Quebec
Quantification	✓	• GHG SSRs identified for each project type (Improved Forest Management, Reforestation, and Avoided Conversion) • Quantification is based on the best available data (e.g. FIA data)
Uncertainty & Accuracy	✓	• Randomly placed plots re-inventoried every 12 years • Confidence deduction applied per calculated sampling error • Conservative 5% threshold for discrepancies between the project developer and verifier values
Conservativeness	✓	• Confidence deduction and materiality threshold • Verification criteria ensure that third party verifiers evaluate for conservativeness • Standardized baseline setting for all project types ensure a degree of conservativeness
Leakage	✓	• Standardized leakage discount (20%) applied in the quantification methodology

Candidate Protocol: ARB Compliance Offset Protocol US Forest Projects

Criterion	Met	Analysis
Additionality	✓	• Legal requirements and financial feasibility included in the baseline for IFM projects • Common practice provides a performance standard • Avoided conversion project type uses appraisals to ensure additionality • Reforestation uses a performance standard benchmark
Permanence	✓	• Permanence requirement is 100 years • Attestations signed by the Offset Project Operator to ensure enforcement of replacing credits in the event of a reversal
Verifiable	✓	• Clear details for what must be included in the inventory methodology, sampling, etc. • 3rd party verification required. • Sequential sampling used by verifiers to evaluate the project inventory in an unbiased manner
Baseline Approach	✓	• Baseline includes standardized elements like common practice, the use of appraisals for avoided conversion, etc. to reduce uncertainty

Candidate Protocol:
CAR Forest Project Protocol V3.3

Criterion	Met	Analysis
Jurisdiction		• Needs adaptation for Ontario & Quebec
Quantification	✓	• GHG SSRs identified for each project type (Improved Forest Management, Reforestation, and Avoided Conversion) • Quantification is based on the best available data (e.g. FIA data)
Uncertainty & Accuracy	✓	• Randomly placed plots re-inventoried every 12 years • Confidence deduction applied per calculated sampling error • Conservative materiality threshold to account for discrepancies between the project developer and verifier values (between 1% and 5%, depending on the number of offset credits earned)
Conservativeness	✓	• Confidence deduction and materiality threshold • Verification criteria ensure that third party verifiers evaluate for conservativeness • Standardized baseline setting for all project types ensure a degree of conservativeness
Leakage	✓	• Standardized leakage discount (20%) applied in the quantification methodology

Candidate Protocol:
CAR Forest Project Protocol V3.3

Criterion	Met	Analysis
Additionality	✓	• Legal requirements and financial feasibility included in the baseline for IFM projects • Common practice provides a performance standard • Avoided conversion project type uses appraisals to ensure additionality • Reforestation uses a performance standard benchmark
Permanence	✓	• Permanence requirement is 100 years • Legal agreements with Offset Project Operator to ensure enforcement of replacing credits in the event of a reversal
Verifiable	✓	• Clear details for what must be included in the inventory methodology, sampling, etc. • 3rd party verification required. • Paired or unpaired t-test is used by verifiers to evaluate the project inventory in an unbiased manner.
Baseline Approach	✓	• Baseline includes standardized elements like common practice, the use of appraisals for avoided conversion, etc. to reduce uncertainty

Candidate Protocols:
Carbon Sequestration Projects in Quebec Private Land Activities: Afforestation and Reforestation V0.1

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Criterion	Met	Analysis
Jurisdiction		• Needs adaptation for Ontario
Quantification	✓	• GHG SSRs identified for each project type • Quantification is based on best available data and documentation (e.g., ministry-produced reports)
Uncertainty & Accuracy	✓	• Relatively high minimum accuracy standard for inventories to be eligible; but once minimum standard is met, no discounts are applied for higher standard error values • Sampling only required when credits issuance is being requested • Conservative tolerance thresholds to account for discrepancies between the project developer and verifier measurement values
Conservativeness	✓	• Asserts that conservativeness should be applied by project developer in the selection of assumptions, values and procedures, which are to be confirmed by verifiers
Leakage	✓	• Leakage is considered relative to default values, but only within the ownership of the project developer

Candidate Protocols:
Carbon Sequestration Projects in Quebec Private Land Activities: Afforestation and Reforestation V0.1

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Criterion	Met	Analysis
Additionality	✓	• Projects not legally required automatically meet performance standard • Quantitatively defined by carbon sequestered in excess of standardized reference scenario yield curves
Permanence	✓	• Tonne-year accounting is applied to offset credit issuance, which gives credit for the climate effect of each sequestered ton, based on 100-year total effect at the time credit is issued (i.e., partial crediting until ton has been sequestered for 100 years) • Reversal risk not assessed since tonne-year accounting assesses current 100-year effect of sequestered ton • Duration of project or sequestration not specified
Verifiable	✓	• Clear details for what must be included in the inventory methodology, sampling, etc. • 3rd party verification required • Verifiers evaluate the inventory measurements relative to tolerance thresholds for deviation from their own measurements
Baseline Approach	✓	• Standardized reference scenario yield curves based on strata characteristics

Discussion: Candidate Protocols

Protocol	Advantages	Challenges
ARB CA Compliance	• Standardized quantification and reporting methodology • Standardized performance standard	• Need considerations for ON/QB – performance standard, Crown Lands and First Nations
CAR V3.3	• Standardized quantification and reporting methodology • Standardized performance standard	• Need considerations for ON/QB – performance standard, Crown Lands and First Nations
Quebec Afforestation & Reforestation V0.1	• Considerations for Quebec • Tonne-year approach provides flexibility in time commitment	• Complexity of tonne-year accounting • Quantification and baseline methodologies are only for Afforestation and Reforestation

Technical Issues

- Crown Lands
- Tonne-year Accounting
- Reversals
- Aggregation
- Baseline development: Public vs. Private
- Quantification Methodologies for different SSPs
- Environmental Safeguards
- Leakage
- Verification

Next Steps

- Please submit comments via email:
  - John Nickerson: john@climateactionreserve.org
  - Amy Kessler: akessler@climateactionreserve.org
  - Sarah Wescott: swescott@climateactionreserve.org
  - Jon Remucal: jremucal@climateactionreserve.org

Thank you for participating!!