

Climate Action Reserve Overview

NYMEX
June 16, 2009



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Agenda

- 9:00 Update on the Climate Action Reserve
- 10:15 Overview of Federal and Regional Policies
- 10:45 Overview of the North American Carbon Market
- 11:15 Break
- 11:30 Update on Climate Action Reserve Protocols
- 1:00 Adjourn



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What Makes a Good Offset?

- It occurs outside of any regulatory requirement (incl. outside capped sector).
- It would not have occurred save for the incentive provided by a GHG market.
- It can be accurately measured.
- It can be independently verified.
- Its ownership is undisputed.
- It is permanent.



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Role of Offsets

- Offsets are part of the solution to climate change
 - Obtain reductions from unregulated sectors
 - Spur/demonstrate new technologies
- Must ensure environmental integrity to be effective
- Voluntary Market
 - Support climate neutral claims
- Compliance Programs
 - Provide economic efficiency, price pressure relief
 - Reduce more emissions faster
 - Allows for more stringent cap.



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Climate Action Reserve

- Project offsets registry that sets high quality standards and registers and tracks carbon offset projects throughout the U.S.
- Ensures environmental benefits of offsets while upholding integrity and financial value
- Until now, U.S.-based projects only
 - Expanding to Mexico and Canada
- Successor organization to the California Climate Action Registry



Purpose and Goal

- Offsets are part of the solution to climate change
 - Obtain reductions in uncapped sectors
 - Spur new technologies
 - Support voluntary and regulatory efforts
- Must ensure environmental integrity to be effective
- Reserve reputation for high-quality accounting standards can provide a recognized “organic seal of approval”

Distinguishing the Reserve: *Recognition*



Recognized and supported by:

- California Air Resources Board
- State of Pennsylvania
- Voluntary Carbon Standard (VCS)
- Leading environmental organizations
 - Environmental Defense Fund (EDF)
 - Natural Resources Defense Council (NRDC)
 - Sierra Club

Distinguishing the Reserve: *Transparency*



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- Unparalleled transparency makes the Reserve unique
- Public reports include:
 - All protocols
 - List of all account holders
 - List of all projects and all project documents
 - List of all issued CRTs for every project
 - All retired CRTs

Distinguishing the Reserve: *Performance Standards*



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- Why a performance standard is different
 - The hard work is upfront
 - Assess industry practice as a whole, rather than individual project activities
- Less subjective determination to qualify
- More certainty in amount of credits
- Lower risk for developers
- Faster project processing

Distinguishing the Reserve:

Separation of Roles



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- Reserve develops protocols but does not fund or develop projects
- Does not take ownership of offsets
- Is not an exchange
- Independent third-party verification
 - Consistent with international standards
 - Accreditation done by ANSI
 - Conflict of interest analysis on every project

Distinguishing the Reserve: *Voluntary and compliance markets*



- For now, main demand is from the voluntary market
- In the future, projects may be usable for compliance in California, Western Climate Initiative or federally
 - Regulators have yet to make decisions on these questions
 - The Reserve “is considered the premier pre-compliance offset standard.” (*State of the Voluntary Carbon Markets 2009*)



Reserve Protocols

- Developed with broad public input
- Goal is to create a uniform standard that is widely recognized and builds on best practice
 - We incorporate the best elements of other protocols
 - We do not accept projects developed under other protocols (i.e. CDM, Gold Standard, VCS)
- Designed as step-by-step instructions on project development

Protocol Development Process



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1. Literature review
2. Scoping/kick-off meeting
3. Multi-stakeholder workgroup formation
4. Draft protocol to workgroup
5. Revised draft released for public comment
6. Public workshop
7. Solicit public comments and respond
8. Adoption by Climate Action Reserve Board in public session
9. Possible adoption by California Air Resources Board or other government bodies



Existing Protocols

- Forest
 - Conservation-based forest management
 - Avoided conversion
 - Reforestation
- Landfill gas capture
- Livestock (agricultural methane capture)
- Urban forest



Protocols Under Development

- Forest Update
- Coal Mine Methane
- Landfill and Livestock for Mexico
- Organic Waste Diversion (co-digestion)
- Industrial Gases and Ozone Depleting Substances



Protocols Under Consideration

- **Industrial Processes**

- Boiler efficiency

- **Transportation**

- Truck stop electrification

- **Agriculture and Biological Sequestration**

- Waste diversion: composting
- Agricultural practices: grassland/rangeland management, soil sequestration, biochar, etc

- **International**

- Mexico
- Canada

New potential project areas are evaluated regularly.

Energy Efficiency & Renewable Energy



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- Reserve strongly supports energy efficiency and renewable energy
- However, no renewable energy or electrical energy efficiency protocols are planned
 - We are planning a natural gas efficiency protocol
- Why not?
 - Electricity is certain to be a capped sector under any GHG regulation
 - These are indirect sources of emissions that are difficult to verify and establish ownership
 - Other policies are better suited to support these activities
 - RPS requirements, feed-in tariffs, standards, direct financial support, tax incentives, rebates, etc.



Determining Eligibility

- Location – must be in the United States
 - Mexico and Canada coming soon
- Material compliance – must meet all applicable environmental regulations
- Additionality
 - Regulatory screen – not legally required
 - Project started operation after 1/1/2001
 - This will be changing with new protocols
 - Performance standard for additionality



Verification

- The Reserve trains, accredits and oversees verifiers
 - Working with ANSI to ensure compliance with ISO
- Developer selects an accredited verifier
- The Reserve reviews conflict of interest
- Developer hires verifier
 - Verifier makes determination how many tonnes of reduction have taken place
 - Project documents, verification report and verification opinion submitted to and approved by the Reserve



Crediting Reductions

- Developer opens an account on the Reserve
 - Reserve software is operated by APX
- The Reserve credits the project developer's account with the appropriate number of CRTs (Climate Reserve Tonnes, pronounced "carrots")
 - Project documents are visible to the public
- Each CRT has a unique serial number for tracking
 - Includes embedded information about the project, project type, vintage and location



Transferring Credits

- Developer contracts to sell CRTs with an interested buyer
 - Financial transaction is outside of the system
 - Buyer must have an account on the system or seller can retire them on behalf of buyer
- Developer instructs the system to transfer the CRTs into the buyer's account
- Buyer can hold them, retire them or transfer them to someone else



Relationship with VCS

- Voluntary Carbon Standard (VCS) is an international program that links together the highest quality carbon offset programs
- The Reserve is the only U.S. program recognized by VCS
- CRTs can be converted into VCUs – but not the reverse



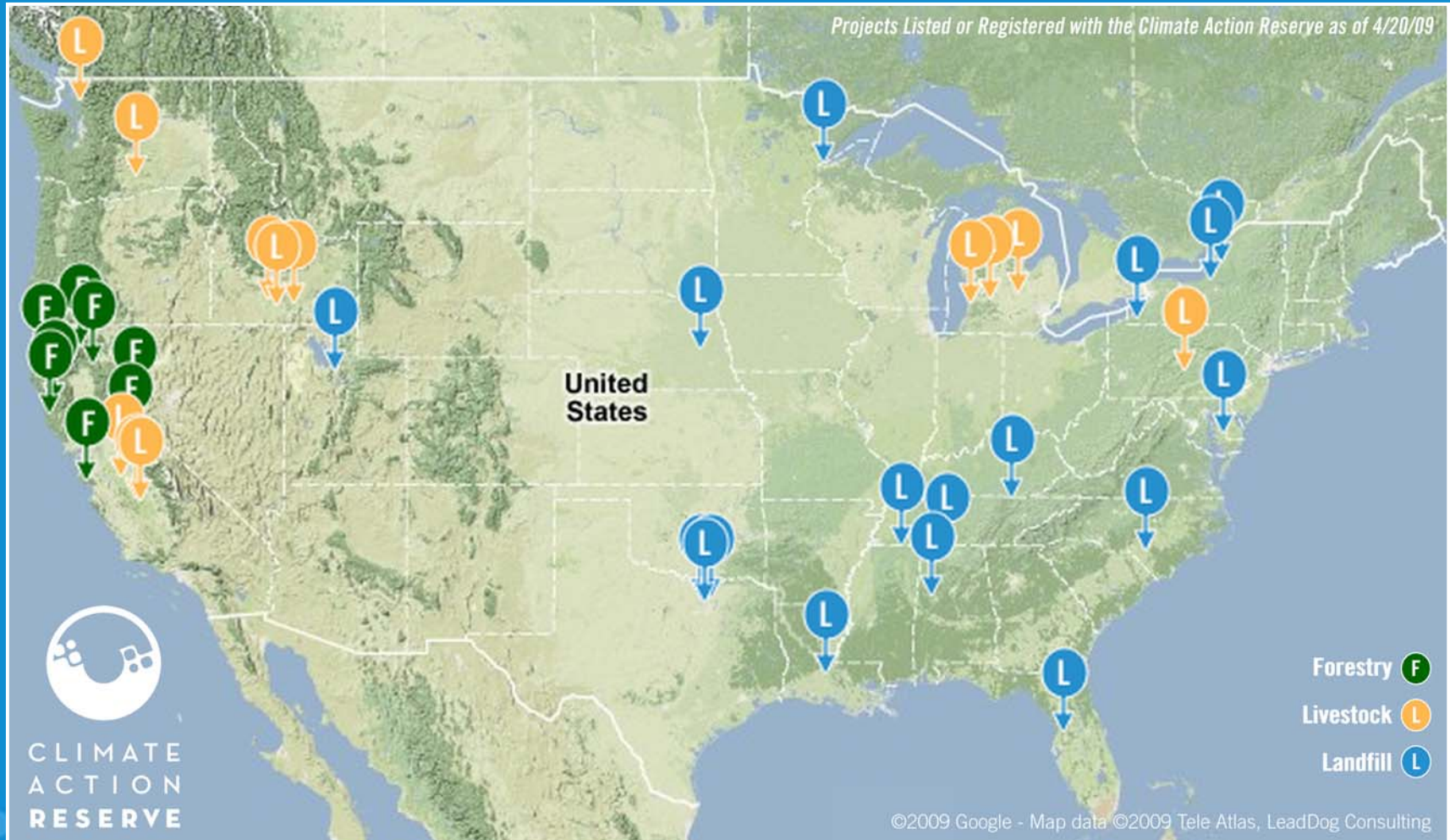
Reserve Statistics

- Reserve launched: May 2008
- Account holders: 103
- Projects: 69
 - 7 Registered
 - 42 Listed
 - 20 Submitted
 - 26 states
- CRTs issued: 1,299,890
- Recent average price: \$6.10/tonne
 - According to *New Carbon Finance, Voluntary Carbon Index*, May, 2009

Listed & registered projects



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Fee Structure

- Account maintenance: \$500/year
- Project listing: \$500/project
- CRT issuance: \$0.15/tonne
- CRT transfer: \$0.03/tonne
- Retirement: Free
- The Reserve is a nonprofit; all fees support its public benefit programs



Reserve Operating System

- System relies on APX, Inc
 - All North American renewable energy markets
 - Leader in voluntary carbon markets
 - Largest provider of hosted wholesale power solutions
- Web-based, enabling use of the system anytime, from anywhere and easy access for all market participants
- Full suite of support services and all infrastructure needed to support operations and users in multiple time zones



System Security

- Supported by two geographically separate data centers (Dallas and San Jose) to ensure continual operations in disaster recovery situations
- Infrastructure ensures highly secure web hosting and connectivity services
- Application login access controls use encryption
- Fully documented audit trail of all activity within system



Scalability and Connectivity

- System architecture is highly scalable
 - Growing numbers of users, protocols, transactions, and projects can be handled without any interruptions
 - Current infrastructure built to manage substantial growth
- APX provides services to VCS, The Gold Standard, and others
 - Automated connectivity to other systems is being developed



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Overview of Federal and Regional Policies

Alexia Kelly

The American Clean Energy and Security Act: GHG Offset Provisions Overview

Alexia Kelly, Senior Associate

Climate and Energy Program

World Resources Institute

June 16, 2009

Climate Action Reserve Policy Workshop

New York, New York

Status of HR 2454

- Bill reported out of E&C Committee on May 21 as “Amendment in the Nature of a Substitute”
- Currently under review by committees of jurisdiction
- Tentatively scheduled for house floor vote on June 25th

Looking Ahead in the House

- Up to 8 House Committees have jurisdiction over some part of the bill
 - Unclear whether House Committee on Agriculture will waive its right of jurisdiction
- House Leadership has set June 19th Deadline for Committee processes
- Expecting new version of bill soon

Looking Ahead in the Senate

- Senate leadership currently meeting with stakeholder groups
- Expecting a bill anytime now
 - Will be heavily modeled on HR 2454
- Offsets likely to be an important and contentious issue

Significant Changes between DD and HR 2454

- 50/50 split on Int. and domestic offsets removed
- Discount changed (no domestic/ int. in 2017)
- Project start date moved back to 2001 (was 2009)
- Revisions to early offset provisions

Administration

- EPA is Administrator
- Calls for the establishment of an Offset Integrity Advisory Board
 - Nine members with relevant expertise
 - Will advise EPA on a variety of matters
- EPA will establish an offset registry

Limits

- International and domestic projects qualify
- Both system and firm level limits
 - Firm level limits vary by year
- System level set at 2 billion tons
 - Can be adjusted by president
- Discount applies to int. credits only after 2017
 - 1.25 offset credits for every 1 allowance
- 50/50 on int. and domestic
 - Administrator can adjust up to 25 dom/75 int. if less than 900 million domestic tons in system

Offset Sources

- Early Offset Supply Provisions
- Project-based credits (domestic and int.)
- Int. credits issued by approved body
- Sector-based credits (int. only)
- Int. Avoided Deforestation

Project Types

- EPA has 2 years to promulgate regulations
 - 1 year for positive list
- Silent on which project types qualify
 - Except for separate program for developing country reduced deforestation

Sequestration Provisions

- Project or activity-based offset credits
- Reduced deforestation offsets credited at national levels from developing countries
 - Sub-national and project-based through 2017
 - LDC's through 2025
- Supplemental ERs through international avoided deforestation fund (5% of allowances)
 - 720m by 2020 and 6B by 2025
 - National, sub-national, project level crediting
- International avoided deforestation tons from the purchased with SOAR auction proceeds

Additionality and Baseline

- To qualify projects must be:
 - Regulatory surplus
 - Not commenced prior to Jan. 1, 2001 (was 2009)
 - Based on an “activity baseline”
 - To reflect a conservative estimate of business as usual performance or practice
 - Credits will only be issued from 2009 on

Crediting Periods

- Established at between 5 and 10 years for non-sequestration
- Unspecified for sequestration
- Unlimited crediting period renewals possible
 - As long as continue to meet standards
 - Can be limited for certain project types

Reversals

- Establishes reporting mechanisms
- Liability assignment
- At least one of the following:
 - An offset reserve
 - Insurance
 - Another mechanism

Reversals Cont.

- Liability assignment for project reversals:
 - Reversals must be addressed by Administrator by removal and cancellation of tons from reserve
 - PD required to replace cancelled tons from *intentional* reversals using an equal number of allowances or offsets
 - PD must replace 50% of tons that were withheld in offset reserve for specific project in the event of an *unintentional* reversal (was 100%)

Leakage and Quant. Uncertainty

- Calls for standardized methodology to address leakage and quantification uncertainty

Verification

- Accredited third-party verifiers allowed
- Must be accredited under ANSI or ISO 14065, or EPA accreditation process

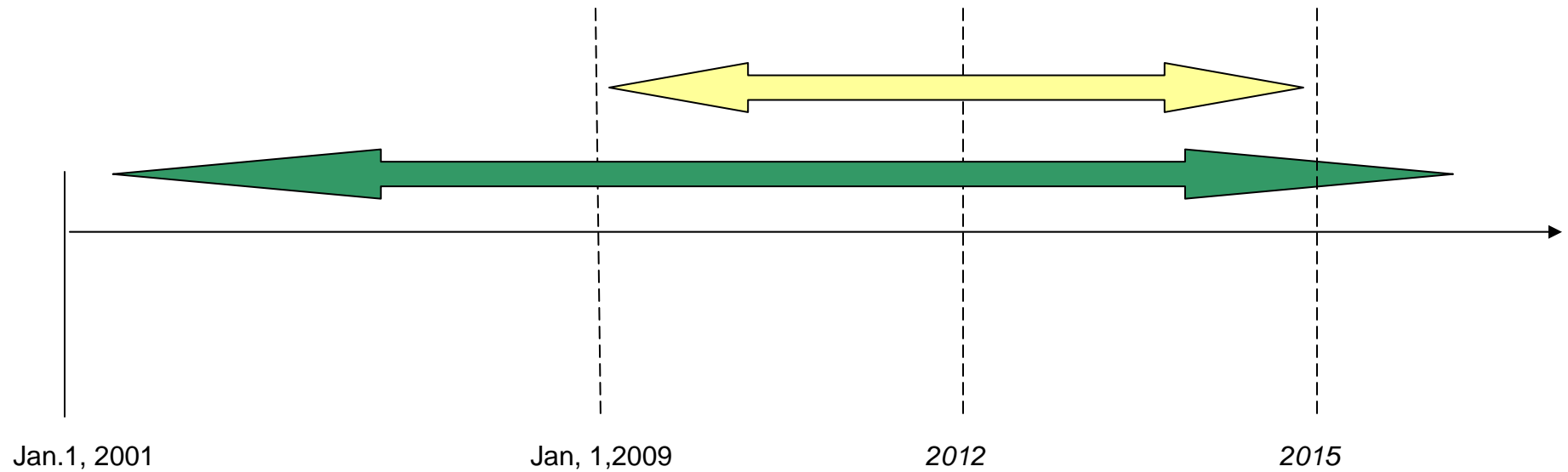
Early Offset Program

- Project started after Jan. 1, 2001
- Credits will only be issued for emission reductions occurring after Jan.1, 2009 until 3 years after date of enactment
 - Or date that new regs take effect
- Only from qualified program

What is a qualified program?

1. Established under state or tribal law before 2009
2. Has developed protocols through a public consultation or *peer-review* process
3. Publicly published methodologies and protocols
4. Has State or independent third-party verification
5. Maintains a publicly accessible registry, with serialized credits
6. Has no stake in the offset projects
7. Programs that don't meet 1 can apply to administrator

Markey-Waxman Early Offset Timeline



Conclusion

- Things are still expected to change considerably between now and house floor vote
- Offsets are an integral component to the political negotiations occurring

Thank You!

Alexia Kelly, Senior Associate

akelly@wri.org

+001 202 729 7888

Climate and Energy Program, World Resources Institute



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Overview of the North American Carbon Market

Thomas Marcello

New Energy Finance: Overview of North American Carbon Markets, 2008 and beyond

16 June 2009



Tom Marcello



new energy finance

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Agenda

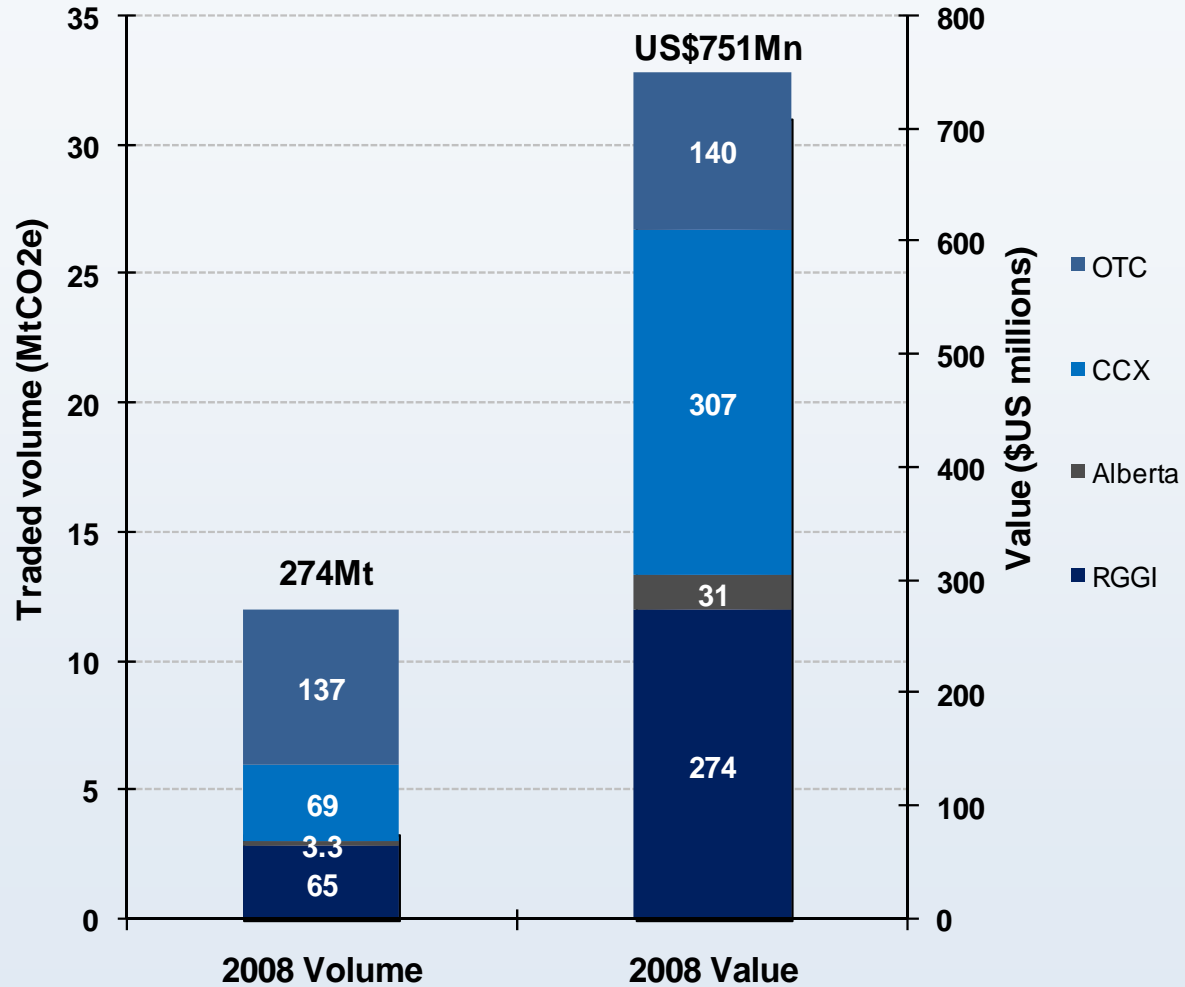
Size of North American Carbon Market

Alberta's Specified Gas Emitters Regulation

North American OTC Market

Going Forward

Size of North American Carbon Market



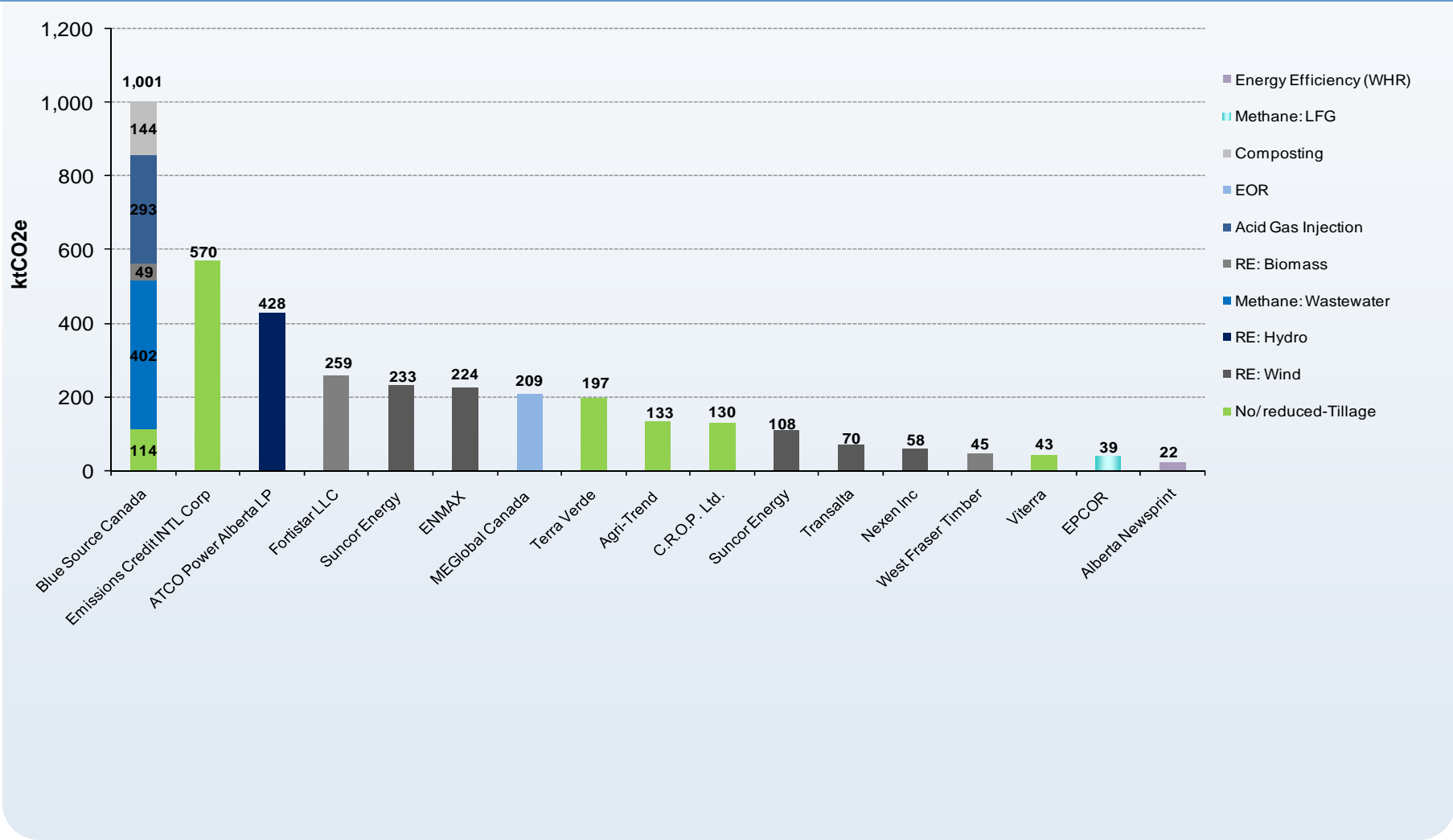
Alberta's Specified Gas Emitters Regulation (SGER)

Programme Details

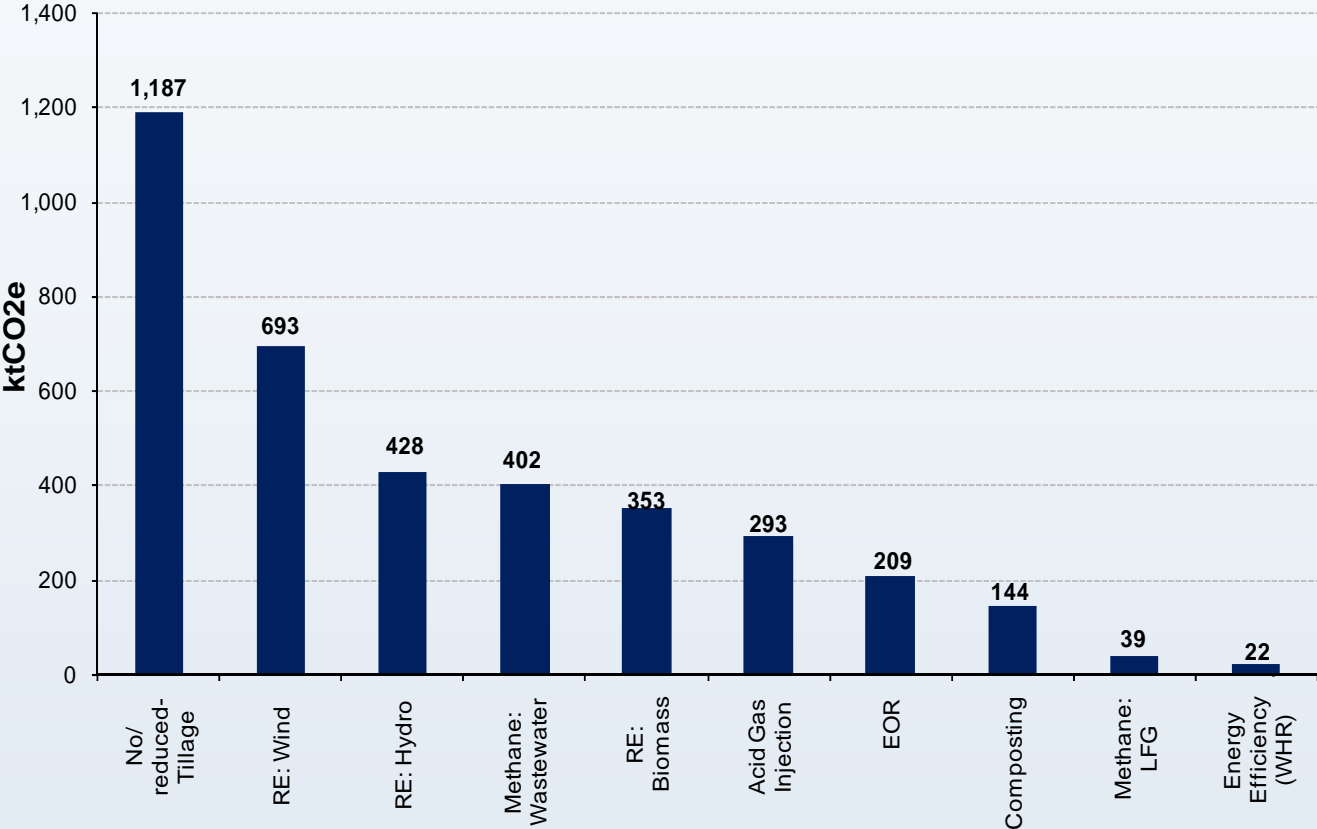
- ✍ Reduction Target: maintain a 12% reduction of emissions-intensity from 2003-2005 baseline
- ✍ Three Methods for Compliance
 - ✍ 1) Technology Fund Contributions @ C\$15/t
 - ✍ 2) Internal Abatement / Emission Performance Credits (EPCs)
 - ✍ 3) Offset Purchases

Compliance Option	Compliance 2nd half of 2007, Volume (MtCO ₂)	Compliance 2008 Volume (MtCO ₂)
Offsets	1.2	2.75
Emission Performance Credits (EPCs)	0.26	0.57
Technology Fund Contributions	2.67	5.5
Total	4.13	8.78

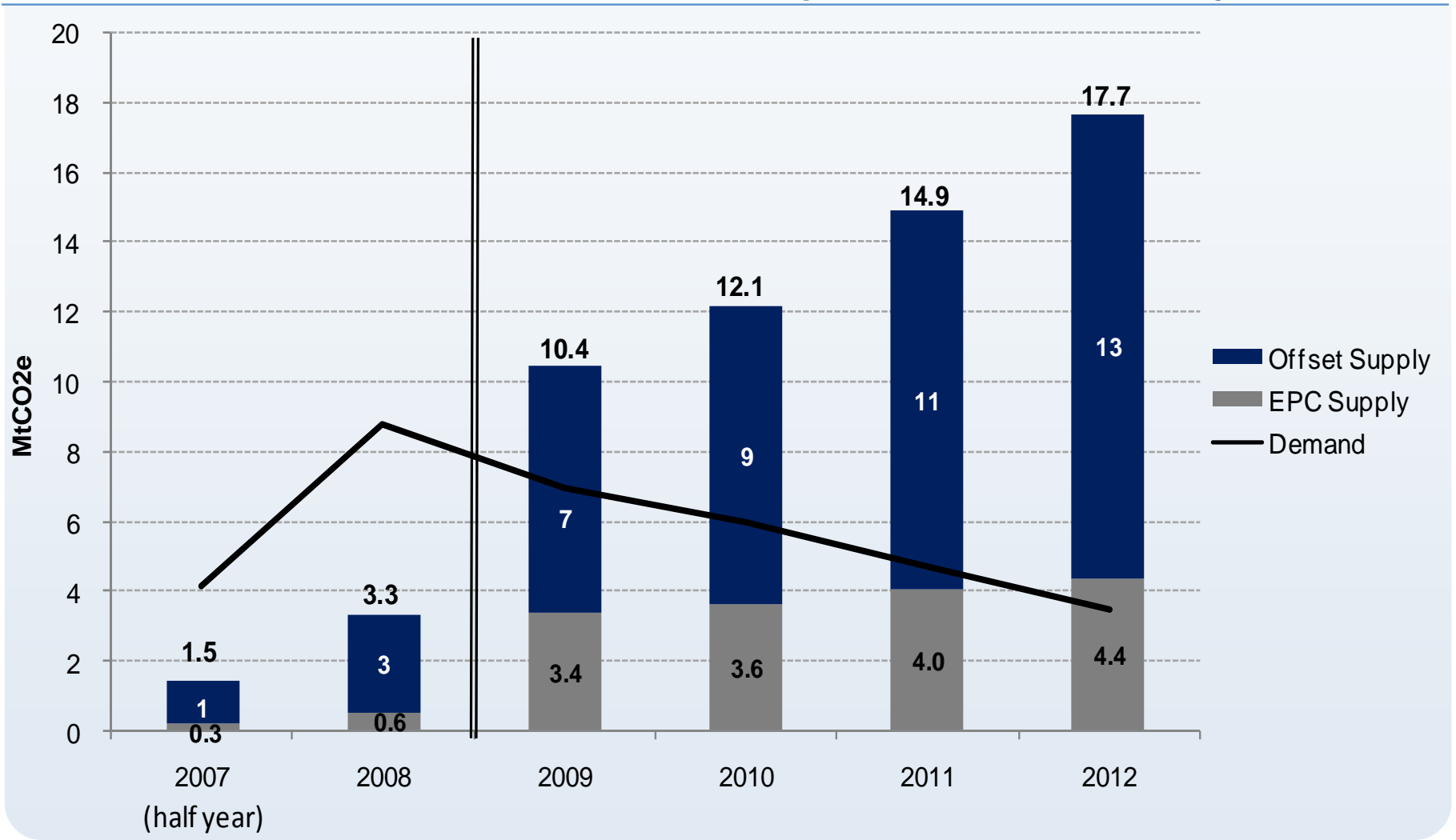
Alberta Offsets Transactions by Company



Alberta's Offset Transactions by Project Type



Alberta SGER: Historical Compliance and Projections



Note: "EE fully exploited" scenarios assume 40% energy efficiency under Waxman-Markey, 26.7% under Bingaman

2008 OTC market, North American Figures

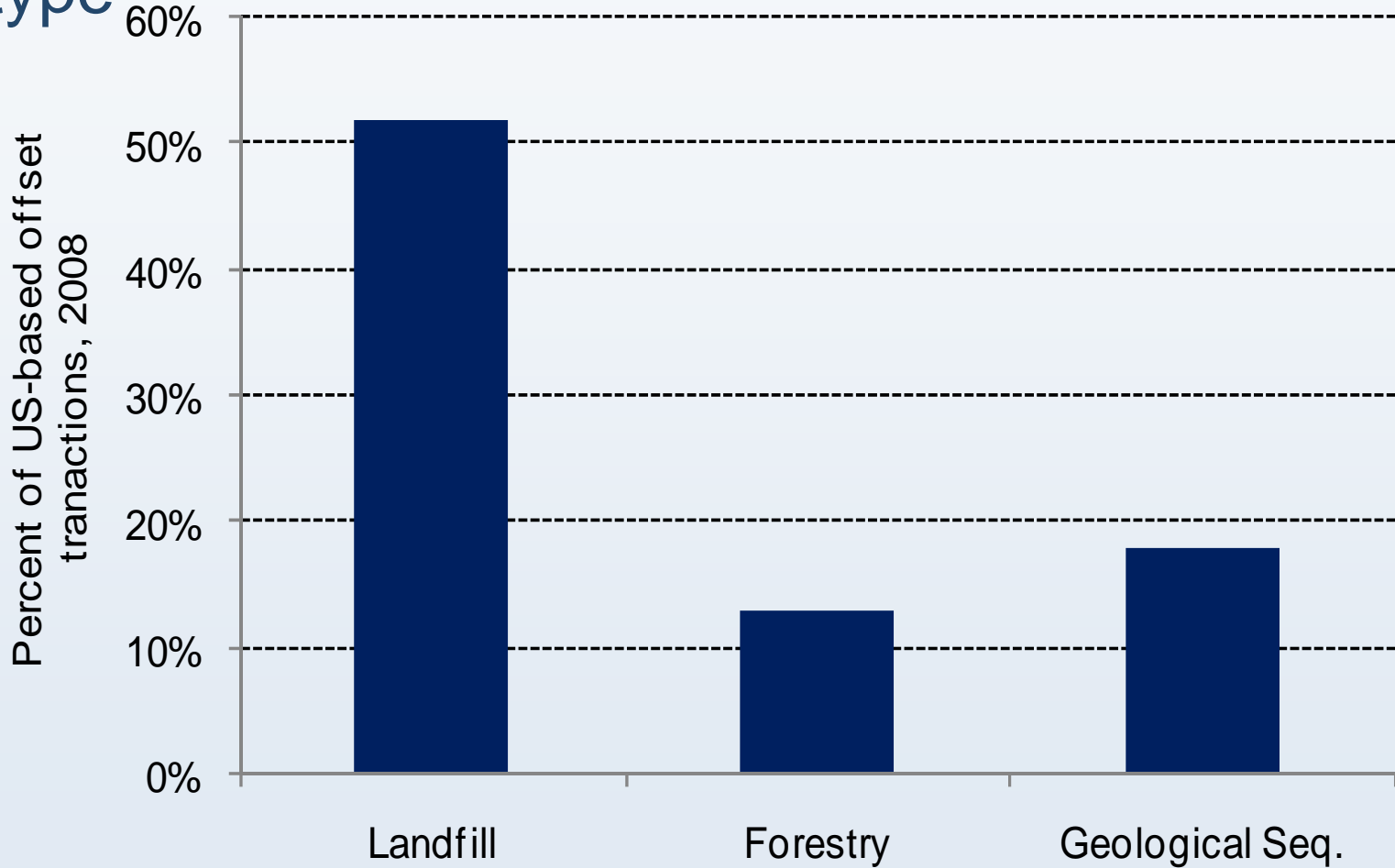
US and Canada offset purchases and project location

- ☞ 95% of US originated offsets purchased domestically
- ☞ 45% of US offset purchases from US-based offset projects
- ☞ 44% of Canadian originated offsets purchased domestically
- ☞ 23% of Canadian offset purchases from Canada based offset projects

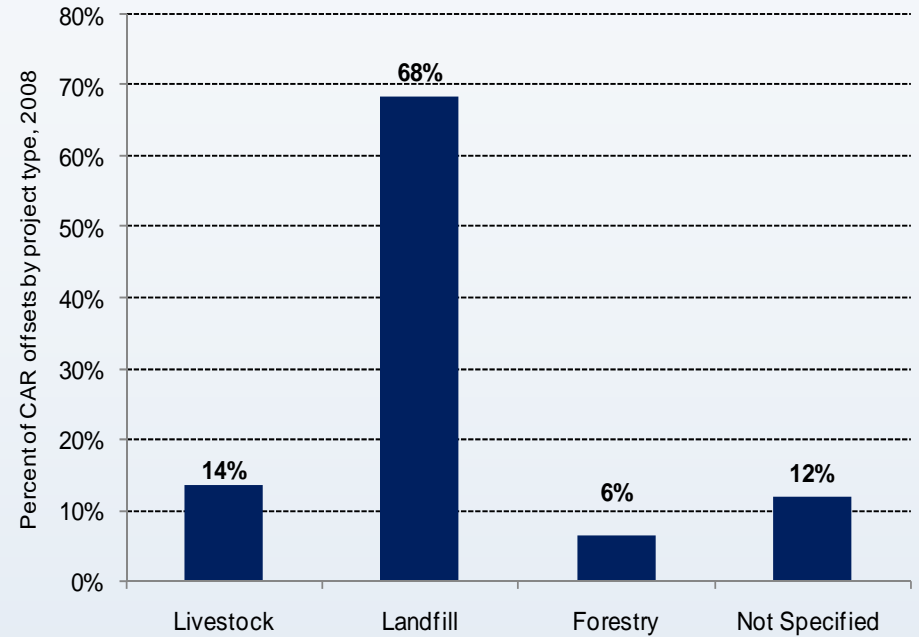
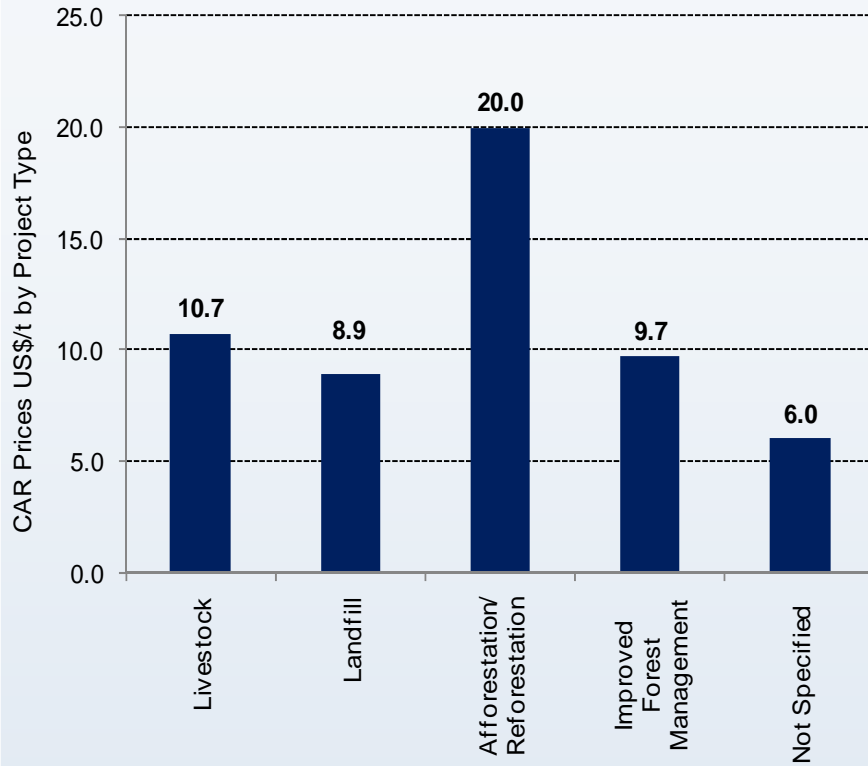
US originated offsets by Standard, percent of 2008 transaction volume

- ☞ Climate Action Reserve = 34%
- ☞ American Carbon Registry = 30%
- ☞ Voluntary Carbon Standard = 10%

OTC voluntary market, US-based offset transactions by type



Climate Action Reserve, 2008 Prices and Volumes

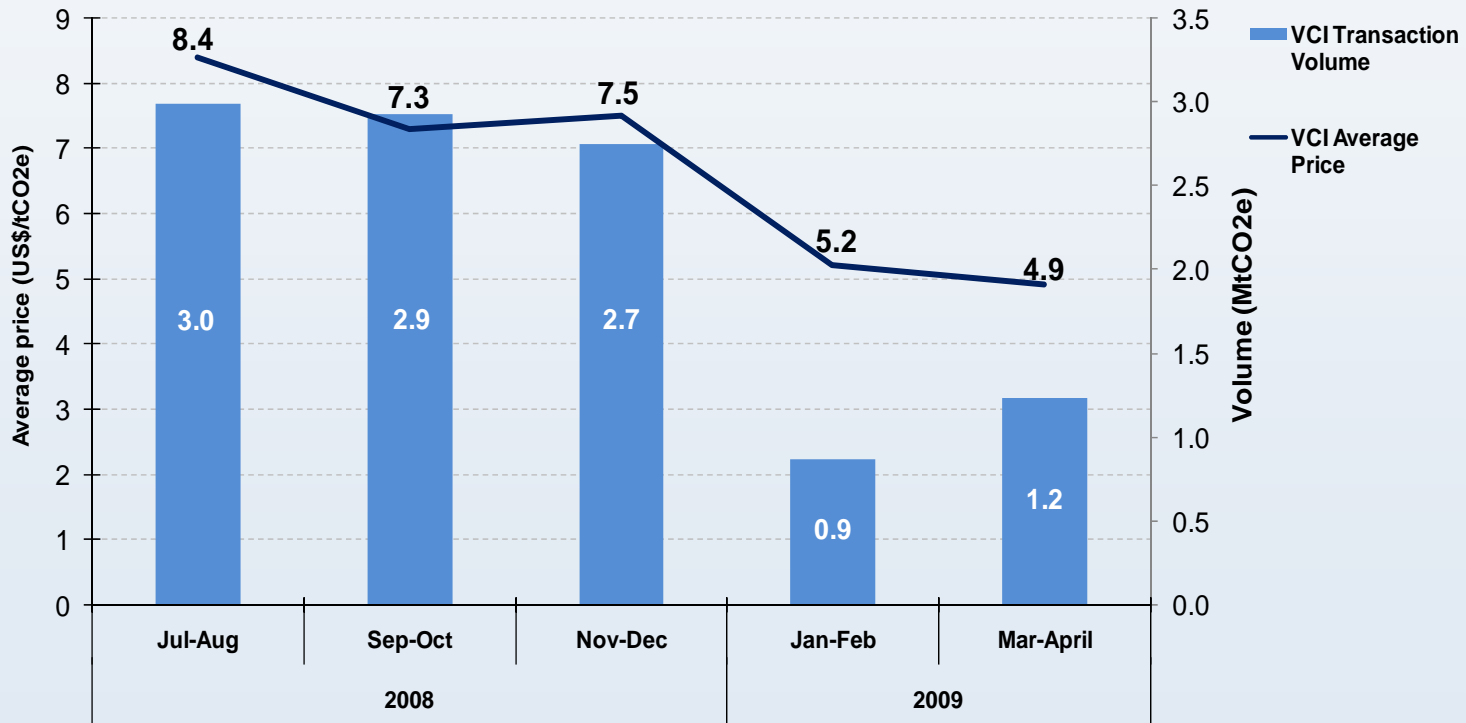


Looking Forward...

Voluntary Carbon Index

☐ Captures 1/3 of OTC market, tracks wholesale-level transactions

☐ Volumes and prices collapse in 2009



Alberta's Specified Gas Emitters Regulation (SGER)

Carbon Market – Key Take-aways for North American Market

- ❏ Pre-compliance play will continue natural separation with “pure” voluntary market
- ❏ Post-2008 vintages will sell at premium due to language in W-M
- ❏ California-based CAR offsets best credit type for pre-compliance credit, lacks regulatory uncertainty. If federal cap-and-trade fails, there's always California
- ❏ Language in HR 2454 allows more than just CAR and RGGI offsets, extends to US-based ACR, VCS, Gold Standard offset projects
- ❏ Several options if federal cap-and-trade fails
 - ❏ EPA regulation: legal analysis at NYU Law school claims EPA had power to create cap-and-trade, but without offsets
 - ❏ Regional patch-work of states and possibly provinces
 - ❏ Potential constitutional problem with First-Jurisdictional-Deliverer approach to covering imported electricity (interstate commerce)

THANKS!

Thomas Marcello

Carbon Market Analyst, North America

tom.marcello@newcarbonfinance.com

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Update on Climate Action Reserve Protocols

Joel Levin



Landfill Project Protocol

- **Project Definition**
 - **Installation of a landfill gas control system for capturing and destroying methane gas**
 - On-site destruction (flare, generator), pipeline injection, etc.
 - End fate of methane *must* be destruction
- **Eligibility**
 - **Start date:** Back to 2001 for projects registered before November 2009; within 6 months of start of operation after November 2009
 - **Location:** United States; Mexico later in 2009
 - **Regulatory compliance:** Compliance with all applicable regulations
 - **Additionality:** Regulatory Test, Performance Threshold
- **Crediting Period:** 10 years



Landfill Projects – Additionality

- **Regulatory Test**
 - Meets an *annual* test demonstrating project reductions would not have occurred as a result of federal, state or local regulations (e.g. NSPS)
- **Performance Threshold**
 - Surpasses a better than business-as-usual standard established through an analysis of U.S. landfill management practice
 - For landfills with no baseline destruction: all destroyed methane is eligible to generate CRTs
 - For landfills with baseline destruction: only methane destroyed above baseline levels or pre-existing device capacity is eligible to generate CRTs

Project Contact: Tim Kidman, tim@climatereserve.org



Livestock Project Protocol

- **Project Definition**
 - **Installation of a Biogas Control System (BCS) that captures and destroys methane gas from manure management at livestock operations**
 - Includes “centralized digesters” and “co-digestion”
 - Onsite combustion or offsite pipeline injection
- **Eligibility**
 - **Start date:** Currently must be after 2001; only new projects after 2009
 - **Location:** United States; Mexico later in 2009
 - **Regulatory compliance:** Compliance with all applicable regulations
 - **Additionality:** Regulatory Test, Performance Threshold (next slide)
- **Crediting Period:** 10 years



Livestock Project – Additionality

- **Regulatory Test**
 - Meets an *initial* test demonstrating project reductions would not have occurred as a result of federal, state or local regulations
- **Performance Threshold**
 - Surpasses a better than business-as-usual standard established through an analysis of U.S. manure management practice
 - Technology-specific threshold: collection and destruction via a Biogas Control System (BCS)
 - Baseline must be anaerobic decomposition

Project Contact: Syd Partridge, syd@climatereserve.org



Urban Forestry

- **Project Definition**

- An Urban Forest Tree Planting and Maintenance program that is developed by an eligible entity (municipality, educational institution or utility) and located in an urban setting
 - Along streets, in parks, near city buildings, greenbelts, etc.
 - Average spacing of no less than 5 meters between trees

- **Eligibility**

- **Start date:** Must be after 2001; only new projects after 2009
- **Location:** United States
- **Additionality:** Regulatory Test, Performance Threshold

- **Crediting Period:** 100 years



Urban Forestry – Additionality

- **Regulatory Test**
 - Must exceed any applicable regulations or statutes requiring planting or maintenance
- **Performance Threshold**
 - For municipalities and educational campuses
 - Must demonstrate an entity-wide **Net Tree Gain** of at least 0 (a stable Urban Forest)
 - All trees planted are additional if $NTG > 0$ is maintained
 - For Utilities
 - All planted trees are additional
- **Other**
 - Permanence: Landowner liability

Project Contact: Syd Partridge, syd@climatereserve.org



Forest Management (Ver. 3)

- **Project Definition**
 - Natural forest management practices employed on private or public lands for commercial or noncommercial harvest and regeneration of native trees
- **Eligibility**
 - **Start date:** Must be after 2001; only new projects after mid-2010
 - **Location:** United States; Mexico in future?
 - **Additionality:** Performance exceeds baseline determined by regulatory, financial and common practice parameter
- **Other**
 - **Permanence:** Landowner liability and Buffer Pool
 - **Leakage:** Risk assessment and discounting
- **Crediting Period:** 100 years



Reforestation (Ver. 3)

- **Project Definition**
 - **Establishment of native tree cover on lands that:**
 - Have had less than 10% tree cover for at least ten years or
 - Have been subject to a significant natural disturbance
- **Eligibility**
 - **Start date:** Must be after 2001; only new projects after mid-2010
 - **Location:** United States; Mexico in future?
 - **Additionality:** Financial viability lookup table for projects following natural disturbance
- **Other**
 - **Permanence:** Landowner liability and Buffer Pool
 - **Leakage:** Risk assessment and discounting
- **Crediting Period:** 100 years

Project Contact: John Nickerson, john@climatereserve.org



Avoided Conversion (Ver. 3)

- **Project Definition**
 - **Specific conservation actions to prevent the site-specific clearing and conversion of native forests to a non-forest use, such as agriculture or other commercial development**
- **Eligibility**
 - **Start date:** Must be after 2001; only new projects after mid-2010
 - **Location:** United States
 - **Additionality:** Verified demonstration of immediate conversion threat or site-specific conversion risk analysis
- **Other**
 - **Permanence:** Landowner liability and Buffer Pool
 - **Leakage:** Risk assessment and discounting
- **Crediting Period:** 100 years

Project Contact: John Nickerson, john@climatereserve.org

Contact Information



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Joel Levin

VP Business Development

joel@climateactionreserve.org

www.climateactionreserve.org

523 W. 6th Street, Ste. 428

Los Angeles, CA 90014

213-891-1444