



North American Carbon Market:

Overview of a emerging market and why it matters for Mexico



EVOLUTION
MARKETS

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Introduction

Evolution Markets Overview

Evolution Markets delivers strategic advisory and introductory brokerage services to participants in the global environmental and energy commodity markets

- Founded in 2000
- Headquarters: White Plains, New York
- Offices: New York City – London – San Francisco – Buenos Aires – Beijing – New Delhi
- World's Largest Environmental Commodity Brokerage Firm
 - More than 80 professionals worldwide
 - Structured over \$65 billion in energy & environmental transactions
- Merchant Banking: *Evolution Markets Financial Services LLC*

Market Coverage

Evolution covers all core environmental and energy markets

ENVIRONMENTAL MARKETS

- Carbon Credits & Allowances
 - Renewable Energy Credits
 - SO₂ Emissions Allowances
 - NO_x Emissions Allowances
 - Houston/Galveston NO_x
 - RECLAIM (L.A. NO_x & SO_x)
 - Emission Reduction Credits
 - Weather Derivatives
 - Catastrophic Risk Derivatives
-

ENERGY MARKETS

- Green Power Transactions
 - Biofuels
 - Ethanol
 - Biodiesel
 - Physical Coal
 - Coal Derivatives
 - Natural Gas
 - Nuclear Fuels
-

Merchant Banking, Carbon and Renewable Energy teams work together to provide complementary services to project developers; enhance market insight and leverage; “EvoFinance”

Integrated services create a seamless transaction process

Market Honors



Magazine Customer Survey



House of the Year:
 •European Emissions (2007)
 •Weather / Emissions (2004)

2000 2001 2002 2003 2004 2005 2006 2007 2008

Top SO ₂ Allowance Broker	🏆	🏆	🏆	🏆	🏆	🏆	🏆	🏆	🏆
Top NO _x Allowance Broker		🏆	🏆	🏆		🏆*	🏆*	🏆*	🏆*
Top EU GHG Allowance Broker				🏆	🏆	🏆*	🏆*	🏆*	🏆*
Top U.S. GHG Credit Broker						🏆*	🏆	🏆	🏆
Top U.S. Renewables Broker			🏆*	🏆	🏆	🏆	🏆	🏆	🏆
Top RECLAIM NO _x Allowance Broker						🏆	🏆	🏆	🏆
Top U.S. Emission Reduction Credit Broker						🏆	🏆	🏆	🏆
Top Kyoto Credits Broker							🏆*	🏆	🏆
Top Weather Derivatives Broker				🏆*	🏆*	🏆*	🏆*	🏆*	🏆*
Best Broker, US Physical Forwards (Coal)					🏆	🏆	🏆	🏆	🏆
Best Broker, Europe ETS Carbon Credits						🏆	🏆*	🏆*	🏆*
Best Broker, U.S. Environmental Products					🏆	🏆	🏆*	🏆*	🏆*
Best Broker, Western U.S. Nat Gas Short-term							🏆*	🏆*	🏆*
Best Broker, Western U.S. Nat Gas Long-term							🏆*	🏆*	🏆*
Best Broker, U.S. Weather Swaps Brokerage					🏆*	🏆*	🏆*	🏆*	🏆*
Best Broker, European Weather Derivatives Brokerage							🏆*	🏆*	🏆*



*category runner-up

Evolution Markets – Carbon

Evolution Markets has 20 carbon team members located in Buenos Aires, San Francisco, New York, London, New Delhi and Beijing originating and brokering every global carbon commodity

- Origination of offset projects globally
- Originate carbon offset projects; leverage brokerage desks in New York, London and San Francisco to access buy side
- Markets and product groups:
 - **North America:** VERs, RGGI Allowances, Alberta-based offsets, CCX, pre-compliance offsets
 - **Europe:** Primary CERs, gCERs, ERUs, AAUs, EUAs, VERs, Options and other financial products

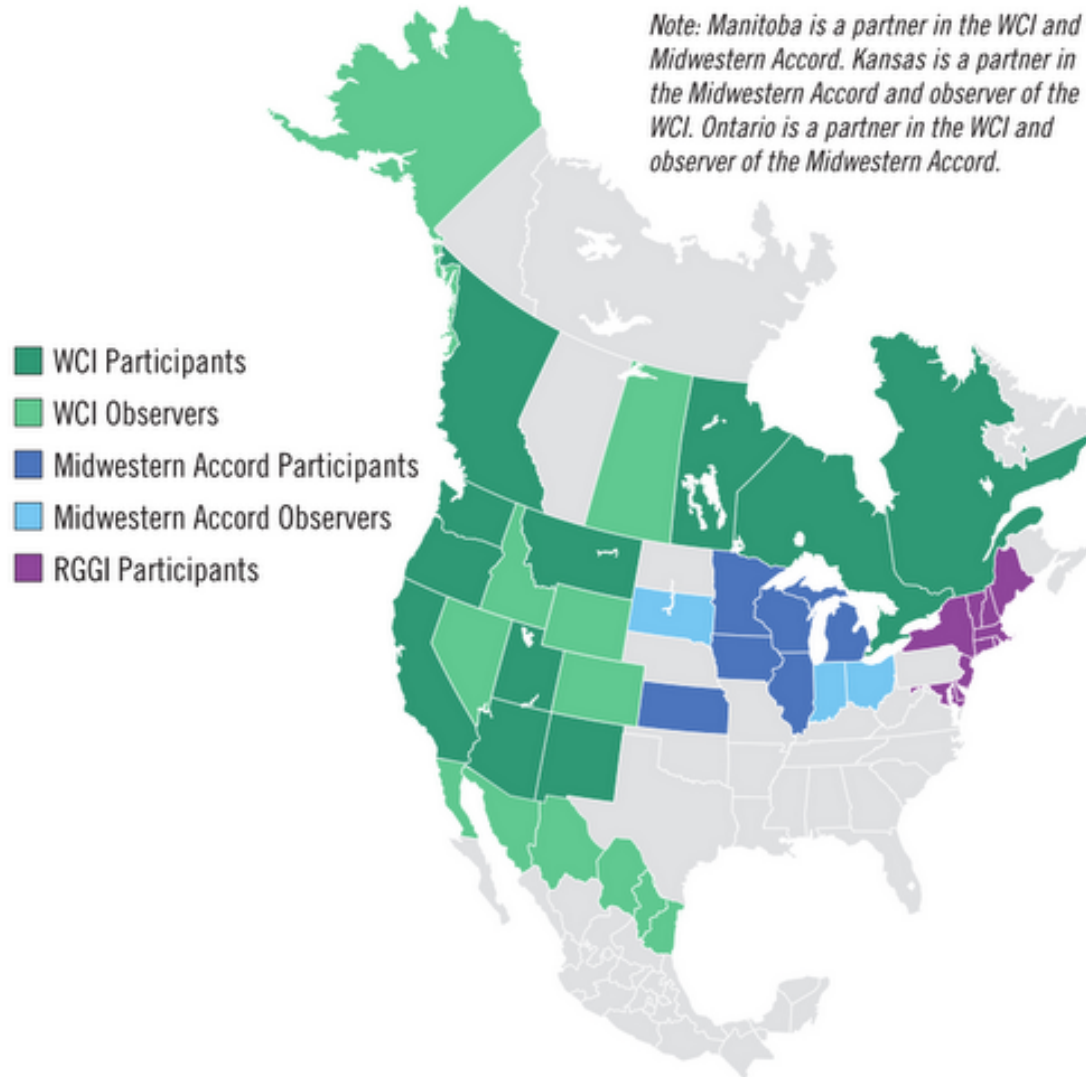
N.A. Carbon Market Overview

Emerging policy and markets

Carbon markets in North America:

- COMPLIANCE – regulation establishing mandatory cap on greenhouse gas emissions and a market for carbon allowances and offsets
- PRE-COMPLIANCE – **emerging** regulations **proposing** mandatory caps and ensuing **speculative** markets for carbon offsets
- VOLUNTARY – no regulations; market for carbon credits driven by voluntary corporate social responsibility / green PR choices

Regulatory Patchwork



N.A. Regulatory Landscape

U.S. Carbon Trading Rapidly Picking Up Due to the Following:

- Federal policy developments – Senate vote expected in September 2009, next month, following House bill passage in June 2009
- Market for pre-compliance offsets rapidly expanding as emitters begin hedging and financials grow long positions
- Advancements in regional frameworks:
 - California AB 32 (mandatory starting 2012)
 - Regional Greenhouse Gas Initiative (mandatory now)
 - Midwest Greenhouse Gas Reduction Accord (proposed)
 - Western Climate Initiative (proposed)

September 2006: A.B.32 – California’s Global Warming Solutions Act

- 1990 levels by 2020
- 2020 Target: 365 MMt CO₂e (for regulated firms)

December 2008: California Air Resources Board Approves Climate Change Scoping Plan

- Cap and trade system covering 85% of emissions

Scoping Plan Measures:

- Energy efficiency program, including building and appliance standards
- Clean vehicle standards (Pavley), including the Low Carbon Fuel Standard
- Increase renewable energy to 33% of mix
- Cap and trade program

Update:

- Regulation development – must be complete by January 1, 2011
- Cap and trade public workshops, i.e. offsets, allocation, market oversight, etc.
- Adoption of Early Discreet Actions
- Economic and Allocation Advisory Committee

California

Cap and Trade:

- Mandatory reporting began June '09 for "capped sectors"
- Capped sectors in 2012:
 - Large industrial facilities that emit 25,000+ mtCO₂E/yr
 - Electricity generation, including imports not covered by WCI
- Capped sectors starting in 2015:
 - Transportation fuel
 - Upstream industrial fuel below 25,000 mtCO₂E/yr, and residential and commercial fuel combustion

Allowances:

- Permit issued by the CA government
- Covered entities must hold 1 allowance (or 1 offset) for every 1 metric tonne of CO₂ equivalent emitted

Offsets

- Project activity which receives credit for "offsetting" emissions
- Quantitative limit: 49% of required reductions from offsets
- Offsets system is currently being defined and developed
- ARB Staff intends to release draft regulatory language on offsets by end of 2009
- **October 2007 and September 2008*:** Board-approves **Climate Action Reserve** offset protocols for forestry and livestock methane projects, respectively

***Observed uptick in trading of pre-compliance offsets**

Western Climate Initiative (WCI)

Overview

- Target: 15% below 2005 levels by 2020
- Cap and trade
- Partners must pass regulations to participate **(to date, California is the only state with regulations passed)**

Offsets

- Offsets from U.S.-based, non-WCI Partner jurisdictions, Mexico and Canada may be approved if they meet the WCI's offset definition and criteria
- Developing offsets definition and criteria **(see White Paper entitled Offset Definition and Eligibility Criteria dated July 24, 2009)**
- 3 project types are being investigated:
 - **Agriculture:** soil sequestration and manure management;
 - **Forestry:** afforestation/reforestation, forest management, forest preservation/conservation, forest products;
 - **Waste management:** landfill gas and wastewater management.

Partners

Arizona
British Columbia
California
Manitoba
Montana
New Mexico
Ontario
Oregon
Quebec
Utah
Washington

Observers

Mexico
Chihuahua
Coahuila
Nuevo Leon
Sonora
Tamaulipas
Baja California

US
Alaska
Colorado
Idaho
Kansas
Nevada
Wyoming

Canada
Saskatchewan
Nova Scotia

The American Clean Energy and Security Act of 2009

Passed U.S. House of Representatives by a 219-212 vote on June 26, 2009

Senate vote is expected on Senate version of the bill September 28, 2009.
Currently, developing sections of the bill and building support amongst
“undecided” votes in Senate

Covered Sources

- Sources emitting more than 25,000 tons per year of CO2 equivalent
- Covers roughly 85% of US emissions, including utilities, refining, and the industrial sector
- Agriculture and forestry sectors are exempt

Targets

- 17% below 2005 levels in 2020,
- 42% below 2005 levels in 2030,
- 83% below 2005 levels in 2050

The American Clean Energy and Security Act of 2009

Offsets

- Capped sources are able to use up to 2 billion offsets, annually, for compliance
- EPA – will determine offset eligibility criteria and methodologies for non-agriculture offsets
- USDA – will determine same for domestic agriculture and forestry offsets; forestry and agriculture expected to play LARGE role in the offset system

Early Offset Supply

- Offsets with vintage year 2009 + three years accepted 1:1 if issued under a state-approved program
- Other protocol programs can apply for acceptance by the EPA, i.e. CCX, VCS
- Pre-2009 credits will have an exchange value likely to be capped at \$3.60 +/- **(recent over-the-counter CCX offsets have traded in the \$0.90-\$1.20 range)**



Trading

Pre-compliance market in the U.S.

Overview

Climate Reserve Tonnes (CRTs)

- Trading began Fall 2008
- Dairy and forestry CARB-approved as voluntary early action reductions; “Priority List” offsets for CARB
- CA supply analysis projections indicate market will be short in 2012 if dairy and forestry only
- **5 million spot and forward CRTs have traded at Evolution Markets since Fall 2008**
- Current market participants:
 - Financials – banks, hedge funds, commodity trading firms
 - Project developers – CDM project developers, municipalities, landowners, etc.
 - Retailers – green marketing firms
 - Compliance buyers (past 1-2 months) – utilities, industrials, etc.

Pricing and Liquidity

Wholesale CRT Pricing

- CA-based CRTs attract a slight premium to non-CA CRTs
- Not commoditized yet
- Priced on risk from emerging policy, project type & commercial terms

70 Projects:

- 9 Forestry
- 41 Landfill gas
- 20 Livestock

Market Liquidity

- Liquidity beginning to improve
- Limited market depth, pre-'09 vintage CRTs are least liquid
- Spot CRT market (mostly pre-'09 vintage) largely forestry CRTs; large landfill gas CRT forward volumes
- Project size: landfill gas (50,000-125,000/yr), livestock (2,500-30,000/yr)

Commercial Structures

Deal structures

- Plain vanilla, fixed price forward contract with physical delivery
- Term: longer term (5-10 year strips) are getting done
- Primary, over-the-counter market trading most common
- Spot, immediate delivery on the Reserve
- Floating price structure where payment price is tied to an index at time of delivery (CCFE CRT)
- Call and Put Options

Terms

<i>Delivery:</i>	Unit Contingent vs. Guaranteed
<i>Payment:</i>	Upon Delivery, Prepayment
<i>Standard:</i>	Seller works with Buyer to convert project to accepted compliance standard



Opportunities for Mexico

Comparing CDM and U.S. market opportunities

Overview of CDM Costs*

		Min	Max	Average
Project Design Document	[EUR]	10,000	30,000	20,000
Validation	[EUR]	25,000	40,000	32,500
Registration	[\$/CER]			0.20
Verification	[EUR]	20,000	30,000	25,000
Issuance	[\$/CER]			0.20

Example (large-scale project)		
Volume	[CER/yr]	100,000
Crediting Period (2010-2012)	[yrs]	3
PDD	[EUR]	20,000
Validation	[EUR]	32,500
Registration	[EUR]	42,000
Verification	[EUR]	75,000
Issuance	[EUR]	42,000
Total	[EUR]	211,500
	[EUR/CER]	0.71

Other Potential Costs:

- Pre-PIN feasibility analysis
- Pre-PIN environmental impact analysis
- Payment to the host country for LoA

* Excludes capital costs for project equipment, permits, etc.; **Carbon project development costs ONLY**

Overview of CAR Costs

		Min	Max	Average
Project Submission Fee (Fixed, One Time)	[USD]			500
Account Maintenance Fee (Annual)	[USD]			500
Project Submittal Forms (to get Listed)	[USD]			No cost
Verification (annual, typically)	[USD]	9,000	20,000	15,000
Issuance	[\$/CRT]			0.15
Transfer	[\$/CRT]			0.03

Example		
Volume	[CRT/yr]	100,000
Crediting Period (2010-2012)	[yrs]	3
Project Submission Fee (Fixed, One Time)	[USD]	500
Account Maintenance Fee (Annual)	[USD]	1,500
Project Submittal Forms (to get Listed)	[USD]	0
Verification (annual, typically)	[USD]	75,000
Issuance	[USD]	45,000
Total	[USD]	122,000
	[USD/CRT]	0.41 *

Save CDM Expenses:

- PDD
- Validation
- Registration

Other Potential Costs:

- Engineering / Feasibility Studies

*** Exchange value adjusted = CAR costs roughly 41% of CDM costs**

CDM Project Cycle

20-30 month process to Issuance, depending on a number of variables



CAR Project Cycle

5-9 month process to Issuance

Open a
Reserve
Account

Submit
Project
Submittals

Get Project
Listed on
Reserve

Conflict of
Interest

Submit
Data and
do
Verification

Reserve
Verification
Approval

Issuance of
CRTs

Summary of Opportunity for Mexico

Upside of U.S. market

- North American Leaders Summit: President Calderon, President Obama, Prime Minister Stephen Harper signed a declaration on climate change pledging cooperation for a North American emissions trading system (August 10th)
- Less cost and time to develop a CAR project, but market price uncertainty

Downside of U.S. market

- Significant uncertainty in the future of a US-ETS
- Present CRT pricing is considerably lower than present gCER

Other considerations

- Kyoto protocol first commitment period expires in 2012 – no certainty for the CDM market post-2012
- Future price of carbon in a US-ETS
- High US demand for international offsets(coupled with the EU); the current CDM market will not meet that demand

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