

Overview of CCX[®]

Chicago Climate Exchange



Nathan Clark
Director- Emission Offsets
312-554-0819
nclark@theccx.com

CASMGS
December 17, 2007

Why Emissions Trading?

- Proven, least-cost, and comprehensive tool for managing emissions: CCX as a Emissions Management System
- Environmental stewardship that rewards environmental innovation and strategic planning
- Flexibility, market efficiencies
- Multiple successes: US SO₂, lead phase-out (gasoline), NO_x, ETS
- Enhances coherent management practices and technological innovation
- Establish value to scarce resource by revealing true cost of emissions



How do we reduce CO₂ Emissions

- Alternative energy forms: nuclear, renewables
- Lower carbon fuel: natural gas, CO₂ neutral fuel
- More efficient fuel use: MPG, lighting, insulation
- Methane capture/combustion
- Abatement devices, alternative chemicals
- Carbon sequestration:
 - reforestation, carbon accumulation
 - agricultural soils, geologic

How to orchestrate these to maximize benefits per dollar?

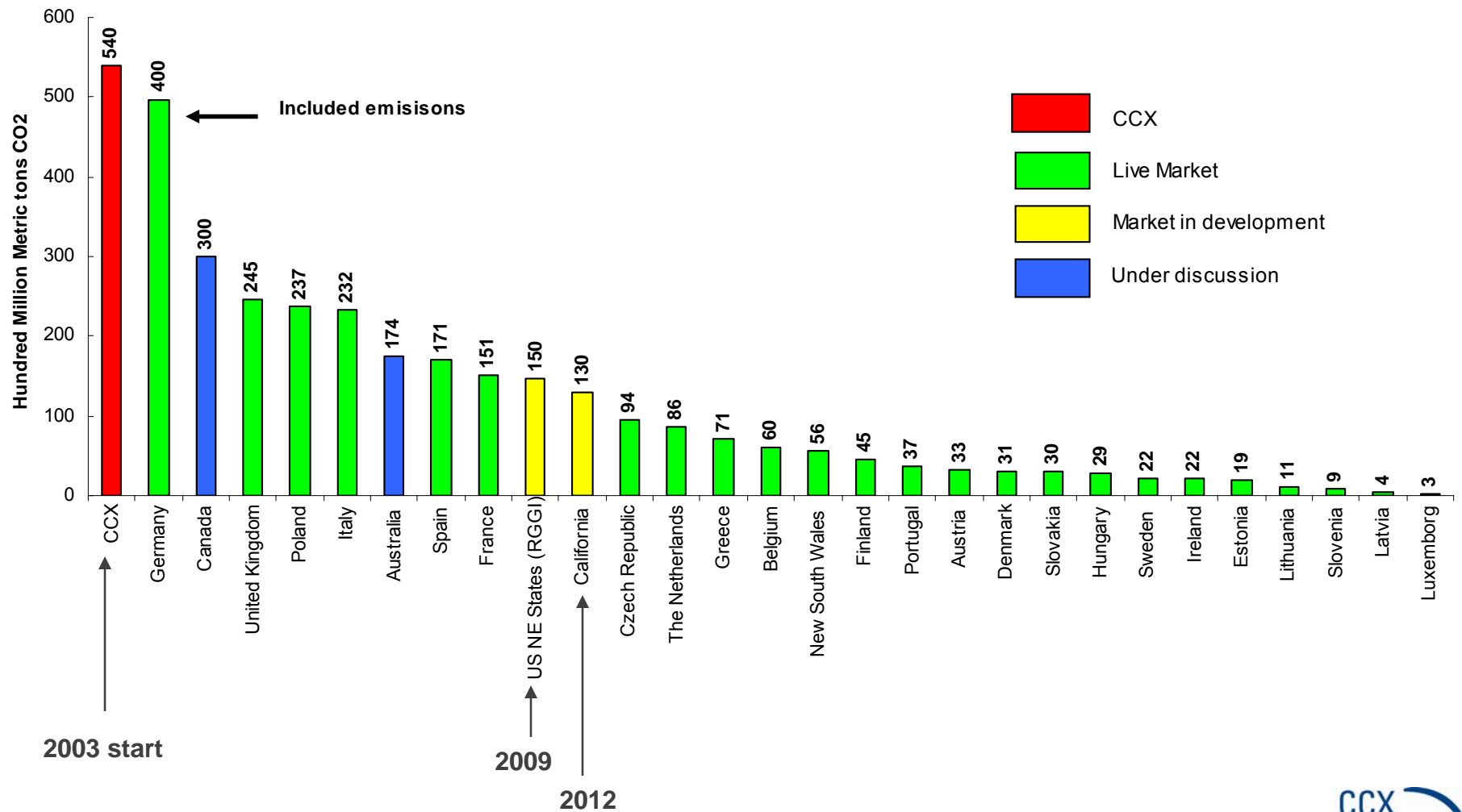


What is Chicago Climate Exchange?

Chicago Climate Exchange (CCX) is North America's only active greenhouse gas reduction and trading program.



CCX, Second Largest Live Carbon Market



CCX Members

Aerospace & Equipment

Rolls-Royce
United Technologies

Automotive

Ford Motor Company

Beverage Manufacturing

New Belgium Brewing Company

Chemicals

Dow Corning
DuPont
Rhodia Energy Brasil Ltda

Coal Mining

Jim Walter Resources, Inc.
PinnOak Resources LLC

Commercial Interiors

Knoll, Inc.
Steelcase Inc.

Counties

King County, Washington
Miami-Dade County, Florida
Sacramento County, California

Diversified Manufacturing

Eastman Kodak Company

Electric Power Generation

AGL Hydro Partnership
Allegheny Energy Inc.
American Electric Power
American Municipal Power-Ohio
Associated Electric Cooperative, Inc.
Central Vermont Public Service
DTE Energy Inc
Duquesne Light Company

Green Mountain Power
Manitoba Hydro
NRG Power Marketing Inc.
Puget Sound Energy, Inc.
Reliant Energy Services Inc.
TECO Energy, Inc.

Electronics

Motorola, Inc.
Sony Electronics Inc.
Square D/Schneider Electric N.A.

Environmental Services

Atlantic County Utilities Authority
Lancaster County Solid Waste
Management Authority
Veolia Environmental Services
North America Corp
Wasatch Integrated Waste
Management Authority
Waste Management, Inc.

Ethanol Production

Corn Plus LLP

Financial Institutions

Bank of America Corporation

Food and Agricultural Products & Services

Agrium U.S. Inc.
Cargill, Incorporated

Food Processing

Meister Cheese Co. LLC
Premium Standard Farms
Smithfield Foods, Inc.

Forest Products

Abitibi-Consolidated
Aracruz Celulose S.A.
Cenibra Nipo Brasileira S.A.
International Paper
Klabin S.A.
Masisa S.A.
MeadWestvaco Corp.
Neenah Paper Incorporated
Stora Enso North America
Suzano Papel E Celulose SA
Tembec Industries Inc.
Temple-Inland Inc

Manufacturing

Bayer Corporation
Interface, Inc.
Ozinga Bros., Inc.
Smurfit-Stone

Municipalities

City of Aspen
City of Berkeley
City of Boulder
City of Chicago
City of Oakland
City of Melbourne, Australia
City of Portland

Petrochemicals

Petroflex Industria e Comercio SA

Pharmaceuticals

Baxter International, Inc.

Recreation

Aspen Skiing Company

Retail

Safeway, Inc.

States

State of Illinois
State of New Mexico

Steam Heat

Concord Steam Corporation

Steel

Roanoke Electric Steel Corp.

Technology

Freescale Semiconductor
IBM
Intel Corporation
STMicroelectronics

Transportation

Amtrak
San Joaquin Regional Rail
Commission

University

Hadlow College
Michigan State University
University of Idaho
University of Iowa
University of Minnesota
University of Oklahoma
Tufts University



CCX Membership

▶ Associate Members

- Have negligible direct emissions, but generate indirect emissions through electricity use and business travel.
- Commit to offset 100% of annual indirect emissions, subject to audit by NASD, through 2010.
- Are office-based organizations such as professional firms, research & science centers and non-governmental organizations.

Architecture/Planning

Mithun, Inc.

Consulting

DOMANI LLC
Global Change Associates
Natural Capitalism Solutions
RenewSource Development, LP
Rocky Mountain Institute

Consumer Products

Collective Wellbeing LLC

Cultural Exchange

Supported International Immersion Programs

Documentary Production

Cloverland Inc.

Energy Broker

Amerex Energy

Energy Management Services

Orion Energy Systems Ltd
Sieben Energy Associates
Thermal Energy International

Engineering

Rumsey Engineers Inc.
Vanasse Hangen Brustlin, Inc.

Financial Services

Access Industries, Inc.
Coghill Capital Management
Fintural Corporation
MB Investments, LLC

Financing Agency

Ohio Air Quality Dev. Authority

Food Services

Lobster.com

Green Power Marketer

Green Mountain Energy

Information Technology

Open Finance LLC
Intercontinental Exchange

Legal Services

Coadys Barristers & Solicitors
Foley & Lardner
Sullivan & Cromwell
Levenfeld Pearlstein

Non-Governmental Organization

American Coal Ash Association
American Council Renewable Energy
Delta Institute
Houston Advanced Research Center
Midwest Energy Efficiency Alliance
Rainforest Alliance
World Resources Institute

Printing

The Big Print LLC

Private College

Presidio School of Management

Professional Associations

Confederation of British Industry
Renewable Fuels Association
The Professional Risk Managers' International Association

Real Estate

ProLogis Logistics Services

Religious Organization

Jesuit Community of Santa Clara University

Renewable Energy

Airtricity
American Renewable Energy
Econergy International
Reknewco Ltd.
Sustainable Energy Partners LLC

Retiring/Offsets

Carbonfund.org
CO2 Australia
Planet C
Terrapass
The Global Warming Project
The Sustainable Group

Social Investment

Generation Investment Management
KLD Research & Analytics
Pax World

Technology

Millennium Cell
Polar Technology

Transportation Services

Valera Global Inc.



CCX Membership

▶ Participant Members

- **Offset Provider:** Owner of an Offset Project that registers and sells Offsets on its own behalf.
- **Offset Aggregator:** Entity that serves as the administrative representative, on behalf of Offset Project owners, of multiple Offset-generating projects.
- **Liquidity Provider:** Entity or individual who trades on the Exchange for purposes other than complying with the CCX emissions reduction schedule, such as market makers and proprietary trading groups.

Selected Offset Aggregators

3 Degrees Group, Inc.
AgraGate Climate Credits Corporation
Carbon Farmers
Cargill, Inc.
CO2 Australia Limited
Delta Institute
Econergy
Ecosecurities
Environmental Credit Carbon Pool
Environmental Credit Corp.
First Capitol Risk Management
Intrepid Technologies, Inc.
Kentucky Corn Growers Assoc.
National Carbon Offset Coalition
North Dakota Farmers Union
Rice Dairy LLC
Standard Carbon
Xi'an Zhongyang Electric Co.

Selected Offset Providers

Arreon Carbon UK Ltd.
Beijing Shenwu Thermal Energy
CO2 Australia
Ecosecurities
Energy Trading Co
Commonwealth Resource Management Corp.
Gallo Cattle Company
Hubei Sanhuan Development Corporation
Lugar Stock Farm
Precious Woods Holdings
RCM International LLC
Sexton Energy LLC
Sustainable Forestry Management, Ltd.
Vessels Coal Gas Inc.
Weber County

Selected Liquidity Providers

Arreon Carbon
Amerex Energy
Black River Clean Energy
Breakwater Trading
Calyon Financial, Inc.
Cargill Power Markets
Evolution Markets
FCT Europe Ltd.
First New York Securities LLC.
Goldenberg, Hehmeyer & Co.
Haley Capital Management
JP Morgan Ventures Energy
Lehman Brother Commodity
Marquette Partners
Natsource LLC
Peregrine Financial Group
Rand Financial Services, Inc.
Shatkin Arbor, Inc.
Swiss Re Financial Products Corp.
Tradelink

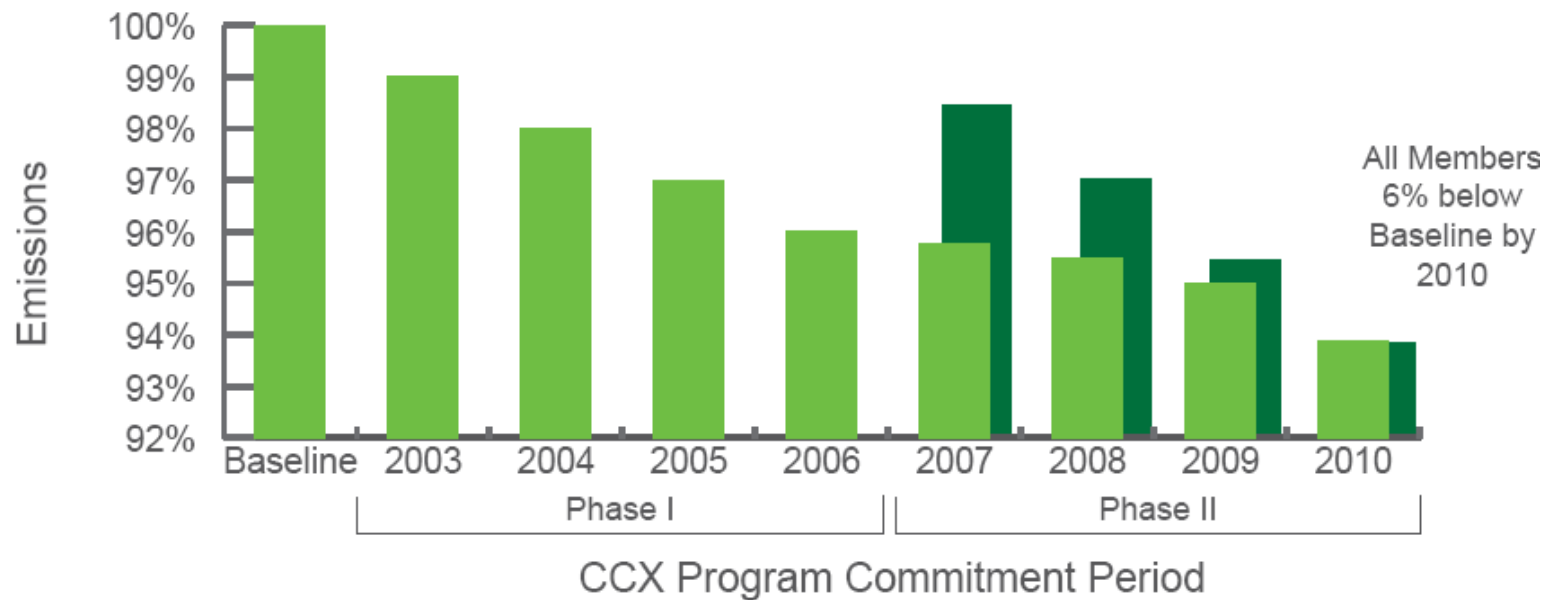
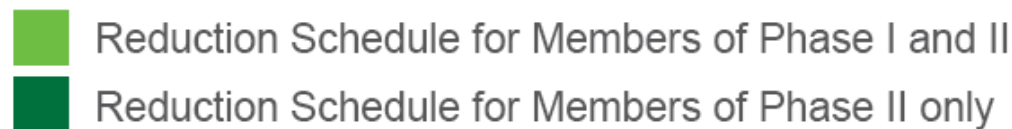


CCX Market Architecture

Phase I: Members made legally binding commitments to reduce or trade 1% per year from 2003-2006, for a total of 4% below baseline.

Baseline = Avg. emissions from 1998-2001, emissions in 2000 (Phase II)

Phase II: Members make a legally binding commitments to reduce to 6% below baseline by 2010.



Why do companies join?

Obvious:

- Make money!

Strategic:

- Build skills and knowledge in new markets
- Contribute to policy development

Operational:

- Achieve real, verifiable GHG emission reductions
- Reduce costs effectively
- Planning and procurement clarity
- Identify efficiencies



CCX[®] Comprehensive Market Structure

Electronic Market Registry

Comprehensive Rules System

- Emitters: Standard baseline, multi-year allowance stream equal to reduction targets
- Offset Providers (project credits)
- Emission audits, project verification
- Liquidity Providers
- Associate Members

You are logged in as nrlarkccx Logout

Select Organization: CCX View Only Company CHICAGO CLIMATE EXCHANGE Registry Position Summary Page v1.0.6

Chicago Climate Exchange Position Statement
Organization: CCX View Only Company
as of Sun, Feb 15, 2004

Direct Emission Baseline: 0 metric tons CO2 equivalent (unaudited)

1. Total holdings of CCX Carbon Financial Instruments
(Exchange Allowances plus Offsets plus Early Action Credits, in hundred metric tons CO2)

Vintage:	2003	2004	2005	2006
Total CFI Holdings:	0	0	0	0

2. Exchange Allowance holdings

Item	Original Allocation of Exchange Allowances:	Action	2003	2004	2005	2006
1% auction pool withholding	debit	0	0	0	0	0
bought in sept 2003 auction	credit	0	0	0	0	0
current holdings		0	0	0	0	0

3. Exchange Offset holdings

Holdings of exchange offsets:	2003	2004	2005	2006
	0	0	0	0

4. Exchange Early Action Credit holdings

Holdings of Exchange Early Action Credits:	2003	2004	2005	2006
	0	0	0	0

All Carbon Financial Instrument quantities are rounded to the nearest hundred metric tons CO2

Web-accessible
Electronic
Trading
Platform

ChicagoClimateExchange - mstern_ccx @ CCX View Only Company

View Admin Help Logout

Kill All Update All Live Only Trade Bids Trade All Trade Orders Deal Reports

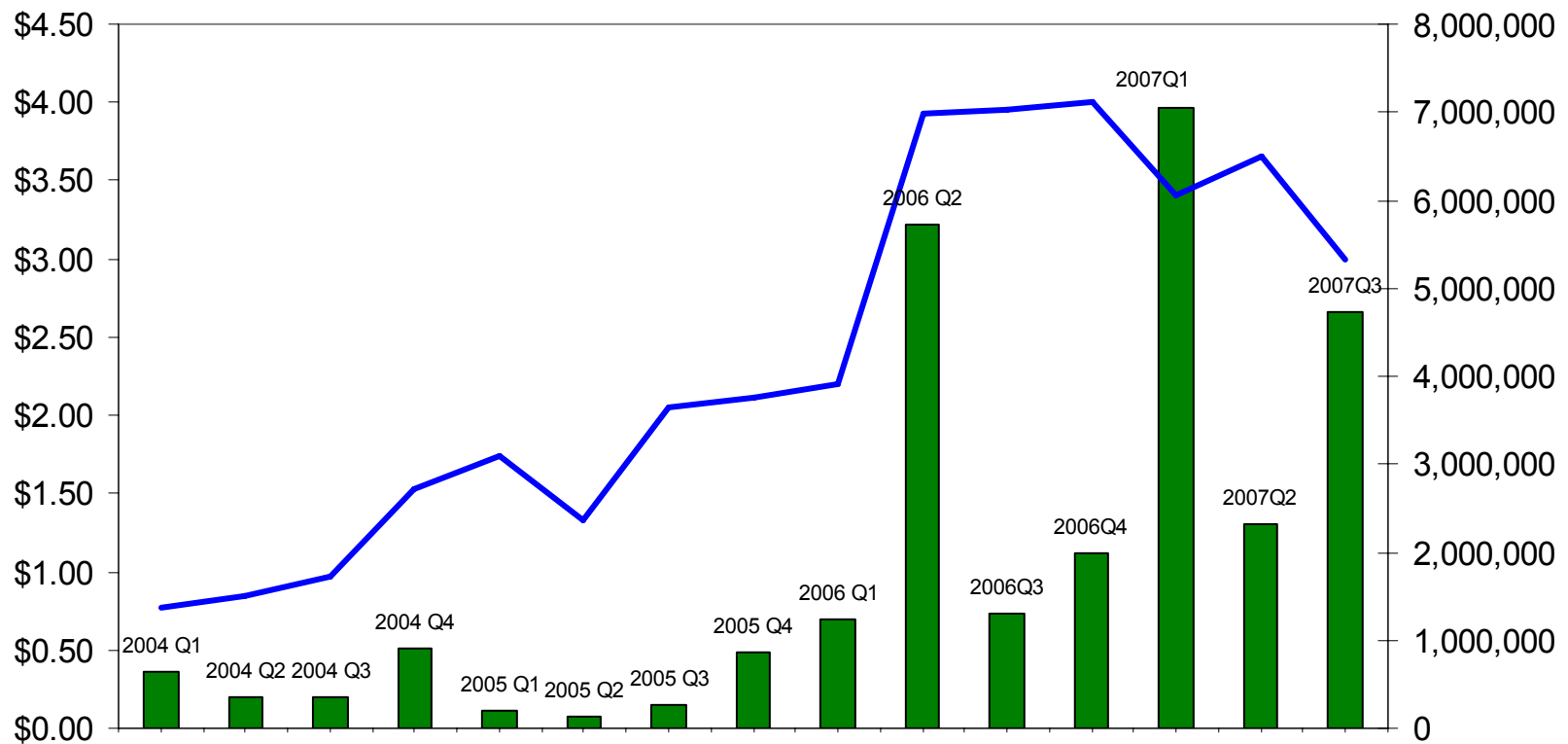
Orders Deals Greenhouse Gases

Strip	Sell	Qty	Bid	Offer	Qty	Buy	High	Low	Last	Volume	+ -	Pin
Vintage 2003				0.92	100							
Vintage 2004		5	0.90	0.93	59		0.93	0.91	0.92	196		
		20	0.80	0.97	30				0.93			
				0.98	10				0.91			
				0.99	10				0.91			
									0.92			
									0.93			
Vintage 2005				0.96	100		0.93	0.93	0.93	25		
				0.98	25							
Vintage 2006												

CCX CFI - Carbon Financial Instrument - Vintage 2005, 25 @ 0.93 (Jan 29, 2004 13:21:00 CST)
 CCX CFI - Carbon Financial Instrument - Vintage 2004, 25 @ 0.92 (Jan 29, 2004 13:19:33 CST)
 CCX CFI - Carbon Financial Instrument - Vintage 2004, 16 @ 0.93 (Jan 29, 2004 11:47:44 CST)
 CCX CFI - Carbon Financial Instrument - Vintage 2004, 5 @ 0.91 (Jan 29, 2004 11:23:54 CST)
 CCX CFI - Carbon Financial Instrument - Vintage 2004, 100 @ 0.91 (Jan 29, 2004 10:07:54 CST)
 CCX CFI - Carbon Financial Instrument - Vintage 2004, 25 @ 0.92 (Jan 29, 2004 10:07:54 CST)
 CCX CFI - Carbon Financial Instrument - Vintage 2004, 25 @ 0.93 (Jan 29, 2004 10:07:24 CST)

13:24:06 CST

CCX Price & Volume History



Markets Now, Markets Coming

- Annual value of current EU carbon market “crop” exceeds:

US Corn *plus* US Soybeans *plus* US Wheat crops

These agricultural markets had more than 85 million contracts traded in 2004

- EU Emissions Trading Scheme
 - 2 Billion metric tons of allowances annually
 - 50% of EU CO₂ Emissions, 7% of Global CO₂
 - \$60 billion/year market at \$30 US/ton



CCX Emission Offsets

Purpose:

- Low cost mitigation option
- Participation from sectors not amenable to cap and trade

Eligibility:

- Beyond regulation, rare, recent
- Verifiable: eligibility, quantities, ownership
- Avoid perverse incentives
- No cherry picking – emitters must take entity-wide reductions

Target Actions with Major Mitigation Potential:

- Non-CO2 gasses: low-cost, multi-benefit
- Agriculture: soils hold 183 years of global CO2 emissions
- Forestation: forests hold 75 years of global CO2 emissions
- Advance broader societal goals: sustainable agriculture and forestry, energy efficiency, renewable

General provisions:

- Conservative crediting
- Reserve pools for sequestration assurance



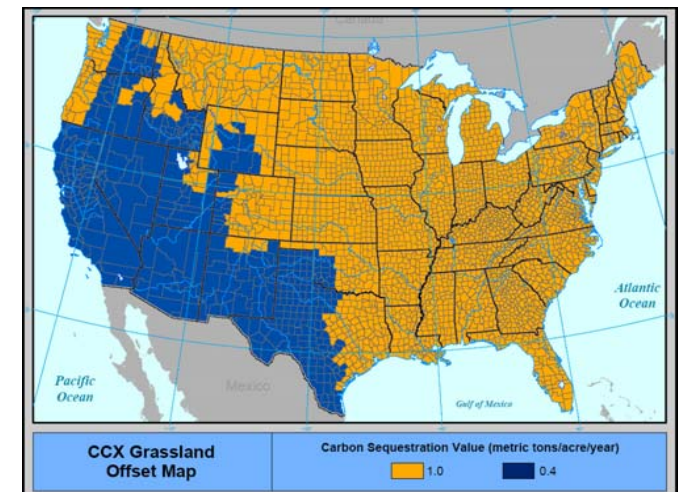
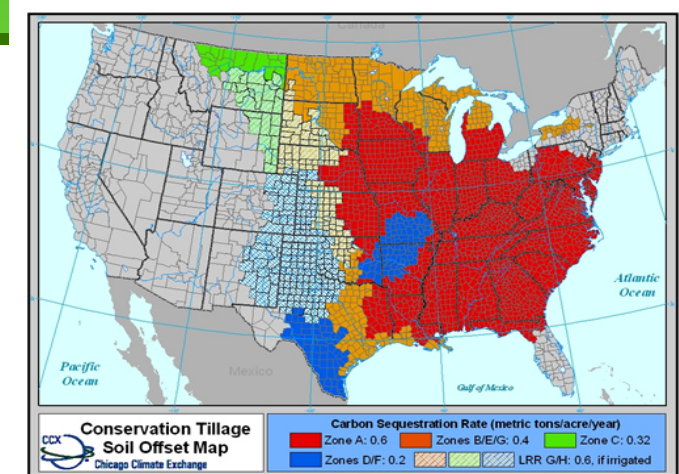
CCX Emission Offset Types

- Methane destruction: Landfills, agricultural operations and coal mines
- Carbon sequestration: forests, soils (conservation tillage, grassland planting, rangeland management)
- Ozone depleting substance destruction
- Energy efficiency
- Renewable energy
- Others case by case



CCX Offsets for Continuous Conservation Tillage and Grassland Planting

- Conservation tillage removes carbon from air (IPCC, Kyoto etc.)
- CCX requirement: 5 year continuous conservation tillage
- Rare practice (<10% of U.S. cropland)
- Sustainable ranching under development



Methane Combustion Projects

- Landfill, coal mine and agricultural methane capture and combustion
- Projects operational on or after January 1, 1999
- Voluntary installation that is not required by law
- High potency greenhouse gas

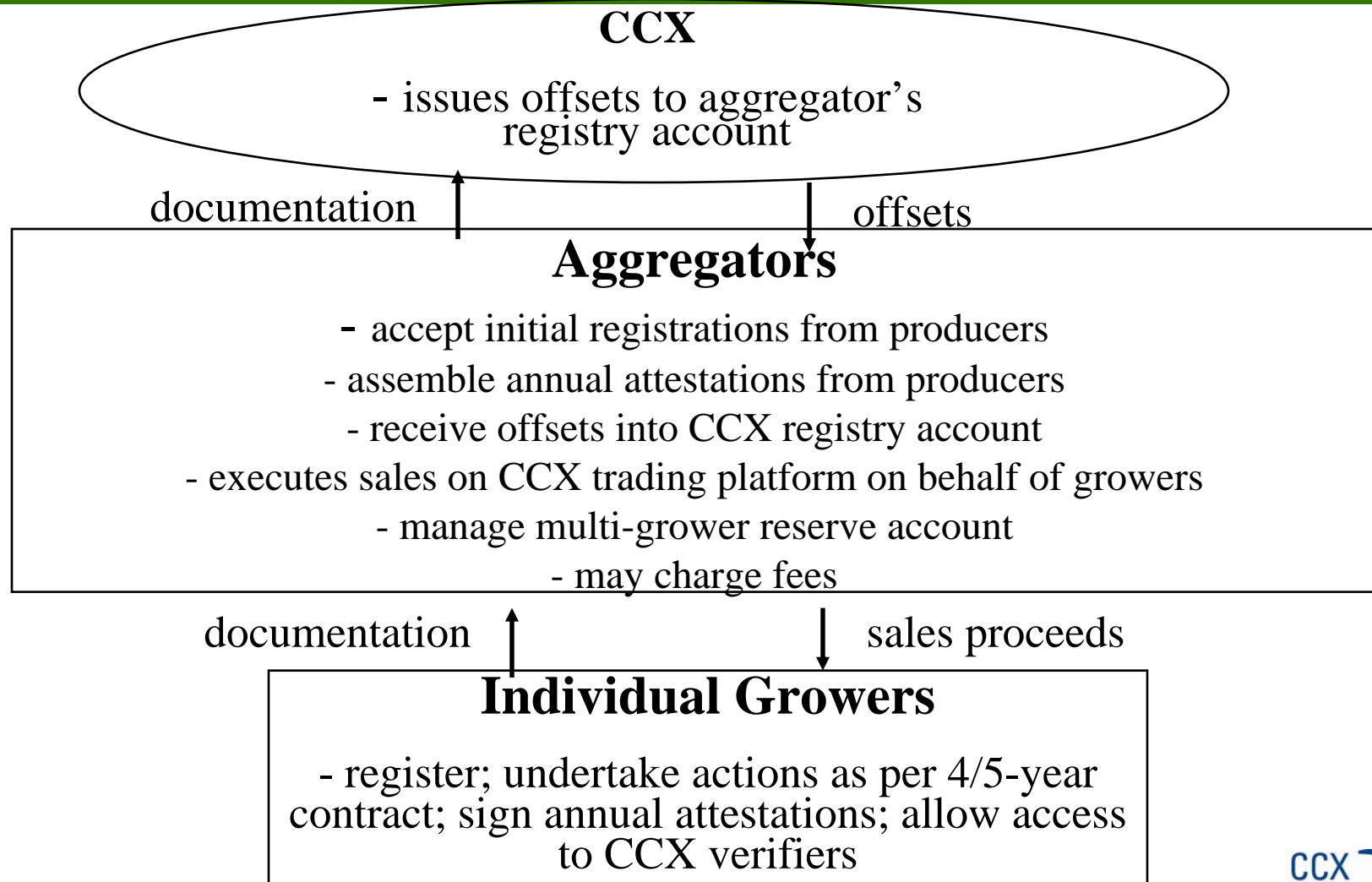


CCX Forestry Offset Types

Afforestation	Managed Forests	Long Lived Wood
<p>Planted January 1, 1990 on sites unforested or degraded</p> <p>Commitment 15 years agreement</p> <p>Offsets for increase in carbon 2003- 2010 period</p> <ul style="list-style-type: none"> •Above and below ground biomass •Increases in soil carbon <p>Quantification based tables (DOE 1605b tables)</p> <p>Maintain 20% of earned offsets reserve pool to account for catastrophic losses and other reversals</p> <p>Verification:</p> <ul style="list-style-type: none"> 10% in-field sample of both acreage and enrollment Beginning, end and periodic verification 	<p>Protocol almost finalized</p> <p>No date cut off</p> <p>Baseline stock 2002 or 2006</p> <p>Proof of sustainable forest management PEFC: ATF, SFI, FSC</p> <p>Offsets issued: Growth – Harvest + Long Lived Wood</p> <p>Annual quantification based on CCX approved model</p> <p>Annual offsets are adjusted for land acquisitions, dispositions, harvesting and catastrophic losses</p> <p>20% of issuance place into reserve pool</p> <p>Long term maintenance of land under forestry</p>	<p>Some carbon remains sequestered in wood products after harvest</p> <p>Credit for the fraction of stored carbon after 100yrs</p> <p>Proof of sustainable forest management PEFC: ATF, SFI, FSC</p> <p>Carbon rights must be retained through sales contract</p>



Mechanics of Offset Aggregation in CCX[®]



Summary and Opportunities

- Modest participation from offsets sector to date (approximately 10% of verified reductions, 18 of 170 million TCO₂)
- Carbon market incenting reduction that would not have occurred otherwise
- Members of CCX are leading with legal commitment to reduce emissions, part of a comprehensive system
- Offsets will bridge gap while emission reduction technology catches up

