

The U.S. Carbon Market

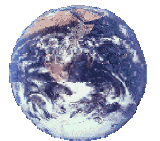


Michael J. Walsh, Ph.D.
Executive Vice President
Chicago Climate Exchange[®], Inc.

www.chicagoclimateexchange.com

312-554-3350

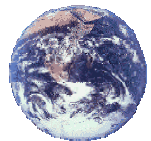
CHICAGO CLIMATE EXCHANGE, INC.



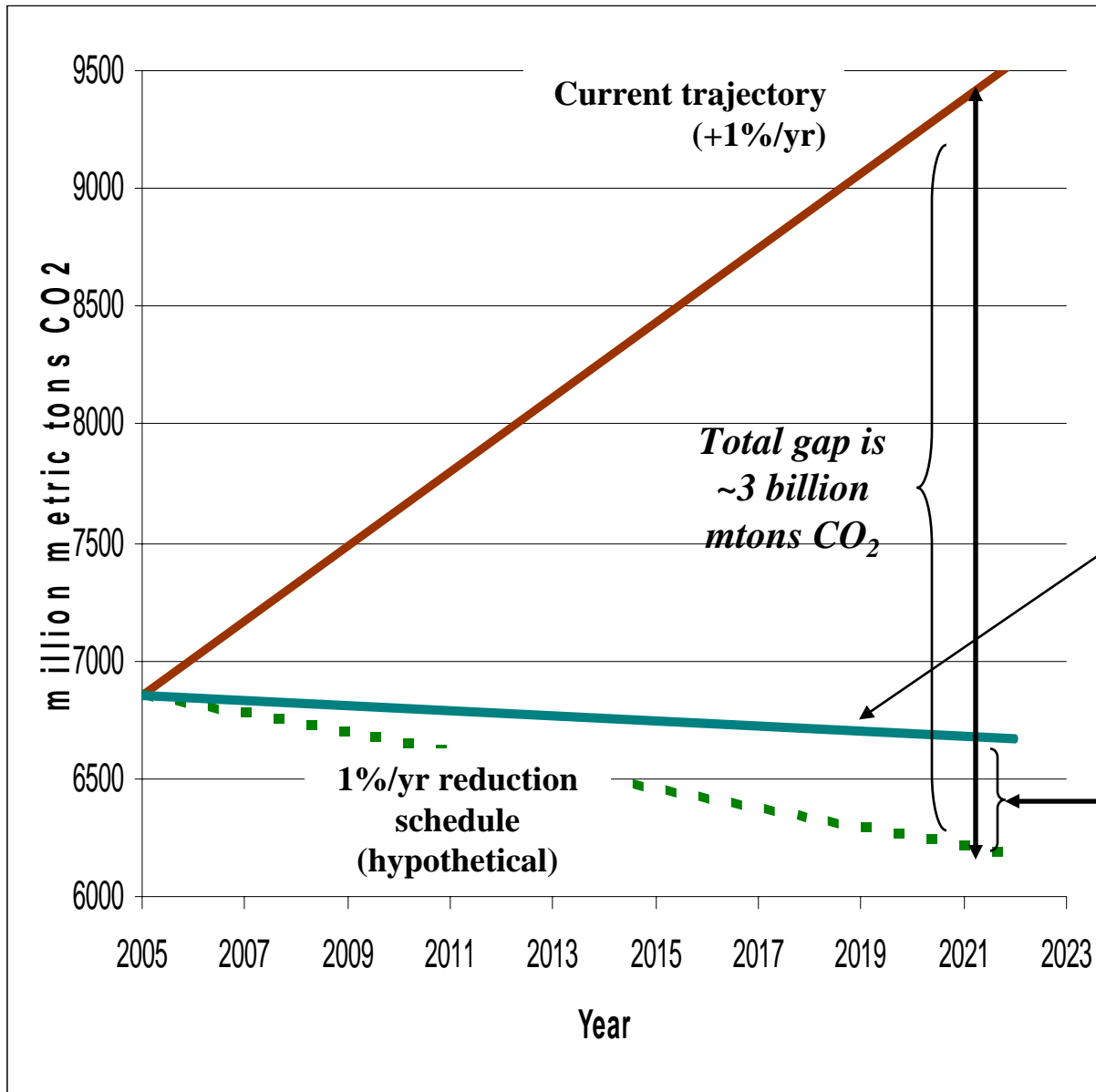
CCX: A Global Exchange Platform

- **Chicago Climate Exchange™ (CCX)**
 - Launched 2003 with 14 members, now 325+ members (US, CA, MX, BR, NZ, AU, CH)
- **European Climate Exchange™ (ECX)**
 - FSA-regulated futures market for European CO₂ Allowances
 - Launched April, 2005 – accounts for 80-90% of total exchange traded volume in the EU ETS
- **Chicago Climate Futures Exchange™ (CCFE)**
 - CFTC-regulated futures exchange for U.S. SO₂ allowances and U.S. NO_x Ozone Season allowances
 - Launched in December 2004, world's first environmental derivatives exchange
- **Montreal Climate Exchange™ (MCeX)**
 - Joint venture with the Montreal Bourse
 - To host Canadian GHG trading, other environmental markets
- **New York Climate Exchange™ and Northeast Climate Exchange™**
 - Developing financial instruments for northeast Regional Greenhouse Gas Initiative (RGGI)
- **California Climate Exchange™**
 - Developing financial instruments relevant to the California Global Warming Solutions Act, AB32
- **India Climate Exchange™**
 - (In development)

CHICAGO CLIMATE EXCHANGE, INC.

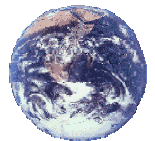


2022 US Compliance Gap, *Optimistic Scenario*, Under 1%/yr Reduction Schedule (vs. 2005 baseline)



Capped sectors:
Assumes industrial sector emissions decline 1%/yr, all others (including power generation) freeze at 2005 levels

500 million ton gap to be filled with Offsets and/or imports



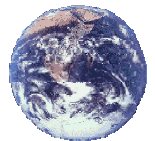
How to fill a 500 million ton U.S. compliance gap in 2022?*

One example

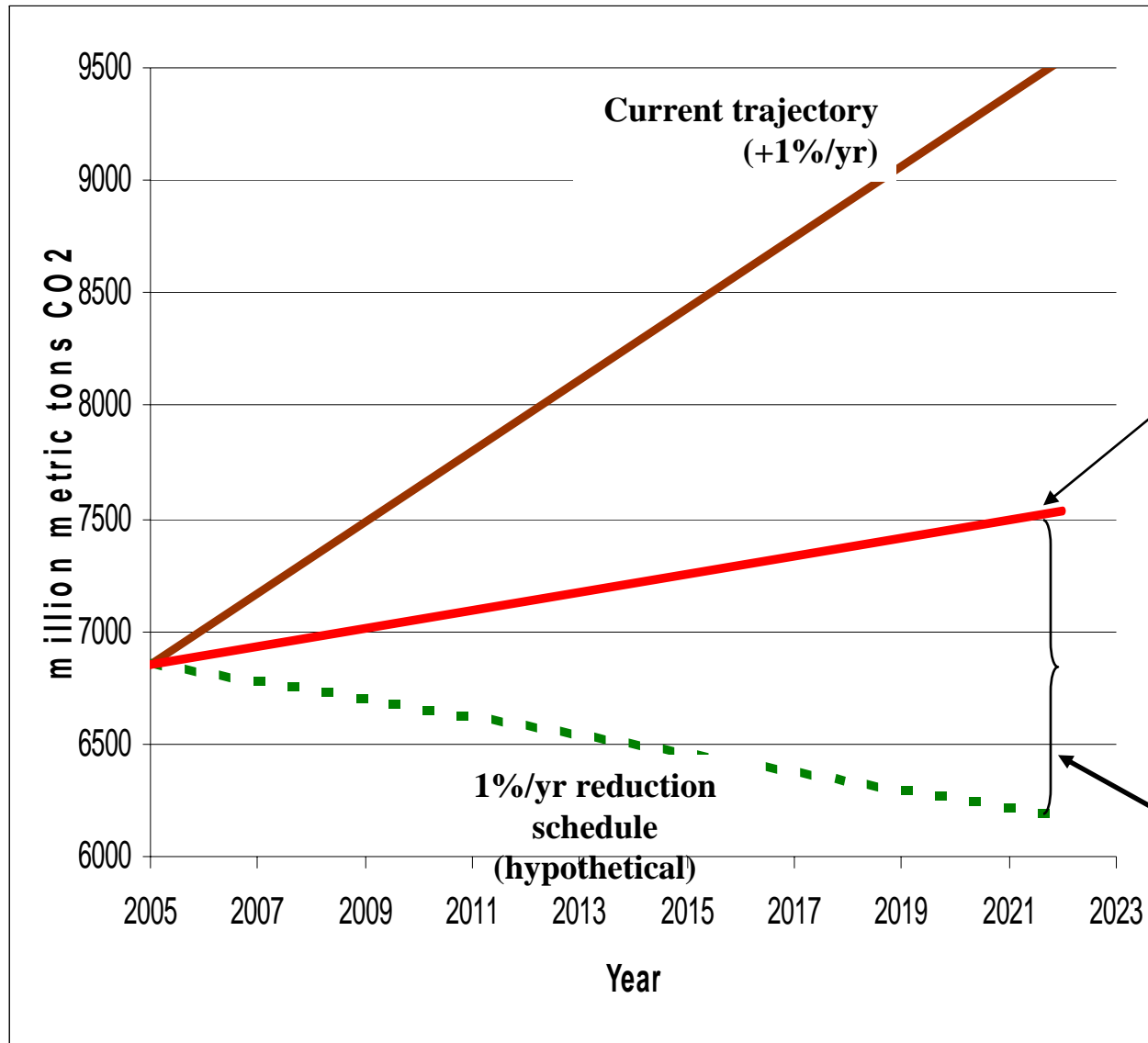
Action	million tons	Description
N ₂ O reductions	38.1	30% cut in ag n ₂ o
Landfill gas	56.4	40% cut in lfg
Ag methane	50.8	40% cut in ag ch ₄
Natural gas systems	48.8	40% cut in gas system ch ₄
New grass	25	25 million acres X 1.0
Ag soils	50	100 million acres of no-till (5x vs current)
Forests	100	10 million acres yielding 10 tons per acre per year
Early Action credits	100	1 billion tons total spread over ten years
Imported offsets	30.9	(residual)
sum	500	

** The gap grows rapidly as time passes, and is larger if the reduction requirements are larger or emission reductions are smaller*

CHICAGO CLIMATE EXCHANGE, INC.



2022 US Compliance Gap, *More Realistic Scenario*, Under 1%/yr Reduction Schedule (vs. 2005 baseline)

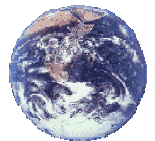


Capped sectors:
Assumes power sector emission growth slows from +2%/ to +1%/y, industrial sector emissions decline 1%/yr, all others grow at *half* their recent rates

1.34 billion ton
gap

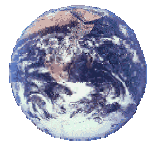
Conceptual framework borrows from: "Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies", S. Pacala* and R. Socolow*

CHICAGO CLIMATE EXCHANGE, INC.



What is Chicago Climate Exchange?

Chicago Climate Exchange (CCX[®]) is the world's first and North America's only voluntary, legally binding pilot greenhouse gas reduction, audit, registration and trading program for emission sources and offset projects in North America, Brazil and globally.



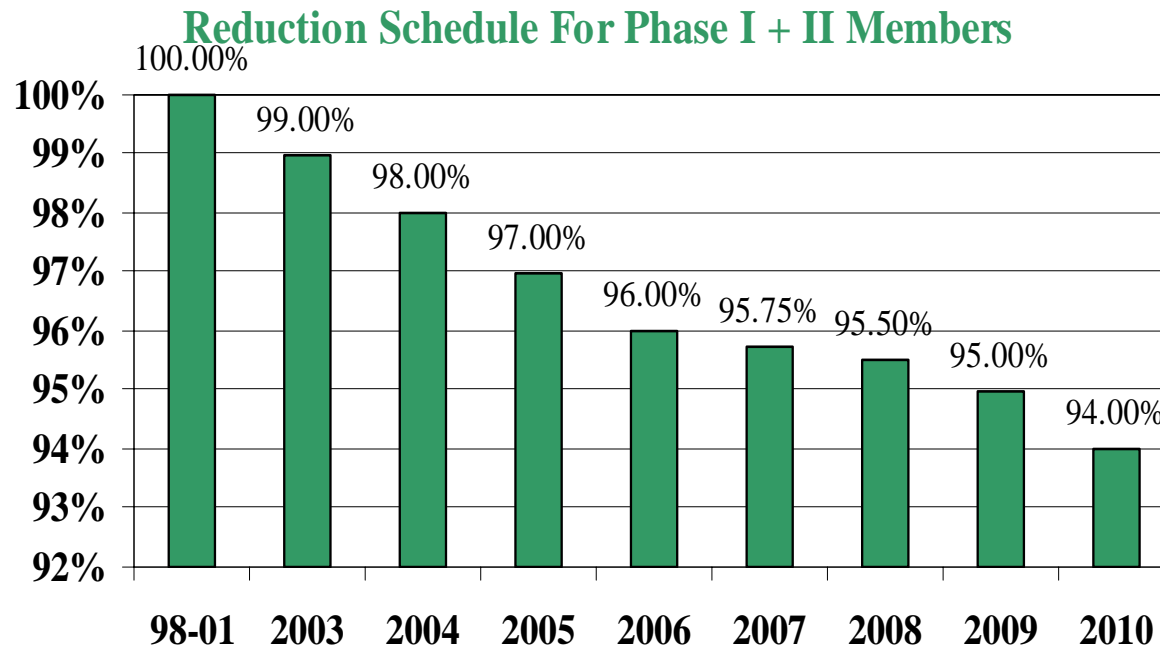
CCX Market Architecture (2003-2010)

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

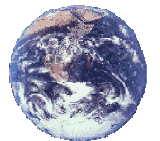
Baseline = Avg. emissions from 1998-2001, emissions in 2000 (Phase II)

Phase II: Legally binding commitments to reduce to 6% below baseline by 2010.

Economic Growth Provision limits recognized emission increase to 2% above baseline in 2003, 2004, 3% above baseline 2005-2010



CHICAGO CLIMATE EXCHANGE, INC.



CCX Operations and Governance

CCX Operations include:

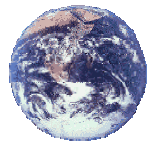
Use of CEMs and WRI/WBCSD emission calculation methods

- CCX Registry: official holder, transfer mechanism for CCX Carbon Financial Instruments
- Trading platform integrated with Registry; all trades guaranteed
- NASD provides market surveillance and emission verification

CCX Governance:

Self-regulatory organization overseen by Committees comprised of Exchange Members, directors and staff

Committees include: Environmental Compliance, Forestry, Membership, Offsets, Trading and Market Operations



CCX[®] Comprehensive Market Structure

Electronic Market Registry

You are logged in as notarkccx 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	Action	Vintage:	2003	2004	2005	2006
Original Allocation of Exchange Allowances:			0	0	0	0
1% auction pool withholding	debit		0	0	0	0
bought in sept 2003 auction	credit		0	0	0	0
current holdings			0	0	0	0

3. Exchange Offset holdings

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

4. Exchange Early Action Credit holdings

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

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

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

Web-accessible
Electronic
Trading
Platform

ChicagoClimateExchange - mstern_ccx @ CCX View Only Company

View Admin Help Logout

Kill All Live Only 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				0.92			
									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, 18 @ 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

CHICAGO CLIMATE EXCHANGE, INC.



Chicago Climate Exchange Members

Aerospace and Equipment

Rolls-Royce

Automotive

Ford Motor Company

Beverage Manufacturing

New Belgium Brewing Company

Chemicals

Dow Corning

Dupont

Rhodia Energy Brasil, Ltda

Electric Power Generation

AGL Energy (AU)

American Electric Power

Associated Electric Cooperative

Central Vermont Public Service

DTE

Duquesne Light Company

Green Mountain Power

Manitoba Hydro

NRG

TECO Energy, Inc.

Electronics

Motorola, Inc.

Sony Electronics

Square D/Schneider Electric N.A

Environmental Services

Wasatch Waste Mgmt District

Waste Management, Inc.

Food Processing

Premium Standard Farms

Forest Products Companies

Abitibi-Consolidated

Aracruz Celulose, S.A.

Cenibra Nipo Brasilliera, S.A.

International Paper

Klabin, S.A.

MeadWestvaco Corp.

Stora Enso North America

Temple-Inland, Inc.

Information Technology

IBM

Manufacturing

Bayer Corporation

Interface, Inc.

Knoll, Inc.

Ozinga Bros., Inc.

United Technologies*

State & Local Governments

The State of Illinois*

The State of New Mexico

King County, WA*

City of Aspen

City of Berkeley

City of Boulder

City of Chicago

City of Melbourne, Australia*

City of Oakland

City of Portland*

Pharmaceuticals

Baxter International, Inc.

Universities

The University of Iowa

Hadlow College

Michigan State University *

The University of Minnesota

The University of Oklahoma

Tufts University

Recreation

Aspen Skiing Company

Retail

Safeway Stores

Semiconductors

Freescale Semiconductor

Intel

STMicroelectronics

Steel

Roanoke Electric Steel Corp.

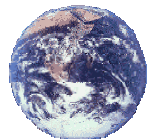
Transportation

Amtrak

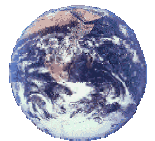
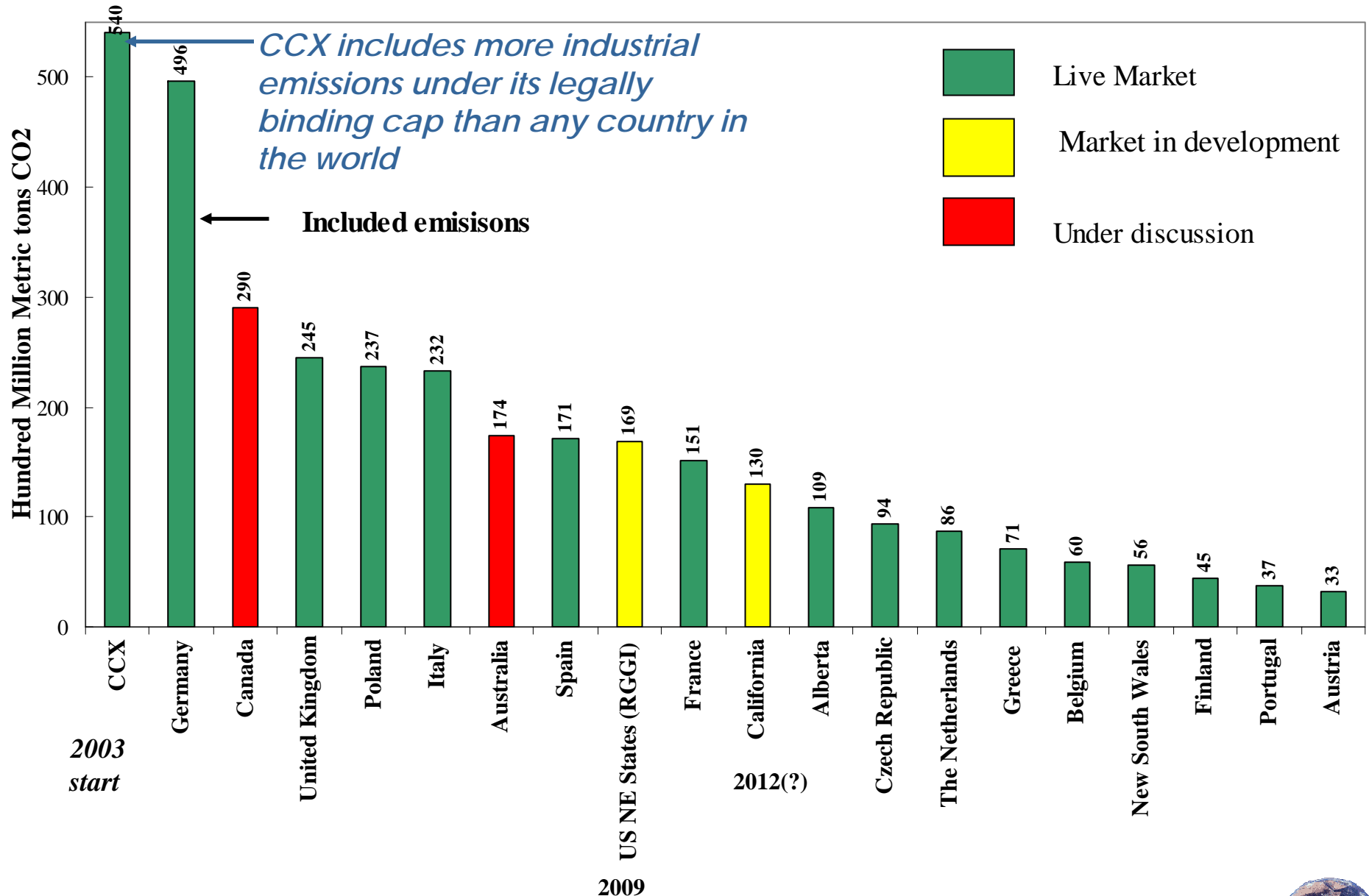
San Joaquin Regional Rail

*in process

CHICAGO CLIMATE EXCHANGE, INC.

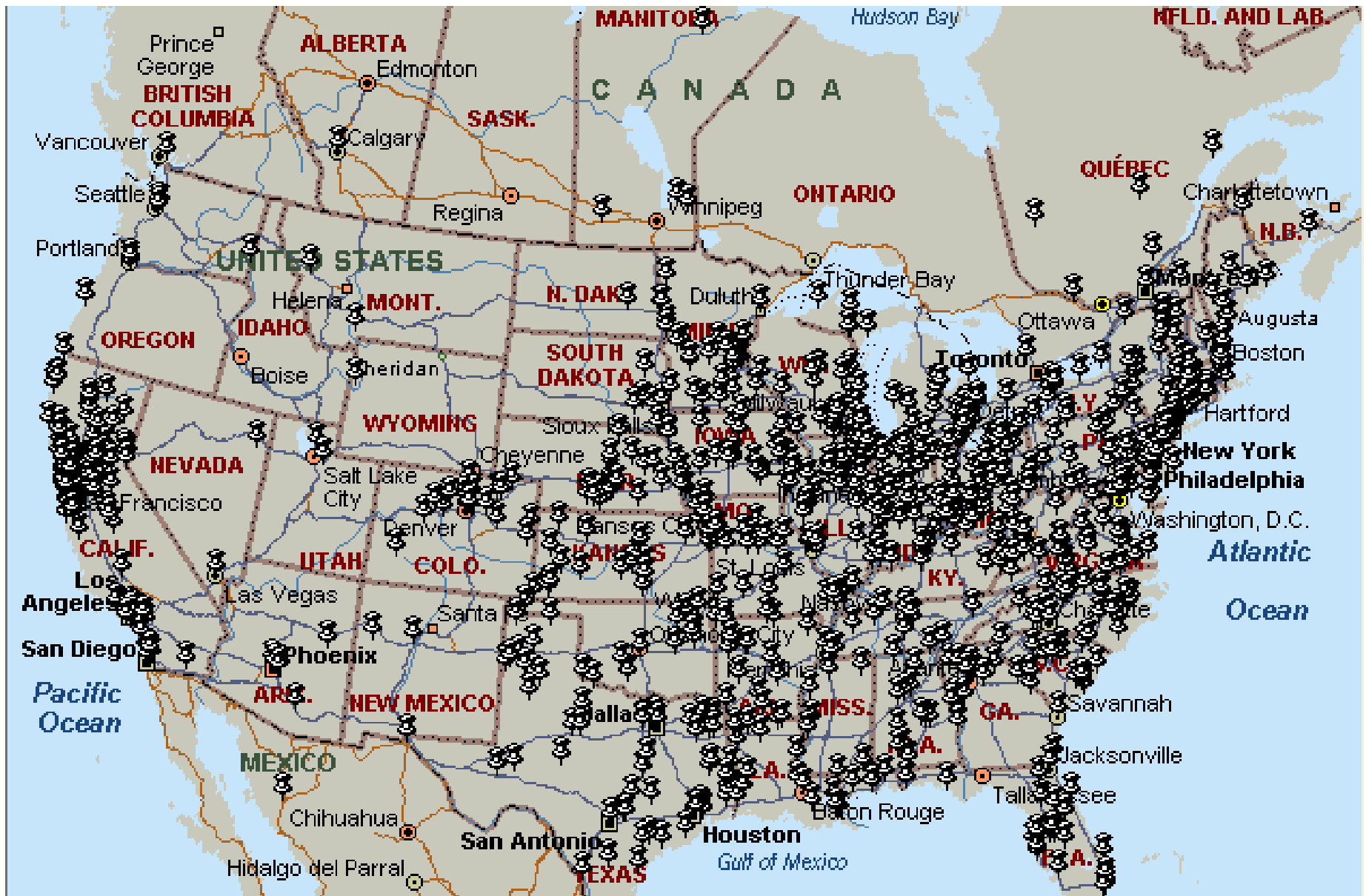


Size of Live, Emerging, Possible GHG Markets

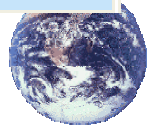


Chicago Climate Exchange Member Facilities

(partial coverage)



CHICAGO CLIMATE EXCHANGE, INC.



CCX Associate Members

Architecture/Planning

Mithun, Inc.

Brokerage Services

Amerex Energy

Consulting

Domani, LLC

Global Change Associates

Natural Capitalism, Inc.

RenewSource Development,
L.P.

Rocky Mountain Institute

Documentary Production

Cloverland, Inc.

Energy and 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.

MB Investments, LLC

Financing Agencies

Ohio Air Quality Development Authority

Green Power Marketers

Green Mountain Energy Company

Information Technology

Open Finance LLC

Intercontinental Exchange

Legal Services

Foley & Lardner, LLP

Sullivan & Cromwell, LLP

Non-Governmental Organizations

American Coal Ash Association

American Council on Renewable Energy

Delta Institute

Houston Advanced Research Center

Midwest Energy Efficiency Alliance

World Resources Institute

Private Colleges

Presidio School of Management

Risk Management

The Professional Risk
Managers' International
Association

Religious Organizations

Jesuit Community of Santa
Clara University

Renewable Energy

Airricity

Intergy

Reknewco, Ltd.

Retiring/Offsets

Carbonfund.org

Terrapass, Inc.

Social Investment

KLD Research & Analytics

Pax World

Technology

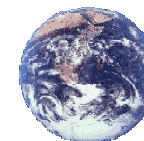
Millennium Cell

Polar Refrigerant Technology

Trade Associations

Confederation of British Industry

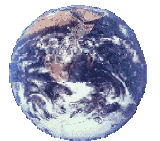
CHICAGO CLIMATE EXCHANGE, INC.



Why Are So Many Businesses, Governments and Institutions Taking Direct Action via CCX Membership?

Practical and strategic drivers:

- Competitive advantages through leadership:
 - obtain practical expertise through “hands-on” participation
 - build institutions: first-mover; global linkages
 - get ahead of disparate regulations, prepare for policy
 - reduce long-term mitigation costs
 - improve focus on energy efficiency, identify free savings
 - build carbon price into minds of operators and planners
 - trading profits, possible early action crediting
 - positioning in face of major growth in social investing
 - meet fiduciary commitments to shareholders and other stakeholders



CCX Participant Members

Offset Aggregators

C-Green Aggregator, LLC
Delta Institute
Environmental Carbon Credit Pool,
LLC
Environmental Credit Corp.
First Capital Risk Management, LLC
AgraGate (Iowa Farm Bureau)
National Carbon Offset Coalition
North Dakota's Farmers Union

Offset Providers

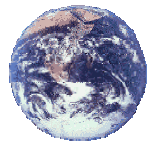
Beijing Shenwu Thermal Energy Trading
Hubei Sanhuan
Gallo Cattle
Granger Holdings
Intrepid Technologies, Inc.
Lugar Stock Farm
Precious Woods Holdings
Sexton Energy
Sustainable Forestry Management, Ltd.

Liquidity Providers

AGS Specialists, LLC
Amerex Energy
Breakwater Trading, LLC
Calyon Financial, Inc.
Cargill Power Markets, LLC
Eagle Market Makers, LLC
Evolution Markets, LLC
EXO Investments
FCT Europe, Ltd.
First New York Securities, LLC.
Friedberg Mercantile Group,
Ltd.

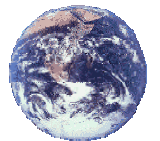
Galtre International Master
Fund, LP
GFI Securities, LLC
Goldenberg, Hehmeyer & Co.
Grand Slam Trading, Inc.
Grey K Environmental Fund, LP
Haley Capital Management
ICAP Energy, LLC
Kottke Associates, LLC
The League Corp.
Marquette Partners, LP
Natsource, LLC

Peregrine Financial Group
Rand Financial Services, Inc.
Serrino Trading Co.
Shatkin Arbor, Inc.
S.R. Energy, LLC
SwissRe Financial Products
Corp.
TEP Trading 2 Ltd.
TradeLink, LLC
Tradition Financial Services,
Ltd.
TransMarket Group, LLC



CCX Offset Projects: Maximizing the Solution Set

- Project-based mitigation offers low-cost, win-win greenhouse gas mitigation
- Large volumes of project-based mitigation must be integrated into the market
 - Predictable, verifiable rules
 - Low transaction costs
 - Maximize participation
 - Avoid perverse incentives (e.g. till-up a no-till field)
- Landfill, agricultural and coalmine methane: Waste Management (IN, TX), Others (PA, etc), Environmental Credit Corp., Premium Standard Farms (MN, WA, TX)
- Agricultural soils: Iowa Farm Bureau, Delta Institute (midwest), North Dakota Farmers Union, C-Green (Canada), National Carbon Offset Coalition (mountain)
- Reforestation: U.S. Farms, Precious Woods (Costa Rica)
- All projects undergo independent verification by approved entities
 - Offsets equal to approximately
18 million metric tons CO₂ generated to date (12% of total reductions)

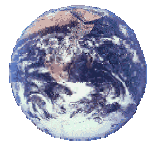


Stable, predictable offset rules contribute to successful GHG mitigation financing

➤ **IDAHO FALLS, Idaho, Sept. 8 /PRNewswire-FirstCall/ -- Intrepid Technology and Resources, Inc. (ITR) (OTC Bulletin Board: IESV), a renewable energy company, has recently signed an Engagement Letter with the brokerage firm of Ferris Baker Watts, Washington D.C., to commence the marketing and placement of 17,790,000 dollars in Tax Exempt Industrial Revenue Bond financing. The financing, expected to be completed within 45-60 days, will provide ITR the capital to triple the size of their existing biogas facility near Rupert, Idaho, (and) construct the Westpoint Dairy biogas plant, ...**

our ability to sell the substantial number of green credits that the system produces on the Chicago Climate Exchange makes these four projects very attractive to ITR's shareholders. At the same time we provide enhanced air, ground and water quality for the livestock owner.

Minnesota dairy farmer receives first check from sale of CCX methane-destruction Offsets



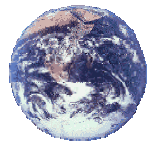
CCX Market Activity

2005 metric tons CO₂ traded: 1.3 million

2006 metric tons CO₂ traded: 10.6 million

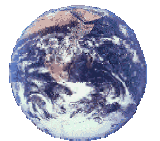
2007 metric tons CO₂ traded to date: 18 million

- **Most trades have occurred in the range of \$3 to \$4 per ton**



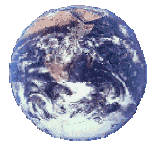
Conclusions: big picture results from CCX[®]

- Nearly all “currently viable” mitigation options reported by IPCC are reflected in CCX Rules
- *NO SHOWSTOPPERS TO IMPLEMENTATION OF A MULTI-SECTOR GHG CAP AND TRADE SYSTEM SUPPLEMENTED BY DIVERSE OFFSETS*
- Major pool of private and public sector talent engaged
 - members, hundreds of experts focusing on energy efficiency and savings
 - other experts: auditors, verifiers, policymakers
- Thousands of individuals now far more informed on carbon management and trading
- Detailed rules and methods tested and refined
 - many second generation procedures now in place
 - hands-on experience for emissions and project verification experts
 - detailed expertise accumulated by members



Key Issues to Watch in U.S. Legislation

- Included sectors, targets, gasses, timetables (start date, true-up periods)
- Pint of regulation (if any) for transport emissions (e.g. fuel vendors?)
- Availability and cost of domestic and international offsets
- Safety valves? (price, quantity, policy?)
- Parallel technology and policy development efforts (e.g. CAFE standards)
- International market and policy linkages
- Initial Allocation of tradable permits
 - grandfathering
 - auctions
 - benchmarking
 - accommodation of growth?



Views on CCX

- **“What would be wrong, at least on a theoretical basis, with taking what you have come up with by way of requirements for your (CCX) members and essentially mandating that everybody in the country comply with those?”**
Senator Jeff Bingaman (D-NM), ranking minority member, Senate Energy & Natural Resources Committee, April 4, 2006
- **“the Chicago Climate Exchange is providing an innovative means of involving American businesses and citizens in the effort to protect the environment...I listed my farm in Indiana on the Chicago Climate Exchange to set an example for farmers and foresters in my state and throughout America...For example, the exchange mechanism could be utilized by turning unused farmland into tree farms that sequester carbon while providing farmers with extra money... In short, American farmers could become the vanguard in using market forces to the benefit of both the environment and the pocketbook...”**
Senator Richard Lugar (R-IN)
- **“The CCX is leading the way toward a future in which reducing greenhouse gases could bring not only environmental rewards, but financial ones too.”**
Al Gore, from An Inconvenient Truth (book version), 2006

