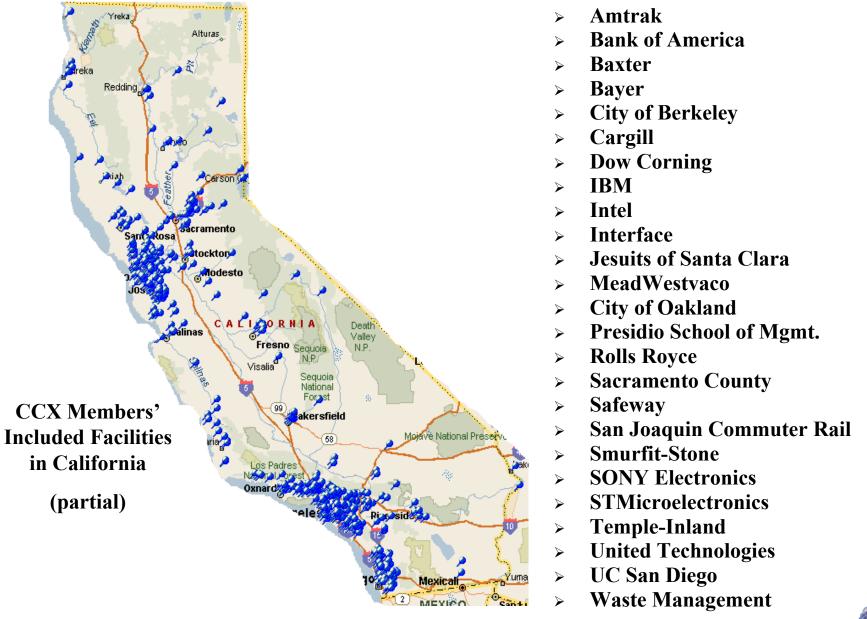
Chicago Climate Exchange



Michael J. Walsh, Ph.D. Executive Vice President Chicago Climate Exchange®, Inc. www.chicagoclimateexchange.com



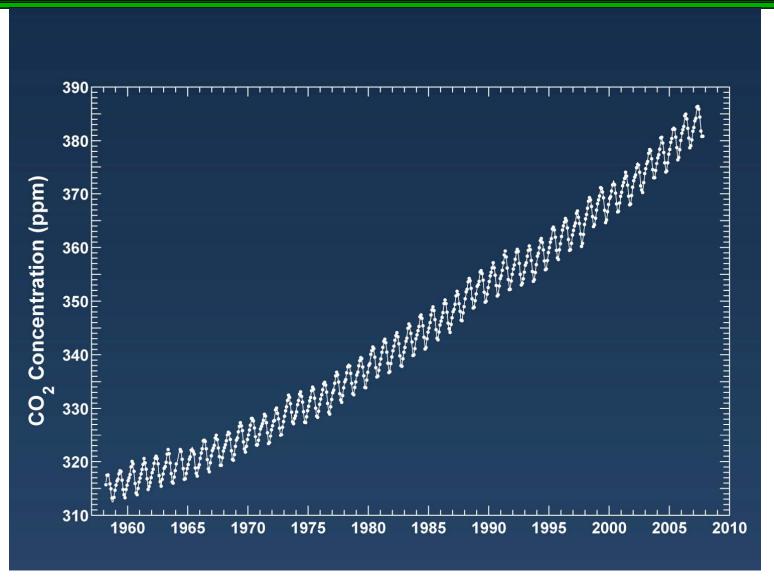
CCX Members with Significant Presence in California





IMATE EXCHANGE, INC

Atmospheric CO₂ Concentrations: The Mauna Loa Record



"Lessons from Mauna Loa: On the value of continuous time series."

Presentation by Ralph Keeling, Scripps Institution of Oceanography

50th Anniversary of the Global Co2 Record, November 28-30, 2007 / Kona, Hawaii



Yet Still No Implementation by Western Hemisphere Governments

Getting Started With A Pilot:
The Rationale for A Limited-Scale Voluntary International
Greenhouse Gas Emissions Trading Program

Testimony Presented by

Dr. Richard L. Sandor
Chairman and Chief Executive Officer
Centre Financial Products Limited

to the

White House Conference on Climate Change October 6, 1997

and the

U.S. Senate

Energy and Natural Resources Committee

September 30, 1997



low transaction costs allow efficient outcomes



Chicago Board of Trade, March 1994

(Photo Source: Mainichi Evening Eye)

CHICAGO CLIMATÉ EXCHANGE, INC.



Rationale for Emissions Trading

- Greenhouse gases mix and cause warming throughout the common global atmosphere
- > Flexibility to meet a global problem: find least-cost means of reducing emissions anywhere in the world
- > Clear and enforced emission limits
- Reduce cost to society of achieving specified emission limits: static efficiency at each point in time
- > Harness capital markets to efficiently deploy new technologies
- > Clear, market incentives to innovate: dynamic efficiency, improvement over time

Trillions of dollars will be spent in the coming decades to address climate change: Will we get the maximum environmental return on investment?



CCX: A Global Platform

- Chicago Climate Exchange (CCX)
 Launched 2003 with 14 members, now 330+ 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 and NOx 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 ExchangeTM and Northeast Climate ExchangeTM
 Developing instruments for northeast Regional Greenhouse Gas Initiative (RGGI)
- India Climate Exchange (In development)



What is Chicago Climate Exchange?

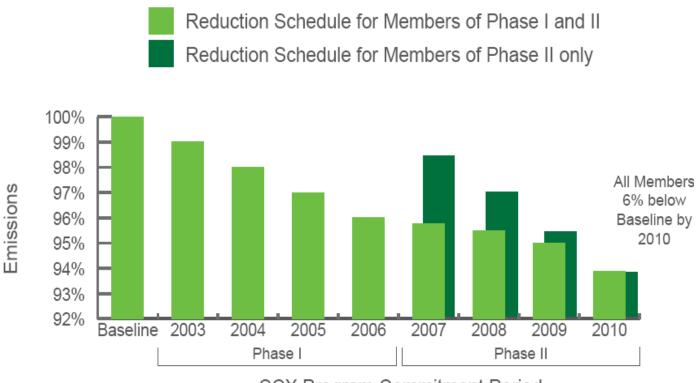
Chicago Climate Exchange ($CCX^{\mathbb{R}}$) is the world's first and North America's only voluntary, legally binding greenhouse gas reduction, audit, registration and trading program for emission sources and offset projects in North America, Brazil and globally.



CCX Market Architecture (2003-2010)

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

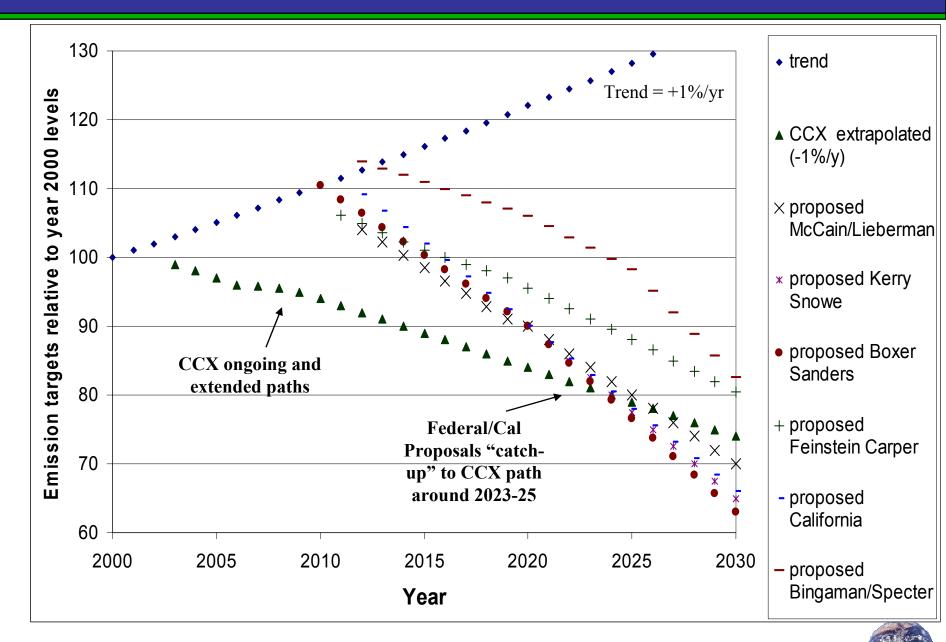
<u>Phase II:</u> Members make a legally binding commitment to reduce to 6% below baseline by 2010. Baseline = Avg. emissions from 1998-2001, emissions in 2000 (Phase II)



CCX Program Commitment Period

CCX is synergistic with and complementary to all emerging policy, precludes none – whether state, regional, national, voluntary or mandatory.

GHG Reduction Targets: CCX, Proposed Legislation



(Over 400 - All Sectors)

Aerospace & Equipment

Rolls-Royce United Technologies

Agricultural Products

Agrium U.S. Inc. Cargill, Incorporated Monsanto Company

Automotive

Ford Motor Company

Beverage Manufacturing

New Belgium Brewing

Chemicals

Dow Corning
DuPont
Rhodia Energy Brasil Ltda

Coal Mining

Jim Walter Resources, Inc. PinnOak Resources LLC

Commercial Interiors

Knoll, Inc. Steelcase Inc.

Counties & States

King County, Washington Miami-Dade County, Florida Sacramento County, California State of Illinois State of New Mexico

Diversified Manufacturing

Eastman Kodak Company

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.

Electric Power

AGL Hydro Partnership Allegheny Energy Inc. **Alliant Energy** American Electric Power American Municipal Power-Ohio Associated Electric Cooperative, Inc. **Avista Corporation** Central Vermont Public Service DTE Energy Inc **Duquesne Light Company** Green Mountain Power Hoosier Energy Rural Electric Coop. 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



(Over 400 - All Sectors)

Ethanol Production Corn Plus LLP

Financial Institutions

Bank of America Corporation

Food Processing

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

Forest Products

Temple-Inland Inc

Abitibi-Consolidated
Aracruz Celulose S.A.
Cenibra Nipo Brasiliera 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.

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

Pharmaceuticals

Baxter International, Inc.

Recreation

Aspen Skiing Company

Retail

Safeway, Inc.

Technology

Freescale Semiconductor IBM Intel Corporation STMicroelectronics

Transportation

Amtrak San Joaquin Regional Rail

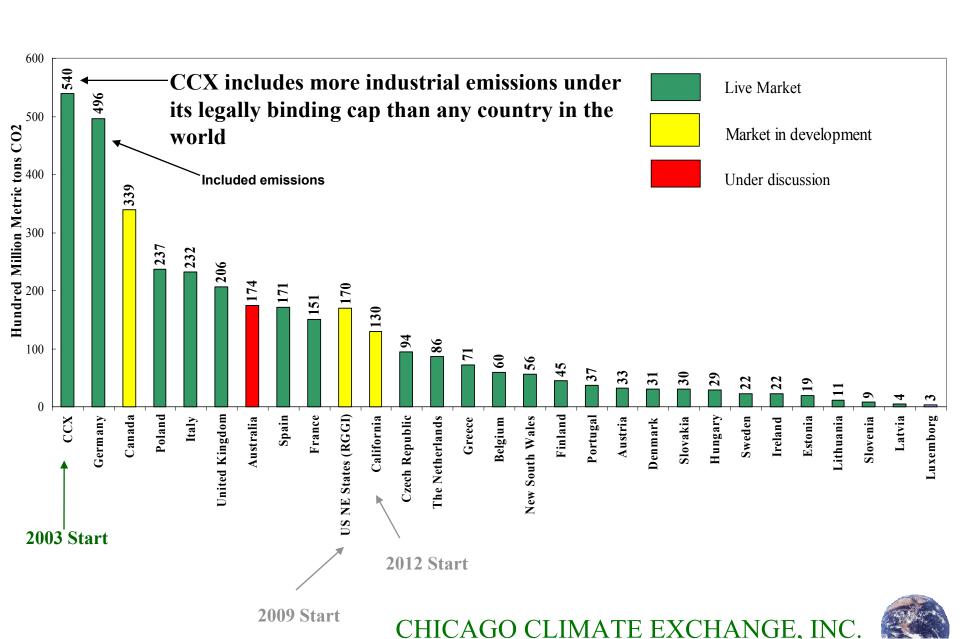
University

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

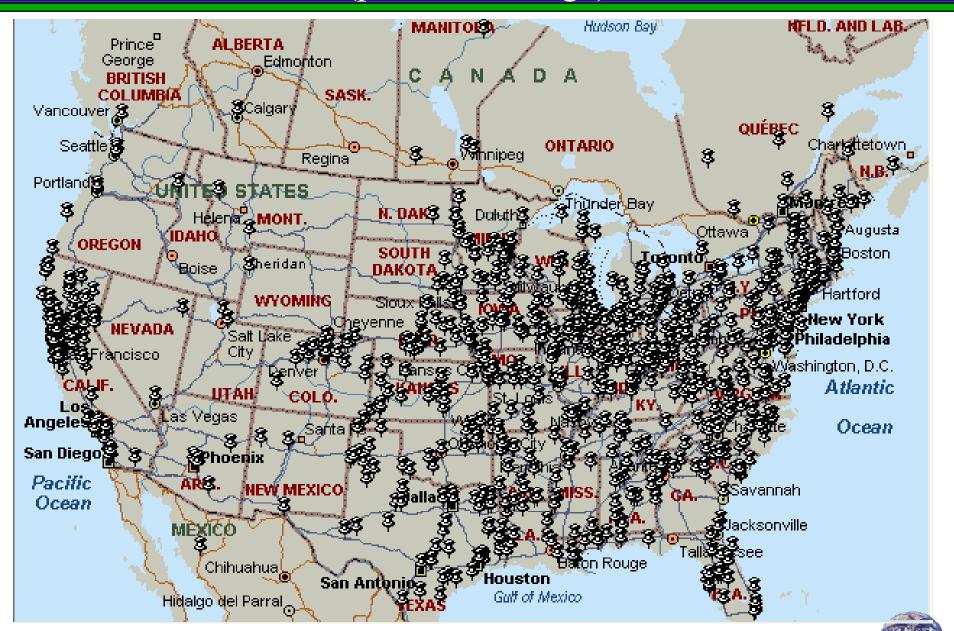


Size of Live, Emerging, Possible GnG Markets

as of September 2007



(partial coverage)



Direct Action via CCX Membership?

Practical and strategic drivers:

- Competitive advantages through leadership:
 - reduce greenhouse gas emissions in a rules-based, independently audited market system
 - 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



Build the Carbon Market

"It's because by participating in the Chicago Climate Exchange, which really governs IBM's own business operations and our company's own carbon footprint, we are better able to understand the entire arena of creating an inventory of carbon emissions, accounting for them in an audit ready manner, presenting them to an exchange so they can be verified and considered to be tradable and how one does and doesn't make money on an exchange"

Wayne Balta
IBM
VP, Corporate Environmental Affairs
September 26, 2007



CCX Associate Members (sample)

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

Private Colleges

Midwest Energy Efficiency Alliance

Presidio School of Management

Risk Management

The Professional Risk Managers'International Association

Religious Organizations

Jesuit Community of Santa Clara University

Renewable Energy

Airtricity 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



CCX Participant Members (sample)

Offset Aggregators C-Green Aggregator, LLC

Delta Institute
Environmental Carbon Credit Pool,
LLC
Environmental Credit Corp.
First Capital Risk Management, LLC
lowa 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.

Galtere 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® Comprehensive Market Structure

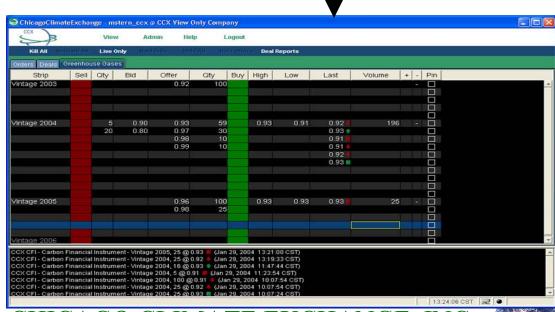


Comprehensive Rules System

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

‡

Webaccessible secure Electronic Trading Platform



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
- FINRA (formerly NASD) provides market surveillance and emissions 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



How CCX Rules Are Advancing Currently Available Mitigation Options As Identified by IPCC

Currently viable mitigation actions	Can be significantly stimulated through an emissions cap	Significantly stimulated <i>mainly via</i> project-based crediting	Requires cap and offset rules to optimize uptake	How addressed through CCX Rules?
Energy Supply				
Improved supply and distribution efficiency	Yes		Yes	Cap
fuel switching	Yes		Yes	Cap + offsets
nuclear power	Yes			Cap
renewables, combined heat and			Yes	-
power	Yes			Cap + offsets
early applications of Carbon				
Capture and Storage	Yes			Not yet addressed√
Transport				
More efficient vehicles	Yes		Yes	Cap + offsets
biofuels	Yes		Yes	Cap + offsets
non-motorised transport (cycling,	(maybe)		n.a.	n.a
walking)	(indirect role for		(possible role for	
land-use and transport planning	carbon market?)		offsets?)	Not yet addressed√
Buildings				
More efficient lighting +	Yes	yes	yes	Cap + offsets
appliances + HVAC		·	•	1 33
insulation	Yes	yes	Yes	Cap + offsets
alternative refrigerants,	Yes	yes	yes	Cap + offsets
recycle/destruct fluorinated gases				(New CCX ODS
(NB: word "destruct" not in IPCC				destruction rule!)
report)	(indirect role for			NGE DIC
passive and active solar design	carbon market?	<u>ICAGO CLIM</u>	<u> [ATE EXCHA]</u>	NGE, INC.

Mitigation Options As Identified by IPCC

Currently viable mitigation actions	Can be significantly stimulated through an emissions cap	Significantly stimulated <i>mainly via</i> project-based crediting	Requires cap and offset rules to optimize uptake	How addressed through CCX Rules?
Industry end-use electrical equipment heat and power recovery material recycling/ substitution control of non-CO2 gas emissions process technologies	Yes Yes Yes Yes		Yes Yes Yes Yes	Cap + offsets Cap + offsets Cap + offsets Cap + offsets
Agriculture increase soil carbon via improved crop/grazing land mgmnt restore degraded lands improved rice cultivation livestock methane energy crops to replace fossil fuel improved energy efficiency	No No No No Yes (maybe)	Yes Yes Yes Yes Yes (indirectly)	Yes Yes	Offsets Offsets Not addressed√ Offsets Cap + offsets Offsets/indirectly via conservation tillage incentives



Mitigation Options As Identified by IPCC

Currently viable mitigation actions	Can be significantly stimulated through an emissions cap	Significantly stimulated <i>mainly via</i> project-based crediting	Requires cap and offset rules to optimize uptake	How addressed through CCX Rules?
Forestry Afforestation; reforestation forest management	No	Yes	All four forestation management	Offsets + forest flux rules
reduced deforestation harvested wood product	No No	Yes	goals can be advanced	Offsets + forest flux rules
management	No	Yes	via on net carbon flux crediting/	Offsets+ Forest flux rules
forest products/bioenergy to replace fossil fuel use	Yes		debiting Yes	Cap + offsets
Waste Landfill methane recovery waste to energy waste water treatment recycling and waste minimization	No Yes No (indirect via cap)	Yes Yes	Yes (possible role for offsets)	Offsets Cap + offsets Offsets (indirect via cap)



CCX Offset Projects Enrolled: Examples

- Landfill methane: Waste Management (IN, TX), Others (PA, etc)
- Agricultural methane: Environmental Credit Corp., Premium Standard Farms (MN, WA, TX)
- Agricultural soils: Iowa Farm Bureau, Delta Institute (midwest), North Dakota Farmers Union, C-Green (Canada)
- Reforestation: Precious Woods (Costa Rica)
- Fuel switching: IdleAire (CA, TX)

Minnesota dairy farmer receives first check from sale of

- Coalmine methane *CCX methane-destruction Offsets*
- Destruction of high GWP ozone depleting substances
 - Offsets equal to approximately 22 million metric tons CO₂ generated to date (11% of total reductions)



CCX Verifiers: Leaders in their Field

Agricultural Methane Capture and Combustion

Agri-Waste Technology, Inc. SES Inc.

TUV SUD Industrie Service GmbH

> Forestry

BVQi Forecon Inc.

SGS —

TUV SUD Industrie Service GmbH Winrock International

Agricultural Soil Carbon Sequestration

Agri-Waste Technology, Inc Association of Illinois Soil and Water Conservation Districts North Dakota Association of Soil Conservation Districts

SES Inc. TUV SUD Industrie Service GmbH

> Energy Efficiency

Econergy Corporation International Franklin Energy Services ICF Consulting Canada Inc.

TUV SUD Industrie Service Gmbh

Landfill Methane

ARM Group Inc.

Det Norske Veritas (DNV)

Econergy Corporation International

First Environment Inc.

Richardson Smith Gardner and Associates, Inc

Kleinfelder

TUV SUD Industrie Service GmbH

WHEN YOU NEED TO BE SURI



SGS is a world leading inspection, verification, testing and certification company, and is recognized as a global benchmark for quality and integrity. With more than 48'000 employees, SGS operates a network of over 1'000 offices and laboratories around the world.

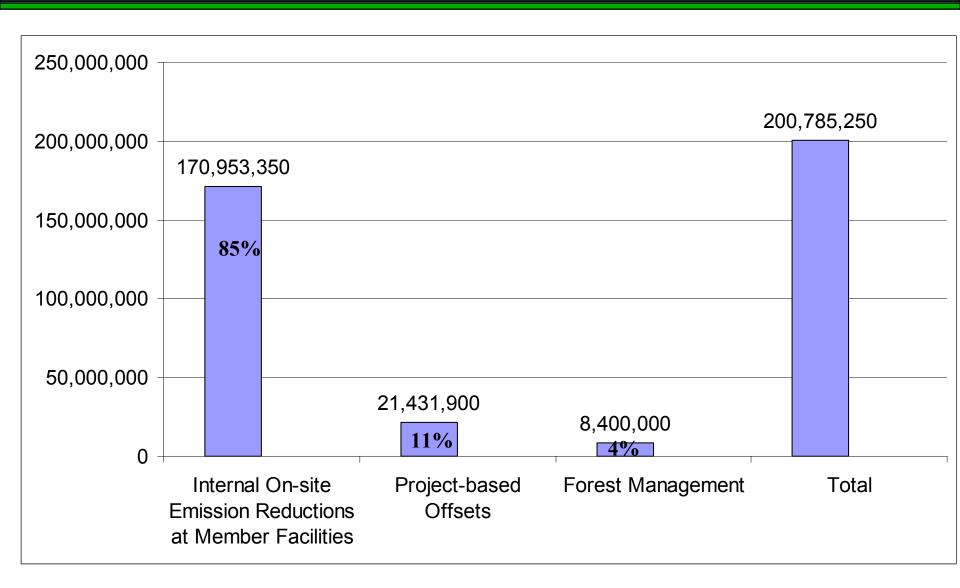


<u>DNV</u> is a leading independent greenhouse gas verifier operating globally. Their GHG experts are used by international organizations, governments, and industry, delivering independent, third party services for climate change activities.



CHICAGO CLIMATE EXCHANGE, INC

Years 2003 through 2006* (metric tons CO₂)



^{*}As of 2-21-08. A portion of new member emission reductions are currently undergoing verification.



CCX Weekly Price & Volume



U.S. House of Representatives Purchases Emission Offsets Through CCX as Part of "Greening the Capitol" Initiative

Auction results Announced November 1, 2007

U.S. House acquired balanced portfolio of 30,000 metric tons CO₂ of verified U.S. domestic offset projects involving: agricultural methane, coalmine methane, landfill methane, agricultural soils, reforestation, renewable fuels*



CCX Chairman & CEO, Dr. Richard L. Sandor; U.S. Representative Rahm Emanuel; U.S. House of Representatives CAO Dan Beard; U.S. Representative Dan Lipinski; U.S. Representative Mark Kirk



Conclusions: big picture results from CCX®

- Large quantity of emission reductions realized and verified: members beat the goals
- 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 SUPPLMENTED BY DIVERSE OFFSETS
- Major pool of private and public sector talent engaged and doing GHG management
 - members, hundreds of experts focusing on energy efficiency and savings
 - other experts now deployed: 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



Bi-Partisan Views on CCX

<u>CCX</u> represents an innovative market-based approach to solving our energy issues and improving air quality.

Chicago Mayor Richard M. Daley (D), Chicago, (September 30, 2003)

It's cold in Chicago today, <u>but I'm thrilled to see that the new Chicago Climate Exchange is warming up for the next wave in environmental protection—and economic innovation.</u> I want to congratulate the Exchange, which is the first comprehensive voluntary pilot program for domestic trading of greenhouse gases, on the announcement of its founding members. Their progress is great news for Chicago's economy and for America's environment.

US Senator Joseph Lieberman (D-CT) (January 2003)

As CCX approaches its first anniversary of continuous trading, it is apparent that members are raising their understanding of market-based carbon emissions management through hands-on experience. Through participation in CCX members are able to develop best practices that allow the activities of emissions data gathering, auditing, and trading to become simplified and standardized.

Gov. Christie Todd Whitman (R), former Governor of New Jersey (December 2004)



Bi-Partisan Views on CCX

"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), Chairman of Senate Foreign Relations Committee

"To deal directly with climate change, something we failed to do in the last energy bill, we should use a market-based strategy that gradually reduces harmful emissions in the most economical way.....Right here in Chicago, the Chicago Climate Exchange is already running a legally binding greenhouse gas trading system"

Senator Barack Obama (D-IL), April 3, 2006

"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, 2006 (book version).

"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), Chairman Senate Energy & Natural Resources Committee, April 4, 2006

CHICAGO CLIMATE EXCHANGE, INC.