Chicago Climate Exchange

Briefing to the North Carolina Legislative Commission on Global Climate Change

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Many Options for Reducing Greenhouse Gases

- Lower carbon fuel: natural gas, CO₂ neutral fuel (biomass)
- More efficient fuel use: MPG, lighting, insulation
- Methane capture/combustion
- Abatement devices, alternative chemicals
- Carbon sequestration:
 - reforestation, carbon accumulation, preservation
 - agricultural soils
 - geologic



Rationale for Emissions Trading

- GHGs mix, cause warming throughout common global atmosphere
- Proven tool, with 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
 - President Bush had proposed CO₂ cap-and-trade for power plants in his first campaign
- Numerous GHG cap-and-trade legislative proposals are circulating in the U.S. Congress, with sponsors as diverse as Senators McCain, Lieberman, Feinstein, Bingaman, etc.
 Chicago Climate Exchange®

www.chicagoclimateexchange.com

The Growing CCX Family

Chicago Climate Exchange (CCX)

Launched 2003 with 14 members, now 220+ 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 fotal exchange traded volume in the FU FTS

Chicago Climate Futures Exchange (CCFE)

CFTC-regulated futures exchange for Ú.S. SO₂ 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 instruments for northeast Regional Greenhouse Gas Initiative (RGGI)

Indian Climate Exchange

- Partnership with the Multi-Commodity Exchange of India
- In development



"Business Increases pressure on G8 to set up global emissions trading system"

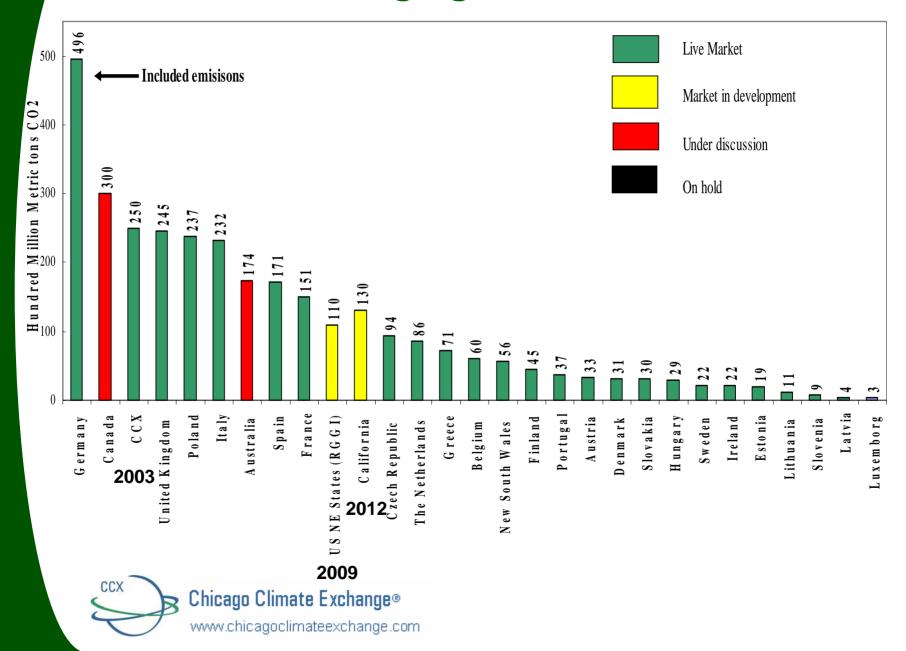
"Steve Lennon, chair of the environment and energy commission of the International Chamber of Commerce, which represents hundreds of thousands of companies in 130 countries, said:

"We see a global system of emissions trading as inevitable"

Financial Times, June 10, 2005, page 1



Size of Live, Emerging, Possible GHG Markets



What is Chicago Climate Exchange?

Chicago Climate Exchange (CCX®) is the world's first and North America's only voluntary, <u>legally binding</u> greenhouse gas reduction and trading program for emission sources and offset projects in North America, Brazil and elsewhere.



CCX Advisory Committee

Honorary Chairman The Honorable Richard M. Daley, Mayor, City of Chicago

Warren Batts, former CEO, Tupperware Corporation, Mead.

David Boren, President, The University of Oklahoma; former governor of Oklahoma and U.S. Senator

Ernst Brugger, President, Brugger, Hanser & Partner

Paula DiPerna, former President of the Joyce Foundation

Elizabeth Dowdeswell, former Executive Director, UN Environment Program

Jeffrey Garten, Dean, Yale School of Management

Lucien Bronicki, Chairman, ORMAT International

Donald Jacobs, Dean Emeritus, Kellogg Graduate School of Management, Northwestern University

Jonathan Lash, President, World Resources Institute

Joseph Kennedy II, Chairman, Citizens Energy Group; former U.S. Representative (MA)

Israel Klabin, President, Brazilian Foundation for Sustainable Development

Bill Kurtis, Journalist and television producer

Thomas Lovejoy, President, Heinz Center; former Chief Biodiversity Advisor, the World Bank

David Moran, President, Dow Jones Indexes

R.K. Pachauri, Chairman, Intergovernmental Panel on Climate Change

Michael Polsky, President and CEO of Invenergy

Les Rosenthal, former Chairman, Chicago Board of Trade

Donna Redel, former Executive Director, World Economic Forum

Maurice Strong, former United Nations Under-Secretary General

James Thompson, Chairman, Winston & Strawn; former four-term Governor of Illinois

Sir Brian Williamson, Chairman, London International Financial Futures Exchange

Robert Wilmouth, President and CEO, National Futures Association

Klaus Woltron, Austrian entrepreneur and Vice President of the Vienna Club

Michael Zammit Cutajar, former Executive Secretary, UN Framework Convention on Climate Change

B Chicago Climate Exchange®

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Chicago Climate Exchange Members

Aerospace and Equipment

Rolls-Royce

Automotive

Ford Motor Company

Beverage Manufacturing

New Belgium Brewing Company

Chemicals

Dow Corning
Dupont

Electric Power Generation

American Electric Power
Central Vermont Public Service
Duquesne Light Company
Green Mountain Power
Manitoba Hydro
TECO Energy, Inc.

Electronics

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

Environmental Services

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. Ozinga Bros., Inc.

State & Local Governments

The State of New Mexico*
King County, WA*
City of Aspen
City of Berkeley
City of Boulder
City of Chicago
City of Oakland

Pharmaceuticals

Baxter International, Inc.

Universities

The University of Iowa Michigan State University The University of Minnesota The University of Oklahoma Tufts University

Recreation

Aspen Skiing Company

Retail

Safeway Stores

Semiconductors

Freescale Semiconductor STMicroelectronics

Steel

Roanoke Electric Steel Corp.

Transportation

Amtrak San Joaquin Regional Rail Commission

*in process

State of Illinois has announced



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

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

Private Colleges

Presidio School of Management

Trade Associations

Confederation of British Industry



CCX Participant Members

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 Co., Ltd. Intrepid Technologies, Inc. Lugar Stock Farm Precious Woods Holdings 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



Why do Companies Become CCX® Members?

Practical 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



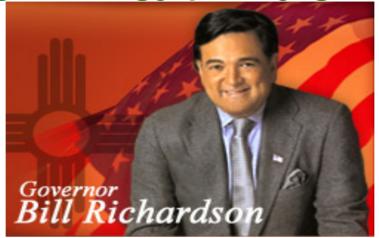
Why do Companies Become CCX® Members?

Strategic drivers:

- Reputation advantages: customers, employees, regulators
 - Major value of corporate goodwill
- Create shareholder value:
 - \$2.3 trillion in socially responsible investments
 - Monetize emission reductions and sequestration
 - Save money by paying attention!
- Corporate risk management:
 - fiduciary responsibility: manage exposure
 - corporate governance concerns
 - reduce legal risks



Carbon markets and cutting-edge energy policy go hand-in-hand



"I declared New Mexico "the Clean Energy State" in a 2004 executive order, based not only on our tremendous wind and solar potential but also on our aggressive new policies to encourage energy efficiency and clean energy development."

... governors... around the U.S. don't have to sit on their hands. Like major corporate partners who recognize the threat of climate change, they can make the binding commitment to the Chicago Climate Exchange, and move our nation forward to a new energy and emissions future.



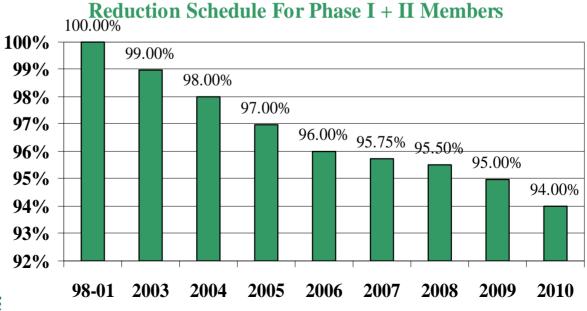
CCX Market Architecture (2003-2010)

<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.

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.

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

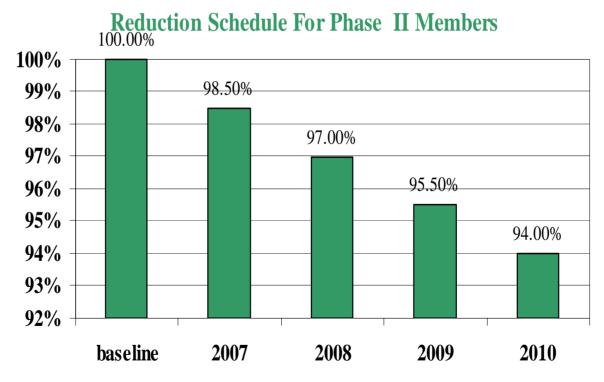


CCX Market Architecture: Phase 2 Only

<u>Phase II:</u> Members made legally binding commitments to reduce or trade 1.5% per year from 2007-2010, for a total of 6% below baseline.

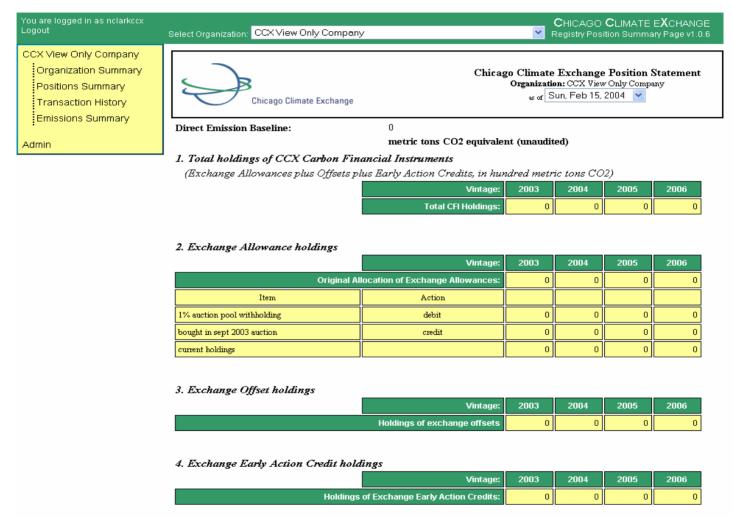
Baseline = Avg. emissions from 1998-2001 OR emissions in 2000

Economic Growth Provision limits recognized emission increase to 3% above baseline 2007-2010





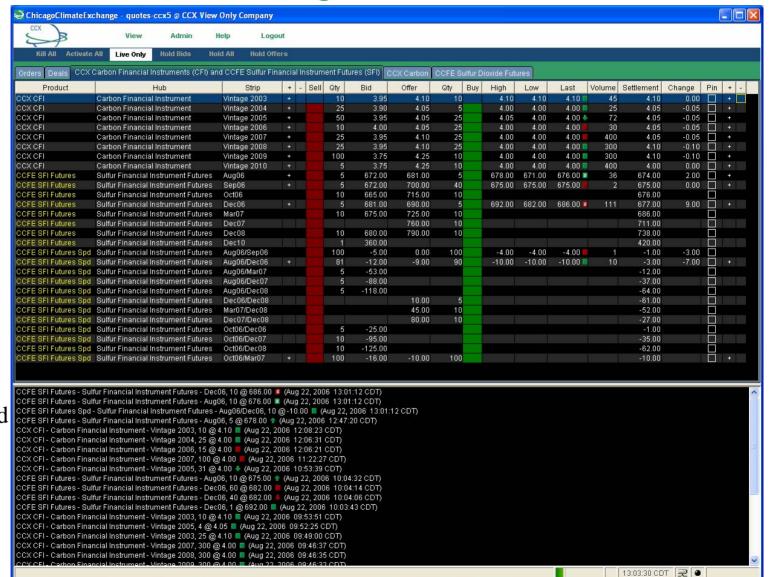
CCX Registry



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



CCX Trading Screen



completed trades (each contract is 100mt CO_2)

bids and

offers



CCX Emission Offsets Program

 Verified Offset projects sequester or eliminate GHGs and earn Carbon Financial Instruments that can be sold to other CCX members.

Pre-defined offset projects:

- Carbon sequestration: reforestation, agricultural soils
- Landfill and agricultural methane destruction
- Renewable energy, fuel switching, energy efficiency
- Independent verification by authorized entities: SGS, DNV, First Environment, BvQi
- Others in development

SES Field Inspector conducting soil sampling in no-till corn



Emission Offsets Concept

- Get emission reductions from sectors/activities/locations not included in cap-and-trade portion of the system
- Offsets issued for doing better than baseline
 - "with project" situation has lower emissions /higher sequestration than "without project"
- Low-cost mitigation
- Economic development and opportunity (e.g. CDM goals)
- Broaden engagement
 - more players involved in action/trading
 - help prepare for deeper participation (caps?)



Defining CCX Offsets: Principles

General provisions:

- Conservative crediting
- Reserve pools for sequestration assurance
- All Carbon Financial Instruments are equivalent
- Compliance through use of Offsets can be no more than half the required program-wide cut

Project Eligibility:

- Predictability: facilitate carbon finance
- Other than "Business as Usual": beyond regulation, rare (e.g. best-in-class), recent
- Verifiable: eligibility, quantities, ownership
- No cherry picking emitters must take entity-wide reductions
- Avoid perverse incentives: avoid encouraging bad acts



Defining CCX Offsets: Principles

- 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, renewables

Minnesota dairy farmer receives first check from sales of methanedestruction CCX Offsets



Stable, predictable offset rules contribute to successful GHG mitigation financing

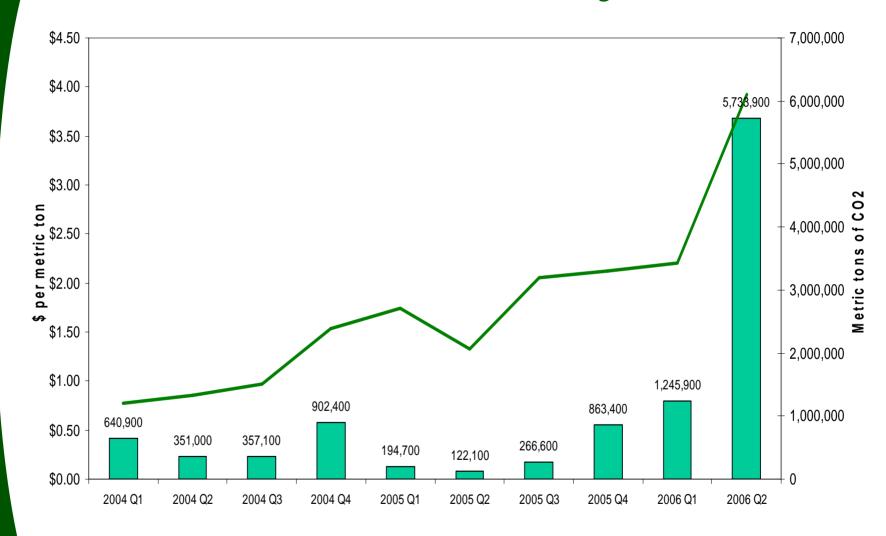
IDAHO FALLS, Idaho, Sept. 8 /PRNewswire-FirstCall/ --

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.



CCX Price* and Volume History 2003 - 2006



* Prices shown are last price of the quarter



CCX® Progress to Date

- Complete operation implemented: rulebook, trading, clearing, registry, market, governance
- Member Baselines and 2003, 2004, 2005 Emissions
 Independently Audited
- Program-wide emission reductions achieved
- Trading and clearing mechanisms fully functional
 - > over 12 million tons exchanged
 - prices now in range of \$4.00/metric ton CO₂
- Offsets from methane, ag soils, forestry, renewables verified, issued and sold



Conclusions: CCX Big Picture Results

- Major pool of private and public sector talent engaged
 - Members
 - Other experts
- 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
 - practical experience now informing policy discussions



Views on CCX®

"We are joining the Chicago Climate Exchange for two reasons. We want to strengthen a pioneering effort to create market-based solutions to the problem of climate change, and CCX helps us maintain our own organizational commitment to keep our net carbon dioxide emissions at zero,"

Jonathan Lash, President, World Resources Institute

"... you could help to create the conditions for efficient emission trading systems, standardized accounting methods and the like. The successful launch of the Chicago Climate Exchange here in the United States is one example of an initiative to create a carbon market. We need more such innovative thinking on financing mechanisms and new insurance products."

United Nations Secretary-General Kofi Annan

"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." *Senator Joe Lieberman*



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. Our nation's leading companies are buying and trading units of carbon as a way to reduce their impact on climate change. I am hopeful that the economic opportunities provided by the Exchange will enhance the incentives farmers already have to participate in the sequestration of carbon." Senator Richard Lugar (R-IN), Chairman of Senate Foreign Relations Committee, May 18, 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 (book version), 2006

