The Chicago Climate Exchange: Creating a Market for GHG Reduction Credits From Brazilian Forests

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# Examples of GHG Emissions Trading Activity

<table>
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<tr>
<th>International Agency Initiatives</th>
<th>Emerging Plurilateral Trading Groups</th>
<th>Initiatives for National GHG Emissions Trading Programs or the CDM</th>
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<tr>
<td>World Bank Carbon Fund</td>
<td><strong>Umbrella Group</strong></td>
<td>United States</td>
</tr>
<tr>
<td>UNCTAD Global Policy Forum</td>
<td>Japan, US, Canada, Australia, New Zealand, Iceland, Norway, Russia, Ukraine</td>
<td>United Kingdom</td>
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<tr>
<td>OECD Workshops &amp; Research</td>
<td></td>
<td>Canada</td>
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<td>International Energy Agency</td>
<td><strong>European Union</strong></td>
<td>Australia</td>
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<tr>
<td>UNEP</td>
<td><strong>Scandinavia</strong></td>
<td>Norway</td>
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<tr>
<td>UNDP</td>
<td></td>
<td>Denmark</td>
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<tr>
<td>UNIDO</td>
<td></td>
<td>Netherlands</td>
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<tr>
<td>European Commission</td>
<td></td>
<td>New Zealand</td>
</tr>
<tr>
<td>Nordic Council</td>
<td></td>
<td>Russia</td>
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<tr>
<td>EBRD</td>
<td></td>
<td>Brazil</td>
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<tr>
<td></td>
<td></td>
<td>Costa Rica</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Central America</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Slovakia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>32 host countries with CDM/AIJ offices of projects</td>
</tr>
</tbody>
</table>
## Examples of GHG Emissions Trading Activity (Cont’d)

<table>
<thead>
<tr>
<th>Provinces, States, Local Programs</th>
<th>Corporate Initiatives &amp; Exchange Activity</th>
<th>Examples of Trading Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>United States</strong></td>
<td>BP-Amoco</td>
<td>Environmental Financial &amp; Costa Rica</td>
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<tr>
<td>Oregon</td>
<td>Shell Oil</td>
<td>Ontario Power-Zahren Alternative Power</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Dupont</td>
<td>GEMCO-IGF Insurance</td>
</tr>
<tr>
<td>California</td>
<td>Ford Motor Co.</td>
<td>BP-Amoco-The Nature Conservancy</td>
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<tr>
<td></td>
<td>Ontario Power</td>
<td>Arizona Public Service-Niagara Mohawk</td>
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<tr>
<td><strong>Statement of US Mayors:</strong></td>
<td>Transalta</td>
<td>Suncor Energy-Niagara Mohawk</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>Suncor Energy</td>
<td>Sumitomo-United Energy Systems (Russia)</td>
</tr>
<tr>
<td>Denver</td>
<td>AES</td>
<td>Pacific Power Australia- New South Wales</td>
</tr>
<tr>
<td>San Francisco</td>
<td>Environmental Financial Products/CCX</td>
<td>Tesco-Uganda forest</td>
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<tr>
<td>Atlanta</td>
<td>Dutch Electricity Board (FACE Foundation)</td>
<td>Waste Management Inc.-Enron</td>
</tr>
<tr>
<td>Chicago</td>
<td>Edison Electric Institute (Utilitree)</td>
<td>American Electric Power-The Nature Conservancy</td>
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<tr>
<td><strong>Australia</strong></td>
<td>Pew (21 corporate members)</td>
<td>Central &amp; Southwest-The Nature Conservancy</td>
</tr>
<tr>
<td>New South Wales</td>
<td>World Resources Institute (3 corporate members)</td>
<td>Illinova-U.S. Reforestation</td>
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<tr>
<td>Western Australia</td>
<td>Cantor Fitzgerald/PWC</td>
<td>Consorcio Noruego-Costa Rica</td>
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<td></td>
<td>Natsource/Accenture</td>
<td>Toyota-New South Wales</td>
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<td><strong>Canada</strong></td>
<td>Environmental Resources Trust</td>
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<td>PERT (Ontario)</td>
<td>GMO Forestry</td>
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<td>GERT (British Columbia)</td>
<td>Hancock Natural Resources Group</td>
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<tr>
<td>British Columbia</td>
<td>International Petroleum Exchange</td>
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<td></td>
<td>Chicago Board of Trade</td>
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<tr>
<td><strong>International</strong></td>
<td>International Council of Local Environmental Initiatives</td>
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</table>
State of the GHG Emissions Market

- Starting to emerge—in its infancy
- The “commodity” is not standardized
- Multiple markets
- Each trade is different
- No organized exchanges
- No clear market price
- Supply outstrips demand
How “CDM” Rules Can Help Attract Investment

- Simple and standardized
  - Low transactions costs
  - Uniform Instruments
  - Predictable
- Transparent, don’t politicize
- Options for small projects
U.S. Legislative and Regulatory Outlook

- Early Reduction Credit Proposals
- “Four Pollutant” Bills
  - Electric power sector
  - Tonnage cap on CO₂
  - Trading allowed or specified
- Carbon sequestration in biomass and soils
- Regulation of GHGs from other sectors
- State Level Initiatives
Barriers to Trading: High Transaction Costs

- The commodity is not yet well defined.
- Regulations limiting GHGs are not yet in place.
- Lack of uniform standards for monitoring, verification and certification.
- Lack of organized markets.
CCX Overview

The Chicago Climate Exchange is a voluntary pilot greenhouse gas trading program targeting emission sources and offset projects in North America, with limited offset projects in Brazil.
Objectives

- Proof of concept: capped GHG emissions trading system, supplemented by offsets
- Develop market infrastructure and skills
- Price discovery
- Predictable GHG reduction schedule
- Start small and grow over time, provide a model
2002: Reduce emissions to 2% below 1998 levels

2003-2005: target falls additional 1% per year (from 1998)

Realistic emission limits for new facilities
## Market Implementation

<table>
<thead>
<tr>
<th>Year</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
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<tbody>
<tr>
<td>2001</td>
<td>Launch</td>
<td></td>
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<tr>
<td></td>
<td>System launch is targeted for the second half of 2001.</td>
<td>Reduction commitments taken by participants in seven-state Midwest region.</td>
<td>Commitments and trading by participants in the entire United States, Canada and Mexico.</td>
</tr>
<tr>
<td>2002</td>
<td></td>
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<tr>
<td>2003</td>
<td></td>
<td></td>
<td>Chicago Climate Exchange&lt;sup&gt;SM&lt;/sup&gt; expanded to include international participants.</td>
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<tr>
<td>2004</td>
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</table>
Initial Region of Focus

- Seven central U.S. states (IL, IN, IA, MI, MN, OH, WI)
- Diverse economy
  - Large industrial base, including automakers
  - Major transport sector
  - Diverse energy sector
  - Pharmaceutical, electronics, and resource industries
  - Agricultural and forest land
- Representative of the U.S. economy
Seven-State Midwest Region

Population = ~52 million
(~United Kingdom)
20% of US

Land Area ~1 million sq. km.
(~Germany + UK + France)
11% of US

GHG Emissions = ~1100 MMTCO₂/yr
(~France + UK)
20% of US

GDP ~$1.8 trillion
(~UK + Netherlands)
19% of US
Market Establishment: 12 Steps

- Clearly define the commodity
- Establish market oversight
- Define baselines
- Set emission targets, allocate permits and monitor emissions
- Establish uniform allowances, define eligible credits
- Develop an allowance clearing house
- Employ existing exchanges and trading systems
- Develop auctions
- Refine and develop trade documentation practices
- Foster harmonization with other research and markets
- Develop appropriate accounting principles
- International linkages
Apply International Standards

- Allowances ("budgets")
- Project-based offsets: sinks, renewables, methane destruction and CDM (Brazil)
- Include all GHGs
- Use IPCC global warming potentials
Allowances and Offsets (Endogenous and Exogenous)

- **Allowances**: emission budgets of participating companies

- **Endogenous offsets**
  - Made in Midwest (Phase 1) and North America (Phase 2)
  - Sinks (forests and soils)
  - Methane destruction, renewables

- **Exogenous offsets**
  - In selected developing countries (e.g. Brazil)
  - Sinks, methane destruction, energy related
Benefits of Participation

- Gain first-mover advantages; help design protocols
- Build management and trading skills
- Reduce long-term GHG mitigation costs
- Enhance reputation among stockholders
- Reward/encourage environmentally sustainable practices; financial gain to sellers
Guidelines for System Design

- Based on unambiguous rules
- Representative of U.S.
- Can be scaled up for comprehensive coverage of emissions
- Responsibility for emissions placed at emissions source (point of maximum responsiveness) whenever feasible
Important Features

- Voluntary participation
- Self-governed / self-funded
- Focus: direct emissions and sequestration
- Standardized baseline period, simple offset rules
- Phased reduction commitments