

Forest Carbon Markets: Potential for Wisconsin



Wisconsin Council on Forestry

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Forecon's Forest Carbon Asset Management Services

- **Forecon, Inc** is an approved Chicago Climate Exchange (CCX) Forest Carbon Verifier

- **Forecon EcoMarket Solutions, LLC** is a CCX Aggregator
 - Forest Carbon Asset Valuation, Forecasting, and Analysis
 - Forest Carbon Offset Project Development
 - Forest Carbon Accounting System Development
 - Carbon Credit Registration, Trading, and Banking
 - Identify buyers within Over-the-Counter markets

Important Reports to Reference:

- The World Bank Report: *State and Trends of the US Carbon Market. 2007*
[http://carbonfinance.org/docs/Carbon Trends 2007- FINAL - May 2.pdf](http://carbonfinance.org/docs/Carbon_Trends_2007- FINAL - May 2.pdf)



- *The State of the Voluntary Carbon Markets 2007: Picking up Steam.*

http://ecosystemmarketplace.com/pages/article.news.php?component_id=5107&component_version_id=7497&language_id=12



- *The Role of Sustainably Managed Forests in Climate Change Mitigation*, JOF Sept 2007
www.foreconemarketsolutionsllc.com





Topics Covered

- **The voluntary (OTC and CCX) carbon market in North America**
- **Voluntary vs. mandatory market demand and prices for forest offsets**
- **Description of the Chicago Climate Exchange (CCX)**
- **CCX managed forest offset rules and costs**
- **10 elements for managed forest offset policy**
- **Drivers for U.S. demand and supply for forestry offsets**



The Voluntary Carbon Market

■ Primarily a North American Market

- Not Driven by Regulation, e.g. the Kyoto Protocol

■ Highly Fragmented

- Over-the-Counter vs. Chicago Climate Exchange (CCX)
- Multiple standards - all have their own forestry offset project standards

■ Multiple US Registries and Programs

- Department of Energy 1605(b)
- California Climate Action Registry
- Regional Greenhouse Gas Initiative
- Midwest Registry (**Wisconsin has joined**)
- Western Registry
- The Climate Registry (about 40 states & tribes, all Canadian Provinces, one Mexican state) (**Wisconsin has joined**)



Voluntary Carbon Market

- **Over-the-Counter (OTC) + Chicago Climate Exchange (CCX)**
 - 2006 value = \$US 91 million
 - 2006 volume = 23.7 million MTCO₂
 - forecasted to be > 300 million globally by 2012
 - U.S. accounted for 68% of demand
 - Businesses accounted for 80% of demand
 - Forest projects accounted for 35% of demand



Voluntary Carbon Market Suppliers

■ **Over-the-Counter (OTC)**

2006 value = \$54.9 million

- Project developers, aggregators, retailers, and brokers
 - **Conservation Fund, Pacific Forest Trust, Ducks Unlimited, Climate Trust, Terrapass, New Forests**

■ **Chicago Climate Exchange (CCX)**

2006 value = \$36.1 million

- Aggregators and project developers
 - **Forecon EcoMarket Solutions, National Carbon Offset Coalition, Sustainable Forestry Management , LTD, Eco-Securities, Natsource**



CCX and OTC

Demand and Prices for CO₂

■ **Over-the-Counter (OTC)**

- Demand and prices are determined by offset project quality characteristics that include project design elements for conservation co-benefits
- Buyers are not driven by compliance requirements

■ **Chicago Climate Exchange (CCX)**

- Demand and prices are established by the CCX rules and the demand for a fungible commodity
 - **quality characteristics are already built into the rules and are not distinguished from other offset projects**
 - **fungible commodity – “a ton is a ton”**
- Buyer are CCX members driven by emission reduction compliance requirements



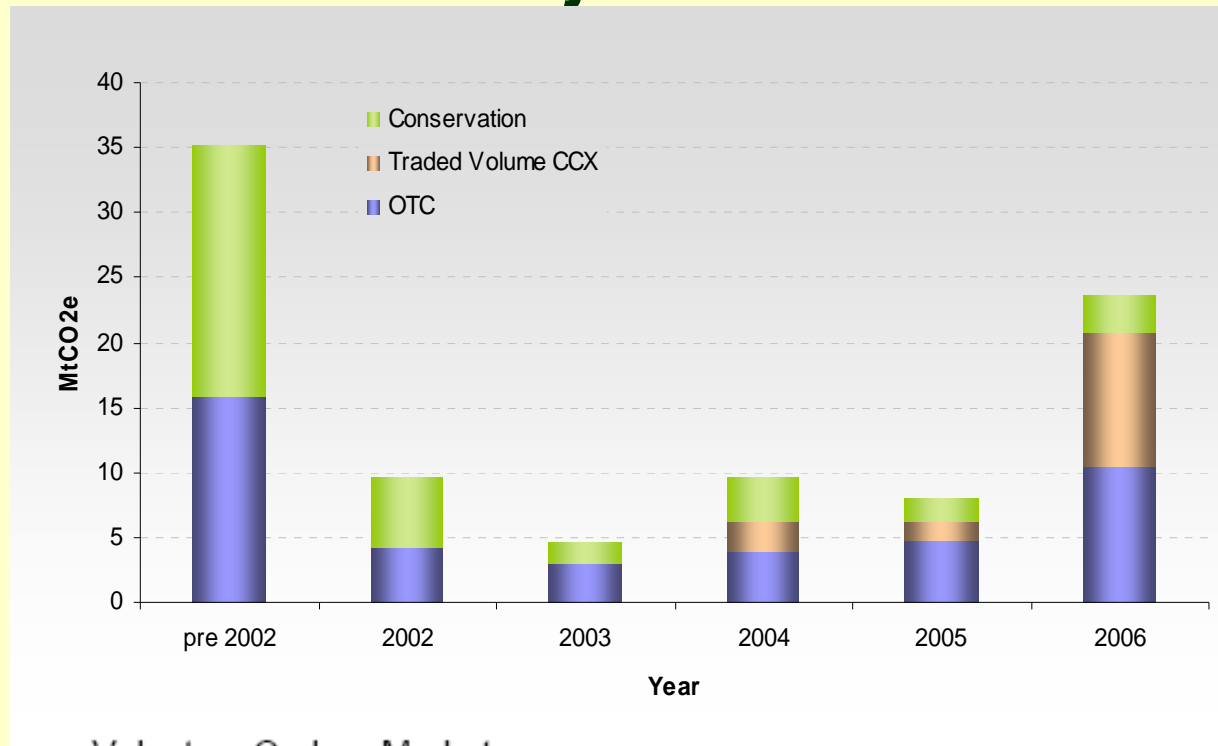
Voluntary vs. Mandatory Market Forest Offset Prices

- **Voluntary Market** **2006 value = \$91 million**
 - **OTC Prices in U.S. for Forestry Offsets:**
 - \$4 - \$13 per MTCO₂e (Clean Air - Cool Planet, December 2006)
 - \$10 - \$18 per MTCO₂e (Ecosystem Marketplace, July 2007)

 - **CCX Prices for Offsets (fungible commodity)**
 - \$2 per MTCO₂e in October 2007 (CCX)

- **Mandatory (Kyoto) Market** **2006 value = \$30 billion**
 - **EU ETS Prices for Offsets (fungible commodity)**
 - \$35 per MTCO₂e in October 2007 (Point Carbon)

OTC Markets for Forest Offset Projects



Voluntary Carbon Markets

| | 2006 Volume (Million MtCO ₂ e) | 2006 Value (\$US Millions) |
|-----------------------------|--|-------------------------------|
| Voluntary OTC Offset Market | 13.4 | 54.9 |
| CCX | 10.3 | 36.1 |
| Total Voluntary Market | 23.7 | 91 |

The Chicago Climate Exchange



- Chicago Climate Exchange (CCX) is the world's first and North America's only legally binding rules-based greenhouse gas emissions allowance trading system, as well as the world's only global system for emissions trading based on all six greenhouse gases.
- Includes all major sectors of the economy
- Trading platform began December 2003
- > 350 members – the largest emissions trading market globally. Surpassed Germany in October 2007
- Located in Chicago, Montreal (2007), New York (RGGI-2009), London/Amsterdam (ECX/2005), California (AB32 – 2012)

The Chicago Climate Exchange



- Entity-wide (US) Emission reduction commitment
 - 6% reduction of CO2 annually through 2010 (vs. 2000 baseline)
 - All emissions and projects are independently verified

- Must join CCX if a direct emitter (mills)
 - Commercial forestry

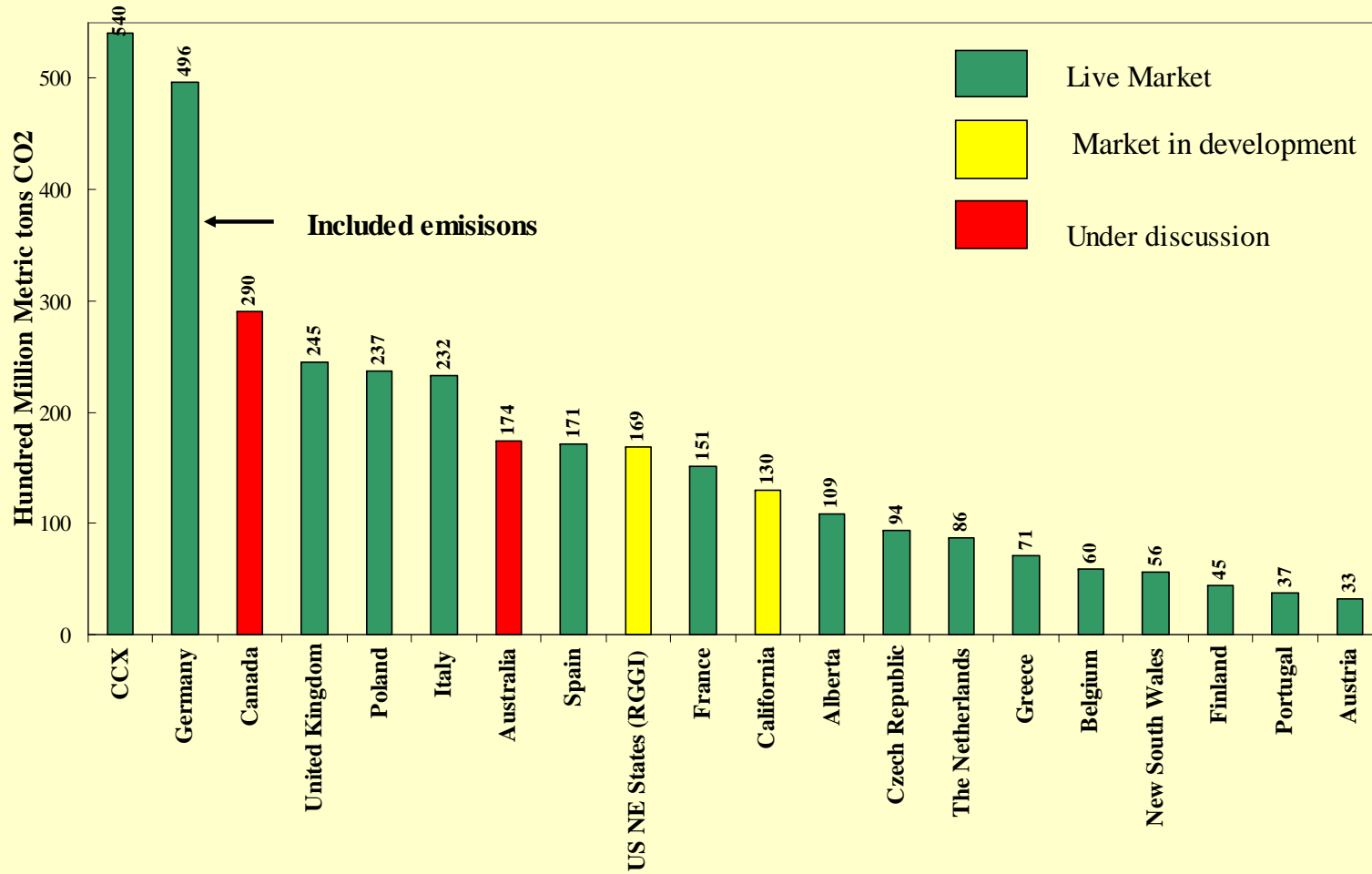
- Forest management organizations can be aggregated
 - TIMO's, NIPF's, Tree farm groups, FSC groups, Land trusts

The Chicago Climate Exchange



- Those who reduce below the targets have surplus allowances to sell or bank.
- Those who emit above the targets comply by purchasing CCX offset contracts called Carbon Financial Instrument™ (CFI), such as forest offset projects.
- Of total verified emission reductions:
 - 12% come from offsets and 88% come from direct emission reductions

Live and Emerging GHG Markets





CCX Forest Offset Rules Update

- Managed forest rules were developed in September – and 6 projects approved
 - Harvested wood products rules for managed forest offsets and products from mills
- Afforestation rules were revised in August
- Forest Conservation and Protection (avoided deforestation) rules are being refined
- Verification protocols and auditor qualification rules are being refined

Managed Forest Offsets within the CCX

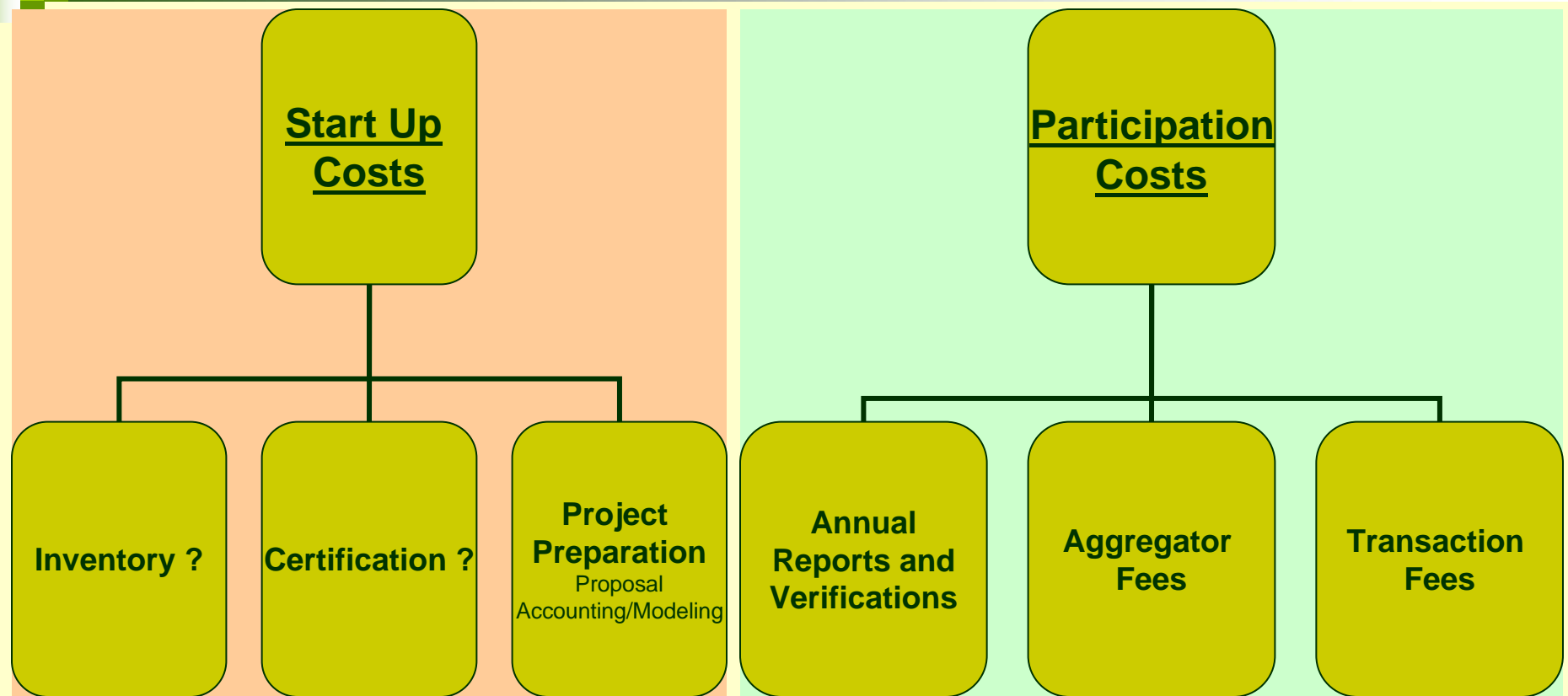


- **Commitment Period:** Through Phase II - 2010
- **Accounting and Reporting:** Annually for project owner
- **Carbon Pools:** Above and below ground
- **Baseline Setting:** Base-year approach
- **Discount:** based on inventory precision and error
- **Sustainable Forestry:** FSC, PEFC endorsed standard like SFI, CSA, ATF Group, or other approved
- **Market Access:** Trading for compliance as member or aggregated as a project or pool
- **Insurance Reserve Level:** 20% of annual net change
- **Harvested Wood Products:** Long-lived for 100 years
- **Verification:** Annually
- **Payback Provision:** Within the commitment period
- **Quantification:** Growth models



Sustainably Managed Forests

- Restricted opportunity globally, new and evolving opportunity in the US
- Not currently accepted by some buyers and in some registries, i.e. RGGI.
- Offsets may not work well for all working forests.
- May provide modest revenues with low added costs to existing management programs.
- Economics favor large projects or aggregation of many NIPF landowners.
- Requires a robust inventory system, and a carbon accounting system.



- Results: Annual costs per forested acre
 - Start Up (Fixed) costs: \$0.28 per forested acre
 - Participation (Variable) costs: \$1.26 per forested acre



Six Requirements of any High Quality Offset Standard

- **Real**
- **Measurable**
- **Permanent**
- **Additional**
- **Independently verified**
- **Unique (no double counting)**

10 Elements for Managed Forest Offset Policy

- Project Eligibility
- Sustainability
- Inclusion of Forest Carbon Pools
- Harvested Wood Products
- Measuring and Monitoring
- Reporting
- Baselines and Additionality
- Leakage
- Permanence
- Equivalence



U.S. demand and supply of forest carbon credits will be driven by:

1. **The level to which all forest offset projects participate, including managed forests.**
2. **The level of standardization of rules in voluntary and mandatory (compliance) markets**
3. **The level of risk, assuredness & equivalence**
4. **U.S. legislation**





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