

Carbon Market Opportunities in US Ag & Forestry & Lessons Learned

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- An entity for carbon credit aggregation owned by Iowa Farm Bureau Federation
- First licensed aggregator on the Chicago Climate Exchange (2003)
- Aggregation Specialists – Building a nation-wide network of contract facilitators in every state.
- Handling about 6 Million Carbon Credits annually
- “Country Elevator of Carbon Credits”



- General Farm Organization
- Part of the American Farm Bureau Federation
- 155,000 member families
- Political Representation
- Member Services



AgraGate Role

Provide farmers, ranchers, and land owners with the following:

- information on opportunities available for earning marketable environmental credits.
- reliable means to market their environmental credits.



Services

- Information
- Enrollment
- Certification
- Verification
- Credit marketing



CCX Market Architecture (2003-2010)

Phase I: Commitments to reduce 1% per year below baseline from 2003-2006

Phase II: Commitment to reduce to 6% below baseline by 2010

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

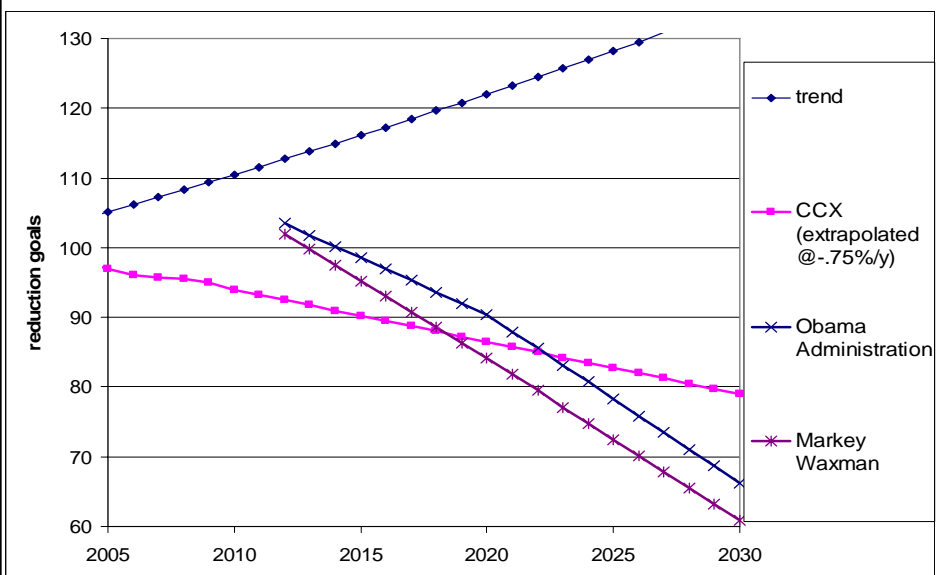


CCX Trading Model

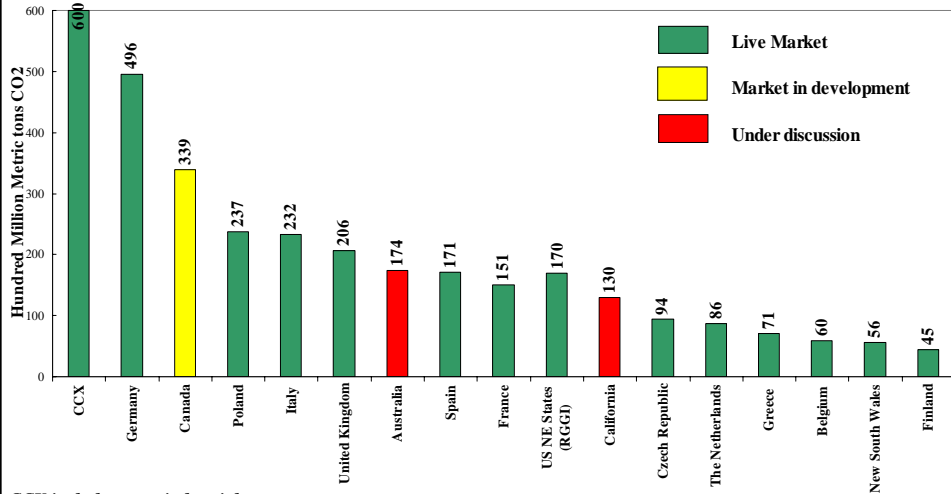
- Rules-based Exchange
 - Members set the rules
- Voluntary decision to join, but legally binding commitment
- Ag Offset program
 - Standardized protocols
 - Enforced through contracts



Proposed Emission Reduction Targets: BAU Trend, Administration, Markey-Waxman, CCX-extrapolated



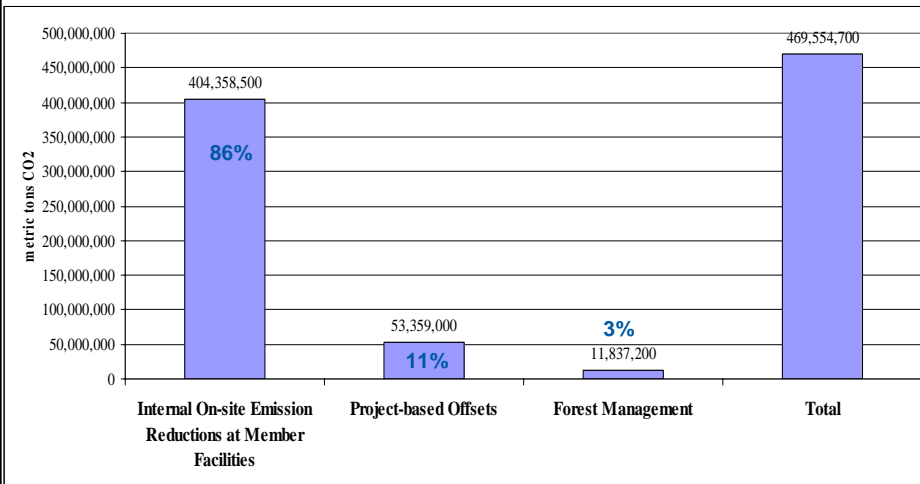
Size of Live, Emerging, Possible GHG Markets



CCX includes more industrial emissions under its legally binding cap than any country in the world



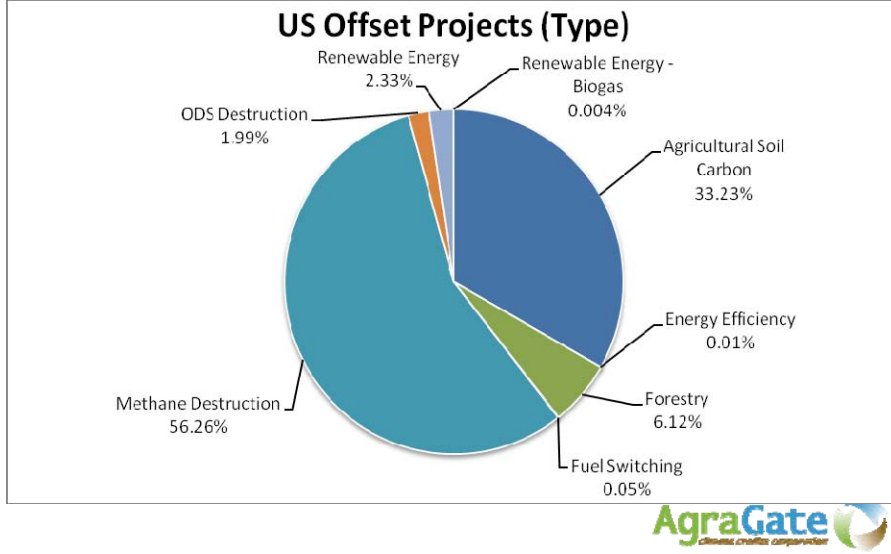
Emission Reductions and Project-based Offsets in CCX 2003 through 2007* (metric tons CO₂)



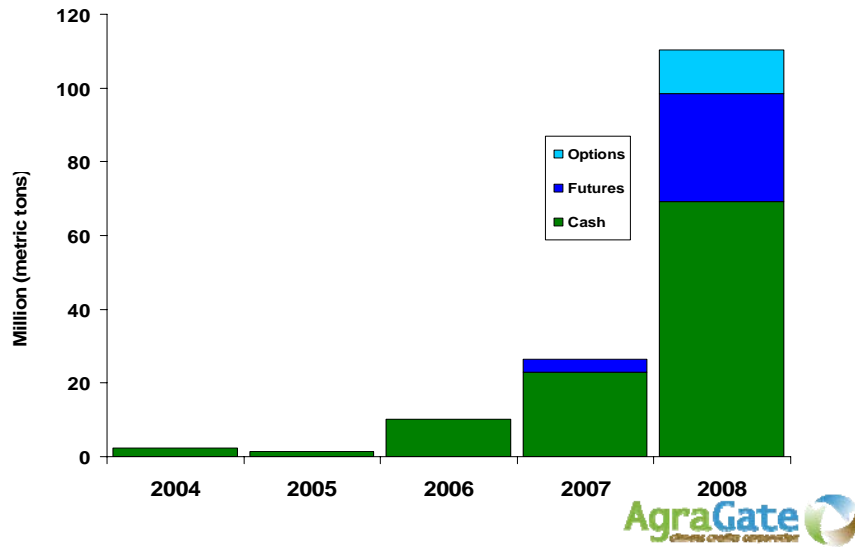
*As of 2-20-09. A portion of new member emission reductions are currently undergoing verification.



Composition of CCX Domestic Offsets Pool through April 2009

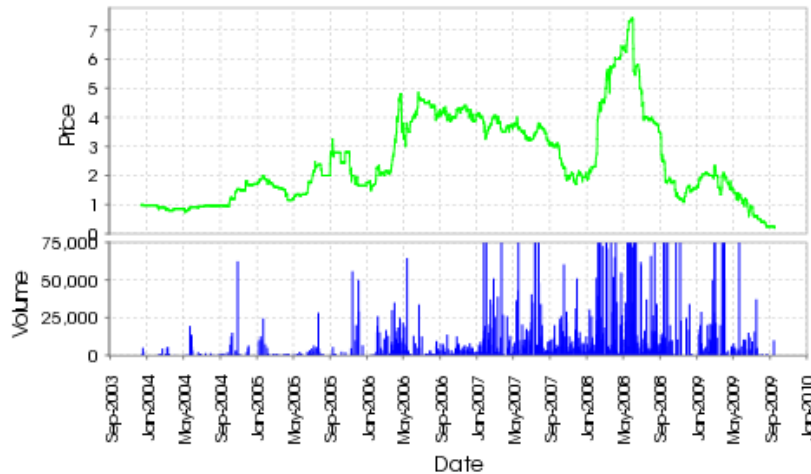


CCX CFI spot and derivatives volume 2004-2008



Carbon Offset Prices

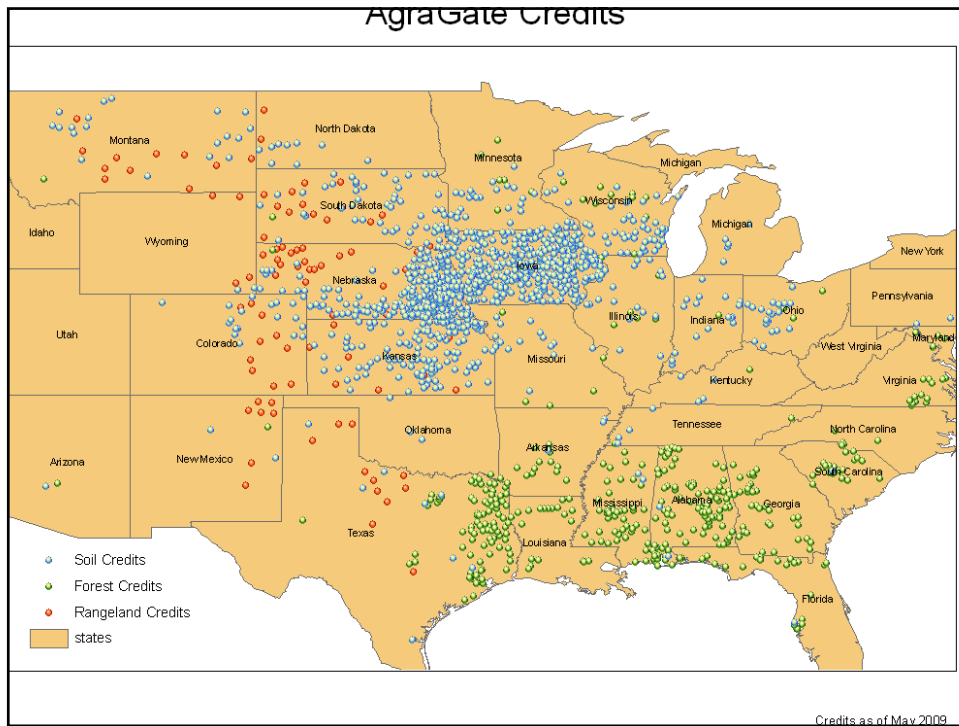
CCX Carbon Financial Instrument (CFI) Contracts Daily Report



U.S. Farmer Participation in CCX

- 16 million acres nationally in 36 states
- 9,000 farmers, ranchers & landowners
- 25 professional verification entities approved
 - “green jobs” employment & income is a reality at CCX
- Tens of millions of dollars in new income through global environmental services
- 2 major aggregators
 - AgraGate & Farmers Union
- Many minor aggregators
 - 4.5 million acres no-till
 - 2 million acres grass establishment
 - 5 million acres rangeland
 - 0.5 million acres afforestation
 - 4 million acres managed forest
 - ag methane projects



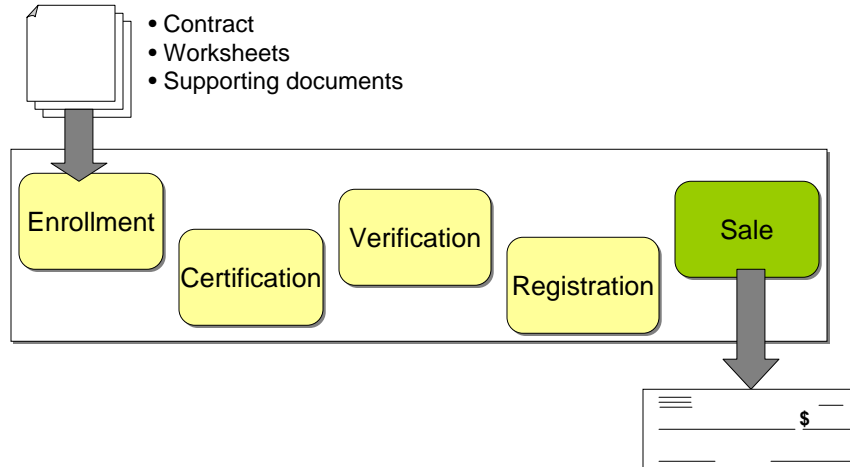


Principles Guiding CCX Offsets

- **Predictability:** facilitate carbon finance
- **Other than Business as Usual:** beyond regulation, rare, recent
- **Verifiable:** eligibility, quantities, ownership
- **No cherry picking** – emitters must take entity-wide reductions
- **Fungible:** All Carbon Financial Instruments are equivalent
- Avoid perverse incentives
- Conservative crediting
- Reserve pools for sequestration assurance



The Carbon Credit Market Process



Emerging Issues for Carbon Markets

- Scope of Coverage
- Eligibility
- Consistency of Rules
- Financial Impacts
- Environmental Considerations
- Unintended Consequences



Impacts of Climate Change Legislation

- If enacted, the ultimate cost of H.R. 2454 would be determined by the response of the economy to the technological challenges presented by the bill.
 - The allocation of allowance value will determine who ultimately bears the cost of the program.
 - The cases generally indicate that the availability of offsets (particularly international offsets) is the key factor in determining the cost of H.R.2454.
 - The interplay between nuclear power, renewables, natural gas, and coal-fired capacity with carbon capture and storage technology emphasizes the need for a low-carbon source of electric generating capacity in the mid- to long-term.
 - A considerable amount of low-carbon generation will have to be built under H.R. 2454 in order to meet the emission reduction requirement.
 - Attempts to estimate household effects (or other fine-grained analyses) are fraught with numerous difficulties that reflect more on the philosophies and assumptions of the cases reviewed than on any credible future effect.



Issues for Ag & Forestry

- Who regulates?
- Will offsets be included
- Who will set standards for ag & forestry?
- Effects on ag inputs
- Effects on energy markets
- Effects on economy
- Linkages to world markets

Key Carbon Offset Issues (RSVP&E)

- Real – Quantification methodology
- Surplus – Additionality measures
- Verified – 3rd party certification
- Permanence – Duration & reversability
- Enforceable – Contract terms & ownership



Lessons Learned

- The US “voluntary” market has allowed ag & forestry to “learn by doing”
- Ag & Forestry offsets are the oil that will enable a GHG reduction program to run smoothly
- As the carbon market matures, more opportunities are likely to emerge for ag & forestry
- Over-estimation of offset supply
- Political uncertainty can kill fledgling markets
 - Specific authority & recognition of ag & forestry offsets
 - USDA needs to be the lead agency on ag & forestry offsets
 - “grandfathering in” of early action credits
- Perfection is the enemy of progress & success
 - Mechanisms designed for developing countries are not necessarily good for the US
 - Zero tolerance does not work for ag
 - Reasonable operating criteria for offsets – must work on “working lands”



Let us remember:

- For society as a whole, there is a very strong correlation between energy use and standard of living. Energy makes manual labor more efficient; is a catalyst for transformation of ingredients and raw products to usable goods; and energy extends the capabilities of the human mind.
- For society to prosper, it must grow. The debate cannot become one of, “maintaining the status quo with less”. It must be a debate about “how to do more with what we have.”



Questions?

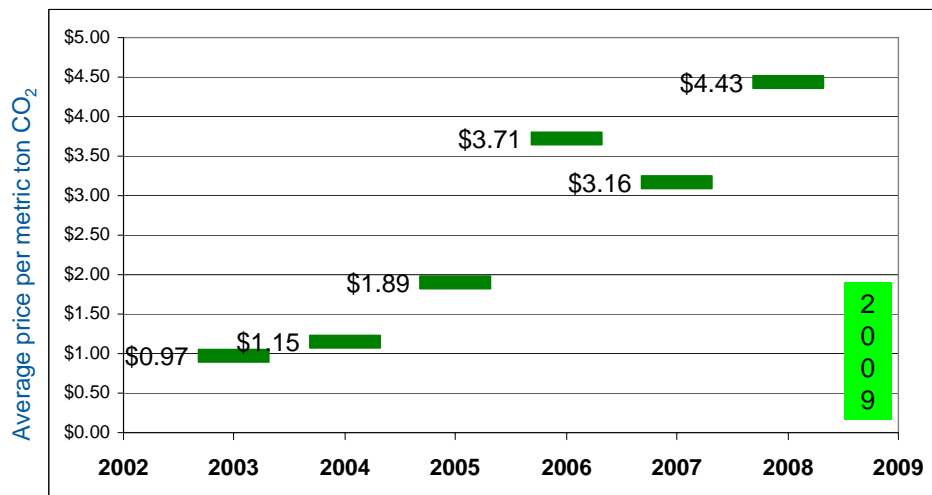
For more information

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Annual Average* Price for CCX CFIs 2003-2008



* Volume-weighted average for spot market trades



**U.S. Farmer Participation in CCX:
9,008 producers enrolled
16,632,284 acres of BMP included in 36 states**

State	Number of Producers	Acres Enrolled	State	Number of Producers	Acres Enrolled
AL	133	600,122	NC	10	4,000
AR	56	61,886	ND	1,381	1,804,845
CO	260	631,058	NE	1,553	3,754,961
FL	35	90,000	NJ	1	19
GA	22	90,532	NM	31	731,169
IA	671	386,534	NY	2	581
ID	8	40,846	OH	116	58,723
IL	942	200,443	OK	12	23,833
IN	133	94,947	OR	7	28,003
KS	402	505,790	PA	13	5,982
KY	133	75,580	SC	17	80,245
LA	42	32,858	SD	956	3,145,518
MD	10	5,155	TN	14	11,454
MI	395	186,016	TX	305	594,006
MN	247	70,899	VA	40	10,211
MO	92	45,663	WA	7	39,957
MS	182	50,337	WI	221	69,686
MT	484	1,701,004	WY	75	1,399,422



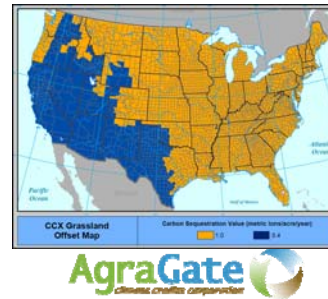
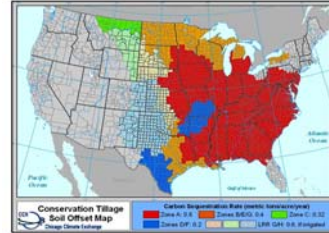
Methane Offsets

- Ag Methane destruction projects that were put into place after Jan 1, 1999.
 - Dairy
 - Swine
- Eligibility
 - Liquid slurry storage
 - Pit storage below animals (> 1 month)
 - Uncovered anaerobic lagoons

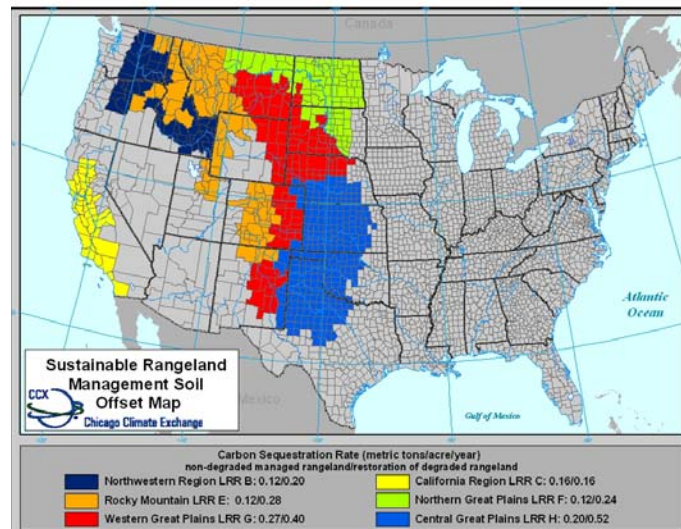


Agricultural soil sequestration offsets in CCX

- Focus first on well-documented actions with clear ownership
- CCX Special Committee on Soil Carbon (scientific committee) provided guidance on annual carbon gains, geography
- 20% Implicit Reserve to mitigate against post-contract reversals
- 20% explicit reserve to mitigate against in-contract reversals
- Full accountability in-contract
- Avoided perverse incentive to till if only “new” no-tillers allowed in
- 100% annual certification; 10% visual inspection;
- Pilot project on satellite imagery



Soil Offset Credit Zones - Rangeland



Forestry Offsets Two Protocols

1. New tree plantings -- Planting and/or natural regeneration on private lands after Jan 1, 1990 on land not forested on December 31, 1989. Thinning of a tree stand is **not** allowed.

- Credits based on net annual increase in carbon stocks (CO2 equivalents) during 2003-2010.
- Proof of ownership and legal description of land.
- Statement of Intent
- 15 year contract.

2. Sustainably Managed Forests -- Must provide evidence of sustainable forest management of all their managed forest land.

- Must have a forest management plan and must be member of the Sustainable Forestry Initiative or American Tree Farm System.
- Provide a description of forest management activity and quantification model used.
- Stand thinning **is** allowed.
- Long-lived wood credits



CCX Offset Projects

- As science directs, foster emission reductions all sectors: low cost, win-win
- Landfill, agricultural and coalmine methane capture/destruction
- Agricultural soils best management practices
- Afforestation & forest management
- Fuel switching, renewables
- All projects must be independently verified by an approved entity
- CCX Offset Rules can be found at:
http://www.chicagoclimateexchange.com/docs/offsets/CCX_Rulebook_Chapter09_OffsetsAndEarlyActionCredits



CCX Agricultural Soil Science Technical Sub-Committee

Dr. Alan Franzluebber	USDA
Dr. Charles Rice	Kansas State University
Dr. Keith Paustian	Colorado State University
Dr. Rattan Lal	Ohio State University
Dr. Mark Liebig	Agricultural Research Service, USDA
Dr. Lee Burras	Iowa State University
Dr. Sjoerd Willem Duiker	Pennsylvania State University
Dr. Mark Alley	Virginia Polytechnic Institute and State University
Dr. John Grove	University of Kentucky

