

Carbon Markets: An emerging Revenue Stream for Agriculture

Presented by
AgraGate Climate Credits Corporation

SAF Spring State 2008 Conference
March 20, 2008



Topics to be Covered

- A developing Greenhouse Gas Market.
- AgraGate Climate Credits Corporation
- What are Carbon Credits?
- Background of the Chicago Climate Exchange (CCX)
- Exchange Forestry Offsets -
Afforestation and Managed Forestry projects
- Revenue Opportunities from XFO Contracts
- Common Questions???



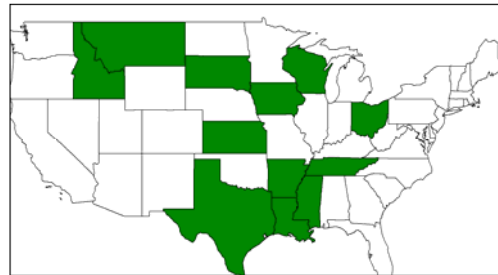
AgraGate Climate Credits Corporation

- New Entity for carbon credit aggregation owned by Iowa Farm Bureau Federation
- Launched in July 2007
- First licensed aggregator on the Chicago Climate Exchange (2003)
- Aggregation Specialists – Build a nation-wide network of contract facilitators
- 1.5 million NT & ST acres enrolled in 25 states
- 60,000 acres of Afforestation in Pool #1
- “Country Elevator of Carbon Credits”



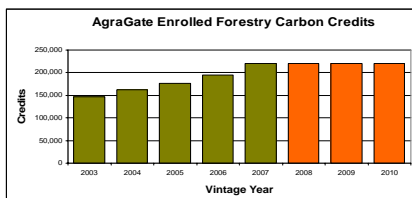
AgraGate News and Updates

Building the AgraGate network – states with Contract Facilitators



Current AgraGate Afforestation credits

Pool 1 XFO credits enrolled/registered



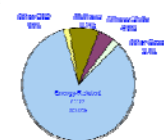
About 900,000 XFO credits are to be registered in Forestry Pool 1 for 2003 through 2007 vintage years.



Greenhouse Gases

- Carbon Dioxide (CO₂)
- Methane (CH₄)
- Nitrous Oxide (N₂O)
- Sulfur Hexafluoride (SF₆)
- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)

Estimated 5 years of 2000 U.S. Greenhouse Gas Emissions



Quantified, emissions of GHG gases in the United States 2005

- 6.9 billion metric tons CO₂e total
- 545 million metric tons from CH₄
- ~40 million metric tons from manure management alone



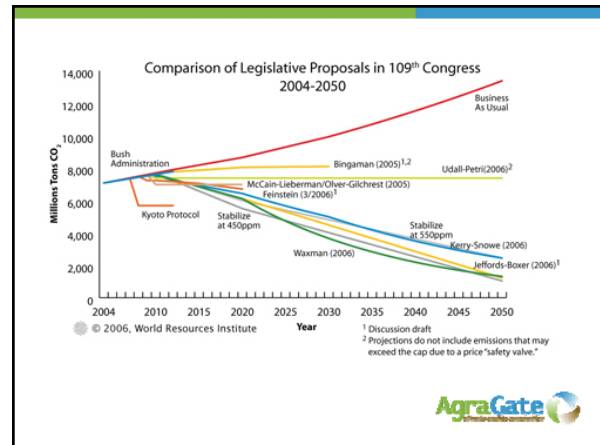
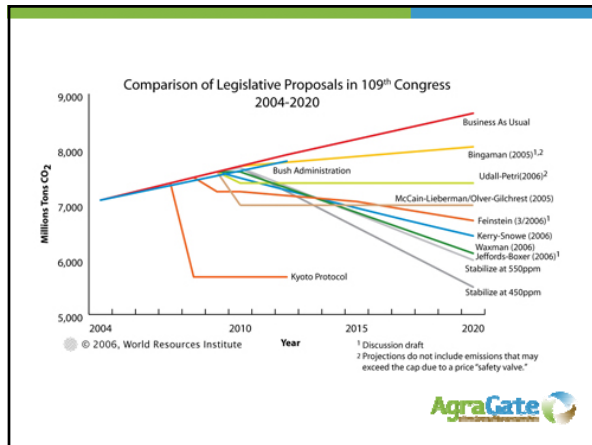
Greenhouse Effect

- The temperature-regulating gases, called “greenhouse gases” or GHGs, form a blanket around the earth that traps some heat from the sun within the earth’s atmosphere, keeping the planet warm and habitable.
- The “greenhouse effect” refers to the temperature regulation effect that certain atmospheric gases have on the earth.

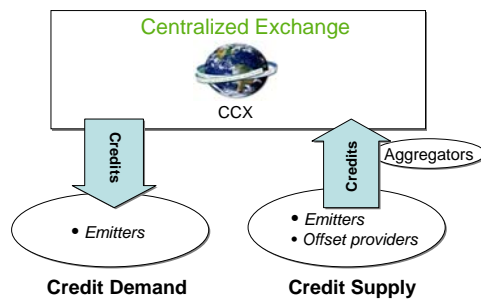


Global Warming Legislation

- The 109th U.S. Congress
 - no less than seven proposals
 - Use of market-based, cap-and-trade mechanisms.
- Specified emission caps
 - Different formulas, such as a return to 2000 levels (Warner-Lieberman) or 1.5% reductions per year (Kerry-Snowe).
 - Different time frames; some run only through 2020, while others run through 2050, usually with reductions that increase in later years.
- Bush administration policy--an [emissions intensity target](#)
- "business as usual" scenario
- Estimated U.S. emissions reduction paths that would be needed to stabilize global atmospheric greenhouse gas concentrations at 450 or 550ppm (parts per million) CO2 equivalent.



The Carbon Credit Market



The Chicago Climate Exchange®

- The Chicago Climate Exchange® (CCX®) is a greenhouse gas (GHG) emission reduction and trading **pilot program** for emission sources and offset projects in the United States and for offset projects undertaken in Brazil and other countries. CCX® is a self-regulatory, rules-based exchange designed and governed by CCX® Members.
- These members made a **voluntary, legally binding** commitment to reduce their emissions of greenhouse gases by four percent below the average of their 1998-2001 baseline by 2006 and a six percent reduction by 2010.



CCX Founding Members

American Electric Power	Manitoba Hydro
Ford Motor Company	MeadWestvaco
Baxter	Motorola
DuPont	STMicroelectronics
Waste Management Inc.	Stora Enso
Equity Office Properties	Temple-Inland
International Paper	City of Chicago



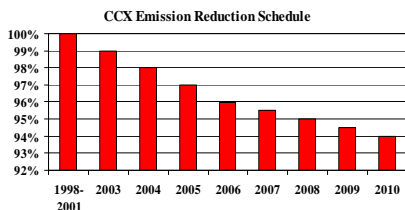
Over 380 CCX Members

- Around 100 emitter members including: Agrium, Alliant Energy, American Electric Power, Bayer Corporation, Cargill, DuPont, Dow Corning, Ford Motor Company, IBM, Intel, Monsanto, Motorola, Smithfield Foods, Safeway.
- CCX Members that cannot reduce their own emissions can purchase credits from members who make extra emission cuts, verified offset projects or aggregators.
- Also including seven municipalities and seven universities.



CCX Reduction Timetable

- 2003-2006: Reduce emissions to 1%, 2%, 3%, 4% below 1998-2001 baseline
- 2006 – 2010: Reduce emissions to 6% below 98-01 baseline
*No more than 50% of reduction requirement can come from Offsets



What are carbon credits?

Carbon credits encompass two ideas:

- (1) Prevention/reduction of carbon emissions produced by human activities from reaching the atmosphere by capturing and diverting them to secure storage.
- (2) Removal of carbon from the atmosphere by various means and securely storing it. (i.e.. carbon sequestration)

One carbon credit = One metric ton of CO₂

Exchange Forestry Offset (XFO) in Wisconsin
 Afforestation tabled rates = 0.15 – 3.40 cc/acre/year
 Managed Forestry = 0.1 – 4.5 cc/acre/year

**Therefore, as a landowner, you will earn carbon credits for implementing CCX approved sequestration methods.

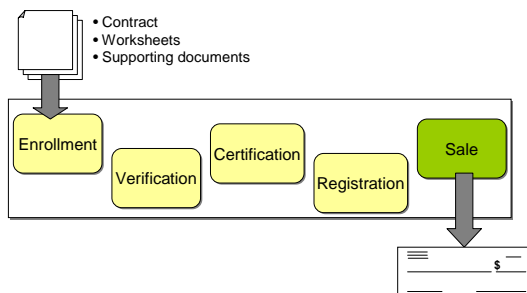


Carbon Sequestration

Carbon sequestration can be defined as the capture and secure storage of carbon that would otherwise be emitted to or remain in the atmosphere.



The Carbon Credit Market Process



Details of Eligible Forestry Offsets

Exchange Forestry Offsets

One contract.....two available ways to enroll.

Afforestation - Land must be in pasture or cropland and converted to new trees after Jan. 1, 1990.

Managed Forestry – Forest Management Plan



CCX Forestry Protocols - Afforestation

General Provisions

- Plantings initiated on or after January 1, 1990 on land previously not a forest. (Pasture or Cropland)
- Credits will be issued based on verified documentation reporting the annual increase in carbon stocks in live trees and soil.
- Annual carbon accumulation may be quantified using either the CCX Carbon Accumulation tables or using growth and yield models (direct measurement).
- Individuals enrolling acres under afforestation and using the tabled rates do not need a forester to complete a timber cruise.



CCX Forestry Protocols - Afforestation

General Provisions

- Contractual agreement to maintain enrolled land as forest for at least 15 years from the enrollment date.
-- Also, require a signed letter of intent from the landowner.
- No harvesting (including thinning).
- Minimum of 250 trees/acre using tabled rates.
- CRP or CREP acres are eligible (> 35 acres)
- All enrolled land is subject to third party verification.
- Twenty (20) percent of issued credits shall be placed in a Forest Carbon Reserve Pool.



Wisconsin Afforestation Credits Rates (250 trees/acre minimum)

Region	Species	Age of Trees					
		1-5	6-10	11-15	16-20	21-25	26-30
Northern Lake State	Aspen-birch	1.592	1.402	0.983	1.537	1.861	2.044
Northern Lake State	Elm-Ash-cottonwood	0.921	1.098	1.024	1.483	1.661	1.802
Northern Lake State	Maple-Beech-birch	1.131	1.240	1.140	1.788	2.239	2.379
Northern Lake State	Oak-hickory	1.466	1.429	1.266	1.752	2.082	2.160
Northern Lake State	Spruce-balsam fir	0.837	1.185	1.138	2.010	2.487	2.805
Northern Lake State	White-red-jack pine	0.146	0.679	1.036	2.260	3.297	3.396



New AgraGate Forestry Contract (December 2007)



New AgraGate Forestry Contract

Contract overview – one contract - > 250 acres

- We are combining afforestation and sustainably managed provisions into one contract.
- The XFO contract will be a 15-year contract (i.e., 2008-2022) with an option to earn credits back to 2003. There is an "out clause" in the event that the CCX is not registering credits through the year 2022.
- Participants can initially enroll under the afforestation provisions and later transition to the sustainably managed forest provisions of the contract. They will need to be compliant with the managed forest provisions and complete a new worksheet.



New CCX Forestry Protocols – Sustainably Managed Forests

General Provisions

- Sustainable forest management required as indicated through certification from agencies or schemes endorsed by PERC (e.g., SFI, ATFS), the Forest Stewardship Council, or other certification program approved by CCX.
- Credits issued based on verified documentation for the projected net changes in carbon stocks.
- Quantification of net changes in carbon stocks must involve a Model-based Accounting Approach. Growth and Yield Model estimates of net annual changes in carbon stocks will be discounted by a minimum of 20 percent or two times the reported statistical error of the baseline inventory.



New AgraGate Forestry Contract

General Guidelines for enrolling applicants

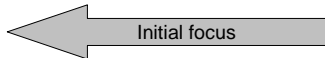
- Potential participants will need to indicate their projected thinning/harvesting events during the course of the contract as well as timber disposition expected.
- A managed forest contract may not work for those who plan to clear-cut during the contract period
- Payments to participants will follow carbon sequestration patterns of the pool and not of the individual participants project.



Growth and Yield Models

CCX-approved models

- GAPPS
- SIMMS
- FVS
- TWIGS
- CO2FIX



New AgraGate Forestry Contract

Total payment based on net CO2 Sequestration



New AgraGate Forestry Contract

Contract overview – payment approach

- Contract holders will be paid based upon their projected net credit contribution to the respective forestry pool over the life of the contract.
- Projected net credit contribution over the life of the contract will be determined by:
 - Growth and yield model annual carbon sequestration projections.
 - Land owner estimate of thinning/harvesting during life of contract.
 - Projected disposition of harvest timber
- End of contract (and possibly intermediate) “true ups” will be needed.



New CCX Forestry Protocols – Sustainably Managed Forests

General Provisions

- Twenty (20) percent of issued credits shall be placed in a Forest Carbon Reserve Pool.
- Reserve credits will **not** stay in the reserve account for more than five (5) years. After five years in the reserve account, credits will be released and available for sale.
- Contractual agreement to maintain enrolled land as forest for at least 15 years from the enrollment date. Also, require a signed letter of intent from the landowner.
- Quantification of carbon stocks will be adjusted to reflect acquisition or disposition of forested land.
- All enrolled land is subject to third party verification.
- Non-compliance will result in cancellation of all previously issued credits and the owner of the non-conforming project shall be prohibited from further participation.



New CCX Forestry Protocols – Long-lived Wood Products

General Provisions

- The quantity of long-lived wood products to be included in the determination of net carbon stock changes will be a fraction of carbon in long-lived wood products in use and in landfills at the end of 100 years.
- Project owners will be required to provide records containing the data, calculations, conversion factors, spreadsheets, and other information that provide the basis for substantiating reports of carbon stored in long-lived wood products.



New CCX Forestry Protocols – Long-lived Wood Products

Selected CCX factors for Average Disposition Patterns of Carbon as fractions of Roundwood by Region and Roundwood category.

	Softwood sawlog	Softwood pulpwood	Hardwood sawlog	Hardwood pulpwood
Northeast	0.318	0.090	0.316	0.261
North Central	0.346	0.092	0.297	0.304
Pacific Northwest (East)	0.337	0.337	0.265	0.265
Pacific Northwest (West)	0.409	0.076	0.477	0.477
Pacific Southwest	0.355	0.355	0.265	0.265
Rocky Mountain	0.367	0.367	0.265	0.265
Southeast	0.336	0.141	0.304	0.188
South Central	0.334	0.162	0.285	0.176

Source: CCX Protocol for crediting carbon in long-lived wood products (Appendix 4).



Example of a Managed Forestry Contract

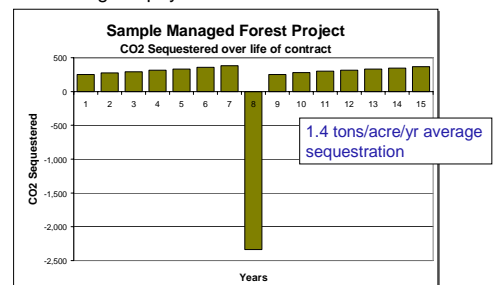
Carbon Credit Financial Simulation model example

- 15-year contract
- Seven year-old stand at start of contract
- 54 green tons baseline volume in stand
- 2.5 to 4.2 MT/acre growth over the 15 years
- 50 percent thinning at age 15 (year 8 of contract)
- 50% softwood sawlogs, 30% softwood pulpwood, 1% hardwood sawlogs, and 5% hardwood pulpwood



New AgraGate Forestry Contract

The challenge of payments to contract owners



How do I calculate carbon credits?

Example - 250 acres - Managed Forestry

- First calculate how many metric tons of carbon (CC) are being projected over the life of the 15-year contract:
 $250 \text{ acres} \times 1.4 \text{ cc/acre/year} = 350 \text{ carbon credits (cc)}$

*Hypothetical example based on CCX rate table through the end of the contract period 2012.



How do I calculate carbon credits?

Example - 250 acres - Managed Forestry

- First calculate how many metric tons of carbon (CC) are being projected over the life of the 15-year contract:
 $250 \text{ acres} \times 1.4 \text{ cc/acre/year} = 350 \text{ carbon credits (cc)}$
- Determine how many unsold carbon credits will be placed into the reserve pool.
 $350 \text{ CC} \times 20\% = 70 \text{ CC}$ to be placed into the reserve pool each year.
 This leaves **280 CC** to be sold each year

*Hypothetical example based on CCX rate table through the end of the contract period 2012.



How do I calculate carbon credits?

Example - 250 acres - Managed Forestry

1. First calculate how many metric tons of carbon (CC) are being projected over the life of the 15-year contract:
 $250 \text{ acres} \times 1.4 \text{ cc/acre/year} = 350 \text{ (CC)}$
2. Determine how many unsold carbon credits will be placed into the reserve pool.
 $350 \text{ CC} \times 20\% = 70 \text{ CC}$ to be placed into the reserve pool each year.
This leaves **280 CC** to be sold each year
3. Multiply the 280 CC by the future price...2009.
 $280 \text{ CC/year} \times \$5.00 = \$1,400.00$ in 2009.

*Hypothetical example based on CCX rate table through the end of the contract period 2012.



How do I calculate carbon credits?

Example - 250 acres - Managed Forestry

4. \$1,400.00 is the gross annual income prior to aggregator, CCX and verification fees.
Aggregator fee (10% of \$1,400) = **\$140.00**
CCX fee (350 x \$0.20/CC) = **70.00**
Verification fee (est. \$0.10/CC) = **28.00 = \$238.00**

*Hypothetical example based on CCX rate table through the end of the contract period 2012.



How do I calculate carbon credits?

Example - 250 acres - Managed Forestry

4. \$1,400.00 is the gross annual income prior to aggregator, CCX and verification fees.
Aggregator fee (10% of \$1,400) = **\$140.00**
CCX fee (350 x \$0.20/CC) = **70.00**
Verification fee (est. \$0.10/CC) = **28.00 = \$238.00**
5. $\$1,400.00 - 238.00 = \$1,162.00$ each year.

*Hypothetical example based on CCX rate table through the end of the contract period 2012.



How do I calculate carbon credits?

Example - 250 acres - Managed Forestry

4. \$1,400.00 is the gross annual income prior to aggregator, CCX and verification fees.
Aggregator fee (10% of \$1,400) = **\$140.00**
CCX fee (350 x \$0.20/CC) = **70.00**
Verification fee (est. \$0.10/CC) = **28.00 = \$238.00**
5. $\$1,400.00 - 238.00 = \$1,162.00$ each year.
6. $\$1,162.00$ per year x 15 years = \$17,430.00
Reserve pool 70 CC x 15yrs = 1050 cc
 $1050 \text{ CC} \times \$5.00 = \$5,250 - 525.00 = \$4,725.00$

*Hypothetical example based on CCX rate table through the end of the contract period 2012.



How do I calculate carbon credits?

Example - 250 acres - Managed Forestry

4. \$1,400.00 is the gross annual income prior to aggregator, CCX and verification fees.
Aggregator fee (10% of \$1,400) = **\$140.00**
CCX fee (350 x \$0.20/CC) = **70.00**
Verification fee (est. \$0.10/CC) = **28.00 = \$238.00**
5. $\$1,400.00 - 238.00 = \$1,162.00$ each year.
6. $\$1,162.00$ per year x 15 years = \$17,430.00
Reserve pool 70 CC x 15yrs = 1050 cc
 $1050 \text{ CC} \times \$5.00 = \$5,250 - 525.00 = \$4,725.00$
7. **$17,430.00 + \$4,725.00 = \$22,155.00$**

*Hypothetical example based on CCX rate table through the end of the contract period 2012.



14 point checklist Data Collection and Management



Data Collection and Management

Items to be submitted with enrollment application

1. Signed Exchange Forestry Offset (XFO) Contract
2. Completed Forestry Offset Enrollment Worksheet
3. Farm Service Administration (FSA), Forest Service, or NRCS aerial maps of enrolled areas
4. A voided check from your checking account so that we can set up electronic transfer of funds



Data Collection and Management

Items to be submitted with enrollment application

5. Legal description of land included in the forest Project (one or more of the following):
 - Covered by information in AgraGate Forestry Contract
 - FSA or Forest Service maps with legal description
 - Deed, Title Insurance
6. Identity of the land owner(s):
 - Covered by information in AgraGate Forestry Contract



Data Collection and Management

Items to be submitted with enrollment application

7. Legal evidence that the Project land is owned by the Project Owner or, in instances where the Project owner is not the landowner, evidence that the CCX Forestry offsets to be generated by the Project are legally owned by the Project Owner (one or more of the following):
 - Copy of Deed of Trust
 - Copy of Sales Contract document
 - Copy of tax receipts
 - Copy of Title Insurance document
 - Copy of appropriate abstract pages
8. Documentary contractual evidence between the aggregator and landowner that Project lands will remain as forest stock for at least 15 years:
 - Covered by AgraGate Forestry Contract
9. Evidence of intent to maintain forest carbon stock:
 - Signed Statement of Intent to Maintain Forest Carbon Stock Beyond 2010



Data Collection and Management

Items to be submitted with enrollment application

Additional documentation needed under the Afforestation provisions:

10. Evidence that trees were planting on land that previously had no trees:
 - Aerial photos of property prior to planting
 - Copy of CRP contract
11. Evidence of planting date:
 - Tree purchase receipts
 - Copy of CRP contract



Data Collection and Management

Items to be submitted with enrollment application

Additional documentation needed under the Manage Forest provisions:

12. Description of sustainable forestry management plan:
 - Copy of signature page of sustainable forestry management plan
 - Baseline cruise records
 - Copy of sustainable certification document
13. Evidence of Sustainable Certification:
 - Copy of Sustainable Certification certificate
14. Direct measurement data:
 - Stand cruise tally sheet and records



Contract Terms

- XFOs through this contract shall be in compliance with the rules of the CCX at the time of credit registration and will abide by the rules for participation in the forestry carbon pool as set forth by this contract.
- In the event that the project fails to meet these requirements, all XFOs from such land shall be null and void (must replace all the carbon credits at the current market price.)



Contract Terms

- Transfer price of the XFOs is the sales price as determined by sale through the Chicago Climate Exchange less a 10% service fee retained by AgraGate.
- Exchange offset registration fees will be deducted from pool proceeds prior to payment calculations



Contract Terms

- **Fulfillment of Obligations:** The commitments and obligations of the seller that are created by this contract shall terminate on January 1, 2023.



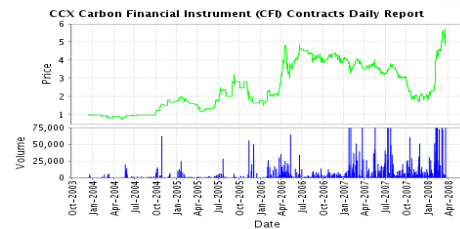
XFO Terms and Conditions

- **Noncompliance due to uncontrollable events:** In the case of noncompliance that results from adverse weather, natural disaster, or pestilence that is not controllable by the project owner, the liability of the project owner shall be limited to forfeiture of any existing reserve credits.



CCX News and Updates

Carbon Offset Prices, 2004-2008

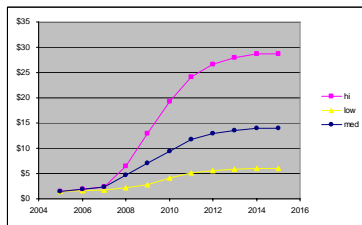


\$5.75/credit close on March 19th



Price forecasts for US carbon credits

Figure 1. Projected price curves for US carbon credits (\$US per metric ton).



Sources: Carbon Finance, August 2004; EIA/DOE 2004, Analysis of S. 1844, the Clear Skies Act of 2003; S. 843, the Clean Air Planning Act of 2003; and S. 306, the Clean Power Act of 2003; Energy Information Administration, USDOE, EROF/AF 2004-05, May 2004; EIA/DOE 2005, Impacts of Modified Recommendations of the National Commission on Energy Policy; Energy Information Administration, USDOE, SROF/AF 2005-06, April 2005; AEP 2004, An assessment of AEP's actions to mitigate the economic impacts of emissions policies; American Electric Power, August 31 2004

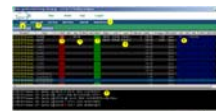


Mechanics of Trading

- CCX Registry



- CCX Trading Floor



Common Questions?????

Why should I enroll today? There isn't enough \$\$ incentive to enroll.
Why not wait until the price gets higher?

1. Creates new revenue stream
2009 - \$ - 2013
2. By not enrolling your forestry acres prior to September, an individual will lose one years worth of carbon credits.
3. \$\$ prices are determined based on the future sale of carbon credits through the Chicago Climate Exchange. Can you predict the future?
4. Lose out on carbon credit price increases. With discussions of a possible US Cap and Trade System, (Warner-Lieberman, Bingamen-Specter, Kerry-Snowe) or future world negotiations, agricultural offsets could increase in value.



How do I enroll?

Chad Martin, Soil Aggregation Specialist
AgraGate Climate Credits Corporation
5400 University Ave
West Des Moines, IA 50266

www.agagate.com

Ph:# 1-866-633-6758 or #(641)-895-2494

E-mail: cmartin@agagate.com

