Opportunities in the Emerging Carbon Trading Markets

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QualityTons

Overall Theme

- If you are reducing methane emissions in the United States, you may be able to monetize those reductions, selling credits to various buyers in the US.

- Why? Various voluntary and mandatory programs to reduce GHG emissions are now emerging.

Overall Carbon Market

1. Voluntary and Retail Market
2. Kyoto Market

- The value of the global aggregated carbon markets was $10 billion in 2005.
- Some predict this new financial market will be worth $25-30 billion in 2006.

Voluntary Carbon Market

Table 2: Volumes Exchanged and Number of Transactions per Market Segment

	Total Project-Based Transactions	Compliance	Voluntary	Retail*
1998	17,976,538	0	17,907,448	69,090
1999	35,423,491	0	35,265,724	157,767
2000	17,094,425	387,933	16,507,407	199,085
2001	13,004,103	4,724,591	8,161,652	117,860
2002	28,776,967	14,676,748	13,893,209	207,010
2003	77,641,815	70,429,780	6,773,367	438,669
2004	107,010,089	104,600,758	2,299,050	110,281
2005 (Jan.-April)	42,863,095	39,823,182	2,995,000	44,913
Total	339,790,524	234,642,992	103,802,856	1,344,675

Note: All volumes are for vintages up to 2012 only. Data for retail incomplete.

Notice growth from ’04 to ’05

Two types of transactions

- Allowance-based transactions (cap and trade)
- project-based (offsets)

Offsets: You reduce a ton of CO_2-eq. in your facility, someone else can buy it to meet their own GHG requirement

Voluntary Markets

- According to the World Bank's, 6.05 million tons of voluntary offsets were traded in 2005, worth approximately $43 million.
- Volume was 200% higher than in 2004, the value increased 700%.
- Criteria for additionality, vintages, acceptability of old vintages, prices and contract terms vary significantly.
- **Not a standardized commodity**
- Prices can range from $1.50 to $4.50 per ton

Motivations

- Many US companies doing voluntary efforts to reduce GHG emissions are turning to emissions trading to reduce their overall GHG emissions profile.

- Tradable units are Verified Emission Reductions (VERs) and have been trading since 1999.

- **Internal corporate GHG commitments**
- **Desires to be "carbon neutral"**
- **Possible early-action compliance under future regulatory regimes in the US.**
- **<u>Speculators looking to get cheap tons that might be sold as offsets under a reg. regime</u>**

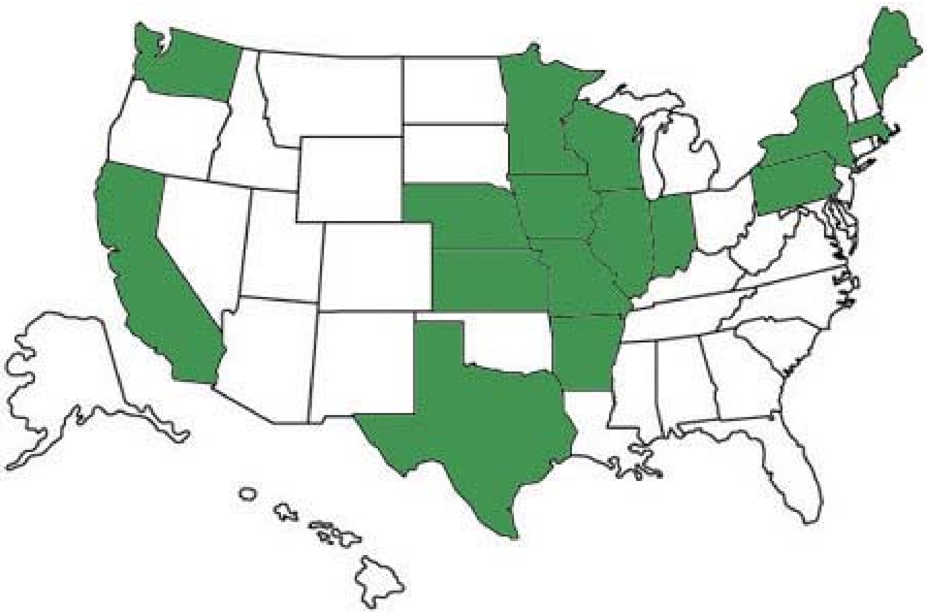
Chicago Climate Exchange

- North America's only voluntary, legally binding GHG reduction system.
- How it Works: voluntary, but if you join, must reduce 1% per year from baseline
- Members can trade allowances
- Offsets Eligibility – if you're a large direct emitter, you need to join.
- Methane reductions from O&G sector would have to be brought to the Offsets Committee

CCX Prices

	Price	Change
Vintage 2003	$4.20	0.10
Vintage 2004	$4.15	0.15
Vintage 2005	$4.25	0.15
Vintage 2006	$4.15	0.10
Vintage 2007	$4.15	0.05
Vintage 2008	$4.15	0.10
Vintage 2009	$4.10	0.10
Vintage 2010	$4.10	0.10

CCX Offset Locations



Offsets and Early Action Credits Issued as of September 7, 2006
(Metric tons of CO_2)

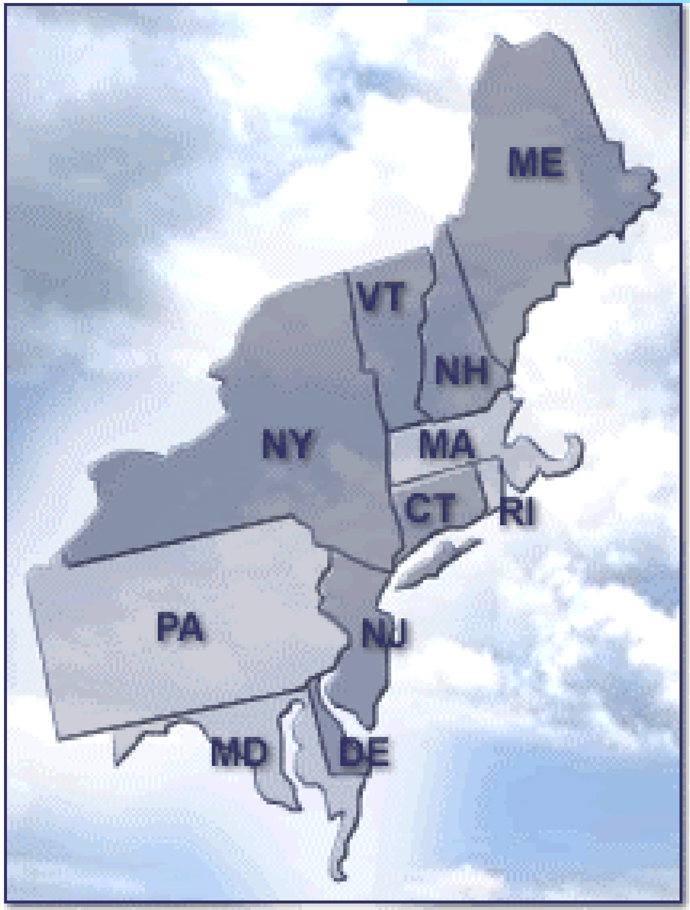
Vintage	2003	2004	2005	2006
Offsets Issued	483,600	485,700	466,800	62,100
Early Action Credits	-	114,200	17,200	-
Total	483,600	599,900	484,000	62,100

Emerging Regulatory Programs

RGGI in the Northeast

- CO_2 allowances
- Starts in 2009
- Eligible offsets include energy efficiency -- reduction in gas usage in buildings (comm & res)
- Offsets can be anywhere as long as reg. agency in both states agree on offset standards

There is the potential to expand offsets eligibility



Other States

- California just approved cap and trade system; offsets eligibility not yet spelled out
- Other states exploring about GHG reduction programs:

    -- North Carolina

    -- New Mexico

    -- Oregon

    -- Arizona

    -- Colorado

How Can Credits Be Sold

- Baseline determination (example of AM0023)
- Monitoring protocol
- Annual Verification – 3rd Party
- Entering into a Contract
- **Credibility: Vintage and "Additionality" – something beyond what is going on anyway. This is important.

Considerations

- Price
- Number of years to sell
- Credibility of offsets
- Contract risks – non-delivery?
- Could offsets be even more valuable when regulatory regimes are established?
- Some people buy at $2.50 and sell at $5.50 – is there a middle-man?

Example of One Buyer

- What is buyer looking for?
- 100,000 TCO2eq/year minimum
- Link to CDM Methodologies as way to enhance credibility
- Price?
- Can start as of 1/1/2000, but future VERs are better
- No geographic limitations
- Seller must have clear title

Compliance Market

- EUAs worth $8.2 billion traded in 2005 -- 322 million tCO2e. 40x increase over the previous years' volumes.
- In 2005, 374 million tCO2e CERs were transacted valued at $2.7 billion; average price was $7.23.
- Increase of 300% from past year in terms of volume and 500% increase in value.
- 1st Quarter 2006 – average price shot up to $11.45 per tCO2e
- 1st Quarter 2006 – 79 million tons transacted, worth $900 million.

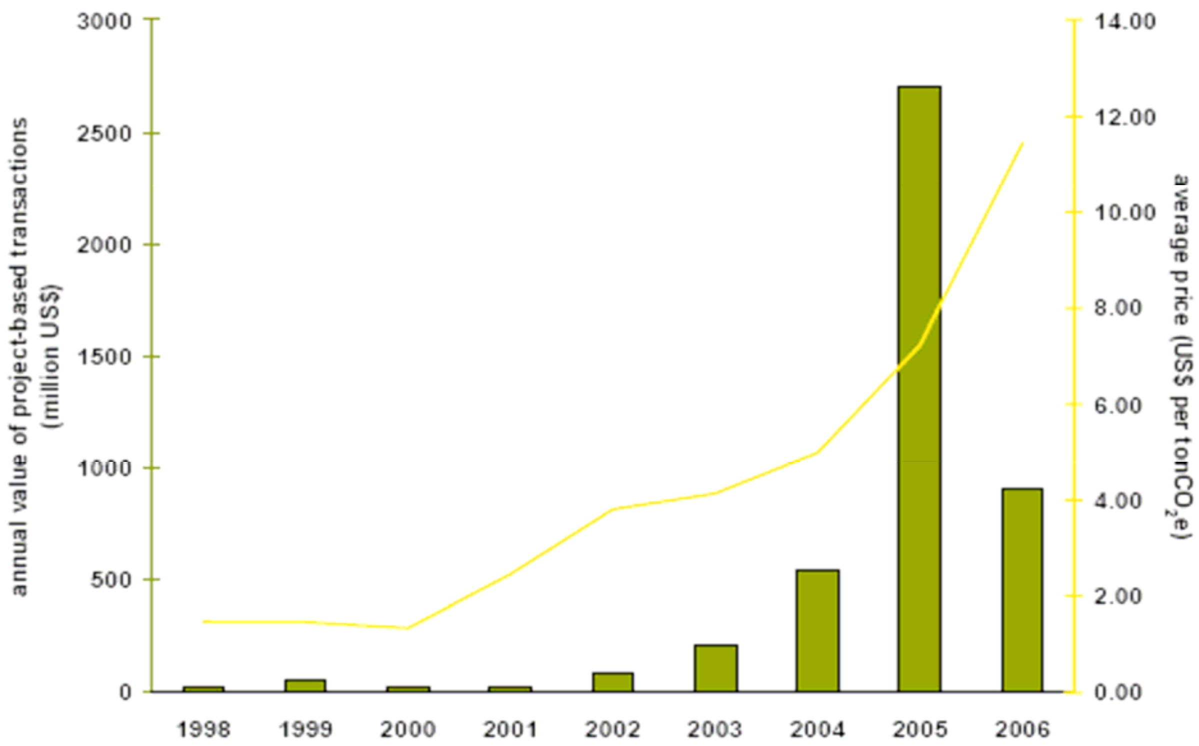


Figure 3: Annual volumes (million tCO_2e) of project-based emission reductions transactions (up to 2012 vintages) and annual average price in US$ per tCO_2

Source: IETA and World Bank

Implications for Gas Star Partners

You can monetize credits, but …

- It takes commitment
- Need to be precise about baseline and monitoring methodology
- Need to undertake and pay for verification
- Need to understand contracts and who the buyer is
- Need to understand that there is some skepticism in the market, which a seller should want to avoid
- The market is clearly going to grow with regulatory frameworks developing, but many of the criteria are not yet set.
- New projects vs. on-going or already implemented projects

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