

# Overview of Voluntary Carbon Markets

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# An overview of Carbon Markets

## Carbon Markets

### Voluntary Markets

- How they work
- Various standards
- Various prices

## Regulated Kyoto compliant market

### Kyoto Protocol Markets

- 3 market based mechanisms: emissions trading, the clean development mechanism (CDM) and joint implementation (JI)

### European Union Emission Trading Scheme

- largest GHG trading scheme (25 of 27 EU member states), launched Jan 1, 2005
  - created in conjunction with Kyoto Protocol
- only mandatory carbon trading program

## Regulated markets (outside of Kyoto)

### Regional Greenhouse Gas Initiative (RGGI)

- 9 northeastern US states, launches Jan 1, 2009
- focus on electricity generation sector

### New South Wales Greenhouse Gas Reduction Scheme (GGAS)

- one state in Australia, commenced on 1 January 2003

## Voluntary markets

### The Chicago Climate Exchange (CCX)

Voluntary but legally-binding trading system.

#### “Bilateral deals”

One-to-one trading system where the sellers and buyers of the carbon credits do business directly with each other instead of using a formal market system.

#### Government Voluntary Purchasing Programs

## Voluntary Carbon Market

### Definition

Parallel with the markets for compliance buyers, there has emerged a market for voluntary end users. This called voluntary market includes the trading of carbon credits – voluntary offset credits – not required by regulation.

### Target group

These voluntary offsets are often bought from retailers or organizations that invest in a portfolio of offset projects and sell slices of the resulting emissions reductions to customers in relatively small quantities. Buyers can be companies and organizations, governments, organizers of events, and individuals, aiming at “carbon neutrality” by voluntarily purchasing carbon offsets.

### Size of Market

Given the small and fragmented nature of the retail market and the lack of any centralized registration for non-CDM projects, it is very difficult to estimate the size of the market with much accuracy. However it was estimated that the voluntary market grew to US\$100 million in 2006 (€80 million) and that in 2007 traded around 75 Mt CO<sub>2</sub>e (Source: World Bank, State and Trends of the Carbon Market 2008).

## Voluntary Carbon Market

## The Chicago Climate Exchange

The voluntary carbon market can be divided in two types of market:

- .Legally binding, cap-and-trade offset market
- .Non-binding offset market

The Chicago Climate Exchange (CCX) is a North America's voluntary legally binding system

- .Members voluntarily join the CCX and accept its legally binding reductions policy
- .CCX's unit of trade is the Carbon Financial Instrument (CFI) which represents 100 tCO<sub>2</sub>e; emissions offset are mainly allowance-based and through a minor percentage of offset credits generated from reduction projects

The voluntary non-binding offset market operates outside of an exchange

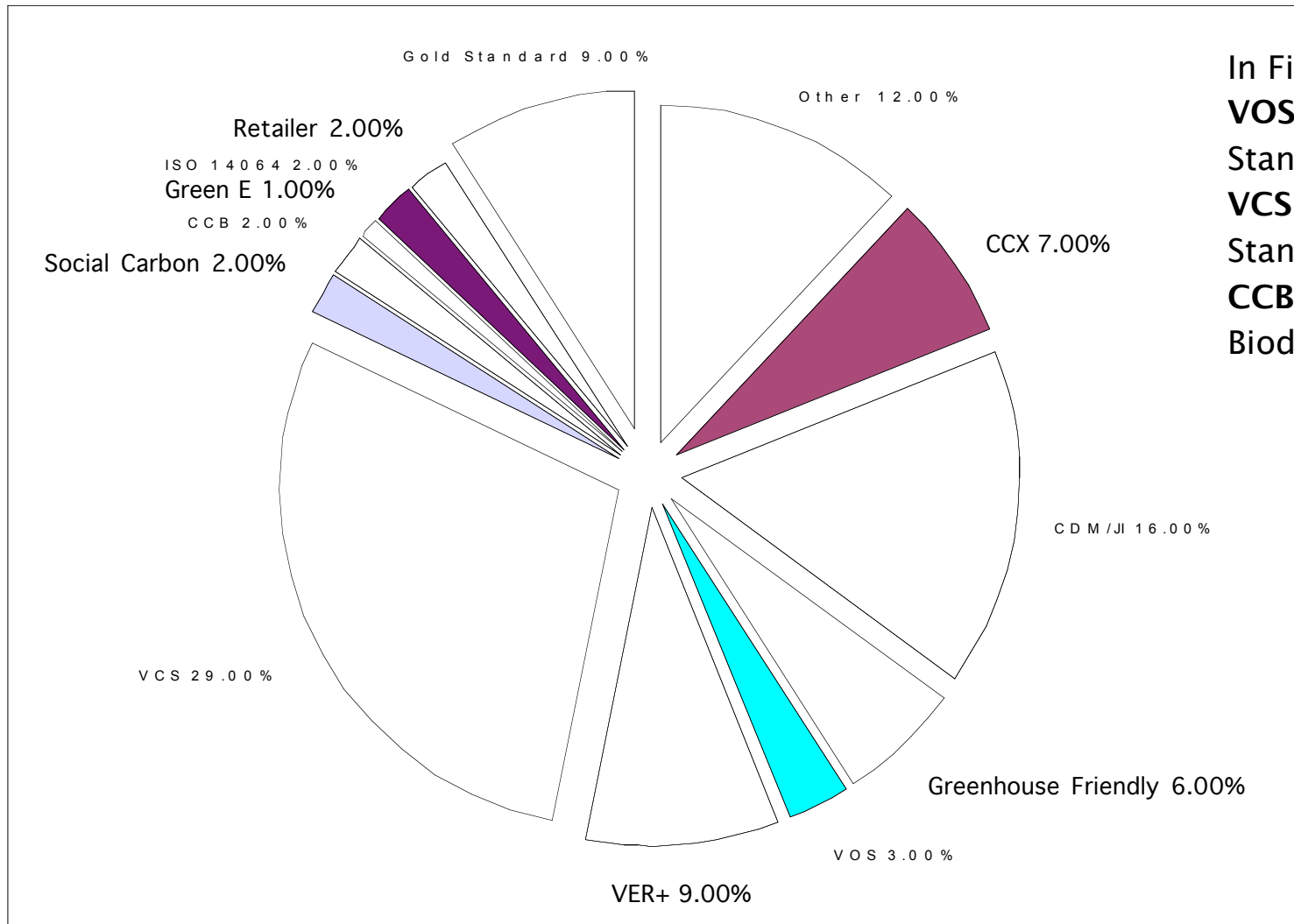
- .Is based in bilateral deals
- .Offsets traded are almost all originated from project-based transactions
- .Credits are often referred to as Verified (or Voluntary) Emission Reductions (VERs) or as carbon offsets
- .Credits can also be purchased from the compliance markets or the CCX

## Voluntary Carbon Market

### Standards

- Operating outside formal regulations, no common set of rules applies universally in the Voluntary Carbon Market. This has led to the evolution of a wide array of processes and standards (Figure 1).
- The designated **third party standards** are used to verify the legitimacy and fungibility of the carbon credits transacted in the voluntary market outside CCX. The compliance markets and the CCX market have their own validation processes.
- Mostly used standards in voluntary offsets markets are the Voluntary Carbon Standard (VCS), VER+, and Gold Standard for VERs. Others include The California Climate Action Registry's Climate Action Reserve, CarbonFix Standard, Chicago Climate Exchange Offsets Program, the Climate, Community, and Biodiversity Standards, Greenhouse Friendly, ISO 14064 Standards, Plan Vivo, Social Carbon, Voluntary Carbon Offset Standard, The Voluntary Carbon Standard, and the WBCSD/WRI GHG Protocol for Project & Corporate Accounting. Also, suppliers may use their own specific standards.
- In efforts to impose accepted and rigorous processes the Gold Standard launched in May 2008 their voluntary market version (GS VER).
- The Climate Group in association with the International Emissions Trading Association (IETA) are also in the process of developing the voluntary carbon standard (VCS), which they hope will be a benchmark in the market ensuring additional, real, quantifiable and permanent offsets.
- In general all voluntary carbon standards can be categorized as follows:
  - CDM / JI Standard – set by international regulatory authorities
  - The Gold Standard – created by consortium of NGOs for energy projects
  - The Climate, Community, and Biodiversity (CCB) Standards – created by consortium of NGOs and private sector for land-based sinks projects
  - Self developed standards – created by individual providers of VERs
  - Labeling Schemes – developed by some provider

# Figure 1. Voluntary Market Standards



In Figure 1:  
**VOS**–Voluntary Carbon Offset Standard  
**VCS**–The Voluntary Carbon Standard  
**CCB**–Climate, Community, and Biodiversity Standards

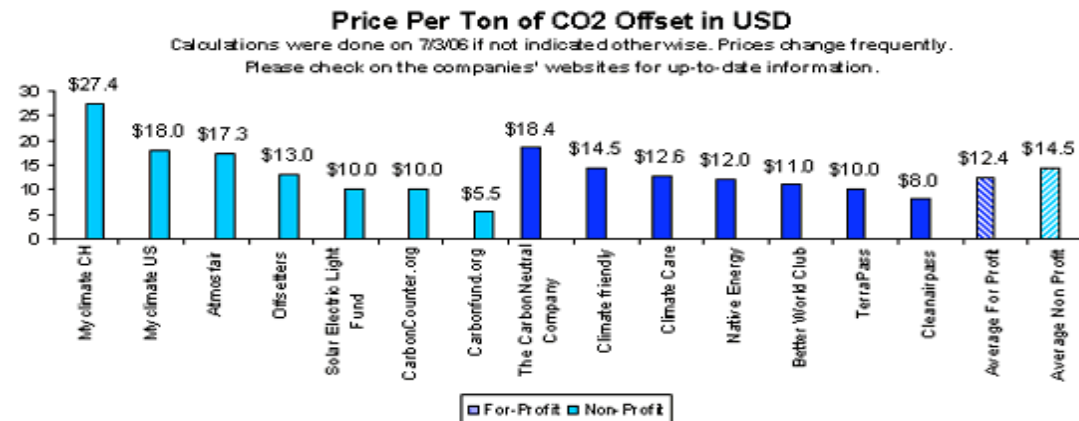
### Credits prices

- The price of voluntary offset credits depends highly on the kind of standards used to implement a given carbon mitigation project.
- The voluntary market has more potential to invest in small-scale projects with high sustainable development benefits as project developers can avoid the bureaucratic procedures and high transaction costs associated with the CDM registration process.
- But third party verification and standards as a way of legitimating and guarantying credits fungibility can increase considerably the associated costs of the projects. This can be a problem specially for micro and small scale projects in developing countries.
- The type of offset project also determines the price of offset credits. According to Ecosystem Marketplace and New Carbon Finance 2008 report “Forging a frontier: state of the voluntary carbon markets 2008”, the highest priced projects are forestry projects (\$6.8 to \$8.2/ tCO<sub>2</sub>e), methane (around \$6.0/ tCO<sub>2</sub>e) and renewable energy projects (\$7-8/ tCO<sub>2</sub>e); the credits of lower price are those from industrial gas projects (\$3.70/ tCO<sub>2</sub>e) and geological sequestration (\$2.50/ tCO<sub>2</sub>e).

# Voluntary Carbon Market

## Credits prices

- The price to offset one ton of CO<sub>2</sub> varies substantially.
- The 2006 report “Voluntary offsets for air-travel carbon emissions”, by Anja Kollmuss and Benjamin Bowell (Tufts Climate Initiative), identified prices ranging from \$5.50 to \$27.40 per ton.
- Eight of the thirteen companies in Kollmuss and Bowell study have prices within \$10 to \$15. The price differences do not seem to coincide with the percent of overhead each company charges (Figure 2).
- The authors concluded that there also “does not seem to be a clear correlation between price and for-profit versus non-profit status”. Non-profit companies and for-profit companies charge the same average price per ton (\$12.35) (Table 1).



**Figure 2. Prices per Ton of CO<sub>2</sub> Offset in USD within Voluntary Carbon Market** (Source: Kollmuss, Anja and Bowell, Benjamin. (2006). Tufts Climate Initiative. *Voluntary offsets for air-travel carbon emissions: evaluations and recommendations of voluntary offset*

**Table 1: prices of Carbon offsets per Ton of CO<sub>2</sub> in USD**

(Source: Kollmuss, Anja and Howell, Benjamin. (2006). Tufts Climate Initiative. *Voluntary offsets for air-travel carbon emissions: evaluations and recommendations of voluntary offset companies*. [online]. <http://www.tufts.edu/tie/tci/carbonoffsets/>. [08.06.2008])

## Credits prices

Company	Cost per ton of CO <sub>2</sub>	For or non-profit	Short or metric tons (3)
Carbonfund.org	\$5.50	Non	Metric tonnes
Cleanairpass	\$7.98 (2)	For	Metric tonnes
CarbonCounter.org	\$10.00	Non (1)	Short tons
Solar Electric Light Fund	\$10.00	Non	NA
TerraPass	\$10.00	For	Short tons
Better World Club	\$11.00	For	Short tons
NativeEnergy	\$12.00	For	Short tons
Climate Care	\$12.57	For	Metric tons
Offsetters	\$13.03	Non	Metric tonnes
climate friendly	\$14.50	For	Metric tonnes
atmosfair	\$17.30	Non	Metric tonnes
myclimate (US)	\$18.00	Non	Metric tonnes
The CarbonNeutral Company	\$18.40 (inc. 17.5% VAT)	For	Metric tonnes
myclimate (CH)	\$27.40	Non	Metric tonnes