

Carbon Credit Industry Report  
By Willow Rivers Wealth



**Willow Rivers Wealth**

Responsible Investments

## Introduction

The carbon industry is expected to be one of the world's biggest traded commodities in the next 10 -20 years, if not the biggest and the carbon boom, or dot.com equivalent is still to come. The US announced its intention in early 2009 to join the carbon race and has already drafted a bill that will have far reaching global effects.

When and if the US comes online (hopefully at some stage in the next 3-5 years) it will instantly become the world's largest carbon market. Those who get in early will be able to reap the rewards over the coming years.

In order to preserve a high probability of keeping global temperature increase below 2 degrees centigrade, current climate science suggests that atmospheric CO2 concentrations need to peak below 450ppm. We are currently at 395ppm and rising faster than at any time in the past 400,000 years, at a rate of 2ppm each year."

This requires global emissions to peak in the next decade and decline to roughly 80% below 1990 levels by the year 2050 (Baer and Mastrandrea, 2006). Such dramatic emissions reductions require a sharp move away from fossil fuel, significant improvements in energy efficiency and substantial reorganisation of our current economic system. The transition to carbon offsetting is an increasingly popular means of taking action. By paying someone else to reduce GHG emissions, the purchaser of a carbon offset aims to compensate for – or “offset” – their own emissions.

Individuals seek to offset their travel emissions and companies claim “climate neutrality” by buying large quantities of carbon offsets to “neutralize” their carbon footprint or that of their products. The concept of carbon credits was initiated at the Kyoto Protocol of 1997. This placed a monetary value on the cost of polluting the air and therefore a price on preventing pollution or removing the pollution from the air. These credits are an intrinsic component of preserving the environment by reducing greenhouse emissions and fighting climate change.

# Table of Content

- Carbon Markets . . . . . 1
- Understanding Carbon Credits . 2
- Market growth s . . . . . 3
- How To Get Carbon Credit . . 4
- How Are Carbon Credits Sold . 5
- Credit Standards . . . . . 6
- Why Use The CCBA . . . . . 7
- The Future . . . . . 8





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## Section 1: Carbon Markets

Carbon offset markets have been promoted as an important part of the solution to the climate crisis because of their economic and environmental efficiency, their key aims are to:

- Contribute to climate protection through real and additional, permanent, and verifiable greenhouse gas (GHG) reductions, while limiting unintended negative consequences.
- Reduce GHG emissions in an economically efficient way.
- Enhance the social and environmental benefits to project hosts.
- Stimulate social and technological innovation and participation by new actors sectors and groups.
- Create and build constituencies for more effective and comprehensive national and international solutions.
- Avoid perverse incentives that could stymie broader climate protection actions and policies.
- Synergistically work with other climate protection measures.

A recent New York Times article described carbon trading as one of the:

*“fastest-growing specialties in financial services”*

and companies are scrambling to get

*“a slice of a market now worth about \$30 billion and that could grow to \$1 trillion within a decade.”*

The article, entitled,

“In London’s Financial World, Carbon Trading is the New Big Thing,” continues:

*“Carbon will be the world’s biggest commodity market, and it could become the world’s biggest market over all.”*



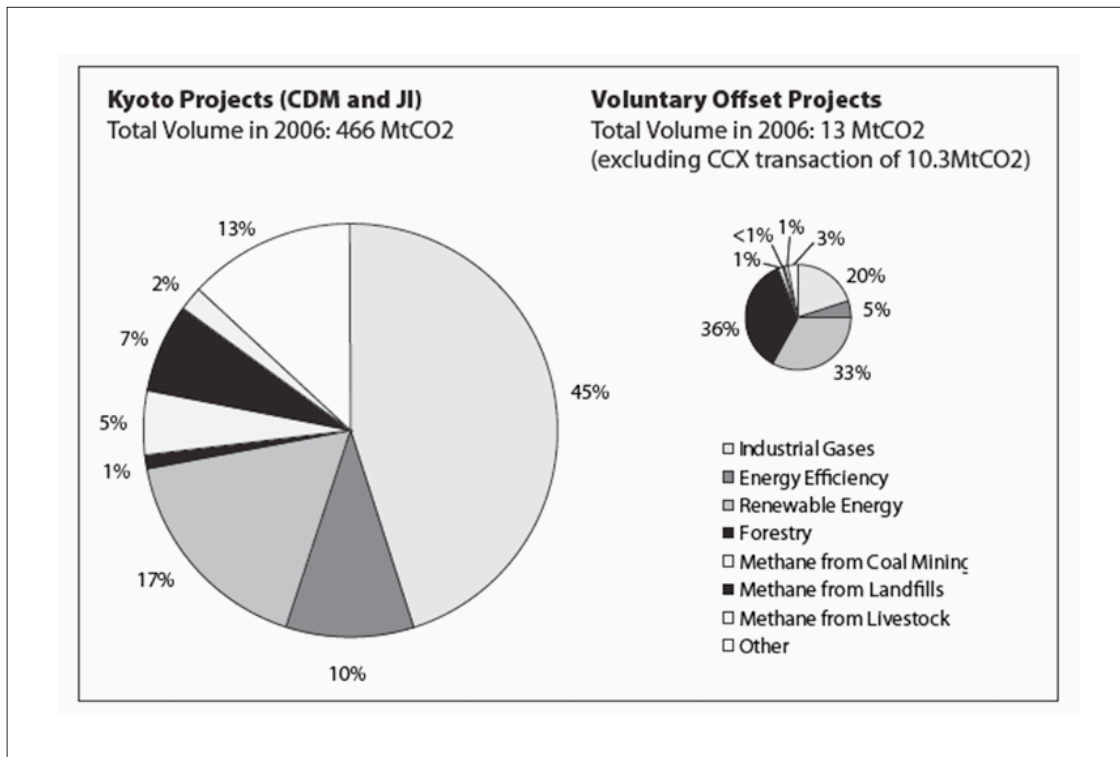
### Section 2: Understanding Carbon Credits

Carbon Markets do not trade in the same way oil or copper does. What changes hands is the right to emit a certain volume of CO<sub>2</sub>, the intention is to put a price on emissions which up until now have been cost free. The second is to allow trades in permits to encourage those that can cut emissions are incentivized to do so.

The EU Emission Trading Scheme (EU ETS) — the world’s first large-scale emissions trading programme under the Kyoto Protocol — was launched in 2005, covering around 12,000 installations in 25 countries and 6 industrial sectors.

Shortly after in 2006 the Voluntary Carbon Market came into existence. This quickly tripled in size in 2007 total transactions now reach a volume of 65 million tons of carbon dioxide equivalent (Mt-CO<sub>2</sub>e) with a market value of \$331 million. This growth has been driven primarily by demand from companies, organisations and individuals wishing to offset their direct and indirect emissions of greenhouse gases (GHG).

The chart below demonstrates the difference in Offset Trading Volumes in the Kyoto and in the Voluntary Markets (Source: Capoor, 2007; Hamilton 2007)



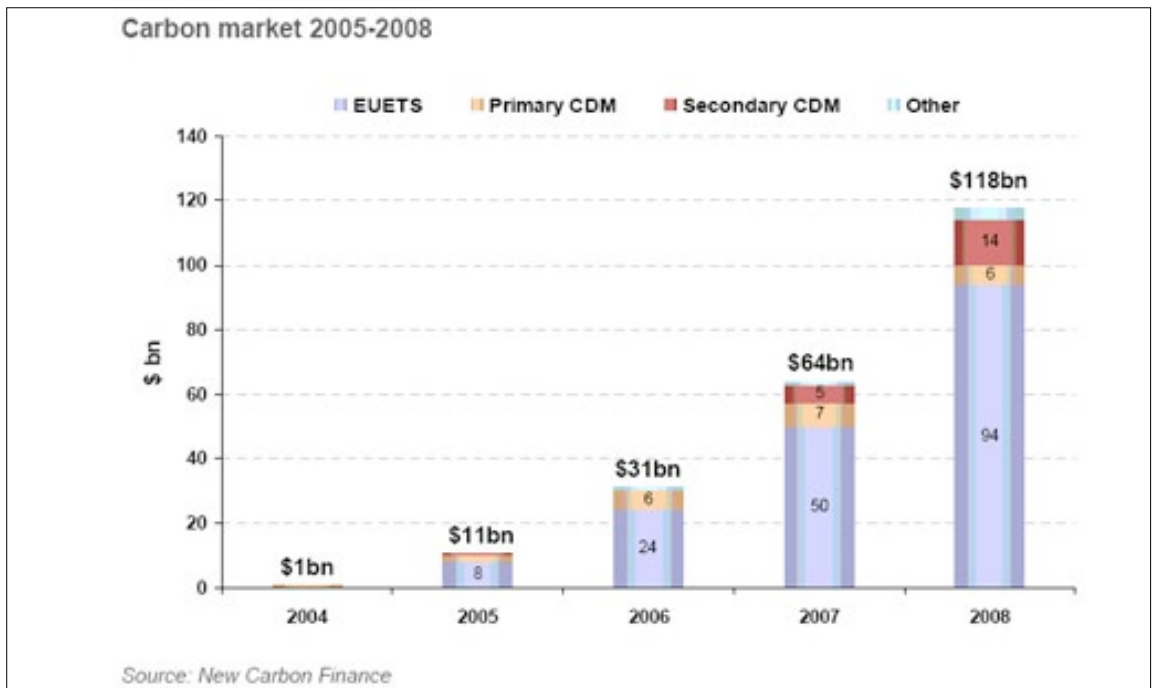
### Section 3: Market Growth

The carbon markets are growing rapidly. With more than € 20 billion traded in 2006 (Capoor & Ambrosi, 2007), The overall carbon market continued to grow in 2008, reaching a total value transacted of about \$126 billion USD (€86 billion) at the end of the year, doubling its 2007 value.

Approximately \$92 billion USD (€63 billion) of this overall value is accounted for by transactions of allowances and derivatives under the EU Emissions Trading Scheme (EU ETS) for compliance, risk management, arbitrage, raising cash and profit-taking purposes. The second largest segment of the carbon market was the secondary market for certified carbon markets which is already a substantial economic force and will likely grow considerably over the coming years.

#### Supply and Demand

- New Carbon Finance expects that the volume of voluntary carbon transactions will rise from 65 MtCO<sub>2</sub>e today to 560 MtCO<sub>2</sub>e by 2012;
- While consultancy ICF International forecasts a more restrained but still substantial expansion of the market to 220 MtCO<sub>2</sub>, also by 2012.
- Demand will further increase post Copenhagen in December should new policies put further financial penalties on global emitters including the emerging markets of China and India.



## Section 4: How do projects get carbon credits?

Every project looking to achieve carbon credits, be it wind, solar, reforestation, or any other carbon emissions reduction strategy has to go through a strict and rigorous third party validation and certification to make sure the project can justify and quantify the amount of CO<sub>2</sub> it intends to reduce.

### Project Design

- developing a project concept,
- choosing or developing a baseline and monitoring methodology,
- Stakeholder consultations.
- All of these elements are documented in the project design document (PDD).

### Project Concept

- A feasibility study of a potential CDM project is conducted to assess the technical feasibility,
- investment requirements, development and operational costs, expected returns,
- administrative and legal hurdles, and
- project risks and pitfalls.

Based on the results of the feasibility study, the project owner will decide whether or not to continue development of the potential CDM project.

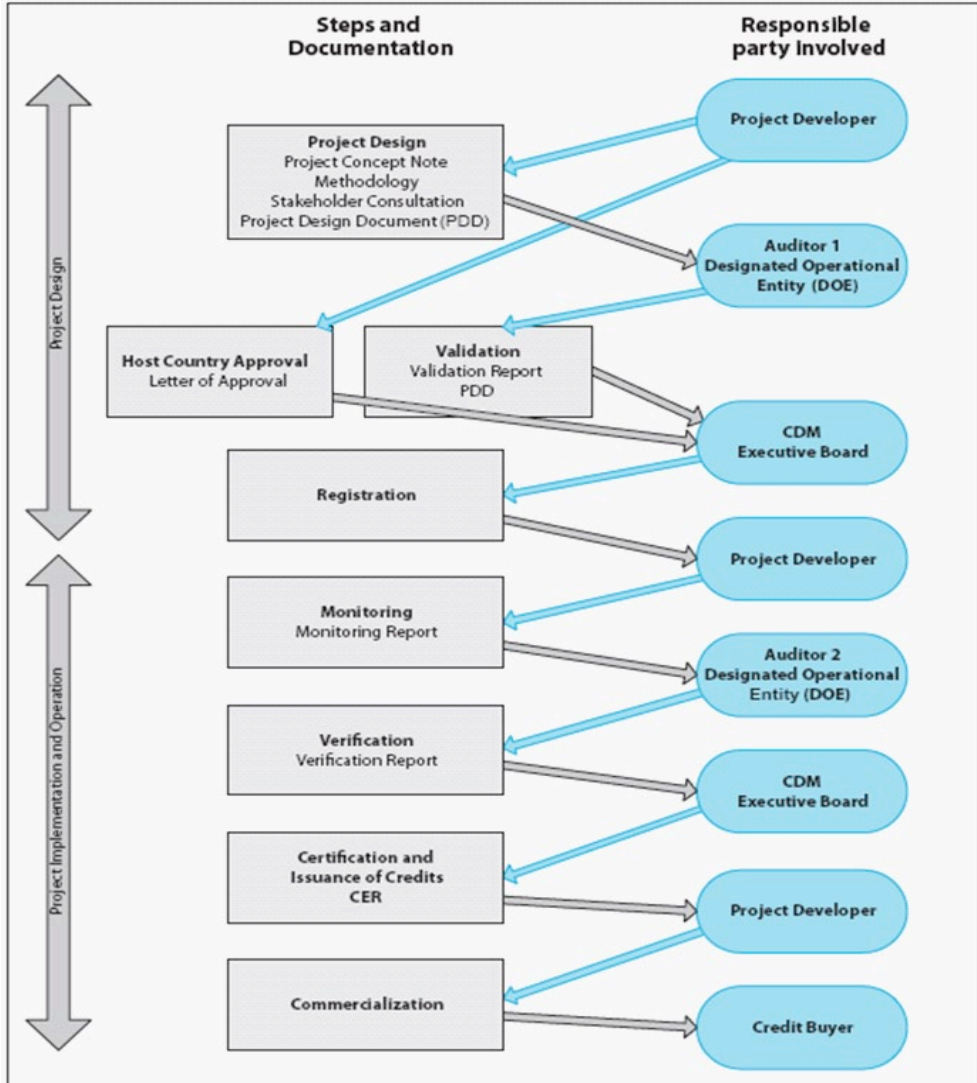
### Methodology

- A CDM methodology defines the rules that a project developer needs to follow to establish a project baseline and to calculate emission reductions and to monitor the parameters used to estimate actual emission reductions.
- If no approved methodology exists for a specific project type, a project developer can submit a new methodology for approval to the CDM Methodology Panel.

### Project Design Document (PDD)

- The Project Design Document (PDD) describes the CDM project activity in detail and forms the basis for all future planning and administrative procedures.
- It contains a description of the chosen technology and explains the methodology used to define the baseline scenario, to confirm additionality and to calculate emission reductions.
- It also contains information on the monitoring of all relevant technical parameters including, how monitoring procedures will be established, how measurements will be made, quality will be controlled, and records will be stored and accessed.
- It contains an estimate of the volume of emission reductions achieved by the project.
- Finally, it documents how the project contributes to sustainable development.

The CDM Project Cycle WWF 2008



## Section 5: How Are Carbon Credits Sold

There are many companies that sell carbon credits to commercial and individual customers who are interested in lowering their carbon footprint on a voluntary basis.

These carbon offsetters purchase the credits from an investment fund or a carbon development company such as **Carbon Impacts** or **The Carbon Advisory** who have aggregated the credits from individual projects.

The quality of the credits is based in part on the validation process and sophistication of the fund or development company that acted as the sponsor to the carbon project. This is reflected in their price.

### Retirement: a VER's life goal

A carbon credit in the voluntary market does not fulfill its life's goal of offsetting another GHG emission until it is "retired" by a supplier or final buyer. When an entity purchases carbon credits to offset GHG emissions, the carbon credit is then retired and cannot be sold again. More and more, these retired offsets are being stored in "retirement registries." The tracking of retired credits is important because it represents the impact of the market from an atmospheric perspective and the fundamental demand behind the market. The number of times a credit was transacted before

retirement, was around 3.9 in 2007, now only 25% < 50% of Voluntary Credits are actually being retired so the "Average Churn Rate" is currently 4.4 .... meaning 50% < 75% could be re-traded

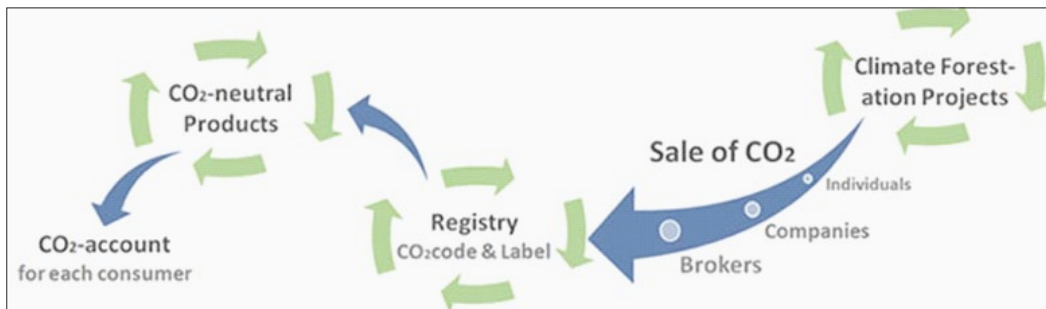
### Registries:

Registries provide a host of market services, including tracking credit sales and ownership, increasing market efficiency through information sharing, and protecting against "double counting."

Registries are typically classified into two categories: emissions tracking registries, which track buyer entities' emissions and reductions, and carbon credit accounting registries, which report on transactions of credits, allowances and offsets.

2007 saw the premier of several new project registries, and at least several more are in the pipeline.

The most utilized registries in 2007 were the CCX, CDM/JI, and TUV SUD and the Blue Registry.



## Section 6: Carbon Credit Standards, New Carbon Finance 2008

Main Supporters	Market Share	Additionality Tests (relative to CDM)	Third-party Verification Required	Separation of Verification and Approval Process	Registry	Project Types	Excludes Project Types with high chance of adverse impacts	Co-Benefits (relative to CDM)	Price of Offsets
<b>Clean Development Mechanism</b>									
UNFCCC Parties	large	=	yes	yes	yes	All minus REDD, new HFC, nuclear	no	=	€14–30
<b>Authors' Comments:</b>	The CDM is part of the Kyoto protocol and aims to create economic efficiency while also delivering development co-benefits for poorer nations. It has been successful in generating large numbers of offsets. Whether it also has delivered the promised development co-benefits is questionable.								
<b>Gold Standard</b>									
Environmental NGOs (e.g. WWF)	small but growing	=/+ <sup>1</sup>	yes	yes	Planned	EE, RE only	yes	+	VERs: €10–20 CERs: up to €10 premium
<b>Authors' Comments:</b>	The GS aims to enhance the quality of carbon offsets and increase their co-benefits by improving and expanding on the CDM processes. <sup>1</sup> For large scale projects the GS requirements are the same as for CDM. Yet unlike CDM, the GS also requires the CDM additionality tool also for small-scale projects.								
<b>Voluntary Carbon Standard 2007 (VCS 2007)</b>									
Carbon Market Actors (e.g. IETA)	new; likely to be large	= <sup>2</sup>	yes	no	Planned	All minus new HFC	no	-	€5–15 <sup>3</sup>
<b>Authors' Comments:</b>	The VCS aims to be a universal, base-quality standard with reduced administrative burden and costs. <sup>2</sup> The VCS plans to develop performance based additionality tests. These tools have not yet been developed and are thus not included in this rating. <sup>3</sup> Prices are for projects implemented under VCS ver. 1.								
<b>VER+</b>									
Carbon Market Actors (e.g. TÜV SÜD)	small but growing	=	yes	no	yes	CDM minus large hydro	yes	-	€5–15
<b>Authors' Comments:</b>	VER+ offers a similar approach to CDM for project developers already familiar with CDM procedures for projects types that fall outside of the scope of CDM.								
<b>Chicago Climate Exchange (CCX)</b>									
CCX Members and Carbon Market Actors	large in the US	-	yes	yes	yes	All (mostly soil carbon)	no	-	€1–2
<b>Authors' Comments:</b>	CCX was a pioneer in establishing a US carbon market. Its offset standard is part of its cap-and-trade programme.								
<b>Voluntary Offset Standard (VOS)</b>									
Financial Industry and Carbon Market Actors	N/A	=	yes	no	Planned	CDM minus large hydro	yes	=	N/A
<b>Authors' Comments:</b>	VOS closely follows CDM requirements and aims to decrease risks for offset buyers in the voluntary market.								
<b>Climate, Community and Biodiversity Standards (CCBS)</b>									
Environmental NGOs (e.g. Nature Conservancy) and large corporations	large for LULUCF	=	yes	no <sup>4</sup>	N/A	LULUCF	yes	+	€5–10
<b>Authors' Comments:</b>	The CCBS aims to support sustainable development and conserve biodiversity. <sup>4</sup> The CCBS is a Project Design Standard only and does not verify quantified emissions reductions.								
<b>Plan Vivo</b>									
Environmental and social NGOs	very small	=	no	no	yes <sup>5</sup>	LULUCF	yes	+	€2.5–9.5
<b>Authors' Comments:</b>	Plan Vivo aims to provide sustainable rural livelihoods through carbon finance. <sup>5</sup> It verifies and sells ex-ante credits only. Third party verification is not required but recommended.								

## Section 7: Why Use CCBA

The Climate, Community & Biodiversity (CCB) Standards are designed to ensure that land use projects are designed to simultaneously mitigate climate change and deliver compelling biodiversity and community benefits.

- The Standards comprise fourteen required criteria and three optional “Gold Level” criteria.
- Once a project has been designed, a third-party evaluator will use indicators to determine if individual criteria are satisfied.
- Only projects that use best practices and deliver significant climate, community and biodiversity benefits will earn CCB approval.
- Gold status is awarded to projects that satisfy one of the optional criteria by providing exceptional benefits including explicit design for adaptation to climate change, benefits for globally poorer communities, or conservation of biodiversity at sites of global conservation significance.

The Climate, Community and Biodiversity Standards are beneficial to a wide variety of users.

- Project Developers can use the CCB Standards to develop projects that deliver a suite of environmental and community benefits. Projects that meet the Standards may garner new investments from multiple funders and supporters.
- Project Investors can use the CCB Standards to identify exceptional initiatives and minimize risks. Projects using the Standards are unlikely to become tied up with controversy and roadblocks. Multiple-benefit projects generate valuable goodwill for investors by fostering synergistic and innovative solutions.

## Section 8: The Future

Carbon Credit markets will without doubt get larger, as more capital becomes available for carbon credits. The regulated markets will blossom once a legislated cap and trade system comes into force in the US and the voluntary markets will continue to grow as awareness of climate change increases. More capital will enable additional offset projects to be funded and will bring competition into the market which will increase the overall quality of offsets. Now has never been a better time to invest.





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