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State of the Voluntary Carbon Markets 2007: Picking Up Steam

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Acknowledgments:

This report is compilation of the insights and efforts of a wide range of individuals. In addition to the contributions of each of the organizations sharing information about their operations, this report has required time, attention, and financial support from a dozens of people across several continents. For that reason, we would like to acknowledge the following people who generously gave of their time, energy and resources to make this possible. They include, in no particular order: Steve Zwick, Rebecca Smith, Rachel Mountain, Jena Thompson, Jessica Abbott, Lauren Kimble, Sara Bushey, Jay Dean, Jessica Lerch, Dan Linsky, Evan Ard, Jason Patrick, Marco Monroy, Jonathan Shopley, Pedro Moura-Costa, Maria Pia Innariello, Philippe Ambrosi, Eron Bloomgarden, Bhavna Prasad, and the staff at Forest Trends and New Carbon Finance. We'd also like to thank Thomas Marcello for his research contributions.

About The Ecosystem Marketplace and New Carbon Finance

Ecosystem Marketplace is the world's leading source of information on environmental markets and payment schemes for ecosystem services. In particular, we are interested in market-based approaches to the conservation of water-related ecosystem services, carbon sequestration and the myriad benefits of biodiversity. We believe that by providing solid and trustworthy information on prices, regulation, science, and other market- relevant issues, we can help markets for ecosystem services become a fundamental part of our economic and environmental system, helping give value to environmental services that have, for too long, been taken for granted.

New Carbon Finance is the leading provider of information, analysis and insights into the European, global and North American carbon markets. New Carbon Finance was created in May 2006 as a new service of New Energy Finance Ltd to create a service that blends the best skills in research, analysis and consulting. New Carbon Finance constantly strives to provide the most accurate projections of future carbon market prices using proprietary fundamental analysis and models. The research underlying this report provides a crucial quantitative platform that will substantially enhance the understanding of the fast moving voluntary carbon market.

New Carbon Finance is a service of New Energy Finance. New Energy Finance is a specialist provider of financial information and associated services to the renewable energy and energy technology industry and its investors. The combination of New Energy Finance and New Carbon Finance brings together a truly global research resource with over 50 full time staff with permanent research bases in the UK, USA, China, India and Australia as well as a wide range of associates and contact networks.

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Acronyms

AB 32	Assembly Bill 32: California's Global Warming Solutions Act
AEP	American Electric Power
CARB	California Air Resources Board
CER	Certified Emission Reduction
CCAR	California Climate Action Registry
CCBA	Climate, Community, and Biodiversity Alliance
CCB	Climate, Community, and Biodiversity Standards
CCX	Chicago Climate Exchange
CCFE	Chicago Climate Futures Exchange
CFTC	Commodities Futures Trading Commission
CDM	Clean Development Mechanism
CFC	Chlorofluorocarbons
CFI	Carbon Financial Instrument
CO_2	Carbon dioxide
DEFRA	Department for Environment, Food and Rural Affairs (UK)
ECCM	Edinburgh Center for Carbon Management
ECIS	European Carbon Investor Services
ECX	European Climate Exchange
ERT	Environmental Resources Trust
EU ETS	European Union Emission Trading Scheme
ERU	Emission Reduction Unit
GHG	Greenhouse Gas
GWP	Global warming potential
IIED	International Institute for Environment and Development's
JI	Joint Implementation
kWh	kilowatt hour
LULUCF	Land Use, Land Use Change and Forestry
$MtCO_2e$	Millions of tonnes of carbon dioxide equivalent
NGAC	New South Wales Greenhouse Abatement Certificate
NGO	Non- governmental Organization
NO_x	Nitrogen oxide
N2O	Nitrous oxide
NSW GGAS	New South Wales Greenhouse Gas Abatement Scheme
OTC	Over-the-counter market
PG&E	Pacific Gas & Electric
REC	Renewable energy credit
RGGI	Regional Greenhouse Gas Initiative
SO_2	Sulfur dioxide
tCO_2e	Tonne of carbon dioxide equivalent
TREC	Tradable renewable energy credit
VER	Verified Emission Reduction
VCS	Voluntary Carbon Standard
VCU	Voluntary Carbon Unit
WBCSD	World Business Council for Sustainable Development
WRCAI	Western Regional Climate Action Initiative
WRI	World Resources Institute
WWF	World Wildlife Fund

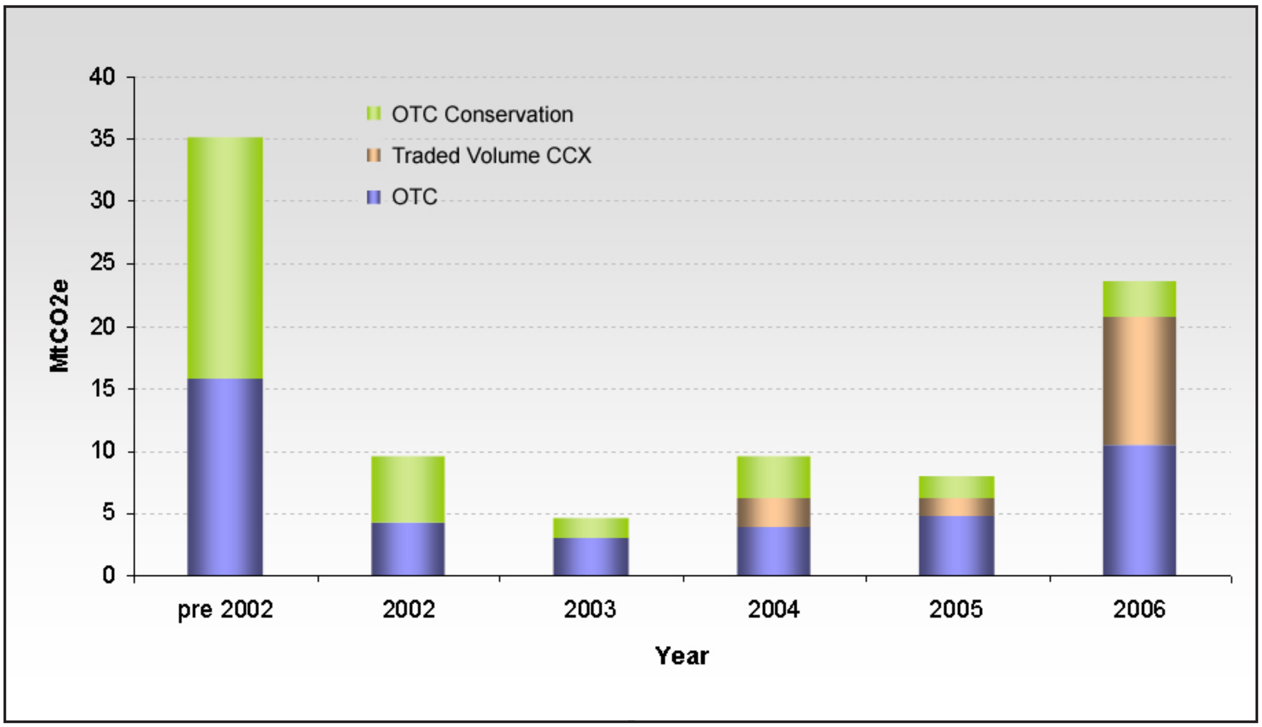
Executive Summary

In the course of 2006 and 2007, interest in climate change, carbon offsets and the voluntary carbon markets accelerated dramatically. And yet despite this interest, and the fact that voluntary carbon markets have effectively been operating since 1989, quantitative data surrounding this market has been sorely lacking. Because of this situation Ecosystem Marketplace and New Carbon Finance teamed up to undertake the most comprehensive analysis to date of the voluntary carbon market. The research has involved a wide ranging survey with responses from over 70 organizations involved all stages of the supply chain including developers, aggregators, brokers and retailers, and covered five continents.

The results show that, like the early stages of the regulated carbon markets of the European Union's Emissions Trading Scheme (EU ETS) and the Kyoto Protocol, the voluntary markets are evolving rapidly. They also show that 2006 was a year of significant growth with many new retailers, brokers, and other actors entering the market. Since 2002 the number of organizations supplying carbon credits into the market has grown by 200%, with online retailers being the fastest growing sector of the marketplace.

Between 2005 and 2006 the Over the Counter (OTC) voluntary offset market also grew 200%. In 2006 23.7 million tonnes of carbon dioxide equivalent ($MtCO_2e$) were transacted in the voluntary carbon markets. Of this, 10.3 $MtCO_2e$ were transacted on the Chicago Climate Exchange (CCX), and our survey revealed that some 13.4 $MtCO_2e$ were transacted in the OTC market.[1] (See Figure 1). Because it is impossible to capture all OTC transactions in a survey such as this, the actual volume traded may be considerably larger than this amount.

Figure 1: Historically traded volumes in the voluntary carbon market



While these numbers are small relative to volumes of transacted in the regulated carbon markets like the EU ETS, the combined voluntary markets (CCX+OTC) are larger in volume than both the Kyoto Protocol's Joint Implementation mechanism and the New South Wales Greenhouse Gas Abatement Scheme. Just as importantly, the voluntary markets are significant in that they represent an active demand by businesses and individuals for some form of action on climate change in the absence of direct regulation. (See Table 1).

[1] Note that these figures include all transactions between counterparties in the supply chain and is not a reflection of the quantity of voluntary credits retired in 2006.

Table 1: Keeping Up with Kyoto? The Voluntary Markets in Context

	2006 Volume (Million tCO_2)	2006 Value (US$ Million)
Voluntary OTC Offset Market	13.4	54.9
CCX	10.3	36.1
Total Voluntary Market	23.7	91
Other GHG Trading Schemes		
EU ETS Trading Scheme [2]	1,101	24,357
Primary Clean Development Mechanism	450	4,813
Secondary Clean Development Mechanism	25	444
Joint Implementation	16	141
New South Wales	20	225

Much of the demand driving the voluntary carbon markets comes from the developed and more environmentally aware markets in North America and Europe. Survey respondents reported that 68% of their customers are based in the United States and 3% in Canada. In addition, about half of the suppliers responding to our survey were based in the U.S, and roughly 43% of carbon offsets sold in the OTC market were sourced from North American-based projects. Europe was also a major source of market demand and supply in the market, with 28% of the survey respondents' customers based in the EU and a little over 30% of suppliers based in the EU. About 10% respondents were based in Australia.

As could have been expected, businesses were the largest buyers (by volume) in this market, but contrary to expectations, anticipation of future regulation did not appear to be the main motivation for purchases. According to buyers surveyed, their main motivations for participation in the market were corporate social responsibility and to "walk the talk" in terms of environmental stewardship.

Voluntary carbon markets have historically served as sources of experimentation and innovation in the carbon markets, as well as the markets most likely to reach poorer and smaller communities in developing countries. This is, in part, because they lack the bureaucracy and transaction costs of their regulated counterparts. For example, compared to the Kyoto regulatory markets the voluntary OTC markets are currently the only source of carbon finance for avoided deforestation, have a higher proportion of forestry based credits out of total market transactions than the Clean Development Mechanism (CDM) (36% vs. 1% for CDM), and a slightly higher proportion of credits sourced from Africa (6% vs. 3% for CDM). Moreover, the voluntary markets seem to be a particularly hospitable climate for smaller offset project. More respondents cited selling offset credits sourced from micro projects, generating less that 5,000 tCO_2e, than any other project type. Around 36% of offset credits in the OTC market were sourced from projects less than 100,000 tCO_2e. This finding signifies the numerous opportunities for voluntary markets to contribute to sustainable development in smaller communities.

In terms of project types our survey found that voluntary carbon markets are not just "charismatic" or "gourmet" carbon. Overall, the OTC market is dominated by three types of projects: forestry sequestration (36%), renewable energy (33%), and industrial gases (30%). (See Figures 2 and 3).

[2] The World Bank. *State and Trends of the Carbon Market,* 2007. <http://carbonfinance.org/docs/Carbon_Trends_2007-_FINAL_-_May_2.pdf>.

Figure 2: Transactions by project location, 2006 (9.7Mt)

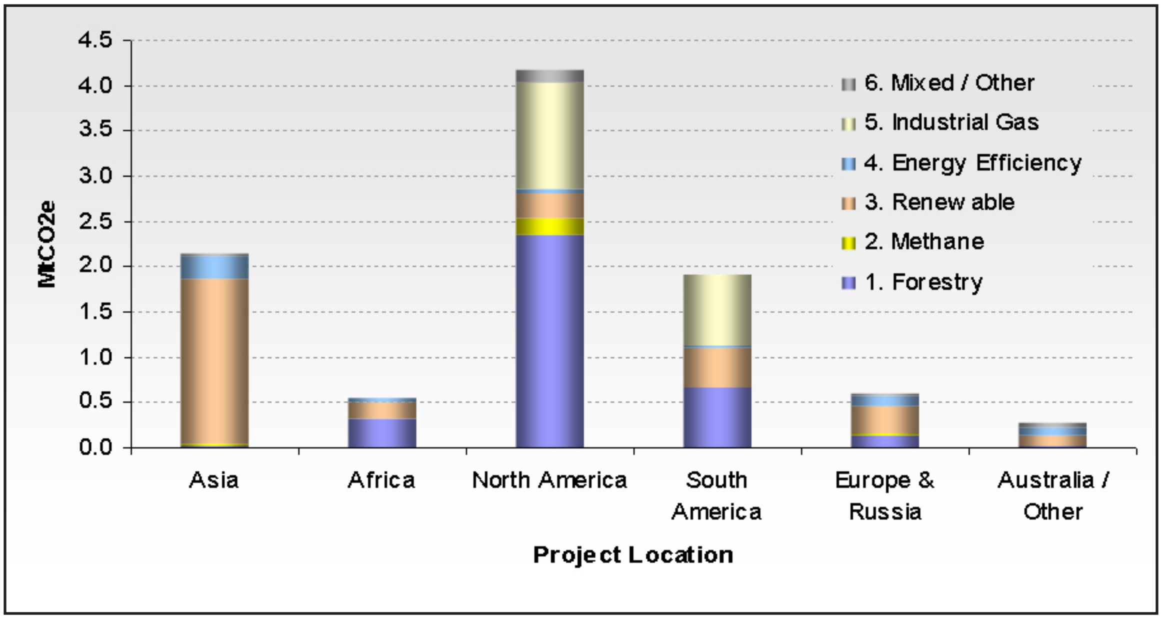
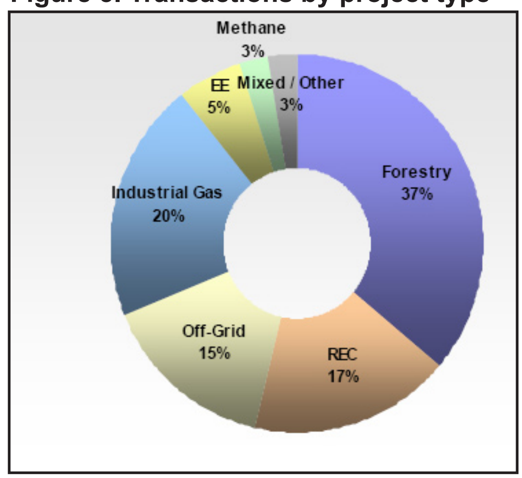


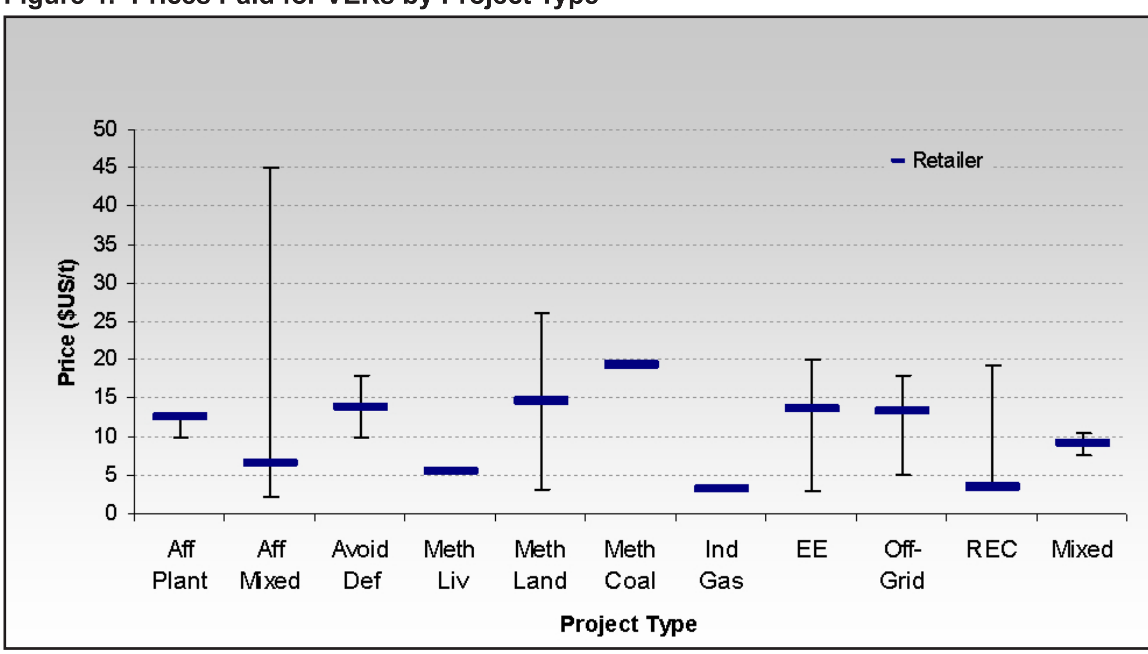
Figure 3. Transactions by project type



Through the survey we were also able to reveal prices paid for different types of projects.

The volume-weighted average price of carbon on these markets was US$4.1 per tCO_2e, although transactions occurred for a vast range of prices; from US$0.45 to US$45 per tCO_2e (See Figure 4). Within this range we see the highest prices being paid for projects with strong quality and verifiability attributes, such as landfill methane and coal mine methane, as well as the more publicly visible forestry projects and long term sustainable development projects, such as energy efficiency and off-grid renewable energy.

Figure 4: Prices Paid for VERs by Project Type



Based on these figures, we estimate that the voluntary OTC market was worth US$54.9 million in 2006. Together with the CCX market, whose prices ranged from around US$1.50 to almost US$5, we estimate the global voluntary market was worth US$91 million in 2006.

The flexibility of the voluntary markets is both a source of strength and a weakness. One of the reasons the market has very low transaction costs is that it does not require proof of quality in the same way as the regulated markets. For instance, in the OTC markets there are no widely accepted standards, processes for certification and verification, or requirements to list credits on established registries. This lowers transaction costs, but it also makes it a "buyer-beware" market where getting a handle on the quality of credits being bought can be difficult for customers.

But this is changing. The quality of offsets is – and will likely continue to be - the most important issue for both buyers and sellers in this market. In our survey, buyers indicated that the quality of offsets was more important to them than price, and sellers all agreed that addressing issues of quality would ultimately determine how (and how fast) this market continues to grow. According to suppliers, the issues that determine quality of offsets in this market include: additionality (would the reductions have happened anyway with or without the offset purchases), third party certification and verification, standards, and avoidance of double-counting and double-selling (i.e. registries).

As part of the consolidation in the market that began to take shape in 2006, various groups (from non-profits and industry associations, to offset providers and government agencies) continue work aimed at creating rigorous standards and processes as a way of ensuring confidence and quality in the market. In 2006 and early 2007, the issue of quality in the voluntary market became very visible in the form of media stories and articles questioning the validity of offsets being sold. This backlash was (at least partly) the result of the increased growth and visibility of the market, but it also helped to fuel increasing efforts on the part of those interested in the industry to strengthen quality and create standards. These efforts are explained and documented in this report.

Overall, the survey confirmed reports that the voluntary carbon markets are a vibrant and growing sector of the carbon markets, one with direct links to consumers, and one whose future (assuming issues of quality can be addressed) looks bright indeed. In fact, based on data we are beginning to receive, it is possible to predict record volumes for 2007. For example, in June of 2007, the Chicago Climate Exchange reported that in the past six months, it had already traded 11.8 $MtCO_2e$, more than had been traded in the entire year of 2006. If this pattern continues, the CCX is well on its way to trading more than 20 $MtCO_2e$ this year.

As the number of companies and individuals who have decided to go "carbon neutral" seems to grow, the voluntary OTC market is also showing similar signs of growth. Some of the respondents to our survey reported that in 2007 they had seen a doubling, a tripling (or more) of volumes transacted. Already Dell, Delta, AEP, Google, Pacific Gas & Electric, Yahoo, Nike, Sky, Origin Energy, and various other major consumer-facing organizations have announced that they will be buying offsets from the voluntary markets. Since our plan is to continue to produce yearly analyses of the voluntary carbon market, we look forward to presenting the results of those studies in 2008.