

DEVELOPING DIMENSION:

State of the Voluntary
Carbon Markets 2012

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DEVELOPING DIMENSION:

State of the Voluntary Carbon Markets 2012

A Report by Ecosystem Marketplace & Bloomberg New Energy Finance

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May 31, 2012

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Acknowledgments:

This report is a compilation of the insights of a wide range of individuals across several continents. It would not be possible without the more than 300 individuals who shared valuable information about their organizations. This report is publicly available due to support from our premium sponsor Santiago Climate Exchange; sponsors Baker & McKenzie, ClimateCare, Carbon Clear, Entergy, and Forest Carbon Group AG; and supporters Camco, The CarbonNeutral Company, BP Target Neutral, Bosques Amazónicos (BAM), EOS Climate, American Carbon Registry, the Gold Standard Foundation, the Verified Carbon Standard, Foundation myclimate, Terra Global Capital, Bio Carbon Group Pte. and the Carbon Advice Group. We also would like to thank South Pole Carbon and Climate Neutral Group for their contributions.

The creation of this report has also required insights, time, and support from dozens of people. They include Duncan Abel, David Antonioli, Evan Ard, Bill Barry, Ricardo Bayon, Ollie Belton, Kathy Benini, Carlos Berner, Derik Broekhoff, Aldo Cerda, Trish Chartrand, Christian Dannecker, Ben Dappen, Christian del Valle, Keith Donington, Claire Dufour, Johannes Ebeling, Shameela Ebrahim, Gabe Eickhoff, Saskia Feast, Jay Gillette, Jamal Gore, Mary Grady, Sophy Greenhalgh, Katherine Graham, Pierre Guigon, Edward Hanrahan, Franziska Heidenreich, Lenny Hochschild, Harmke Immink, Todd Jones, Yagmur Karabulut, Daniel Kandy, Gediz Kaya, Naomi Korolew, Alexandre Kossoy, Grattan MacGiffin, Celine Lim, Ingrid Maier, Stephen McComb, Brian McFarland, Brookly McLaughlin, Eduard Merger, Pieter van Midwoud, Elaine Muir, Christian Nagel, Tanya Petersen, Nevena Pigarova, Nadine Planzer, Gerald Prolman, Charles Purshouse, Adrian Rimmer, Steve Ruddell, Michael Sahm, Maria Scola, Pat Snowdon, Robert O'Sullivan, Kazuyoshi Sasaki, Jerry Seager, Freddy Sharpe, Wayne Sharpe, Neelesh Sachdeva, Joanna Silver, Jonathan Shopley, Denis Sleiker, Tim Stumhofer, Gabriel Thoumi, Jorge Torres, Kevin Townsend, Steve Tullos, Gareth Turner, Lloyd Vas, Virgilio Viana, Devon Walton, David Wang, Wen Wang, Andrea Welsh, Martijn Wilder, Gareth Wishart, Erik Wurster, and Zubair Zakir.

A special thank you also to Michael Jenkins for his guidance and the staff at Forest Trends Ecosystem Marketplace and Bloomberg New Energy Finance.

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Executive Summary



State of the Voluntary Carbon Markets 2012: Developing Dimension is the sixth annual report created to shed light on trading volumes, credit prices, project types, locations, and the motivations of buyers voluntarily purchasing carbon offsets. Findings are based on data voluntarily reported by 312 offset suppliers, seven exchanges, and all major registries.

In 2011, the voluntary carbon market again demonstrated its resiliency, as buyers in Europe upped their offset purchases even in the face of financial troubles – albeit at a lower price – and buyers in the US and emerging markets stepped in to make up the shortfall. Combined, they transacted the second-highest volume and value tracked in this report series – and the highest value ever attributed to the “over-the-counter” market – while broadening the dimensions of the voluntary market for offsets to capture new countries, project types and buyers.

Both economic factors and price competition led many European buyers to the relatively inexpensive market for offsets from Asian clean energy projects. Europeans that could afford to expand their search were also the largest supporter of projects in Latin America and Africa. Buyers in the US purchased more credits than companies in any other country, supporting domestic projects to sustain climate action in the absence of a federal cap-and-trade scheme. Buyers in developing countries purchased locally as they cut their teeth on the 2011 offset market – to “green” their end of a supply chain as exporters or to prepare for domestic GHG regulations.

New tools from third-party standards also gave life to the market’s development dimension. Standards’ focus on bringing scale to projects in developing countries led to record transactions of credits from Africa-based projects that aid public health, biodiversity protection and local employment – while projects that reduce emissions from deforestation and forest degradation (REDD) contributed most to overall market value. Registries kept an eye on these emerging markets, while managing record volumes of trades, new credits and credit retirement. In these and other ways, the market for voluntary carbon offsets deepened the dimensions of its contributions to corporate sustainability, climate and the local context.

Voluntary Market Value Increases to \$576 Million, Volume Down 28%

Last year, suppliers reported transacting the second-largest market-wide volumes (95 MtCO₂e) and value (\$576 million) tracked in this report series – and the highest value ever attributed to “over-the-counter” (OTC) transactions (\$574 million). The OTC market reached this new height by transacting 93 MtCO₂e in 2011.

Following the market exit of the Chicago Climate Exchange (CCX) at the end of 2010, the voluntary OTC market was home to the vast majority – 97% – of offset transactions and value creation in 2011. The exit of the CCX left exchange-traded volumes to a handful of private platforms which hosted another 2 MtCO₂e in offset transactions – the same volume as in 2010. Overall volumes dropped by 28% from 2010 record highs. If one excludes a single low priced, high volume outlier from the 2010 market,¹ transaction volume increased 28% percent over 2010 levels.

Prices in the voluntary markets remained resilient. The average price for VERs increased slightly in 2011, from \$6/tCO₂e in 2010 to \$6.2/tCO₂e in 2011. While the volume of credits traded in the \$1-2/tCO₂e range doubled, so too did the volume of credits in the \$5-10/tCO₂e range. Above-average prices were attributed to newly issued credits from highly charismatic projects; emerging domestic programs; and credits eligible for future compliance market use. Last year’s average price is the aggregation of hundreds of reported price points that vary greatly by project standard, location, and technology – ranging from less than \$.1/tCO₂e to over \$100/tCO₂e in 2011.

¹ In 2010, we recorded a single trade of 59 MtCO₂e, priced at less than \$0.02/tCO₂e. In both last year’s and this report, this outlier is excluded from more detailed market analysis throughout this report.

Table 1: Transaction Volumes and Values, Global Carbon Market, 2010 and 2011				
	Volume (MtCO ₂ e)		Value (US\$ million)	
Markets	2010	2011	2010	2011
Voluntary OTC-traded	128	93	422	572
CCX (exchange-traded and OTC-cleared)	2	-	.2	-
Other Exchanges	2	2	11	4
Total Voluntary Markets	133	95	433	576
Total Regulated Markets	8,702	10,094	158,777	175,451
Total Global Markets	8,835	10,189	159,210	176,027

Source: Ecosystem Marketplace and the World Bank's State and Trends of the Carbon Markets 2012. Note: Totals may not add up due to rounding.

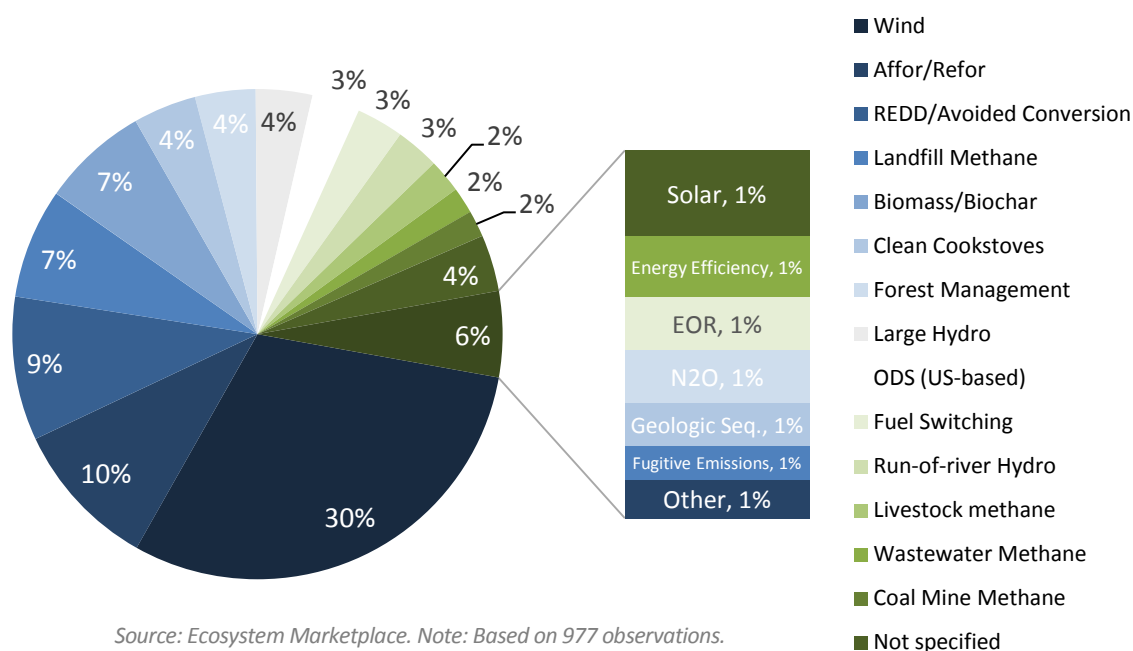
Renewables Wind up Market Share, Clean Development Heats up

Renewable energy projects generated 35 MtCO₂e or 45% of all transacted reductions in 2011 – roughly the same space occupied by forest carbon credits last year. Of this volume, wind projects blew away other technologies to transact 23.5 MtCO₂e. Demand for lower-price credits – as well as intensifying price competition among European suppliers – bumped up purchases of older vintages of Asian renewable energy credits, which were abundantly available.

Afforestation/reforestation projects that were in the works for years found their way to market in 2011, to transact the market's second-highest volumes (7.6 MtCO₂e). While credits from REDD projects dropped 59% from 2010, REDD's still-significant transactions (7.3 MtCO₂e) and above-average price yielded the highest value of any project type. The drop in transaction volume can be attributed to both political and technical challenges, as well as interest in lower-priced credits.

Figure 1: Market Share by Project Type, OTC 2011

% of Market Share



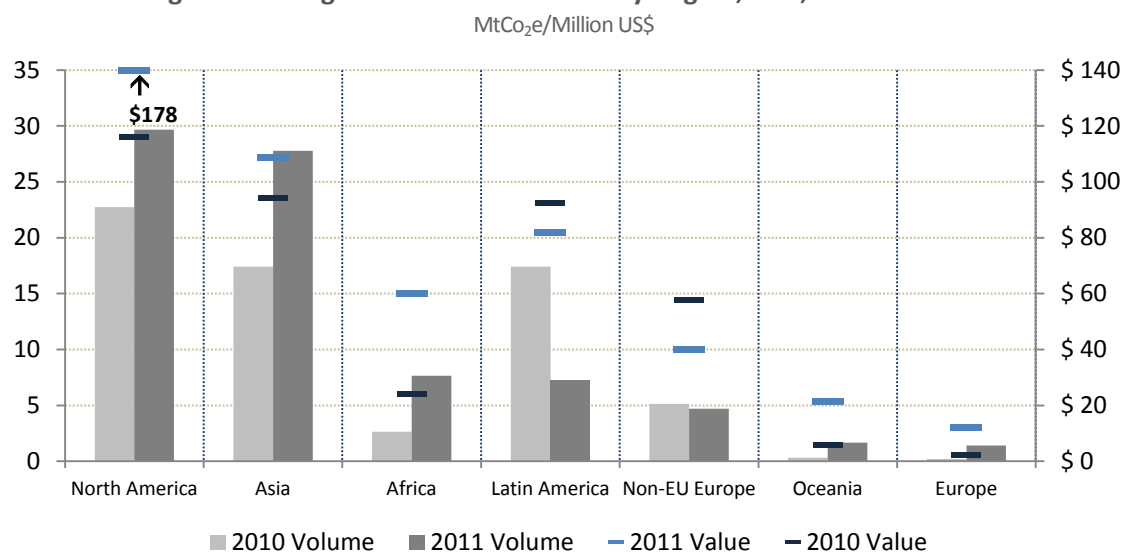
Landfill methane capture also remained popular but saw fewer transactions than in 2010. Biomass projects (including water purification) and clean cookstoves were spotlighted last year, with the latter transacting large volumes as a relatively new project type in this survey.

North America Leads, Africa Rising in Project Origination

Last year, the market extended voluntary carbon finance to 16 new country locations – overall, reporting project activities in 61 countries.

North America narrowly maintained its top spot among project locations to generate 37% of transacted OTC volume and \$178 million in value. It is likely that the North American project pipeline will continue to grow, with almost half (48%) of post-2011 contracted credits from North American projects. As a result of buyers' focus on Asian renewables, credits from the region captured over one third of all transacted volumes. However, the vast majority of transacted credits were from existing supplies transacted on a spot basis.

Figure 2: Change in Volume and Value by Region, OTC, 2010 vs. 2011



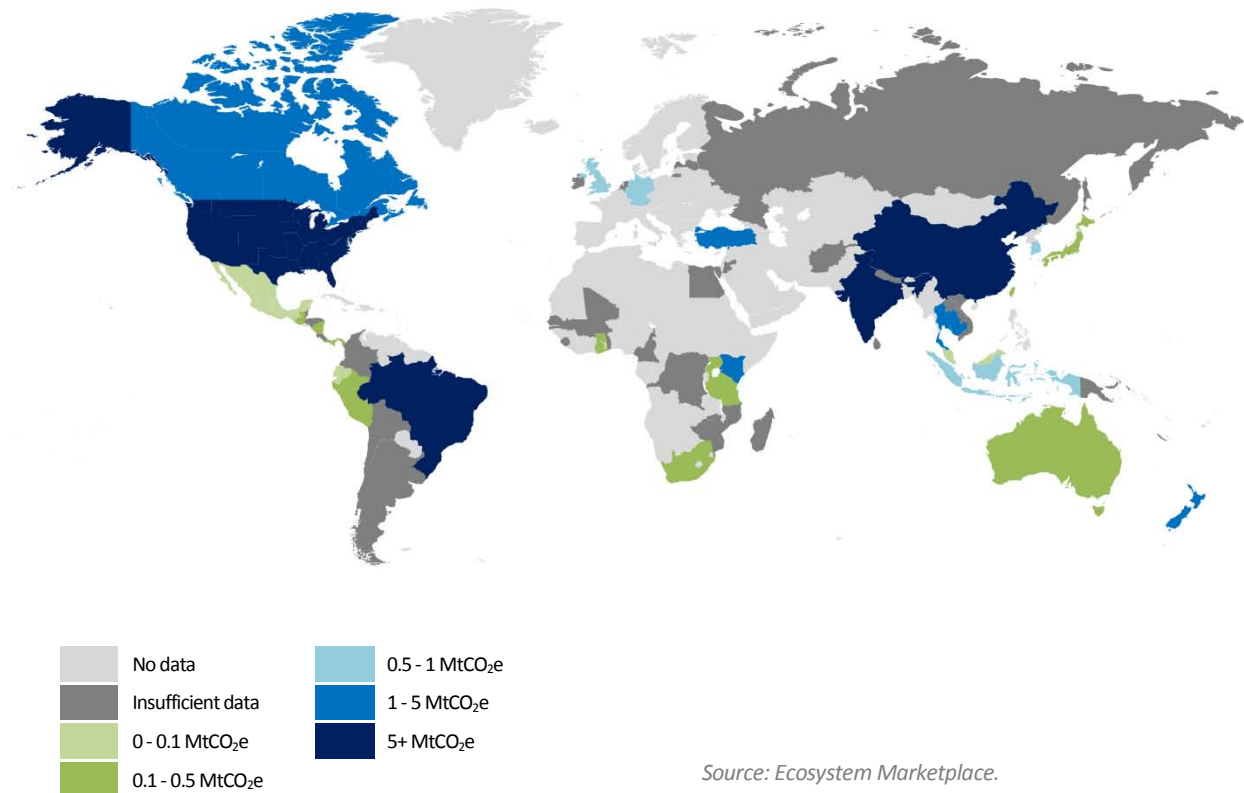
Source: Ecosystem Marketplace. Note: Based on 1843 survey responses.

For the first time in this report series, Africa boasted elevated status as the third-largest supply location for transacted credits – attracting \$60 million to projects in the region. This reflects the growing volume of credits emerging from the pipeline to meet voluntary buyers' consistent demand for Africa-based projects, but also the broader carbon markets' intensifying focus on sustainable development objectives.

In line with lower transaction volumes from forest carbon, transactions of Latin America-based offsets fell by more than half (-58%). Buyers still had an interest in supporting new project development – albeit at a discounted price for future vintages.

Oceania and Europe also saw an increase in transacted volumes from their shores. Despite Australia's passage of a carbon tax – transitioning to a trading mechanism – suppliers reported an insignificant volume of credits sold for pre-compliance. In Europe, most transaction volumes were reported from pre-Kyoto Protocol vintage credits, but also some credits for woodland creation in the United Kingdom – that are not technically offsets but are denominated and sold in tCO₂e.

Figure 3: Map of Transaction Volume by Project Location, OTC 2011



VCS Prevails in Market Share While Domestic Program Standards Fetch Highest Average Prices

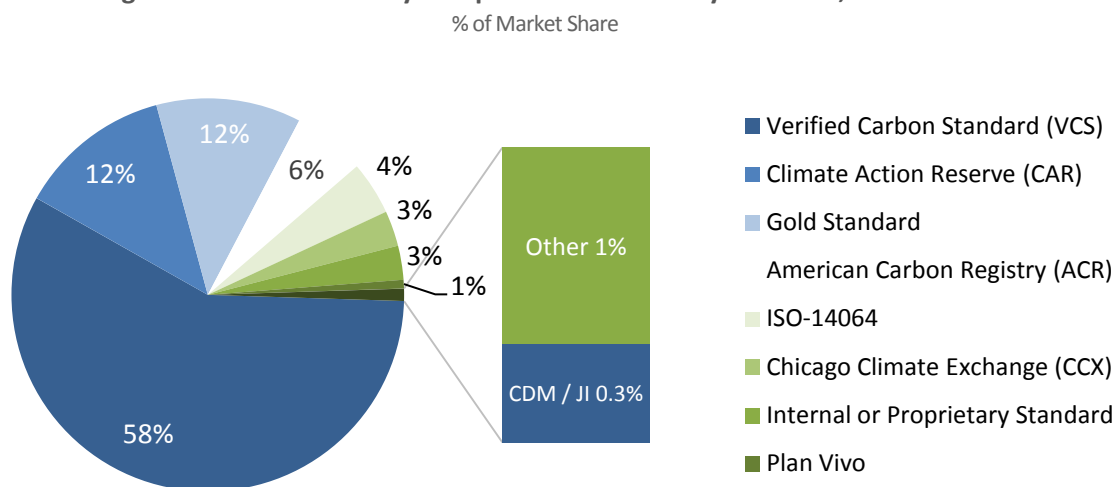
Market infrastructure continued to assert its importance, as the uptake of third-party standards to guide project development reached new heights. Suppliers that reported using a standard said that almost all (98%) credits they transacted adhered to a third-party standard, as opposed to utilizing an internal standard. Standards bodies emerged or responded to put new project types, regions and players on the carbon market map in a myriad of ways, whether in the forests, on water, or in the realm of “suppressed demand.”

Continuing a 5-year streak at the top, the Verified Carbon Standard saw 41 MtCO₂e of credits transacted utilizing its standard. Behind VCS, the Climate Action Reserve guided another 9 MtCO₂e of credits transacted in 2011, and Gold Standard with 8.5 MtCO₂e.

The rise of domestic standards was a significant trend last year. A number of standards that apply exclusively to domestic projects remained active, while numerous local and national governments initiated voluntary offset projects. Country-specific standards backed 6 MtCO₂e or 7% of all credits transacted in the VCM in 2011.

Credit prices were highly stratified across the range of available third-party standards. Volume-weighted average prices ranged from less than \$0.1/tCO₂e for CCX credits to over \$120/tCO₂e for J-VER credits.

Figure 4: Market Share by Independent Third-Party Standard, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 946 observations.

Credits with a high average price ($> \$8/\text{tCO}_2\text{e}$) were transacted by purely voluntary buyers who sought to support projects with social, environmental, and – most of all – local benefits. As in previous years, Gold Standard and CarbonFix credits obtained a high average price. Credits generated by domestic program standards like J-VER and the Pacific Carbon Trust achieved the highest average prices of any type of standard ($\$17.3/\text{tCO}_2\text{e}$ average across all domestic standards). Their comparably high prices owe to the high cost of project inputs in the case of developed country programs, as well as heightened demand for supporting local initiatives. The value associated with these programs is primarily accessed by – and accessible to – suppliers operating within the program boundary. In contrast, most international, independent carbon accounting standards fell within the average price range (between $\$4$ – $\$6/\text{tCO}_2\text{e}$) and impacted the largest number of regions and types of projects.

Record Issuance and Retirement on Registries

Demand for issued credits put a spotlight on registries, which themselves reported unprecedentedly high issuances and retirements in 2011. Indeed, over half (60%) of all credit retirements occurred last year. Suppliers say this is not surprising given the relative newness of registry systems and the time it has taken them to incorporate them into their regular work.

While suppliers reported that 92% of transacted credits were in their seller accounts on Markit, APX, and CDC VCS registries, we tracked reduced activity from other active registries. The exception was the Japanese government's J-VER registry and Blue Registry, which saw small volumes of their issued credits transacted in 2011, but still more than the year before. About 2 MtCO_2e was transacted and recorded in organizations' internal registries – roughly the same volume as in 2010.

Purely Voluntary Buyers Gain Traction, Pre-Compliance Steady

In 2011, purely voluntary buyers fueled demand. Suppliers reported selling 53% of credits to voluntary buyers for retirement. Together with intermediaries that source credits for these types of buyers, the purely voluntary market segment drove 81% of all transactions, valued at \$368 million. At the pre-compliance end of the spectrum, two thirds of credits were transacted to end users who purchased the credits in hopes of receiving compliance market recognition. Overall, pre-compliance demand held steady, as suppliers and buyers awaited guidelines about how

voluntary early-action credits would be converted into compliance units and how energy buyers would be required to source offsets.

NGO, government, and individual buyers split a remaining 4%. Purchases for individual offsetting remained small (1.2 MtCO₂e) but were still more than double the volume reported in 2010. The remaining category of “other” buyers includes credits transacted by sporting associations, universities, and other miscellaneous buyers. It also includes offsets sold to individuals as investments rather than for offsetting emissions, the subject of debate and legal action in recent months.

Within both the pre-compliance and purely voluntary sectors, 92% of all credits were transacted by corporate buyers. The largest proportion of these buyers (54%) voluntarily purchased offsets for CSR or public relations and branding purposes. Other corporate buyer motivations included resale (22%), anticipation of direct regulation (12%), and “greening” a supply chain at 3% of market share.

Last year, companies in the energy sector were the largest voluntary buyers of carbon offsets. Insofar as California’s guidance for how utilities would be required to source their offsets was not yet available in 2011, utilities purchased offsets for purely voluntary purposes – many of them in Europe, where existing liabilities under the EU ETS did not dampen their demand for voluntary offsetting. Product wholesale and retail companies transacted the second-largest volume, while manufacturers transacted 19%. Large deals also surfaced in the finance, insurance, and transportation sectors.

Table 2: Volume and Value Transacted by Buyer Region and Top Country Locations, OTC 2011

Location	Volume (MtCO ₂ e)	Value (\$ million)	Market Share
Europe	33	204	47%
North America	29	\$159	41%
Oceania	3	\$22	4%
Asia	3	\$47	4%
Latin America	2	\$23	2%
Africa	.9	\$10	1%

For the first time in this report series, we examined buyers’ market share not only by region, but also the country where they or their businesses are located. In 2011, suppliers reported transacting credits to buyers in 38 countries around the globe – from both developed and developing economies.

European buyers maintained their lead as the largest source of offset demand, transacting 33 MtCO₂e worth \$204 million – a little over 1/3 of overall OTC market value in 2011. With regards to both country-level and purely voluntary demand, the US came out on top – purchasing 19 MtCO₂e for purely voluntary purposes, and

with 12.4 MtCO₂e going directly to end users. We tracked another 10 MtCO₂e of offsets transacted for California pre-compliance purposes, at an average price of \$8/tCO₂e – for a total value of \$85 million in 2011. To the north, Canada’s voluntary buyers transacted 58% less volume in 2011 (1 MtCO₂e). Oceania saw growth through increased offset transactions in both Australia and New Zealand. We tracked a small 5 MtCO₂e or 7% market share from credits transacted to buyers based in developing countries in Asia, Latin America, and Africa. This represents a 32% decrease in volumes transacted to developing country buyers in 2011 and is mostly attributed to fewer transactions by buyers in Latin America – where a few large transactions in 2010 were not repeated last year.

Suppliers Await Steady Long-Term Growth in Global Markets

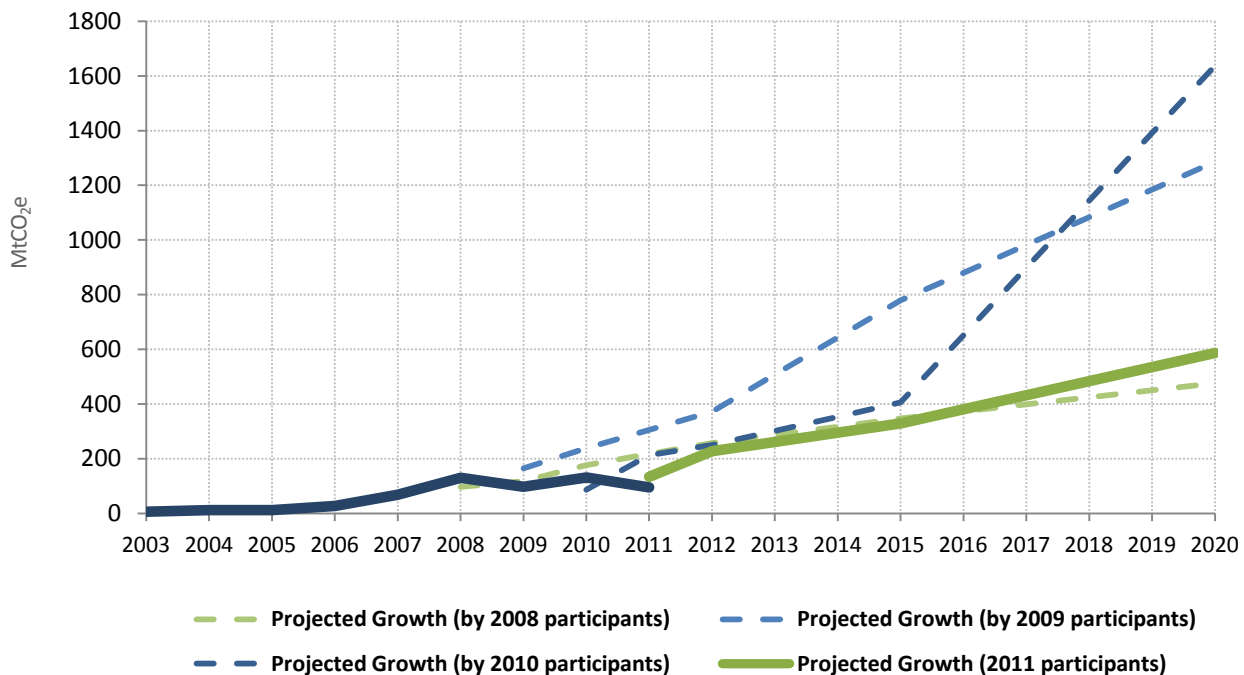
Turning back to the global market, suppliers forecasted a 70% growth rate for the 2012 market, expecting that they and their peers will transact 227 MtCO₂e this year. To achieve this predicted sales volume in 2012, suppliers would need to transact 132 MtCO₂e more than they did last year.

This year’s projected rate of annual growth through year 2020 was roughly in line with that given by suppliers in the 2008 market – a time before the rapid escalation of trading volumes on the CCX spurred bullish expectations about

future market growth. Even based on this year's comparably conservative estimates of market growth, the cumulative volume of transactions suppliers expect to see through the end of 2016 (1,500 MtCO₂e) is four times the volume they reported in their project pipelines for the same period.

Suppliers say their future expectations were balanced by the voluntary markets' still-intensifying price competition; the start of a California compliance program, the existence of budding regional programs and continued corporate interest in offsetting emissions and greening their supply chains.

Figure 5: Supplier-Projected Growth in the Voluntary Carbon Markets



Source: Ecosystem Marketplace. Note: Based on 85 organizations.

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Acronyms

ACR	American Carbon Registry	MRV	Measurement, reporting and verification
AFOLU	Agriculture, forestry & other land use	OTC	Over the Counter
CAR	Climate Action Reserve	PoA	Programme of Activities
CBEEEX	China Beijing Environment Exchange	REC	Renewable Energy Certificate
CCA	California Carbon Allowance	RGGI	Regional Greenhouse Gas Initiative
CCO	California Carbon Offset	ROR	Run-of-River
CCFE	Chicago Climate Futures Exchange	SCX	Santiago Climate Exchange
CCX	Chicago Climate Exchange	SEEE	Shanghai Environment and Energy Exchange
CDM	Clean Development Mechanism	TCX	Tianjin Climate Exchange
CRT	Climate Reserve Tonne	tCO ₂ e	Tonne of carbon dioxide equivalent
CSR	Corporate Social Responsibility	UN	United Nations
CTX	Carbon Trade Exchange	VCM	Voluntary Carbon Market
EU ETS	European Emissions Trading Scheme	VCS	Verified Carbon Standard
GHG	Greenhouse gas	VCU	Verified Carbon Units
ICE	IntercontinentalExchange	VER	Verified (or Voluntary) Emission Reduction
J-VER	Japan Verified Emissions Reduction	WCI	Western Climate Initiative
K-VER	Korea Verified Emissions Reduction		
LDC	Least developed Country		

1. Introduction



When Forest Trends' Ecosystem Marketplace, along with Bloomberg New Energy Finance, launched the first annual *State of the Voluntary Carbon Markets* report in 2006, our focus was on the voluntary carbon market's role as a critical incubator of innovation, not only in the carbon markets, in all branches of conservation finance. This year, we pick up the theme of innovation in spades and have entitled our sixth annual report "Developing Dimension" to highlight the new initiatives, project types, and sources of demand.

Key among those new initiatives are more than a dozen new voluntary programs being developed and overseen by government agencies in the wake of stalled global climate negotiations. Meanwhile, market infrastructure continues to evolve in ways that lend clarity and stability to the market, with more people using registries to track offsets and dozens of new project types being approved by existing standards.

Most deals, however, still occur 'over the counter', leaving the market opaque and difficult to track. Ecosystem Marketplace aims to facilitate market mechanisms as an effective tool for conservation by increasing transparency and access to information. This annual report is a significant part of that endeavor. Its creation requires outreach to hundreds of organizations that willingly take the time to complete our surveys and even participate in detailed interviews. The outcome is this analysis, which we hope continues to provide critical perspective on supply, prices, demand, and sheer existence of programs in the voluntary carbon markets.

Despite tremendous efforts to contact and collect data from many suppliers as possible, we remain acutely aware of the limitations of a survey based analysis. We caution readers to understand the methodology behind the findings and to consider reported numbers as conservative.

We hope this report will continue to inspire suppliers to share data and thank those that contributed data for fostering a more transparent and effective marketplace.

Ecosystem Marketplace will continue to track this marketplace through 2012. If you have questions about content or supporting this work, the production of this type of analysis, please contact us at: vcarbonnews@ecosystemmarketplace.com.

Michael Jenkins
President and CEO
Forest Trends

Katherine E. Hamilton
Director
Ecosystem Marketplace

2. Capturing the Data – Methodology



In this report, “voluntary carbon markets” refers to all purchases of carbon credits not driven by an existing regulatory compliance obligation. This includes transactions of credits created specifically for the voluntary markets (such as Verified Emission Reductions – VERs), as well as regulatory market offsets or allowances that buyers sought to voluntarily offset their emissions. It also includes transactions of voluntary credits in anticipation of future compliance obligations (“pre-compliance”).

2.1 What We Track

In order to chart the size of the global marketplace in terms of carbon offsetting and future project investment, our analysis examines the volume of carbon credits transacted. We consider “transactions” to occur at the point that credits are contracted or suppliers otherwise agree to deliver credits immediately or in the future. We do not track the individual “lives” of credits as they pass through the value chain. For example, if a project developer sold a credit to a retailer and then the retailer sold the same credit to a final buyer, we count each transaction separately in order to derive the **volume and value of transactions** in the overall market. This methodology is consistent with most other marketplace analysis, such as the World Bank’s *State and Trends of the Carbon Markets* annual reports.

We also collect data on the volume of credits retired. This volume, along with origination numbers, represents the market’s ultimate **environmental impact**. Retired credits can no longer be resold and so represent the volume of emissions that were confirmed as offset in each year.

2.2 Data Collection: Where It All Begins

Information presented is based on data collected from offset project developers, wholesalers, brokers, and retailers, as well as carbon credit accounting registries and exchanges participating in the voluntary carbon markets.

The bulk of data was collected via an online survey designed for organizations supplying credits into the “over-the-counter” (OTC) voluntary carbon market. The survey was available between February 28 and April 15, 2011. It was sent to approximately 1200 organizations identified as possible suppliers and distributed through the Ecosystem Marketplace news briefs and Climate-L and Forest-L list serves. In the same survey, developers of forest carbon projects were additionally surveyed for the *State of the Forest Carbon Markets 2012* report, which requires a more extensive project-based (vs. transaction-based) survey.

We complemented the survey with data and insights provided by major brokerage firms such as Evolution Markets, Armajaro Trading, Karbone and TFS Energy LLC, as well as registries and exchanges, including: the American Carbon Registry (ACR), Canadian Standards Association GHG CleanProjects™ Registry, APX, Inc., Markit Environmental Registry, CDC Climat, Japan Verified Emission Reduction (J-VER) Registry, BlueRegistry, Carbon Trade Exchange (CTX), Chicago Climate Exchange (CCX), Chicago Climate Futures Exchange (CCFE), China Beijing Environmental Exchange (CBEE), Climex, Tianjin Climate Exchange (TCX), and Santiago Climate Exchange (SCX).

2.3 Survey Response Rates: Suppliers Step Up

Our goal was to identify and collect information from as many active suppliers as possible. It is critical to note that because of the fragmented nature of the market and confidentiality issues surrounding transaction data, it is impossible to capture all deals.

We received survey information from 312 organizations that supplied carbon offsets to voluntary buyers in or before 2011. We identified or communicated with another 195 suppliers from our list that had transacted VERs in the past but did not transact credits in 2011, were no longer selling voluntary carbon credits, or were no longer in business.

This year's survey collected both organization-wide and transaction-specific information. Because many of the calculations in this report are weighted by respondents' transaction volumes, responses from suppliers who did not disclose 2011 transaction volumes were not included in many final figures, as it could not be ascertained how significant their answers were to the OTC market. For organizations that disclosed volume data but not price data, we used the market-wide average price as a proxy in our monetary valuation of the overall market. Since respondents had the option of skipping questions, the response rate varied by question. Response rate per question is noted throughout the report.

2.4 Confidentiality

This report presents only aggregated data; all supplier-specific information is treated as confidential. Any supplier-specific transaction data mentioned in the text was already public information or approved by the supplier. Additionally, we do not identify prices or volumes from any country, project type, standard, or vintage for which we had fewer than three data points to protect the confidentiality of the supplier's transaction information.

2.5 Accounting Methodology

Because the aim of this report is to account for all voluntary payments for emissions reductions, we do not apply any quality criteria screens for credits included in calculations. However, we did follow up with dozens of respondents to confirm or clarify survey responses. Findings in this report are based on numbers obtained through our survey, and we do not extrapolate to estimate numbers.

Because we collected transaction data from brokers and exchanges as well as suppliers, to minimize the occurrence of "double-counting", we asked respondents to specify the volume of credits transacted through a broker or exchange. When we identified an overlap, the transaction was counted only once. Exchange-traded volumes are reported according to the exchange utilized (Box 1) and not as OTC transactions.

All financial figures presented are reported in US Dollars unless otherwise noted. The numbers presented throughout this survey are measured in metric tonnes of carbon dioxide equivalent (tCO₂e) or million metric tonnes of carbon dioxide equivalent (MtCO₂e).

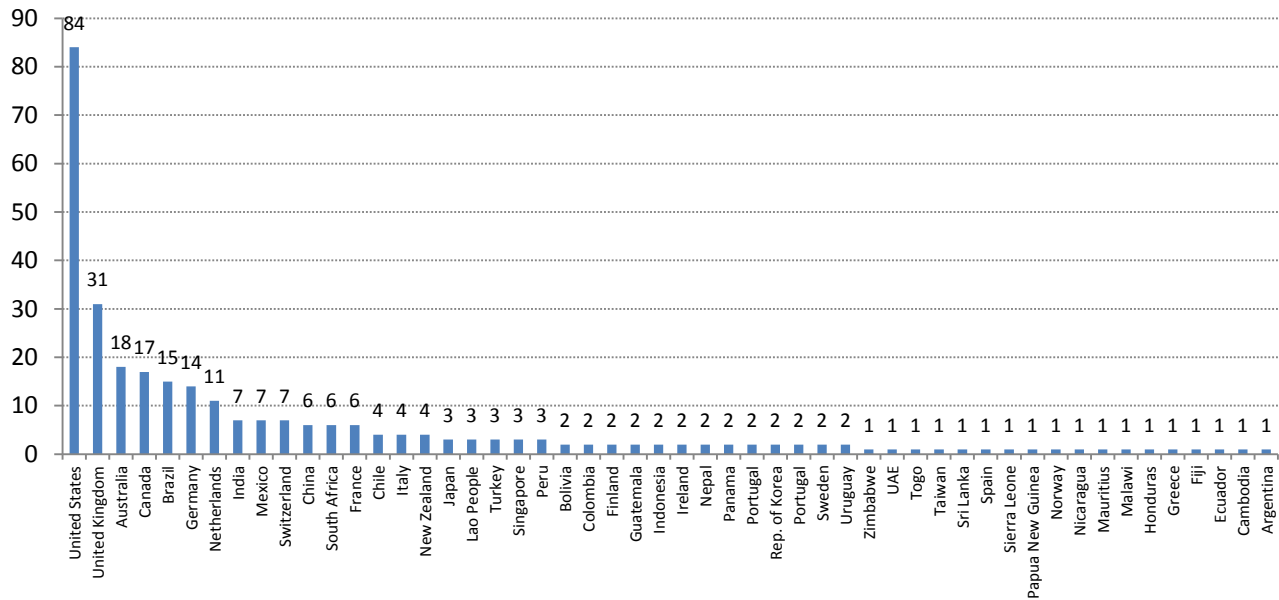
2.6 Response Distribution

As in previous years, the largest proportion of survey respondents was headquartered in the US (28%). After the US, suppliers based in the United Kingdom (UK) were again the second-largest proportion of respondents, followed by Australia and Canada. Taken as a whole, we received 84 responses from European suppliers – in line with the large volume of credits purchased by buyers in the region. Suppliers from emerging markets in developing countries saw a surprising jump in survey representation. This year's survey tracked 88 responses from suppliers headquartered in developing countries – a little more than were from Europe-based suppliers and representing around 30% of all responses. This is up from 58 developing country supplier responses to our 2010 survey, and, again, half of developing country respondents were based in Latin America. This and other regional themes are explored in more depth in Section 8: Regional Markets.

While respondents' headquarters increasingly match the locations of both project developers and resellers (wholesalers, brokers, retailers) in the marketplace, we believe there are dozens of project developers generating and selling to voluntary buyers across the globe that we were unable to survey. Many of these projects are represented

by reseller responses in the survey and hence Figure 6 does not fully represent the distribution of *project* locations. For this information, see Sections 5.3 and 8.

Figure 6: Number of Suppliers by Country Headquarters
of Companies



Source: Ecosystem Marketplace. Note: Based on 312 survey respondents.

3. Voluntary Carbon Markets 101



3.1 The Voluntary Carbon Markets: What They Are...

Transactions in the voluntary carbon markets (VCM) are not required by regulation. Instead, demand is driven by companies and individuals that take responsibility for offsetting their own emissions, as well as entities that purchase “pre-compliance” offsets before emissions reductions are required by regulation. Voluntary markets co-exist with compliance markets driven by regulated caps on greenhouse gas emissions. The volume of carbon credits transacted *voluntarily* in 2011 represents less than a 0.1% share of the global carbon markets.

What the voluntary carbon markets lack in size, they make up for in flexibility – spinning off innovations in project finance, monitoring, and methodologies that also inform regulatory market mechanisms. For example, the voluntary carbon market has spawned its own standards, registries, and project types beyond the scope of existing compliance market mechanisms. In turn, in recent years governments worldwide have increasingly turned to voluntary carbon market mechanisms – particularly standards and registries – to inform the development of or serve as compliance instruments themselves.²

Carbon credits can be voluntarily purchased in one of two ways – through a private exchange or on the decentralized “over-the-counter” (OTC) market, where buyers and sellers engage directly through a broker or online retail “storefront.” This report primarily focuses on OTC transactions, the source of most voluntary offset transactions and market value, as few transactions currently occur on an exchange. From 2004 to 2010, a significant volume of voluntary credit transactions were conducted on the Chicago Climate Exchange (CCX). The CCX was a cap-and-trade system that organizations joined voluntarily to track and reduce their GHG emissions. The exchange was launched as a pilot program and completed its final trades in 2010.

Because the voluntary carbon markets are not part of any mandatory cap-and-trade system, almost all carbon credits purchased voluntarily are sourced specifically for the OTC market. Credits are generically referred to as Verified (or Voluntary) Emission Reductions (VERs) – or simply as carbon offsets.³ OTC buyers may also voluntarily purchase and (in most cases) retire allowances from compliance markets like the Kyoto Protocol’s Clean Development Mechanism (CDM) or the US Regional Greenhouse Gas Initiative (RGGI).

The OTC market is driven by both “purely voluntary” and “pre-compliance” buyers. Purely voluntary buyers purchase credits to offset their individual or organization’s emissions and are driven by a variety of considerations related to corporate social responsibility (CSR) and ethics or reputational risk. Hence, the demand curve for purely voluntary VERs has similarities with other “citizen consumer” ethical purchases such as for Fair Trade or organics.

Pre-compliance buyers purchase VERs for one of two purposes: to purchase credits that they might be able to use for future compliance at a comparatively low price or to sell them at a higher price to entities regulated under a future mandatory cap-and-trade scheme.

3.2 ...and What They Are Not

While companies have voluntarily transacted carbon credits to offset their emissions for over two decades, the vast majority of market activity has occurred within the last 5 years. Because the market is largely unregulated but also

² Peters-Stanley, Molly. “Bringing it Home: Taking Stock of Government Engagement with the Voluntary Carbon Markets.” *Ecosystem Marketplace*, February 2012. <http://www.ecosystemmarketplace.com/takingstock>

³ The term VER is also used specifically to refer to credits generated by aspiring CDM projects that have not yet been registered by the CDM Executive Board. Once registered, these projects will generate CERs.

driven by corporate climate actions, many self-regulating tools have quickly emerged that aim to assure buyers of the environmental impact of their purchases.

The voluntary carbon market remains illiquid – meaning that ready buyers are not always at hand; one or a few market players can dramatically influence pricing; and prices are highly stratified and often unpredictable, even within similar classes of offset. The details of payment and offset delivery vary tremendously from one project to the next, as do the projects’ design, risk, start date and other factors that contribute to their eventual price.

4. Volume and Value

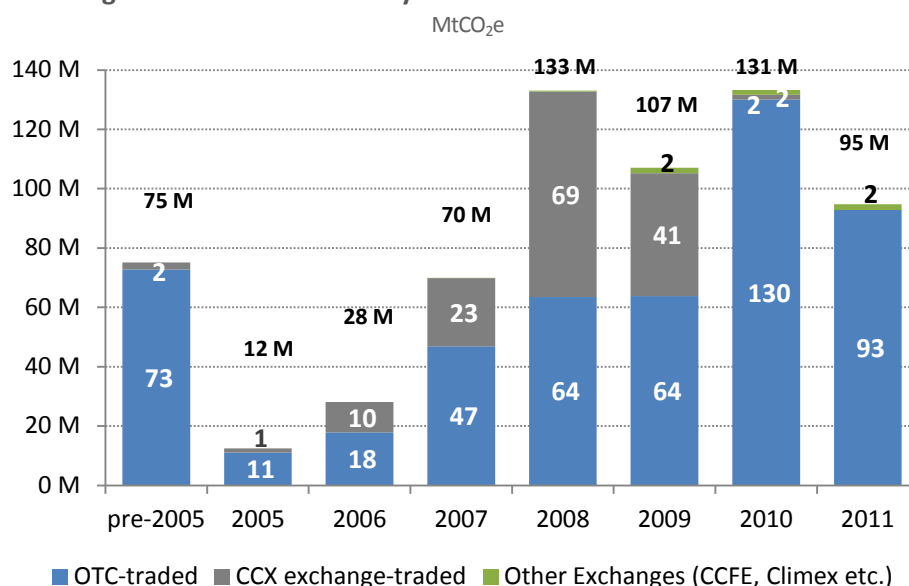


4.1 Tracking Transactions

In 2011, the value of the voluntary marketplace increased by 33% to \$576 million as the average offset price increased slightly from \$6/t in 2010 to \$6.2/t in 2011. Actors in the voluntary carbon markets contracted 95 MtCO₂ for immediate or future delivery – representing a 28% decrease in transaction volumes from 2010. However, if one excludes a single low-priced, high-volume outlier from the 2010 market,⁴ this represents a 28% percent increase over 2010 levels.

Following the market exit of the CCX at the end of 2010, the voluntary OTC market was home to the vast majority of offset transactions and value creation in 2011 – when suppliers reported the highest value ever attributed to the OTC market in this report series (\$572 million). The voluntary OTC market last year transacted 92 MtCO₂, or 97% of global voluntary market share. Transactions on the CCX ceased at the end of 2010, leaving exchange-traded volumes to a handful of private platforms, like the CCFE, Climex, and Carbon Trade Exchange (CTX), and regional platforms like the Santiago Climate Exchange (SCX) and China Beijing Environmental Exchange (CBEEEX). These platforms hosted another 2 MtCO₂e in offset transactions – the same volume as in 2010 and constituting 2% of global voluntary market share. Fewer trades reported on “other exchanges” led to smaller volumes in this sector, where several emerging platforms otherwise saw increased activity in 2011.

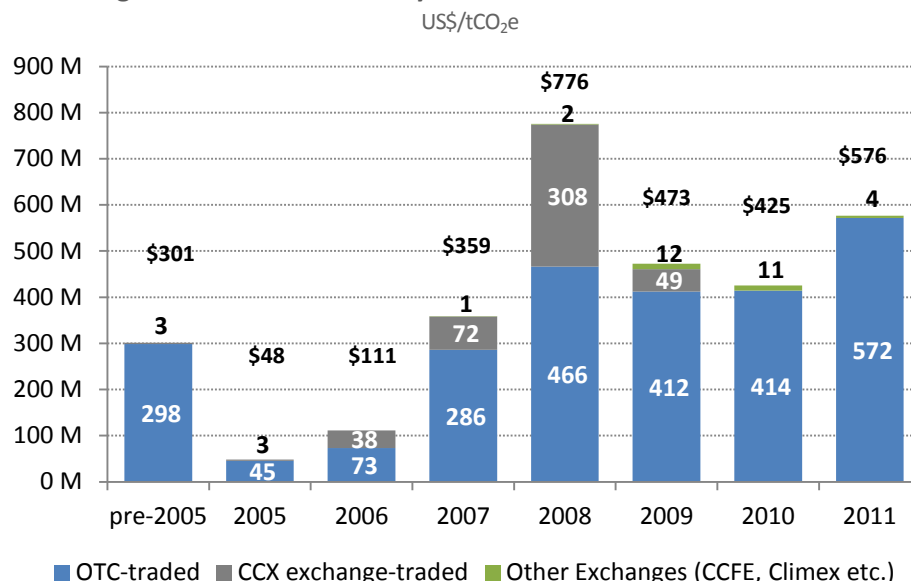
Figure 7: Historic Voluntary Carbon Market Transaction Volume



Source: Ecosystem Marketplace. Notes: Based on 1,040 observations. Annual totals may not equal sum of categories due to rounding.

⁴ In 2010, we recorded a single trade of 59 MtCO₂e, priced at less than \$0.02/tCO₂e. In both last year's and this report, this outlier is excluded from more detailed market analysis throughout this report.

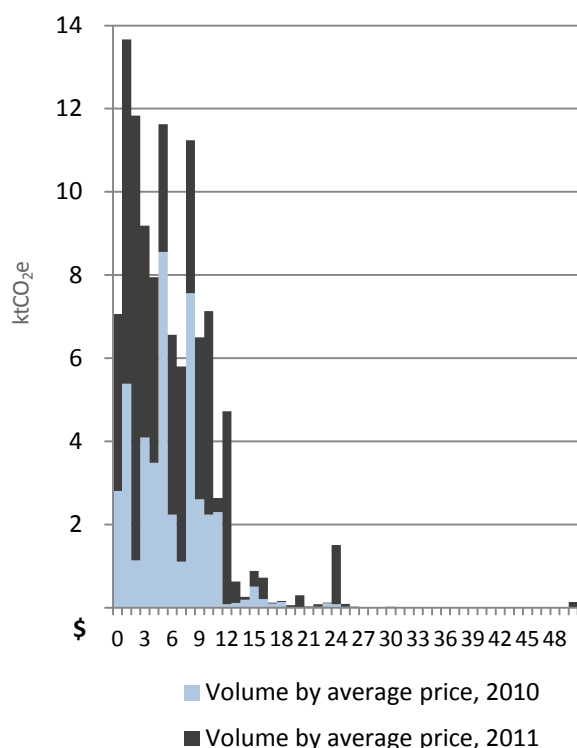
Figure 8: Historic Voluntary Carbon Market Transaction Value



Source: Ecosystem Marketplace. Note: Based on 862 observations.

In 2011, the volume-weighted average price of credits transacted in the voluntary OTC market rose slightly to \$6.2/tCO₂e, up from \$6/tCO₂e in 2010. As demonstrated throughout this report, last year's higher average price is the aggregation of hundreds of reported price points that vary greatly by project standard, location and technology – ranging from less than \$.1/tCO₂e to over \$100/tCO₂e in 2011.

Figure 9: Histogram, Transacted Volume by \$1 Price Point, 2010 vs. 2011



Source: Ecosystem Marketplace. Note: Based on 862 observations.

Using the volumes and prices stated above, we estimate the value of the voluntary carbon markets to be at least \$576 million in 2011 (Figure 8). This represents the second-highest value ever attributed to the voluntary carbon marketplace (the highest being \$776 million in 2008), and a 33% increase over 2010. Again, the majority of this value was derived from transactions conducted OTC, which captured 99% of the total market value. Exchange-based trades were valued at \$4 million in 2011 – much less than in 2010 and in part due to more granular reporting about exchange traded prices from a wider array of exchanges.

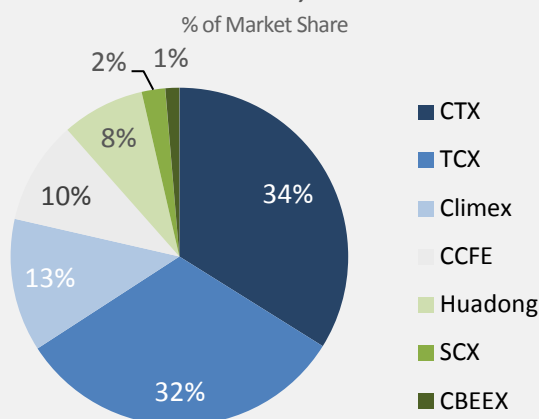
Some suppliers may be surprised by 2011's higher average price, given that one third of suppliers transacted credits at less than \$5/tCO₂e, and the volume of credits trading at <\$1-2/tCO₂e more than doubled. However, Figure 9 shows the volume of transacted credits reported at each dollar price point – and that the volume of credits priced between \$5-10/tCO₂e also doubled in 2011. While most of 2010's volume was concentrated in the <\$10/tCO₂e range, 2011 saw larger volumes in the direction of higher prices last year; 12% of all volumes were priced at >\$12, compared to 3% in 2010. Most high-priced transactions are not tied to any trend in technology or location, but nonetheless impacted the market average.

Box 1: VER Trading Platforms: Wax and Wane

Climate exchanges provide an electronic platform for voluntary carbon market players to trade offsets and allowances. In 2011, the volume of VERs transacted on voluntary exchange platforms remained small (2 MtCO₂e) compared to the OTC market, but grew slightly as a few platforms picked up steam.

While CCX phased out its voluntary cap-and-trade program in 2010, other platforms continue to serve as mechanisms for trading voluntary carbon offsets that some actors in places like Chile and China hope may one day service domestic regulated markets. Unlike the CCX, newer platforms are not traditional exchanges – they do not offer standardized contracts or transparent trade details. In the case of Climex, voluntary transaction volumes rely on a few large auctions every year.

Figure 10: Trading & Auction Platform Market Share, 2011¹



Source: Ecosystem Marketplace. Note: Based on 30 organizations and 7 platforms.

Independent platform CTX reported the highest VER transaction volume among VER exchanges (0.6 MtCO₂e), buoyed in part by the broader VER selection available through the exchange's new partnerships to list ACR and Gold Standard credits.

In China, the Tianjin Climate Exchange (TCX) topped the charts as voluntary buyers' most widely used domestic exchange. Volumes traded on CBEEEX thinned last year prior to its cap-and-trade pilot launch in March 2012. Last year nonetheless saw a landmark pilot transaction when CBEEEX and BlueNext announced the forward sale of 16,800 tCO₂e from the China-based Panda Standard to Frashion Properties. In collaboration with China Green Carbon Foundation, the Huadong Forestry Exchange (HFX) also opened its doors in November for a pilot auction of 148,000 tCO₂e to 10 China-based corporate buyers.

In North America, the year saw pre-compliance driven Climate Reserve Tonnes (CRTs) futures and options transition in August to ICE's OTC platform. Through August, though, CCFE saw increased transaction volumes over 2010, albeit at a lower price. While keeping its hand in the voluntary space, ICE continued to shift toward its strength in compliance-oriented markets with the introduction of California Carbon Allowances (CCAs), also in August 2011.

Other domestic platforms remained under development in 2011 – with some finding it harder to launch than initially expected. Says Santiago Climate Exchange's Carlos Berner, fostering domestic demand in emerging markets is not as simple as providing commoditized carbon credits over a "supermarket" platform – i.e., a traditional exchange model. Instead, he says domestic exchanges should embrace their "local" nature. "[SCX hasn't] received any demand today for cheap credits coming from outside South America, even though the prices can be attractive," he says, noting that customers instead prefer carbon credits tied to local, tangible projects. He says it is critical, particularly in the absence of regulatory leverage, to engage companies early on in exchange design and rule-making as partners, not just as private investors.

4.2 Compliance Comparisons

The compliance carbon markets transacted 10,194 MtCO₂e worth \$175,451 million in 2011.⁵ Last year, the European Union's Emissions Trading Scheme (EU ETS) grappled with long-term oversupply of allowances, with allowance prices hitting below \$5/tCO₂e and a corresponding slide in demand for CDM projects. Even so, global carbon markets' value grew on the back of increased liquidity, hedging and arbitrage in the compliance offsets and allowance markets.

In contrast, prices in the voluntary markets – about half the size of the 2011 primary CDM market – remained resilient. Late last year, Climex managing director Jeroen Van de Kletersteeg noted that VERs auctioned on the

⁵ State and Trends of the Carbon Markets 2012. Alexandre Kossoy and Pierre Guidon. Washington, DC: World Bank.

platform “do not seem too influenced by the price development we have seen in the [compliance] markets lately.” Indeed, the average price for VERs increased slightly in 2011, despite concerns that an excess of compliance instruments may be “dumped” into the VCM. However, factors other than record-low compliance prices may eventually steer these credits to the voluntary buyers.

For example, after 2012 the EU ETS will only allow registration of new projects from least developed countries (LDCs). Suppliers say that some CDM-bound projects from non-LDCs will not make the 2012 registration cut-off and may look to the VCM for demand. Implicit in the collapse of CER prices is also the longer-term concern that reduced incentives for new CDM projects could diminish *new* supplies of VERs that have traditionally been generated as projects waited in the CDM registration line.

Table 3: Transaction Volumes and Values, Global Carbon Market, 2010 and 2011

	Volume (MtCO ₂ e)		Value (US\$ million)	
Markets	2010	2011	2010	2011
Voluntary OTC-traded	128	93	422	572
CCX (exchange-traded)	2	-	.2	-
Other Exchanges	2	2	11	4
Total Voluntary Markets	133	95	433	576
EU ETS [EUA]	6,789	7,853	133,598	147,848
Primary CDM ⁶	265	291	3,206	3,320
Secondary CDM ⁷	1,275	1,822	20,637	23,250
Kyoto [AAU]	62	47	626	318
RGGI	210	120	458	249
RMU	-	4	-	12
NZU	7	27	101	351
CCA	-	4	-	63
Other Allowances	94	26	151	40
Total Regulated Markets	8,702	10,094	158,777	175,451
Total Global Markets	8,835	10,189	159,210	176,027

Source: Ecosystem Marketplace and the World Bank's State and Trends of the Carbon Markets 2012. Note: Totals may not add up due to rounding.

4.3 VER Retirement: The Final Frontier

In contrast to compliance offsets that are surrendered to meet mandatory GHG targets, carbon credits in the voluntary market do not fulfill their life's goal of offsetting GHG emissions until they are voluntarily “retired” by a supplier or final buyer. In order for an entity to claim that it has neutralized emissions by purchasing carbon credits, the credits must be retired and cannot re-enter the marketplace – or the atmosphere. Retirement is critical in the

⁶ Includes pCERs pre-2013, pCERs post-2012, and pERUs.

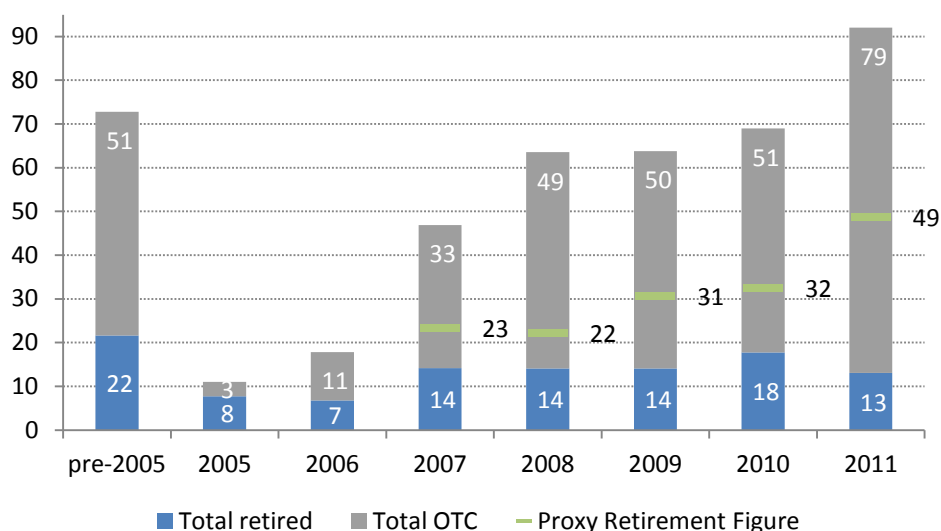
⁷ Includes sCERs, sERUs, and other spot and secondary offsets.

voluntary markets because it is the final step in illustrating the degree to which the market has fulfilled its ultimate environmental purpose.

Of 312 total responding suppliers, 145 reported retiring credits in 2011. Of the total volume they transacted in 2011,⁸ suppliers or their voluntary buyers retired 13 MtCO₂e. This equates to one third of all transacted credits that suppliers reported as issued by a registry – meaning that they’re eligible for retirement. Retirement can only occur after GHG reductions are verified and issued by a registry as carbon credits. Section 6.6 in this report for the first time explores the relationship between our reported retirement figures and the volume of credits issued by and retired on the market’s major registries.

Because some suppliers cannot confirm the fate of their credits once ownership changes hands, we also look at another question in the survey regarding buyer motivations to determine what volume of transacted could possibly be retired, in 2011 and in the future. Seen in Figure 11, this is the “proxy” retirement figure and represents the proportion of credits sold to buyers who indicated their intention to retire the credits.

Figure 11: Historic Retirement, Actual and Proxy, OTC
MtCO₂e



Source: Ecosystem Marketplace. Note: Based on 361 observations (proxy) and 145 organizations (retirement numbers).

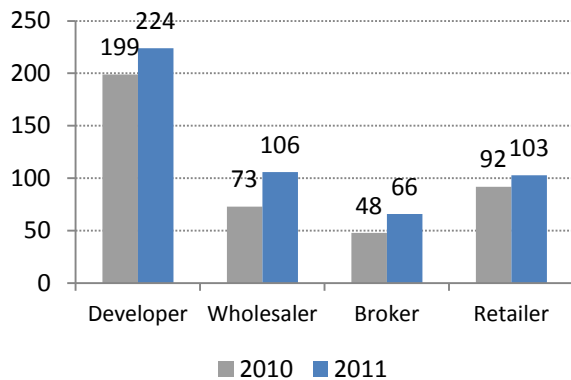
4.4 Offering Offsets: Suppliers in the Market

No two voluntary carbon offset suppliers are alike; but depending on their position in the supply chain, sellers can be categorized into four major types:

1. **Project Developers:** Develop emissions reduction projects to sell to intermediaries or final customers
2. **Wholesalers:** Sell offsets in bulk and often have ownership of a portfolio of credits
3. **Retailers:** Own and sell small volumes of credits to individuals or organizations, usually online
4. **Brokers:** Do not own credits, but facilitate transactions between sellers and buyers

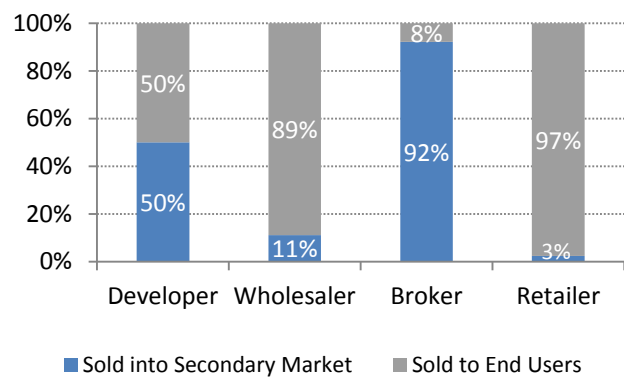
⁸ In previous years, this report’s survey has captured data about the volume of credits that suppliers *did retire* in the reporting year, but in some cases also included retirement as credits they *intended* to retire once credits are issued. To more accurately track same-year retirement, this year we asked suppliers to only specify actual credit retirement as a proportion of the credits they contracted in 2011.

Figure 12: Supplier Type by Response Count, 2010 vs. 2011
Response Count



Source: Ecosystem Marketplace. Note: Based on 306 organizations.

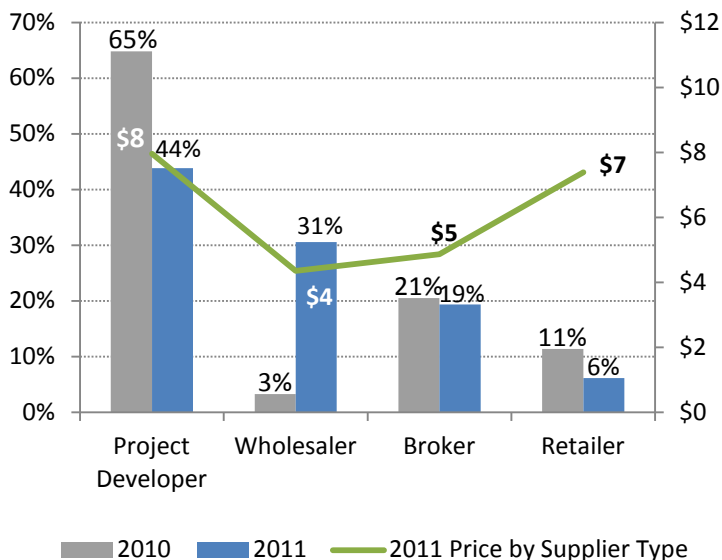
Figure 13: Supplier Type by Buyers' Market Type, 2011
% of Market Share



Source: Ecosystem Marketplace. Note: Based on 557 observations.

In order to understand suppliers' activities throughout the supply chain, we asked them to identify their role (Figure 12). Because many organizations wear several hats, respondents had the option to select an unlimited number of business activities that they perform. Therefore, the total number of organizations across the supply chain as shown in Figure 12 exceeds our survey response rate. It also demonstrates that the proportion of suppliers performing various roles remained largely unchanged from 2010.

Figure 14: Supplier Type by Market Share and Average Price, 2010 vs. 2011
% of Market Share/US\$



Source: Ecosystem Marketplace. Note: Based on 557 observations.

Project developers remained the most populated segment of the marketplace. Last year, primary market transactions (credits contracted from the original project developer to resellers or end users) again played an important role in the marketplace but lost market share compared to 2010. In 2011, suppliers were more likely to self-identify as wholesalers and classify their transaction volumes as wholesale (Figure 13).

As can be seen in Figure 13, the wholesale category is where many suppliers transacted credits to larger for-profit voluntary buyers. While some suppliers consider any credits sold to final buyers to be retail transactions, this report has traditionally defined large-scale transactions to be wholesale. The retail category includes smaller volumes sold to individuals, though there are some exceptions. In particular, the 3% of retailers that sold their credits back *into* the

secondary market were typically selling on to companies in sectors that give their customers the option to buy offsets.

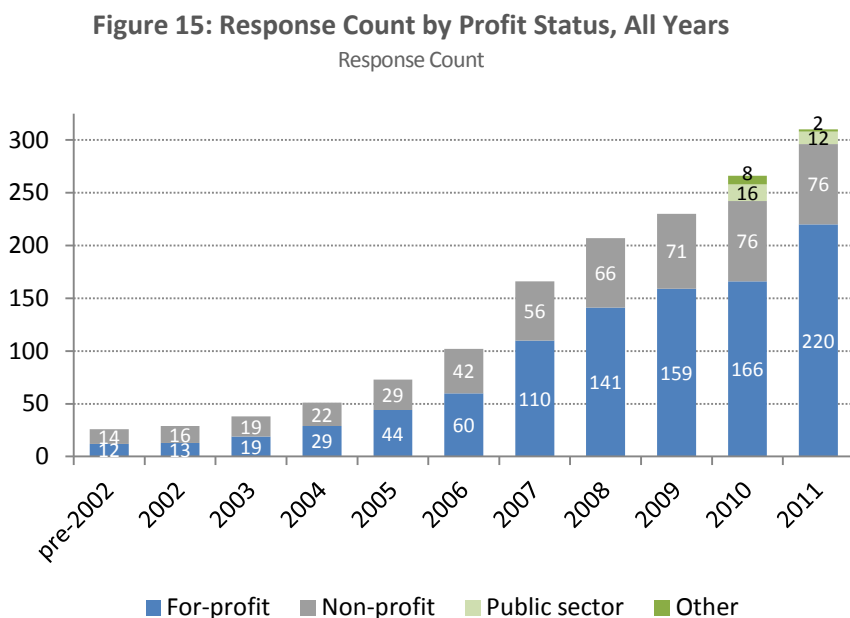
Brokers saw lesser market share but still facilitated more transactions in 2011 than in 2010. Their average price – which was closer to the market average than in previous years – reflects more stable pricing for pre-compliance offsets that made up roughly 40% of all credits brokered in 2011.

Figure 14 also illustrates that the highest credit prices were paid by buyers who dealt directly with project developers – whose prices have traditionally been at the opposite end of the food chain. Project developers saw higher prices in 2011 for a variety of reasons including a larger volume of issued forest carbon credits and the reportedly weighty project costs and demand associated with popular project types like REDD and clean cookstoves.

4.5 Suppliers by Profit Type

Carbon offset suppliers are challenged to juggle both environmental and financial outcomes in this marketplace, which uniquely unites the realms of philanthropy and commodity. In this arena, organizations from all sectors – private, public, and non-profit – supply carbon offsets.

Of the 310 respondents that reported a profit status in 2011, private sector suppliers vastly outnumbered non-profit suppliers – as they have since 2005. Suppliers that identified as public sector organizations were fewer in number in 2011, but again represented many levels of government worldwide.



Source: Ecosystem Marketplace. Note: Based on 310 organizations from previous four years.

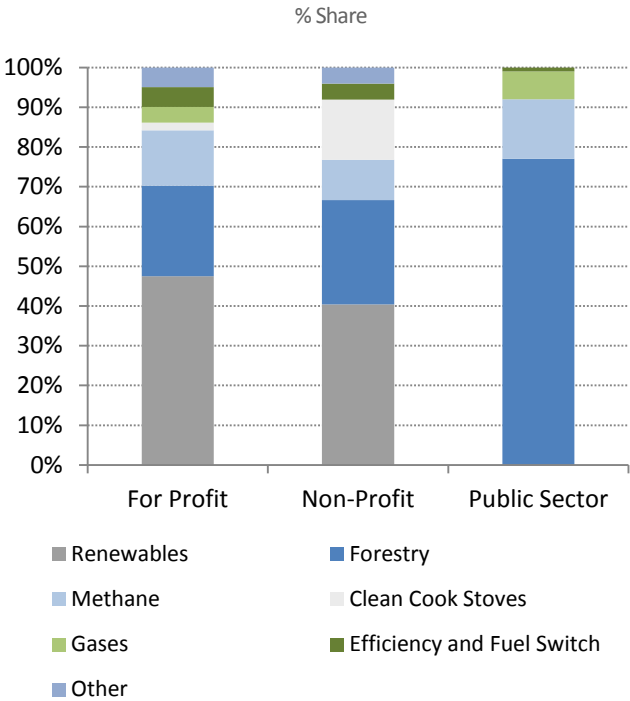
Non-profit market share grew again in 2011 (to 20% of all transacted credits), when the private sector looked to non-profit suppliers to source a growing volume of their credits or pursued a more philanthropic model for meeting their GHG targets. Hence, non-profit suppliers' portfolios were more varied last year – shifting from a dominant focus on forestry (85% of non-profit credits sold in 2010) to transacting several project types and at a price more competitive with for-profits (Figure 16).

As documented in Ecosystem Marketplace's report *Bringing It Home: Taking Stock of Government Engagement with the Voluntary Carbon Market*,⁹ we tracked several governments around the world that were beginning to leverage the voluntary markets as a source of tools and innovations to reduce domestic GHGs. Those governments that

⁹ Peters-Stanley, Molly. "Bringing It Home: Taking Stock of Government Engagement with the Voluntary Carbon Markets." *Ecosystem Marketplace*, February 2012. <http://www.ecosystemmarketplace.com/takingstock>

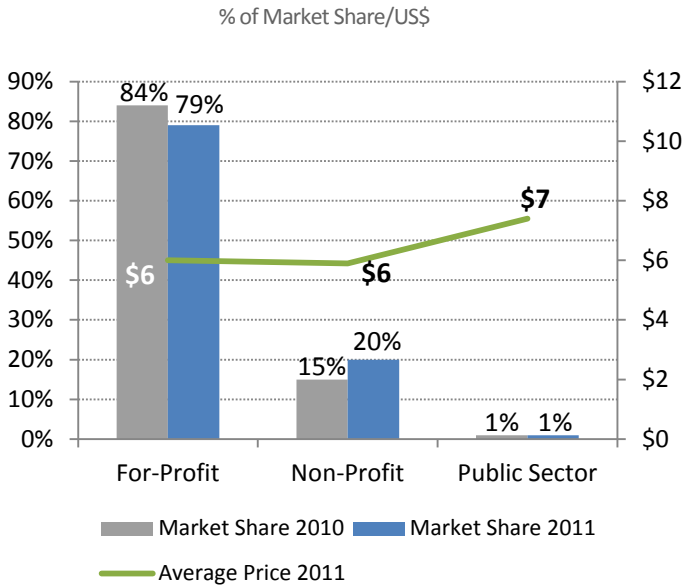
contributed data on behalf of their program participants are captured in the public sector category. Offsets transacted as a result of or through these programs tended to command higher prices as a result of their scarcity, uniqueness and domestic buyers’ preference to support local projects.

Figure 16: Project Types Transacted by Profit Type, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 300 organizations.

Figure 17: Profit Type by Market Share and Average Price, 2010 vs. 2011



Source: Ecosystem Marketplace. Note: Based on 555 observations.

5. Origin of an Offset



Projects that reduce or avoid carbon emissions are the source of offsets in the voluntary carbon markets. Each project is differentiated by its technology, location, and potential environmental and social contributions (“co-benefits”). Voluntary buyers emphasize these project details – the story behind the credits – to make their purchase decisions. An ever-expanding variety of credits reflects voluntary buyers’ diverse tastes and motivations. This section describes the origins of credits transacted OTC in 2011: their project type, location and credit vintage.

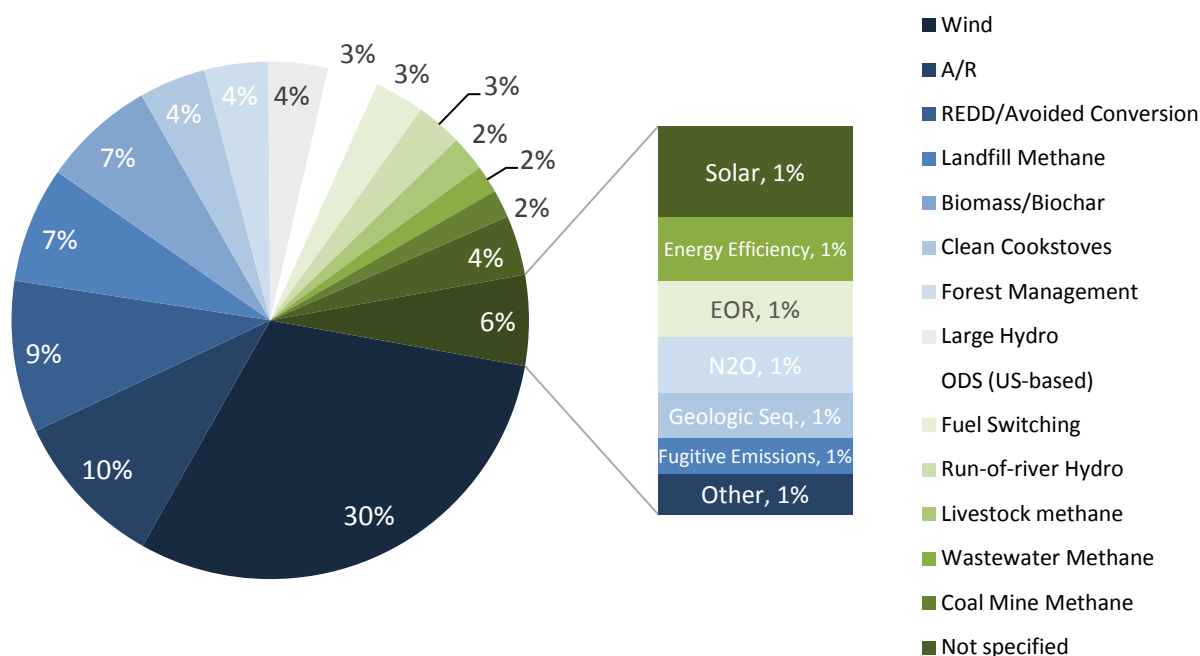
5.1 OTC Project Types: Reaping Reductions

In 2011, credits from wind projects transacted the largest volume of credits among any project type (23.5 MtCO₂e), followed by afforestation/reforestation or “A/R” (7.6 MtCO₂e) and REDD (7.3 MtCO₂e). Several macro-level trends underlie voluntary demand for these and other project approaches (Figure 18) – some of them familiar and still other trends that emerged in 2011 as new influences on project uptake.

Wind energy projects transact record volumes After playing second fiddle to other project types for three years, renewable energy projects got a second wind. Project types included in this category are wind, hydropower, solar, and biomass. As a category, renewable energy projects generated 35 MtCO₂e or 45% of all volumes that were tied to a project type in 2011 – roughly the same space occupied by forest carbon credits in the year before. Of this volume, wind projects blew away other technologies to transact 23.5 MtCO₂e. For the first time in several years, the market’s top project category did not scale the charts due to newly available methodologies (like REDD in 2010) or positive pre-regulatory signals (like landfill methane in 2009).

Figure 18: Market Share by Project Type, OTC 2011

% of Market Share



Source: Ecosystem Marketplace. Note: Based on 977 observations.

Credits generated from wind projects have long been a basic element of European buyers' offset portfolios. Last year, Europe's continued economic downturn meant that price played an unprecedented role in purchase decisions. Buyers' depressed price requirements were well paired with a market for Asia-based wind projects that suppliers describe as "massively long" – allowing sellers to match a decreased pricing appetite to an abundant supply of credits from the region. Indeed, over 60% of all transacted wind credits were from pre-2011 vintages.

Wind projects in Asia and Turkey were the source of 65% of all transacted wind credits. India and China are where several suppliers reported that the CER price collapse had a clear impact on VCM activity. They explain that many developers previously held their credits in expectation of a post-2012 price increase, but after the collapse were willing to sell VERs – and sooner – as carbon's notional value and their project budgets took a hit.

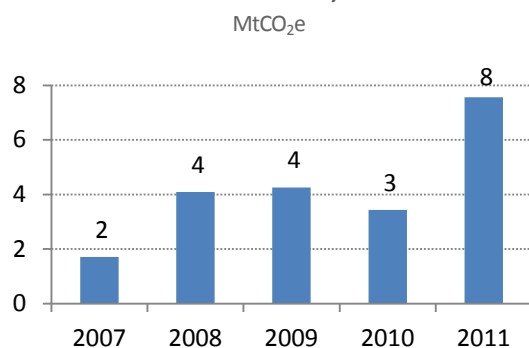
Renewed support for renewables offsets in US While Asian project developers fought to differentiate their projects in a severely low-margin marketplace last year, US-based renewable energy projects' transaction volumes grew (6.1 MtCO₂e in 2011) as domestic buyers supported renewable energy projects closer to home. In the US, renewable energy installations can generate Renewable Energy Certificates (RECs) that are measured in megawatt hours – or, if they qualify, carbon offsets denominated in tCO₂. While buyers can claim use of renewable energy, make Scope 2¹⁰ carbon claims, and/or support renewable energy installations by buying RECs, they cannot use them to make carbon offsetting claims.

Green-e Climate program manager Todd Jones says that while US buyers' demand for supporting domestic renewable offset projects has been ever-present, last year's fresh volumes are "perhaps due to an increase in clarity around how to evaluate U.S. renewable energy for offsets, and a resulting increase in the availability and suitability of project standards and certification program rules around U.S. renewable energy." Indeed, suppliers reported that most renewable energy projects were or aim to be credited by the VCS. As standards like VCS and Gold Standard enter the US renewables ring, Green-e has decided to phase out its Protocol for Renewable Energy, while still maintaining its Green-e Climate certification program for retail transactions of qualifying VCS, Gold Standard, CAR, and CDM credits.

REDD demand stalls while A/R projects reach new heights Forest carbon and other land-based projects contracted 38% percent less volume in 2011, but nonetheless remained a popular project category, supplying another quarter of all transacted credits.

Last year, purely voluntary demand for tree planting activities propelled A/R projects from their long-running plateau (Figure 19) to transact (7.6 MtCO₂e) – the second largest volumes within the broader VCM. Almost half of all A/R

Figure 19: Afforestation/Reforestation Transaction Volume, All Years



Source: Ecosystem Marketplace. Note: Based on 142 observations.

credits transacted in 2011 were issued tonnes. Because of the time lag between when a tree is planted and when it begins storing carbon (and thus generating credits), many of these issued A/R credits were years in the making. Tree planting is also a key activity of emerging domestic programs from China's Panda Standard to the UK Woodland Carbon Code. Both reported their first transactions in 2011.

For REDD projects, 2011 launched with optimism regarding progress made around REDD+ at the UNFCCC's 2010 16th Conference of Parties in Cancun – as well as project developer Wildlife Works' fast-moving Kenyan REDD project that brought the first-ever verified VCS REDD credits to market in February. As the year progressed, however, only one other REDD project achieved verification, as

project developers and third-party standards continued to navigate REDD projects' unique political and technical challenges to credit delivery.

¹⁰ Scope 2 emissions are those emissions incurred indirectly as a result of the use of purchased energy.

Overall, REDD projects contracted 7.3 MtCO₂e representing 59% percent less volume than in 2010. When searching for the root cause of decreased transactions of REDD credits, Christian del Valle, who manages the forest-facing Althelia Ecosphere's EUR200 million fund, summarized several suppliers' observations when he explains, "I think everyone underestimated the impact of the financial crisis, overestimated the ability of regulators to get it together, and underestimated the amount of extra work that those two failures would precipitate in order to get capital into the [REDD] space."

Regarding del Valle's first point, forest carbon project developers say that European buyers' recession-driven retreat from the forest carbon space indeed hit their bottom line in recent months. Despite Europeans' historic aversion to land-based activities, 2011 was the second year that they have played an integral part role funding REDD activities – last year picking up 67% of REDD market share.

In addition to European economic circumstances, recessed demand for REDD credits mirrored high-level trends in forest carbon finance, where progress on the UN-REDD front has been described as mixed and slow to resolve challenges regarding proper safeguards, reference levels, and REDD finance. Suppliers also pointed to delays in project audits – some saying that in the months they have waited for an auditor to review their otherwise near-term project, it has become increasingly difficult to manage buyers' expectations without being able to point to an expected credit delivery date.

Suppliers say that REDD work has continued unhindered by these macro-level and market challenges. "Activities in the field are moving along a very different trend than the market," suggests Jorge Torres, Forest Carbon Program Manager from Peru-based REDD developer Bosques Amazonicos. "I think that movements in the field on the technical aspects of REDD are what will ultimately move the market forward from its current state."

CSR buyers see sustained demand for landfill projects As a project category, methane capture remained a popular project type but saw fewer transactions overall as US pre-compliance demand for landfill methane continued to taper off. In its place, purely voluntary buyers picked up some of the slack.

While landfill methane credits transacted 5.6 MtCO₂e (4 MtCO₂e less than in 2010) 13% of credits transacted were from future vintages currently in their PDD phase or undergoing validation – signaling new investment in landfill project development. Both this project type and clean cookstoves – a new project category this year that captured 4% of overall market share – saw enough credits contracted for future delivery that we are able to explore and report pricing for their future vintages (Figure 22).

Clean cookstoves: from marginal volumes to prominent project type Accounting for 4% of global market share, this year's report for the first time tracks credits from clean cookstove projects as a unique category. In previous years, cookstoves were classified by survey respondents according to their underlying technology – as biomass or energy efficiency projects. As cookstoves attracted broad international attention in 2011, however, it is fitting to analyze these projects in their own right.

Clean cook stove technologies transacted 3.2 MtCO₂e in 2011, primarily from Africa-based projects utilizing Gold Standard guidance. While a comparison with 2010 data is not possible, this volume is 40% greater than transacted volumes tracked for energy efficiency and biomass combined in 2010 and so represents significant progress made in Africa's traditionally project-challenged environment.

Clean cookstoves received substantial media attention and NGO and institutional support throughout 2011, within and beyond the carbon markets. Organizations like the Global Alliance for Clean Cookstoves – backed by 33 donor and member nations and dozens of multilateral, institutional, and private sector partners – brought to the world's attention the large-scale adverse health impacts and environmental pressures caused by burning biomass fuel for indoor cooking, and the hardships placed on women and children who spend the most time collecting biomass and inhaling indoor smoke.

Box 2: New Tools Target Suppressed Demand

Sustainable development was also a theme in other project categories – notably among biomass projects. Here, a variety of technologies were reported, from traditional biomass power projects to Vestergaard Frandsen’s LifeStraw technology that provides an alternative to existing or *potential future* burning of non-renewable biomass to purify water.

The LifeStraw project attracted sustained attention throughout 2011, upon launching its Carbon for Water program under The Gold Standard. The project has so far distributed more than 800,000 water filters to 91% of households in Kenya’s Western Province. Carbon credits are earned for users’ shift from burning biomass to boil water, to utilizing the LifeStraw for water purification. The project also earns credits from distributing LifeStraws to households that do not even boil their water due to a lack of education about water quality, resources, or physical capability – but would do so if they could.

In these cases, project proponents make use of a principle called suppressed demand that addresses demand for an energy source (in this case, biomass) that is currently suppressed by underdevelopment. They claim that as education about the health benefits of clean water – as well as incomes – inevitably rise, households that do not currently purify their water may do so in the future. Rather than wait for them to adopt the dirty technology in order to be eligible to earn carbon credits for making the LifeStraw switch, the suppressed demand approach enables them to earn carbon credits for “leapfrogging” the dirty approach altogether.

This requires accounting for both the region’s baseline emissions scenario and assumptions about how increased demand for clean water over time might lead more households in the region to boil their water. Projects that dampen future demand for burning biomass can receive credits for a proportion of the emissions that are avoided under this trajectory. Under the LifeStraw project, baseline emissions are also considered to be “evolving” rather than “fixed”, and are monitored alongside the project activity.

The concept of suppressed demand is not new to the carbon markets, being alluded to within the UNFCCC as early as 2002. Yet, only recently deemed an acceptable approach under the CDM, The Gold Standard *Methodology for Improved Cook-Stoves and Kitchen Regimes*, developed in 2008, and *Methodology for Small Scale Biodigesters*, developed in 2007, already included provisions for a baseline to account for suppressed demand.

Because a larger number of households or activities are eligible for crediting under the approach, the market has already seen an increase in the volume of credits issued to developing country-based projects as a result. Vestergaard Frandsen alone received 1.3 MtCO₂e in early 2012 for the LifeStraw project – of an expected annual issuance of 2 MtCO₂e. While the suppressed demand baseline approach is already enabling larger issuance volumes for projects in at-need communities, the same led to discussions throughout the year that suppressed demand may still require further refinement to avoid distortions within the VCM.

Like other project types in the VCM, LifeStraw (and African projects more generally) benefitted in 2011 from their growing credit issuance, but also their relative newness and novelty. It remains to be seen if the projects and the region can sustain demand at a price that continues to cover project costs, as suppliers report that 2011 prices have already come off from previous years’ highs. They also expect to see additional cook stove projects enter the VCM from non-LDC African countries that do not make the 2012 CDM registration cutoff and instead try to take their projects to voluntary buyers.

Of the Alliance’s 249 implementing partners, 20 responded to this 2012 report survey. Yet, the voluntary carbon market’s engagement with cookstove projects started long before the Alliance’s launch in late 2010 – and as with REDD, was a source of experimentation and technical innovation ahead of the technologies’ move into the CDM.

Cookstove projects’ leap from marginal development activities to major project type was precipitated by years of relationship building with local partners to establish distribution channels sufficient to enable scale; carbon data collection and “kitchen testing” for project performance and uptake; capacity building and training; and development of methodologies and tools like Programmes of Activities (PoAs) that enable developers to scale up single, localized project activities into larger projects without incurring some additional costs.

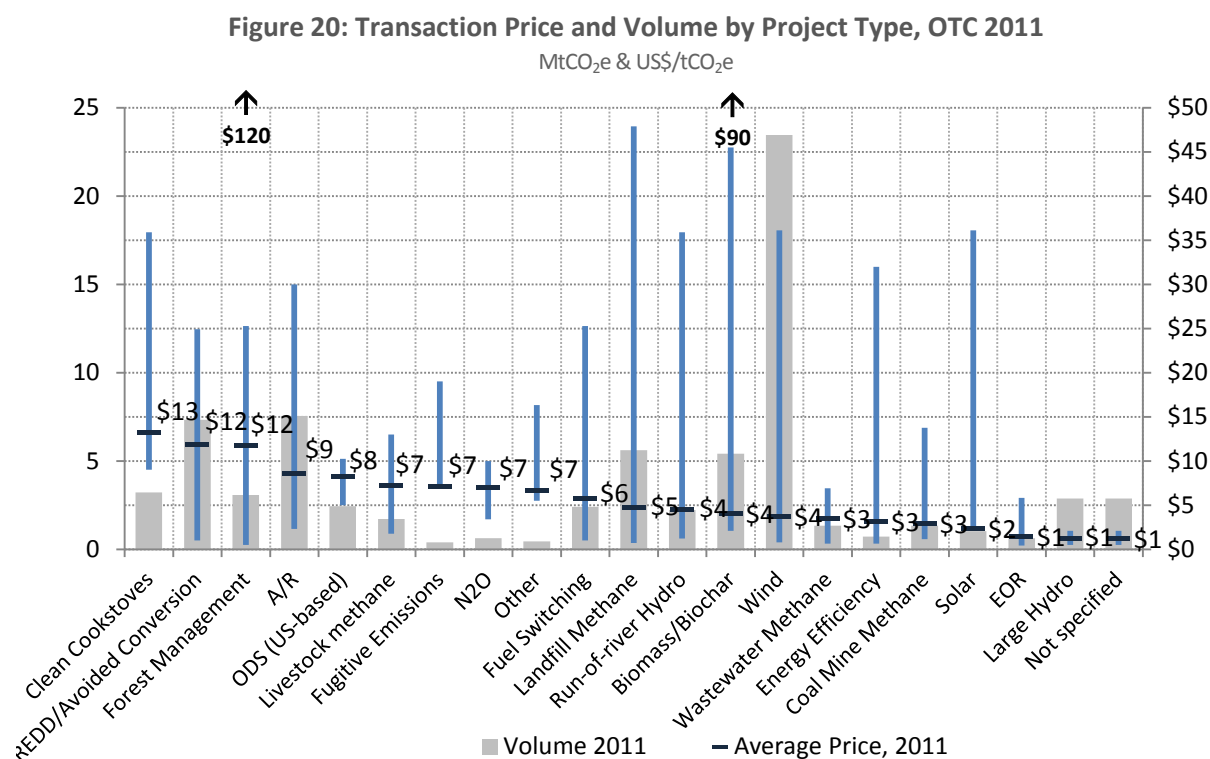
The result? Projects that have been up and running for years are for the first time seeing large-scale credit issuance. Suppliers report that in the last year, supply of issued cook stove tonnes has begun to catch up with demand. They suspect that demand will continue to keep pace, too, as corporate offsetters increasingly consider cook stove credits to be a “catch all” CSR strategy – that unites humanitarian, environmental, and in some cases investment opportunities under one offset purchase.

Nevertheless, cook stove projects continue to face their own set of barriers to implementation, which include setting the right user price for the right stove – thus enabling continual and frequent use of the technology – and establishing sustained distribution channels through partners and programs that can deliver the stoves and provide proper monitoring services and training for end users.

“[The] distribution channel is the biggest missing link for post-2012 market actors,” says Erik Wurster of UpEnergy Group, one of a few cook stove pioneers that also include E+Carbon (which Wurster co-founded) and Impact Carbon. “Proper distribution channels are the critical ingredient for geographically disbursed projects such as cookstoves.”

5.2 Tech Dollars: Prices by Project Type

In 2011, the volume-weighted average price for OTC credits rose slightly to \$6.2/tCO₂e from \$6/tCO₂e in 2010. This price helps to benchmark the value of global OTC trades, but is also set against a wide range of prices that are highly stratified according to the availability of similar credits; the project’s upfront costs and investment risk; the buyer’s understanding of the marketplace; project characteristics, credibility and co-benefits; and a slew of other factors.



Source: Ecosystem Marketplace. Note: Based on 1798 observations.

Table 4: Change in Value by Project Type, OTC 2010 & 2011

Type	2010 (\$ million)	2011 (\$ million)	% Change
REDD	87	87	No Change
Wind	60	86	+43%
A/R	29	65	+125%
Cookstoves	N/A	42	N/A
IFM	19	36	+91%
Landfill	57	27	-54%
Biomass/Char	13	22	+67%
Fuel Switch	5	14	+191%
Livestock	10	12	+19%
ROR Hydro	18	10	-45%

Unlike previous years where the high end of the price spectrum was dominated by low-volume transactions of boutique project types, this year some of the voluntary market's most popular credit types also transacted credits at above average prices – most notably clean cookstoves (\$13.2/tCO₂e) and REDD (\$12/tCO₂e).

Wind Sees Volume, REDD Sees Value While REDD's transaction volumes fell by 59% from 2010, the largest proportion of overall market value is attributed to REDD contracts, owing to their jump in average price (Table 4). As a result of the price increase, the REDD market retained its value from 2010 to 2011. More generally, one third of market value was derived from the sale of forest carbon credits.

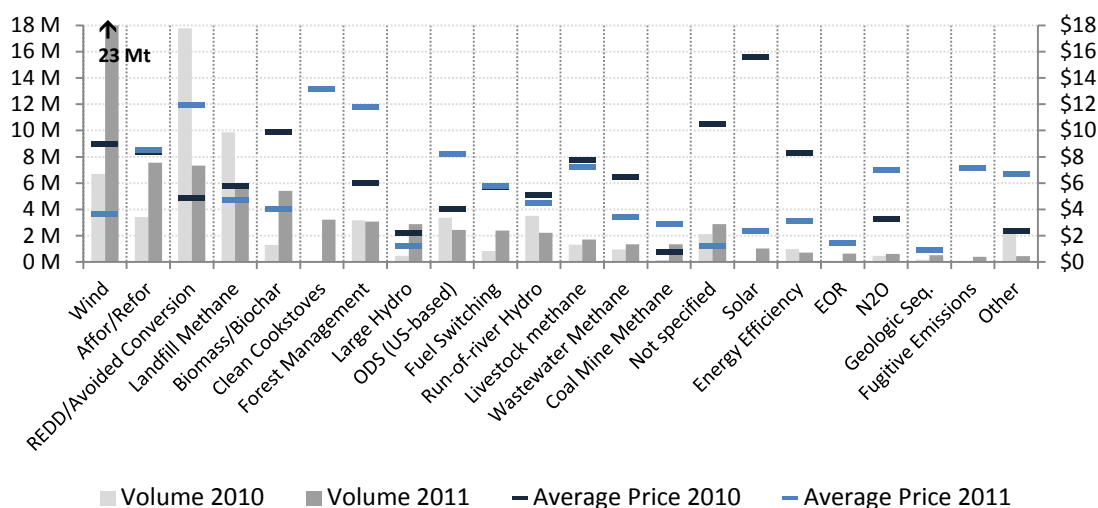
Forest carbon project developers say that this proportion would have been greater if it weren't for the market's intensifying price competition – pointing to what they refer to as “tech offsets” like wind and hydropower that sit at the opposite end of the price spectrum and saw large transactions in 2011.

In a market where new buyers were and remain scarce, one supplier's gain was quite often another's loss. Increasing price pressure from both economic factors and competitive drivers saw higher demand for older vintages of renewable energy credits, which were abundantly available. Also, many project developers with older vintages from Asia-based renewable energy projects disposed of their credits at low prices to avoid what they believed might eventually result in a write-off. Others decided not to transact credits in 2011, instead waiting to see if price trends would reverse course at a micro and macro level.

Several suppliers explained that for some energy projects, carbon finance is supplemented by power purchase agreements, subsidies for project implementation, and potentially other revenue streams. Therefore, they could be more flexible than suppliers of credits that are chiefly dependent on carbon revenues.

Figure 21: Change in Transacted Price and Volume by Project Type, OTC 2010 & 2011

MtCO₂e & US\$/tCO₂e



Source: Ecosystem Marketplace. Note: Based on 1798 observations.

Forest carbon projects held their own in terms of pricing in 2011, which in all cases saw stable to increased prices over 2010. In the case of REDD credits, and possibly as a result of a lower risk appetite, buyers typically preferred to contract credits from REDD projects that were undergoing validation or were issued (see Figure 31), rather than assume the risk of paying less for much earlier-stage credits. Nonetheless, credit prices were highly contingent upon the project's stage of development. A/R projects, on the other hand, saw more early-stage investment owing to their high up-front costs and delayed delivery.

In all cases, as the forest carbon market continues to mature, project developers are increasingly aware of the real cost of project implementation, measurements, reporting and verification (MRV), and stakeholder management. "People are disillusioned by those old reports that claimed that forest carbon mitigation would be inexpensive compared to other options – by now we know that if you want forest carbon credits to deliver benefits you can be proud of, they're going to be expensive," observed Forest Carbon Group's Michael Sahm. "Given that the price pressure is so enormous right now, trying to convince buyers of this principle has been a very sobering experience," he concludes.

Cookstoves achieve above-market average pricing Coming out on top of this year's average price spectrum, clean cookstoves commanded an average price of 13.2/tCO₂e. Buyers injected approximately \$42 million into cook stove projects in 2011, with a minimum transacted price that was more than \$3/tCO₂e higher than the market average.

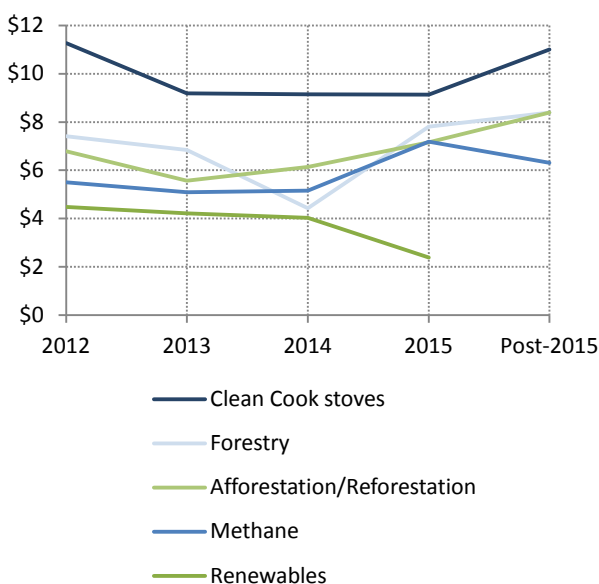
As cook stove projects shifted from marginal to mainstream, they maintained a premium against the average market price. It remains to be seen, however, if they can retain this price as potentially large credit volumes come online. Suppliers of these offsets believe so, explaining that – much like forestry – the high price not only reflects the cost to implement and maintain the projects, but also corporates' desire to support projects with community health and other social benefits.

"Even more than the emissions reduction element," says ClimateCare CEO Edward Hanrahan, "buyers of [credits from] some of our projects are interested in supporting the reduced incidence of pneumonia from the use of cookstoves, or the purification of water and eradication of waterborne disease from the use of the LifeStraw. Projects like these are where we expect to see undersupply come through again next year."

Contracting California-compliant credits For those project types that the California ARB tapped as eligible for early action crediting, credits traded within a narrow price range relative to other project types. This can be seen in the range of prices reported for IFM (average \$11.8/tCO₂e), US-based ODS (\$8.2/tCO₂e) and livestock methane credits (\$7.3/tCO₂e). The going price for these credits types received wide coverage among carbon market media outlets and in brokers' reports to clients throughout the year, narrowing their bid-ask spread as the pre-compliance market became more liquid. The exception to this is IFM, where the wider range of prices is indicative of more purely voluntary activities. For an analysis of "California only" credits, see Section 8.3.

Setting the curve: future delivery price by type In order to understand not only how project types were priced in 2011, but also where voluntary buyers' demand is headed, Figure 22 illustrates project types for which suppliers reported contracting credits for future delivery from new projects, by average transaction price and vintage year. To ensure

Figure 22: Price for Future Delivery by Project Category, OTC 2011
US\$/tCO₂e



Source: Ecosystem Marketplace. Note: Based on 256 observations.

confidentiality of suppliers' reported prices, in some cases project types are combined into categories (like "Forestry" and "Renewables") while for a few, responses were sufficient to pull out specific project types like A/R. Because this chart only captures 200 individual data points, it is important to look at the overall trends – like which project types and regions are seeing *any* project activity in the near future – rather than focus on inter-year price fluctuations, as the marketplace is highly illiquid.

In general, future vintage pricing for most project types was consistent with 2011 levels. For forest carbon and cook stove projects specifically, however, contracts seeing lower prices from 2012 through 2014 reflect the market's view that large issued volumes currently in the pipeline are likely to enter the marketplace in the next year or two. More than any other project type, A/R projects saw a steady price increase for credits that are expected to come online in later years, based on several dozen data points. In the methane category, most new project investment occurred in the landfill methane category, where purely voluntary buyers in the US were keen to support new projects in addition to transacting existing or older vintages.

Investment in new renewable energy activities saw fewer and lower price points (US-based and run-of-river hydro – "ROR hydro" – projects notwithstanding), and project types like energy efficiency and fuel switching did not present enough new project activity to chart.

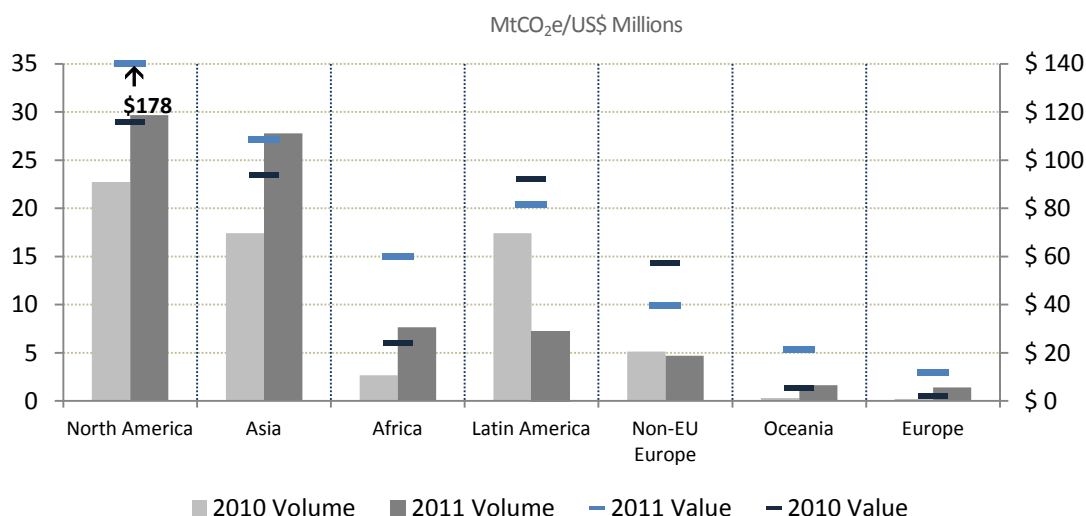
5.3 Place-Based Portfolios: OTC Project Locations

Offset projects are implemented around the globe. In 2011, the market extended voluntary carbon finance to 16 new country locations – overall, reporting project activities in 61 countries.

Last year, discrete preferences and prices for voluntary offsets were influenced by the domestic political and economic context. In turn, the tools and drivers of voluntary action continued to splinter into regional marketplaces. For this reason, this year's report features a new section that examines each region individually (Section 8). The following section aims to provide global context for those regional findings.

As seen in Figure 23, North America narrowly maintained its top spot among project locations to generate 37% of transacted OTC volume and \$178 million in value. Moving down the chart, though, the project location line-up changed dramatically. As a result of buyers' focus on Asian renewables, credits from the region captured over one third of all transacted volumes in 2011. However, as illustrated in Figure 22, projects based in Asia reported no new project investment – the vast majority of transacted credits were from existing supplies transacted on a spot basis.

Figure 23: Change in Volume and Value by Region, OTC, 2010 vs. 2011

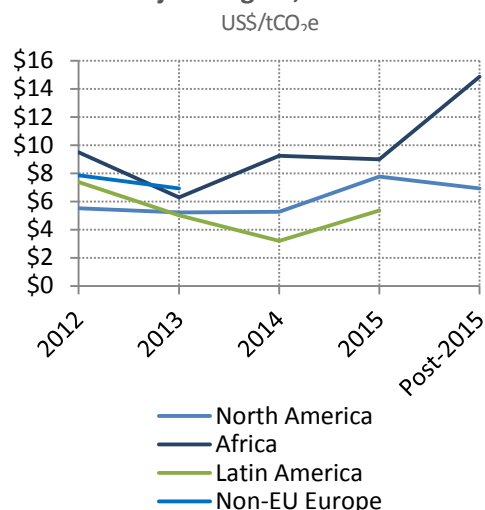


Source: Ecosystem Marketplace. Note: Based on 1843 survey responses.

For the first time in this report series, Africa boasted elevated status as the third-largest supply location for transacted credits – attracting \$60 million to projects in the region. This reflects the growing volume of credits emerging from the VCM pipeline to meet voluntary buyers’ consistent demand for Africa-based projects, but also the broader carbon markets’ intensifying focus on the CDM’s development objectives.

In line with lower transaction volumes from forest carbon, transactions of Latin-America based offsets fell by more than half (-58%). However, Figure 24 demonstrates that though the region’s transaction were down in 2011, buyers

Figure 24: Price for Future Delivery by Project Region, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 256 observations.

still had an interest in supporting new project development – albeit at a discounted price for future vintages. This figure also demonstrates the high value placed on future issuances from African projects, in keeping with their historic price trends and market anticipation of the region’s potentially prominent future role in both the voluntary and compliance markets.

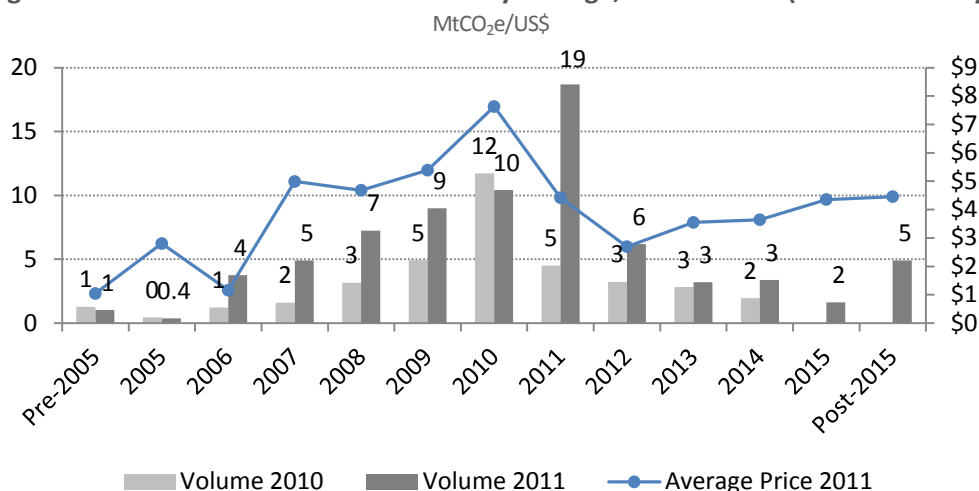
The Non-EU Europe category, which includes Turkey and non-EU member states, is the only other region (also Latin America) where both transacted volumes and value fell as a result of wind projects’ price competition with Asian projects. For non-EU Europe, bear in mind that this drop is also potentially explained by the loss of a few major survey respondents. Based on the responses we did receive, no new origination was reported for post-2013 vintages.

Buyers of North American credits, on the other hand, sent the strongest signal to the market with regard to investment in early stage projects in 2011 – with almost half (48%) of post-2011 contracted credits from North American projects.

5.4 Credit Vintage: Year of the Offset

A credit’s vintage refers to the year in which the emissions reduction occurred, or will occur. As in every previous year’s *State of* report, the current year’s vintage (2011) was the most popular, reflecting the market’s typical “bird-in-hand” sentiment. Over one third of this volume was transacted from wind projects, while the remaining 2/3 of 2011 vintage credits were sourced from a wide range of project types.

Figure 25: Transaction Volume and Price by Vintage, 2010 & 2011 (Price 2011 Only)



Source: Ecosystem Marketplace. Note: Based on 1902 observations.

In a break with 2010 – when 40% of transaction volumes were from *future* vintages – in 2011, half of all credits transacted were from *previous years'* vintages. This fits with findings in other sections of this report that reflect buyer demand for issued, low-risk, and moderately priced credits. Except for early-year vintages, the volume weighted average price for these vintages was above \$4/tCO₂e. The *current* year vintage is where price most reflects a few large volume, low priced transactions. Removing even one of these transactions from the above calculation, the volume-weighted average price for 2011 vintage credits increases by \$1/tCO₂e – demonstrating the illiquid nature of this relatively small marketplace.

As in all previous *State of* reports, suppliers reported lower prices for credits that are expected to be delivered in the near future – followed by a gradual increase in price over future vintage years that is still well below the current market average (\$6.2/tCO₂e). This reflects several influences, including the buyers' expectations that while credits from the current and near-future vintages do not have compliance market value, they might have in the longer term. The increase could also reflect contracts' escalation clauses or the expected delivery of credit types that have high value in the current marketplace, like cook stove and A/R credits. Figures 22 and 23 in previous sections demonstrate that future vintage trends vary highly by individual credit types and contracts.

6. Market Infrastructure: Standards and Serials



6.1 Independent, Co-benefits and Domestic Project Standards

Every new route to market on the VCM's expanding map of project types is paved by methodologies that steer the development of projects, credits – and in some ways, the market itself. Last year, the uptake of third-party standards to guide project development reached a new height when suppliers that reported using a standard said that almost all (98%) credits they transacted adhered to a third-party standard, as opposed to an internal standard or methodologies.

Because standard use is clearly a crucial filter for most purchase decisions, suppliers are relying on them more than ever before to access new markets for supply *and* demand and to respond to early regulatory signals. In 2011, we identified six key themes that demonstrate the myriad ways that standards bodies responded to put new project types, regions and players on the carbon market map.

Governments supporting standards from within the VCM When California's Air Resources Board (ARB) adopted its landmark regulation – including its plan to adapt and use offset protocols developed in the voluntary market – it illuminated voluntary programs' deepening relationships with government bodies. In 2011, other examples included the British Columbia government's use of VCS credits that met regulation-based eligibility requirements to pursue its carbon neutral target; cooperation between the Gold Standard and German government to explore mechanisms for market scale in underdeveloped regions; the Costa Rica government's acknowledgement of VCS and Gold Standard for domestic carbon neutrality claims; VCS and Thailand Greenhouse Gas Management Organization's agreement to enable “tagging” of VCU with the Thai government's domestic Crown Standard – which was developed with assistance from the Gold Standard in 2009; the procurement of Gold Standard credits by the UK, Swiss and Irish governments and the U.S. State Department; acceptance of both VCS and Gold Standard credits under Australia's National Carbon Offset Standard; and continued work from CAR, VCS and ACR to “nest” project-level activities within governments' broader jurisdiction-level activities.

National programs developed to support domestic demand The emergence of purely domestic programs and marketplaces has been a key theme in recent years.¹¹ This is evidenced by a growing number of standards that exclusively apply to domestic projects – with many making headway in 2011. Gaining traction were the China-facing Panda Standard, which submitted its first reforestation methodology for public review in late 2011; the UK Forestry Commission's Woodland Carbon Code targeting domestic woodland creation; Japan's J-VER and J-CDM programs; Korea's K-VER program; Australia's Carbon Farming Initiative (CFI); and several other programs currently operating or under development.

Standards tackle the “other” land-use emissions Upon verification of the world's first VCS REDD credits – as well as passing some milestones with regard to other forest carbon project types (Section 5.1) – some standards turned their attention to other types of land-use activities. As “climate-smart agriculture” emerged as a buzzword in the UNFCCC process, several standards including ACR, CAR and VCS were already exploring methodologies like rice cultivation and agricultural land and nutrient management. ACR approved its fertilizer management methodology in late 2010 – in 2011, projects were underway by the California Farm Bureau Federation and the Chesapeake Bay Foundation, among others. More recently, late last year CAR approved version 1.0 of its Rice Cultivation Project Protocol and, in early 2012, the VCS approved its first soil carbon methodology, applied to a World Bank-led farming project in Africa. Meanwhile, Australia's newly approved Carbon Farming Initiative (CFI) was introduced, replacing the popular Greenhouse Friendly program with options for agricultural land-use projects.

¹¹ Peters-Stanley, Molly. “Bringing It Home: Taking Stock of Government Engagement with the Voluntary Carbon Markets.” *Ecosystem Marketplace*, February 2012. <http://www.ecosystemmarketplace.com/takingstock>

VCM crediting the link between carbon and water In 2011, the VCM revved its innovation engine in pursuit of new methodologies that address the relationship between carbon and water (Box 2, Section 5.1). On the land-use side, the VCS established a working group to develop requirements for crediting wetlands conservation projects – including mangroves and coastal and tidal wetlands – while ACR supported similar efforts throughout 2011 and previewed a modular methodology approach to coastal wetlands restoration in early 2012. ACR is also developing approaches to stacking GHG and water quality credits from agricultural land management, with pilots underway in Maryland and Puerto Rico.

Scaling up in developing countries A growing number of projects are aiming to suppress future demand for polluting energy sources and to make good on the CDM’s sustainable development directive by offering the clean technology first. This methodological approach to “suppressed demand” is one of several efforts pursued by the Gold Standard and subsequently adopted by the CDM, to draw larger issuances from projects that contribute to sustainable development in developing countries and LDCs. The approach is discussed in detail in the previous section. Both voluntary and compliance market programs also continued refining “programmatic” approaches to grouping small project activities in order to lower barriers to market entry. Traditionally employed by programs from Plan Vivo to the CCX, aggregating small project activities into larger ones for efficiency’s sake is nothing new to the VCM, where again in 2011 16% of all transacted credits came from grouped or aggregated projects.

VCM standards expanding geographic scope Several standards took program expansion literally in 2011, pursuing methodologies, recognition, and partnerships that broadened their geographic scope. Among them was ACR, which approved for use its first methodology for projects that avoid planned deforestation (a REDD subcategory) – giving international projects the green light to make use of the traditionally US-facing standard. ACR and CarbonFix, too, were also both recognized for use by EU-based retailers adhering to the International Carbon Reduction and Offset Alliance’s (ICROA) Code of Best Practice. VCS announced its first regional office in Chile, in cooperation with the Santiago Climate Exchange, while the CAR also headed south with Version 1 of its Mexico Forest Project Protocol. Meanwhile, the Gold Standard carved out new opportunities for projects in conflict zones and refugee camps – allowing an Objective Observer (such as a trusted UN or NGO representative) to do onsite validation, meaning that projects can be audited even when DOE’s are unwilling to travel to danger zones.

A note on figures Because of the unique designs – and in some cases, challenges – presented by domestic programs, this year’s report analyzes them in a separate category from other independent third-party standards. We also separately explore standards that exclusively account for project co-benefits – which are not carbon accounting standards in their own right but are “tagged” onto carbon accounting standards.

6.2 Third-Party Standards Usage in 2011

In 2011, the VCS, CAR, the Gold Standard and ACR were the front-runners for market share among independent third-party standards, together guiding the development of 82% of all transacted credits. Continuing a 5-year streak at the top of the chart, the **Verified Carbon Standard** saw 41 MtCO₂e of credits transacted utilizing its standard. Of this volume, 60% was generated from renewable energy, which took a prominent place within the standard comparable to forestry projects in 2010.

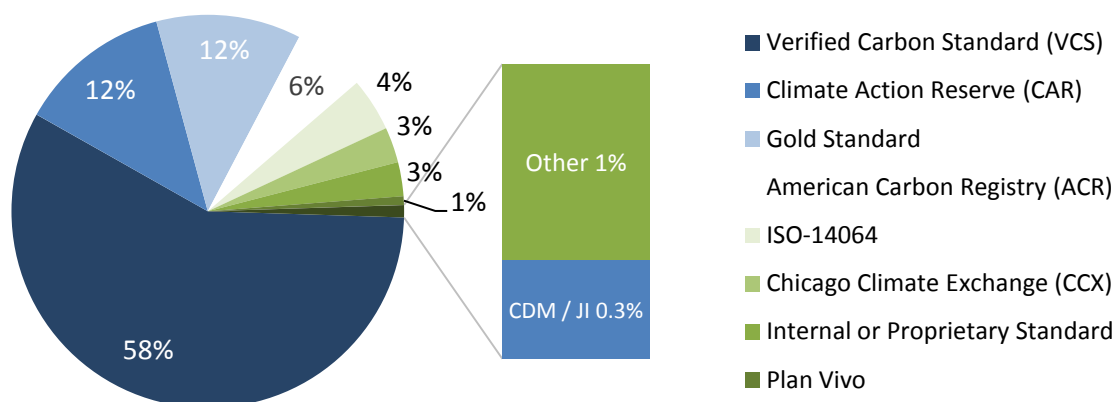
In Annex A, we explore the supply, registry activity, and basic structure of each standard that was active in the marketplace in 2011. Here, one can see that 78% of all validated VCS projects are energy-based. Though VCS continues to expand its portfolio and policies in support of agriculture, forestry and other land use (AFOLU) activities, these projects comprise a small proportion of its portfolio – particularly REDD, which in 2011 saw 4 validated projects – 2 of which achieved verification. Last year, VCS REDD projects transacted 2.5 MtCO₂e from 12 projects at various stages of development, compared to 12.8 MtCO₂e from 6 projects in 2010.

Behind VCS, the **Climate Action Reserve (CAR)** guided another 9 MtCO₂e of credits transacted in 2011. Of that volume, over 70% was contracted by intermediaries and companies preparing for the launch of the California cap-and-trade program, which acknowledged four CAR protocols for early-action credit. Though CAR expanded its Forest

Carbon Project Protocol to Mexico in 2011, all CRTs that were tracked last year were or will be generated from US-based projects – and 95% were purchased by domestic buyers.

Figure 26: Market Share by Independent Third-Party Standard, OTC 2011

% of Market Share



Source: Ecosystem Marketplace. Note: Based on 946 observations.

On the purely voluntary end of the spectrum, suppliers transacted a record 8.5 MtCO₂e from **Gold Standard** projects. Gold Standard buyers also sought credits from wind projects (38%) – primarily from Turkey – but also from water purification and other biomass projects (33%) and clean cookstoves (16%). Reflecting both the Gold Standard’s and buyers’ emphasis on sustainable development in Africa, 44% of all Gold Standard credits transacted were generated from Africa-based activities.

The **American Carbon Registry** captured 6% market share – not only thanks to a potential pre-compliance nod from California regulators but also demand from US-based voluntary buyers. Reflecting ACR parent organization Winrock International’s roots in forest carbon, 46% of ACR credits transacted were from forestry activities. Meanwhile, credits from projects utilizing **Chicago Climate Exchange** offset protocols fell from their top-three ranking last year as hopes faded for a US federal cap-and-trade program – once a driver of CCX credits’ popularity. Credits from CCX projects transacted 2.1 MtCO₂e in 2011.

In contrast to these primarily US-facing standards, **Plan Vivo Standard** credits contracted .5 MtCO₂e from projects in 10 different countries in 2011, in line with the standard’s small but steady increase in use year-on-year. Beyond that, another 1% of credits adhered to standards that saw comparably small market share last year, including **Clean Development Mechanism** methodologies, the **CarbonFix Standard** and **Green-e Standard** – which plans to phase out its US renewable energy standard throughout 2012 to focus on certifying retail offset transactions.

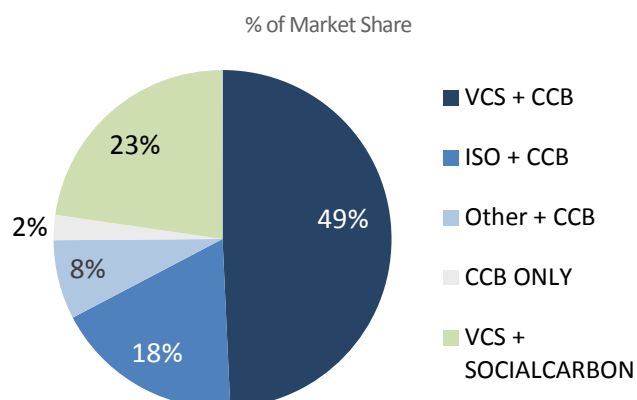
Co-Benefits Standards For many voluntary buyers, a carbon offset’s contribution to social and sustainable development is as important as its climate benefits. Some standards – the Gold Standard, Plan Vivo and CarbonFix – require that their projects measure up to additional social and environmental indicators. As purely carbon accounting standards, the VCS and ACR do not require additional co-benefits – but they do allow project developers to pursue additional certification to a handful of standards that exclusively credit those “beyond carbon” impacts. This certification is then tagged onto the carbon credit and sold as a single unit.

Because “tagging” standards do not by themselves quantify projects’ carbon attributes, we examine them separately in Figure 27. Transacted credits that are tagged with these additional certifications are included in our analysis under their primary carbon accounting standard – except

in the case of projects pursuing the Climate, Community and Biodiversity Standard (CCB) that did not yet claim use of an additional carbon accounting standard in 2011.

VCS credits tagged with the forest-facing CCB Standard were again a popular combination, transacting 2.8 MtCO₂e in 2011. This is a significant drop from 2010, however, when 15 MtCO₂e of transacted credits sported both standards. Overall, the CCB Standard was applied to 47% of transacted VCS forestry credits (3.2 MtCO₂e of 6.4 MtCO₂e), and saw the first verification of two CCB projects in tandem with their verification to the VCS. Per its latest update, projects must verify their CCB-certified impacts to the project area at a minimum every five years.

Figure 27: Market Share by Co-Benefits Standard, OTC 2011

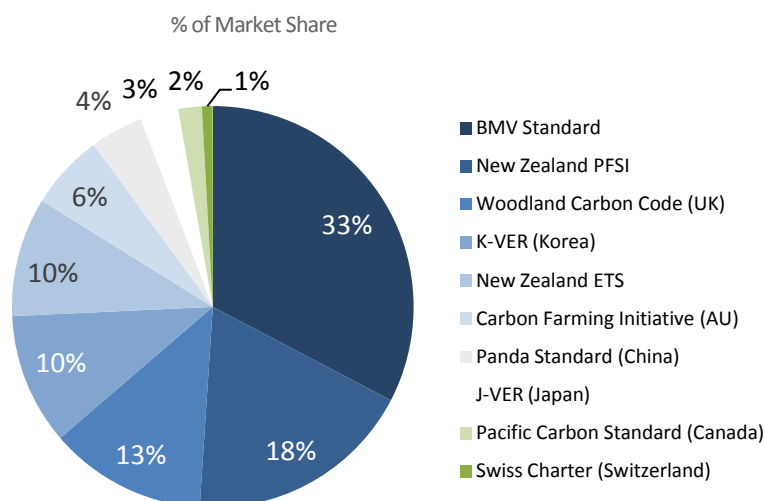


Source: Ecosystem Marketplace. Note: Based on 946 observations.

VCS projects that applied the additional Social Carbon certification, on the other hand, grew their transaction volumes 81% to 1.4 MtCO₂e in 2011. As in previous years, certified Social Carbon Standard credits were primarily transacted from fuel switching and biomass projects in Brazil.

Domestic Standards Country-specific standards were behind 6 MtCO₂e or 7% of all credits transacted in the VCM in 2011. With the exception of the Brazil-facing BMV Standard for forest conservation projects, these standards were developed or are administered by the public sector. For this reason, many of them service compliance markets but sell credits into the voluntary market, too – like the New Zealand Emissions Trading Scheme (NZ ETS) and Permanent Forest Sink Initiative (NZ PFSI), Australia’s CFI, and British Columbia’s Pacific Carbon Standard.

Figure 28: Market Share by Domestic Standard, OTC 2011



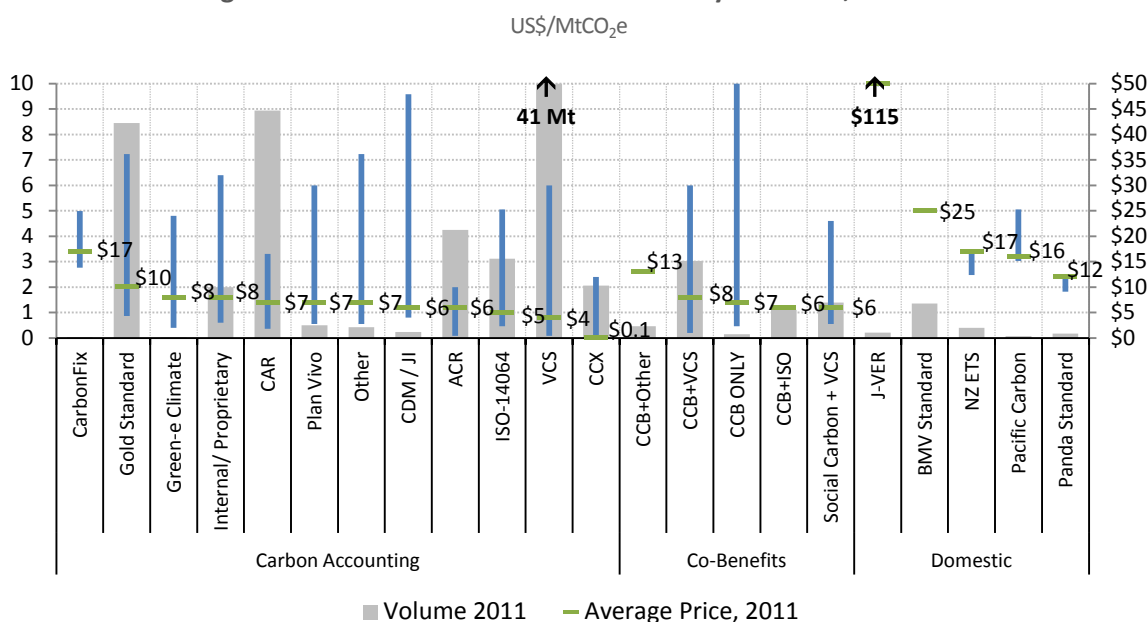
Source: Ecosystem Marketplace. Note: Based on 946 observations.

Noticeable entrants, representing \$27 million in 2011, were credits verified to Japan's J-VER and J-CDM programs, as well as the UK Forestry Commission's Woodland Carbon Code – all of which are intended for purely voluntary domestic buyers. In the case of the Woodland Carbon Code, buyers are incentivized by a government provision that allows them to “net out” their Woodland credit purchases from their GHG reporting. Both the UK and Japan programs' projects occur within sectors that are included in the country's national Kyoto accounts, meaning that any purchases ultimately help the country meet its national GHG targets. In the case of the UK program, users are cautioned that the reductions do not constitute “offsets.” Despite this regulatory overlap, domestic programs attracted several high profile participants in 2011, from Japan Post to British Airways.

6.3 Prices by Standard Utilized

Credit prices are highly stratified across the range of available third-party standards. They can also vary widely within each standard, depending on other project characteristics. In 2011, volume-weighted average prices ranged from less than \$0.1/tCO₂e for CCX credits to over \$120/tCO₂e for J-VER credits.

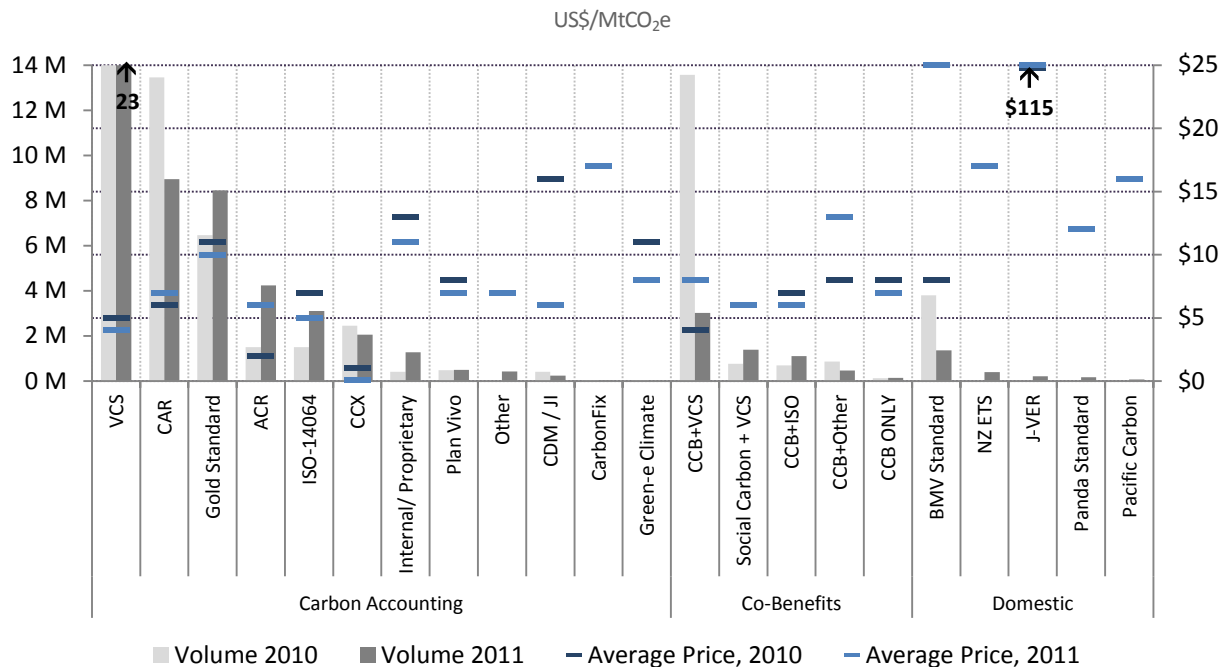
Figure 29: Transaction Price and Volume by Standard, OTC 2011



Credits with a high average price (>\$8/tCO₂e) were transacted by purely voluntary buyers who sought to support projects with social, environmental and often local benefits. As in previous years, Gold Standard credits obtained a high average price, as did those certified to the CarbonFix Standard. However, credits generated by domestic program standards like J-VER and the Pacific Carbon Trust achieved the highest average prices of any *type* of standard (\$17.3/tCO₂e average across all domestic standards). In most cases, their comparably high prices are due to the high cost of project inputs in the case of developed country programs, as well as heightened demand for supporting local initiatives.

In contrast, most international carbon accounting standards fell within the average price range (between \$4-\$6/tCO₂e). Here, CAR credits were at the high end of the spectrum, pulled up by ODS CRTs (\$8.2/tCO₂e) that buyers believed to be at lesser risk of invalidation by California regulators. At the other end of the spectrum, VCS credits averaged \$3.7/tCO₂e, weighted down by the low average price of VCUs from some renewable energy project types (like wind, also at \$3.7/tCO₂e).

Figure 30: Change in Transacted Price and Volume by Standard, OTC 2010 & 2011

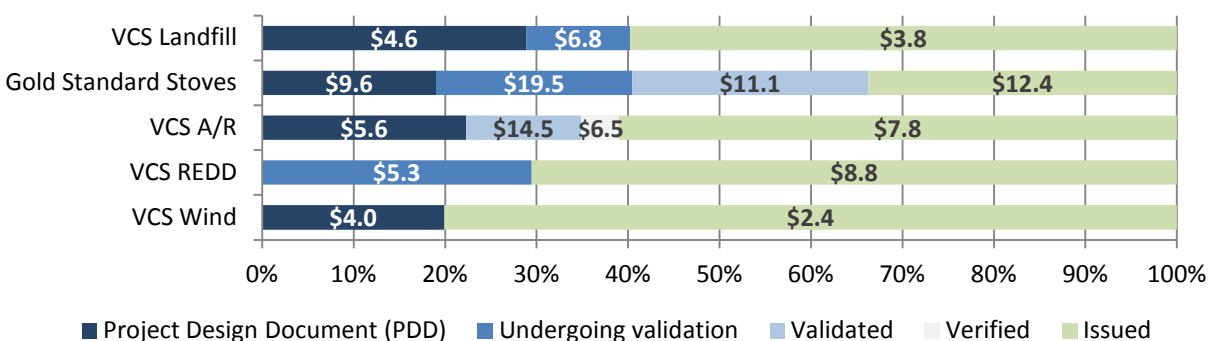


Source: Ecosystem Marketplace. Note: Based on 1,758 observations.

Last year, ACR average credit prices leaped to \$5.7/tCO₂e in 2011, compared to \$2/tCO₂e in the previous year – benefitting from a higher than average price for its A/R and IFM projects (average \$7.3/tCO₂e). ACR's price increase left the CCX as the only standards transacting credits at less than \$4/tCO₂e on average.

Because 75% of transaction volumes were concentrated around the market's top five independent standards, it's helpful to understand the variables within those standards that influence price. Figure 31 examines some of the voluntary market's leading project types (according to type and dominant standard) to understand the price paid for credits at various stages of project development.

Figure 31: Average Price by Stage for Popular Credit Types, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 1,002 observations.

Average prices are highly variable within the various stages of project development for each type. In the case of VCS wind and landfill, the higher prices paid at earlier project stages are partly explained by the fact that – despite an existing oversupply of those credit types – some voluntary buyers preferred to catalyze new project activities according to their preferences rather than fall back on earlier vintages. Issued credit prices for both types are more reflective of their large volumes of existing supply.

In the case of cookstoves and A/R, prices paid for pre-issued credits varied highly by planting stage, project location, technology, and other factors. For these types and REDD, too, issued credit prices hovered much closer to the average given greater transparency into their “going price” and availability. These and other price spreads tracked in our survey by type, stand and stage represent an accounting of the prices that suppliers and their buyers were able to achieve in 2011, and in some cases do not truly reflect the cost of capital and risk associated with project stage and the type of credit.

6.4 Registries: Tracking the Trades

As the voluntary market’s supply and geographies continue to expand, registries that track credits’ origin, ownership, and retirement are more critical than ever. Suppliers reported that of the 93 MtCO₂e they transacted OTC last year, 41.3 MtCO₂e were currently on registry. This is just slightly less than the total volume of *issued credits* that suppliers reported transacting in 2011 (42.2 MtCO₂e), reinforcing the accuracy of responses in both categories.

Last year’s demand for issued credits put a spotlight on registries, which themselves reported record issuances and retirements in 2011. Indeed, almost half of all credit retirements that were publicly reported by registries occurred last year. Suppliers say this is not surprising given the relative newness of registry systems and the time it has taken them to incorporate them into their regular work.

Of the 246 MtCO₂e that has been issued on a registry over the years, over 20% was issued in 2011. Katherine Graham, Carbon Registry Manager for APX, says the larger issuance volumes can be attributed to several factors, including that some of the volume came from older vintages that had been verified and were finally “uncovered” once a buyer was found.

“Last year was partly about getting the older vintages out of the registry and sold,” she observes. “There’s a lot of available supply to meet the demand, and those credits weren’t getting any younger – so sellers made the most of what they had.” Also, a number of VCS forestry projects finally achieved verification and issuance in 2011.

While registries kicked their GHG services into high gear, behind the scenes they juggled challenges to market integrity and opportunities for market expansion that led each of the major registries to evaluate their business approach in the years ahead.

Registries see record activity, new markets Behind the large volume of issued credits transacted in 2011, registries reported record activity for both issuance and retirement. For Markit Registry, 30% of credits that have ever been issued were issued in 2011. For APX, too, 44% of all issuances occurred in 2011. Also in 2011, registries reported that 60% of credits ever retired were retired last year, as verified reductions – both from recent and prior activities – made their way to registries. Markit says that the level of investment that has occurred within the VCM – and as result, through its registry – enabled its venture into other markets for environmental services. This includes providing auction and registry services to the Pennsylvania Infrastructure Investment Authority (PENNVEST) to facilitate the sale and purchase of nutrient credits in local watersheds. Markit is now considering how similar auction platforms could provide much-needed price transparency for the VCM as well. “Now that projects and credit activities in this market are becoming more transparent, our next focus is to bring visibility to credit prices,” says Kathy Benini, Managing Director and global head of Markit Environmental. “Price transparency is a critical element in any emerging market to scale up liquidity and build confidence. It is also the foundation for other valuable information including indices and valuations, both key tools for investors and participants.”

Returning to or putting down new roots In February 2011, APX Inc. – which underpins one of three VCS registries, the VCS Project Database, and the Reserve, and Gold Standard registries – announced its transition to a joint venture with NYSE Euronext’s share of BlueNext. The new company, called NYSE Blue, retained all of APX’s registry services in combination with BlueNext, and aimed to focus on emerging environmental and sustainability markets worldwide. After a little over a year, the company transitioned back to its more traditional market roles and once again assumed the APX, Inc. name in spring 2012.

While market participants have grown accustomed to the standard's three existing registry operators – APX, Markit and CDC Climat – CDC Climat announced in early 2012 that it will no longer act as a VCS registry after 2012, for what it described as strategic reasons. The VCS originally launched its multi-registry system to enable several registries to service the needs of VCS project developers – in their words, to provide a system that is “scalable.” Projects registered on the CDC Climat platform have the option to transition to one of the remaining two registries – depending upon their passage through another registry's screening processes.

Registries put new emphasis on client KYC Passing through a registry's Know Your Customer (KYC) process and meeting minimum account requirements has become increasingly more challenging than in years past, as Markit, APX, Inc., and ACR registries revised their membership policies in 2011. Last year, when new market entrants introduced a business model to offer offsets to individuals as financial investments (rather than for purely offsetting activities), Markit revised its rules and APX and ACR responded similarly – all reporting that they have “beefed up” the background checks that occur before an organization is granted an account. “Maintaining registry security is multi-fold,” Graham says about registries' higher thresholds for eligibility that are intended to monitor and disallow these activities. “System and infrastructure security is a top priority, and we also recognize we have to be able to implement strict guidelines for operating within the registry and that knowing all aspects of how market participants intend to use a registry is paramount.”

What registry activities does this report track? Before describing last year's registry trends, it is important to understand what *kinds* of registries we track – or don't. The term GHG “registry” can describe systems that simply track organizations' emissions and reductions, or “accounting registries” that serialize and track carbon credits. For the purpose of analyzing carbon credit transactions, this report exclusively follows the latter. Accounting registries track VERs or allowances after they have become carbon credits (“issued”) – and in a few cases before credits are issued. Registries often utilize serial numbers as an accounting tool and generally incorporate screening requirements such as third-party verification to a specific offset standard.

Credit-accounting registries may be *independent*, meaning that they accept credits from a variety of standards, or *standard-specific*, meaning the infrastructure is built specifically to serve a particular standard. Several registry companies serve as infrastructure providers for standards and/or serve as independent registries. As of mid-2012, we have identified three existing credit-accounting registries that can be categorized as standard-specific and five infrastructure providers or independent registries that serve several standards or methodologies. The latter are summarized in Annex B.

6.5 Registry Usage in 2011

As both our data collection and registry transparency expands, registry activity can be examined from many angles. This year we determined registry market share exclusively by the volume of supplier-reported transacted¹² credits that *have been issued* by a registry into a supplier's account – in previous surveys, some suppliers had also reported credits they *intend to list* on a registry once the credits are verified. This year's more narrow scope offers a clearer portrayal of registry use in 2011 and a useful comparison with both registry-provided and transaction data.

Figure 32 illustrates survey respondents' registry usage by the volume they transacted that was housed in suppliers' registry accounts. As in 2010, credits in suppliers' accounts on Markit registry – which provides registry services for 11 active voluntary market standards on its Markit Environmental Registry website – were reported as seeing the largest transaction volumes in 2011 (18 MtCO₂e).

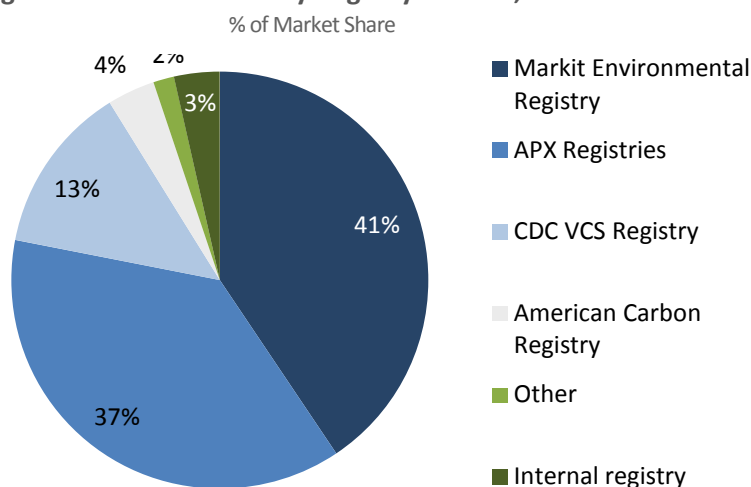
Turning to another type of registry infrastructure provider, APX saw a 5% increase in the volume of transacted credits that were issued by one of the external registries APX supports. In particular, transacted volumes that were housed

¹² This report considers a “transaction” to be an agreement or contract made in the reporting year (2011) to deliver credits immediately or in the future. Registries, on the other hand, consider a “transaction” to mean the transfer of credit ownership between buyers' and sellers' accounts on a registry. This report does not track credit delivery, which may have been contracted in previous years and is not always indicative of new market activity.

on its Gold Standard registry nearly doubled in 2011 – while APX-based VCS credit transactions fell by half. Even so, according to registry data, 40% of VCS credits on APX registry were issued in 2011 alone.

Despite CDC Climat’s now-impending exit from the registry trade, in 2011 the volume of transacted VCS credits that suppliers reported as housed on its registry more than doubled. On the other side of the pond, credits on the standard-specific ACR registry – which has until recently been administered in-house – saw roughly the same activity as in 2010.

Figure 32: Market Share by Registry Utilized, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 145 organizations.

While 95% of transacted credits that were housed on a registry used one of the providers mentioned above, we tracked reduced activity from other active registries – with the exception of the Japanese government’s J-VER registry and Blue Registry, which saw small volumes of their issued credits transacted in 2011, but still more than the year before. Registries seeing <100,000 tCO₂e of their credits transacted in 2011 included the Canadian Standards Association’s GHG Registry and the CDM/JI Registry. No volume was tracked on the New South Wales GHG Registry as participants there prepared for its regional cap-and-

trade program to phase out in favor of Australia’s carbon tax. Another 2 MtCO₂e was transacted and recorded in organizations’ internal registries – roughly the same volume as in 2010.

6.6 Trends in Registry versus Survey Data

Just a few years ago, very few projects and even fewer credits were housed on a third-party registry – one reason why this report continues to track their development. However, as registry uptake expands, direct comparisons between report survey findings and registry data becomes more relevant. This year, we surveyed the market’s most-used registries to obtain more details about registered projects (as in previous years), and also about credits issued and retired. A summary/comparison of both registry and report survey data from years 2007-2011 can be seen in Table 5.¹³

Our analysis focuses on transactions rather than the lives of individual issuances. However, some meaningful comparisons can nonetheless be made. Of the 82MtCO₂e that survey respondents expected to retire over the years, only 41% (34 MtCO₂e) has actually been retired on registries as of the end of 2011. This could result from the fact that this report tracks transactions – and inquires about retirement – at the point of contract. In some cases, contracts for future delivery specify that the credits should be retired once they’re available, but they may not have yet been issued. For example, roughly 124 MtCO₂e of transacted credits that suppliers reported were *or will be* issued via a registry currently equals about half of the total available issued tonnes in the marketplace – including the CCX registry, which is home to 36% of all issued VERs.

¹³ For Table 5, retired volumes that are tracked from the SOVCM survey are only presented for registries that are analyzed in the Registry Data columns. It does not include credits that were reported as retired on an internal registry or registries that chose not to report additional data.

Table 5: Comparison of Survey Data and Registry Data, Historical and 2011 Only				
	ALL YEARS		2011 ONLY	
	Registry Data	Survey Data	Registry Data	Survey Data
CREDITS	246 MtCO ₂ e Issued	124 MtCO ₂ e Issued + Transacted	53 MtCO ₂ e Issued	41 MtCO ₂ e Issued + Transacted
RETIREMENT	34 MtCO ₂ e	82 MtCO ₂ e	34 MtCO ₂ e	13 MtCO ₂ e

Because this year's survey specifically inquired about the proportion of 2011 transacted credits that were retired in the same year,¹⁴ retired volumes reported in our survey can be compared with 2011 retirements as reported by registries themselves, and represented less than half of all actual retired credits. However, if one excludes retirements on the CCX – where users retired 70% of their credits in 2011 – survey-reported retirements equated to 93% of all credits retired on a major registry last year (14 MtCO₂e). The remaining difference between the two volumes demonstrates both the limitations of survey-based research – i.e., it is impossible to track every supplier in the marketplace – and also that suppliers often do not retire credits immediately upon transaction.

Section 8 provides a deeper comparison of survey versus registry data by region, while Annex A explores registries' information in more depth according to the standards they support.

¹⁴ This year, Ecosystem Marketplace conducted extensive follow-up with over 30 major respondents to ensure that suppliers understood the parameters of this question.

7. Buyers



Every major trend in offset supply is influenced by buyer preferences – and every buyer brings to the market a unique motivation for offsetting and varying criteria that guide their purchases. No one is more attuned to these motives and preferences than the offset supplier responsible for meeting their demands.

Because credits pass hands many times before retirement, even suppliers admit that they do not always know the final fate of an offset once it is sold. Therefore, this section – which describes the market’s buy side according to offset suppliers – has traditionally profiled buyers at a very high level. At the same time appreciating the scarcity of buyer information available to the VCM, this year’s report explores buyers’ locations, sectors, and motivations – to provide a clearer context for market behavior in 2011.

7.1 Buyer Types and Motivations

Buyers transact carbon credits to offset a variety of activities, including their personal, employee, event, or overall corporate emissions; or to prepare for the presence of a future regulated carbon market. Within these divisions, buyers hail from an array of sectors, business types, and in some cases carbon market roles. In 2011, 65% of survey respondents reported buyer types alongside their transacted volumes.

Voluntary end-users single largest buyer category in 2011 In our survey, we ask suppliers to broadly classify their buyers as either end users of offsets or intermediaries (the secondary market), motivated by voluntary or pre-compliance purposes. In 2011, suppliers reported selling 53% of credits to final buyers with the understanding that they or their buyers would retire the credits to offset emissions.¹⁵ Voluntary end users make up the largest proportion of any buyer type and, as many suppliers see it, the “real” audience for the vast majority of offsets generated internationally. Behind voluntary end users, another 28% of buyers were intermediaries that intend to sell credits to buyers for retirement purposes. All told, purely voluntary buyers’ transactions were worth \$368 million – or 64% of overall market value.

Table 6: Voluntary & Pre-Compliance Markets by End Users vs. Intermediaries, OTC ‘11¹⁶

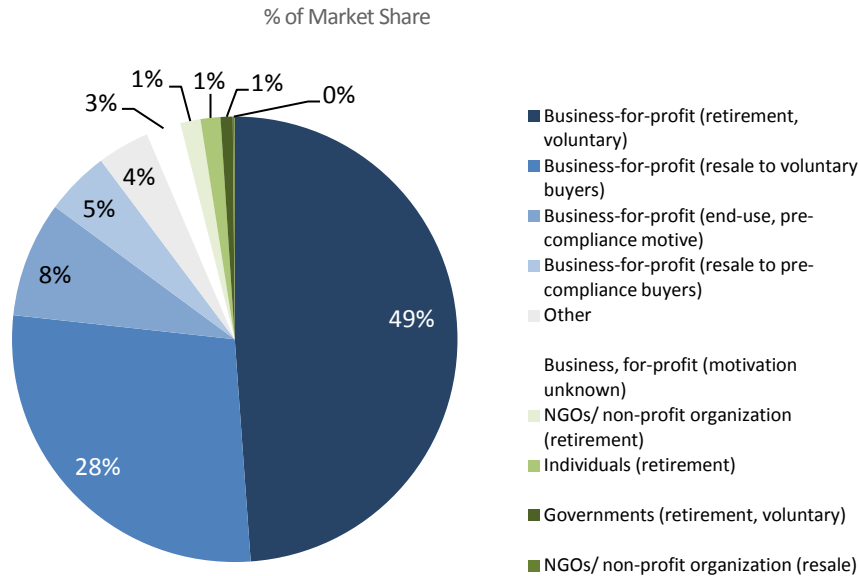
	Voluntary Buyers			Pre-Compliance Buyers		
	Volume (MtCO ₂ e)	Value (\$ million)	Market Share	Volume (MtCO ₂ e)	Value (\$ million)	Market Share
End Use/ Retirement	48	\$259	53%	8	\$64	8%
Secondary Market	26	\$172	28%	4	\$22	5%

Another 13% of market share was transacted by buyers for pre-compliance purposes – either end users (8MtCO₂e) or those who intend to resell credits to end users (4 MtCO₂e). Pre-compliance activities were tracked not only in North America, but also less significant volumes in South Africa, Brazil, and Mexico.

¹⁵ Because of their stated aim to retire the credits – either in 2011 or once emissions reductions occur – we apply this percentage (53%) to overall OTC transaction volumes to derive the “proxy retirement” figure presented in Figure 10.

¹⁶ The 6% of credits transacted to buyers whose motivations were “other” or “unknown” are omitted from this table. In this table only, percentages derived from this question are applied to overall transacted OTC volume (92 MtCO₂e) and value (\$572 million) to estimate the overall market contributions of the buyer types presented.

Figure 33: Market Share by Buyer Type, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 360 observations.

CSR and Public Relations Top-Ranked Buyer Motivations Further breaking down these broad categories of buyers according to their profit types, Figure 33 shows that 92% of all credits were transacted by for-profit corporate buyers. The largest proportion of these buyers (54%) voluntarily purchased offsets to attain corporate GHG targets that were established for CSR or public relations and branding purposes – both mainstay motivations of the VCM over the years (Table 7). Suppliers say the distinction between the two categories pertains to where offset spending occurs within corporate budgets – either from their corporate sustainability budget (for CSR), or from marketing resources (PR/branding).

Moving down the list, credits transacted for resale captured 22% of market share – slightly less than suppliers indicated in the previous question about buyer types (Figure 33). This is partly because some credits were purchased as commodity investments or in preparation for pending regulations – with the intent to resell to final pre-compliance buyers. Both credits purchased for resale to pre-compliance buyers and some demand from pre-compliance end users themselves is captured in the 19% transacted in preparation for regulation or as a commodity investment. Finally, another 7% of buyers sought offsets to “green” their supply chain. Suppliers most often reported that this was the motivation for buyers in developing countries that are under pressure from large multinational importers to address the carbon contents of their supply chain.

“We’re beginning to get requests from companies in South Africa to measure and begin to understand their carbon footprint,” says domestic supplier Promethium Carbon’s Harmke Immink. “This is resulting from mounting pressures from EU-based companies that are starting to ask lots of questions about their exporters’ emissions.”

Government and individual offset demand more than doubles

As seen in Figure 33, another 4% of market share is split between NGO, government, and individual buyers. Relative to previous years, government purchasing has grown partly as a result of new survey respondents participating in the South Korean government’s purchasing program for K-VER credits – an existing

Table 7: Top Five Business Motivations for Offsetting, 2011

Rank	Motivation	Share
1	Corporate Social Responsibility	32%
2	Public Relations/Branding	22%
3	Resale	22%
4	Anticipation of Regulation or Commodity Investment	19%
5	Greening a supply chain	7%

program tracked for the first time in this year's survey. Other sales to municipal and public sector agency buyers are also captured in this response.

On the individual offsetting side, purchases remained small (1.2 MtCO₂e) but were nevertheless more than double the volume reported in our 2010 market survey. This finding tends to come as surprise to some, given the visibility of utility, airline, and other consumer offsetting programs. Reasons for individuals' small market share include the fact that individual offset purchases are significantly smaller than corporate purchases; tend to be tied to a single activity; the option to offset is not offered very often at the point of sale of a product or activity, when consumer offsetting programs have the highest uptake; and that individual preferences for offsetting are generally expressed in their choice as consumers to purchase low-carbon or carbon neutral products and services which have been offset by the manufacturer or other corporate entity. Hence, their demand for offsetting is captured upstream, in the actions of larger private sector offset buyers.

Market, government push back against individual investors The remaining category of "other" buyers includes credits transacted by sporting associations, universities, and other institutions. It also includes offsets sold to individuals as investments – rather than for offsetting emissions. This approach has been the subject of debate and in some cases legal action in recent months. Some suppliers defend the practice, saying that if individuals want to assume the risks associated with investing in a complex marketplace, they are within their rights to do so. Others argue that the VCM is not a commodity market, but a highly stratified product market where individuals are no match for corporate buyers' unpredictable demands.

"We like to do business with institutional investors for a reason – their organizations have the capacity to analyze the risks and absorb the consequences of investments that don't pan out," says EKO Asset Management Partners' Ricardo Bayon. "Even experienced traders who've been at this for years have seen serious losses along the way."

Because this marketplace is largely unregulated, anyone who wants to buy, sell, or hold offsets is typically able to do so. In recent months, though, the UK's Financial Services Authority (FSA) has intervened (to the extent possible) in cases where suppliers have made contact with individuals to invest in offsets – and then have disappeared with their funds. The agency states on its website, "Carbon credits can be sold and traded legitimately and there are many reputable firms operating in the sector. However," it continues, "we are concerned that an increasing number of firms are using dubious, high-pressure sales tactics and targeting vulnerable consumers." In the last year, the FSA placed several dozen such outfits on its list of Unauthorized Firms and Individuals doing business in the UK, and launched a website to explain high pressure sales tactics and general consumer risks associated with carbon credit investments.

The VCM has taken some steps toward self-regulation, including a public statement from ICROA warning that "the sale of VERs to the general public for investment rather than immediate retirement purposes, does not represent best practice in the industry." This follows on two major registries' decisions to revise their rules for account eligibility (Section 6.4).

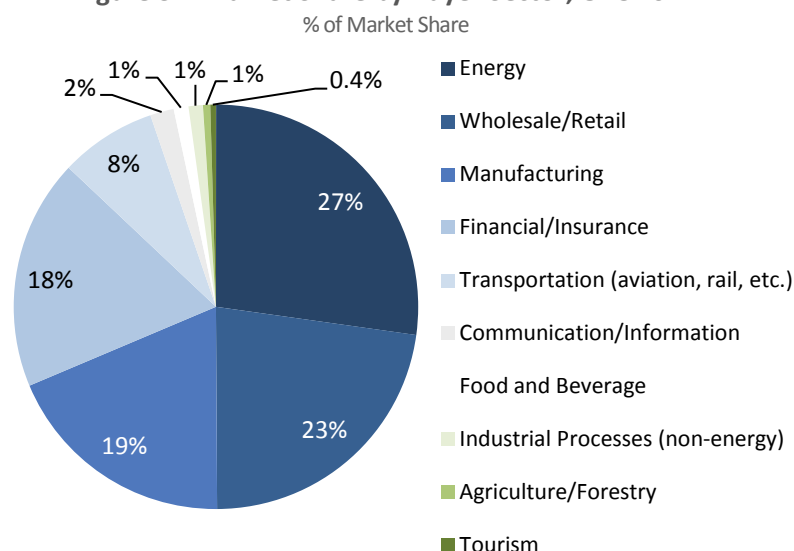
7.2 Buyer Sectors

If and how a company chooses to offset is often determined by their line of work. Some buyers choose to offset because their business is primarily consumer-facing (like retail operations) or to offer offset options to their customers (like the transportation sector). Still others, because of supply chain or regulatory risks and opportunities (like manufacturers and the financial sector). The following section explores those sectors that suppliers identified as major voluntary offset buyers in 2011.

Energy sector the most prominent offset customer in 2011 Last year, companies in the energy sector were the largest voluntary buyers of carbon offsets. While one might assume that their large market share is a result of pre-compliance positioning, in 2011 California's guidance for how utilities would be required to source their offsets was

not yet available. Instead, utilities purchased offsets for purely voluntary purposes – many of them in Europe, where existing liabilities under the EU ETS did not dampen their demand for voluntary offsetting.

Figure 34: Market Share by Buyer Sector, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 267 observations.

Germany-based HEAG Südheissische Energie AG (HSE) is one such European utility with regulated emissions that also buys carbon offsets for unavoidable emissions and a carbon neutral gas product. “The EU ETS covers and caps only those of our emissions that are caused by energy generation from thermic power plants,” explains HSE’s Christian Nagel, “but our corporate and product carbon footprint is much higher. Moreover, our vision is to enable our customers to live a climate-neutral life.” The energy sector is one example where the types of offsets transacted have a direct relationship to their source of emissions (Figure 34).

Next in line, the retail product market transacted the second-largest volume of credits in 2011 – primarily for PR and branding purposes. Prominent buyers in this category have included the Co-operative and PPR Group (Puma brand parent company) which recently acquired a 5% stake in project developer Wildlife Works to support its REDD project activities.

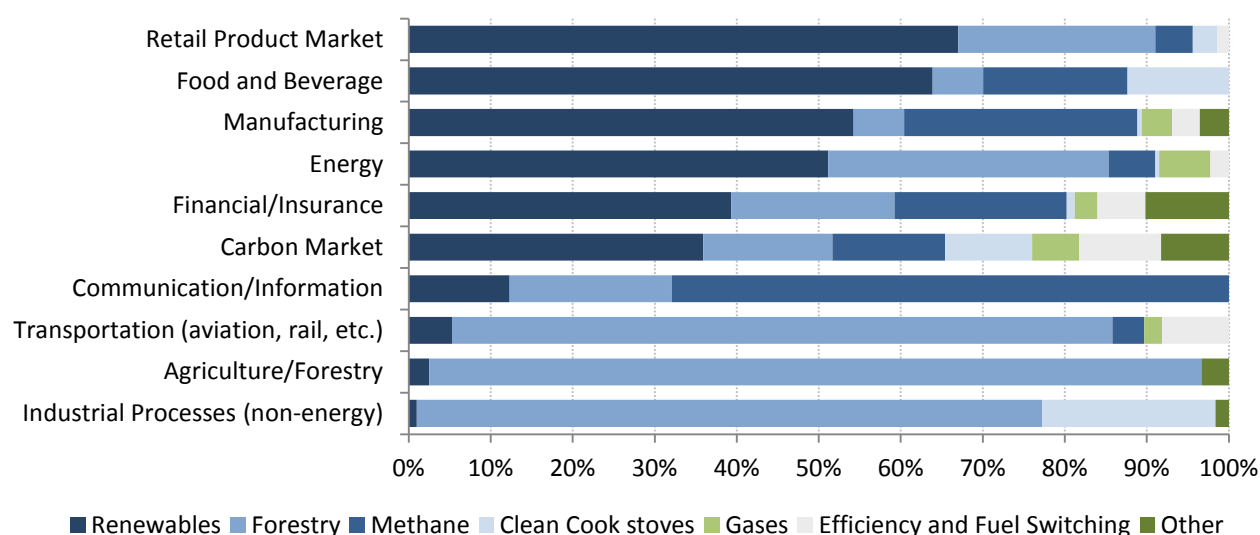
Manufacturers made up another 19% of buyers in 2011. Notable among these companies were General Motor’s Chevy brand, which in late 2010 committed to purchase up to \$40 million to reduce 8 MtCO₂e over several years. Throughout 2011, Chevy sourced offsets to begin meeting this target with the help of Bonneville Environmental Foundation – and learned a few things along the way.

“Now that we have a few projects under our belt and the experience of having done months of due diligence on these projects and their methodologies alongside Bonneville,” says GM Director of Sustainability David Tulauskas, “in our final phase, we’re thinking about taking the hard road and pushing the carbon market to act creatively on new project opportunities that could have a broader impact.”

Large deals were also seen from finance and insurance sector buyers – including Bank of America Merrill Lynch’s move into the California market via a multi-million dollar deal with US-based livestock methane project developer Terrapass. On the purely voluntary side, insurance giant Allianz also agreed to a 10% stake in Wildlife Works, with a multi-year option to buy REDD credits. Both the finance industry and carbon market intermediaries were most likely to contract credits from a wide range of project types, and together contracted 43% of clean cookstove credits sold in 2011. Suppliers point out that these transactions do not capture the several financial players that invested in clean cookstoves with the expectation of future revenues from carbon offset sales, but not to obtain credits themselves.

Given that transportation emissions are a significant contributor to many countries’ emissions profiles, transportation companies like Qantas, Virgin Atlantic, Amtrak, and Avis Car Rental are often found among the market’s high profile buyers. Many of these buyers rely on passenger demand for offsets after the point of sale, rather than fully offsetting their services themselves. To increase consumer uptake of their offset program, Virgin America was the first airline to offer in-flight offset options to their customers from their seat backs. Another travel company, TUI Travel, utilizes an “opt out” donation option for its holiday packages.

Figure 35: Proportion of Credit Demand by Project Type within Buyers' Business Sectors, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 1,244 observations.

Given that transportation emissions are a significant contributor to many countries' emissions profiles, transportation companies like Quantas, Virgin Atlantic, Amtrak, and Avis Car Rental are often found among the market's high-profile buyers. Many of these buyers rely on passenger demand for offsets after the point of sale, rather than fully offsetting their services themselves. To increase consumer uptake of their offset programs, both TUI Travel and Virgin America offer in-flight or "opt-out" offset options to their customers.

Box 3: Buyers Tell All

From energy providers to event organizers, voluntary offset buyers, their sources of business emissions and level of engagement with offset purchases come in all shapes and sizes. This year, we caught up with four offset buyers to discover why they offset their emissions, how they make their purchase decisions, and where they think the market could stand to improve.

ENERGY	HEAG Südthessische Energie AG (HSE)	Christian Nagel Manager, Products and Services
<i>When making a decision about which offsets to purchase, how do the following criteria rank?</i>		
1. Community impact; 2. Project location; 3. Standard; 4. Relationship to supply chain; 5. Vintage		
<i>What was your <u>primary</u> motivation for offsetting or investing in projects?</i>		
To be a "holistic" sustainable utility, by greening our business and supply chain.		
<i>Based on your experience, would you consider the voluntary offset market to be mature in terms of transparency, pricing, supply?</i>		
"It is still difficult for companies like us to understand and assess the carbon market, project types, standards, and offset projects, and make informed decisions ourselves. More standardization and market transparency especially when it comes to pricing is certainly needed."		

MANUFACTURING	General Motors Chevrolet	David Tulauskas, GM Director of Sustainability
<i>When making a decision about which offsets to purchase, how do the following criteria rank?</i>		
1. Standard; 2. Vintage; 3. Project location; 4. Community impact; 5. Relationship to supply chain		
<i>What was your <u>primary</u> motivation for offsetting or investing in projects</i>		
“CSR and branding are both important – and we want to see how we can contribute to the communities in which we operate.”		
<i>Based on your experience, would you consider the voluntary offset market to be mature in terms of transparency, pricing, supply?</i>		
“It would be great to see a wider variety of bulletproof methodologies for developing projects in the US. It’s too easy for us to go back and buy older tonnes of renewable energy and methane, but what we really want to be able to do is drive new opportunities in the market and in communities.”		
FINANCE	NedBank Group	Duncan Able Carbon and Financial Products Unit
<i>When making a decision about which offsets to purchase, how do the following criteria rank?</i>		
1. Standard; 2. Project location; 3. Community impact; 4. Vintage; 5. Relationship to supply chain		
<i>What was your <u>primary</u> motivation for offsetting or investing in projects</i>		
“We’ve spent a lot of time building our reputation as an environmental leader – and offsetting speaks to that. There’s also the profit element in that we buy and sell offsets.”		
<i>Based on your experience, would you consider the voluntary offset market to be mature in terms of transparency, pricing, supply?</i>		
“There’s a lot of room for improvement in terms of price transparency in the market. Because price information is so secretive, people have unrealistic expectations of what prices should be and don’t understand how projects stack up against each other. It’s also often hard to see trends.”		
PUBLISHING	Macmillan USA	Bill Barry, Sustainability and Vendor Management Consultant
<i>When making a decision about which offsets to purchase, how do the following criteria rank?</i>		
1. Vintage; 2. Standard; 3. Project location; 4. Community impact; 5. Relationship to supply chain		
<i>What was your <u>primary</u> motivation for offsetting or investing in projects</i>		
“CSR is a genuine motivation of Macmillan’s leadership – acting responsibly toward future generations. Also, any geographic balance in our offset decisions is to give our employees a local project they can take pride in.”		
<i>Based on your experience, would you consider the voluntary offset market to be mature in terms of transparency, pricing, supply?</i>		
“I’d be interested in seeing what an auction market looks like – for the sake of transparency, to potentially give the offset buyer the biggest bang for their buck, and to offer some interesting incentives to ambitious projects.”		

7.3 Buyer Locations

This report for the first time examines buyers’ market share not only by region, but also the country where they or their businesses are located. In 2011, suppliers reported transacting credits to buyers in 38 countries around the globe – from both developed and developing economies.

EU largest region, US largest single country for offset demand

European buyers maintained their lead as the largest source of offset demand, transacting 33 MtCO₂e worth \$204 million – a little over 1/3 of overall OTC market value in 2011. CSR buyers were the source of almost half of this demand, as were carbon market intermediaries themselves.

Location	Volume (MtCO ₂ e)	Value (\$million)	Market Share
Europe	33	204	47%
<i>Of which Germany</i>	8	\$38	
<i>Of which France</i>	5	\$32	
<i>Of which Switzerland</i>	1	\$6	
<i>Of which Sweden</i>	1	\$4	
North America	29	\$159	41%
<i>Of which US</i>	28	\$151	
<i>Of which Canada</i>	1	\$8	
Oceania	3	\$22	4%
<i>Of which Australia</i>	2	\$15	
<i>Of which New Zealand</i>	.4	\$7	
Asia	3	\$47	4%
<i>Of which South Korea</i>	.4	\$2	
<i>Of which Japan</i>	.4	\$22	
<i>Of which China</i>	.3	\$1	
Latin America	2	\$23	2%
<i>Of which Brazil</i>	1.3	\$20	
<i>Of which Chile</i>	.05	\$.5	
Africa	.9	\$10	1%
<i>Of which South Africa</i>	.9	\$10	

Note: Totals by country may not add up to Regional volumes, as some buyer country locations are omitted to protect confidentiality of responses.

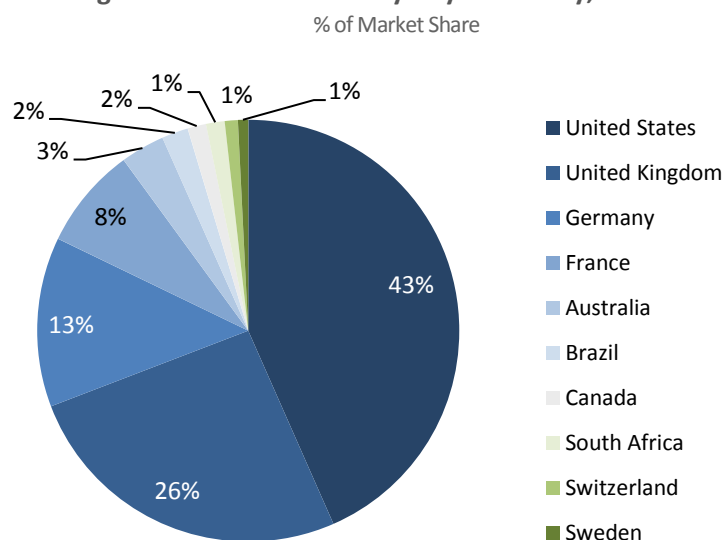
Buyers in Oceania, Africa increase offset consumption

In Oceania, the region's growth in 2011 resulted from increased offset transactions in both Australia and New Zealand. Particularly in Australia, where demand has lagged in recent years due to political indecision on climate issues, the country's passage of a carbon tax and the Carbon Farming Initiative coincided with increased activity on the voluntary front. Suppliers say this also the result of some large companies fulfilling existing offsetting commitments – some of which are set to expire in 2012.

As a hub of trading activity for both compliance and voluntary carbon markets, UK-based buyers alone transacted 26% of market volumes – and approximately 40% of those credits were purchased by intermediaries that will sell them to end users. Buyers in other EU countries were more likely to be offset end users. In Germany, for example, over 90% of all credits purchased by German companies were reported as being transacted by end users with the intention to retire them. Behind the UK and Germany, buyers in France, Switzerland, and Sweden were also among the voluntary market's top ten buyer locations.

In the context of both country-level and purely voluntary demand, the US came out on top – purchasing 19 MtCO₂e for purely voluntary purposes, with 12.4 MtCO₂e going directly to end users. The larger figure represents 66% of all credits transacted in the country, where remaining volumes were attributed to pre-compliance activity or unknown buyer types. The large volume of voluntary offsets transacted in the US in 2011 can be attributed to large-scale climate actions undertaken by buyers like GM's Chevy brand and Norfolk Southern railway, but also some voluntary marketplace mainstays like Google, Dell, JetBlue, Staples, Ebay, and others. To the north, Canada's voluntary buyers transacted 58% less volume in 2011 (1 MtCO₂e) as a result of many of the same trends that affected volumes sold from Canadian projects – discussed in more depth in Section 8.

Figure 36: Market Share by Buyer Country, OTC 2011



Source: Ecosystem Marketplace. Note: Based on 343 observations.

As in 2011, this we also tracked a small volume of credits (5 MtCO₂e or 7% market share) transacted to buyers based in developing countries in Asia, Latin America, and Africa. This represents a 32% decrease in volumes trans-acted to developing-country buyers in 2011. This decrease is mostly attributed to fewer transactions by buyers in Latin America – where a few large transactions in 2010 were not repeated last year. In Asia, on the other hand, enthusiasm for a “low-carbon lifestyle” in response to various government signals was behind a 5% increase in transacted volumes. Most credits transacted by Asian buyers were sourced from domestic programs and standards, by companies from a variety of sectors including airlines, shipping and packaging, government, and real estate.

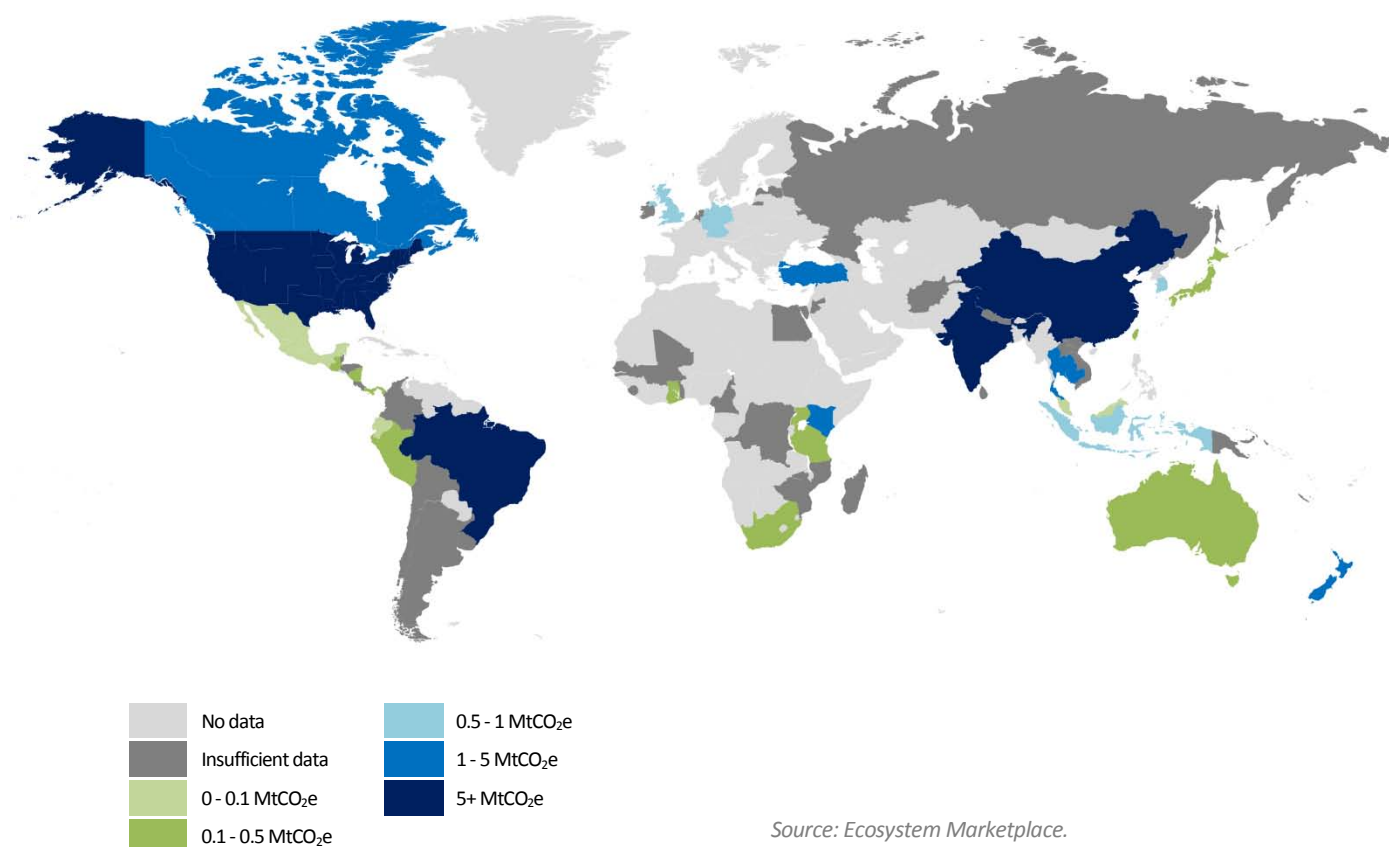
In Africa, most of the 1 MtCO₂e transacted domestically went to buyers in South Africa,¹⁷ where domestic companies like NedBank remained active in the voluntary carbon marketplace, or transacted credits with an eye on the country’s evolving proposed carbon tax which may include a domestic offset component. See the next section for more information about these and other regional market developments.

¹⁷ Sales to buyers in other African countries were also recorded but are not reported by country to protect the confidentiality of survey responses.

8. Regional Markets: Where it All Comes Together



Figure 37: Map of Transaction Volume by Project Location, OTC 2011



8.1 Supply and Demand by Region

This report refers to the voluntary carbon market“s” – plural – for a reason. Voluntary carbon offsets are not a standardized commodity, but are instead a product market where preferences, prices, and projects vary greatly by region. While analyzing project location is one of many ways to “cut the cake,” *where* a supplier and/or their credits call home is a starting point to understand the markets’ varying contributions to volume and value. This section explores regional trends through the lens of findings that have been presented in previous sections – examining regions **by both the volumes of credits supplied from that region and the buyers who transacted them**. A global summary of offsets supplied by location can be found in Section 5.3, while buyer information by region and country is summarized in the previous section.

Figures 38, 41-43 illustrate the volume of credits that have been issued and retired by major registries, by vintage and for all years. This does not always include private or “local” registry data and should be considered conservative for

some regions. The “Primary Transactions” shape summarizes (by vintage) all volumes ever reported in our survey as transacted in the primary market – i.e., the volume of credits that have ever seen an initial buyer. It is critical to understand that while issued credits may not yet have been transacted, their verification confirms that emissions reductions have occurred – hence, from an environmental standpoint they have still made an impact. While highlighting primary transactions removes any market turnover from these shapes, we cannot distinguish between spot and forward transactions. When transacted volume shown is higher than issued volumes for a particular vintage, it is likely that credits that have been forward-sold and not yet issued, or our registry data is not comprehensive in that region. Finally, percent values reported in Tables 9 – 19 are based on the volumes associated with individual questions. In some cases, these volumes are not stated if there was not sufficient data, or regional analysis is omitted to protect respondents’ confidentiality.

8.2 North America: US Voluntary Buyers Top the Charts

Table 9: North America by the Numbers, '11 (all in MtCO ₂ e and US\$)		
	Total, '11	% Change from '10
# of Survey Respondents in Region	101	-13%
Volume supplied	30 Mt	+30%
Average Price	\$6/t	+18%
Value	\$178m	+54%
Volume Purchased Domestically	23 Mt	+20%

Since 2007, much discussion about the North American offset market has been focused on pre-compliance activity. After all, US federal lawmakers were the first to suggest adopting the use of existing voluntary carbon market mechanisms in a regulated scheme. Though any federal carbon market in North America failed to materialize, states and provinces – so far, California and British Columbia – have followed this example. However, North America was also the world’s largest buyer of offsets for purely voluntary purposes, transacting 18 MtCO₂e in 2011 for reasons other than pre-compliance.

North America supplied 30 MtCO₂e of all credits transacted in 2011 – worth \$178 million. Of this volume, 92% of offsets were sold to domestic buyers. Another 8% went to buyers in Europe. Of this volume, suppliers attributed the largest proportion of their transactions to projects certified to VCS, in both the methane and renewable energy categories. Behind VCS, both CAR and ACR also supplied significant volumes.

Table 10: North America: Transacted Credit Types and Credit Buyers, OTC 2011

TOP TRANSACTED CREDIT TYPES, 2011					
Project Category		Project Stage		Standard Use	
Methane	29%	Issued	51%	VCS	34%
Forestry	23%	Project Design Doc	35%	CAR	30%
Renewables	23%	Undergoing Validation	9%	ACR	14%
TOP BUYER TYPES, 2011					
Buyer Locations		Buyer Sectors		Buyer Motivations	
North America	92%	Manufacturing	36%	PR/Branding	36%
Europe	8%	Energy	22%	CSR	30%
		Carbon Market	17%	Pre-compliance	14%

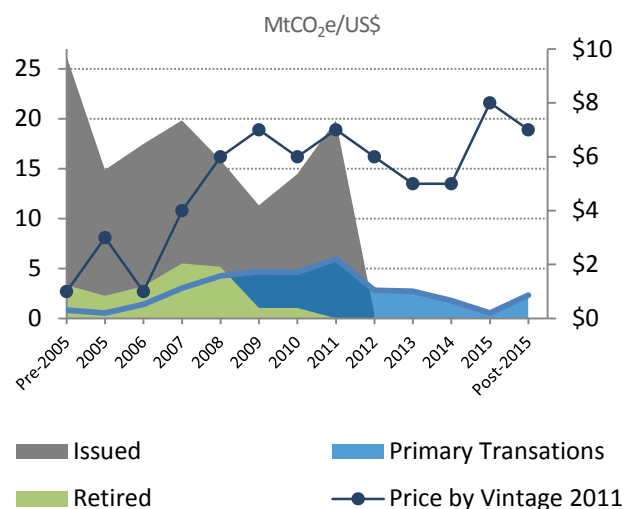
North American buyers continued to support new landfill methane credits – investing in new projects in addition to the region’s large existing supply. Many of North America’s older vintage-issued credits (Figure 38) come from landfill methane projects – once considered for federal compliance eligibility in the US but last year seeing a sizeable price discount. Therefore, some suppliers were surprised that buyers would seek to bring new landfill methane credits on board, but Bonneville Environmental Foundation’s David Wang explains, “Many of the region’s credits are priced high for the California market. We’re beginning to see some non-California compliance forestry projects out there, but right now landfill methane is one sector where voluntary buyers can affordably and easily make something happen.”

Some of North America’s big deals in 2011 did occur in the “non-California” forestry sector, like US railway Norfolk Southern’s 5-year, \$5.6-million deal with forest carbon project developer Greentrees, to support their A/R work under an ACR methodology. Canada also saw its share of forestry activity, including the first VCS-verified Canadian credits from the large scale Darkwoods managed forest project.

Canadian suppliers more than doubled the volume of credits sold from domestic projects in 2011, to 3.2 MtCO₂e. This does not include volumes sold to the B.C. government, which purchases offsets according to provincial regulation. Suppliers did not report any pre-compliance activity in Canada, where they continued to wait for clarity from the Quebec government about how its program would be linked with the California market. Instead, most tonnes were picked up by buyers in the energy and financial sectors, and intermediaries.

Jay Gillette, at B.C.’s Pacific Carbon Trust, says that it’s encouraging to see transaction volumes on the increase in Canada. “We’re seeing carbon markets gain traction at the provincial and state level in North America, which creates an opportunity for greater awareness of offsetting at the voluntary level. We commissioned a poll that found that 80 % of B.C. residents think the government should lead the way on emission reductions, which we see as very positive.”

Figure 38: North America: Historical Issued, Retired and Primary Transaction Volume, and Price by Vintage 2011



8.3 Exploring the Market for California Pre-Compliance Offsets

January 2013 will mark the launch of California’s cap-and-trade program. The program will not be the first on the continent – the Regional Greenhouse Gas Initiative in the Northeast US has been in existence since 2009 – but California’s program is noted for its stringent targeted reductions and size. By 2015, Bloomberg New Energy Finance (BNEF) predicts the allowance market to be worth \$7.7bn, compared to \$0.3bn for RGGI and \$42bn for Europe’s cap-and-trade market. California’s program also bucks the trend of receding political support for carbon markets federally and regionally in the US. Most relevant to this report, it is the first broad-based carbon market in the world to adapt standards developed in the voluntary markets for compliance use.

The California cap and trade program has overcome its share of obstacles. In November 2010, voters defeated Proposition 23, which would have suspended the law behind the program. More recently, in April 2012, the US Court of Appeals temporarily reinstated the state’s low-carbon fuel standard after an earlier ruling deemed it to be unconstitutional – a ruling that would have potentially threatened elements of the cap-and-trade program. Regulators also pushed back its initial auction date from August to November 2012, and the August auction will now

be a simulation. Market players expect other delays and legal challenges to arise, like the challenge to the program's offset program that is currently under legal review.

Protocols, registries from voluntary market feature prominently The California Air Resources Board (CARB) has authorized four types of offsets – including forestry, US-based ODS and livestock methane capture – from the California-based Climate Action Reserve for early-action crediting. These are credits initially issued by a voluntary market registry. Once the California program starts, CARB will issue compliance offsets on a 1:1 basis for qualifying early actions, subject to regulatory verification requirements. CARB has additionally adapted those voluntary protocols as compliance protocols within its regulation. These offsets, known as California Carbon Offsets (CCOs) will be issued directly by CARB. CARB has acknowledged that more project options may become eligible in the future, including oil/gas fugitive emissions (e.g., retrofitting of high-bleed pneumatic devices); nitrogen fertilizer use; and rice cultivation practices. Once the program begins, compliance offsets can be used to meet up to 8% of an entity's compliance obligations.

The CARB further allows for independent registries in the VCM to apply for designation as Offset Project Registries (OPRs), to help oversee verification, listing, and issuance of compliance protocol offsets. The registry applicants will be required to undergo Compliance Offset Program and Compliance Offset Protocol training classes prior to approval. Credits tracked on an OPR will still have to be converted to CARB offset credits and issued by the CARB for formal compliance use. What this conversion process will require remains to be seen – and this particular uncertainty has reportedly stymied project developers' and buyers' willingness to move forward with pre-compliance activities.

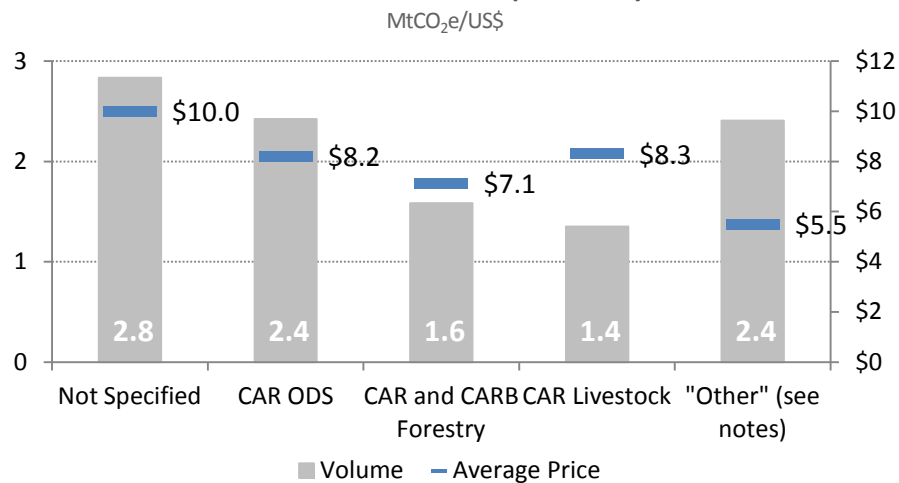
California pre-compliance offset market worth \$85 million Overall, we tracked 10 MtCO₂e of offsets transacted for California pre-compliance purposes, at an average price of \$8/tCO₂e – for a total value of \$85 million in 2011. This is slightly less than the volume and value of all credits transacted for pre-compliance purposes as reported in our Buyers section (12 MtCO₂e and \$86 million), which also includes pre-compliance activities in other Western Climate Initiative (WCI) provinces and other emerging compliance markets.

Figure 39 shows California-focused transaction volumes reported in our survey, by project type and standard. In cases where reported data points were insufficient, the types are grouped into related categories (e.g., all CAR and CARB-certified forestry are presented as one type) to protect respondents' confidentiality.

Supplier-liability see above average pricing Of the volume of credits tracked for California pre-compliance purposes, 23% were from suppliers that did not report a project type – this generally reflected brokered deals, as brokers can contract future offset deliveries that originate from a variety of project developers and types that they represent. Brokers say the fact that these credits obtained the highest prices partly relates to the fact that, in some cases, buyers were willing to pay more for sellers to “wear” the risk associated with offsets being invalidated or revoked by CARB – even if buyers have arguably deeper pockets for absorbing the cost of the risk on their end. The default, according to a unique provision of the California ETS regulation, would have the buyer absorb this liability, making the product less attractive to the buyer.

Brokers say prices are increasingly stratified according to who is wearing the revocation risk – higher prices are associated with credits where the seller takes on the revocation risk. Sellers explain that offsets are otherwise priced lower than they would be, if the revocation risk was not present.

Figure 39: Transaction Volume and Average Price by Standard and Project Type Sold to California Pre-compliance Buyers



Source: Ecosystem Marketplace. Notes: Based on 94 observations. 'CAR and CARB Forestry' refers to CAR early action and CARB-approved protocol forestry offsets and consists of CAR/CARB IFM and CAR avoided conversion. "Not Specified" includes both CAR early action and CARB-approved protocols for which a project type was unknown/not reported. "Other" includes ACR retrofitting of high-bleed pneumatic devices; VCS coal mine and waste water methane; CAR agricultural N₂O and landfill methane from multiple standards.

ODS remains most popular pre-compliance project type Respondents attributed the largest volume of transacted credits pre-compliance to CAR early action ODS credits. Because ODS projects' time to market is significantly less than one year (California ODS project developer EOS says they have completed 26 production cycles with an average cycle time of < 2 months) compared to other eligible project types, buyers and sellers were more willing to accept the "unknowns" of how the early action credits will be converted to compliance offsets – rather than waiting to register under the CARB protocol and develop CARB-certified offsets, as some did for livestock and forestry projects. The higher price attained by ODS credits reflects buyers' belief that the credits are at least risk of revocation, based on the perception that their relatively straightforward accounting of emissions reductions makes it less likely that project developers would overstate those reductions.

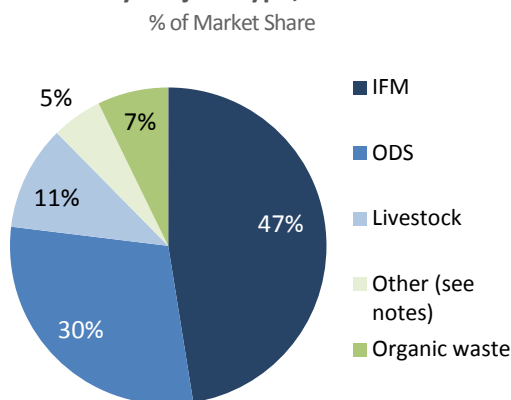
Commitment, complexity weigh down forestry IFM projects were also a popular pick for pre-compliance buyers, but saw slightly lower prices due to risk concerns. While reversals of forest carbon sequestration are not by themselves grounds for credit revocation, buyers still priced the credits at a discount to other project types given their greater complexity throughout the project cycle. CAR's Vice President of Policy Derik Broekhoff Observes, "I think many people are waiting to see how real the market is and what the final rules will be before committing to 100 years of forest project activities." He notes, though, that a growing number of projects are getting verified and moving toward project registration in 2012, as market actors recognize that the California program is on track to launch.

Livestock methane sees smaller volumes, mostly California-driven Behind forestry, livestock methane projects transacted another 1.4 MtCO₂e. Beyond the challenges described above that are common to all California-compliant project types, livestock methane projects continue to transact smaller volumes in part because project activities themselves generate small- to medium-scale reductions. Throughout 2011, livestock methane credits transacted at a price somewhere between ODS (at the top) and forestry (below livestock pricing), according to some stakeholders because their risk of invalidation was perceived to be somewhere in the middle. As a California-facing livestock project developer, Camco's Vice President Charles Purshouse pushes back against this notion. "There are a lot moving parts within these projects – livestock projects are small and you have to be careful about recording and documenting the data. But," he continues, "once you've gone through the process of putting all the data in front of a verifier and they've approved of it, and CAR approves of it, it should be given equal weight as any other compliance offset project." Most livestock methane credits in 2011 were transacted to pre-compliance buyers, in contrast to previous years when voluntary buyers picked up a larger proportion of this volume.

With regard to other project types that are anticipated to be eligible for compliance, but not yet recognized by CARB – like conversion of pneumatic controllers and fertilizer management – the market saw an additional 2.4 MtCO₂e transacted, albeit at a severe price discount. However, if one removes the volume and price of reported landfill credits – which few suppliers expect will be eligible for California compliance – the remaining volume of 1.1 MtCO₂e is priced at \$8.9/tCO₂e. While some data points in this series are too few to report for California purposes only, they are captured within this report’s broader price ranges for both voluntary and pre-compliance credits. In this case, fugitive emissions projects (including pneumatic device retrofits along with other types) and N₂O projects (agricultural and industrial) both saw an average price of \$7/tCO₂e.

Reported pipeline looms large Figure 40 shows the share of project types that suppliers intend to generate over the next five years (2012-16) – of a total 36 MtCO₂e from protocols that have been approved, are likely to be

Figure 40: Pre-compliance Pipeline: Market Share by Project Type, 2012-2016



Source: Ecosystem Marketplace. Notes: Based on 49 observations. “Other” includes ACR retrofitting of high-bleed pneumatic devices; Agricultural N₂O and crop land management.

“sector-based” reductions that currently have a placeholder in the regulation – but will most likely not see clarity around their inclusion for a few years yet.

“There have been some policy dialogues initiated including Governor’s Climate and Forests Taskforce (GCF) and the REDD offset working group which is a dialogue between California, Chiapas, Mexico, and Acre, Brazil, about creating a REDD program that works for California,” says Broekhoff. “Even given these promising signals, right now the CARB has limited bandwidth to consider these options, and we probably won’t see REDD in California before the second compliance period.”

8.4 Asia: At Home and Abroad

One of the strongest relationships in the carbon markets – both voluntary and regulated – has been between European buyers and Asia-based projects. This was demonstrated in the voluntary carbon markets in 2011, when 35% of all transacted credits were from Asia – and 85% of those credits were sourced from European buyers. Overall, Asian projects contributed the second largest volumes and value to the voluntary marketplace – and at 28 MtCO₂e, the most-ever reported for the region through this report survey.

While Asia’s transacted volumes increased, prices for the credits fell as price competition escalated among European resellers. That bid prices could dip so low (less than \$1/tCO₂e in some cases) speaks to the region’s large supply of renewable energy credits from vintage years 2005-2011 – when the volume of issued credits that have never been

Table 11: Asia by the Numbers, '11
(all in MtCO₂e and US\$)

	Total, '11	% Change from '10
# of Survey Respondents in Region	32	+78%
Volume supplied	28 Mt	+60%
Average Price	\$4/t	-28%
Value	\$109m	+15%
Volume Purchased Domestically	3 Mt	+5%

transacted is at least 2.5 times the volume that has ever seen a primary transaction (Figure 41). This survey tracked very few early-stage project activities in the region that received voluntary carbon finance in 2011, except for boutique projects like clean cookstoves and small-scale forestry that are fast emerging throughout Asia but were drowned out by renewable energy projects' sizeable market share.

"There is a divergence, in that in the future Asia will see smaller, exotic, and more community-engaged projects for the voluntary carbon markets," says Neelesh Sachdeva from India-based project developer Emergent Ventures. "We still see large-scale renewable energy developments, but those will mostly veer towards domestic schemes such as RECs, where prices and the policy environment are currently more favorable."

The question remains of what will become of Asia's stockpile of older vintages as voluntary buyers' attention shifts to emerging regions like Africa and Latin America – which expect their own large issuances in the next few years. On the topic, VCS CEO David

Antonioli says, "Sustained low prices are problematic in the long term, but lower pricing also means that more people can enter the market, which is a good thing if we're seeing more activity and value as a result."

Low prices for credits from large-scale clean energy projects are only one piece of the puzzle in Asia, where this report also tracked activities beyond the traditional CDM-led project development. For example, China confirmed its intentions in 2011 to pursue national carbon regulations, starting with pilots in seven major cities. Two of the cities – Beijing and Tianjin – are home to VER exchanges that reported some trading activity last year (Section 4.1). Two China-facing forestry programs – the China Green Carbon Foundation and Panda Standard for China-based projects – announced their first transactions in 2011, with all credits going to domestic firms. These transactions contribute to the 6% of Asian credits that were sold to domestic buyers, who were primarily motivated by CSR.

In the time leading up to South Korea's passage of an emissions trading scheme in 2012, its Ministry of Knowledge Economy has administered the Korea Verified Emissions Reductions scheme (K-VER) to build capacity for a regulated scheme. Since its inception, the government has purchased over 7 MtCO₂e through its purchasing scheme, including .4 MtCO₂e in 2011. The Japanese government also hosts two versions of a domestic voluntary scheme – J-VER and J-CDM – which both reported growing transaction volumes in 2011, together valued at \$17 million. A similar domestic scheme is now under consideration in Thailand. Thailand, along with Indonesia and Malaysia, were among the smaller Asian nations that together contributed over 4 MtCO₂e to the region's market share from a wide variety of project types.

Figure 41: Asia: Historical Issued, Retired and Primary Transaction Volume, and Price by Vintage 2011

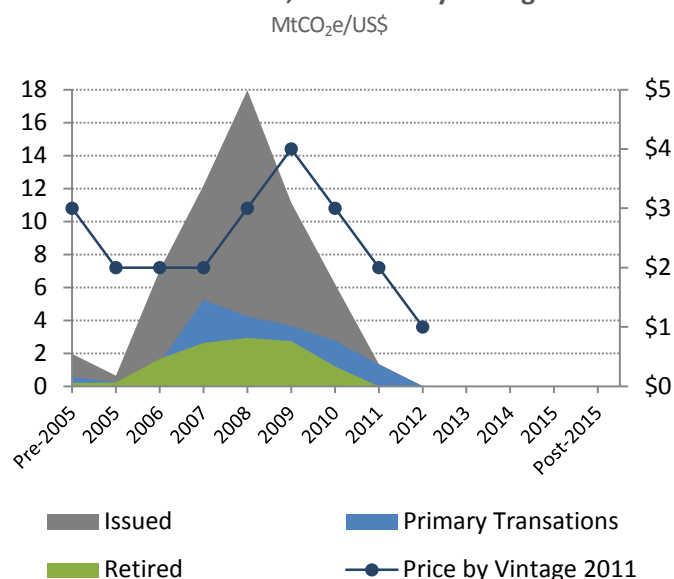


Table 12: Asia: Transacted Credit Types and Credit Buyers, OTC 2011					
TOP TRANSACTED CREDIT TYPES, 2011					
Project Category		Project Stage		Standard use	
Renewables	72%	Issued	88%	VCS	96%
Efficiency & Fuel Switch	7.4%	Undergoing Validation	5%	Gold Standard	3%
Forestry	6.8%	Verified	5%	Internal or Proprietary	1%
TOP BUYER TYPES, 2011					
Buyer Locations		Buyer Sectors		Buyer Motivations	
Europe	85%	Wholesale/Retail	36%	CSR	46%
Asia	6%	Energy	32%	PR/Branding	27%
Oceania	5%	Carbon Market	21%	Investment	9%

8.5 Latin America: Still Grounded in Forestry

Table 13: Latin America by the Numbers, '11 (all in MtCO₂e and US\$)

	Total, '11	% Change, '10
# of Survey Respondents in Region	43	+30%
Volume supplied	7.3 Mt	-58%
Average Price	\$11/t	+100%>
Value	\$82m	-11%
Volume Purchased Domestically	1.1 Mt	-75%

Following a year of explosive growth in 2010, projects in Latin America saw 58% less volume transacted in 2011 – when one supplier described the European financial crisis as a “wet blanket” on the Latin American market for forest carbon projects. Even so, the region saw its average credit price increase from \$5/tCO₂e in 2010 to \$11/tCO₂e in 2011, partly owing to higher prices paid for later-stage REDD credits. Thus, the Latin American market’s value only fell by 11%, despite the fact that transaction volumes were more than halved.

Beyond the exent of European buyers, suppliers offer several explanations for the region’s quiet year. Chief among them were the challenges faced by those REDD countries that are waiting for sub-national and national governments to determine whether and how project-level activities will be recognized within a national REDD program. Others remarked about the difficult and expensive task of getting forest carbon projects through the pipeline, which required an extensive amount of unanticipated fieldwork in 2011. Even so, Belize was home to the second-ever project to receive issued VCS REDD credits.

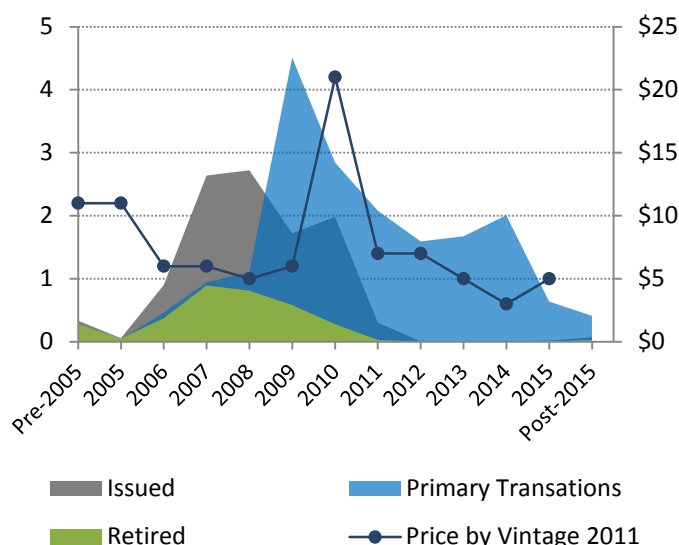
Table 14: Latin America: Transacted Credit Types and Credit Buyers, OTC 2011					
TOP TRANSACTED CREDIT TYPES, 2011					
Project Category		Project Stage		Standard use	
Forestry	70%	Issued	51%	VCS	47%
Efficiency & Fuel Switch	16%	Project Design Doc	18%	Internal or Proprietary	27%
Renewables	11%	Undergoing Validation	15%	Brasil Mata Viva	20%

TOP BUYER TYPES, 2011					
Buyer Locations		Buyer Sectors		Buyer Motivations	
Europe	63%	Carbon Market	32%	Resale	49%
Latin America	26%	Wholesale/Retail	28%	CSR	27%
North America	7%	Entertainment/Events	11%	PR/Branding	8%

Though domestic policies in Latin America have been slow-moving, a few programs produced a response among voluntary market actors. Among them, Rio de Janeiro's stated intention to launch a regional trading program sometime in the next year coincided with the launch of the Bolsa Verde Rio, an exchange that aims to facilitate the trade of forest carbon credits used to comply with the country's Forest Code. Among Latin American countries, the largest volume of credits were tracked from Brazilian projects (5.7 MtCO₂e), thanks in part to small emerging secondary and buyers markets in the region. Despite Mexico's recent passage of a national emissions trading scheme, its transaction volumes were largely unchanged in 2011 (.1 MtCO₂e) – as with Colombia and Chile, both of which have expressed interest in a carbon tax or "tax-and-trade" mechanism and are also establishing domestic trading platforms.

While both the Brazilian state of Acre and Mexican state Chiapas are engaged with California to feed REDD credits into the state's offset program after 2015, this survey tracked an insignificant volume of credits from Latin American projects sold to pre-compliance buyers. Instead, buyers in the Americas sought Latin America-based credits primarily for their CSR value. Programs like Costa Rica's C-Neutral Standard – launched in 2011 – and Chile's Santiago Climate Exchange aim to guide offset use and carbon neutrality efforts among independent domestic firms (as opposed to only multinational importers).

Figure 42: Latin America: Historical Issued, Retired and Primary Transaction Volume, and Price by Vintage 2011



More than any other region featured in this report, Latin America continues to see a large proportion of its transacted credits certified to a domestic or internal, proprietary standard. In most cases, project developers utilizing non-traditional standards claim that existing independent standards like VCS do not address the "local situation" – project area flora, fauna, and socioeconomic considerations that are unique to the region. For Latin American forestry activities in particular, only 28% of contracted credits utilized the VCS.

8.6 Africa: Breaking Through, Backing Development

From reporting only less than 1 MtCO₂e two years ago to sitting among the markets' top three regions for supply in 2011, Africa's voluntary carbon market has seen growing interest among diverse development multinationals, NGOs, governments, and traditional market players – many seeking scale for "carbon-plus- development" projects in the region.

Table 15: Africa by the Numbers, '11
(all in MTCO₂e and US\$)

	Total, '11	% Change, '10
# of Survey Respondents in Region	12	+33%
Volume Supplied	8 Mt	+100%>
Average Price	\$8/t	-14%
Value	\$60m	+100%>
Volume Purchased Domestically	0.9 Mt	+100%>

As a challenge to project developers, the region presents few, if any, opportunities for the voluntary carbon market's traditional large-scale distributed renewable energy projects. The types of options available to project developers – especially in the forest carbon markets – have also incurred high levels of both risk and cost. All the while, though, standards and pilot projects within the VCM have been pursuing means to move forward with approaches to clean cookstoves and REDD, some of which began to pay off with large and “first” issuances in 2011.

Last year, the market not only saw verification of the first VCS REDD credits from a project in Africa, but it was also the standard's first “mega project,” meaning that the Kenya-based REDD project is expected to generate over 1 MtCO₂e reductions per year. Also in 2011, ERA Ecosystem Restoration Associates announced an expected mega project in the Democratic Republic of the Congo, where the Congolese government assigned a conservation concession to ERA to develop the REDD project – now a joint

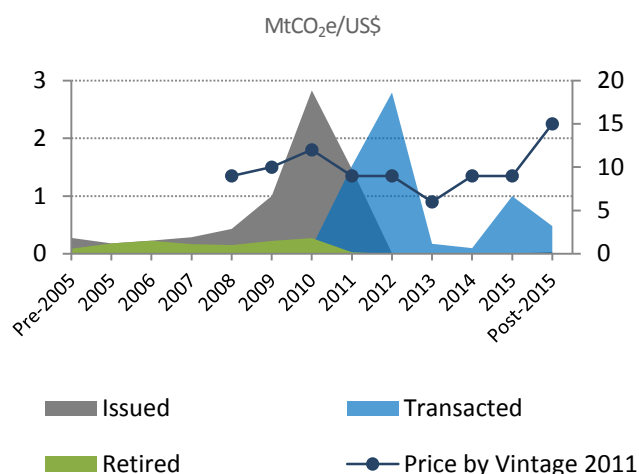
venture between ERA and Wildlife Works.

Larger-scale project activities are moving ahead in other categories, too, including clean cookstoves that are discussed in depth in Section 5.1. To move these projects down the path to reductions, some suppliers have aligned themselves with Africa's existing, broad-based NGO community, taking part in programs like the Alliance for Clean Cookstoves. Beyond the motivation to improve livelihoods and biodiversity in the region, suppliers say the market is beginning to gear up for the European compliance market's shift to only accepting new (post-2012) CDM credits from projects in LDCs. This report tracked projects in 10 LDCs in 2011, up from 5 in 2010 – though most project types seen there were geared toward purely voluntary rather than compliance market technologies and buyers.

In South Africa, discussion surfaced in late 2011 about the country's plans for a domestic GHG regulatory scheme – of the “tax-and-trade” variety – that could include a domestic offsetting component. This was confirmed in a national budget review released in early 2012, which suggests a tax that allows companies to offset 5-10% of their obligation. Some in the business community say they will push for the acceptance of voluntary carbon market mechanisms much like the design of California's offset program.

Already, domestic financial institutions like Nedbank are preparing for the measure, but with reservations. “If there is a carbon tax and especially with offsets, we'll definitely be involved – but it's ‘wait and see’ as to whether the policy will move forward,” says Duncan Abel, a senior transactor at Nedbank Capital. “Right now South Africa is faced with a number of socio-economic issues like education, housing and unemployment, and it is therefore difficult to call on people to fund climate measures when these basic needs are a challenge to meet.”

Figure 43: Africa: Historical Issued, Retired and Primary Transaction Volume, and Price by Vintage 2011



The South African government has also been supporting the training of local verifiers who can conduct domestic project audits at a cost they hope will be more locally feasible than that of traditional DOEs. Audit costs have been identified as a major barrier to voluntary project uptake in the region.

Table 16: Africa: Transacted Credit Types and Credit Buyers, OTC 2011					
TOP TRANSACTED CREDIT TYPES, 2011					
Project Category		Project Stage		Standard use	
Renewables	48%	Validated	44%	Gold Standard	49%
Forestry	38%	Issued	33%	VCS	33%
Clean Cookstoves	11%	Undergoing Validation	16%	ISO-14064	13%
TOP BUYER TYPES, 2011					
Buyer Locations		Buyer Sectors		Buyer Motivations	
Europe	83%	Financial/Insurance	58%	Investment	31%
North America	9%	Carbon Market	11%	PR/Branding	16%
Africa	8%	Wholesale/Retail	11%	Resale	14%

8.7 Oceania: Compliance Complications

Table 17: Oceania by the Numbers, '11
(all in MtCO₂e and US\$)

	Total, '11	% Change, '10
# of Survey Respondents in Region	23	+15%
Volume Supplied	2 Mt	+100%>
Average Price	\$13/t	-29%
Value	\$21m	+100%>
Volume Purchased Domestically	3 Mt	+100%>

For several years, demand for offsets in Australia and New Zealand has become increasingly subdued due to a short supply of domestic credits – with the lone exception of Australia's Greenhouse Friendly program, which was phased out when Australia assumed a Kyoto Protocol commitment and began considering a domestic regulatory framework for achieving it. This began to turn around in 2011, as the region saw greater clarity about the treatment of domestic offsets under Australia's recently approved carbon price, while New Zealand foresters also fed compliance forest carbon credits into the VCM. All told, 50% of credits transacted in region were from domestic projects in 2011.

In New Zealand, where 74% of the region's volume was sourced, voluntary offset suppliers transacted a small volume of credits from international projects, but mostly offsets came from the country's two available avenues for generating forest carbon credits – the Permanent Forest Sink Initiative (NZ PFSI) and the country's emissions trading scheme (NZ ETS). Under different rules, both programs credit forestry activities with compliance

instruments, either New Zealand Units (NZUs) through the ETS or Kyoto units under the PFSI. Suppliers say that the latter finds favor among other developed-country buyers that want to invest in forestry and find reassurance in the PFSI's government backed offsets – which enter into a minimum 50-year covenant with the Crown.

On the domestic voluntary front, suppliers explain that demand is complicated by a set of national guidelines for offsetting and carbon neutrality claims that were laid out by New Zealand Commerce Commission several years ago under the country's Fair Trading Act of 1996. Intended to stymie unsavory activities by "carbon cowboys," suppliers say the legally enforceable guidelines present prescriptive rules that tend to deter new voluntary activity on the part of both buyers and project developers.

Across the Tasman, in 2011 Australia saw the long-awaited passage of a national carbon tax, which transitions to a full trading mechanism in mid-2015. As a supporting mechanism for the regulated program – and to replace the decommissioned Greenhouse Friendly program – the government also passed the Carbon Farming Initiative (CFI) to bring about domestic offsets in eligible sectors. While some sectors will receive credits that are convertible to compliance units under the scheme, reductions in other sectors occur outside of the national program’s scope and so generate “non-Kyoto” units that can be sold to voluntary buyers. To kick-start the program, Australia has instituted a government purchasing much like that seen in South Korea (Section 8.4) where the government has offered to purchase \$250 million through the CFI non-Kyoto Carbon Fund that will be administered by Australia’s Department of Climate Change and distribute funds for six years starting in 2013.

Australian buyers continue to interact with the country’s National Carbon Offset Standard (NCOS) administered by government-founded Low Carbon Australia. The NCOS accredits the carbon neutrality claims of companies or products that adhere to its guidelines for acceptable offsetting practices – including the use of certain offset standards. To date, the NCOS primarily recognizes independent standards VCS and Gold Standard, though the recognition of non-Kyoto CFI instruments was under consideration in 2011.

Last year, only 12% of credits purchased by Australian buyers were sourced from domestic projects. Given that Australian buyers – as in other developed countries – prefer to support local projects when available, one would expect that proportion to increase as non-Kyoto credits become available. However, several domestic suppliers have voiced concerns that while the mechanisms are in place to generate domestic supply, there are no strong demand drivers to incentivize companies to set offsetting targets – or renew existing targets that for many companies will expire in coming months.

“A lot of enthusiasm for climate action has been mitigated through the years by political pressure and political risk,” remarks Climate Friendly CEO Freddy Sharpe. “The momentum that comes from consumer, investor and employee pressure has been lost as a result, and trying to reignite it is requiring some creative thinking about how to make offsets an economically sound business case – not just a feel good purchase.”

8.8 Turkey Stays True to Purely “Exporter” Status

Table 18: Non-EU Europe by the Numbers, '11 (all in MtCO₂e and US\$)

	Total, '11	% Change, '10
# of Survey Respondents in Region	4	Not significant
Volume Supplied	5 Mt	No change
Average Price	\$8/t	-24%
Value	\$40m	-31%
Volume Purchased Domestically	0 Mt	No change

In 2011, reported transaction volumes in non-EU Europe remained steady, despite the absence of a major survey respondent in Turkey. In this report, “Non-EU Europe” captures volumes from both Turkey and Russia – two countries that are not included in our analysis of supply and demand among EU-member countries (Section 8.9), as their market dynamics are inherently different.

Unlike the EU, which is the world’s largest source of demand for international offsets, Turkey is purely a supply market. For several years, this report has not tracked any volumes sold to Turkish buyers, but instead a relatively steady stream of credits sold *from* Turkish projects. These credits are sourced primarily from wind projects, which make up most of the country’s existing issued credit supply. Some volumes also come from hydropower, however, which suppliers say comprises the majority of the region’s credits the market can expect to see from the Gold Standard pipeline in the near future. Like other regions, Turkish suppliers faced growing price competition from comparatively

lower-priced renewables supplied by their Asian neighbors – and also the supply of Gold Standard projects from new project types and locations that began coming online in 2011.

Unlike China or India, where large-scale wind projects were brought online to service the CDM market, Turkey – which is not a CDM-supply country – finds its only source of offset demand with voluntary buyers. Therefore, the pressure was on in 2011 to differentiate their projects by diversifying their marketing efforts, emphasizing their additional contributions to sustainable development and – perhaps most importantly – closely managing existing relationships with buyers.

“There are approximately 20 Gold Standard wind projects that have issued credits in Turkey, and many more in the pipeline,” points out Yagmur Karabulut from Turkey’s Mavi Consultants. Given Turkey’s looming and large pipeline of both wind and hydropower credits, he suggests, “I think the winners are and will be those that have already secured long-term relationships with buyers who will keep coming back to the same projects every year.”

In 2011, Turkey adopted a National Climate Action Plan to apply from years 2012 to 2023. While the plan does not introduce any carbon market mechanism, a new regulation is valid as of April 2012 that requires big emitters to monitor, verify, and report (MRV) their emissions starting in 2015-2016. Suppliers express mixed expectations about the extent to which the policy will raise domestic awareness about offsetting. To date, they report that most voluntary climate actions undertaken by domestic companies for CSR claims revolve around “physical” activities like tree planting – and not with the intent to offset emissions.

8.9 Europe: Thinking Locally, Acting Internationally

Table 19: Europe by the Numbers, ‘11
(all in MtCO₂e and US\$)

	Total, ‘11	% Change, ‘10
# of Survey Respondents in Region	90	+30%
Volume Supplied	1.4 Mt	+100%>
Average Price	\$9/t	-22%
Value	\$12m	+100%>
Volume Purchased Domestically	30 Mt	+44%

Because of the long-standing presence of the EU ETS and broader Kyoto Protocol commitments in Europe, a report section describing domestic supply in Europe is bound to be brief. Most reductions that occur in the region help countries meet their international commitments and would be “double-counted” if sold as offsets. For this reason, over the years most EU-based buyers have shifted their attention elsewhere, transacting the majority of offsets produced in developing countries – as seen in Tables 12, 14, and 16. A small volume of Europe-based reductions that were generated before the start of the Kyoto Protocol’s Phase I have continued to transact credits over the years and did so in 2011, too.

However, suppliers report that – like other developed regions and especially in times of economic hardship – European companies increasingly desire to support projects that are closer to their homes and headquarters. This trend can be seen in the emergence of programs like the now-operational UK Woodland Carbon Code; Italy’s Carbomark regional voluntary trading

program that is currently under development; and a few other examples of programs that channel domestic dollars toward local development of clean energy infrastructure and woodland creation.

One such program, the UK Carbon Reporting Framework (UK CRF) matches domestic donors with local projects pursuing energy efficiency and small renewable energy generation, on the basis of carbon savings – but cautions donors against making offsetting claims because of the double-counting issue. When British Airways, a co-founder of the CRF, abandoned its offsetting program in favor of supporting the local project, the news raised a red flag among UK-based offset retailers. The designers of programs like the CRF point out, though, that in order to meet national targets, the market determines where least cost reductions can occur and local, pricier opportunities are often overlooked – hence the need for additional “non-offset-based” domestic programs.

Even as this debate continues, there are limited instances when European projects can generate offsets. For example, the VCS allows projects in some cases where the project developer can produce documentation stating that the

reductions are not counted under a regulated cap of any kind. Projects can also take the “basket approach” to buy and retire an international offset alongside every ton of domestic emissions reductions it monetizes. This is the approach taken by a few European suppliers – whose transaction volumes are recorded under the independent standard and non-EU-based project that supplemented the domestic reductions.

9. Market Projections



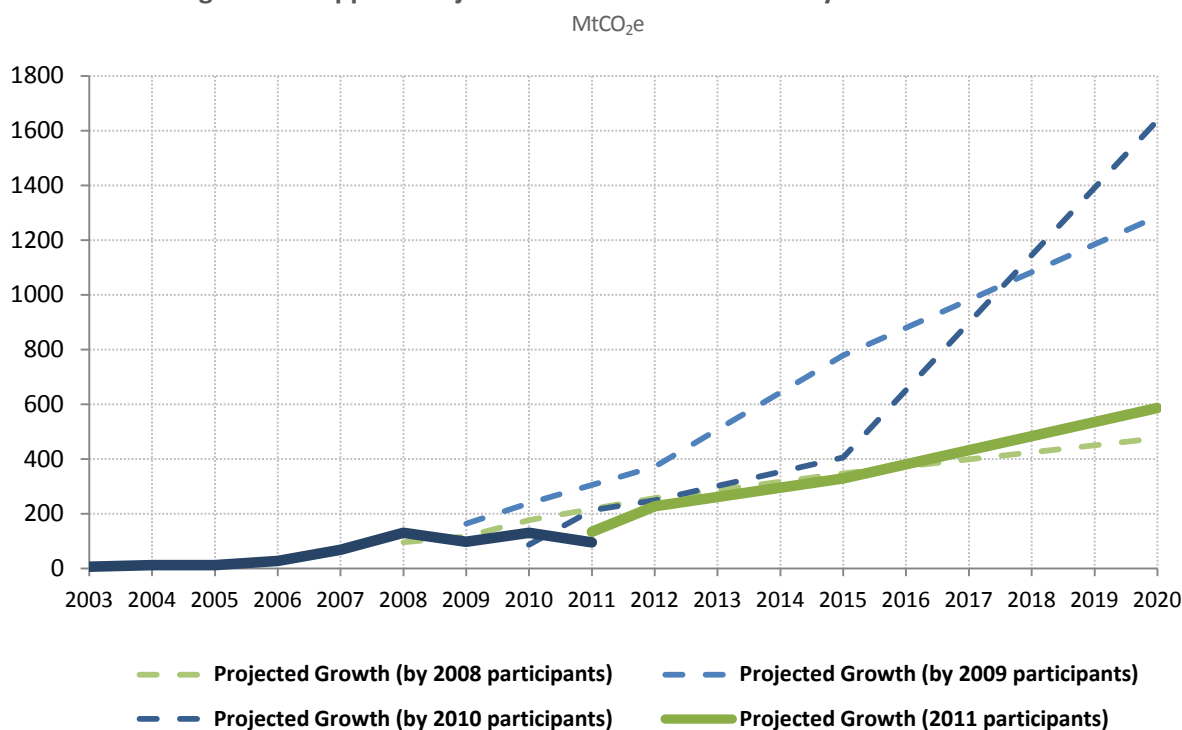
This backward-looking report takes a snapshot in time of the projects, buyers, and suppliers that together formed a marketplace in the previous year. All the while, trends tracked in the past continue to unfold in the new year, over the six months that we collect data and compile a new report. By the time suppliers are asked to predict future market activity, in many ways the future is already here.

With that in mind, this report's survey asked suppliers to give a panoramic view of their projections for voluntary carbon market growth and – for the first time in this survey – to report their future plans at the project level (Section 9.2).

9.1 Supplier-Reported Market Projections

This year, 85 survey respondents predicted the overall transaction volume of the voluntary carbon markets in 2011 and projected market size and growth through 2020. With all responses weighted evenly, this year's respondents overestimated the 2011 market in which they sold credits, predicting that the market transacted 134 MtCO₂e in 2011. This is a full 39 MtCO₂e more than was actually tracked. The overestimate is perhaps due to the fact that suppliers tend to base their predictions on the previous year's volumes (in this case, 2010) and did not account for 2010's large outlier that buoyed OTC volumes in that year but was unlikely to recur in 2011. With this information in hand, suppliers forecasted a 70% growth rate for the 2012 market, expecting that they and their peers will transact 227 MtCO₂e in the current year. This is close to the volume suppliers predicted in last year's survey would be transacted in 2011. To achieve this predicted sales volume in 2012, suppliers would need to transact 132 MtCO₂e more than they did last year.

Figure 44: Supplier-Projected Growth in the Voluntary Carbon Markets



Source: Ecosystem Marketplace. Note: Based on 85 organizations.

This year's projected rate of annual growth through year 2020 was roughly in line with that given by suppliers in the 2008 market – a time before the escalation of trading volumes on CCX spurred bullish expectations about future market growth. Even based on this year's comparably conservative estimates of market growth, the cumulative volume of transactions suppliers expect to see through the end of 2016 (1,500 MtCO₂e) is four times the volume they reported in their project pipelines for the same period.

In contrast to the last two years' surveys, respondents in 2011 were more conservative about their long-term outlook as well, anticipating steady growth with no major disruptive events. Their estimates for transaction volumes in 2020 were reduced by more than half from projections made by 2011 respondents looking at the 2010 market. In follow-up interviews regarding this finding, a few suppliers pointed out that now, with a few years of relatively steady OTC market activity under their belt, market participants might have more realistic expectations of market growth.

9.2 Supplier Portfolios and Pipeline

While suppliers' estimates in the previous section are useful primarily for gauging market sentiment, beginning last year we also asked survey respondents about their actual organization-level expectations. This is captured both in the volume of credits remaining in their portfolios at the end of 2011 and the volume of credits they expect to transact or generate over the next five years.

This year's survey respondents reported a total of 50 MtCO₂e in their portfolios at the start of the current year and an anticipated 414 MtCO₂e that the market may see come online from 2012 to 16. Both of these volumes fall short of what was tracked in the previous year's survey, when the volume of unsold credits in suppliers' portfolios was three times what was reported as "left over" this year. Much of the volume that suppliers reported still holding at the end of 2010 was from forestry activities and renewable energy – some of which is among the transacted credits tracked in this report.

Table 20: 2011 Transacted Volume, End-of-2011 Portfolio Volume and 2012-2016 Pipeline by Project Type, Intended for Purely Voluntary OTC Market (*in MtCO₂e*)

Volume Transacted 2011 (Mt)		Volume Left in Portfolios (Mt)		Projected Pipeline (Mt)	
Wind	24	A/R	13	REDD	86
A/R	8	IFM	11	A/R	31
REDD	7	Ag Land Management	5	Wind	27
Landfill	6	REDD	4	Hydro	27
Biomass	5	Hydro	4	Fuel Switching	12
Clean Cookstoves	3	Geothermal	N/A	Energy Efficiency	12
IFM	3	Energy Efficiency	1	Clean Cookstoves	7
Large Hydro	3	Fuel Switching	1	Biomass	6
ODS	2.4	Wind	1	Waste Heat Recovery	4

The volume of credits in respondents' project pipelines from 2012 to 16 was 14% less than was reported in the previous year, primarily due to a smaller estimated pipeline for REDD projects. Table 20 explores the volume of credits in suppliers' portfolios and pipelines that are intended for purely voluntary buyers – for more information about the pipeline for pre-compliance buyers, see Section 8.3. Here, one can see that forestry and land-use credits were a top project type transacted in 2011, are among the top project types that suppliers are looking to generate over the next five years, and also comprise the largest volumes of unsold credits in suppliers' portfolios. Bear in mind

that this represents both issued credits and the volume of reductions that suppliers may need to sell forward to help finance their projects.

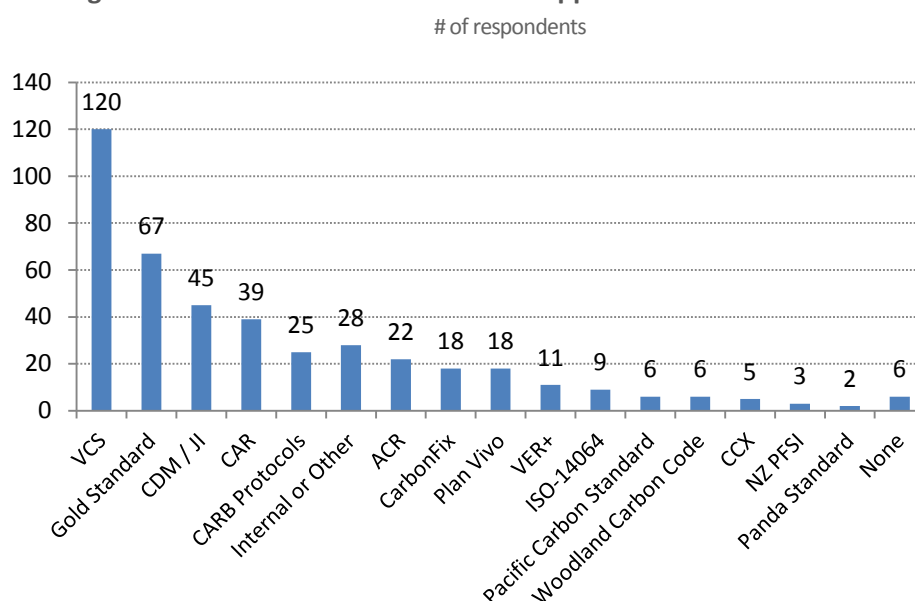
Also seeing a more prominent place in suppliers' 5-year pipelines are credits from renewable energy projects. In this year's survey, suppliers expected their future portfolios to include 52 MtCO₂e from wind and hydro projects which is 13 MtCO₂e more than projected in the previous year. This fits with the large volume of credits expected to be issued from some regions (like Turkey) in the next year, but was not reflected in any substantial demand for future vintages from new renewable energy projects in the same regions (Section 5.3). Therefore, these projected volumes may be more indicative of intermediaries' demand for existing credits, rather than new project activities.

9.3 Future Standard Utilization

Third-party standards play a powerful role in shaping the voluntary carbon market, offering guidance to project developers in the mainstream and niche markets. With all of the choices available, we asked suppliers to weigh in on which standards they plan to use in 2012. Participants were given the option to select an unlimited number of standards from our list – including internally created standards and a write-in option. Each response was given equal weight regardless of suppliers' transaction volume. Figure 45 depicts the number of respondents that selected each standard. As responses are not volume-weighted, a standard's popularity does not necessarily equate to market share in 2012.

In keeping with previous years' trends, the VCS was again reported as the most sought-after certification, with 100 organizations (38% of respondents) planning to use the standard in 2012. Behind the VCS, the Gold Standard regained its second-runner-up status – in line with the larger volumes of renewables and (new this year) clean cookstoves that suppliers have identified in their 5-year plans. Next in line was CAR, which fell from a second-place ranking in 2011. The standard may have lost some projected users to California's regulation-based protocols, which picked up 25 respondents that intend to use CARB protocols in 2012.

Figure 45: Count of Carbon Standards Suppliers Plan to Use in 2012



Source: Ecosystem Marketplace. Note: Based on 430 observations.

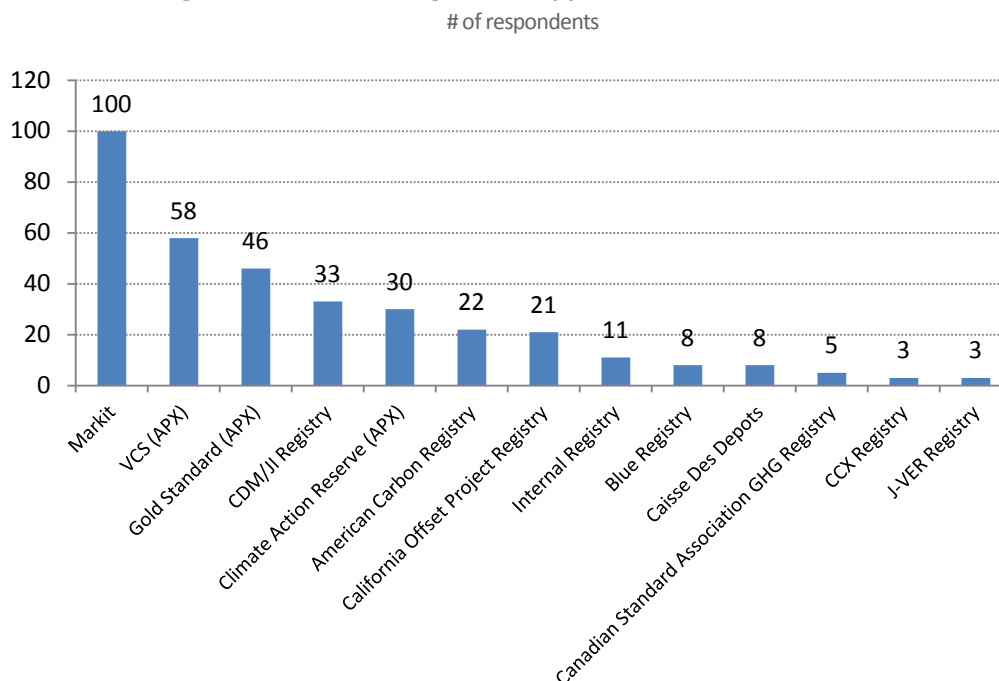
For the first time in several years, a larger number of respondents this year reported intentions to use internal or “other” standards not included in the survey list. Also building on 2010 report trends, suppliers showed a greater interest in domestic standards – like the Pacific Carbon Standard, Panda Standard, and UK Woodland Carbon Code, all of which saw responses for projected use for the first time in 2011.

9.4 Future Registry Utilization

Registries vie for market share on the basis of engaging new suppliers, standards, and partners in their systems. Last year, despite a rapidly changing registry environment, preferences for registry use remained relatively stable from 2010 – albeit with a new focus on California-facing registries that may be tapped to help administer the state’s compliance offset program.

As with standards, we asked market suppliers which registries they plan to use in 2012. Again, participants were given the option to select an unlimited number of registries from among 15 third-party infrastructure providers, independent registries, and standard- and exchange-registries, as well as to select an internal registry or write-in option.

Figure 46: Count of Registries Suppliers Plan to Use in 2012



Source: Ecosystem Marketplace. Note: Based on 348 observations.

Markit registry again grew the number of suppliers that intend to use its registry service in 2012 – to 100 respondents, up from 70 last year. The VCS registry administered by APX saw more responses in this year’s survey, as well. Across all APX registries, responses totaled 134 potential users which surpassed its projected 2011 usage by 7 “votes.” While the same number of suppliers intended to use CDM/JI methodologies in 2012 as had in 2011, their expected use of the CDM/JI registry fell by 10 responses. On the US side of the compliance equation, a total 21 respondents expected to make use of registries that service the California compliance offsets program. As discussed in Section 8.3, CARB has yet to anoint a registry or registries to do the job, but perhaps in response to early expectation of its eligibility, the ACR registry saw more responses than in the previous year. At the same time, expected use of CAR’s APX-administered registry fell by 8 responses.

As in last year's survey, 11 respondents plan to use an internal registry in 2011, and no respondents to this question selected the option for "none." Also, despite its announcement that it would shut down registry services by the end of 2012, the same number of respondents said that they will make use of Caisse des Dépôt's VCS registry in 2012. Another 8 respondents acknowledged BlueRegistry as their registry service provider of choice – in line with a larger number of respondents that plan to use the VER+ standard in 2012.

9.5 Looking Ahead: 2012 and Beyond

The voluntary carbon markets are fundamentally a grassroots system – whether as a laboratory for new methodologies and project types, or more broadly in supporting local and regional markets where access to regulated markets or a top-down mechanism is not always established or adequate. Such bottom-up climate action was a key trend in 2011 and continues to take root in 2012. In particular, governments and suppliers are becoming buyers in the run-up to regional compliance markets; corporates are whetting their appetite for offset projects tied to the impact of their international supply chains; and some buyers are taking a direct stake in new projects or in the project developer themselves. This type of demand points to further regionalization and continued interest in the personality of a credit – in contrast to an emphasis on a global, liquid marketplace.

In 2012, the market also continues to focus its energies to the everyday well-being of project stakeholders – aiming for outcomes like improved health and livelihoods in poor communities, more efficient farms or environmental rehabilitation of disaster-stricken areas.

In the United States, many stakeholders are preparing for a chunk of the voluntary carbon markets to make a long-awaited move to compliance credits in 2013. This is the first time a compliance market will base its offset program on standards incubated in the voluntary marketplace. A grassroots revolution of sorts.

While bottom-up climate action has numerous benefits, it also poses challenges. In response, in the first half of the year, the market has continued to proliferate new tools for tracking and trading credits and monitoring their multifaceted impacts. Suppliers reported that in the first half of the year, buyers too have deepened their level of engagement with the voluntary carbon market. Another key theme already at play in 2012 is an intensifying focus on market transparency and professionalization – stemming from a desire among suppliers to “keep the house in order” even as the market continues to build up and out.

Annex A:

Standards Unpacked



In early 2012, we surveyed standards and registries to explore the volume and types of credits that have been tracked through their systems, as well as how each standard's structure and scope impacts uptake. Tracked information varied slightly by each infrastructure provider, but what we were able to obtain is reported in the following section – along with six years' worth of historical *State of* survey data.

At the top of each standard's profile – created for any standard with more than one year's worth of transaction data – we present a summary of the standard and basic price and volume information. The bottom half of each profile is dedicated to basic information about the standards' geographic and technical scope; use of third-party verification for various project activities; the number of projects validated by project category through the end of 2011; and the market share for different types of credits that were transacted under each standard in 2011 only.

In between these quantitative and qualitative sections, a series of ratios explore the relationships between available, transacted, and retired offset volumes.

Issued to Transacted Ratio: This ratio compares the volume of credits issued by a registry according to the featured standard, against volume of credits that suppliers have reported transacting, for all years and in 2011. In some cases, transaction volumes are higher than issuance volumes – this captures both market turnover and forward sales.

Issued to Retired Ratio: This ratio compares the volume of credits issued by a registry according to the featured standard, against the volume of credits that registries have reported retiring from that standard, for all years and in 2011.

A Note on Our Methods. Most standards do not have a clear picture of the volume of credits verified to their standard until a verification report is submitted to a registry. Verification numbers should therefore be considered indicative, whereas issued, transacted, and retired volumes are more closely tracked. In this section, we rely exclusively on registries' retirement data and not the retired volumes we track in our survey, as registries' retired volumes are slightly more comprehensive. All issued and retired volumes tracked on an APX-administered registry (CAR, Gold Standard, and some VCS credits) and from the CarbonFix Standard reflect publicly available data. The proportion of market supply that unreported, private activities represents remains unknown. Finally, we include a **key for the “Validated and Transacted Projects by Type”** charts at the bottom of each page.

A.1 Carbon Accounting Standards

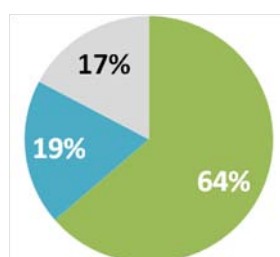
American Carbon Registry – ACR Standard (Version 2.1, 2010)

ACR, founded in 1996, is a non-profit enterprise of Winrock International. ACR currently has three published standards, all of which underwent scientific peer review. In 2011, ACR introduced its first international REDD methodology. ACR methodologies also made a list of protocols to be reviewed for potential adoption under California's cap-and-trade program.

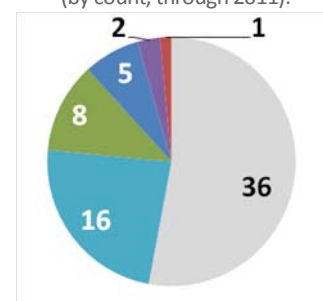
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$4	12	68	34.7	2.9
2011:	\$5.8	4	9	.5	.1
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	3 to 1			5 to 1	
2011:	1 to 10			11 to 1	

STANDARD SCOPE	
Standard Type:	Carbon accounting only + tagged co-benefits
Asset generated:	Carbon credit
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
MAX time between verifications (years):	5

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



Carbon Fix Standard – Carbon Fix (Version 3.2, 2011)

The CarbonFix Standard applies to afforestation, reforestation, natural regeneration, and agro-forestry projects that demonstrate a commitment to socio-economic and ecological responsibility. In January 2011, the International Carbon Reduction and Offsets Alliance (ICROA) recognized CarbonFix Standard as suitable for use under its Code of Best Practice.

Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified* (Mt)	Vol. Retired* (Mt)
All Years:	\$13.6	.4	5	.7	.04
2011:	\$17.5	.03	3	.4	.03
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	1 to 1			3 to 1	
2011:	1 to 1			10 to 1	

STANDARD SCOPE	
Standard Type:	Carbon accounting + embedded co-benefits
Asset generated:	Carbon credit
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	✓
MAX time between verifications (years):	5

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



KEY: AFOLU Energy Methane Gases Fuel Switch Other

*Only reports publicly available data on Markit Environmental Registry

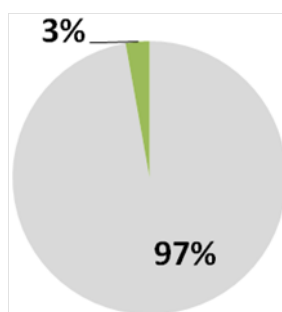
Chicago Climate Exchange – CCX (Several publications 2003 - 2012)

After retiring its voluntary cap-and-trade scheme in 2010, last year CCX launched the Chicago Climate Exchange Offsets Registry Program to register verified emission reductions based on a comprehensive set of established protocols.

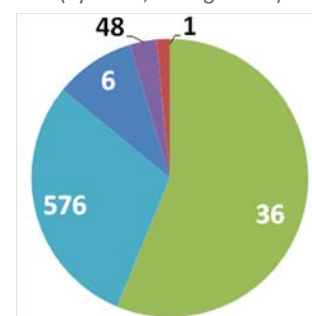
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$1.5	11	339	89	24
2011:	\$0.1	2	0	6	17
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	7 to 1			4 to 1	
2011:	3 to 1			1 to 3	

STANDARD SCOPE	
Standard Type:	Carbon accounting only
Asset generated:	Carbon credit
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	N/A
MAX time between verifications (years):	5

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



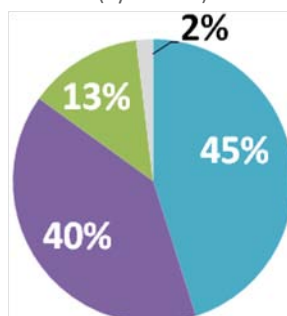
Climate Action Reserve – CAR

CAR is a non-profit carbon offset registry and standards-setting body. CAR has so far developed several carbon offset protocols for use in the US and in some cases Mexico. In 2011, the California Air Resources Board approved four CAR protocols for early-action compliance credits and adapted the same protocols for compliance purposes.

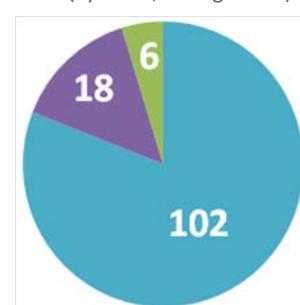
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified* (Mt)	Vol. Retired* (Mt)
All Years:	\$6.9	42	126	21	3
2011:	\$7.3	9	56	10	2
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	1 to 2			7 to 1	
2011:	1.1 to 1			5 to 1	

STANDARD SCOPE	
Standard Type	Carbon accounting only
Asset generated:	Carbon credit
Eligible countries:	U.S. & Mexico
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	N/A
MAX time between verifications (years):	6

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



KEY: AFOLU Energy Methane Gases Fuel Switch Other

*Only reports publicly available data on the CAR APX Registry

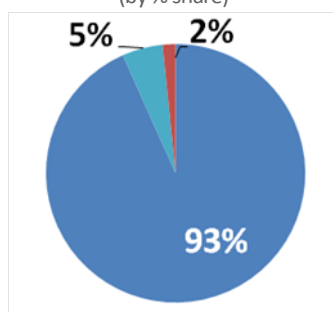
Gold Standard – GS (Version 2.1, 2009)

The Gold Standard certifies energy-based projects. The standard body conducts in-house audits of auditors, and of all projects before registration and twice during project development. Projects must score “positive” in two of three categories (environment, social development, economic and technological development) against 12 development indicators.

Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified* (Mt)	Vol. Retired* (Mt)
All Years:	\$12.2	26	145	8	5
2011:	\$10.4	9	50	3.6	1.5
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	1 to 2			2 to 1	
2011:	1 to 2			10 to 1	

STANDARD SCOPE	
Standard Type	Carbon accounting + embedded co-benefits
Asset generated:	Carbon credit
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	✓
MAX time between verifications (years):	3

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



Plan Vivo Standard – Plan Vivo (Second Edition, 2008)

Plan Vivo certifies forestry offset programs, ensuring that livelihood needs are considered and built into project design, and local income sources are diversified to reduce poverty and tackle the root causes of deforestation and land degradation.

Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$7.7	1.1	7	1.1	.8
2011:	\$7	.5	3	.3	.2
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	1 to 1			1.2 to 1	
2011:	1 to 2			1.3 to 1	

STANDARD SCOPE	
Standard Type:	Carbon accounting + embedded co-benefits
Asset generated:	Carbon credit
Eligible countries:	Developing countries
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	✓
MAX time between verifications (years):	5

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



KEY: ■ AFOLU ■ Energy ■ Methane ■ Gases ■ Fuel Switch ■ Other

*Includes all Markit registry data and publicly available data on the Gold Standard APX Registry

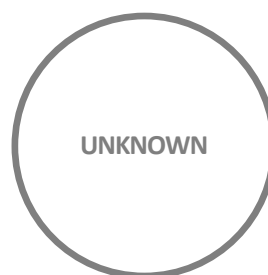
VER+ – VER+ (Version 2.0, 2008)

The VER+ Standard is a voluntary offset standard launched by project verifier TÜV SÜD for projects that are not eligible for CDM or JI accreditation but follow the CDM and JI project design methodologies. Projects wishing to receive VER+ accreditation may only be validated and verified by UNFCCC-accredited Designated Operating Entities or AIE organizations.

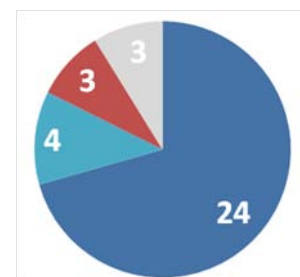
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$5.7	3.5	34	4	1
2011:	\$15.7	.003	2	.2	.05
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	1 to 1			4 to 1	
2011:	47 to 1			3 to 1	

STANDARD SCOPE	
Standard Type :	Carbon accounting only
Asset generated:	Carbon credit
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	
MAX time between verifications (years):	N/A

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



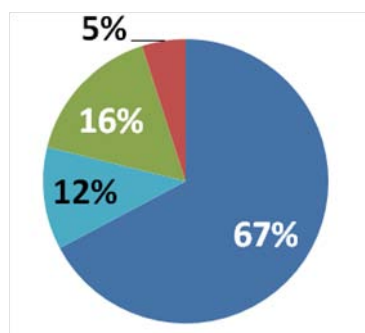
Verified Carbon Standard – VCS (Version 3, 2011)

The VCS was launched as the Voluntary Carbon Standard in 2007 by The Climate Group, the International Emissions Trading Association, World Economic Forum and the WBCSD. In 2011, VCS saw its first verified REDD credit; in early 2012, released new guidance on standardized methods for additionality and crediting, and technical guidance for nesting REDD projects.

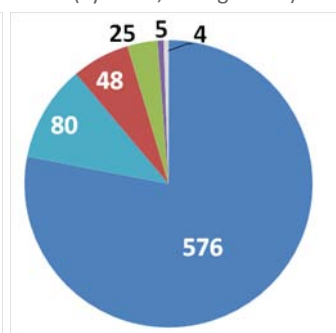
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified* (Mt)	Vol. Retired* (Mt)
All Years:	\$4.8	117	738	92	15
2011:	\$3.7	41	189	36	10
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	1 to 1.5			5 to 1	
2011:	1 to 1.5			3 to 1	

STANDARD SCOPE	
Standard Type:	Carbon accounting + tagged co-benefits
Asset generated:	Carbon credit
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	✓
MAX time between verifications (years):	None

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



KEY: AFOLU Energy Methane Gases Fuel Switch Other

*Includes all Markit and CDC Climat registry data and publicly available data from APX on the VCS Project Database

A.2 Project Co-Benefits Programs

Climate, Community & Biodiversity Standards* – CCB Standards (2nd edition, 2008)

The CCB Standards are project-design criteria for evaluating land-based carbon mitigation projects' community and biodiversity co-benefits. As a co-benefits only standard, GHG reductions must be verified against another underlying carbon standard. Transaction volumes below are from carbon projects tagged with CCB certification.

Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	5.4	23	44	NOT APPLICABLE	.5
2011:	\$4.7	4.2	13	NOT APPLICABLE	.5

STANDARD SCOPE	
Standard Type:	Co-benefits only
Asset generated:	Certificate
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	
Co-benefits	✓
MAX time between verifications (years):	5

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



SOCIALCARBON Standard (Version 4.2, 2011)

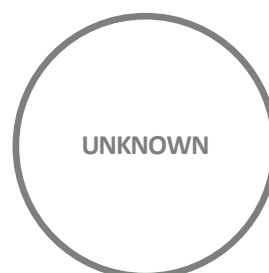
The SOCIALCARBON Standard is a certification program based on the sustainable livelihoods approach that requires project developers to apply Standard indicators that correlate with six aspects of the project: social, human, financial, natural, biodiversity, and carbon. SOCIALCARBON is another "stacking" standard to be paired with a carbon accounting standard.

Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified** (Mt)	Vol. Retired** (Mt)
All Years:	\$7.3	3.3	50	3.3	check
2011:	\$6.3	1.4	2	.1	.5

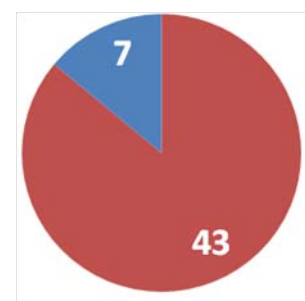
Ratios:	Issued : Transacted	Issued : Retired
All Years:	1 to 1	3 to 1
2011:	1 to 1	3 to 1

STANDARD SCOPE	
Standard Type:	Co-benefits only
Asset generated:	Certificate
Eligible countries:	All
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	
Co-benefits	✓
MAX time between verifications (years):	N/A

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



KEY: ■ AFOLU ■ Energy ■ Methane ■ Gases ■ Fuel Switch ■ Other

*Ratios are not calculated because issued volumes are not available for this standard

**Includes all Markit registry data and publicly available data on the VCS Project Database

A.3 Domestic (Country- or Region-Specific) Programs

Brasil Mata Viva* – Plano de Desenvolvimento Sustentável Brasil Mata Viva (2011)

Brasil Mata Viva is a payment for environmental services standard with a forest carbon accounting component. Through its application, the BMV Methodology aims to generate resources for the introduction of new sustainable technologies for land use and the establishment of production units, to add value to areas' rural production, re-composition and recovery.

Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$12	5	14	14.84	4
2011:	\$25	1.4	14	14.84	0

STANDARD SCOPE	
Standard Type:	Carbon accounting + embedded co-benefits
Asset generated:	Sustainability Credits
Eligible countries:	Multiple
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	✓
MAX time between verifications (years):	5

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



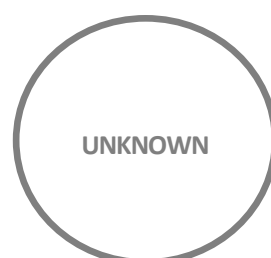
Korea Verified Emissions Reduction Program – K-VER (2005)

Administered by Korea's Ministry of Knowledge Economy (MKE) and Korea Energy Management Corporation (KEMCO), the K-VER program launched in 2005. A government purchase program incentivizes development of projects, which can utilize CDM methodologies or propose their own approaches based on ISO standards.

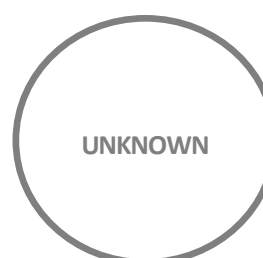
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$4.5	7.4	717	12	7.4
2011:	\$5	.4	226	3.3	.4
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	2 to 1			2 to 1	
2011:	8 to 1			8 to 1	

STANDARD SCOPE	
Standard Type:	Carbon accounting only
Asset generated:	Carbon credit
Eligible countries:	Republic of Korea
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	N/A
MAX time between verifications (years):	?

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



KEY: ■ AFOLU ■ Energy ■ Methane ■ Gases ■ Fuel Switch ■ Other

*Ratios are not calculated because issued volumes are not available for this standard

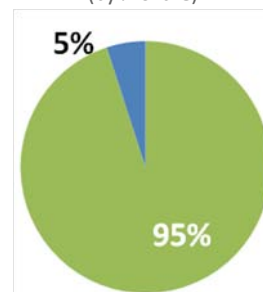
Japan's Offset Credit (J-VER) Scheme – J-VER (2008)

Japan's Ministry of the Environment (MOEJ) launched the J-VER voluntary offsetting scheme as an effort "by and for Japan," with Japan-only internal methodologies (based on ISO-14064), internal registry and complementary Voluntary Carbon Offsetting Activities including Japan Carbon Offset Scheme Neutral that together comprise a purely domestic scheme.

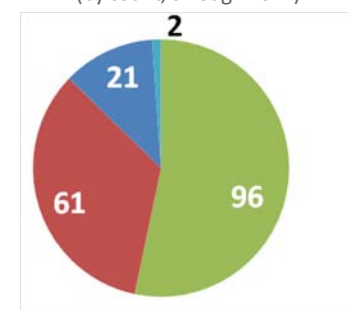
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$115	.05	180	.15	N/A
2011:	\$115	.03	113	.12	N/A
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	3 to 1			N/A	
2011:	4 to 1			N/A	

STANDARD SCOPE	
Standard Type:	Carbon accounting only
Asset generated:	Carbon credit
Eligible countries:	Japan
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	N/A
MAX time between verifications (years):	N/A

Transacted Project Types, '11
(by % share)



Validated Projects by Type
(by count, through 2011):



NZ Permanent Forest Sink Initiative* (PFSI) – Forests Act 1949, Part 3B (2006)

New Zealand's PFSI offers landowners of permanent forests established after 1 January 1990 the opportunity to earn Kyoto Protocol Assigned Amount Units (AAUs) for the carbon sequestered by their forests since 1 January 2008. Landowners have until the end of 2012 to register the forest and attempt to claim AAUs.

Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$17	1	43	.3	.05
2011:	N/A	.8	20	.2	.05
Ratios:	Issued : Transacted			Issued : Retired	
All Years:	1 to 4			5 to 1	

STANDARD SCOPE	
Standard Type:	Carbon accounting only
Asset generated:	Allowances (AAU's)
Eligible countries:	New Zealand
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	N/A
MAX time between verifications (years):	5

Transacted Project Types, '11
(by % share)



Validated Project Types
(by count, through 2011):



KEY: ■ AFOLU ■ Energy ■ Methane ■ Gases ■ Fuel Switch ■ Other

*2011 ratios are not calculated because issued volumes are not available for this standard

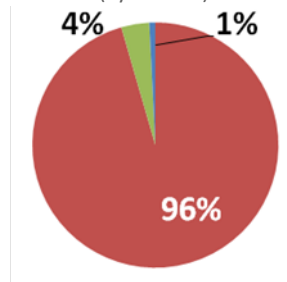
Pacific Carbon Standard* – PCS (Version 1, 2011)

The Pacific Carbon Standard defines the requirements for developing offsets to be recognized as Pacific Carbon Units (PCU). All units generated under the PCS are currently exclusively owned and transacted through the Pacific Carbon Trust, a British Columbia crown corporation tasked with sourcing offsets for the government's carbon neutrality commitment.

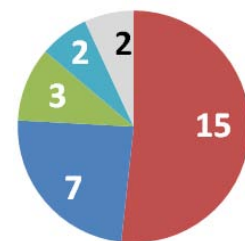
Utilization:	Avg. Price	Transacted (Mt)	# Projects Validated	Vol. Verified (Mt)	Vol. Retired (Mt)
All Years:	\$25	.08	29	1	.4

STANDARD SCOPE	
Standard Type:	Carbon accounting only
Asset generated:	Carbon credit
Eligible countries:	British Columbia
VERIFICATION REQUIRED FOR:	
Projects	✓
Methodologies	✓
Emission Reductions	✓
Co-benefits	N/A
MAX time between verifications (years):	N/A

Transacted Project Types, '11
(by % share)



Validated Project Types
(by count, through 2011):



KEY: ■ AFOLU ■ Energy ■ Methane ■ Gases ■ Fuel Switch ■ Other

* Ratios are not calculated because year-on-year data is not yet available for this standard

A.4 Standards to Watch

California Air Resources Board Protocols – CARB Protocols (2011)

The California Air Resources Board (CARB) within California's Environmental Protection Agency has developed a cap-and-trade program under AB32 that draws from existing voluntary carbon market infrastructure. Approved in 2011, the CARB Protocols were adapted from existing protocols developed by California's Climate Action Reserve (CAR). So far, they consist of four protocols covering livestock manure, ozone-depleting substances, and urban and other forest management. The protocols are outlined in California's cap and trade regulation and will not be issued by CARB until the program start date.

Carbon Farming Initiative – CFI (2011)¹⁸

Enabled by the Carbon Credits (CFI) Act 2011 and launched in December 2011 as a key part of the Australian Government's Clean Energy Future Plan, the CFI supports Australia's carbon market as the first national scheme to regulate the creation and trade of carbon credits from farming, landfill and forestry. The CFI uses positive and negative lists to determine project additionality. Approved methodologies cover capture and combustion of landfill gas, destruction of methane generated from manure in piggeries, environmental plantings, and savanna burning. Other methodologies are under development. An independent expert committee, the Domestic Offsets Integrity Committee, has been established to assess offset methodologies and advise the Minister for Climate Change and Energy Efficiency on their approval. The Committee will ensure that methodologies are rigorous and lead to real abatement. The recently established Clean Energy Regulator is responsible for operating the CFI.

¹⁸ <http://www.climatechange.gov.au/en/government/initiatives/carbon-farming-initiative>

Global Conservation Standard – GCS (Version 1.2, 2011)¹⁹

Launched in March 2011, the GCS is a not-for-profit NGO registered in Offenburg, Germany, designed to make conservation pay for landowners and local populations worldwide based on the stock volume of measurable ecosystem service benefits through issuance and sales of Conservation Credit Units (CCUs). Its first methodology quantifies CCUs based on carbon stocks in vegetation. On additionality, the GCS does not issue or generate offsets that compensate emissions. Thus, additionality as defined under ISO 14064-2, the Kyoto Protocol and other emerging standards is not applicable to the Global Conservation Standard. Conservation Areas are monetized based on the accounting for the existing ecosystem services and reinvested in sustainable socioeconomic activities and capacity-building programs within the Commercial Buffer Zone. The GCS encourages the use of additional certification schemes like VCS, FSC, RSPO, or organic farming in project areas. The standard's MG Registry will record CCU issuance, ownership, retirement, and project details.

Panda Standard (Version 1, 2009)^[1]

Partners China Beijing Environment Exchange and BlueNext, with the support of Winrock International, founded the Panda Standard as the first voluntary carbon standard designed specifically for China, in order to support the nascent Chinese carbon market and encourage investment into the domestic rural economy. Governed by the Panda Standard Association, the Panda Standard focuses on promoting Agriculture, Forestry and Other Land Use (AFOLU) offset projects with poverty alleviation benefits. The standard determines additionality using both standardized and project-based methods. Launched at COP 15 in Copenhagen in December 2009, Panda Standard Version 1.0 describes the core procedures of its project certification scheme. At the 16th Conference of the Parties in Cancun in December 2010, BlueNext, the Agence Française de Développement (AFD), and CBEEX signed a Memorandum of Understanding to support a 15000-ha Bamboo plantation as the first pilot project for the Panda Standard. The methodology for the project was finalized and approved by the Technical Committee early 2012 and should lead to the registration of the first PS project later this year.

Swiss Charter Standard – SC (Climate Protection by Recycling, 2009)²⁰

Run by SENS International, the Swiss Charter was launched in 2009 to support recycling projects that reduce ozone-depleting CFCs in emerging economies. Its design keeps in mind VCS/CDM technical requirements, featuring double validation of new methodologies and a project development path with methodology and PDD validation followed by verification. Projects must trigger at least two impetuses in the ecological, social, economic, and technological fields. Additional social and environmental benefits must be demonstrated not only in a monitoring report, but in separate disclosure of corporate tax accounting outlining funds spent on capacity building and other relevant activities. SC also requires "natural additionality": investment case calculations cannot be used to support additionality assumptions. Projects underlying credits must not be able to yield revenue per se.

Three Rivers Standard – Three Rivers (Version 0.1, 2011)²¹

The Three Rivers Standard is the first voluntary standard based in western China, located in an area that includes the headwaters of the Yellow, Yangtze, and Mekong Rivers. Initiated by the Qinghai Environment and Energy Exchange (QHEx) in collaboration with other Chinese and international partners, the standard applies to mitigation activities conducted in China and will cover a range of sectors. Standard documents were released in 2012 following a public consultation process based on the ISEAL Code of Good Practice for standard setting and in compliance with relevant ISO standards. Three Rivers allows for both project-based, performance-based and/or technology standard additionality tests. Specifications for agriculture, forestry, grassland, and livestock projects are under development, with registration of the first project planned by the end of 2012. AFOLU project methodologies that have been approved by the CDM and VCS may be automatically approved by Three Rivers, but may also be subject to a review and revision process to account for China-specific conditions. Requirements for social and environmental impacts of projects are based on national laws and supplemented by guidance from other domestic and international initiatives.

¹⁹ <http://www.globalconservationstandard.org>; <http://mgregistry.com>

^[1] <http://www.pandastandard.org>

²⁰ http://www.sens-international.org/fileadmin/user_upload/sens-international/SENS_International/Downloads/091028_SENS_Int_Brosch%C3%BCre_E.pdf

²¹ <http://www.threeriversstandard.com/uploads/soft/111115/ThreeRiversStandard.pdf>

Woodland Carbon Code – WCC (2011)²²

Observing that the UK's lack of domestic voluntary mechanisms disincentivized local action on forestry, the Forestry Commission developed the WCC to credit domestic forestry projects using certificates. Launched in July 2011, the WCC uses the project-based method for additionality testing and requires projects to meet the UK Forestry Standard's environmental and social criteria. While WCC projects cannot generate offsets due to the double-monetization issue, the WCC shares features with international standards like a buffer pool, project grouping mechanism and independent certification. The Forestry Commission has led the development of methodologies, either undertaking work itself or commissioning specialists. The WCC is currently considering working with an established carbon registry to host its credits (Woodland Carbon Units), but as of 2011 operated an internal registry for carbon sequestered from program projects. It is also looking at the potential of trading platforms to bring buyers and sellers of Woodland Carbon Units together more effectively.

A.5 Other Programs

Costa Rica C-Neutral Standard – C-Neutral (2012)

Targeting purely domestic users through 2021, Costa Rica's new C-Neutral Standard is the first measure launched in a long line of mitigation actions necessary to meet the country's 2021 deadline for achieving carbon neutrality. The Standard recognizes VCS, Gold Standard, and CDM credits for offsetting, as well as program-specific methodologies that will generate Costa Rican Carbon Units (UCCs), available by Q3 2012. The standard uses project-based additionality testing and covers a variety of project types including forestry and land use, energy, methane, fuel switching, N₂O, and transportation. The program will use an internal, program-administered registry or external registry depending on the type of credit transacted. The Standard originated with the 2007 National Climate Change Strategy, which established the 2021 carbon neutral goal, a Climate Change Directorate – and the resulting C-Neutral Standard. The program is administered by the Climate Change Directorate under the Ministry of Environment.

ISO-14064-2 (2006)²³

The International Organization for Standardization launched ISO 14064 in 2006 as a three-part set of policy-neutral, voluntary GHG accounting standards. ISO 14064-2 is an offset standard protocol that provides definitions and procedures to account for GHG reductions, intended for use in conjunction with an established offset program. ISO 14064-2 is not prescriptive about elements that apply to the policies of a particular GHG program such as additionality criteria, project eligibility dates, or co-benefits. ISO 14064 is program-neutral and the requirements of the program under which ISO is used take precedence to ISO rules. For example, ISO 14064-2 contains no formal requirements for additionality determination but offers general guidelines. The guidelines for additionality tools generally assume a project-specific approach. However, since the requirements of a GHG program take precedence over specific ISO 14064-2 requirements, ISO 14064-2 allows performance standards to be used, where this is prescribed by a GHG program. VCS is ISO 14064-compatible, the Canadian GHG Offset Protocols will draw from ISO 14064-2, and the Climate Action Reserve is adapting their quantification protocols to ISO 14064 standards.

Australia's National Carbon Offset Standard – NCOS (Version 2, 2012)²⁴

The NCOS was initiated by government directive, largely based on ISO 14064, 14040, the GHG Protocol and Australia's National Greenhouse and Energy Reporting Act 2007. The NCOS provides a voluntary standard for organizations to reduce carbon pollution beyond Australia's national targets as part of the NCOS Carbon Neutral Program, which certifies products or business operations as carbon neutral under the NCOS. Administered by Low Carbon Australia (previously the Australian Carbon Trust), the Carbon Neutral Program replaced Greenhouse Friendly—the Australian government's former voluntary offset program—in 2010. Organizations can purchase from a range of eligible offsets, including Australian Carbon Credit Units (ACCUs) issued under the Carbon Farming Initiative, credits issued under the former Greenhouse Friendly, Carbon Units issued under Australia's Carbon Price Mechanism (starting July 2015), international units issued under the Kyoto Protocol, and credits issued under the Gold Standard and VCS. No specific

²² <http://www.forestry.gov.uk/forestry/INFD-863FFL>

²³ <http://www.co2offsetresearch.org/policy/ISO14064.html>; <http://www.scribd.com/doc/55419582/Making-Sense-of-The>

²⁴ <http://www.climatechange.gov.au/ncos>

project types or technologies are required, beyond meeting independent standard criteria. However, credits issued from REDD and other AFOLU projects must apply NCOS-approved methodologies.

International Carbon Reduction and Offset Alliance – ICROA (Programme and Policy Framework, 2009)²⁵

Founded in 2008, ICROA is an international non-profit organization made up of the leading carbon reduction and offset providers in the voluntary carbon market. Its members operate across Europe, North America, and Australia. ICROA is a program of the International Emissions Trading Association (IETA) and has an independent Secretariat and Advisory Board comprised of experts from the voluntary carbon offset field. The primary aim of ICROA is to promote best practice in the voluntary carbon market. Members demonstrate quality services through adherence to a Code of Best Practice. ICROA members sign up to, and publically report against, the Code, which provides specific requirements for how companies provide their carbon foot printing, greenhouse gas reduction advice, and offset services. Members are audited against the code by 3rd-party independent verifiers. ICROA currently allows CDM/JI, Gold Standard, Carbon Fix, ACR, VCS, and CAR standards for its members offset services.

Green-e Climate Standard (Version 1.1, 2010)²⁶

Green-e Climate was launched in early 2008 as a sister program of Green-e Energy to certify retail offset products in the voluntary market. This program requires that suppliers sell credits certified under eligible project types/protocols by one of five endorsed project standards, including the CDM, Gold Standard, VCS, the Climate Action Reserve, and the Green-e Climate Protocol for Renewable Energy. Green-e Climate's independent certification ensures that offsets sold in the voluntary market are additional, verified, and correctly delivered based on an audit of sales, and it requires that sellers provide customers with sufficient and accurate disclosure and do not practice deceptive or misleading marketing and sales tactics.

²⁵ <http://www.icroa.org>

²⁶ <http://www.green-e.org>

CARBON ACCOUNTING STANDARDS

American Carbon Registry

Governed by: Winrock International / ACR Advisory Council

Affiliated Registry: Internal; APX Inc. from 2012+

Website: www.americancarbonregistry.org

Carbon Fix Standard

Governed by: CarbonFix e.V.

Affiliated Registry: Markit Environmental Registry

Website: <http://www.carbonfix.info>

Chicago Climate Exchange

Governed by: Offsets Committee

Affiliated Registry: CCX

Website: <http://www.theice.com/ccx>

Climate Action Reserve

Governed by: Climate Action Reserve

Affiliated Registry: APX Inc.

Website: <http://www.climateactionreserve.org>

Gold Standard

Governed by: Gold Standard Foundation

Affiliated Registry: Markit Environmental Registry, APX Inc.

Website: <http://www.cdmgoldstandard.org>

Plan Vivo Standard

Governed by: Plan Vivo Foundation

Affiliated Registry: Markit Environmental Registry

Website: <http://www.planvivo.org>

VER +

Governed by: TÜV SÜD Industrie Service GmbH

Affiliated Registry: BlueRegistry

Website: <http://www.blue-registry.com>

Verified Carbon Standard

Governed by: VCS Association

Affiliated Registry: Markit, APX Inc., CDC Climat (until '13)

Website: <http://www.v-c-s.org>

CO-BENEFITS PROGRAMS

Climate, Community and Biodiversity Standards

Governed by: Climate, Community & Biodiversity Alliance

Affiliated Registry: Markit Environmental Registry, APX Inc.

Website: <http://www.climate-standards.org>

SOCIALCARBON

Governed by: Instituto Ecológica Palmas (Ecologica Institute)

Affiliated Registry: Markit, Social Carbon Registry

Website: <http://www.socialcarbon.org>

DOMESTIC (COUNTRY- OR REGION-SPECIFIC) PROGRAMS

Brasil Mata Viva

Governed by: Working Group FEPAP/UNESP/IMEI/IDESAM

Affiliated Registry: REGIS -TR..

Website: <http://brasilmataviva.com.br/index.php>

NZ Permanent Forest Sink Initiative

Governed by: New Zealand Ministry for Primary Industries)

Affiliated Registry: New Zealand Emissions Unit Register

Website: <http://www.mpi.govt.nz/forestry/funding-programmes/permanent-forest-sink-initiative.aspx>

K VER

Governed by: Korea Ministry of Knowledge Economy.

Affiliated Registry: Internal

Website: <http://kcer.kemco.or.kr>

Pacific Carbon Standard

Governed by: Pacific Carbon Trust

Affiliated Registry: Markit Environmental Registry

Website: <http://www.pacificcarbontrust.com>

J VER

Governed by: Ministry of Environment of Japan

Affiliated Registry: Internal

Website: <http://j-ver.go.jp>

Annex B: Exchanges and Registries



Table 21: Examples of Trading Platforms in the Voluntary Carbon Market

Exchange	Host Company	Credits Traded	Agreement/ Formal Affiliations with Voluntary Standards, Registries, Schemes	Launch Date of VER Trading	VER-Related Fees (US\$ except where otherwise specified)
Carbon Trade Exchange	CTX	VERs (multiple standards)	Commercial agreement with Markit that allows Markit clients to offer their credits for sale on CTX	2010	7% (5% on the sell side and 2% on the buy side)
China Beijing Environment Exchange	China Beijing Equity Exchange	VERs (multiple standards)	Joint venture with BlueNext whereby two sides share market information	2008	Unknown
Climex	Climex	EUAs, CERs, ERUs, RECs, VERs (multiple standards)	None	2007	Auctioneer: 1.75% of transacted amount; Buyer: 1-1.75% of transacted amount
Santiago Climate Exchange	SCX	VCUs, CERs	Partnership with VCS as dominant but not exclusive standard; also recognizes CDM and other standards	2011	3% (1.5% on the sell side and 1.5% on the buy side)
Tianjin Climate Exchange	InterContinental Exchange and The China National Petroleum Company	VERs and other major pollutants (CDM and EMC development consulting)	To be determined; China pilot trading scheme starting 2013	2009	Unknown

Table 22: Registry Infrastructure Providers

Infra-structure Provider	Market Position	Entities Served (in case of Infrastructure Provider)	Transparency	As of 12/31/2011 ¹			In 2011 Only		
				Projects Listed	VERs Issued	VERs retired	Projects Listed	VERs Issued	VERs retired
BlueRegistry	Quasi-independent	VER+ and others	Project info public; List of account holders public; Listing eligibility requirements clear	34	3,811,381	1,014,503	2	150,817	54,429
CDC Climat (Caisse des Dépôts)	Infrastructure	VCS	No public info	18	8,118,816	1,740,883	4	2,697,826	1,593,510
GHG CleanProjects Registry	Independent	Not applicable	Project information public; List of account holders public; Listing eligibility requirements clear	139	4,026,791	281,851	11	330,797	15,014
Markit Environmental Registry	Infrastructure/Independent	VCS; Carbon Fix; CCB Standards; ISO 14064; Gold Standard; Permanent Forest Sink Initiative (PFSI); Plan Vivo; Social Carbon; Pacific Carbon Trust, Swiss Charter Standard, New Zealand Projects to Reduce Emissions (Pre-2008)**	Most project info public; Some account info public; Listing eligibility requirements clear	437	49,756,438**	11,613,725**	75	15,092,135**	7,754,215**
NYSE Blue	Infrastructure	VCS, Gold Standard, Climate Action Reserve	Project info public; Account info public; Listing eligibility requirements clear		28,320,615	4,637,983		11,352,575	3,067,177

[1] Total refers to the entire volume of VERs or projects registered during the lifetime of the registry as of December 2011, except where otherwise noted.

Annex C: Supplier Directory



Supplier	Retailer	Wholesaler	Broker	Developer
3GreenTree Ecosystem Services Ltd.				✓
Ag Methane Advisors				✓
AgraGate Climate Credits				✓
Advanced Global Trading	✓	✓	✓	
AIDER				✓
Amazonas Sustainable Foundation				✓
Ambiental PV	✓			✓
Appalachian Carbon Partnership	✓	✓		✓
Armajaro Trading			✓	
Atlantic County Utilities Authority				✓
Atlântica Simbios C. S. A. Ltd.	✓			✓
Australian Carbon Traders	✓	✓	✓	✓
Beyond Neutral Australia	✓		✓	
Bio Assets				✓
Biofílica		✓		✓
Bischoff & Ditze Energy GmbH	✓	✓		
Blue Source, LLC		✓	✓	✓
Bonneville Environmental Foundation	✓	✓		
Bosque Sustentable, A.C.	✓			✓
BP Target Neutral	✓			
Brighter Planet	✓			
Brokers Carbon			✓	
C&D Consultores Ltda.				✓
Camco International Group, Inc				✓
Canopy	✓			✓
Carbon Advice Group Plc	✓	✓	✓	
Carbon Clear	✓	✓		
Carbon Credits Advisors	✓	✓	✓	
Carbon Market Solutions	✓		✓	✓
Carbon Neutral	✓	✓		✓
Carbon Tanzania	✓	✓	✓	✓
CarbonBrake Limited	✓			✓
Carbonding Climate Community				✓
Carbonfund.org Foundation, Inc.	✓	✓		✓
Carbonica Capital	✓	✓	✓	✓
Carbonzero	✓	✓		✓
Caspervandertak Consulting				✓
CF Partners	✓	✓	✓	✓

China Green Carbon Foundation	✓			✓
City Project	✓	✓	✓	
Clean Air Action Corp				✓
ClearSky Climate Solutions	✓	✓	✓	✓
CLEVEL	✓			✓
Climate Bridge		✓		✓
Climate Friendly	✓	✓		
Climate Neutral Group	✓	✓		✓
Climate Partner		✓		
Climate Wedge		✓		✓
ClimateCare	✓	✓		✓
ClimeCo America Corporation	✓	✓	✓	✓
CLP Wind Farms (India) Pvt. Ltd.				✓
co2balance UK Ltd	✓	✓		✓
COFIDE				✓
Community Energy, Inc.	✓			
Conservation Carbon Company (Pvt) Ltd				✓
Conservation International				✓
Cool nrg International Pty Ltd				✓
Cool Planet	✓			
CoolClimate Holding, Inc.		✓		✓
Cooperativa AMBIO				✓
CPS Carbon Project Solutions Inc.				✓
Credible Carbon and PACE	✓			✓
Deuman			✓	✓
Dinámica de Procesos S.A.	✓	✓	✓	✓
Durania LLC				✓
E.Value - - Estudios e Projectos de Ambiente e Economia, S.A.	✓		✓	✓
East Central Solid Waste Commission				✓
Eccaplan Environmental Consulting	✓			
ECO2LIBRIUM LLC				✓
EcoAct	✓	✓		✓
ecoagree inc		✓	✓	✓
Ecological Restoration Capital		✓	✓	✓
Ecoprogreso			✓	
ecosur america	✓	✓	✓	✓
Ecosystem Services LLC		✓	✓	✓
EcoWay srl	✓	✓	✓	
EKO Asset Management Partners				✓
Emergent Ventures International	✓	✓	✓	✓
Eneco Energy	Other			
Energy Mad				✓
Entergy				✓
Environmental Capital LLC				✓

Environmental Credit Corp.				✓
Envirotrade Carbon Ltd	✓			✓
EOS Climate				✓
Equator, LLC	✓		✓	✓
ERA Carbon Offsets	✓			
Evolution Markets			✓	
Face the Future	✓	✓		✓
FairClimateFund	✓	✓		
Finite Carbon				✓
First Climate		✓		✓
Forest Carbon Ltd	✓		✓	✓
Forest Carbon Offsets LLC		✓		✓
Forest Credits	✓			✓
ForestFinance Group / CO2OL	✓	✓		✓
Foundation myclimate	✓	✓		✓
Fox and Earth Industries AG				✓
Fundación Chile			✓	✓
FutureCamp Climate GmbH	✓	✓	✓	✓
GAIA CARBON FINANCE A.S.				✓
General Carbon	✓	✓	✓	✓
GERES	✓	✓		✓
GET-Carbon	✓	✓	✓	✓
GFA ENVEST GmbH		✓		✓
Green Energy Corporation Ltd				✓
GREEN EVOLUTION SA			✓	✓
Green Resources				✓
Greenfleet	✓			✓
Greenhouse Balanced		✓		✓
Greening Australia Ltd	✓	✓		✓
Greenoxx NGO		✓		✓
Grupo Occidente		✓		✓
GSS Sustentabilidade			✓	✓
GTE Carbon Trading			✓	✓
Hestian Innovation				✓
HGB and Associates		✓		✓
Hi Tech Carbon				✓
HIB & CO. INTERNATIONAL TOGO	✓			
Hidroluz Centrais Elétricas Ltda		✓		
Hivos Foundation	✓	✓		✓
Impact Carbon				✓
Indonesian Rainforest Foundation				✓
Initiative Développement (ID)	✓	✓		✓
instituto Aco Verde	✓	✓	✓	✓
ITC AG				✓
Karbone			✓	

Kent & Sorensen				✓
Klima ohne Grenzen gGmbH	✓			✓
Iavola 1981, SA	✓			
Lee International			✓	
Less Emissions	✓			
Livelihoods Venture				✓
Longyuan (Beijing) Carbon Asset Management Technology Co., Ltd.			✓	✓
Mavi Consultants	✓	✓		✓
MGM Innova Capital			✓	
MILLER TABAK + CO.			✓	
Mpingo Conservation & Development Initiative				✓
National Forest Foundation				✓
NativeEnergy, Inc.	✓	✓		✓
Nedbank Capital		✓		
Neutralize Carbono Ltda	✓			
Nexus-Carbon for Development				✓
Nordic Offset	✓	✓	✓	
Northwest Natural Resource Group		✓	✓	✓
Offsetters Clean Technology Inc.	✓	✓	✓	✓
Oklahoma Carbon Program	Other			
Orbeo / OneCarbon International				✓
Overseas Environmental Cooperation Center, Japan	Other			
Pacific Carbon Trust	✓	✓		
Pangolin Associates	✓		✓	
Permanent Forests International			✓	✓
Pica de Hula Natural				✓
Pike Carbosur	✓	✓	✓	✓
PrimaKlima -weltweit- e.V.	✓	✓		✓
PROFAFOR S.A.				✓
Promethium Carbon				✓
Proyecto Mirador				✓
PT. Rimba Makmur Utama				✓
Pure Interactions UK				✓
Rainforest Project Management				✓
Redd Forests Pty Ltd				✓
SAO AC				✓
SERVICIOS AMBIENTALES DE OAXACA				✓
Sicirec Bolivia Ltda	✓	✓		
Sindicatum Sustainable Resources		✓		✓
Socio-eCO2NOMix-Global				✓
South Pole Carbon	✓	✓		✓

Sustainable Carbon – Projetos Ambientais Ltda	✓	✓		✓
Taking Root	✓			✓
The Carbon Credits Trust		✓		✓
The Carbon Farmer Inc.	✓	✓		✓
The CarbonNeutral Company	✓	✓		
The Climate Trust		✓	✓	✓
The Nature Conservancy				✓
The Nature Conservancy Brazil				✓
The Trend is Blue	✓	✓	✓	✓
The Trust for Public Land				✓
Tricorona Climate Partner	✓	✓	✓	✓
U YOOL CHE AC				✓
Unisfera / Planetair			✓	
UpEnergy				✓
VEDA Climate Change Solutions Ltd	✓	✓	✓	✓
Vestergaard Frandsen				✓
WayCarbon		✓	✓	✓
WeAct Pty Ltd	✓	✓		
Wildlands Conservation Trust				✓
Wildlife Works LLC				✓
Woodland Trust	✓	✓		✓
Woodlands Carbon LLC.			✓	✓
World Land Trust				✓

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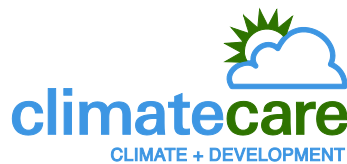


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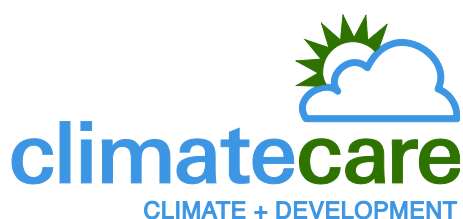




SCX | Santiago Climate Exchange (www.scx.cl) is the first private exchange of the Southern Hemisphere for carbon trading and CO2 Neutral certification. It was founded by ten top corporate players in Chile, with the aim to develop new business models that foster green investment and sustainability retailization in the country and the rest of the Latam region.

SCX offers a CO2 Neutral certification for products & services differentiation, and works with organizations looking to link their climate engagement with their core business and competitiveness - not relying solely on CSR policies. SCX's experience has been the base for the discussion in Chile of a tax reform that would include a tax-and-trade system applied over corporations' carbon footprint and the role of local offsets to reduce the potential tax base. Overall, SCX hopes to perform the role of an active catalyzer of innovations that change the paradigm from climate change as a source of costs, to a more proactive one, where public awareness is translated into opportunities for local development. Thus, SCX seeks to be a hub for market building rather than a limited traditional exchange.

Sponsors



ClimateCare (www.climatecare.org) is an independent 'profit for purpose' organisation committed to tackling climate change, poverty and development issues. Our unique climate and development model funds ground-breaking projects spanning renewable energy, water purification and clean cookstove technology, cutting emissions and transforming millions of lives worldwide.

ClimateCare runs some of the world's largest corporate carbon offsetting programmes. In addition, we originate and source compliance and voluntary carbon credits on behalf of large corporates, NGOs, and nation states. ClimateCare develops and consults on emission reduction projects in Sub-Saharan Africa and in developing countries worldwide, for both compliance and voluntary carbon markets, as well as the newer emergent climate and development finance funds. Our focus is on innovation and sustainable development. Every project we develop is designed to contribute towards fulfilling the Millennium Development Goals (MDGs) while achieving health, poverty and development impacts and delivering emission reductions.



Baker & McKenzie (www.bakermckenzie.com) was the first law firm to recognize the importance of global efforts to address climate change and the importance of such legal developments to our clients. Our dedicated team has worked on numerous pioneering deals, including writing the first carbon contracts, setting up the first carbon funds and advising on the first structured carbon derivative transactions.

Our team has worked extensively in the voluntary carbon market over the past fifteen years, beginning with early forestry transactions between Australia and Japan in the late 1990s. Our team is involved in the development of market standards and infrastructure and has represented clients on many early voluntary market transactions and deals under the Voluntary Carbon Standard, including a number of REDD transactions. We have worked closely with market-makers such as Markit and the Voluntary Carbon Standard.



Carbon Clear (www.carbon-clear.com) has a proven track record of helping organisations address climate change challenges through an integrated approach to carbon management. We focus on creating business value from effective voluntary carbon offsetting and reduction programmes.

With offices in the UK, India, Spain, Turkey and the United States, Carbon Clear is ideally positioned to help our global clients develop leading-edge carbon management practices in their operations and supply chains. We develop and source high quality carbon credits, conduct carbon footprints, provide carbon reduction advisory services, and help organisations to comply with carbon-related legislation. Carbon Clear is a founding member of the International Carbon Reduction and Offset Alliance (ICROA), and a member of the advisory board developing the British Standards Institute's PAS 2060 specification for Carbon Neutrality.



Entergy Corporation (http://www.energy.com/our_community/environment/)

Entergy Corporation is an integrated energy company engaged primarily in electric power production and retail distribution operations. Entergy owns and operates power plants with approximately 30,000 megawatts of electric generating capacity, and it is the second-largest nuclear generator in the United States. Entergy delivers electricity to 2.8 million utility customers in Arkansas, Louisiana, Mississippi and Texas. Entergy has annual revenues of more than \$11 billion and approximately 15,000 employees.

Entergy has been an industry leader in carbon reductions since 2001, when it was the first U.S. utility to voluntarily commit to stabilize CO₂ emissions at or below year 2000 levels. As a founding member of the American Carbon Registry, Entergy has provided funding for restoration of degraded deltaic wetlands, an offset methodology that will quantify how wetland restoration reverses climate change and explores solutions to help pay for rebuilding the Gulf of Mexico's disappearing coastal wetland.



The Forest Carbon Group AG (FCG) (www.forestcarbongroup.de) develops,

finances and markets worldwide forest projects with high social and ecological benefits, and supports companies in implementing their carbon strategies. It is motivated by the need for forestry that does not jeopardise livelihoods, which sustainably utilises forests and natural resources, and uses forestry management to restore damaged habitats.

FCG is a service provider with considerable project experience that offers economic and technical expertise in balancing carbon along the entire value added chain – ranging from the development of the projects to their certification and marketing. FCG has devoted itself to forest conservation and restoration because forests not only provide long-term storage of carbon, they are vital for ecosystems, local communities and businesses. It is only through their protection and sophisticated management that we are guaranteed environmental services such as water regulation or soil protection, and ensure biodiversity. Our forest projects create revenue for the participating communities and foster regional economic cycles that are viable.



**F O R E S T
T R E N D S**

The Family of Forest Trends Initiatives



*Using innovative financing to promote the
conservation of coastal and marine ecosystem services*

Ecosystem Marketplace

*A global platform for transparent information
on ecosystem service payments and markets*

Forest Trade & Finance

*Bringing sustainability to trade and financial
investments in the global market for forest products*



*Building capacity for local communities and governments
to engage in emerging environmental markets*



*Business and Biodiversity Offsets Program, developing,
testing and supporting best practice in biodiversity offsets*



*Linking local producers and communities
to ecosystem service markets*

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