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Forest Trends analyzes strategic market and policy issues, catalyzes connections between producers, communities and investors, and develops new financial tools to help markets work for conservation and people.

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Maneuvering the Mosaic

State of the Voluntary Carbon Markets 2013

A Report by Forest Trends' Ecosystem Marketplace
& Bloomberg New Energy Finance

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Executive Summary

Consumer awareness of the immediate impacts and future risks of climate change is trending upward – converging with a global economic scenario that complicates the implementation of broad-based policy solutions. But where some policy makers fear to tread, many private companies are voluntarily internalizing the price of carbon in their business activities, as seen in their still-growing voluntary demand for carbon offsets in 2012.

Last year, voluntary actors worldwide channeled their personal or corporate financial resources into carbon reduction projects that often reflected the full spectrum of their climate footprint, supporting activities that deliver positive benefits “beyond carbon” and that are in line with their environmental impacts and vulnerabilities.

This motivation was deeply felt by forestry and land-use projects where a resurgence of support to early-stage activities by offset end users speaks to buyers’ growing confidence in the projects’ ability to deliver verified carbon assets and potentially mitigate supply chain risks.

2012 KEY FINDINGS

- In 2012, voluntary actors contracted 101 million tonnes of carbon offsets (MtCO₂e) for immediate or future delivery – 4% more than in 2011. Market value decreased 11% to \$523 million as offset prices fell slightly for several popular project types (Figure 1).
- 90% of offset volumes were contracted by the private sector – where corporate social responsibility and industry leadership were primary motivations for offset purchases.
- Offset buyers’ desire to positively impact the climate resilience of their supply chain or sphere of influence was evident in our data which identifies a strong relationship between buyers’ business sectors and the project categories from which they contract offsets.
- Most forward contracts spanning multiple years were negotiated between project developers and offset end users – providing some indication of future corporate demand for carbon offsets, particularly from project types that confer additional environmental and social benefits.
- A sizeable portion of market value (64% of value associated with a contract type or \$170 million) was paid to offset sellers at the point of transaction rather than offset delivery – primarily via spot contracts (35.6 MtCO₂e, up 25% from 2011) and pre-payment for future delivery (8.7 MtCO₂e, down 1% from 2011).
- Demand surged for carbon offsets from forestry projects certified to the Verified Carbon Standard and Climate, Community and Biodiversity Standards. Voluntary buyers also funneled \$80 million to Gold Standard-certified offsets from projects that distribute clean cookstoves and water filtration devices.
- Suppliers predict market value could reach \$1.6 - \$2.3 billion in 2020¹ – if market actors can effectively communicate the relevance of offsetting and carbon market infrastructure to private sector actors, the international donor community, and governments seeking tools to incentivize, verify, and finance climate action.

¹ Based on current dollar value without consideration to inflation.

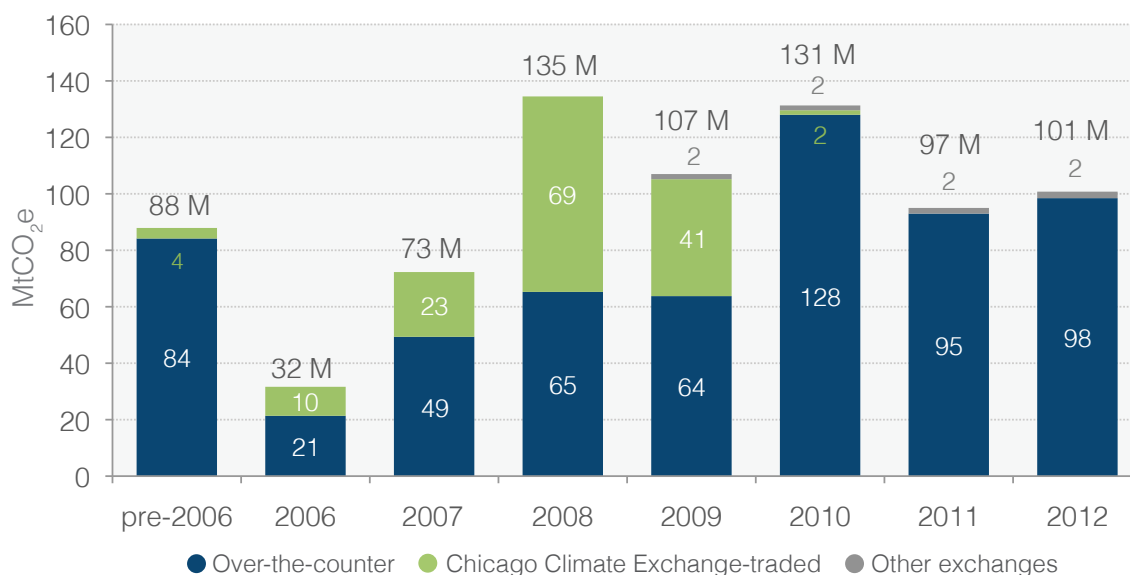
Voluntary offset buyers also sought a large volume of offsets from projects that distribute clean cookstoves and water filtration devices – that burn fuel more efficiently or not at all, thus reducing carbon emissions while sparing households from harmful smoke inhalation. More traditional project types – from wind energy to fuel switching – rounded out a mosaic of mitigation activities implemented in the largest number of countries ever tracked in this report series.

These projects were guided by results-based accounting standards that underpinned an ever-larger collection of mitigation approaches. Throughout 2012, these standards bodies took steps to lower transaction

costs, strengthen voluntary actors' relationships with compliance carbon markets, and expand projects' ability to account for their additional contributions to health, women's empowerment, and other public services.

At the receiving end of this global effort, offset buyers in Europe and North America expanded their offset programs in order to "demonstrate climate leadership" even as both regions struggle to implement or maintain a meaningful carbon price signal. Where governments have included offset provisions within their broader climate regulations, demand ranged from steady (in California) to growing (in Australia) as companies prepared for compliance.

Figure 1: Historical Offset Demand by Transacted Volume, All Voluntary Carbon Markets



Notes: Based on 763 MtCO₂e of offsets transacted and reported to Ecosystem Marketplace over 7 survey years.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Table 1: Historical Transaction Volumes, All Voluntary Carbon Markets

	Volume (MtCO ₂ e)		Value (\$ Million)		Average Price (Volume-Weighted \$/tCO ₂ e)	
	2011	2012	2011	2012	2011	2012
Voluntary Offsets Contracted Over-the-Counter	93	98.5	\$572	\$515.7	\$6.2/t	\$5.9/t
Voluntary Offsets Traded on an Exchange	2	2.3	\$4.2	\$6.3	–	–
Historical Transactions Tracked and Added in 2012	1.8	–	\$10.9	–	–	–
Voluntary Carbon Markets Total	97	101	\$586.5	\$523	\$6.2/t	\$5.9/t

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

These and other findings are described in this seventh edition of the *State of the Voluntary Carbon Markets* report series, which is informed by over 300 responses to our global annual survey of offset providers. Each of these suppliers respond on behalf of a unique portfolio of carbon offset projects and voluntary demand drivers. This report describes these responses both as unique actions and as the sum of their many parts, unveiling a picture of a market leveraging innovation to maneuver the mosaic of public and private solutions to climate change.

Voluntary Offset Demand Tops 100 Million Tonnes, Market Value Down 11%

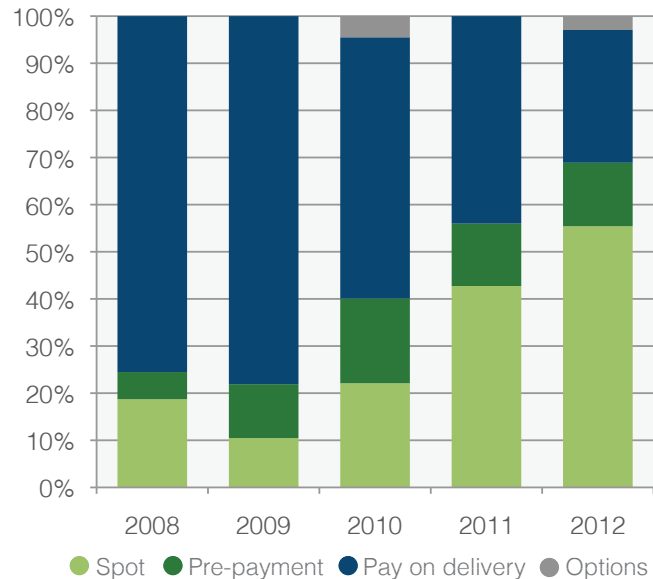
In 2012, voluntary actors contracted 101 million tonnes of carbon offsets (MtCO₂e) for immediate or future delivery – 4% more than in 2011. The vast majority of these offset transactions (98.5 MtCO₂e) occurred bilaterally, or “over the counter” (OTC) rather than on any formal exchange.

This represents the second highest level of OTC market activity tracked in this report series, behind the 2010 market which was boosted by a sizable transaction of offsets generated through the voluntary Chicago Climate Exchange (CCX) – which wound down operations in the same year. Despite the formal program’s closure, its influence is still felt in the North American carbon markets, where voluntary actors transacted 8.3 MtCO₂e of CCX offsets in 2012 – pushing the voluntary market as whole over the one-hundred-million-tonne mark.

While offset demand grew, market value decreased 11% to \$523 million as offset prices fell slightly for most project types. A sizeable portion of market value (64% of value associated with a contract type or \$170 million) was paid to offset sellers at the point of transaction rather than offset delivery – primarily via spot contracts (35.6 MtCO₂e, up 25% from 2011) and pre-payment for future delivery (8.7 MtCO₂e, down 1% from 2011). Another \$97.5 million will be paid in future years, if and when the projects under contract deliver verifiable reductions. As seen in Figure 2, this finding reflects a significant shift in contract structures favoring upfront payments as the volume of verified tonnes has grown over time, boosting both offset supply and buyer confidence that projects are capable of verifying GHG reductions and delivering offsets.

In 2012, voluntary actors paid a volume-weighted average price of \$5.9/tCO₂e – slightly down from 2011’s \$6.2/tCO₂e, but significantly higher than the United Nations’ regulatory Clean Development Mechanism

Figure 2: Historical Market Share, Transacted Volume by Payment Method



Notes: Based on 65.5 MtCO₂e associated with a contract type.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

(CDM) carbon offset price of less than a \$1/tCO₂e. Declining prices were most apparent in the high-priced offsets range (\$10+/tCO₂e) where the volume of offsets contracted at these prices fell by 46%. On the other hand, transacted volumes of offsets at less than \$5/tCO₂e grew by 19%. Suppliers say this downward trend was primarily a function of perceived offset oversupply and knock-on effects of the collapse of the EU carbon price.

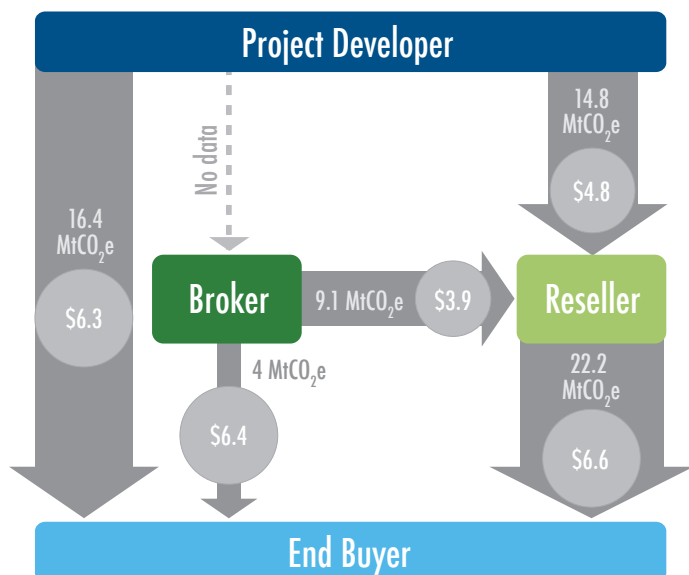
Over all of the years of market activity tracked in this report series, voluntary buyers have funded 763 MtCO₂e in emissions reductions worth \$3.7 billion and at an average historical price of \$5.9/tCO₂e – equivalent to the 2012 market-wide average offset price.

Project Developers, Private Sector Dominate Transactions

Project developers were responsible for generating and selling almost half of all offset volumes in 2012 – valued at \$184 million, or about 18% the size of the primary market for offsets in the CDM in 2012, according to Bloomberg New Energy Finance.

Around 15 MtCO₂e of this volume was sold to retail offset providers that will then sell the offsets to their offset end use clients. Another 16 MtCO₂e was sold

Figure 3: Transacted Volume and Average Price by Buyer and Seller Types, OTC 2012



Notes: Based on 324 organizations reporting 66 MtCO₂e associated with business roles and buyer types.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

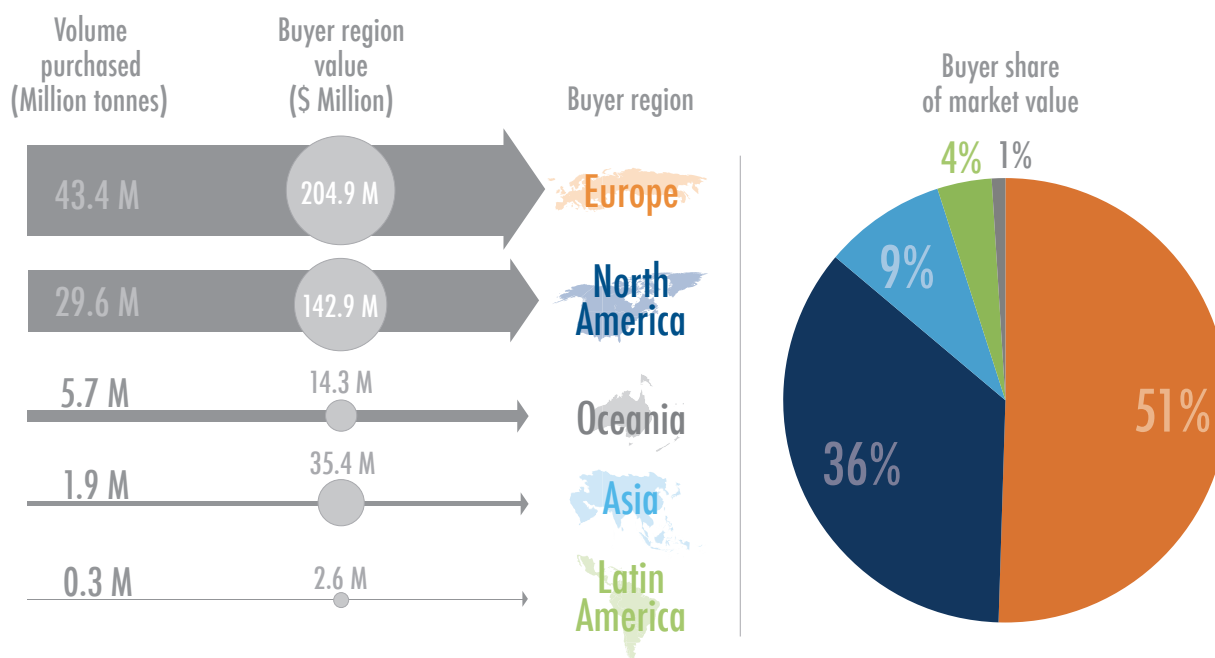
by project developers directly to offset end users – in direct competition with retailers and for a slightly lower average price (\$6.3/tCO₂e versus \$6.6/tCO₂e, as seen in Figure 3).

At the other end of these transactions, a full **90% of offset volumes were contracted by the private sector** – representing a mix of multi-national firms (36% of all buyers), small- to medium-size enterprises (31%), and domestic corporations (13%) from a wide variety of business sectors.

A large contingent of primarily European offset retailers formed the single most prominent buyer type in 2012. The manufacturing and energy sectors were tied as the top source of offset end use demand, followed by transportation services (air and rail), and the finance/insurance industry. Prominent buyers in these sectors in 2012-2013 included Chevrolet, Qantas, Allianz, Germany utility HSE Entega, and US-based utility Entergy.

Corporate social responsibility remained the top off-setting motivation among end users. In 2012, respondents also identified buyers' desire to demonstrate climate leadership in their respective industries as another significant motivation, tracked for the first time this year.

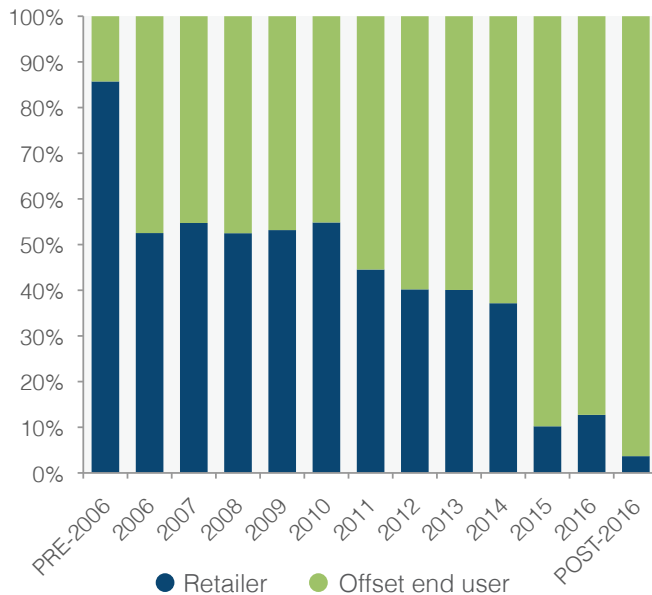
Figure 4: Transacted Volume, Value, and Average Price by Buyer Region, OTC 2012



Notes: Based on 81 MtCO₂e associated with a buyer region.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 5: Transacted Volume by Vintage and Buyer Type, OTC 2012



Notes: Based on 65.5 MtCO₂e associated with a contract type.

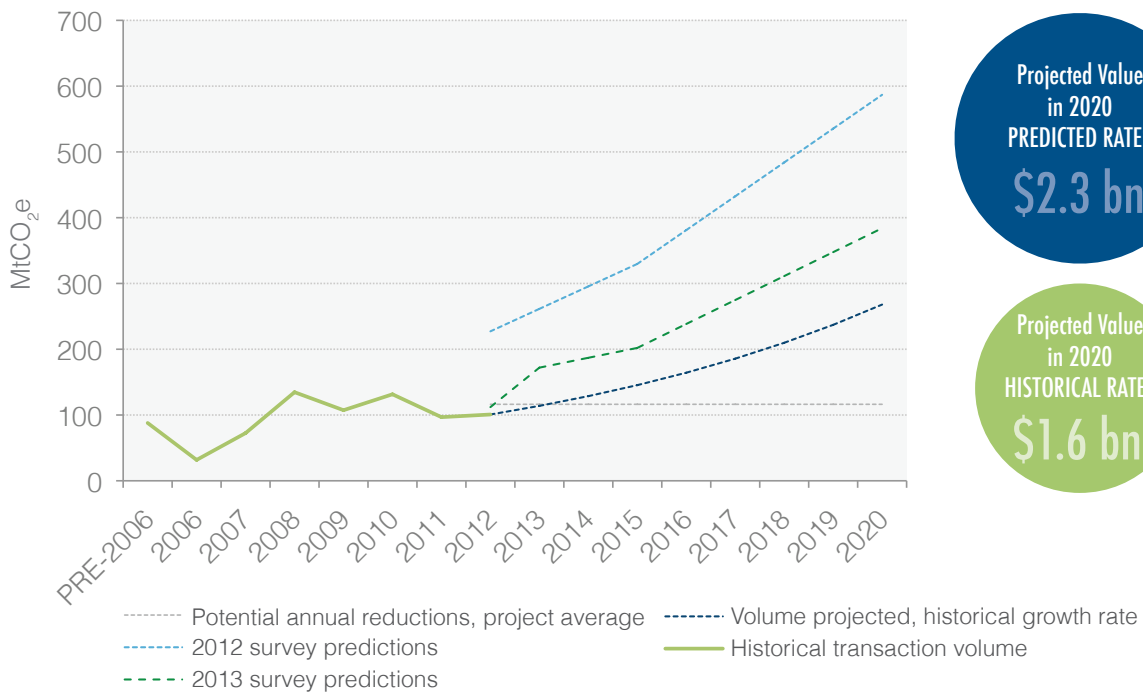
Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

The private sector's use of offsets to promote climate resilience in their supply chains and spheres of influence is still a nascent trend but evident in our data set as a strong relationship between buyers' business sectors and the project categories from which they contract offsets.

Offset end users are also increasingly interested in taking greater ownership of mitigation projects throughout their lifecycle, engaging directly with project developers to support tailor-made projects. End buyers were also most likely to sign forward contracts for emissions reductions that have not yet occurred but will be delivered in future years (Figure 5). **In 2012, most forward contracts spanning multiple years were primarily negotiated between project developers and offset end users.**

The European private sector, including offset retailers and regulated energy utilities, was the market's biggest voluntary buyer by region – contracting 43 MtCO₂e of offsets even in the face of significant challenges to Europe's mandatory carbon market. Across the pond, United States-based corporates, ranging from The Walt Disney Company to Volcom, offset more emissions than buyers in any other single country at

Figure 6: Market Projections, Historical Data and Supplier Predictions



Notes: Based on 87 organization responses.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

28.7 MtCO₂e. A little over a third of offsets purchased by US buyers (9.7 million tonnes) were obtained for future use in California's emerging cap-and-trade program. Over time, offset demand in Europe and North America has grown by an average of 35%/year and 13%/year, respectively. While North American buyers continued to prefer supporting domestic projects, European offset buyers remained the world's primary source of voluntary demand for offsets from developing countries.

Market Outlook: Steady as She Goes

Projects that successfully contracted offsets in 2012 could potentially reduce 54-233 MtCO₂e/year, or 430-1,860 MtCO₂e cumulatively over the next eight years, based on their estimated annual reductions (Figure 6).

This does not account for projects that might exit the market, as discussions with offset suppliers indicate that project developers will indeed abandon carbon project activities and revert back to a business-as-usual scenario if/when carbon revenues prove insufficient. Nor does it account for the even larger volumes of emissions reductions from large-scale projects that are not yet online, but are in the pipeline. In another section of our survey, project developers reported that they anticipate bringing an additional 1,440 MtCO₂e online over the next five years – more than has been contracted cumulatively to date.

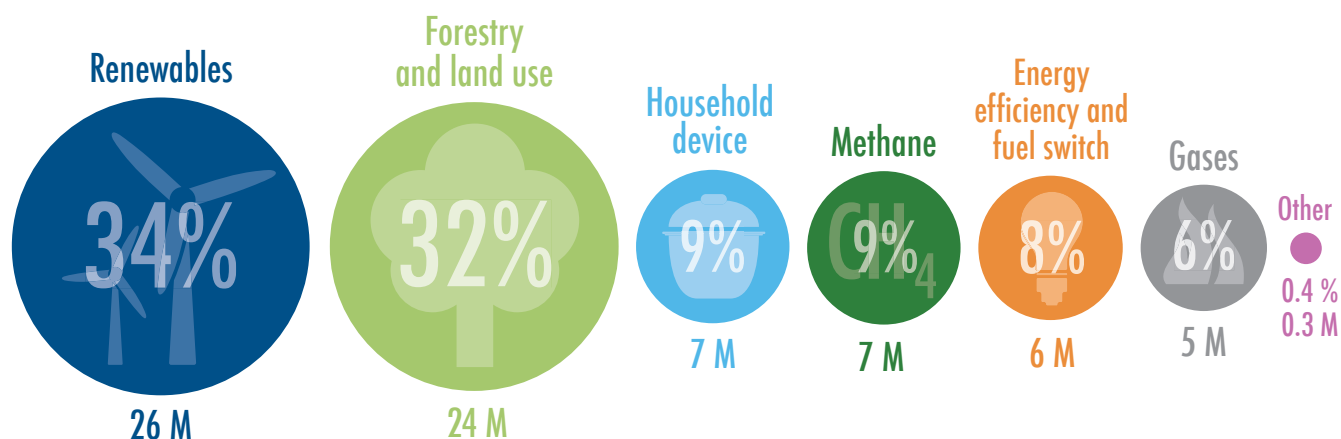
To absorb these volumes, and according to survey respondents' back-of-the-envelope predictions, the market expects an average market growth rate of 17% in 2012-2020. Based on the voluntary carbon market's historical average price of \$5.9/tCO₂e, **suppliers' predictions place market value at \$2.3 billion in 2020.² Another predictive measure – that of recent years' average growth rate for voluntary offset demand (13% from years 2008-2012) – estimates 2020 market value at \$1.6 billion.**

In order to incentivize voluntary offsetting activities of this magnitude, suppliers say the market must more effectively communicate the value of its underlying infrastructure and pilot project activities to private sector actors, the international donor community, and governments seeking tools to incentivize, verify, and finance emissions reductions. They also anticipate that in coming years, the private sector may increasingly leverage offset payments to incentivize sustainable resource management in their supply chains and spheres of influence.

Project Type: Forestry Regains Ground While Cookstove Projects Heat Up

Voluntary offset buyers' list of preferred project types in 2012 was strikingly similar to trends tracked in 2011, with offsets from wind energy projects again on top – their popularity attributed to affordability, ready availability, and simplicity. A total of 15.3 MtCO₂e of

Figure 7: Transacted Volume by Project Category, OTC 2012 (MtCO₂e and % Share)

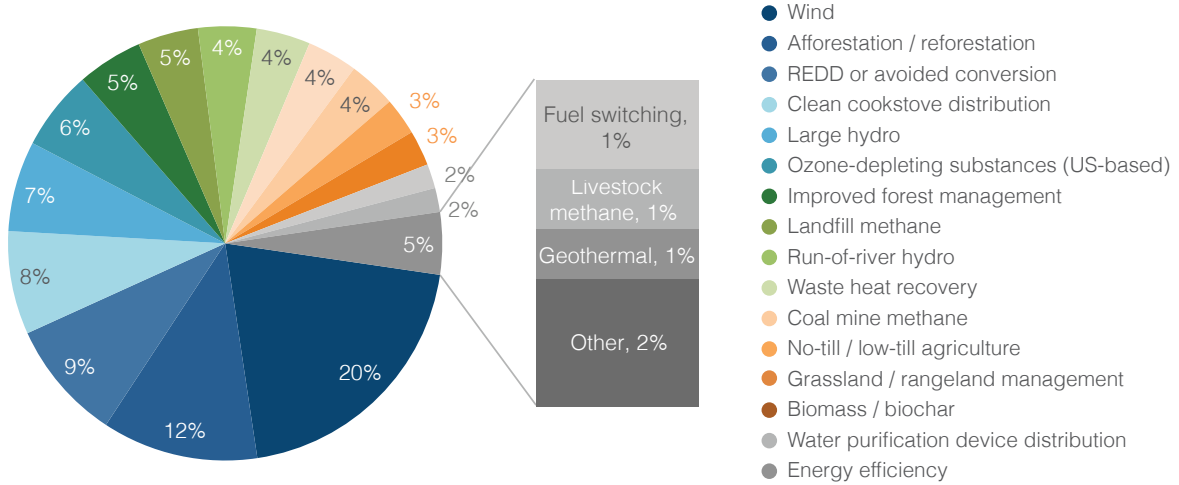


Notes: Findings pertain to the 75.5 MtCO₂e associated with a response to this question, including "N/A" and "Other".

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

² Based on current dollar value without consideration to inflation.

Figure 8: Market Share by Project Type, OTC 2012



Notes: Percentages and totals may not sum perfectly due to rounding.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

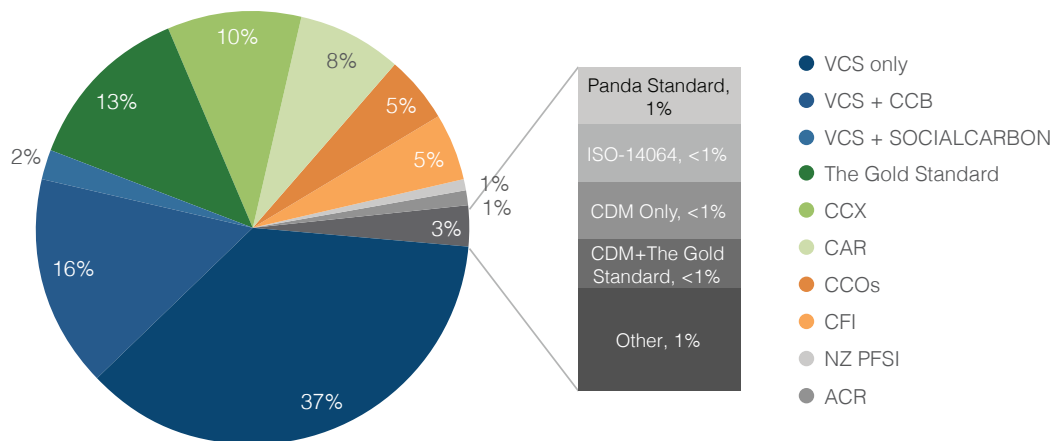
wind project-based offsets were transacted from projects both in developing countries (China and India) and the United States.

The volume of transacted wind offsets fell 35% from 2011. Demand for forestry and land-use activities grew, on the other hand, as voluntary support for afforestation/reforestation projects climbed once more to a transacted volume of 8.8 MtCO₂e. Meanwhile, demand for offsets from projects that reduce emissions from deforestation and forest degradation

(REDD) fell by 8% to 6.8 MtCO₂e in 2012. Even so, the volume of offsets contracted from REDD projects that are or aspire to be certified to both the Verified Carbon Standard (VCS) and the Climate, Community and Biodiversity (CCB) Standards more than doubled – as demand for this combination of certifications grew market-wide.

Voluntary buyers funneled **\$80 million into offsets from projects that distribute clean cookstoves and water filtration devices** – that burn fuel more efficiently or not

Figure 9: Market Share by Project Standard, OTC 2012



Notes: Percentages and totals may not sum perfectly due to rounding.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

at all, thus reducing greenhouse gas emissions while sparing households from harmful smoke inhalation. In a separate survey administered only to cookstove project developers we found that these projects have so far delivered at least 4 million cookstoves or other “clean” household devices to developing country households with the aid of carbon revenues.

Other popular projects in 2012 included ozone-depleting substance destruction – aimed exclusively at California cap-and-trade program buyers preparing for the compliance market – and landfill methane projects, also contracted primarily by US-based buyers.

Project Certification: Standards Expand Scope, Seek Scale

The VCS retained its top spot among third-party standards guiding the development and measurement of carbon project performance. Buyers contracted 43 MtCO₂e of offsets adhering to a VCS-approved project methodology, up from 41 MtCO₂e in 2011. The volume of VCS offsets from projects that certified their additional environmental and social benefits to the CCB Standards more than doubled to 12.5 MtCO₂e.

Transaction volumes certified to The Gold Standard continued their steady market ascent as a result of sustained demand for offsets from the standard's signature household device distribution projects – increasingly tapping into the crediting of micro-scale activities – as well as biodigester and Turkey-based wind projects. Voluntary offset buyers contracted a total volume of 10 MtCO₂e from Gold Standard voluntary projects in 2012. Next year this report will likely add forestry and climate-smart agriculture to the roster of Gold Standard-supported project types, following the standard's expansion into land use carbon offset certification with its 2012 acquisition of the CarbonFix Standard for afforestation/reforestation projects and its new alliance with the agriculture-facing Fairtrade label.

Behind The Gold Standard, offsets using CCX methodologies reappeared in the 2012 marketplace after a sharp drop in demand in 2011. While the CCX program originated in the United States, only 26% of the reported 7.6 MtCO₂e transacted from CCX projects were US-based. Remaining volumes were sourced from projects in China, India, Brazil, Germany, and several other country locations.

Both the Climate Action Reserve (CAR) and the American Carbon Registry (ACR) projects saw decreased market activity as both certification programs turned their attention to the California compliance carbon market – where CAR and ACR received long-awaited approval as Offset Project Registries for the regional program.

VCS, ACR, and CAR all reported major strides in the expansion of their land-use programs, including pilot project development in the fields of rice cultivation (ACR and CAR), wetland restoration (ACR), and soil carbon management and sustainable agricultural land management (VCS). VCS and ACR both finalized and made available Jurisdictional Nested REDD (JNR) requirements guiding the development of jurisdictional REDD programs and their relationship to REDD projects. With support of a grant from the Norwegian government, VCS is exploring, and in some cases already supporting, several regions in piloting JNR programs.

Standards, too, are responding to intensified corporate interest in measuring and verifying the delivery of “non-carbon” project attributes. Existing and new programs are exploring how non-carbon attributes like vulnerability reduction via adaptation, water quality, biodiversity, women's empowerment, and public health can be tied to a carbon offset – and if not, what other units of outcomes accounting are potentially appropriate and viable.

To this end, programs like the Higher Ground Foundation (exploring vulnerability reduction offsets), the Water Benefit Partners (exploring water benefit certificates), and the Women's Carbon Standard (recognizing women's issues and contributions in project development) are among several programs that have emerged in the last year to explore opportunities for harnessing corporate sustainability investments for developmental aims that are not restricted to GHG mitigation.

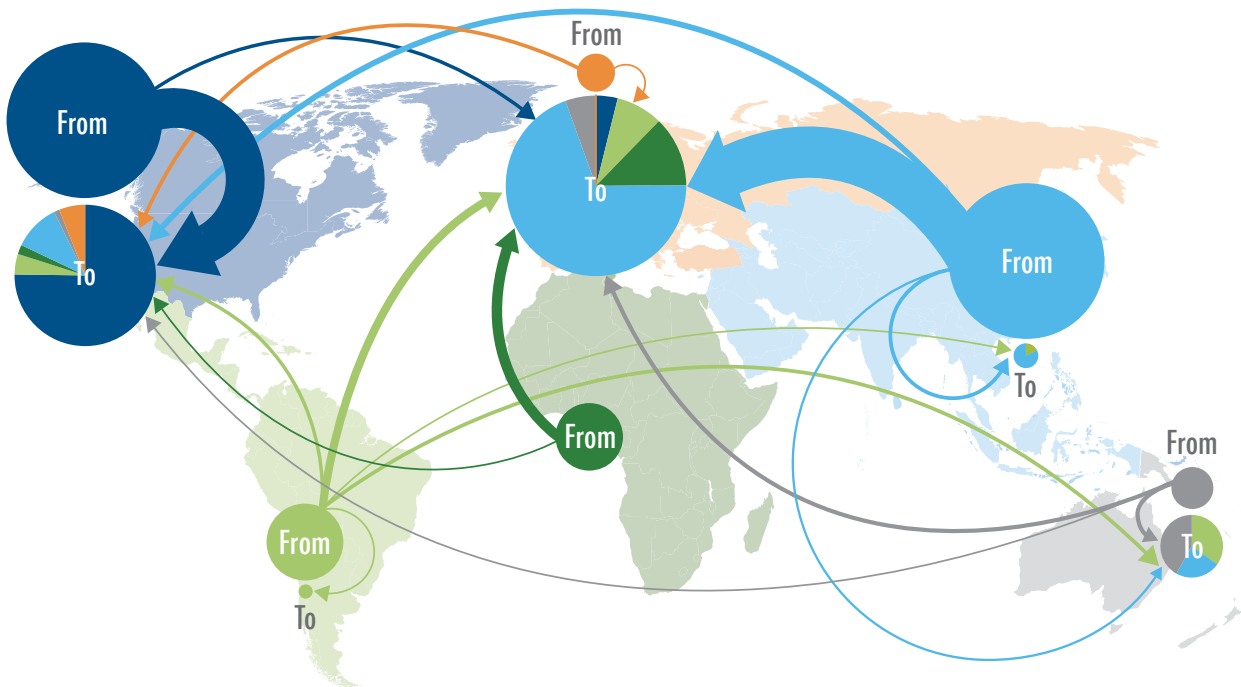
Project Location: Asia, Oceania Markets Grow on Trees

Last year, the market extended voluntary carbon finance to four new country locations, making for a total of 65 countries represented in this year's data.

Despite the continued predominance of renewable energy offsets flowing from major supplier countries China and India, Asia saw forestry, energy efficiency, and fuel switching offsets grow significantly in market share. Overall, the region saw a 4% increase in the volume of offsets supplied, while their average price fell by 9% to \$3.5/tCO₂e. While the bulk of the region's offsets flowed to overseas buyers in keeping with previous years, 2012 saw a significant increase in the purchase of Asian offsets by Asian buyers – a growing trend as emissions trading schemes and domestic offset initiatives are set to develop over the next several years in China, South Korea, Thailand, and Vietnam.

Further south, while still attracting some support from both domestic and overseas buyers, New Zealand's forestry-dominated market fell by over 50% in voluntary transaction volume in the shadow of its compliance

Figure 10: Flow of Transacted Volumes by Offset Supplier and Buyer Region, OTC 2012



From ↓ To →	North America	Latin America	Asia	Oceania	Europe
North America	20.3 M	-	-	-	1.2 M
Latin America	1.1 M	0.2 M	0.3 M	1.5 M	2.8 M
Africa	0.7 M	-	-	0.03 M*	3.9 M
Asia	2.5 M	-	1.3 M	1 M	21.5 M
Oceania	0.3 M	-	-	1.8 M	1.7 M
Europe	1.5 M	-	-	-	0.4 M

*Values smaller than 0.1 Million (M) are not shown on map.

Notes: Based on 80 MtCO₂ associated with either offset project or buyer location.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

market. Australian suppliers, awaiting clarity on future demand for offsets generated through the Carbon Farming Initiative, nevertheless saw domestic demand for offsets more than double to 5.6 MtCO₂e owing to some pre-compliance activity as well as purely voluntary transactions of offsets through the National Carbon Offset Standard.

Kenya-based projects stood their ground in 2012 as the world's fourth largest supplier country, responsible for over half of Africa's 8 MtCO₂e total transaction volume. In addition to attracting corporate support for REDD efforts, Kenya and other countries including Ghana,

Mozambique, Uganda, and the Democratic Republic of the Congo saw international demand for offset from projects delivering clean cookstoves and water purification devices, which in Kenya produced the first large-scale issuance using The Gold Standard's suppressed-demand approach.

North America's biggest surprise in 2012 materialized in the over 8.3 MtCO₂e of offsets transacted through the Chicago Climate Exchange offsets registry program, where new offset generation has more or less come to a halt but domestic buyers continue to transact offsets at sub-dollar rates to replenish their portfolios. The total

value of offsets generated in North America was \$123 million, with 73% of overall value transacted to pre-compliance buyers in anticipation of California's cap-and-trade program. Buyers in the United States together purchased more offsets than buyers in any other single country, supporting \$143 million worth of offsets in 2012.

The volume of offsets transacted in Latin America was relatively stable in 2012 at 7.2 MtCO₂e despite a fall in average price, with forestry still driving the bulk of domestic project development. Seeds of growth were planted in the region, with governments in Acre (Brazil), Colombia, and Chile signing agreements with VCS to establish stronger frameworks for their domestic carbon markets, and Mexico passing a law to pursue a domestic emissions trading scheme. Latin American projects contracted a large proportion of their offsets to European buyers, with only a smattering of Latin American offset buyers in the game.

Regulated under the European Union Emissions Trading Scheme and broader Kyoto Protocol commitments, projects in EU member states supplied a modest 1.4 MtCO₂e of offsets in 2012, continuing for the most part to be a source of voluntary offset demand rather than supply. On the demand side, buyers in the United Kingdom and other major European countries continued to show a strong appetite for offsets from abroad, securing a total of 43.4 MtCO₂e offsets in 2012, with over half of those offsets sourced from projects in Asia.

Caveats and Conclusions: The Year Ahead

As seen in the mosaic of project types, regional trends, and unpredictable drivers of offset demand presented in this summary of our 2013 *State of the Voluntary Carbon Markets* report, voluntary buyers are a source of demand for differentiated products that are purchased on the basis of dozens of decision points. These criteria include offset supplier reputation, perceived offset quality, and, more broadly, the health of the buyer's business, the economy, and their previous experience with offset programs.

Because of the market's lack of liquidity and predictability, historical trends presented in this report should be viewed only as a starting point for understanding demand in the current year – which continues to evolve as both offset buyers and suppliers innovate new ways to mitigate GHGs, influence policy, and communicate their purchases and successes.

Already in 2013, major organizations ranging from Microsoft to the United Nations Environment Programme have renewed or made new offsetting commitments, with Microsoft and The Walt Disney Company both introducing an internal carbon price on operations to

pay for offset purchases. On the "sell" side, programs like the UN Foundation's Global Alliance for Clean Cookstoves and campaigns Code REDD and Whole World Water are expanding their efforts to raise public awareness of voluntary carbon finance's contributions to forest conservation and sustainable development. Meanwhile, offset suppliers are experimenting with crowd-funding, collective purchase auctions, and wrapping inexpensive issued offsets with forward sales of offsets from early-stage projects – to support both existing and future offset project development.

Offset suppliers remain concerned that the collapse of an EU carbon price and exclusion of a host of CDM projects post-2012 will channel an oversupply of compliance instruments into the voluntary markets. ***In 2012, Ecosystem Marketplace tracked less than 1 MtCO₂e of CDM offsets ("CERs") sold to voluntary buyers*** – typically from unique projects and locations and at prices similar to those paid to traditional voluntary projects. We will continue to closely track these developments throughout the year.

While concerns about the fate of millions of CERs drive some suppliers to distance themselves and their products from the Kyoto offset market, others are focusing on connecting with emerging compliance programs – in California, Australia, South Africa, China, and various jurisdictions in Latin America. Here, offset infrastructure providers and market participants are working to bridge the gap between voluntary and compliance programs. As some offsetting activities in these regions shift from voluntary "pre-compliance" preparations to full-blown compliance market participation, findings around market size and make-up in this report series will no doubt change substantially in future editions.

In the midst of this dynamic marketplace, voluntary offset market players are also changing their pitch – from simply offsetting carbon emissions to relating their on-the-ground experience to broader policy and corporate sustainability objectives.

This involves highlighting the offset project market's potential for rapid response to mitigation opportunities that can supplement slower-moving fund-based actions. Some market players are focused on communicating lessons learned about verification and results-based finance models. Still others are developing a new lexicon around the delivery of vulnerability reduction, health, and other public benefits associated with private sector interventions. Through a combination of these and other efforts to raise the offset product market profile, suppliers strive to remain relevant as climate policy makers target ever-more scalable solutions.

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Definitions and Glossary

Additionality Requirement that emissions reductions claimed as offsets must go above and beyond emissions reductions that could have been achieved under a business-as-usual scenario. Methods of gauging additionality include regulatory, financial, barriers and common practice tests, and can be applied at the project level (project-based approach) or across a project category (standardized approach).

Baseline The estimate of greenhouse gas emissions, population, gross domestic product, common practice, and other factors that describe the “business-as-usual” scenario that would have occurred without implementation of the carbon project activity.

Carbon Offset In this report series, a carbon offset is defined as an instrument representing the reduction, avoidance or sequestration of one metric tonne of CO₂ or greenhouse gas equivalent.

Compliance Carbon Markets Marketplaces through which regulated entities obtain and surrender emissions permits (allowances) or offsets in order to meet predetermined regulatory targets. In the case of cap-and-trade programs, participants – often including both emitters and financial intermediaries – are allowed to trade allowances in order to make a profit from unused allowances or to meet regulatory requirements.

Co-Benefits Additional environmental, social, or other benefits arising from a carbon project that are quantified based on metrics or indicators defined by the project developer; a co-benefits certification program; or third-party carbon project standard that accounts for both climate and co-benefits. Some registries and standards enable co-benefits certification to be “tagged” onto issued carbon offsets, if quantification and verification of co-benefits are not already embedded in a carbon project standard.

Emissions Scopes Scope 1 emissions encompass all direct greenhouse gas emissions. Scope 2 emissions cover indirect emissions from consumption of purchased electricity, heat, or steam. Scope 3 emissions represent indirect emissions from outstanding sources left out of Scope 2, including extraction and production of purchased materials and fuels, electricity-related activities, transport activities in vehicles not owned/controlled by the reporting entity, outsourced activities, and waste disposal.

Issuance / Issued Offsets Once a carbon offset project has been validated, verified, and undergone other required processes, carbon offsets can be issued to the project owner with a unique identifier; and tracked, transferred, and retired by a designated registry.

Primary and Secondary Markets The primary market for carbon offsets is defined as the initial transaction of offsets from the project developer to the first buyer in line – this can be an offset retailer or wholesaler (i.e., the “secondary market”) or a buyer of offsets for “end use” (i.e., end user or end buyer) in the voluntary or compliance carbon offset markets.

Registry A registry issues, holds, and transfers carbon offsets, which are given unique serial numbers to track them throughout their lifetime and can also retire offsets. In compliance markets, each scheme has its

AAUs	Assigned Amount Units
ACR	American Carbon Registry
AFOLU	Agriculture, Forestry, and Other Land Use
A/R	Afforestation/Reforestation
ARB	California Air Resources Board
CAR	Climate Action Reserve
CBEEX	China Beijing Environment and Energy Exchange
CCB	Climate, Community & Biodiversity Standards
CCER	Chinese Certified Emission Reduction
CCO	California Carbon Offset
CCX	Chicago Climate Exchange
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CFI	Carbon Farming Initiative
CRT	Climate Reserve Tonne
CSR	Corporate Social Responsibility
CTX	Carbon Trade Exchange
DOE	Designated Operational Entity
EU ETS	European Union Emissions Trading Scheme
FPIC	Free, Prior and Informed Consent
FSC	Forest Stewardship Council
GHG	Greenhouse Gas
GS	The Gold Standard
IFM	Improved Forest Management

own designated registry. In the voluntary market, there are independent registries available.

Retirement The point at which a carbon offset that is purchased voluntarily is permanently set aside by its owner in a designated registry – effectively taking the carbon offset's unique serial number out of circulation. Retiring offsets through a registry ensures that they cannot be re-sold – which is of particular importance if the buyer's intent is to claim the offsets' emissions reductions against a carbon reduction or neutrality target.

Suppressed Demand A situation where access to energy services is insufficient due to poverty or lack of access to modern energy infrastructure to meet stakeholders' needs (i.e., their demand for energy services is "suppressed" by their circumstances). In these instances, the project baseline may include a scenario where users' future emissions are projected to rise above current levels as development provides access to more carbon-intensive sources of energy. Typically based on survey research, the project assumes a higher volume of emissions from the project area in the future and thus receives a larger volume of offsets for avoiding future emissions by enabling project stakeholders to "leapfrog" to a clean energy technology first.

Standard A set of project design, monitoring, and reporting criteria to which carbon offsetting activities and/or projects' environmental, social, and other co-benefits can be certified or verified. In the voluntary markets, a number of competing standards have emerged with the intent to increase credibility in the marketplace. More recently, national and sub-national regulated markets have also designed standards specific to regional needs, for voluntary or regulatory use.

Tagged Offsets / "Tagging" When an offset is verified as delivering carbon benefits via a carbon accounting standard – and then also verified to deliver co-benefits – the co-benefits certification is formally layered onto the offset in a registry system.

Transaction(s) We consider "transactions" to occur at the point that offsets are contracted or suppliers otherwise agree to deliver offsets immediately or in the future.

Validation The approval of carbon offset projects in their planning stages, when projects must submit for approval information on project design, including information on baseline scenarios, monitoring schemes and methodologies for calculating emissions reductions.

Verification The process of verifying emissions offsets generated by an offset project to a particular standard, which quantifies the amount of actual emissions reductions to guarantee that this amount aligns with the number of offsets to be issued to the project; or to verify the delivery of a project's stated environmental, social, and other co-benefits.

Voluntary Carbon Market The voluntary carbon marketplace encompasses all transactions of carbon offsets that are not purchased with the intention to surrender into an active regulated carbon market. It does include offsets that are purchased with the intent to re-sell or retire to meet carbon neutral or other environmental claims.

Voluntary (or Verified) Emissions Reductions (VERS) General term for offsets transacted in the voluntary carbon markets.

J-CDM	Japan Clean Development Mechanism
J-VER	Japan Verified Emissions Reduction
K-VER	Korea Verified Emissions Reduction
KYC	Know Your Client
LDC	Least-Developed Country
MRV	Monitoring, Reporting, and Verification
MtCO ₂ e	Million Metric Tonnes of Carbon or Carbon Equivalent
NCOS	National Carbon Offset Standard (AU)
ODS	Ozone-Depleting Substance
OPRs	Offset Project Registries
OTC	Over the Counter
PDD	Project Design Document
PFSI	Permanent Forest Sink Initiative
PIN	Project Idea Note
REC	Renewable Energy Certificate
REDD	Reduced Emissions from Deforestation and Forest Degradation
SALM	Sustainable Agricultural Land Management
UNFCCC	United Nations Framework Convention on Climate Change
VCM	Voluntary Carbon Markets
VCS	Verified Carbon Standard
VER	Verified Emission Reduction
VCU	Verified Carbon Units
WCC	Woodland Carbon Code
WCI	Western Climate Initiative

Introduction

A mosaic is made up of many unique pieces that can be valued as a whole *and* for the uniqueness that each piece contributes to the bigger picture. What better way to understand the market for voluntary carbon offsetting than by appreciating the world's many distinctive approaches to market-based climate action, both individually and as the sum of their parts?

The mosaic of global offsetting trends is, by nature, a work in progress. Over the seven years that Forest Trends' Ecosystem Marketplace and Bloomberg New Energy Finance have tracked this marketplace, voluntary actors continue to build upon the original picture laid by those that conceptualized a truly global carbon market. This once-unified market concept has evolved into localized climate solutions as the public and private sectors reimagine the most effective ways to price carbon.

This trend was recently seen in the World Bank's notable shift from tracking the State and Trends of the Carbon Markets to Mapping Carbon Pricing Initiatives among 40 nations and 20 jurisdictions that are pricing carbon by differentiated means. Uniqueness, innovation, and business and community relevance have long been goals of voluntary carbon market programs and actors, which are increasingly called upon to support emerging domestic carbon initiatives in jurisdictions ranging from South Africa to California to Costa Rica.

But companies, not countries, remain the driving source of voluntary offset demand – with their appetite to support ever-more innovative environmental projects, couched in increasingly complex results-based frameworks. Even the potential for voluntary

offset demand adds a larger number of greenhouse gas mitigation approaches, guiding standards, project locations, and offset suppliers to the market mosaic, and, ultimately, to our tracking efforts every year.

This annual report is a significant part of Forest Trends' endeavor to facilitate transparency and a flow of information about these individual efforts and their efficacy as a whole.

Its creation requires outreach to hundreds of organizations that willingly take the time to complete our surveys and, for some, participate in detailed interviews. The outcome is this analysis, which we hope, as the only report of its kind, continues to provide vital perspectives on voluntary offset supply, prices, demand, market infrastructure, and places and people engaged in voluntary carbon finance.

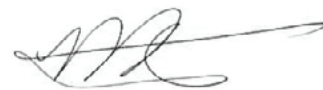
Despite tremendous efforts to contact and collect data from as many suppliers as possible, we are acutely aware of the limitations of survey-based analysis. We caution readers to understand our reporting methodology and to consider reported numbers as conservative.

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

Throughout 2013, Ecosystem Marketplace will track trends and questions first illuminated in this report. If you have questions about content or supporting the production of this type of analysis, please contact us at: info@ecosystemmarketplace.com.



Michael Jenkins
President and CEO
Forest Trends



Molly Peters-Stanley
Associate Director
Ecosystem Marketplace

Methodology: Frequently Asked Questions

How Does This Report Define “Voluntary” Offsetting?

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

How Does This Report Define a Transaction?

We consider “transactions” to occur at the point that offsets are contracted; or suppliers otherwise agree to deliver offsets immediately or in the future; or when suppliers agree to retire an offset on someone’s behalf based on a donation model. Payment and delivery of offsets can occur simultaneously (“spot” transaction); payment can occur immediately (“pre-pay”) or upon delivery (“pay on delivery”) of offsets that will be generated from future emissions reductions; contracts can define a specific volume of offsets to deliver (“firm” or “fixed” delivery), or specify that delivery and payment are based on the volume of offsets that are actually generated by the project in the future (“unit contingent”).

Does This Report Track Environmental Impact?

Our analysis examines the volume of carbon offsets transacted in order to chart the size of the global marketplace in terms of carbon offsetting and future project investment. We do not track the individual “lives” of offsets as they pass through the value chain. For example, if a project developer sold an offset to an offset retailer and then the retailer sold the same offset 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 annual reports on carbon pricing mechanisms³.

We do collect data on the volume of offsets retired. This volume, along with origination numbers, represents

the market’s ultimate environmental impact – retired offsets can no longer be resold and so represent the amount of carbon emissions that were confirmed as being offset in each year.

Where Does Ecosystem Marketplace’s Market Data Come From?

Information presented is based on data collected from offset project developers, wholesalers, brokers, and retailers, as well as carbon offset accounting registries and exchanges that track and facilitate the transfer of offsets between owners.

The bulk of data was collected via an online survey designed for organizations supplying offsets into the “over-the-counter” (OTC) voluntary carbon market. The survey was available between January 21 and April 15, 2013. It was sent to approximately 1,200 organizations identified as possible suppliers and was distributed through the Ecosystem Marketplace news briefs and Climate-L and Forest-L list serves. In the same survey, developers of forest carbon and clean cookstove offset projects were additionally surveyed for both this report and other research products, including the *State of the Forest Carbon Markets 2013* report, which require a more extensive project-based (vs. transaction-based) survey. In 2012-2013, Ecosystem Marketplace partnered with the Global Alliance for Clean Cookstoves to disseminate the clean cookstove distribution project survey.

We complemented the survey with data and insights provided by major brokerage firms such as Evolution Markets, Armajaro, Amerex, Karbone, and TFS Energy LLC, as well as registries and exchanges, including: APX, Inc., Australia’s Clean Energy Regulator Registry of Offsets Projects, BlueRegistry, BTAAB Registry, Canadian Standards Association GHG CleanProjects™ Registry, CDC Climat, Japan Verified Emissions Reduction (J-VER) Registry, Korea GHG Reduction Registry Center, Markit Environmental Registry, Carbon Trade Exchange (CTX), the Chicago Climate Exchange Offsets Registry Program, Climex, Tianjin Climate Exchange (TCX), and Santiago Climate Exchange (SCX).

³ <http://documents.worldbank.org/curated/en/2013/05/17751166/mapping-carbon-pricing-initiatives-developments-prospects>.

To minimize the occurrence of “double-counting” volumes reported by offset suppliers and brokers, we asked respondents to specify the volume of offsets transacted through a broker or exchange. When we identified an overlap, the transaction was counted only once.

How Do You Protect the Confidentiality of Survey Responses?

This report presents only aggregate 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. We do not share supplier information with third parties without prior permission from the survey respondent.

What Was This Report's Survey Response Rate in 2013 (Examining the 2012 Offset Marketplace)?

Each year, our goal is to identify and collect information from as many active offset 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.

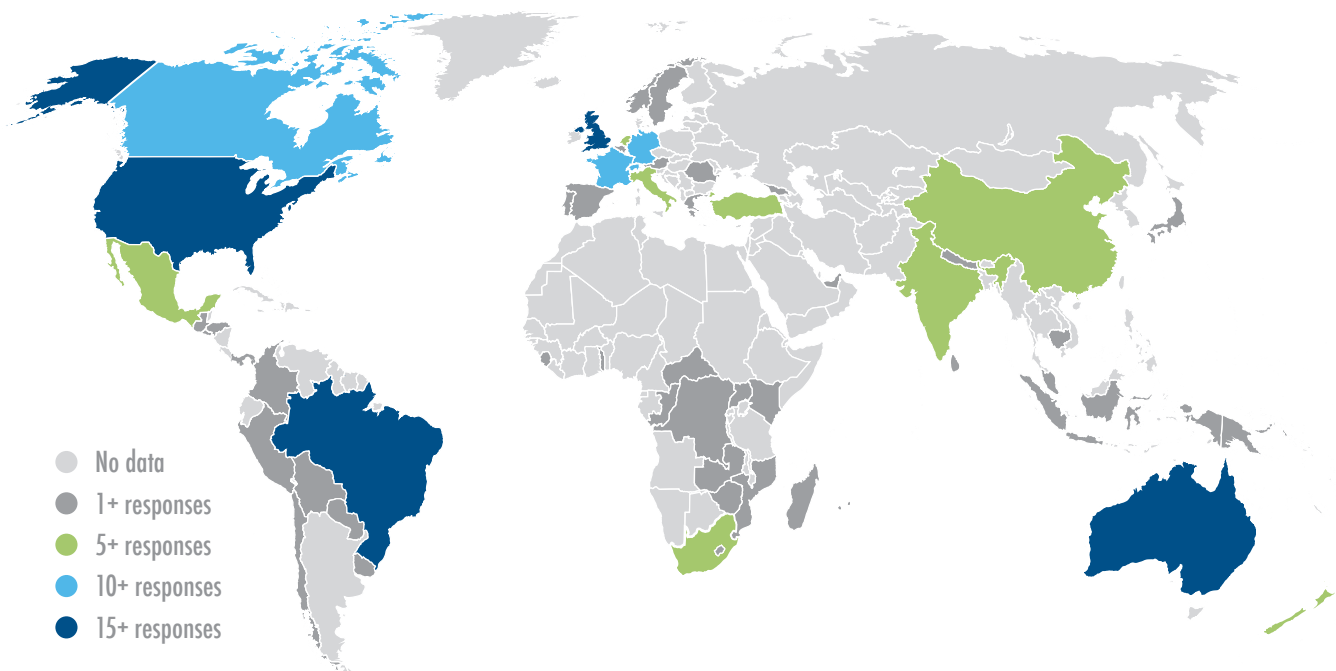
This year, we received survey information from 320 organizations that supplied carbon offsets to voluntary buyers in or before 2012. We identified or communicated with another 213 suppliers from our list that did not transact offsets in 2012, were no longer selling voluntary carbon offsets, or were no longer in business. Based on the numbers described above as well as contact with brokers and industry associations, we estimate that well over two-thirds of active VER suppliers provided some level of data.

What Was the Regional Survey Response Distribution in 2012?

The largest proportion of survey respondents was based in the US (26% of all respondents). After the US, suppliers based in the United Kingdom were again the second largest proportion of respondents, followed by Australia and Brazil.

Taken as a whole, we received the largest number of responses from North American suppliers (93) – in line with the large volume of offsets purchased from the

Figure 11: Response Rate Distribution by Offset Supplier Country Location, 2012



Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

region. The response rate from Europe-based offset suppliers was close behind (91). Offset suppliers from emerging markets in developing countries saw another growth year in terms of market participants, tracking 94 responses from organizations headquartered in Latin America (43), Asia (32), and Africa (19). These organizations represent 31% of all survey responses, slightly up from the 88 developing country supplier responses to our 2011 survey. Figure 11 illustrates regional response rate distribution by country.

While the locations of survey somewhat align with the locations of both offset project developers and resellers (wholesalers, brokers, retailers), 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 11 does not fully represent the distribution of project locations. For this information, see Chapter 5.

How Do You Calculate Market Share and Aggregate Volumes?

This year's survey collected both organization-wide and transaction-specific information. Because all of the calculations in this report are weighted by respondents' transaction volumes to determine the significance of their response, responses from suppliers who did not disclose 2012 transaction volumes were not included in many figures, as it could not be ascertained how significant their answers were to the offset market. All of the calculations in this report are weighted by respondents' transaction volumes to determine the significance of their response. Responses from suppliers who did not disclose 2012 transaction volumes were not included in many figures, as it could not be ascertained how significant their answers were to the offset market. Market share is thus calculated

based only on the transaction volume associated with each question. We do not extrapolate market share findings to all volumes reported in our survey, as the marketplace is too differentiated to make such assumptions. Notes at the bottom of most figures report the transaction volume associated with the figure.

How Does This Report Present Prices and Market Value?

All offset prices reported in this series are volume-weighted to determine their significance. We prioritize pricing that was reported at the transaction level as more granular and robust than organization-wide pricing. 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 and any variables for which we present market value.

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 (tCO_2e) or million metric tonnes of carbon dioxide equivalent ($MtCO_2e$).

Do Ecosystem Marketplace Researchers Screen the Quality of Offsets Reported in This Survey?

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 offsets included in calculations. However, we did follow up with dozens of respondents to confirm or clarify survey responses that were incomplete or raised a red flag. This included any responses that varied significantly from "typical" market behaviors and thus would also significantly influence market trends. In a few cases where we were unable to confirm that transactions occurred, these responses were omitted.

Voluntary Carbon Offsetting 101

Voluntary Offsetting Motivations and Markets

Voluntary demand for carbon offsets is driven by companies and individuals that take responsibility for offsetting their own emissions (“purely voluntary” demand), as well as entities that purchase “pre-compliance” offsets before emissions reductions are required by regulation.

Purely voluntary offset buyers are driven by a variety of considerations related to corporate social responsibility (“CSR”), ethics, and reputational or supply chain risk. Pre-compliance buyers speculatively procure offsets before a compliance carbon market start date, hoping to obtain a lower price than what the same offset may eventually fetch in the compliance program.

Voluntary markets co-exist with compliance offset markets driven by mandated caps on greenhouse gas (“GHG”) emissions, which operate at a significantly larger scale. The most active compliance carbon offset program is the United Nations Clean Development Mechanism (“CDM”), the source of offsets for Kyoto Protocol Signatory Countries and buyers in the European Union Emissions Trading Scheme (“EU ETS”). See Box 1 for a comparison of CDM and voluntary offset market size.

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 influence 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.

The Project Cycle and Standards

Carbon offset projects are implemented to reduce, avoid, or sequester greenhouse gases. Each carbon offset represents one tonne of GHGs reduced that can then be purchased to cancel out or neutralize a comparable volume of GHG emissions elsewhere.

Project developers create carbon offsets according to a methodology describing how a project will be implemented and how climate benefits are to be measured. There are currently dozens of **independent standards** offering methodologies that can guide offset project development. Some standards develop methodologies internally with support from external stakeholders. Others enable external parties to develop and propose new methodologies which are subjected to an approval process prior to use.

Project developers engage in several preparatory steps to project implementation that vary by project type and methodology requirements. This typically includes producing a **Project Idea Note** (“PIN”) that gives shape to project plans; various project feasibility, impact, and risk assessments; stakeholder input sessions; and numerous other early-stage preparations.

Once a methodology is available, developers produce a **Project Design Document** (“PDD”) that details project design; anticipated emissions reductions; plans for quantifying and monitoring the delivery of climate and other social and environmental benefits; assesses projects’ arguments that the project activity exceeds “business-as-usual” (“BAU”) reductions and avoids emissions leakage; and other technical issues. **Validation** is the process by which a third-party auditor examines a project’s planning documents and proposed framework (including the PDD), affirming its ability to deliver expected outcomes.

Following a period – sometimes years – of project implementation, monitoring, and documentation, another audit process called **verification** assesses the delivery of GHG mitigation and any additional “co-benefits”. This confirms the total volume of emissions that the project has reduced over time. After tonnes are verified, they can be **issued** by an offset project registry – which assigns each tonne a unique serial number that stays with the offset as it changes hands and is ultimately retired.

Offset Retirement

When a buyer desires to **retire** an offset so that it can no longer be re-sold, the registry designates the offset as “retired” in the offset owner’s account. Often,

Table 2: Basic Project Cycle by Popular Standards

Clean Development Mechanism	
Project Cycle: Early Stages	Project Cycle: Late Stages
PIN → PDD Design → Host Country Approval → Validation → Registration →	Monitoring → Verification → Issuance → Forwarding →
Verified Carbon Standard	
Project Cycle: Early Stages	Project Cycle: Late Stages
PIN → PDD Design → Validation → Registration →	Monitoring → Verification → Issuance → Transfer of offset ownership →
The Gold Standard	
Project Cycle: Early Stages	Project Cycle: Late Stages
PIN → Local Stakeholder Input & PDD Design → Stakeholder Consultation Feedback and Report → Validation → Registration →	Monitoring → Verification (Carbon, Sustainability Monitoring Reports) → Gold Standard Review of Verification → Issuance → Transfer of Credit Ownership →

Source: Standard website information: <http://www.cdmgoldstandard.org/>; <http://v-c-s.org/>; <http://cdm.unfccc.int/>.

offset suppliers will retire an offset on behalf of their buyer without transferring offset ownership to them and publicly acknowledge the offsetter's name on the registry for others to see. Offset suppliers may retire offsets regularly or intermittently in bulk. They may also choose whether or not to make this or any registry information available for public view.

Offsets are typically issued on a registry in order to be formally retired – to demonstrate that the tonne has been verified as “real” and to enable the buyer to claim that emissions have been neutralized. While many offset buyers seek issued offsets for this purpose, some may desire to use their CSR resources to catalyze new project development by supporting earlier-stage activities. Thus, some offsets are forward-contracted for future delivery once the project has successfully verified and issued tonnes. Both early- and late-stage transactions are tracked in this report series.

“Over-the-Counter” Versus Exchange Contracts

The majority of voluntary offset buyers obtain offsets through decentralized **“over-the-counter”** (“OTC”) transactions. These are bilateral contracts between buyers and sellers that define the terms of payment and offset delivery. A small volume of offsets are also obtained on private exchanges.

This report primarily focuses on OTC transactions, the source of most offset transactions and market value, as **exchange activity** is less common. From 2004

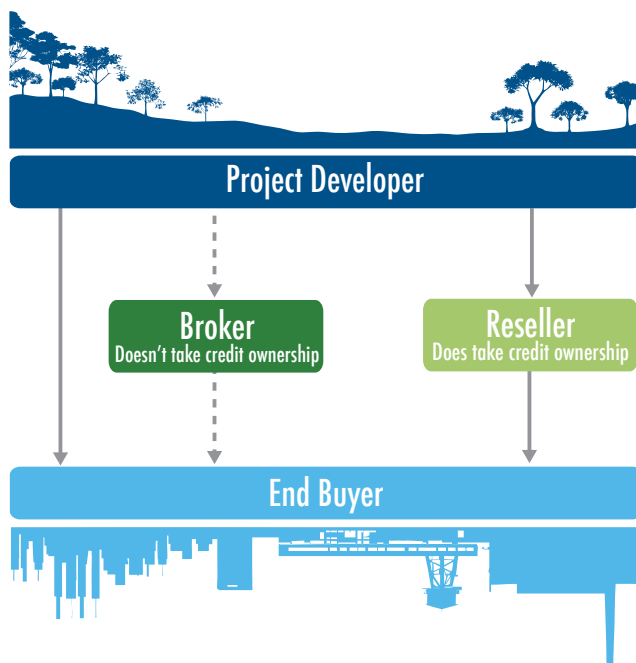
to 2010, however, a significant volume of voluntary offset transactions occurred on the Chicago Climate Exchange (CCX). The CCX was a cap-and-trade system that organizations joined voluntarily, making legally binding commitments to track and reduce their GHG emissions. The exchange was launched as a pilot program and completed its final trades in 2010. Today, CCX continues to administer a voluntary offset program and registry.

Voluntary Offset Supply Chain

In compliance carbon markets, formal exchanges and several layers of intermediaries drive market liquidity and transparency. In the voluntary carbon markets, there are typically only three layers – project developers, brokers, and retailers or wholesalers.

The term **“offset project developer”** is a catch-all phrase to describe activities that may be carried out by many different entities. “Project developer” often (but not always) describes the organization that acts as carbon asset developer – developing concept and feasibility studies and the PDD, and managing the seeing the project through validation, monitoring activities and, ultimately, verification. Depending on project type and circumstance, this organization may differ from the actual project owner; from local partner organizations involved in project implementation; from project financiers/investors; and from the organization actually selling offsets to end users. Additionally, a separate aggregator may pull together several of these disparate functions.

Figure 12: The Voluntary Carbon Markets Value Chain



Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Offset retailers do not traditionally manage project development and documentation. Instead, they contract with project developers to take ownership of a portfolio of offsets that they then offer to end users. Because their role is more end user-facing, they typically also offer other corporate carbon management services that may also include internal emissions reductions strategies and public relations tied to the overall corporate environmental strategy – including offset use.

Brokers do not take ownership of offsets, but facilitate transactions between project developers and end users; project developers and retailers; and between retailers. They do this for a fee. There are currently only a handful of active brokers in the voluntary offset marketplace. When given the opportunity, some retailers will also perform this role, but generally not at significant volumes.

Throughout this report, the initial offset contract between a project developer and an end user or other intermediary is referred to as the **primary market**. The **secondary market** consists of transactions between retailers and retailers, or retailers and offset end buyers.

Offset Buyers and Suppliers: How They Connect

Offset buyers may take one or several available routes to identify an offset supplier and choose offset types. Because voluntary offset transactions do not occur

on any formal exchange where buyers are easily identified, offset suppliers report that the time required to find a buyer can be the most costly aspect of their business. Wait times may range from a few months to several years.

As seen in Section 4.2, many voluntary offset end use buyers rely on offset retailers to guide their decisions and procure offsets. Buyers may identify an offset retailer by looking to **industry associations** like the International Carbon Reduction and Offsets Alliance (ICROA). They may also **partner with organizations and campaigns** like the Global Alliance for Clean Cookstoves or the Code REDD campaign. Project developers and retailers engage with these organizations in order to gain access to end users through association-based events, introductions, mailings, and other outlets for exposure. Project developers wishing to sell their offsets to retailers may pursue **commercialization agreements** that grant retailers the exclusive right to market projects' offsets to their clients, with some form of return to projects.

Some buyers may assemble **advisory committees** of NGOs, third-party carbon offset project standards and, other stakeholders to guide their offset purchase decisions. They may also identify suppliers from a company or industry list of approved vendors. Public **Requests for Proposals (RFPs)** are another approach whereby end buyers – and in some cases retailers grappling with large contracts – will issue tenders specifying their offset requirements. In some cases RFPs will be made publicly available online, while in other cases they are sent only to project developers and retailers with which the buyer has some familiarity. **Buyers** and suppliers may also connect via international carbon or other industry-specific **conferences**, or simply engage in “cold calling.”

An emerging approach taken by offset buyers is to consider offset project opportunities that address emissions within their **supply chain or sphere of influence**. As discussed in Section 4.3, this may not always mean that the project bears a direct relationship to buyers' operations but may be located in a relevant region or sector – thus helping to narrow the field of offset options.

Market and Report Limitations

While companies have voluntarily offset their emissions for over two decades, the vast majority of this activity has occurred in the last 5 years. Because voluntary offsetting is largely unregulated but also driven by corporate climate actions, many self-regulating tools

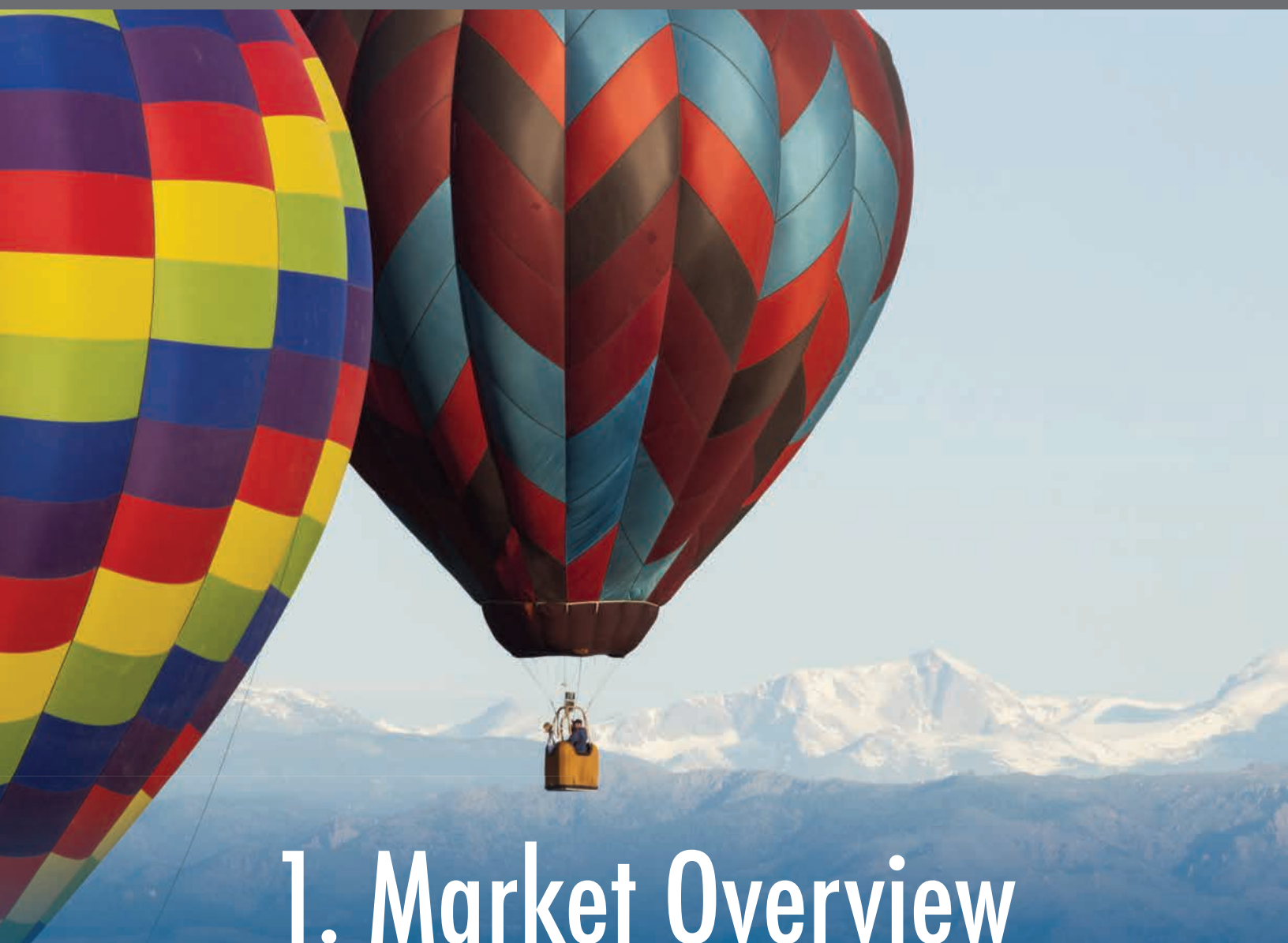
have quickly emerged that aim to assure buyers of the environmental impact of their purchases.

As such, this marketplace has matured rapidly. However, demand continues to rest with those actors that have the desire and discretionary income to voluntarily purchase offsets. In reality, this represents a small number of buyers and transactions when compared to the volume of trades that occur daily to weekly in a commoditized, compliance-based carbon market.

In comparison to more active marketplaces, voluntary buyers are not always at hand and offset prices are highly stratified and unpredictable, even within similar

classes of offsets. 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. Therefore, to produce a traditional market report that offers intra-year trading data or forecasts would be impossible if not misleading.

What this report series aims to offer is a year-on-year, survey-based exploration of trends in offset supply and demand – to illuminate disruptive innovations, emerging or distressed markets, and the impact of broader regulatory, economic, and consumer signals.



1. Market Overview

Volume and Value



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

1. Market Overview: Volume and Value

In 2012, voluntary actors contracted 101 million tonnes of carbon offsets (MtCO₂e) for immediate or future delivery – 4% more than in 2011. The vast majority of these offset transactions (98 MtCO₂e) occurred bilaterally, or “over the counter” (OTC) rather than on any formal exchange.

This represents the second highest level of OTC market activity ever tracked. The OTC market’s “biggest” year was in 2010, when the market was boosted by a sizable transaction of offsets generated through the voluntary Chicago Climate Exchange (CCX) – which wound down operations in the same year. Despite the formal program’s closure, its influence is still felt in the North American carbon markets, where voluntary actors transacted 8.3 MtCO₂e of CCX offsets in 2012 – pushing the voluntary market as whole over the one-hundred-million-tonne mark.

The volume of offsets traded on exchanges hovered around 2 MtCO₂e, similar to the level activity reported by exchanges for the last four years. All of the platforms that reported activity in 2012 – including the Carbon Trade Exchange (CTX), Climex, and the Santiago Climate Exchange (SCX) – are return respondents, most of which saw modest growth last year. No new voluntary offset exchanges were tracked in 2012.

While offset demand grew, market value decreased 11% to \$523 million⁴ as offset prices fell slightly for most project types. The sizeable demand for CCX offsets transacted at an average of \$0.1/tCO₂e, which did not aid market value. As with offset volumes, the majority of this value was generated by OTC offset contracts (\$516 million) while exchange-traded offsets were valued at a total of \$6.3 million.

2012 KEY FINDINGS

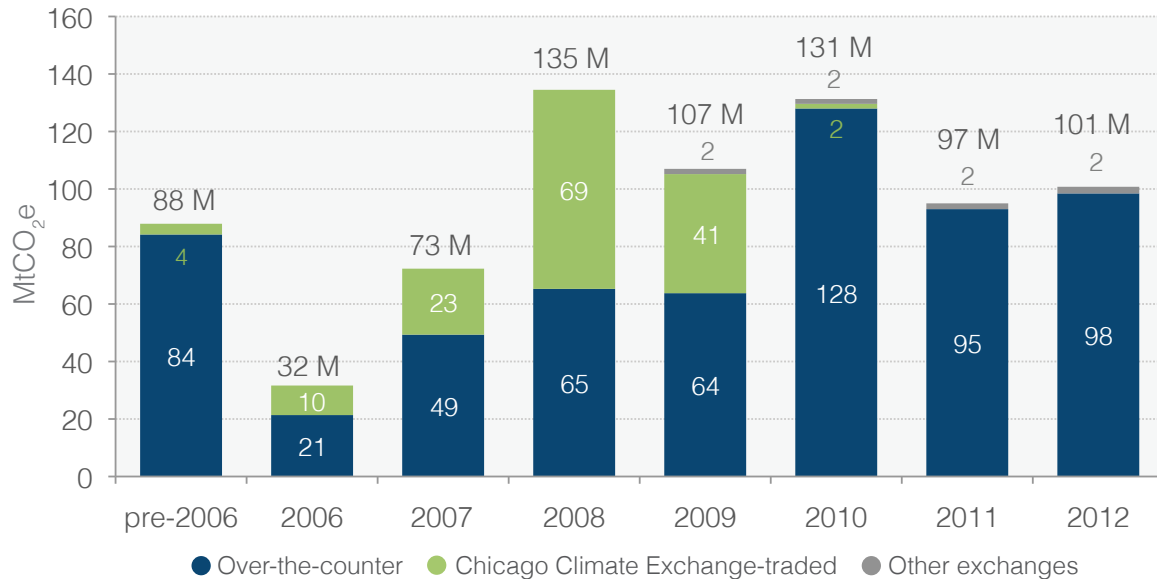
- In 2012, voluntary actors contracted 101 million tonnes of carbon offsets (MtCO₂e) for immediate or future delivery – 4% more than in 2011. Market value decreased 11% to \$523 million.
- 2012’s voluntary actors paid a volume-weighted average price of \$5.9/tCO₂e – down 5% from 2011, but significantly higher than the United Nations’ regulatory Clean Development Mechanism (CDM) recent record low carbon offset price of \$0.16/tCO₂e.
- Over all of the years of market activity tracked in this report series, voluntary buyers have funded 763 MtCO₂e in emissions reductions worth \$3.7 billion and at an average historical price of \$5.9/tCO₂e – equivalent to the 2012 market-wide average offset price.
- Offset project registries report that voluntary actors retired a record volume of offsets in 2012, totalling close to 20 MtCO₂e across all certification programs. This is in keeping with the ever-growing volume of offsets that have been verified by auditors and “issued” by registries (66 MtCO₂e newly issued in 2012 alone) and so are eligible for retirement.
- In 2012, private sector offset suppliers transacted 86% of market volumes (or 81 MtCO₂e) – regaining ground lost to non-profit organizations in 2011.
- Project developers were responsible for generating and selling almost half of all offset volumes in 2012 – valued at \$184 million, or about 18% the size of the primary market for offsets in the CDM in 2012 (\$1,047 million – see Box 1). Overall, retailers bought or supplied a total of 50 MtCO₂e valued at \$230 million in 2012, roughly 51% of all transacted offsets and 45% of market value.
- In 2012, our survey tracked less than 1 MtCO₂e of CERs sold to voluntary buyers – mostly from unique projects and locations, at prices similar to those paid to traditional voluntary projects.

⁴ See Methodology section for an explanation of how volume-weighted average prices and value are calculated throughout this report.

A substantial portion of market value (64% of all volumes reporting contract types or \$170 million) was paid to offset sellers at the point of transaction (rather than on delivery) – primarily via spot contracts (35.6 MtCO₂e, up 25% from 2011) and pre-payment

for future delivery (8.7 MtCO₂e, down 1% from 2011). Another \$97.5 million will be paid in future years – if and when the projects under contract deliver verifiable reductions. This dynamic is discussed in greater detail in Section 4.6.

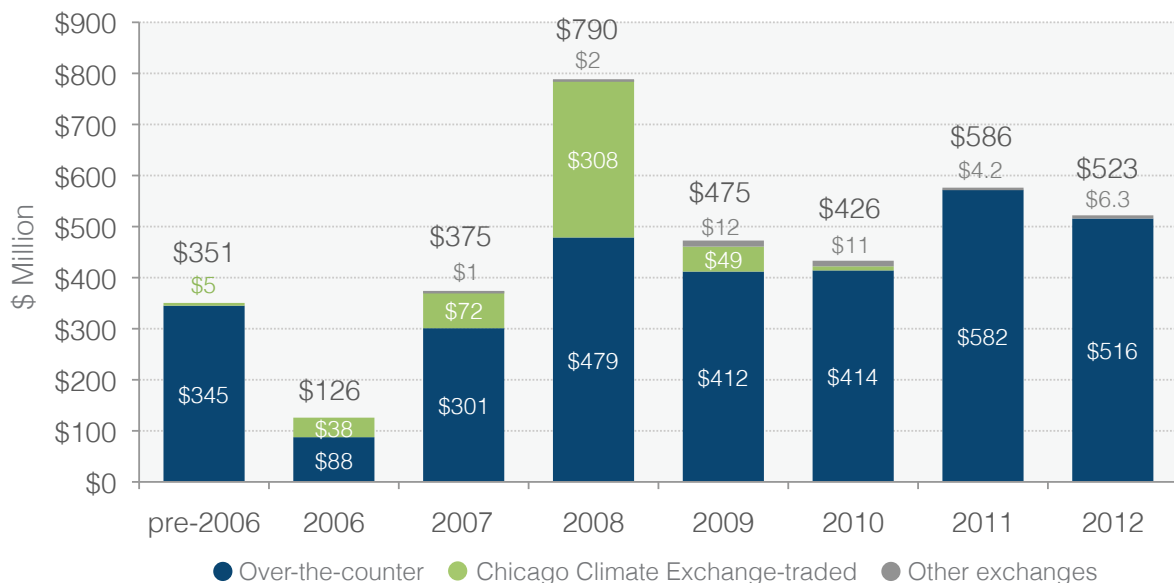
Figure 13: Historical Offset Demand by Transacted Volume, All Voluntary Carbon Markets



Notes: Based on 763 MtCO₂e of offsets transacted and reported to Ecosystem Marketplace over 7 survey years.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 14: Historical Offset Demand by Market Value, All Voluntary Carbon Markets



Notes: Based on \$3.6 billion in voluntary offset market value transacted and reported to Ecosystem Marketplace over 7 survey years.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

In 2012, voluntary actors paid a volume-weighted average price of \$5.9/tCO₂e – down 5% from 2011's \$6.2/tCO₂e, but significantly higher than the United Nations' regulatory Clean Development Mechanism (CDM) carbon offset price of less than a \$1/tCO₂e as of mid-2013. As demonstrated throughout this report, last year's lower average price for voluntary offset transactions is the aggregation of close to 1,000 reported price points that vary greatly by project standard, location, and technology – ranging from less than \$.1/tCO₂e to over \$100/tCO₂e in 2011.

Declining prices for voluntary offsetting were most apparent in the high-priced offset range (\$10+/tCO₂e) where the volume of offsets contracted at these prices fell by 46%. On the other hand, transacted volumes of offsets at less than \$5/tCO₂e grew by 19%. This trend is illustrated in Figure 15 which depicts the volume of offset transacted for every dollar between \$0-\$30/tCO₂e. Suppliers say this downward trend was primarily a function of perceived offset oversupply and knock-on effects of the collapse of the EU carbon price.

Over all of the years of market activity tracked in this report series, voluntary buyers have funded 763 MtCO₂e in emissions reductions worth \$3.7 billion and at an average historical price of \$5.9/tCO₂e – equivalent to the 2012 market-wide average offset price.

1.1 Offset Retirement: Walking the Talk

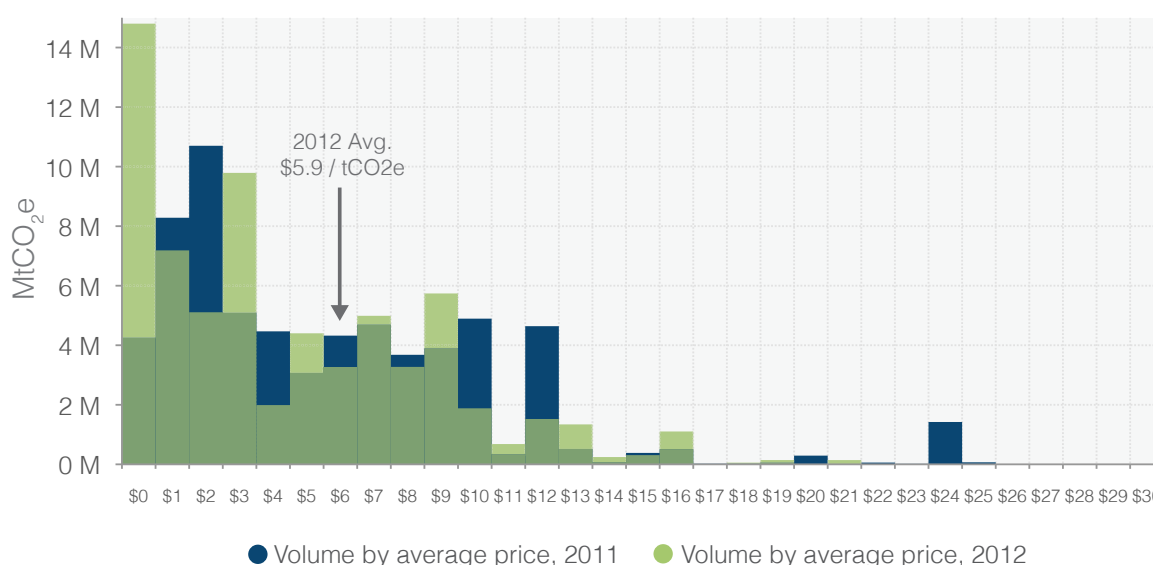
Organizations seeking to neutralize their carbon emissions must ideally “retire” the offsets they purchase – so that offsets can no longer be onsold to other market participants and claimed more than once. Offset registry systems execute this process, tracking individual offsets as they enter the market, change ownership, and are ultimately retired in their systems. See Voluntary Offsetting 101 for more about this process.

Offset project registries report that voluntary actors retired a record volume of offsets in 2012, totalling close to 20 MtCO₂e across all certification programs. This is in keeping with the ever-growing volume of offsets that have been verified by auditors and “issued” by registries and so are eligible for retirement. As of January 1, 2013, registries had issued over 66 MtCO₂e across all programs – another market record.

A sizable portion of retired offsets (12.2 MtCO₂e) was certified to the Verified Carbon Standard (VCS) program, which also saw the largest volume of newly issued offsets (34.4 MtCO₂e). This finding is discussed in greater detail in Chapter 3.

The survey that informs this report also tracks the subset of offsets that suppliers reported selling and also retiring in 2012 – totaling 12.7 MtCO₂e in 2012.

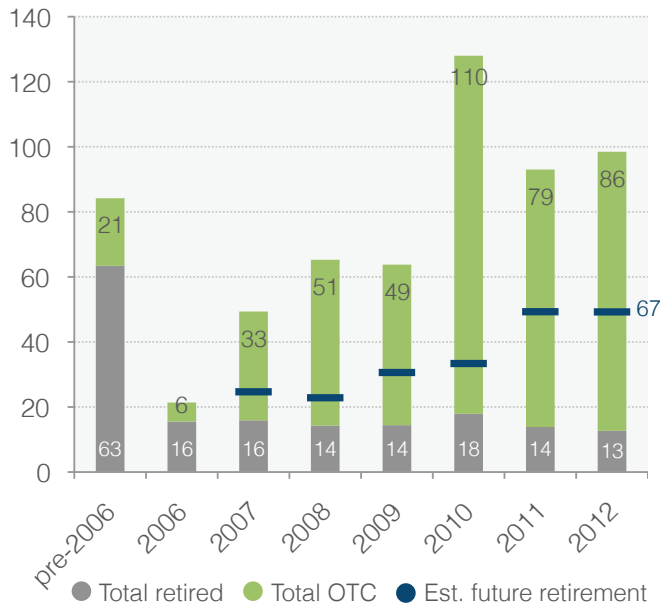
Figure 15: Transacted Volume by Average Price, 2011-2012



Notes: Based on 1,142 reported transaction prices associated with 74 MtCO₂e.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 16: Historical Voluntary Offset Retirements (MtCO₂e)



Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

While this number is lower than total retirement volumes reported by registries, it is also important to note that offset suppliers often will not retire offsets in the same year that they are transacted – either because the offsets have not yet been issued or because they prefer to retire offsets on behalf of clients all at once, in bulk.

Thus, some proportion of registry-reported retirements capture offsets that were transacted before 2012 and only recently issued and retired.

Another question in our survey's Buyers section asks suppliers about their buyers' motivations to determine the volume of offsets purchased for purely voluntary purposes that might be retired in the future. In 2012, 47% of offsets were transacted by purely voluntary offset end users. This is illustrated in Figure 16 as the "estimated future retirement figure", totaling 67 MtCO₂e.

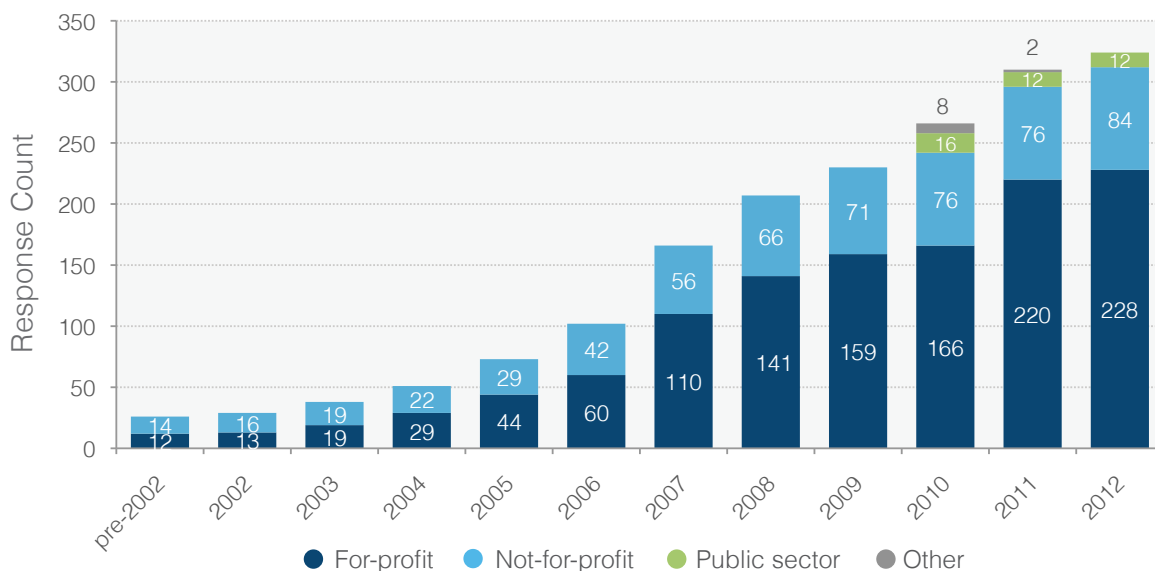
1.2 Profit Status: Suppliers by Sector

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 336 respondents that reported a profit status in our 2013 survey, private sector suppliers vastly outnumbered non-profit suppliers – as they have since 2005. Suppliers that identified as public sector organizations were again few in number in 2012, but represented many levels of government worldwide.

In 2012, private sector offset suppliers transacted 86% of market volumes (or 81 MtCO₂e) – regaining ground lost to non-profit organizations in 2011. Non-profit market share fell from 20% to 14%, even as voluntary

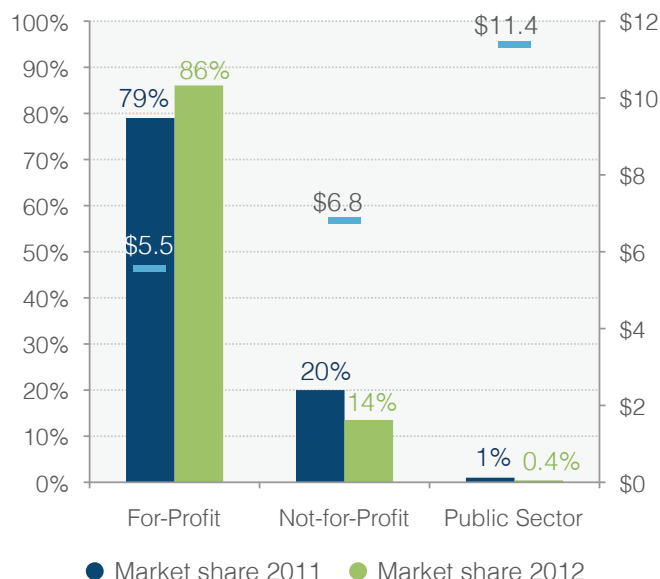
Figure 17: Cumulative Response Count by Supplier Profit Status, All Survey Years



Notes: Based on 324 organization responses.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013.*

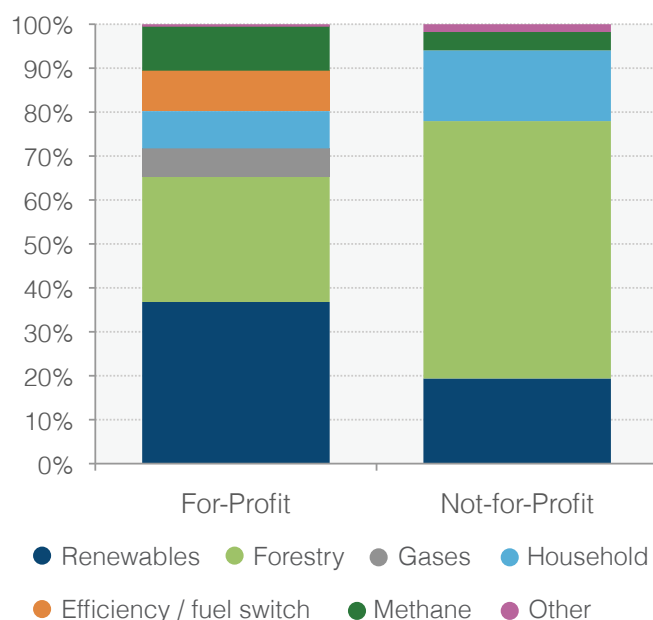
Figure 18: Market Share and Average Price by Offset Supplier Profit Status, OTC 2012
(% Share and \$/tCO₂e)



Notes: Based on 324 organizations reporting 95 MtCO₂e transacted.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Figure 19: Market Share by Project Category and Offset Supplier Profit Status, OTC 2012



Notes: Based on 324 organizations reporting 95 MtCO₂e transacted.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

demand for forest carbon offset projects grew. As seen in Figure 19, forestry has always been and remains a key component of non-profit offset suppliers' portfolios.

2012 saw a slightly smaller proportion of offsets transacted by public sector actors hosting domestic offset programs – at .4 MtCO₂e last year. These actors reported the highest per-tonne offset prices, however, at an average of \$11.4/tCO₂e, reflecting the typical above-average price paid to public programs. At the other end of the spectrum, private sector suppliers contracted offsets at an average of \$5.5/tCO₂e while non-profits reported an average offset price of \$6.8/tCO₂e. This is a departure from 2011, when average prices did not differ between private-sector and non-profit offset suppliers.

1.3 Value Chain: From Supplier to Buyer

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

Project developers: Develop emissions reduction projects to generate and sell offsets to offset retailers or end buyers.

Retailers/wholesalers: Take ownership of a portfolio of offsets to sell to offset end users (companies or individuals). In addition to offset sales, they may also engage in other carbon management advisory and communications services.

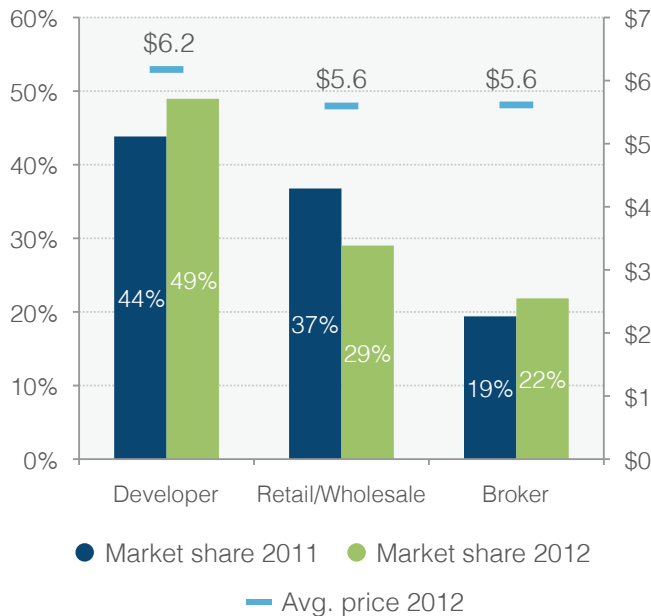
Brokers: Do not own offsets, but facilitate transactions between sellers and buyers (either retailers or offset end users).

This report also occasionally draws a distinction between primary and secondary market transactions.

Primary transactions are defined in this report series as the initial sale of offsets from the project developer – into the “secondary market” of retailer intermediaries or to offset end users. The secondary market represents transactions reported by retailers/wholesalers that are transacted amongst themselves or (more commonly) sold to offset end users.

In order to understand suppliers' activities throughout the supply chain, we asked them to identify their role in each offset transaction. Overall, we find that project developers were responsible for generating and selling almost half of all offset volumes in 2012 – valued at \$184 million, or about 18% the size of the primary market for offsets in the CDM in 2012 (\$1,047 million – see Box 1). Developers contracted a total of 37.4 MtCO₂e.

Figure 20: Market Share by Supplier Role, 2011-2012, and Average Price, 2012 (% Share and \$/tCO₂e)



Notes: Notes: Based on 324 organizations reporting 77 MtCO₂e transacted

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013.*

Retailers were responsible for another 29% (22 MtCO₂e) of offsets transacted in 2012 – considerably down from 2011's 29 MtCO₂e. This is partly due to the fact that in 2012, a larger volume of offsets were sold from project developers working with project types that have not traditionally taken the retail route to market, but instead sold directly to offset end users, like clean cookstove and forestry offset projects. At the same time, 2012 saw several instances of mergers or acquisitions between project developers and retailers, thus blurring the lines between roles.

A slightly larger proportion of volumes were reported as brokered between parties instead of being sourced directly from a project developer or retailer. All told, brokers were responsible for facilitating 16.7 MtCO₂e of offsets in 2012. Offsets that were obtained to prepare for California's impending cap-and-trade program were the primary source of growth in this market segment, where brokers long active in the US carbon markets were sought to navigate the year's tumultuous offset policy and pricing developments.

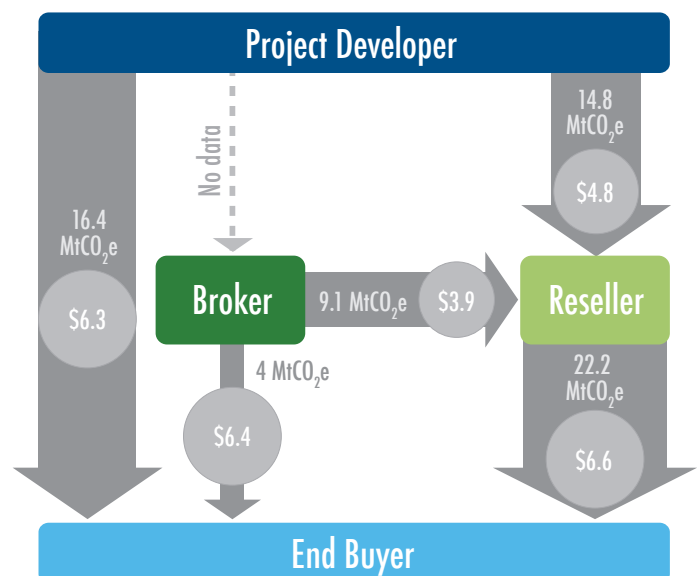
Project developers' reported average price of \$6.2/tCO₂e was slightly lower than in 2011 (\$7/tCO₂e) –

but remained higher than for other offset suppliers types. Prices associated with transactions that were facilitated by brokers increased from \$4.9/tCO₂e – tied to the rising price of California-facing offset contracts.

Figure 21 provides a more complete picture of these dynamics, though it only captures data from suppliers that reported offset transaction volume, price, and buyer (67 MtCO₂e total). In 2012, project developers sold 15 MtCO₂e to retail offset providers, to then offer to their offset end use clients. Another 16 MtCO₂e were sold by project developers directly to offset end users – in direct competition with retailers and for a slightly lower average price than that offered by retailers to end users (\$6.3/tCO₂e versus \$6.6/tCO₂e).

We can also assume that a large volume of offsets brokered to offset end users or retailers were sourced from project developers, though we have no means of confirming the source of volumes reported by brokers. We do find that the price of offsets brokered to end users (\$6.4/tCO₂e) is very similar to offsets sold directly to end users by project developers. Retailers obtained the lowest-priced offsets in the market when sourcing them through a broker – the story for 9 MtCO₂e sold at \$3.9/tCO₂e.

Figure 21: Transacted Volume and Average Price by Buyer and Seller Types, OTC 2012



Notes: Based on 324 organizations reporting 66 MtCO₂e associated with business roles and buyer types.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013.*

BOX 1: Make or Break – Implications of CDM Market Developments for Voluntary Offset Supply and Demand

Historically, compliance-driven demand for carbon offsets from the UN Clean Development Mechanism (CDM) has far outpaced voluntary offset demand – thanks to a substantive carbon price and offset demand from the world's largest regulatory carbon market, the European Emissions Trading Scheme (EU ETS). In 2012, however, the EU ETS was a market in severe distress. Bloomberg New Energy Finance estimates that while traded volumes for CERs jumped 16% in 2012, market value for CERs (primary and secondary market) fell from an estimated \$22 billion in 2011 to \$6.5 billion this past year. Throughout 2012-2013, CDM offset (“CER”) prices fell precipitously, falling to a record low of \$0.16/tCO₂e.

Within this context, the voluntary market has begun and may continue to take some supply of offsets already developed for and targeted toward compliance buyers with obligations under the EU ETS or broader Kyoto Protocol targets, as well as other markets with prices linked to these. Some developers may consider the voluntary markets' historical average pricing to be comparable or favorable compared to current compliance market prices, which have been driven to record lows by policies that have not corrected for oversupply and provide insufficient price signals for compliance market-facing offsets.

But while the relative stability of voluntary offset demand and pricing may be appealing to CDM project developers and CER suppliers, it's important to recognize that this report's findings capture a large volume of offset sales from project types that are not eligible under the CDM (like projects that reduce emissions from deforestation and forest degradation or “REDD” – or all offsets generated in developed countries).

Table 3 details 2012 offset transactions that are relevant to CDM project developers (see Notes), as they come from relevant project types developed under the CDM, VCS, or The Gold Standard. Here, we see that 43% (42 MtCO₂e) of all offsets sought by voluntary buyers in 2012 were from “CDM-relevant” projects – valued at \$172 million or one third of overall voluntary market value. Prices for these offset types, at an average of \$4.5/tCO₂e, were 23% less than the overall voluntary markets' average of \$5.9/tCO₂e. Excluding high-priced Gold Standard offsets from the mix (a total of 9.3 MtCO₂e), this price falls to \$3.3/tCO₂e. *(Continued on next page.)*

Table 3: Transacted Volume, Market Value, and Average Price, UN Clean Development Mechanism and “CDM-Relevant” Voluntary Carbon Offset Types, 2012

	Clean Development Mechanism			Voluntary Carbon Offsets		
	Volume (MtCO ₂ e)	Value (\$ Million)	Avg. Price (\$/tCO ₂ e)	Volume (MtCO ₂ e)	Value (\$ Million)	Avg. Price (\$/tCO ₂ e)
Primary Markets	339 Mt	\$1,047 M	\$3.1/t	20 Mt	\$86 M	\$5/t
Secondary Markets	1,686 Mt	\$5,451 M	\$3.2/t	22 Mt	\$87 M	\$4.2/t
TOTAL 2012	2,025 Mt	\$6,498 M	\$3.2/t	42 Mt	\$172 M	\$4.5/t
Rulemaking Body	UNFCCC/ Executive Board (CDM EB)			Independent third-party standards guide projects; no central regulatory body		
Geographic Scope	Non-Annex I Countries			Global		
Trading Platform	Exchange or Over-the-Counter			Over-the-Counter		
Price Setter(s)	Kyoto Compliance Markets			Voluntary Buyers		

Notes: Non-Annex I countries are Kyoto Protocol signatories that are not obligated to set and achieve emissions reductions targets, but are typically developed country participants that are eligible to host CDM projects.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.
Bloomberg New Energy Finance, CDM market analysis, 2013.

Box 1: Continued

Despite voluntary offset supplier concerns that traditional CDM market players will channel an oversupply of CERs into the voluntary markets, in 2012 **our survey tracked less than 1 MtCO₂e of CERs sold to voluntary buyers** – mostly from unique projects and locations, at prices similar to those paid to traditional voluntary projects. In contrast, 8.3 MtCO₂e were sold from CCX projects to North American buyers at an average \$0.1/tCO₂e, representing a far larger source of inexpensive offsets that nevertheless did not collapse the US voluntary offset price. This highlights the fact that voluntary offset demand is highly stratified according to buyer tastes and offset supplier relationships, hence the demand for unique and atypical CERs, roughly half of which were also Gold Standard-certified.

CER suppliers considering a position in the voluntary offset market will face a host of challenges and important considerations – including the longer time required to identify a voluntary offset buyer; opaque supply information; additional registry fees; and voluntary offset suppliers' historic effort to distance their products from the CER market.

Finally, 24.3 MtCO₂e were sold by retailers to offset end users at an average price of \$6.6/tCO₂e. While this price is higher than for offsets transacted by other types of suppliers, it does not imply that retailers necessarily achieved a significant margin as some of the volumes transacted may have been contracted from project developers in previous years and at a higher price.

Overall, these findings mirror other findings in our Buyers and Contracts section that pin the retail offset market as the single most common type of buyer in the voluntary carbon markets.

1.4 Other Supplier Types: Exchanges and Auctions

As seen in Figure 22, voluntary offset exchanges and auctions have reported small but steady volumes for four years. Throughout this report series, we have tracked the rise and market exit of several platforms – however, all platforms active in 2012 were also tracked in previous years and have evolved their business models as they seek sure footing in this recognizably opaque marketplace.

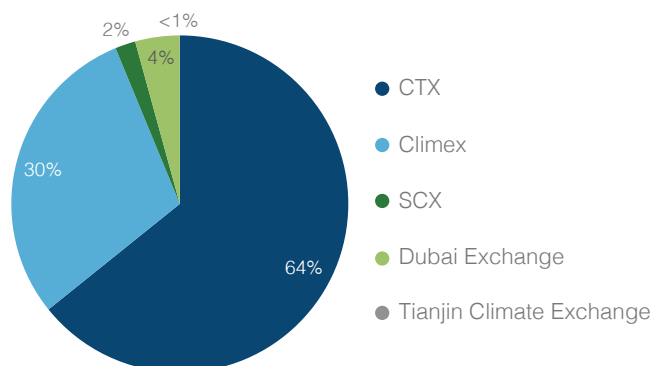
CTX facilitated the transaction of 1.5 MtCO₂e in 2012, making it the most active of these platforms. Last year and into 2013, CTX set its sights on the US offset market – seeking a boost in activity from a new relationship with California protocol-setter the Climate Action Reserve (CAR) and parenting the Texas Climate and Carbon Exchange to target buyers preparing for compliance under California's cap-and-trade program.

Auction platform and voluntary market veteran Climex saw smaller transaction volumes pass through its platform in 2012, and in early 2013 introduced collective purchase auctions as a new arrangement

aiming to provide market access to buyers demanding offset volumes under 10,000 tCO₂e from Gold Standard projects.

All other exchanges reporting 2012 activities were based in developing countries – particularly in Asia and Latin America. Here, SCX continued working to build domestic business capacity for offsetting with the support of a VCS regional office in Santiago. SCX was the third largest voluntary offset purchase platform in 2012. Last year, VCS also announced its collaboration with Colombia's Fundacion Natura to support projects that will ultimately underpin the region's voluntary carbon market – facilitated by a domestic exchange still under development.

Figure 22: Market Share by Offset Transaction Platform



Notes: Based on 33 supplier responses and data provided directly by three platforms – altogether representing 2 MtCO₂e transacted.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.



2. Offset Origins

Type, Place, and Time



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

2. Offset Origins: Type, Place, and Time

2.1 Project Type: Technologies and Techniques

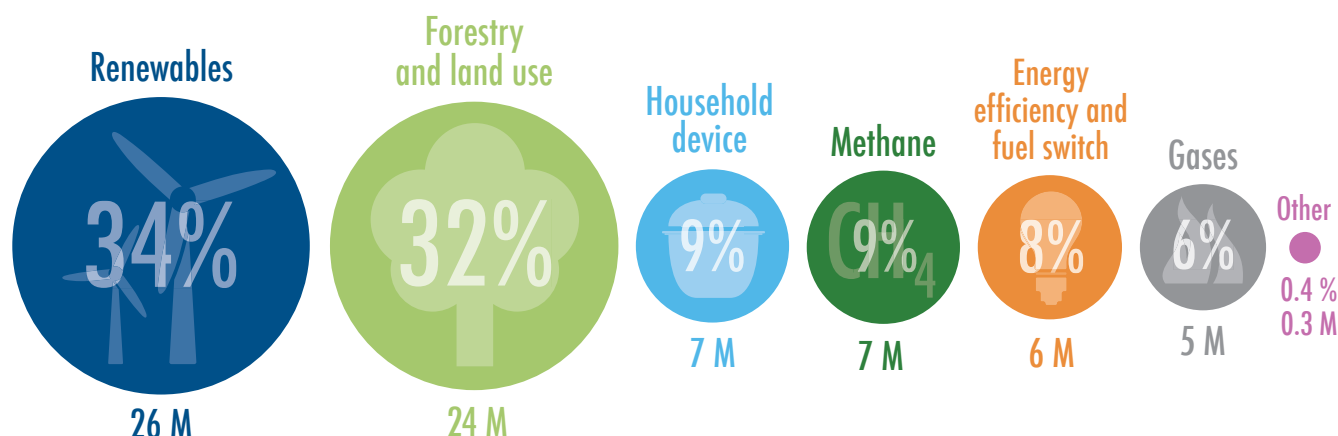
Initiatives that reduce or avoid carbon emissions are the source of offsets in the voluntary carbon markets. Each project is differentiated by its technology, location, and potential environmental and social contributions (“co-benefits”). Voluntary buyers emphasize these details – the story behind the offsets – to make their purchase decisions. An ever-expanding variety of emissions reduction projects reflects voluntary buyers’ diverse tastes and motivations. This section describes the origins of offsets transacted OTC in 2012: the project types, locations, and other factors that begin to

differentiate each offset from the next – and ultimately determine their appeal to end buyers.

In 2012, offsets developed from renewable energy projects were the most popular among voluntary offset buyers. These projects were the source of 26 MtCO₂e or 34% of all transacted offsets that were associated with a project type. Forestry and land-use activities were close behind as the source of another 24 MtCO₂e, a volume 22% greater than in 2011. This year, Ecosystem Marketplace added a new category, “Household Device Distribution” – where we tracked significant growth both in the number of projects and demand for offsets

2012 KEY FINDINGS

- In 2012, offsets from renewable energy projects were the most popular among voluntary offset buyers, as the source of 26 MtCO₂e or 34% of transacted offsets that were associated with a project type. Wind energy was behind 15.3 MtCO₂e of transacted offsets – 35% less than in 2011, as some buyers turned their attention to other inexpensive offsets sourced from large hydropower projects. Forestry and other land-use projects were close behind, supplying another 24 MtCO₂e, a volume 22% greater than in 2011.
- REDD offsets that were (or aim to be) certified to both the VCS and CCB Standards more than tripled their transaction volume in 2012. VCS REDD projects that have already issued offsets can potentially generate and transact 9.6 MtCO₂e annually. Only 5.6 MtCO₂e of this volume has ever been issued.
- Transactions of clean cookstove offsets were valued at \$65.3 million in 2012 – 54% more than in 2011. Over time, the value of private sector support for clean cookstove carbon projects is estimated to be \$145 million. This has enabled the distribution of 4 million stoves from the 45 projects tracked so far in this survey – 99% of these stoves were delivered to users below their respective national poverty lines.
- Last year, the market extended voluntary carbon finance to 4 new country locations, making for a total of 65 countries represented in this year’s data. Asia supplied the largest volume of transacted offsets (29 MtCO₂e) from a growing variety of project types.
- Project uniqueness (understood by number of available standards, project locations, offset suppliers, and project size) is an important contributor to steady market growth. Project types that generate smaller annual volumes from a larger number of project locations, standards, and offset suppliers have seen more sustained demand over time.
- While buyers have an ever-growing buyer interest to engage closely or exclusively with a projects, few buyers expressed demand to support multi-year, exclusive engagement with large- or mega-sized projects. 98 of 113 transactions of future offset vintages – and 25 out of 40 multi-year forward contracts signed in 2012 – were for offsets from micro- to medium-scale projects. In 2012, our survey tracked less than 1 MtCO₂e of CERs sold to voluntary buyers, mostly from unique projects and locations, at prices similar to those paid to traditional voluntary projects.

Figure 23: Transacted Volume by Project Category, OTC 2012 (MtCO₂e and % Share)

Notes: findings pertain to the 75.5 MtCO₂e associated with a response to this question, including “N/A” and “Other”.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

generated from the distribution of clean cookstoves and water filtration devices in developing countries.

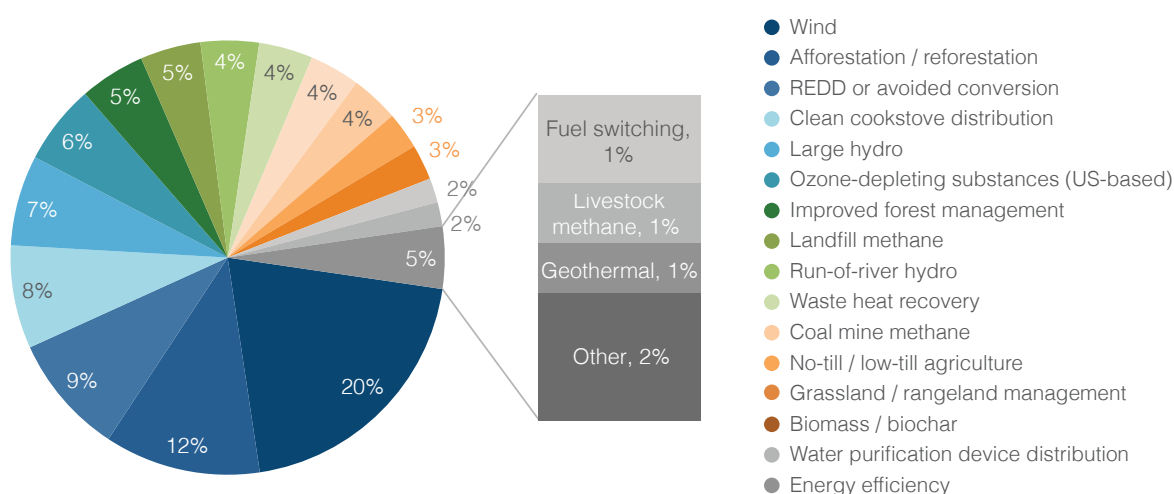
In other categories, demand for offsets from US-based landfill methane projects declined last year as, without some source of a regulatory price signal, low prices for landfill methane offsets were an insufficient incentive for project developers to continue generating and transacting offsets. The category for projects that destroy other potent GHGs – primarily ozone-depleting substances (“ODS”) – expanded their market share due to intensifying demand for the offset type among future California carbon market participants.

Forestry regains ground while renewable energy offsets stay on top

Looking at specific project types within each of these categories (Figure 24), wind energy offsets remained popular in 2012 due to their straightforward “story” and the voluntary market’s abundant supply of inexpensive wind offsets.

“Wind offsets are a simple, linear option and the investment isn’t likely to be detrimental to the buyers’ public profile, explains UK broker Armajaro’s Gareth Turner. It may not be an exotic choice, but it’s safe.”

Figure 24: Market Share by Project Type, OTC 2012



Notes: Findings pertain to the 75.5 MtCO₂e associated with a response to this question, including “N/A” and “Other”.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

These projects were behind 15.3 MtCO₂e of transacted offsets, which is a 35% drop from 2011, as some buyers turned their attention to other inexpensive offsets sourced from large hydropower projects. More attention was also paid to other project types that feature additional environmental and social benefits, beyond the 2.3 MtCO₂e transacted from Gold Standard wind projects demonstrating sustainable development contributions.

Enter forestry projects, where offsets suppliers reported some regrowth in demand following a tough 2011. Across all sequestration approaches, afforestation/reforestation ("A/R") remained the second most popular activity in the voluntary offset marketplace, as the source for 8.8 MtCO₂e of transacted offsets.

Like wind energy, tree planting activities owe their steady year-on-year growth to buyers' familiarity with reforestation, along with a diversity of project locations and standards utilized, and typically small project size. All of these variations enable buyers to make unique claims about their ultimate impact on project viability and to potentially support A/R activities as a project's sole offset buyer. See Section 2.4 for more on this topic.

A/R projects were also behind 1/3 of all survey responses in which offset suppliers sold more than one year's worth of estimated carbon reductions. This reflects their need to cover the high up-front costs incurred from tree planting and forest monitoring activities.

As in 2011, projects that reduce emissions from deforestation and forest degradation ("REDD") were buyers' third most popular choice as an offset source, transacting 6.8 MtCO₂e or 8% less than the previous year. This decline occurred exclusively in the categories of projects that did not utilize a third-party standard to certify their carbon reductions or that utilized a "domestic", country-specific standard like Brasil Mata Viva.

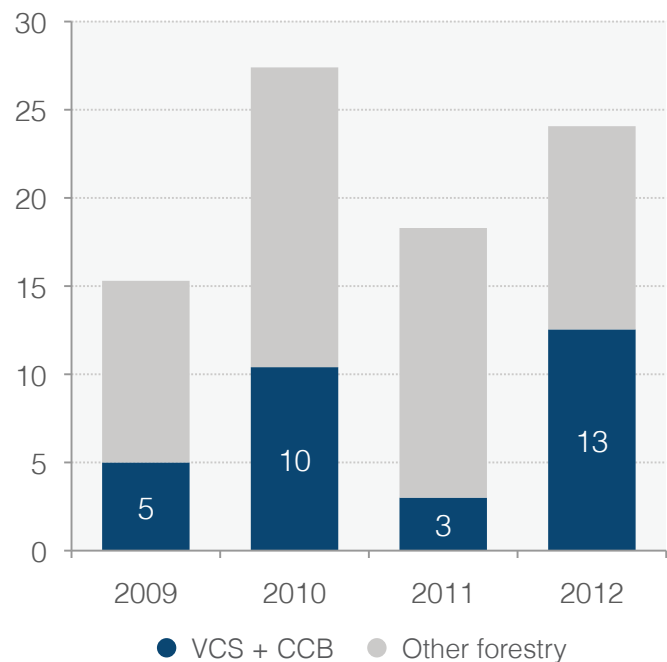
On the other hand, 2012 was a significant year for REDD offsets that were (or aim to be) certified to both the VCS and CCB Standards – which more than tripled their transaction volume (Figure 25). Overall, REDD offset suppliers reported a larger number of transactions of offsets sourced from a larger diversity of projects than ever before.

As REDD projects increasingly demonstrated their ability to verify climate and community benefits and issue offsets, buyers were more willing to support

projects at all stages of development. Around 82% of all VCS forestry offset transactions were from projects that had not yet achieved offset verification or issuance. End use buyers were more likely than retailers to support projects at these stages, albeit at a lower average price (see Section 4.6).

Despite these overall "wins" for conservation forestry – and for VCS REDD projects in particular – suppliers still recount their ongoing struggle to compete for buyer attention with less expensive renewable energy offsets. As the pipeline of VCS REDD projects and offsets (Verified Carbon Units - or "VCUs") continues to grow, they also express concern for the future price of the asset class. Table 4 summarizes this dynamic, where REDD projects that have demonstrated their ability to issue VCUs have the potential to generate and transact 9.6 MtCO₂e annually – only 5.6 MtCO₂e of which has ever been issued. Of this volume, almost half were issued in 2012 alone, and a smaller proportion was actually transacted in 2012. A full 96% of REDD VCUs issued in 2012 were from four VCS+CCB projects – the Kenyan Kasigau Corridor project (Phases I and II), the Mai Ndombe Project in the Democratic Republic of the Congo ("DRC"), and the Alto Mayo Project in Peru – all of which are additionally certified to the CCB Standards.

Figure 25: Historical Transaction Volumes, VCS+CCB and Other Forestry Standards (MtCO₂e)



Notes: Findings pertain to 85 MtCO₂e associated with historical, voluntary forest carbon offset transactions in 2009-2012.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Table 4: Historical Transaction Volumes, VCS+CCB and Other Forestry Standards (MtCO₂e)

9.6 Mt	Potential annual reductions from VCS REDD projects that have previously issued offsets
5.6 Mt	REDD VCUs issued, all years
3 Mt	REDD VCUs issued in 2012
1.8 Mt	Issued REDD VCUs transacted in 2012

Notes: 2012 transaction findings pertain to 6.8 MtCO₂e of REDD offsets transacted.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*, VCS Project Database.

Project developers point to these large numbers to illustrate the idea that the market's significant efforts to develop technical capacity around REDD should now transition to identifying sufficient demand to support and refinance projects.

"It will be very challenging for voluntary private sector buyers to purchase enough credits from already verified vintages to sufficiently satisfy project needs, even if they buy really substantial offset volumes," explains retailer Forest Carbon Group's Michael Sahm. ***"This is why we've begun exploring how to engage institutional or country-level buyers that want to engage in REDD purchase programs or bilateral agreements that can achieve a greater scale of demand."***

REDD offset suppliers expressed mixed feelings about the development of jurisdictional REDD programs that will account for and issue offsets as a region, rather than exclusively at the project level. Ultimately, they acknowledge that offsets issued in accordance with these programs – all of which are currently being developed to the VCS Jurisdictional Nested REDD (JNR) requirements – may be best placed to secure bilateral or multilateral support.

On the other hand, regional programs generating JNR VCUs pose a much larger source of REDD offset

supply that begs questions like, "Will voluntary offset end use buyers engage in transactions with a domestic government?", "Will governments allow project developers to issue and monetize their own offsets – or what does the private sector need to demonstrate to governments in order to gain their confidence in this approach?", "How can progress be demonstrated to the private sector?", "Will offsets from these large programs affect the market's perception of supply and influence prices, or will they be sufficiently differentiated from project-level activities?"

While the market and JNR program developers grapple with these questions, private initiatives like the Code REDD campaign (first introduced in last year's *State of the Voluntary Carbon Markets* and *State of the Forest Carbon Markets* reports) attempt to position existing REDD projects in the public eye, even as Code REDD itself eyes opportunities to unite projects with jurisdictional efforts.

Support for clean household device distribution projects heats up

Voluntary offset buyers funneled \$80 million to offsets from projects that distribute clean cookstoves and water filtration devices – that burn fuel more efficiently or not at all, thus reducing greenhouse gas emissions while sparing households from harmful smoke inhalation. In this category, clean cookstove projects were the market's fourth most popular greenhouse gas mitigation activity – transacting 5.8 MtCO₂e, or 80% more than in 2011. Water filter distribution captured another 2% of market share.

These project approaches debuted in our data in 2010-2011 and have seen continued uptake from voluntary buyers in 2012 as project developers brought a larger number of projects and verified tonnes to the voluntary offset market. Most offsets from this category (89%) were transacted from late-stage projects that had verified tonnes, compared to 34% in 2011.

As project developers and their local partners continue to expand their technical capacity and device distribution channels (i.e., the means by which they sell or distribute devices to end users), they report struggling with issues similar to those facing forest project developers.

Examples of some of these issues are: "How does one quantify the improvement of community well-being and health over the life of the project?", "How can private sector projects and stakeholders better engage with donor-based sustainable development financing

BOX 2: The Market for Offsets from Clean Cookstove Distribution: Some Like It Hot

From the first registered clean cookstove offset project in 2007 to record transaction volumes in 2012, the voluntary offset market has watched climate actors worldwide get behind this popular approach to carbon reductions and sustainable development. This year, Forest Trends' Ecosystem Marketplace teamed up with the Global Alliance for Clean Cookstoves to survey cookstove project developers regarding their projects' transactions, devices and inputs, distribution channels and, ultimately, the populations they impact. This section brings you the preliminary results of this jointly administered research project, with key findings that include:

- Voluntary demand for clean cookstove offsets was valued at \$65.3 million in 2012 – 54% more than in 2011. Around 61% or \$40 million of this value arose from transactions reported by a project developer. The remaining value resulted from offset resale.
- Over time, the value of private sector support for clean cookstove carbon projects is estimated to be \$145 million. This has enabled the distribution of 4 million stoves from the 45 projects tracked so far in this survey – 67% of which were distributed in 2012 alone.
- In 2012, carbon finance for clean cookstove distribution reached 15 country locations on three continents. The most prominent project locations included Peru, Ghana, Mozambique, and Kenya.
- The average price for offsets from clean cookstove projects was \$11.3/tCO₂e. This is the aggregation of 67 unique prices reported for this project type and represents a 15% fall in price from 2011's \$13.2/tCO₂e. This difference is a function of both the growing volume of available cookstove project offset supply and lack of clarity regarding CER demand in the EU ETS – another source of demand for some clean cookstove offsets.
- Clean cookstove distribution directly connected carbon finance to the rural and urban poor, as 99% of stoves were delivered to users below their respective national poverty lines. Of these, 64% of stoves went to users in rural communities. Projects tracked so far reported 1,662 local employees – 27% of which are women – working for local partner organizations or in-country offices.
- Approximately 3 out of 4 stoves were assembled in the country where they were distributed to meet users' cooking specifications. Offsets sold from projects where stoves were assembled in-country (as opposed to imported stoves) saw a 17% higher average price (\$11.7/tCO₂e versus \$10/tCO₂e).
- Only 2% of projects that reported contracting offsets in 2012 engaged in stove “give-aways” – the majority of projects charged users between \$2 and >\$140/device. Lower prices were sometimes associated with projects that only distributed clean ignition devices, versus a whole stove, while others only charged a nominal cost to ensure that the stove user had some “buy-in” with regard to stove use over time.
- In a survey section that asked offset suppliers to identify the polluting activities that the more efficient or clean cookstoves would address, the most commonly cited “business-as-usual” fuel source was charcoal that user populations would purchase.
- Almost half of the projects distribute cookstoves based on the side-feeding “rocket” stove design – combusting biomass fuel sources efficiently by harnessing a natural draft. Efficient charcoal stoves were the second most popular stove/fuel type.
- 83% of cookstove project offsets transacted in 2012 were certified to the Gold Standard, the carbon market's most popular program based on its many available methodologies and projects, and volume of issued and transacted offsets. A smaller proportion of offsets were certified to the VCS, most of which were issued and sold or re-sold from one long-running project in Asia. A small volume of transacted cookstove project offsets were developed under the CDM and additionally certified to the Gold Standard. This volume may grow as a number of CDM project developers look to voluntary buyers for more sustainable offset prices – adding their CERs to the mix of over 80 Gold Standard VER projects that rely exclusively on the voluntary market for demand. *(Continued on next page.)*

Box 2: Continued

- Gold Standard certified offsets were priced at an average \$11/tCO₂e. The price for CDM Gold Standard offsets was close to this level but cannot be reported due to a small number of data points. On average, suppliers estimated that The Gold Standard issued 2.98 tCO₂e (or roughly three offset tonnes) per device distributed.
- The majority of Gold Standard projects that have verified and issued offsets were developed for voluntary buyers. As of April 2013, only one CDM Gold Standard project had issued offsets. However, more new project applicants will pursue both CDM and Gold Standard certification than those that will generate Gold Standard VERs. Overall, Gold Standard clean cookstove projects at various stages and in both markets could reduce an estimated 6.4 MtCO₂e annually from 143 unique projects.

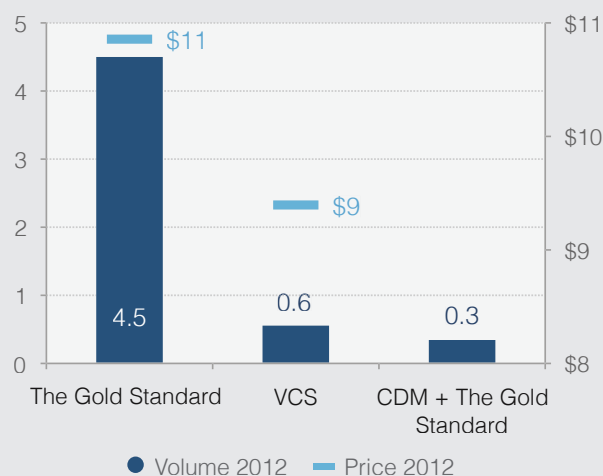
(Continued on next page.)

Table 5: Number of Gold Standard Projects and Estimated Annual Reductions by Project Region

Region	Project Count	Estimated Annual Reductions (MtCO ₂ e / Year)
Latin America	15	0.7
Asia	53	1.7
Africa	75	3.7
Total	143	6

Source: The Gold Standard, as of April 2013.

Figure 26: Transacted Volume and Average Price by Cookstove Carbon Project Standard, 2012



Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Table 6: Number of Gold Standard Projects and Estimated Annual Reductions by Stage

Status	Gold Standard Voluntary Market Projects (GS VERs)		Gold Standard CDM Projects (GS CERs)	
	Project Count	Estimated Annual Reductions (MtCO ₂ e / Year)	Project Count	Estimated Annual Reductions (MtCO ₂ e / Year)
Listed	30	1.1	18	0.6
Registered	20	0.8	5	0.4
Validated	3	0.3	2	0.05
Inactive	10	0.4	–	–
New Project Applicant	17	0.9	22	1.1
Issued	15	0.8	1	0.06

Source: The Gold Standard, as of April 2013.

models?”, “How can baselines (which describe business as usual scenarios or “BAU”) and future emissions scenarios be accurately estimated to fairly credit projects for avoided emissions while preserving project and market integrity?”, “Which organizations or institutions have sufficient offset demand to support multi-year contracts?”

Regarding these questions about future market challenges and development related to REDD and clean cookstove projects, Ecosystem Marketplace invites experts to share their insights and expertise via a new insight series to be published monthly through our news service beginning in July 2012.

Other project types

Suppliers also reported transacting 5.1 MtCO₂e in offsets from large hydropower projects in China, India and Turkey. Most offsets from this project type (75%) were sold by project developers to offset retailers, primarily based in the United Kingdom. In 2012, large hydro projects were also the most common project type in the CDM project pipeline, though the New Zealand Emissions Trading Scheme banned large hydro project CERs – as well a few other industrial gas project types – from use under its domestic scheme. While the EU has considered banning large hydro CERs in recent years, currently projects are only required to undergo an independent assessment of their compliance with the World Commission on Dams quality criteria. A few voluntary offset suppliers have raised the question of whether carbon industry associations, standards or other market players could take steps to limit the use of offsets from such controversial and large scale projects, given that they potentially raise reputational risks to the voluntary carbon market – which is not centrally regulated and also perceived to be oversupplied.

Demand for other popular project types was driven by buyers' preparations for the California compliance carbon market. Here, ODS, livestock methane and improved forest management (“IFM”) projects developed to ARB-approved Early Action Quantification Methodologies and California's compliance offset protocols are eligible for use. This is discussed in greater detail in the California market-specific section (Box 3). Also in North America, this year's survey tracked a large volume of offsets supplied from agricultural land management projects. Almost all of these offsets were certified to the CCX offset protocols.

2.2 Offset Price by Project Type

In 2012, the market-wide average price for offsets was \$5.9/tCO₂e. This finding is the aggregation of hundreds of individually reported prices across over 30 offset project types. Forestry projects saw the most dramatic decrease in prices, where across all forest carbon project types the average price fell 25% to \$7.8/tCO₂e from \$10.5/tCO₂e in 2011, as buyers sought larger offset volumes for future delivery from projects in their earlier stages (see also Section 3.4). Project developers also found it necessary to lower their offset price from forestry's 2011 high in order to compete with other forestry projects and project types experiencing similar price pressures.

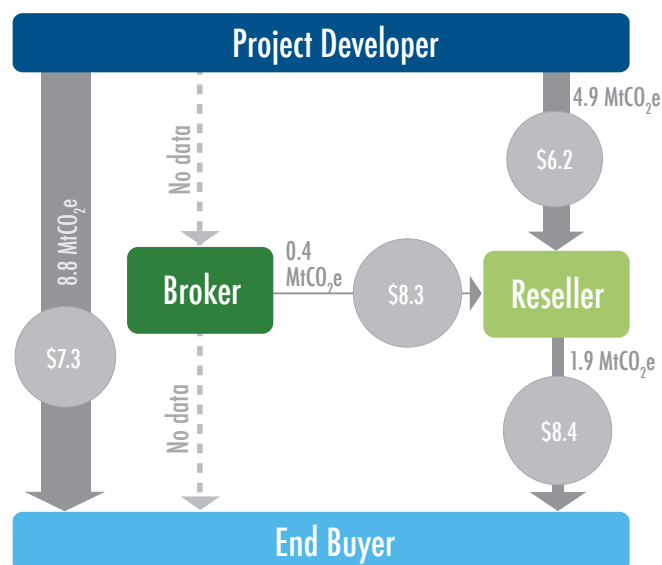
Along the carbon market value chain, forest carbon offset prices primarily fell for offsets sold to retailers (from \$9.4/ tCO₂e in 2011 to \$6.2/ tCO₂e in 2012) who were unable to expand the volume of offsets they ultimately sold to end users. Project developers alternatively grew the volume of offsets they sold directly to end users while reducing their average price by only \$0.2/ tCO₂e.

Prices for renewable energy offsets remained relatively stable in 2012, particularly for offsets from wind projects which did not see a significant change. This finding also captures a substantial difference in price between primary and secondary transactions. For example, retailers paid project developers an average of \$2/ tCO₂e and sold renewable energy offsets to end buyers for an average price of \$4.6/tCO₂e (removing Gold Standard renewable energy offsets from this equation, retailers' average sell price dropped to \$3.5/tCO₂e).

Retailers explain that this price spread reflects their common use of a “basket” or “portfolio” approach. This sometimes involves assembling and pricing a portfolio of offsets types that imposes a larger markup on inexpensive offsets in order to sell more expensive offset types at cost or even a loss in order to meet the average portfolio price clients are willing to pay.. Retailers say that if the portfolio approach was not possible, the overall price at which they sell to end buyers would be significantly higher for those who want offsets from more expensive categories, like forestry or clean cookstoves – but in lesser quantities.

Sometimes retailers are compelled to sell offsets at a lower price than what they paid to compete with project developers that sell offsets to end buyers at lower prices than they sell to retailers. This is evident in both the VCS REDD and household device delivery categories. Retailers say that increasingly narrow margins for charismatic project types will ultimately

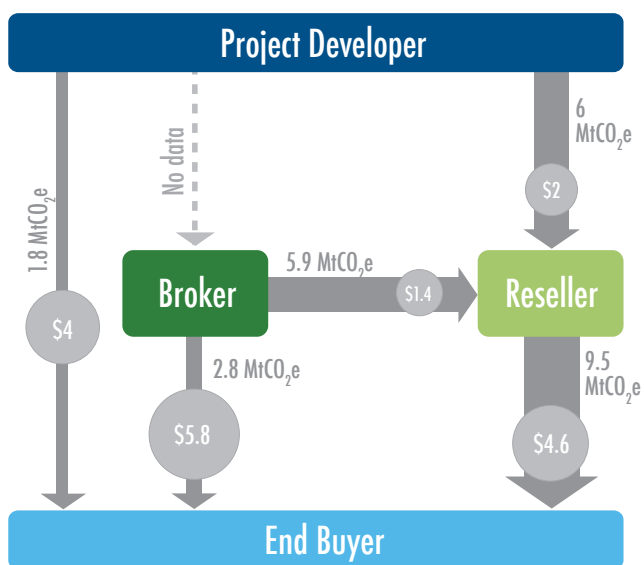
Figure 27: Transacted Volume and Average Price by Buyer and Seller Types, Forestry Offsets, 2012 (MtCO₂e and \$/tCO₂e)



Notes: Findings based on 16 MtCO₂e associated with forestry offsets and a response to both transaction-level and buyer-type questions.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

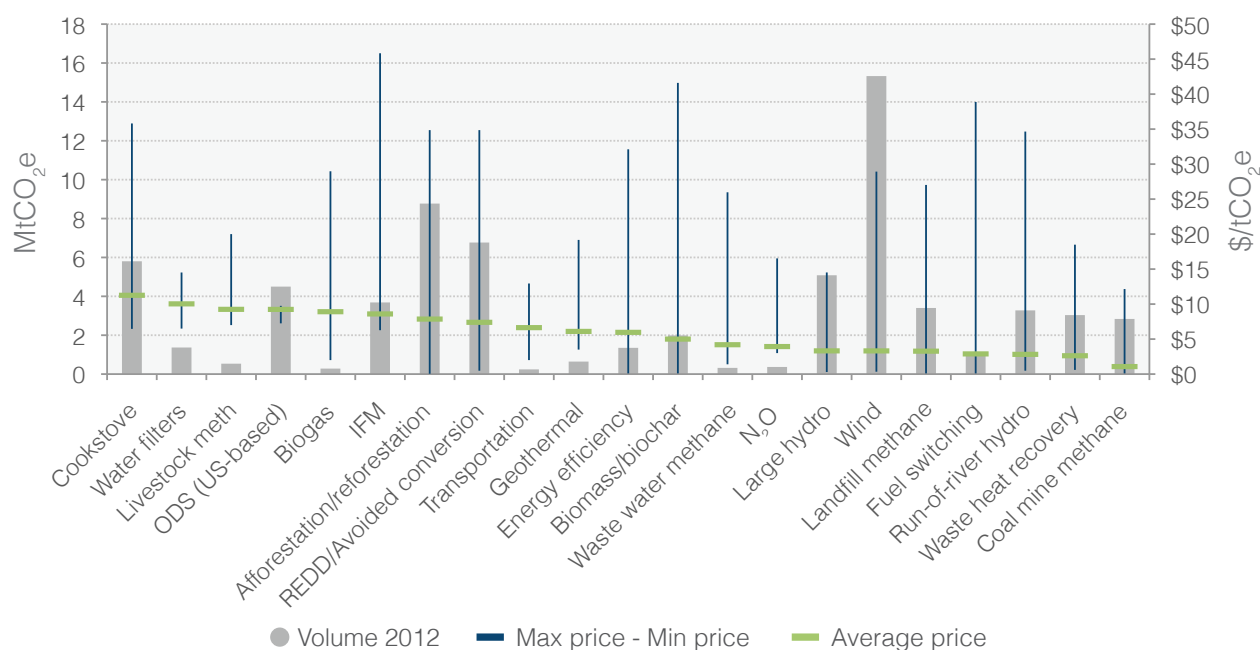
Figure 28: Transacted Volume and Average Price by Buyer and Seller Types, Renewables Offsets, 2012 (MtCO₂e and \$/tCO₂e)



Notes: Findings based on 26 MtCO₂e associated with renewable energy offsets and a response to both transaction-level and buyer-type questions.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

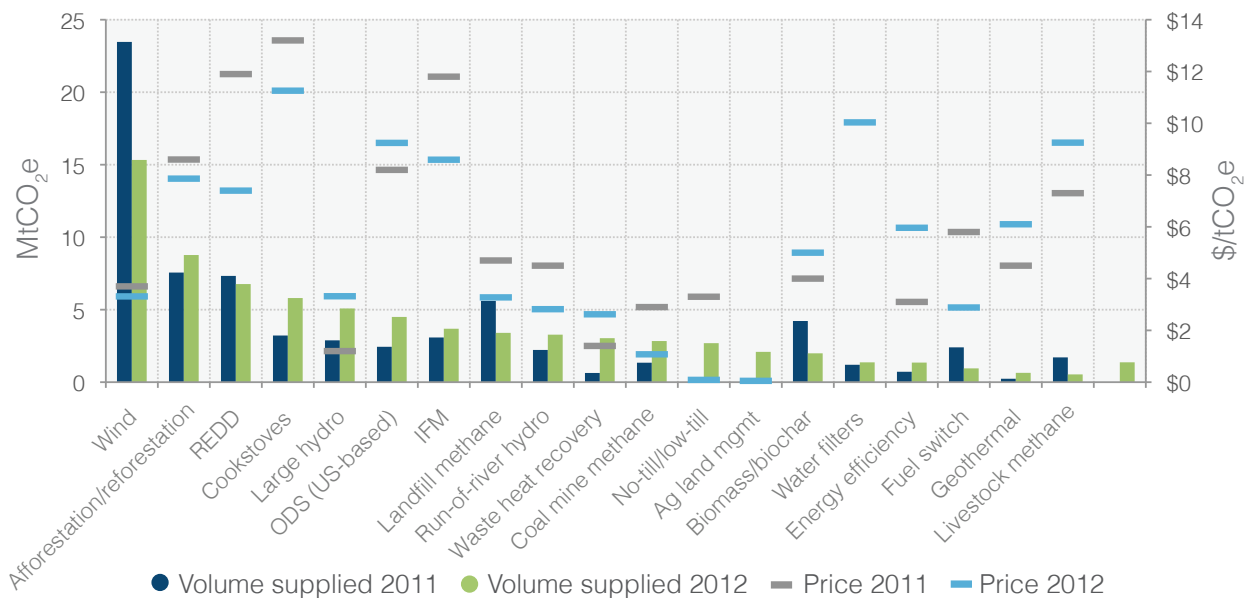
Figure 29: Transacted Volume and Average Price by Project Type, 2012



Notes: Findings based on 77 MtCO₂e associated with transaction-level price, volume, and project type.

Source: Forest Trends' Ecosystem Marketplace. State of the Voluntary Carbon Markets 2013.

Figure 30: Change in Transacted Volume and Average Price by Project Type, 2011-2012



Notes: Findings based on 77 MtCO₂e associated with transaction-level price, volume and project type.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

jeopardize their ability to continue adding value to the marketplace, where between their purchases and sales they contributed almost half of market-wide value (\$247 million). At the same time, project developers note (and our data shows) that retailers were less likely than offset end users to sign on to multi-year, large-volume contracts. Retailers say that last year's lower volume of forward-sold offsets reflects some avoidance of risk associated with exposing clients to prices that are trending downward. It also doesn't reflect the offset quantities that clients have committed to buy on annual basis via multi-year contracts with retailers.

Figures 29 and 30 show that offsets from clean cookstove and water filtration device projects commanded above-average prices, though slightly lower than in 2011. Clean cookstove offset prices varied highly by project stage, as is also discussed in Section 3.4.

Offsets that will be eligible for use in the California cap-and-trade program were also in the market's above-average category, including IFM, ODS and livestock methane projects. Alongside these project types, the price of forestry offsets including A/R (\$7.9/tCO₂e) and REDD (\$7.4/tCO₂e) fell in 2012 but remained above-average. Project developers say that their prices have remained at this level because, as the forestry sector matures, they have better insight into project costs – from the upfront costs of tree planting to costs

associated with local community engagement, and regularly adjusting project specifications to “fit” with several VCS forestry and land-use program updates. Notes one Latin American forest carbon project developer, **“all of this unexpected additional time to implement the project begins to add up, and so do the costs. And so, so does the eventual offset price to compensate for those costs.”**

2.3 Project Location: Offsets at Home and Abroad

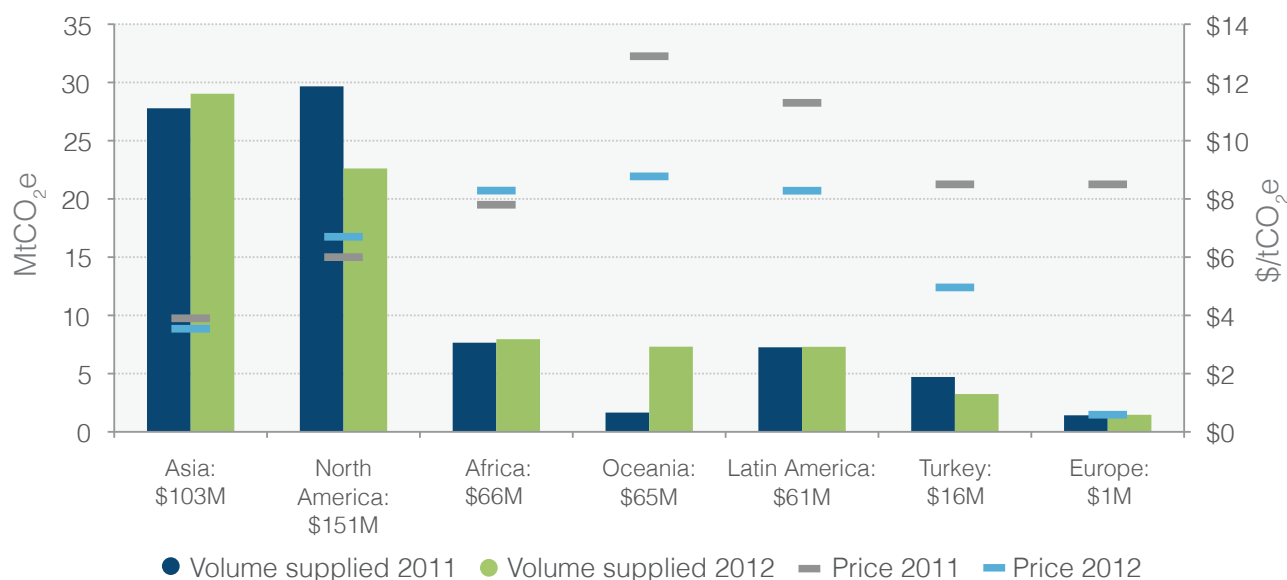
Last year, the market extended voluntary carbon finance to 4 new country locations, making for a total of 65 countries represented in this year's data. This section provides an overview of project location-based findings, while Chapter 5 presents detailed findings by region.

Asia, Oceania markets grow on trees

In addition to the continued predominance of renewable energy offsets flowing from major supplier countries China and India, Asia saw forestry, energy efficiency, and fuel switching offsets grow significantly in market share. Overall, the region saw a 4% increase in the volume of offsets supplied, though the region's average offset price fell by 9% to \$3.5/tCO₂e.

While the bulk of the region's offsets flowed to overseas buyers in keeping with previous years, 2012 saw a significant increase in the purchase of Asian offsets by

Figure 31: Change in Transacted Volume and Average Price by Project Region, 2011-2012



Notes: Findings based on 79 MtCO₂e associated with transaction-level price, volume, and project location.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Asian buyers – a growing trend as emissions trading schemes and domestic offset initiatives are set to develop over the next several years in China, South Korea, Thailand, and Vietnam.

Further south, while still attracting some support from both domestic and overseas buyers, New Zealand's forestry-dominated market fell by over 50% in voluntary transaction volume in the shadow of its struggling compliance market. Australian suppliers, awaiting clarity on future demand for offsets generated through the Carbon Farming Initiative ("CFI"), nevertheless saw domestic demand for offset more than double to 5.6 MtCO₂e, owing to some pre-compliance activity as well as purely voluntary transactions of offsets through the National Carbon Offset Standard ("NCOS"). The NCOS is Australia's government-administered program defining acceptable offset programs from which domestic companies can purchase offsets to make carbon reductions and neutrality claims.

Cookstoves, forestry on Africa's front burner

Kenya-based projects stood their ground in 2012 as the world's fourth largest supplier country, responsible for over half of Africa's 8 MtCO₂e total transaction volume – the largest-ever volume of offsets voluntarily contracted from the region.

In addition to attracting corporate support for REDD efforts, Kenya and other countries including Ghana,

Mozambique, Uganda, and the Democratic Republic of the Congo saw international demand for offset from projects delivering clean cookstoves and water purification devices. Kenya saw the first large-scale offset issuance using The Gold Standard's suppressed demand approach for social entrepreneur Vestergaard Frandsen's mega-sized LifeStraw project water filter distribution project.

CCX legacy offsets, California carbon market boost North American offsetting

North America's biggest surprise in 2012 materialized in the over 8.3 MtCO₂e of offsets transacted through the Chicago Climate Exchange offsets registry program, where new offset generation has more or less come to a halt, but domestic buyers continue to transact offsets at sub-dollar rates to replenish their voluntary offset portfolios.

The total value of offsets generated in North America was \$151 million, with 60% of overall value contributed by pre-compliance buyers preparing for California's cap-and-trade program. By volume, however, 56% or 12 MtCO₂e of North American offset purchases were motivated by purely voluntary action. Buyers in the United States together purchased more offsets than buyers in any other single country, supporting \$143 million worth of offsets in 2012.

Domestic programs make (or break) offset supply in Latin America, Europe

Demand for offsets generated in Latin America was relatively stable in 2012 at 7.2 MtCO₂e, with forestry still driving the bulk of domestic project development. Seeds of growth were planted in the region, with governments in Acre (Brazil), Colombia, and Chile signing agreements with VCS to establish stronger frameworks for their domestic carbon markets; and Mexico passing a law to pursue a domestic emissions trading scheme. Latin American projects contracted the bulk of their offsets to European buyers, with still only a smattering of domestic offset buyers in the game.

Regulated under the EU ETS and broader Kyoto Protocol commitments, projects in EU member states supplied a modest 1.4 MtCO₂e of offsets in 2012 to voluntary buyers in the United States – primarily offsets from coal mine methane projects in Germany whose certification precedes the Kyoto Protocol start date. Otherwise, the EU continued for the most part to be a source of voluntary offset demand rather than supply. On the demand side, buyers in the United Kingdom and other major European countries continued to show a strong appetite offsets from abroad, securing a total of 43.4 MtCO₂e offsets in 2012, with over half of those offsets sourced from projects in Asia.

2.4 Offset Uniqueness: Other Dimensions of Demand

Because every offset project and their ultimate buyers differ slightly to significantly from the next, data in this relatively small marketplace is also too differentiated to conduct much meaningful multivariate analysis. We can, however, informally compare information about a few of the market's most popular project types to shed light on a key driver of demand described by offset suppliers over time and in 2012 – that of offset “uniqueness.”

Sizing up emissions reductions

Offset projects reduce, sequester, or avoid emissions every year at volumes ranging from less than 5,000 tCO₂e to over 1 MtCO₂e annually. Project size is and has always been a key determinant of offset price, as seen in Table 7 for 2012. This finding has seen little change throughout our State of report series, and reflects not only buyers' willingness to pay more to support “boutique”, small-scale projects where they can potentially afford exclusivity, but also the higher marginal abatement cost associated with smaller, community-based efforts. Suppliers also point out that very large scale projects tend to sell to any buyer that

Table 7: Transaction Volume and Average Price by Projects' Estimated Annual Reductions (i.e., “Project Size”), 2012

Reductions / Year	Volume (MtCO ₂ e)	Response Count	Average Price (\$/tCO ₂ e)
Micro (<5ktCO ₂ e)	0.7	51	\$10
Small (5-20 ktCO ₂ e)	1.8	76	\$8.7
Med (20-100 ktCO ₂ e)	13.8	185	\$6.2
Large (100-500 ktCO ₂ e)	15.3	97	\$6.1
Very Large (500 ktCO ₂ e – 1 MtCO ₂ e)	7	20	\$5.6
Mega (> 1 MtCO ₂ e)	11.4	30	\$5.8

Notes: Based on 50 MtCO₂e associated with a project size.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

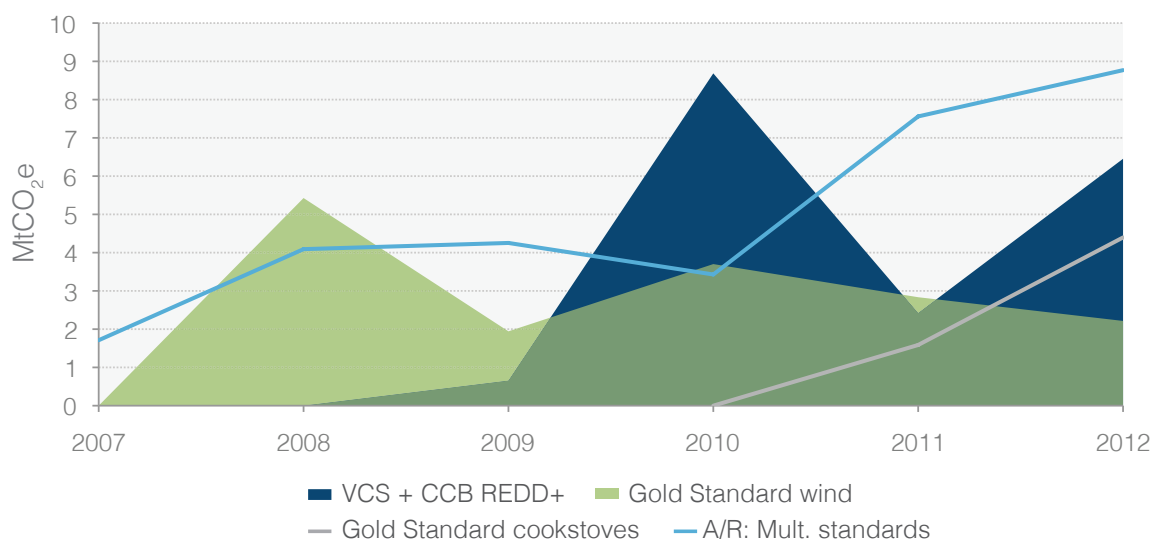
shows interest in the project, and thus they or their retailers find their prices being undercut by the same supply from different sources – sources that may not have paid anything to secure commercialization rights.

“We do sometimes see sellers coming to market in a way that can erode price because the chosen route is uncoordinated, in a market which is of limited size,” says The CarbonNeutral Company's Zubair Zakir. “Sellers that only offer a portion of their volumes more selectively, may see higher prices and possibly improve value overall.”

Over time, the market has seen a few highly anticipated mitigation approaches emerge from such large-scale (500,000 – 1 MtCO₂e/year) to even “mega-sized” (>1 MtCO₂e/year) activities, like the first Gold Standard wind project offsets in 2008 or VCS plus CCB Standard-certified REDD projects in 2010. Both of these project types saw intense demand when the projects (or even just the methodologies in the case of REDD) first entered the market – only to see transactions level off in subsequent years.

On the other hand, project types that generate smaller annual volumes from a larger number of project locations, standards, and offset suppliers have seen more sustained growth over time. The most obvious of these cases are offsets sold from A/R projects, which over time have contracted most of their volume from

Figure 32: “Uniqueness” Preference: Comparison of Historical Transaction Volumes from Popular Project Types



Notes: Based on 28 MtCO₂e associated with survey responses that report project type, location, and transaction volume.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

micro- to medium-scale projects and have grown their transaction volumes in all but one year (2010).

As can be seen in Figure 32 and Table 8, clean cookstove projects may follow a similar trend. Future market tracking will reveal whether or not cookstove offset projects will continue this trajectory, however, as many cookstove projects optimize stove distribution

and thus grow in project size and the volume of issued offsets generated over the life of the project.

The popularity of project types capable of deployment to many locations, via several standards and methodologies, and (critically) at multiple scales, speaks to what suppliers describe as an ever-growing buyer interest to engage closely – and ideally, exclusively – with a project.

Table 8: “Uniqueness” Preference: Annual Change in Volume, Price, Number of Transactions, Project Locations and Most Common Project Size for Popular Project Types

TYPE	Volume 2011	Volume 2012	Price 2011	Price 2012	# Transactions 2011	# Transactions 2012	# Locations 2011	# Locations 2012	Common Size 2011	Common Size 2012
VCS + CCB REDD	2.4 M	6.5 M	\$8/t	\$7/t	19	23	6	9	“Mega” Project	“Mega” Project
Gold Standard Wind	2.6 M	2.2 M	\$10/t	\$7/t	32	24	7	3	Medium	Large
Gold Standard Cookstoves	1.6 M	4.4 M	\$14/t	\$11/t	24	36	12	15	Medium	Medium
Affor. / Refor.	7.6 M	8.8 M	\$9/t	\$8/t	81	53	31	20	Macro	Medium

Notes: Based on 28 MtCO₂e associated with survey responses that report project type, location, and transaction volume.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

However, most buyers in this resource-constrained economic environment don't have the balance sheet to provide multi-year, exclusive project financing or offtake to large- or mega-scale projects.

Indeed, 98 of 113 transactions of future offset vintages (i.e., support for future project activities) were for offsets from micro- to medium-scale projects. Of the 40 multi-year forward contracts signed in 2012, 25 were for offsets from micro- to medium-scale projects, with another 9 reported for large projects. The remainder is of unknown size.

Location(s) count

As a market, VCS REDD projects saw increased offset demand in 2012, but growth occurred primarily in the category of offsets sold from new project locations that did not report significant transaction volumes in 2011. Gold Standard wind offsets originated from some by-now-familiar locations and projects (primarily from Turkey) and are constrained by the comparably small number of country locations that present opportunities for wind project installation.

Both A/R and clean cookstove projects, on the other hand, represented a large number of project locations and unique transactions relative to other project types. Cookstove offset project developers and suppliers continued to rapidly add new project locations to the map and identify buyers for a growing volume of issued offsets. A/R projects, implemented on every relevant continent, also expanded market activity in 2012, though the number of A/R project locations and transactions fell as attention shifted from micro-scale projects (27% of all projects that commercialized offsets in 2011) to medium-sized projects (40% of all reported projects in 2012).

This partly reflects decreased demand for both Plan Vivo and CarbonFix program A/R offsets – a traditional source of offsets from “boutique” tree planting and agro-forestry projects. The trend may see a reversal in coming months, however, as the CarbonFix program is integrated into The Gold Standard, which acquired CarbonFix in 2012 and will make its micro-scale scheme available to smallholders under its emerging land-use program.

Unique implications

At a high level, these trends speak to the offset demand side's sometimes conflicting interests in GHG mitigation, sustainable development, and public image and communications. Over time, other survey

findings have revealed that corporate risk mitigation – in the form of pre-compliance and now (to a still-limited extent) supply chain risk management – is the dominant incentive for large-scale, multi-year transactions. While a few prominent voluntary buyers engage in large-scale transaction activities with single projects, such cases are rare.

This reality is currently driving some large- to mega-scale project developers and their representative standards bodies to engage bilateral and multilateral institutions and large donors in an emerging discussion about how VERs can be incorporated into “results-based” but potentially non-market-based mitigation funding programs like the Forest Carbon Partnership Facility or the Green Climate or Adaptation Funds. It is also forcing voluntary offset market participants to realistically assess the private sector's ability to support large-scale mitigation, absent the presence of a strong carbon price signal from governments.

In an effort to drive private sector voluntary demand, a few market participants and their buyers have begun to describe and leverage offset project activities as tools that financially incentivize their producers to “climate-proof” their supply chains in a measurable way – thus potentially tapping into corporate's less public-facing and more substantial risk management budgets.

Others have considered “parceling out” specific sections of large project areas to individual buyers to offer buyers more of a direct connection to the project and, potentially, to the community being impacted by their contribution. Rather than measuring and reporting separately for each parcel, this would be done symbolically. Even so, suppliers point out that the method leads to tricky issues such as: “*Which land areas and communities are offered first?*”, “*From an ethical marketing standpoint, can such an approach be taken without undertaking MRV for unique project areas?*”

Most large-scale REDD and renewable energy project developers interviewed for this report believe that their market success will require harnessing a combination of these concepts. They also stress that the original motivation for “scaling” up these activities was to dramatically disrupt business-as-usual in favor of large-scale GHG mitigation, biodiversity protection, and social benefits to the extent that one corporation alone could not accomplish, but the combined resources of many actors could.

2. Offset Origins: Type, Place, and Time

“While some people in this market are now looking to governments to scale up demand for our actions, political will and public money are not always present and won’t be enough without the participation of the private sector,” says Wildlife Works founder Mike Korchinsky.

“As a market, we have to do a better job of communicating the fact that climate change and biodiversity and forest loss are a large scale problem that requires large scale solutions,” he adds. “The scale of both problem and solution means that the private and public sectors need to find a way to go down this path together.”



3. Market Infrastructure

Standards and Registries



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

3. Market Infrastructure: Standards and Registries

3.1 Third-Party Offset Project Standards and Certifications

Every new route to market on the voluntary carbon market's expanding map of project types is paved by methodologies that steer the development of projects, offsets, and, in some ways, the market itself. The 2012 market continued to see uptake in the proportion of offset projects that used third-party, peer-reviewed standards. Suppliers that reported using a standard said that 100% of all their transacted offsets used an independent third-party standard as opposed to an internal or proprietary standard.⁵

Over the years and again in 2012, carbon project standards persisted in their efforts to raise the bar on technical rigor for project methodologies, while identifying opportunities to reduce project costs and pave routes to market for new project categories that are still in pilot stages.

Last year, standards' certification processes continued to evolve in hopes of unlocking the potential for an ever-broader set of activities to access carbon finance with an eye to cost-effectiveness and scalability, given the market price downturn and size limitations of some of voluntary buyers' favorite project types. Six major trends – some new, others ongoing – are highlighted here.

2012 KEY FINDINGS

- For the first time, suppliers that reported using a standard said that 100% of all their transacted offsets used an independent third-party standard instead of an internal or proprietary standard.
- Existing and new standards are innovating methodologies to measure and verify the delivery of co-benefits, including some efforts to bypass carbon quantification entirely and instead support “impact” projects. Examples include the development of Gold Standard Water Benefit Certificates, the Women's Carbon Standard, Vulnerability Reduction Credits, and the BBOP Standard on Biodiversity Offsets.
- In 2012, the VCS retained its position as the market's most popular third-party standard, when VCS-approved project methodologies were behind a record transaction volume of 43 MtCO₂e. Demand for Gold Standard offsets topped the 10 MtCO₂e for the first time in the standard's history, while Chicago Climate Exchange projects around the world grew their market share from 3% in 2011 to 12% last year. Only one third of CCX offsets were from agriculture, forestry, and land-use projects in the US.
- Offsets from REDD projects that are or aspire to be certified to both VCS and CCB more than doubled in 2012. These projects, combined with Gold Standard-certified offsets, made up 73% of all transaction volumes that quantified project co-benefits or were implemented in forest areas that feature additional non-carbon forest product certification. Country-specific standards backed an additional 9.5 MtCO₂e or 13% of all offsets transacted in the voluntary carbon markets in 2012.
- 42.5 MtCO₂e or 43% of all transacted offsets were reported as being issued at the time of transaction. Overall, of the 312 MtCO₂e of verified offsets that have ever been issued and tracked on a registry, 21% of this volume (66 MtCO₂e) was issued in 2012.
- 96% of all offsets issued in 2012 were housed on a registry hosted by APX Inc. (34 MtCO₂e issued in 2012) or Markit Environmental Registry (25 MtCO₂e issued in 2012). A few domestic registries like the Clean Energy Regulator's offset register under Australia's Carbon Farming Initiative also issued their first offsets in 2012.

⁵ 21 MtCO₂e of transacted offsets were not reported alongside a response on their use of a project standard, so the standards breakdown for this volume is unknown

Streamlining expertise and process

Carbon accounting standards and other certification bodies became more ambitious and collaborative in developing measures to more efficiently verify emissions reductions, motivated partly by the declining carbon price, as well as the solidifying relationships between actors working toward environment, health, and sustainable development outcomes. Moving beyond its traditional focus on renewable energy and energy-efficient technologies, The Gold Standard acquired the forest-facing CarbonFix standard and entered into partnerships with the Forest Stewardship Council (“FSC”) and Fairtrade consumer label. VCS also launched a joint approval process with CCB for VCS-CCB certification, designed to lower validation/verification costs for forestry and land-use projects seeking offsets for both emissions reductions and co-benefits.

Building out co-benefits

Projects’ environmental, social, sustainable development, and other public benefits continue to climb to the top of buyers’ offset project considerations. In response, existing and new standards are innovating methodologies to measure and verify the delivery of these benefits, including some mechanisms that bypass carbon quantification entirely.

These efforts include the development of water benefit certificates (initiated by the Water Benefit Partners, The Gold Standard, and offset supplier First Climate); the Women’s Carbon Standard (administered by Women Organizing for Change in Agriculture and Natural Resource Management – WOCAN), certifying women’s engagement and leadership in carbon projects; and Vulnerability Reduction Credits (from the Higher Ground Foundation) that aim to quantify vulnerability reduction resulting from adaptation efforts; and The Poverty Alleviation Criteria Tool, developed by ACR and the China Beijing Environmental Exchange, to assess poverty alleviation impacts achieved by implementing forestry and other land-use projects under the Panda Standard.

Other programs under development in 2012 include a tool to quantify cookstove project health benefits (developed by C-Quest Capital with the Global Alliance for Clean Cookstoves) and the Business and Biodiversity Offsets Program (“BBOP” – an initiative of Ecosystem Marketplace parent organization Forest Trends) BBOP Standard on Biodiversity Offsets. These programs are being designed to sit alongside existing and long-utilized co-benefits certifications like the CCB and SOCIALCARBON Standards.

“It’s encouraging to see programs that certify development benefits without pinning all results to the carbon element,” says Climate Care CEO Edward Hanrahan. ***“The development community has strong measurement tools and larger funding streams that we can harness,” he adds, “while being open to the efficiencies that can be gained by layering what we’re doing [in the carbon markets] with what they’re doing.”***

Tapping into voluntary programs’ experience

To avoid reinventing the wheel in the design of their formal offset programs, governments worldwide continued to borrow expertise from prevailing independent third-party standards to inform their emerging domestic markets. Governments ranging from Chile to Costa Rica to Brazil’s state of Acre signed agreements with VCS to pilot the standard’s Jurisdictional Nested REDD (JNR) guidelines, intended to scale up emissions reductions beyond project-level activities into larger jurisdictional targets. ACR released its own nested REDD methodology in 2012 and is currently in the process of identifying pilots. In the US, California’s Air Resources Board (ARB) continued to consider new offset protocols developed in the voluntary market by CAR, ACR, and others for use in its compliance cap-and-trade program. In Asia, Thailand’s “T-VER” program continues to build capacity with support from Korea’s K-VER program, which became accredited as a VCS audit body in 2012. In early 2012, Thailand’s Greenhouse Gas Management Organization announced that it will also allow eligible domestic VCS projects to additionally tag their offsets with the national Crown Standard label.

In Oceania, project developers submitted methodologies for use under Australia’s Carbon Farming Initiative (“CFI”) program that adapted elements of existing VCS methodologies, while fine-tuning them to suit the Australian context. Both the CFI and China’s independent Panda Standard continued to develop AFOLU-facing program methodologies and encourage pilot activities for use in their domestic markets – with the Panda Standard applying to have its methodologies eligible to issue CCERs under China’s emerging cap-and-trade pilots, which are set to launch this year.

Crediting the link between carbon and water

Both ACR and VCS rolled out landmark carbon accounting methodologies for wetland restoration in 2012. ACR approved the world’s first methodology for deltaic wetland restoration, while VCS released the

standard's first requirements for crediting restoration and conservation across wetland ecosystems. As stakeholders in the payments-for-watershed-services space continue to explore new vehicles for financing water quality projects, some have floated the possibility of “stacking” or “bundling” blue carbon projects' multiple benefits to watersheds through a third-party carbon standard.

Tackling “other” land-use emissions

While movement on climate-smart agriculture in international negotiations has been slow, the voluntary carbon standards and projects have continued to elevate technical rigor and accessibility for this project type. VCS approved its first soil carbon methodology in 2012, based on a versatile sampling method that may potentially apply to other landscapes including wetlands and peatlands. ACR and CAR introduced new N₂O fertilizer management methodologies, while ACR saw expansion of its California Rice Production methodology to the US Mid-South, as well as new methodologies for Grazing Land and Livestock Management and Avoided Conversion of Grasslands to Croplands. The Gold Standard, too, is exploring accreditation of climate-smart agriculture through its new alliance with Fairtrade and the FSC.

Targeting the hard-to-reach places

The Gold Standard's micro-scale scheme gained traction in 2012, reportedly seeing a significant amount of new project development that leverages the scheme's lower audit costs for projects in developing

countries that will generate under 10,000 tCO₂e/year. The Gold Standard's 2012 alliance with Fairtrade further strengthened the network through which the standard can bring carbon finance to smallholders. Plan Vivo also updated its standard guidelines to cover all community-based land management activities, aiming to offer more integrated certification services for smallholder activities.

Suppressed demand methodologies – which credit projects for avoiding future emissions resulting from more carbon-intensive development – saw their first large-scale Gold Standard issuance for water filtration device distribution in Kenya. This follows the mechanism's original intent to enable larger issuances from projects that promote sustainable development. It also raised some level of concern among market practitioners that say that “baseline innovations” like suppressed demand and ex ante (i.e., forward) project crediting render the market vulnerable to external criticism.

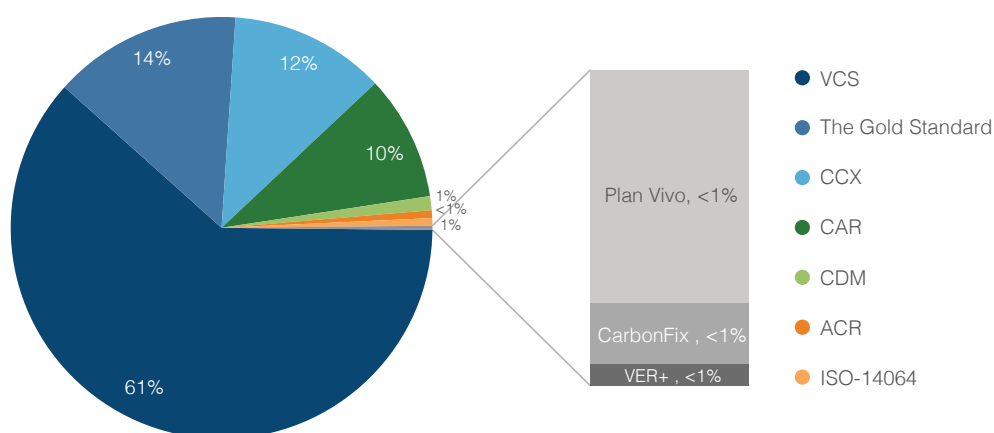
Note on figures

We provide separate analyses for independent third-party standards, and domestic offset and co-benefits certification programs, given their unique designs and functions.

3.2 Third-Party Standards Usage in 2012

In 2012, the VCS retained its position as the market's most popular third-party standard, when VCS projects were behind a record transaction volume of 43 MtCO₂e. This represents 61% of all offsets utilizing an

Figure 33: Market Share by Independent Third-Party Carbon Project Standard, 2012



Notes: Based on 70 MtCO₂e associated with the use an independent third-party project standard.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

independent third-party carbon standard (Figure 33), or 53% market share if one includes domestic offset standards (Figure 9). Last year, 52% of transacted VCS offset volume was from renewable energy projects, compared to 60% in 2011. On the flip side, VCS forestry offsets made up a growing proportion of the standard's portfolio, transacting 13 MtCO₂e or 30% of VCS volumes.

Demand for Gold Standard offsets topped the 10 MtCO₂e mark for the first time in the standard's history, with much of the increase in transaction volume owing to heightened interest in the clean cookstoves and water filter distribution space.

Volumes transacted from Chicago Climate Exchange projects around the world grew their market share from 3% in 2011 to 12% last year. Of this 8.3 MtCO₂e, only one third of CCX offsets were from agriculture, forestry, and land-use projects in the US – worldwide, CCX offsets were sourced from another nine locations including Costa Rica, Germany, Brazil, India, and China. CCX volume largely came from a trickle of high-volume, low-priced bilateral transactions of offsets generated before 2009.

In the United States, both CAR and ACR fell in market share as both standards reoriented their focus to support the development of methodologies and infrastructure for California's cap-and-trade program. The California Air Resources Board approved both programs as Offset Project Registries ("OPRs") in late 2012.

Even in light of plunging prices in the CDM market, a limited 0.7 MtCO₂e of CDM offsets ("CERs") reportedly found their way into the hands of voluntary buyers. Offset suppliers say this volume is bound to increase as a growing number of CDM project developers seek a market exit strategy that will help recoup some of the losses incurred in the distressed compliance program.

"Voluntary buyers are now accepting some volume of CERs, and obviously CER suppliers are keen to promote that," says EcoInvest's Grattan MacGiffin, who adds that (up to now) voluntary buyers have primarily considered CERs only from the most "unique" projects. ***"For most CDM projects like wind and hydropower, voluntary offset supply is long for those types already," MacGiffin explains. "Buyers are primarily looking for interesting projects with a story behind them, and the fact that some people may buy CERs won't change that."***

Among other programs, both Plan Vivo and the CarbonFix program saw smaller transaction volumes

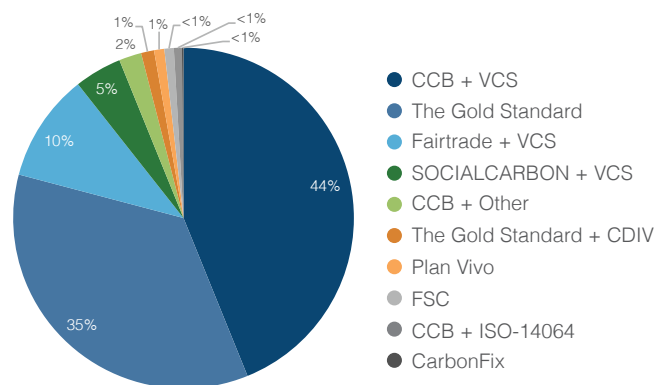
in 2012, together comprising less than 1% of market share. Even so, the Plan Vivo project register reported two new projects registered in early 2013 and several new projects that submitted their first documentation in 2012. In 2012, the CarbonFix Standard continued to operate independently of The Gold Standard, but will be included in The Gold Standard's market share in future years.

Co-benefits standards and project area certifications

For many voluntary buyers, a carbon offset's contribution to social and sustainable development is as important as its climate benefits. Some carbon standards – The Gold Standard, Plan Vivo and CarbonFix – require that their projects measure up to both climate and additional social and environmental indicators that are certified simultaneously. These standards are thus included in both carbon accounting and "other certifications" categories (Figures 33 and 34). On the other hand, purely carbon accounting standards like the VCS and ACR do not require additional co-benefits certification – but they do encourage project developers to pursue additional certification to some standards that exclusively measure "beyond carbon" impacts. This certification is then tagged onto the carbon offset and sold as a single unit.

We examine all of these programs separately in Figure 34. Transacted offsets that utilize both a pure carbon accounting standard and are tagged with an additional certification are included in our analysis under their primary carbon accounting standard in Figure 33 to prevent double-counting.

Figure 34: Market Share by Co-benefits Standard or Project Area Label, 2012



Notes: Based on 31.5 MtCO₂e associated with the use of an additional co-benefits standard or project area label.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

The volume of offsets contracted from REDD projects that are or aspire to be certified to both VCS and CCB more than doubled in 2012 as demand for the combination grew market-wide, with growth in activities tracked in Latin America, Africa, and Asia. Across regions, CCB was applied to 95% of transacted VCS forestry offsets (12 MtCO₂e of 13 MtCO₂e).

VCS projects that applied the SOCIALCARBON certification saw transaction volumes drop slightly to 1.3 MtCO₂e in 2012. As in previous years, certified SOCIALCARBON offsets were primarily transacted from fuel switching and biomass projects in Brazil, though 2012 did see some interest in forestry offsets with SOCIALCARBON certification as well.

The Gold Standard program differentiates between projects that are developed exclusively for voluntary offset buyers and those that are targeted to the CDM's compliance carbon markets and also seek additional Gold Standard certification. Around half of the .7 MtCO₂e that was transacted from CDM projects in 2012 was additionally certified to The Gold Standard. These Gold Standard projects transacted a small proportion of CERs to voluntary buyers – compared to the bulk of Gold Standard VERs sold to voluntary buyers.

Another question specific to our forest project survey asks respondents about any additional certifications of forest management or forest products associated with the area in which a carbon project is developed – but which are not themselves carbon offset certifications. These certification programs include the organic Fairtrade, Rainforest Alliance, and FSC labels. These labels are not in any way tied to carbon offsets issued to the project but do influence the desirability of offsets from projects occurring in certified forests or that produce certified forest products. This demand reportedly stems from investors' or offset buyers' desire to support projects that clearly feature the added stability of additional revenue streams and lesser risk associated with third-party certification of forest products.

Indeed, in the 2011 forest carbon market, we found that offset buyers were more likely to support REDD and A/R projects that promote a transition to alternative sustainable livelihoods, which in some cases included sustainable, certified commodity production from forests in the carbon project area. This trend will again be analyzed in more depth in this year's *State of the Forest Carbon Markets* report.

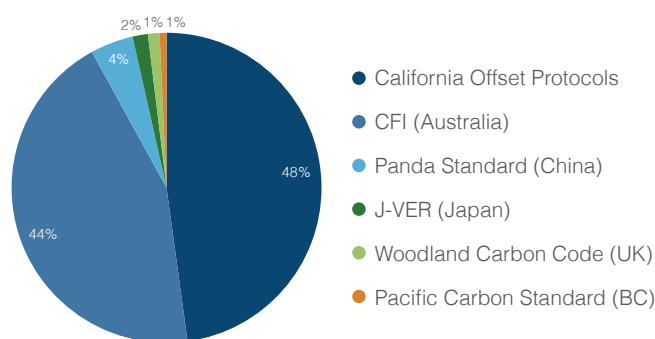
In 2012, 1.7 MtCO₂e of VCS offsets were sourced from project areas where communities engaged in Fairtrade labeled productive activities. Currently, however, there are no offsets labeled by any of these programs under any carbon accounting standard. In 2012, The Gold Standard established the voluntary carbon market's first formal link with both Fairtrade and FSC programs so that the benefits of both the carbon mitigation project and other certified activities will be “bundled” in one offset – and in the case of Fairtrade-labeled offsets, will be sold according to Fairtrade program specifications.

Domestic standards

Country-specific standards backed a record 9.5 MtCO₂e or 13% of all offsets transacted in the voluntary carbon markets in 2012. Aside from China's Panda Standard for forestry and land-use projects, all participating standards were developed or are administered by the public sector. For this reason, many of them service compliance markets but sell offsets into the voluntary market, too.

Domestic offset market activity was almost evenly split between offsets developed to California's regulation-based offset protocols and Australia's CFI, both reporting roughly 4 MtCO₂e in 2012 transactions. Behind these programs, New Zealand's Permanent Forest Sink Initiative (“PFSI”) and China's Panda Standard contributed just under 0.5 MtCO₂e apiece, both focused on domestic A/R activities. Voluntary demand for PFSI units in NZ was modest, with some support from overseas buyers but limited domestic demand.

Figure 35: Market Share by Domestic Project Standard, 2012



Notes: Based on 18 MtCO₂e associated with the use of an additional co-benefits standard or project area label.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Out of the domestic programs, Japan's J-VER program continued to draw the highest prices, at \$85/tCO₂e for forestry offsets contracted to domestic buyers motivated by philanthropic and CSR purposes. United Kingdom's Woodland Carbon Code had a quiet year compared to 2011, but moving into 2013 piloted its first grouped validation scheme in support of reduced validation costs for small-scale forest carbon project developers.

3.3 Offset Prices by Standard Utilized

In 2012, volume-weighted average prices ranged from under \$0.1/tCO₂e for CCX offsets to \$85/tCO₂e for offsets from Japan's J-VER program.

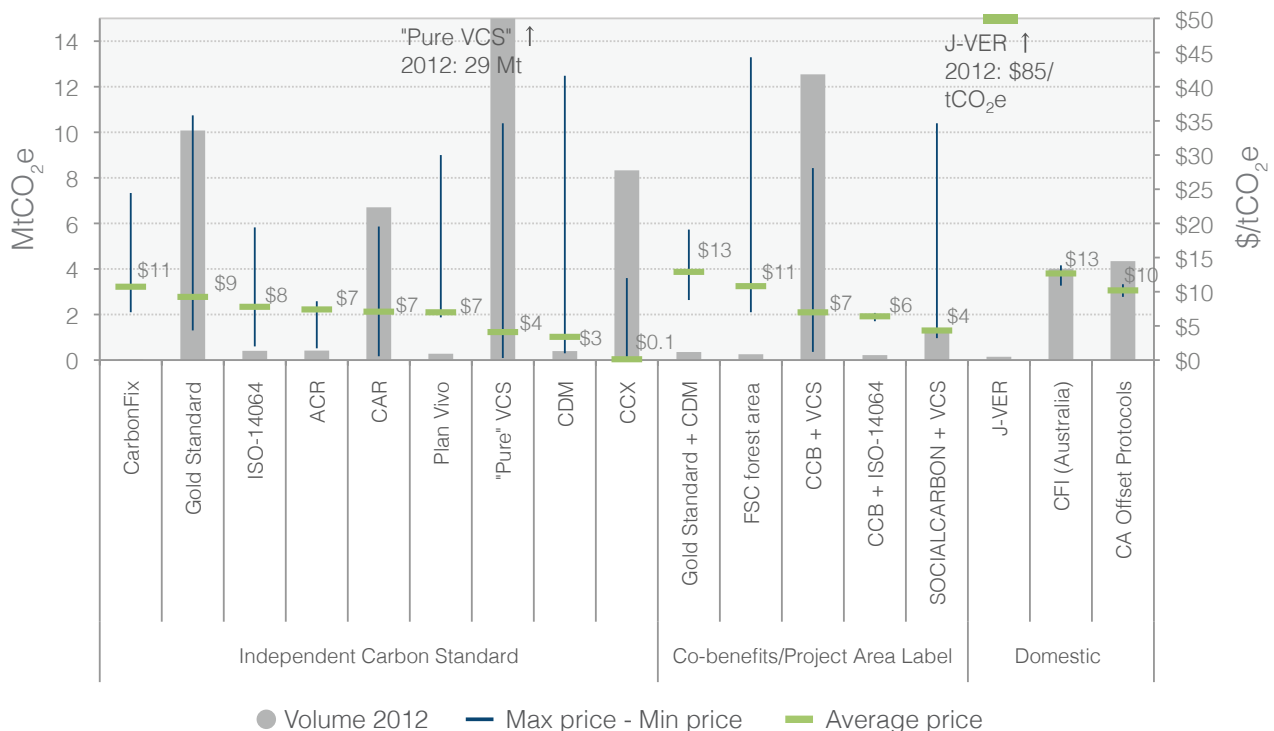
As in 2011, offsets certified to CarbonFix or The Gold Standard commanded the highest average prices (\$10.7/tCO₂e and \$10/tCO₂e, respectively), though both average prices were slightly to significantly lower than 2011 levels. While both these standards and Plan Vivo certify project benefits in addition to carbon accounting, they are only included under "Independent Carbon Standard" in Figures 36 and 37 to avoid redundancy. Gold Standard CERs are included under the co-benefits category, however, to

demonstrate the variation in price between these and non-Gold Standard CERs.

For several activities in the marketplace (ISO-14064 and ACR-certified projects, and projects implemented in FSC-certified forests) significantly smaller transaction volumes correlated with higher average prices. ACR offset prices rose from \$5.7/tCO₂e in 2011 to \$7.4/tCO₂e in 2012, reflecting above average prices paid by US-based buyers like The Walt Disney Company and Chevrolet. Meanwhile, pre-compliance program offsets under the CAR program, California regulation-based offset protocols, and Australia's CFI converged at a range between \$7/tCO₂e and \$12.7/tCO₂e as offsetting preparations picked up in the respective regions. While California regulation-based protocols and the CFI saw offset prices fall within a narrow range, CAR program offsets varied more widely as some of the program's offsets (including low-priced landfill methane offsets and high-priced livestock methane offsets) continued to be sold to purely voluntary buyers at prices that varied from "typical" pre-compliance offset prices.

The average price for "pure" VCS offsets (without any additional certifications) remained stable in 2012.

Figure 36: Transacted Volume and Average Price by Various Project Standards and Certifications, 2012



Notes: Based on 70 MtCO₂e associated with the use of an independent third-party project standard.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Within this category, prices ranged from an average \$1.4/tCO₂e for VCS energy efficiency project offsets to an average \$9/tCO₂e for a small volume transacted from VCS clean cookstove distribution project offsets.

Beneath VCS, CDM project offsets without any additional Gold Standard certification transacted at an average \$3.4/tCO₂e, while those with Gold Standard certification – while very rarely reported – averaged \$13/tCO₂e. This premium was primarily tied to household device delivery projects or projects employing other unique technologies in unique locations.

3.4 Offset Prices by Standard and Project Stage

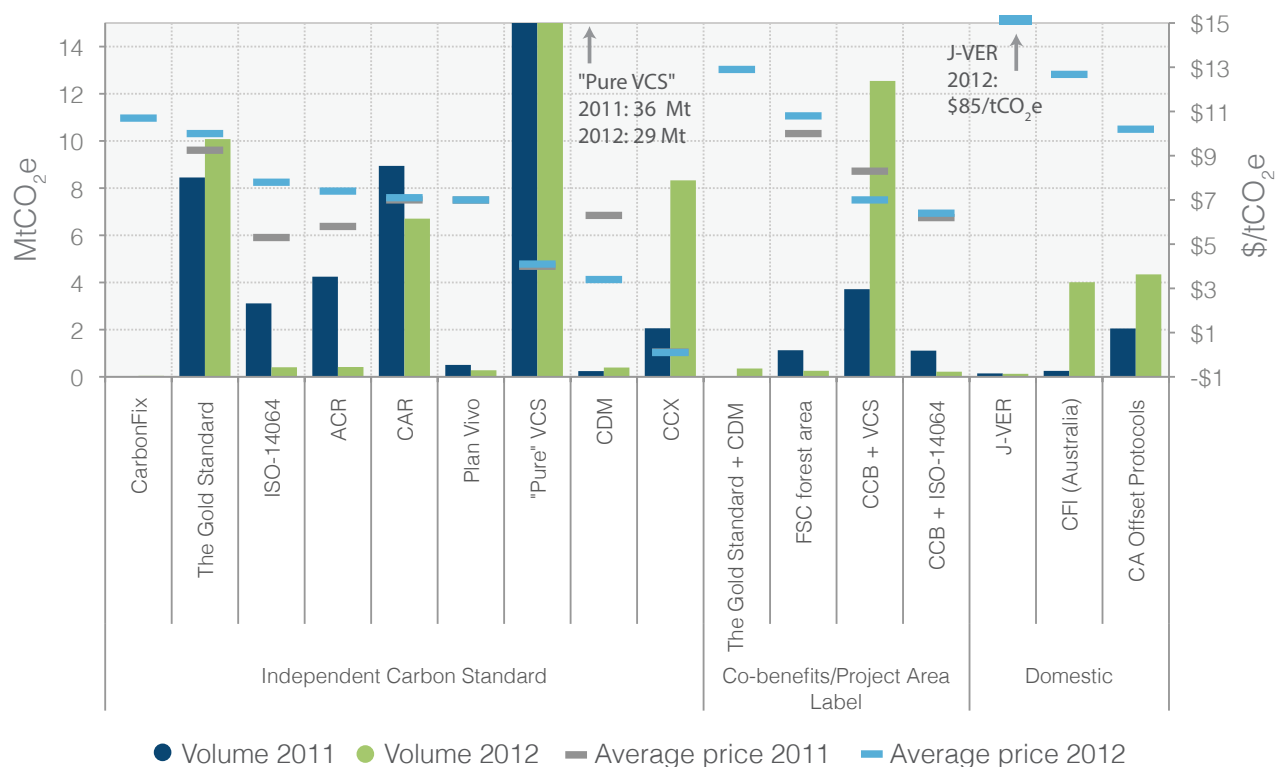
Because 76% of transaction volumes were concentrated around the market's top five independent standards, it is helpful to understand the variables within those standards that influence price. Figure 38 examines some of the voluntary market's leading project types (according to type and dominant standard) to understand the price paid for offsets at various stages of project development.

42.5 MtCO₂e or 43% of all transacted offsets were reported as being issued at the time of transaction. Even so, a few project types (particularly VCS forestry) reported offset transactions that predominantly occurred in projects' early, pre-verification stages. Both here and in the clean cookstove distribution market, buyers paid more for offset contracts occurring at later stages in the project cycle.

Much like buyers had a preference for offsets from late stage forestry projects in 2011, the same was seen for Gold Standard clean cookstove projects in 2012 as a larger volume of issued offsets came online. Cookstove project developers had a more difficult time contracting offsets from early-stage projects in 2012, reportedly due to the fact that, based on their experience with recent decelerating offset prices, buyers offered significantly lower prices for new forward contracts, which developers were unwilling to accept.

"Looking back five years ago, Gold Standard offsets from cookstove projects were trading at €15 to €16 per tonne [approximately \$20/tCO₂e], and multi-

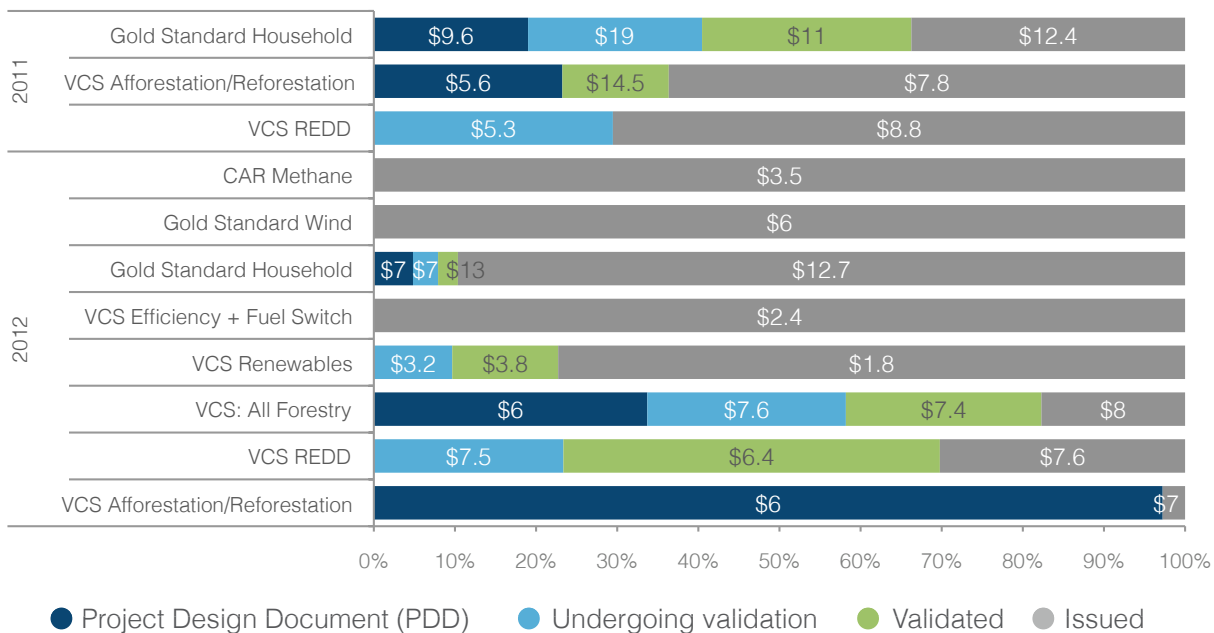
Figure 37: Transacted Volume and Average Price by Various Project Standards and Certifications, 2011-2012



Notes: Based on 70 MtCO₂e associated with the use of an independent third-party project standard.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 38: Market Share and Average Price by Project Stage, Popular Project Types 2011-2012



Notes: Based on 50 MtCO₂e in 2012 and 4 MtCO₂e associated with use of select project standards, project types and project stages.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

year forward contracts were discounted from there,” explains E+Carbon’s Cathy Diam. **“Buyers see that the price has dropped quite a bit and hesitate to sign new multi-year contracts without knowing how much lower the price might go.”**

For those project types like renewables where the average price was higher for early-stage offsets rather than for issued offsets, the reversal in price trend can be explained by the large existing supply of old-vintage issued offsets on the market, paired with some buyers’ preference to catalyze new project activities.

3.5 Offset Project Registries: Tracking the Trades

Whereas standards guide the development of offset projects and verifiable offsets, registries provide a crucial clearinghouse for tracking offsets, facilitating changes of offset ownership and, ultimately, offset retirement. Increasingly, a registry account also serves a rite of passage for offset suppliers and buyers, indicating their organization cleared a registry’s intensive client approval process.

Registries as a whole reported record activity again in 2012 as registry use and offset issuance have become a key requirement for market participation. Of the 312

MtCO₂e of verified offsets that have ever been issued and tracked on a registry, 21% of this volume (66 MtCO₂e) was issued in 2012. As also seen in 2011, much of this volume was made up of older vintage offsets issued by VCS renewable energy projects, corresponding with the voluntary market’s dominant offset transaction activities in 2012.

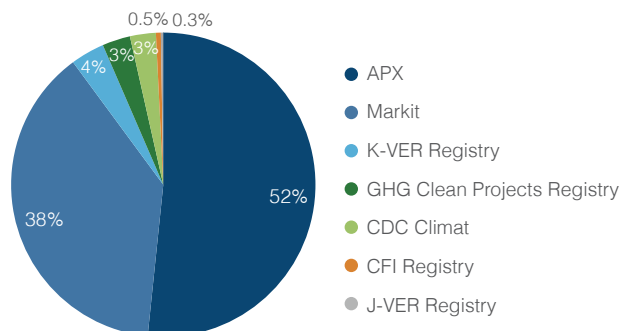
While the volume of offsets retired on a registry rose for major registries run by Markit and APX (17 MtCO₂e, up 60%), the overall volume of retirements was pulled downward due to lower offset retirement rates through the CCX Offsets Registry. If CCX historical and 2012 retirement volumes are removed, 2012 represented a record year for offset retirements (18 MtCO₂e in 2012).

Underlying their overall growth in activity, registries in 2012 worked to adjust their infrastructure in order to better facilitate activities among various market players along the offset supply chain, while partnering to support emerging domestic programs for both carbon and other environmental assets. These and other trends are highlighted in this section.

Major registries see record activity, new functionality

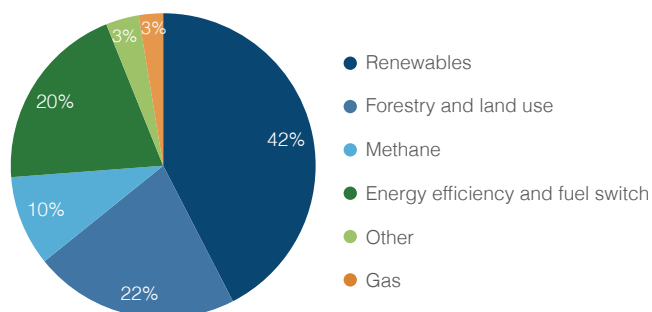
APX – servicing CAR, VCS and, most recently, ACR – experienced significant growth, issuing 34 MtCO₂e,

Figure 39: Market Share of Issued Offsets by Registry, 2012



Sources: APX, Markit, J-VER, K-VER, CDC Climat, GHG CleanProjects Registry, and the AU CFI Registry.

Figure 40: Number of Registered Projects by Project Category, 2012



Sources: ACR, CAR, CarbonFix, CCB, CCX, CFI, The Gold Standard, J-VER, K-VER, Panda Standard, the Pacific Carbon Trust, Plan Vivo, VER+, VCS, and the Woodland Carbon Code.

or 55% of all volumes that APX registries have issued over time. Last year, APX focused significant effort on implementing new registry functionality to align ACR and CAR registries with the California compliance program's Compliance Instrument Tracking System Service.

“Registry activity is markedly higher already in 2013, than it was toward the end of 2012,” reports Lars Kvale, Head of Environmental Markets at APX. “This [uptick] is related mostly to California compliance-eligible projects.”

The Markit Environmental Registry – which services 10 carbon standards – also saw heightened activity, issuing 25 MtCO₂e in 2012, or 34% of all offsets ever issued by Markit.

Following through on its stated interest in exploring auction platforms to provide market transparency and liquidity, Markit North America signed on as auction administrator for California's cap-and-trade program in 2012. Markit also enhanced a bid-and-offer functionality on its own registry system, not as an execution-based platform but as a platform facilitating introductions.

Infrastructure providers ramp up support for jurisdictional programs

As domestic carbon programs launch, major registries are increasingly targeting their support to jurisdictional programs – all subnational to date. In 2012, ACR and CAR registries, both underpinned by APX – became official Offset Project Registries

(“OPRs”) under California's new cap-and-trade program and saw an uptick in new projects listed and offsets coming online for use under state-approved Early Action Quantification Methodologies and California's compliance offset protocols.

In Latin America, Markit signed an MOU with Brazil's state of Acre to develop a registry for the state's voluntary Program of Incentives for Environmental Services. Markit is the first registry to establish a program to issue and track REDD offsets at the state level that will facilitate linkages with Acre's partners in Brazil. In July 2013, the UK's Woodland Carbon Code registry will also go live on Markit.

As other emerging markets like Ghana, Kenya, Uganda, Chile, and Thailand consider obtaining registry infrastructure to support emerging capacity for project development and corresponding demand for offsets, major registries are looking to provide customizable options to develop jurisdictional registries at reasonable cost.

“There needs to be flexibility in working with states and other governments in order to determine the right level of automation,” says Kathy Benini, Markit's Managing Director and Global Head of Environmental Products, who acknowledges the less-expensive alternatives like open-source software or even using Excel to manage project lists that are at jurisdictions' disposal. “We offer governments a flexible platform and work with them on how to phase their programs in order to have the appropriate level of technology supporting their programs as they evolve.”

Table 9: Offset Issuance and Retirement by Registry, Historical and 2012

Registry	Issued, All Years	Issued, 2012	Retired, All Years	Retired, 2012
MtCO ₂ e				
Markit	75	25	23	11
APC	63	34	11	6
CCX	89	0	26	2
K-VER	15	2	8	0.1
CDC Climat	10	2	2	0.3
GHG CleanProjects	5	2	0.7	0.4
Blue Registry	4	0	1	0.01
CFI	0.3	0.3	0	0
J-VER	0.2	0.2	N/A	N/A
TOTAL	312	76	66	20

Sources: Markit, APX, CCX Offsets Registry, Korea GHG Reduction Registry, CDC Climat, GHG CleanProjects Registry, BlueRegistry, Australia's Clean Energy Regulator Registry of Offsets Projects, Japan Verified Emissions Reduction Registry.

Providers, partnerships see flux

ACR, which has traditionally maintained a standard-specific ACR registry, launched a new registry in partnership with APX in the first half of 2012 that is built to serve both voluntary and compliance users. In early 2013, The Gold Standard moved its own registry platform from APX to Markit. The VCS registry system – spread across three registry providers – saw an increase in issuance activity on Markit and APX but a drop in activity on CDC Climat, which phased out its services to VCS projects by the end of 2012 for what it described as strategic reasons.

Registries support beyond-carbon dialogue

Registry providers – particularly Markit – continued to explore ways to provide supporting infrastructure for new markets for water and biodiversity benefits in addition to servicing co-benefits standards for carbon offset projects. This reflects a broader push by market participants to recognize environmental assets beyond carbon emissions reductions, as well as the potential for “stacking” or bundling various ecosystem assets coming from the same project area.

The customer isn't always right

In line with revisions made by Markit, APX, and ACR to ramp up client admission requirements, market entrants offering offsets to individuals as financial investments have hit a wall when trying to obtain accounts on major registries. Particularly in the UK, the country's Financial Services Authority and Insolvency Service became more active in 2012 in warning individual investors against participating in the carbon markets and conducting investigations against those potentially involved in scam activities. As one of the market's few lines of defense against fraudulent activities in the carbon offset value chain, major registries continue to take an active role in vetting new market entrants seeking accounts on their registries.

3.6 Registry-Reported Activity in 2012

Figures 39 and 40 and Table 9 exhibit the volume offsets issued and retired by various offset project registries, as well as the types of projects registered under various standards. For the first time this year, this information is made available in full in this report

as both our research and market participants make greater use of registry information services.

As in previous years, Markit Environmental Registry and APX Inc. were the most active registry service providers in the offset marketplace – as the virtual “homes” of most major offset programs. While the Markit registry platform has issued the largest volume of offsets across all years (75 MtCO₂e), standards utilizing the APX platform issued a larger volume in 2012. Even if 2012's 6.4 MtCO₂e Gold Standard issuance is removed, APX issued volumes were slightly higher than Markit's (27.8 MtCO₂e). The rest of APX issuance volumes came from ACR (3 MtCO₂e), CAR (1 MtCO₂e) and, most prominently, VCS (14.7 MtCO₂e). Another 19.7 MtCO₂e from VCS were issued on the Markit platform, where, in our 2013-14 report, Gold Standard issuance and retirement will also be tracked.

While 96% of issued offsets were housed on these registries or CDC Climat (which phased out operations in late 2012), we tracked a smaller volume of activity from other active registries.

Domestic registries like the Clean Energy Regulator's offset register under Australia's Carbon Farming Initiative

issued their first offsets in 2012. The Chicago Climate Exchange Offsets Registry Program, first launched in 2011 following the close of CCX's exchange platform, also oversaw some OTC activity for offsets from projects developed using CCX protocols. The CCX Registry nevertheless reported a significant drop in the volume of offsets retired. Registries seeing <100,000 tCO₂e of their offsets transacted in 2012 included the Canadian Standards Association's GHG Registry and Blue Registry for VER+ offsets.

Standards bodies that responded to our survey reported that the largest volume of issued offsets were from VCS renewable energy projects, followed by The Gold Standard. This is in line with the large proportion of registered projects in this category (42% - Figure 40). VCS offsets were also retired in larger volumes than offsets from any other standard (16 MtCO₂e). As with all issuances and retirements reported by registries, some of this volume was most likely transacted in previous years and was only issued – and so eligible for retirement – for the first time in 2012. This is particularly the case for project types like forestry and clean cookstove distribution, where project developers have only begun to issue offset volumes in the last 2-3 years.



4. Details of the Deals

Buyers and Contract Structures



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

4. Details of the Deals: Buyers and Contract Structures

Every major trend in offset supply is influenced by buyer preferences – and every offset 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.

This section describes the market's “buy” side according to offset suppliers that responded to our survey. In 2012, 189 survey respondents reported buyer types alongside their transacted volumes. While

some survey respondents may only be able to offer a best guess about the fate their offsets, the information in this section aims to connect the dots between elusive offset buyers and disaggregated offset suppliers and to contextualize market trends in 2012.

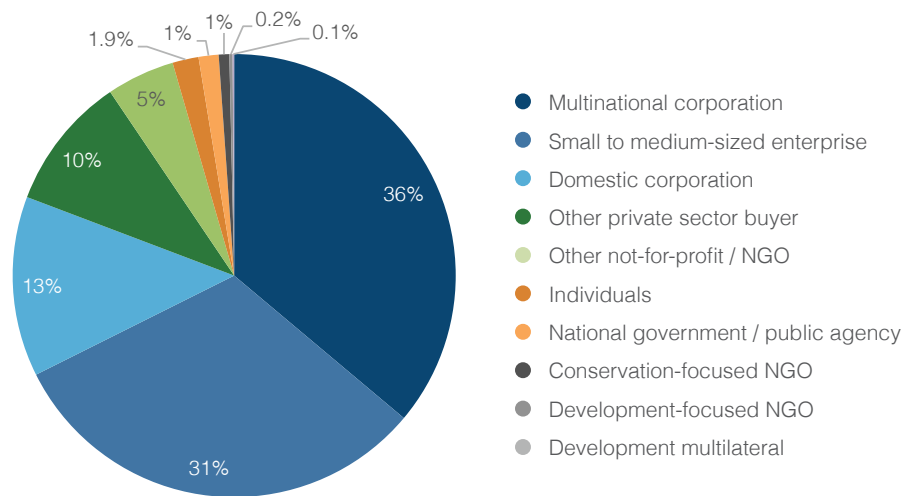
4.1 Who Buys Offsets?

Buyers offset a variety of activities, including their personal, employee, event, product, or overall corporate emissions. They may also buy offsets to prepare for the emergence of a future regulated carbon market.

2012 KEY FINDINGS

- In 2012, the private sector was behind 90% of offset purchases. Here, multinational corporations in North America and Europe transacted the largest offset volume of any business category (27 MtCO₂e). Close behind these organizations were offset buyers from domestic small- to medium-sized enterprises, 82% of which were Europe-based.
- Last year, offset retailers were the voluntary market's most active offset buyer. Overall, retailers bought or supplied 50 MtCO₂e valued at \$230 million in 2012 – roughly 51% of all transacted offsets and 45% of market value.
- Among offset end users, manufacturing companies topped the chart, transacting 8 MtCO₂e in 2012. Energy utilities were next in line, transacting 7.2 MtCO₂e and primarily based in Europe (90%). The transportation sector – particularly aviation – was behind another 4 MtCO₂e of transacted offsets. Individual offset purchases remained small (1.4 MtCO₂e) but grew 17% from our 2011 market survey.
- As in all previous years, CSR ranked at the top of the list of offsetting motivations, behind 14.3 MtCO₂e of transacted offsets, a volume 33% less than in 2011 as some buyer intentions shifted to “demonstrating climate leadership in their industry” or in policy, particularly when the buyer is a “first mover” in their sector and in the EU and US where a carbon price policies was weak to non-existent.
- Survey findings indicate a relationship between the types of offsets being contracted and buyers' business activities or environmental impacts. Examples of sectoral offsetting relationships are seen among buyers in agricultural and forest products sectors; the food and beverage industry; and the manufacturing sector.
- In 2012, suppliers reported transacting offsets to buyers in 29 countries around the globe, from both developed and developing countries. Buyers in the EU remained the voluntary offset market's primary source of demand for international offsets from all active project regions.

Figure 41: Market Share by Buyer Organization Type, OTC 2012



Notes: Based on 75 MtCO₂e associated with a buyer organization type.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Within these divisions, buyers hail from an array of sectors, business types, and in some cases carbon market roles⁶.

Private sector buys lion's share of offsets, NGO purchases grow

In 2012, the private sector was behind 90% of offset purchases. Here, multinational corporations in North America and Europe – from consultants Bain & Company to eBay – transacted the largest offset volume of any business category (27 MtCO₂e – Figure 41). Close behind these organizations were offset buyers from domestic small-to-medium-sized enterprises, 82% of which were Europe-based. Suppliers explain that buyers of this size are prevalent in the EU simply because their awareness of carbon offsetting is raised by the presence of the EU ETS, whereas in North America, carbon offsetting is not such a household topic, so less common among small businesses.

Domestic corporations – think energy utilities and domestic transportation operators – transacted another 9.8 MtCO₂e, followed by buyers in a “general private sector” category.

Another 8% of market share is split among non-governmental organizations (“NGOs”), the public sector, and individual buyers – twice the share these

types purchased in 2011. NGO buyers transacted 4.4 MtCO₂e, more than the triple their 2011 market participation. While a large proportion of these buyers were unidentified, suppliers reported that 13% of NGO buyers run conservation-focused programs while another 4% were development-focused. The public sector made up a collective 2% of market share, hailing from governments in South Korea and Turkey, as well as a few UN agencies and development multilaterals. The public sector's share is expected to grow in 2013 based on examples like the one of German development bank KfW's which contributed \$24 million to Acre state's REDD development efforts that includes some offset purchase volume; and Australia's \$250 million commitment to buy domestic non-Kyoto compliant offsets.

While individual offsetting programs are some of the most public-facing offset offerings (à la travel offsetting or other point-of-sale offset options), purchases remained small (1.4 MtCO₂e) but grew 17% from our 2011 market survey.

In reality, individual emissions from discrete activities are low, and opportunities for individual offsetting are growing fewer as offset retailers target their energies toward “upstream” emitters – like utilities, industrial facilities, manufacturers, shipping companies, and

⁶ Because it is often difficult to connect prominent buyers with the year in which they bought offsets, this section references dozens of reportedly active offset buyers, but acknowledges that not all of them may have contracted offsets in 2012, but instead in the prior or current year.

Table 10: Buyer Profile: BP Target Neutral

Andrea Abrahams, Global Director of Target Neutral
Highlights
Official offset partner of the 2012 London Olympic Games
What criteria drive your offset decision?
1. Standard; 2. Community impact; 3. Vintage; 4. Project location; 5. Relationship to supply chain
What is your motivation for offsetting?
"To work with our customers on jointly taking action to reduce the environmental impact caused from the use of our products."
Is the voluntary offset market mature? How could it improve?
"Yes it is mature, especially due to the work of the International Carbon Reduction and Offset Alliance (ICROA) to set a Code of Best Practice, review standards and methodologies, and expose unscrupulous organizations."
Offset project types
Olympic portfolio: VCS+CCB A/R, Kenya; VCS biomass, China; Gold Standard landfill, Turkey; Gold Standard wind, New Caledonia; CAR landfill methane, United States; VCS + SOCIALCARBON biomass, Brazil.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

retail product suppliers, where offsetting can be more efficiently embedded into products and services supplied downstream. Even the latest variation of a "climate neutral credit card", launched by South Pole Carbon and Swiss Cornèrcard in late 2011, offsets users' emissions using the card's marketing budget rather than taking the traditional route of letting cardholders cash in "points", as airlines like air SWISS permit for members' earned mileage points.

In other efforts to incentivize individual action, offset retailer BP Target Neutral offered to offset for free the travel emissions of all 2012 London Olympics attendees, who could sign up online or at the event – and over 500,000 did so. Airline operator TUI Travel features an "opt-out" function for its holiday packages, whereby if buyers don't actively opt out of the offset option, their travel emissions are offset. Virgin America flights enable travelers to purchase offsets from the touch screen on the back of airplane seats – making a direct connection between the offset purchase choice and the activity being offset.

4.2 Which Business Sectors Actively Offset Their Emissions?

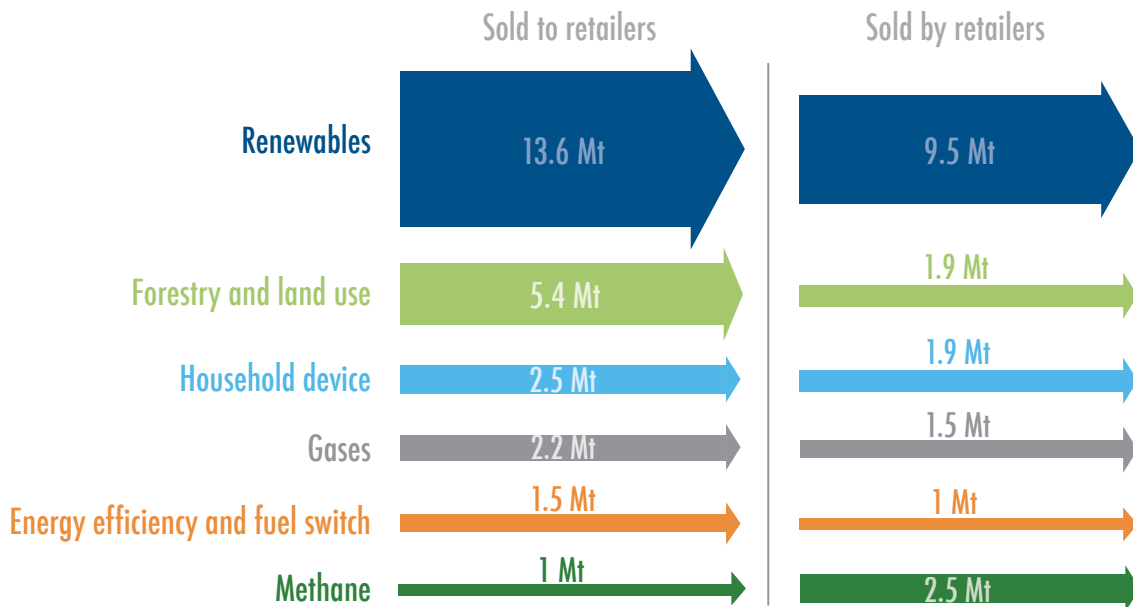
If and how companies choose to offset their emissions is often determined by their line of work. Some buyers choose to offset because their business is primarily

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).

Last year, offset retailers were the voluntary market's most active offset buyer. Carbon offset retailers contributed significant value to the market, picking up over half of all project developers' transacted volumes and providing multiple services to offset end users. Overall, retailers bought or supplied 50 MtCO₂e valued at \$230 million in 2012, roughly 51% of all transacted offsets and 45% of market value.

As described on Section 2.1, a large proportion of retailers' 2012 transaction volumes (both purchases and sales) was comprised of inexpensive renewable energy offsets for which they could obtain a sufficient margin in order to sometimes sell more expensive offset types at cost or at a loss, while continuing to pay project developers average or above-average prices (depending on the project type). This "basket approach" is also reflected in Figure 42, which illustrates a common retail strategy taken to remain profitable while continuing to add value to projects and clients. Of all retailer offset buyers captured in these findings, 83% were based in Europe.

Figure 42: Transacted Volume Sold to and by Retailers, OTC 2012



Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

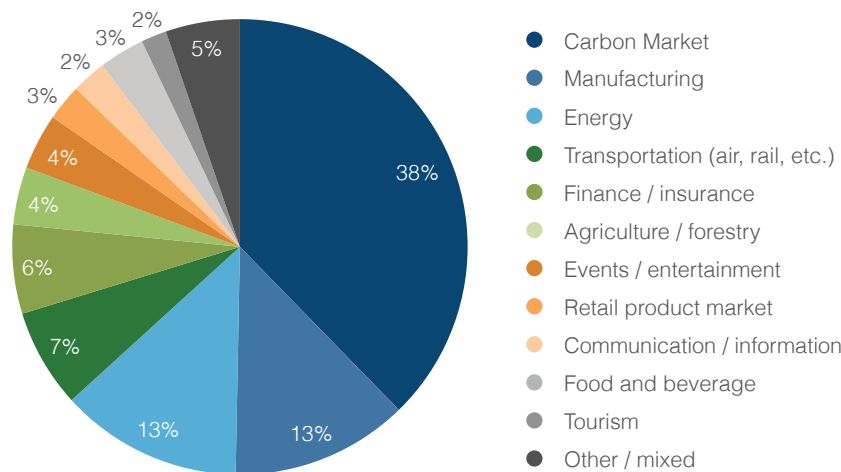
Among offset end users, manufacturing companies topped the chart, transacting 8 MtCO₂e in 2012. Two-thirds of this volume was contracted to North America-based manufacturers like Chevrolet, while another 30% went to manufacturers in the UK.

Energy utilities were next in line, transacting 7.2 MtCO₂e and primarily based in Europe (90%). Even though European utilities are capped under the EU ETS,

companies like Germany's ENTEGA offer customers carbon- or "climate-neutral" energy products, typically supporting co-benefits-heavy international offset projects. Suppliers say this type of action is likely to escalate if EU policy makers fail to address the region's deflated carbon price.

Companies in the transportation sector – particularly aviation – were another significant offset buyer in

Figure 43: Market Share by Buyer Sector, 2012



Notes: Based on 57 MtCO₂e associated with a buyer organization type.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

2012, behind another 4 MtCO₂e of transacted offsets. This sector was represented by dozens of names worldwide, like Hostelling International, Qantas, Kenya Airways, TUI Travel, Spirit of Japan Travel agency, Virgin America and Virgin Atlantic, United Airlines, Amtrak, and Lufthansa. Suppliers say that, despite the transportation sector's enormous carbon footprint, this volume is not larger because most companies' offset programs still rely on individual travelers to voluntarily "opt in" to an offset transaction – and often not at the point of sale or travel.

Offsetting sporting and other events featured prominently among a few regions' top buyer motivations in 2012 – of which one of the most recognizable was BP Target Neutral's 2012 London Olympic Games offsetting program, which set a record for the largest number of individual attendees to offset their journey to a single event. A follow-up assessment of the program's performance, however, said that uptake could have been stronger if, over the course of the event, due media attention had been paid to global sustainability issues, including climate change. The Commission review concluded, ***"It will be important for future events to try and establish a baseline of changed consumer preferences resulting from engagement in travel offset programmes so that learnings can be gathered***

about what works best and why, during and after the programme has been implemented." Other significant event offset programs included US-based utility Entergy's offsetting of the 2012 Superbowl XLVI and ongoing preparations for the 2014 FIFA World Cup, hosted in Rio de Janeiro, Brazil.

4.3 What Motivated Offset Buyers in 2012?

Reflecting offset retailers' sizable demand in 2012, the most common buyer motivation behind offset transactions was resale. Beyond this, Table 12 describes offset end buyers motivations, which saw a significant shift last year when we added a new motivation to our list of survey options – that of demonstrating climate leadership within a buyer's industry or in policy. This option was added in the 2012-13 survey based on feedback from several prominent offset buyers in 2011. As it turns out, they weren't alone in this motivation, which was the second most popular reason for private sector offset end use purchases, globally.

As in all previous years, though, CSR ranked at the top of the list, behind 14.3 MtCO₂e of transacted offsets, a volume 33% less than in 2011. Suppliers say this decline is not only a function of the new survey question, which inherently overlaps with some CSR

Table 11: Buyer Profile: Volcom, Inc.

Derek Sabori, Senior Director, Department of Sustainability
Highlights
2012: Offset company-hosted surfing events, in addition to parent company Kering's (formerly PPR Group) existing offsetting commitment
What criteria drive your offset decision?
1. Community impact; 2. Standard; 3. Relationship to supply chain; 4. Project location; 5. Vintage
What is your motivation for offsetting?
"For all of our effort to reduce our environmental impact, we realized that we still have a carbon footprint. As we move along with our carbon reduction initiatives, the idea of offsetting what's left is becoming more tangible."
Is the voluntary offset market mature? How could it improve?
"Without a crash course on offsetting or someone to walk you through it, [offsetting] can be very overwhelming and easily bypassed and also hard to justify as an expense when pushing the idea up the company ladder – because it's such a unique market."
Offset project types
Volcom portfolio: VCS + CCB REDD in Kenya

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

intentions and resources. It also speaks to voluntary buyers' increasingly holistic take on offsetting as a "one-to-many" key to financially incentivizing internal and external climate, social and political action.

"We need to go further than just having CSR," said Puma General Manager Martyn Bowen in a speech about the company's REDD offset investments. "We need to go further than just doing less bad. We need to start doing more good."

Indeed, media and NGO communities have not always been kind to companies' choice to offset, to the extent that those who continue to operate in this space have formed increasingly sophisticated arguments for offsetting. It also might explain why, year-on-year, the volume of offsets transacted explicitly for marketing and public relations purposes continues to fall down the list of motivations (down 71% from 2011). In its place, demonstrating corporate leadership – particularly when the buyer is a "first mover" in their sector and in the EU and US where carbon price policies are weak to non-existent – increasingly motivates corporates who really want to offset. And in some cases, that's exactly how they're communicating it – "because we wanted to."

"The more we as a company learn about offsetting and how important these programs are, it just becomes more important," says clothing brand Volcom's Senior

Table 12: Offset End Users' Top Offsetting Motivations, 2012

Motivation	Ranking by % Share
CSR	34%
Demonstrating climate leadership	26%
Pre-compliance	19%
PR / branding	10%
Climate-driven mission / philanthropy	9%

Notes: Based on 42 MtCO₂e associated with an offset end user motivation.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Sustainability Director Derek Sabori. "As far as our consumers go, I haven't had any feedback on our program and think it's a bit too esoteric to resonate with them. ***But it's a large concept that you have to appreciate no matter what. We've committed to it and will keep doing it.***"

Other examples of this kind of offsetting activism include both The Walt Disney Company's and Microsoft's self-imposed internal carbon tax levied on business

Table 13: Buyer Profile: Interface, Inc.

Buddy Hay, Assistant VicePresident, Sustainable Strategies
Highlights
Large-scale offset buyer for 10 years
What criteria drive your offset decision?
1. Standard; 2. Vintage; 3. Project location; 4. Community impact; 5. Relationship to supply chain
What is your motivation for offsetting?
"To provide our customers with a product that is carbon neutral for the full life-cycle – from raw material extraction to end of life of the project – in keeping with our company's Mission Zero goal."
Is the voluntary offset market mature? How could it improve?
"Yes. When the market today—with numerous projects available, globally recognized standards and web-based registries—is compared with the market 10 years ago, there is a tremendous difference that provides the structure and accountability needed to ensure that you are buying quality offsets."
Offset project types
Examples from current portfolio: VCS A/R, Guatemala; VCS + SOCIALCARBON biomass, Brazil; VCS fuel switching, US; VCS wind, China; VCS+CCB REDD, Kenya

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

divisions that incentivizes internal emissions reductions while operations realize the real business cost of carbon and also leverage the revenues raised to support their international offset programs. Also at REDD Talks, an event hosted by REDD campaign Code REDD in April 2013, Microsoft's Tamara "TJ" DiCaprio said that pricing carbon within the company has led to a sea change. "It was very important to start speaking about carbon in terms of dollars," she said. "The impact on the business has been significant. Folks are engaged now."

The desire to offset emissions regardless of the activity's "esoteric" nature also extends to other motivations, even branding and public relations. US-based Interface, Inc. purchases approximately 400,000 MtCO₂e every year to make their product carbon neutral. Buddy Hay, who is in charge of the offset purchases for Interface, says that perhaps there may only a small subset of customers who fully appreciate carbon neutrality, but he still believes the company's Cool Carpets campaign gives them a market advantage. Talking about Interface's carbon initiatives "gives our salespeople another reason to get in front of their customer," he says.

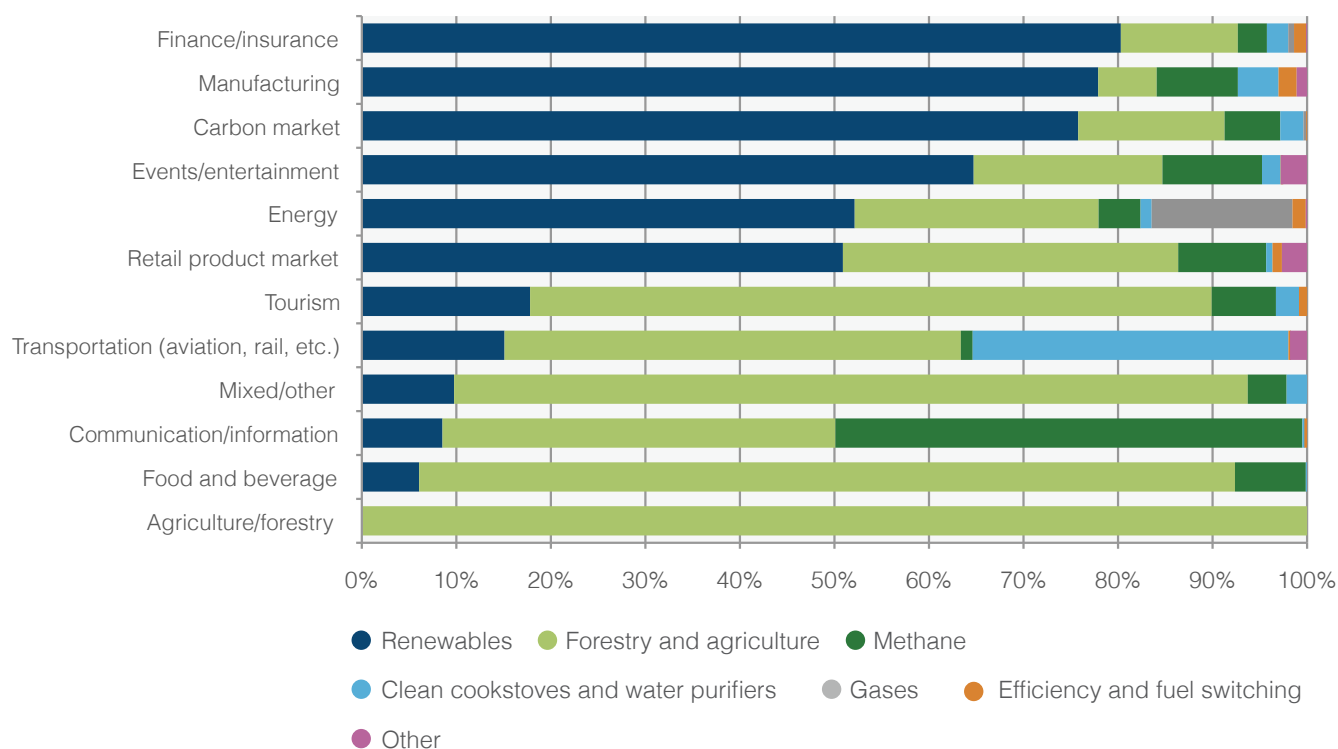
4.4 Are Companies Considering Their Supply Chain in Offset Purchase or Project Investment Decisions?

Both Volcom and PUMA brands are subsidiary brands of Kering (formerly PPR Group) which took an early stake in REDD project developer Wildlife Works. Here, PUMA's employment of the Kasigau Corridor project's sustainable clothing factory into its production chain highlights offsetters' growing interest in supporting projects that have a real or symbolic relationship to their business model.

Despite the fact that supply chain management features prominently in the recent offset market conversation, no 2012-13 survey respondents reported buyers that supported projects directly impacting their scope 3 emissions or sphere of influence (a.k.a. "insetting"). Even so, Ecosystem Marketplace has tracked a few companies that are taking this approach to mitigate climate risks to their business models or stakeholders.

One example is US-based energy utility Entergy's support to Tierra Resources for the development of a delta wetland restoration project methodology

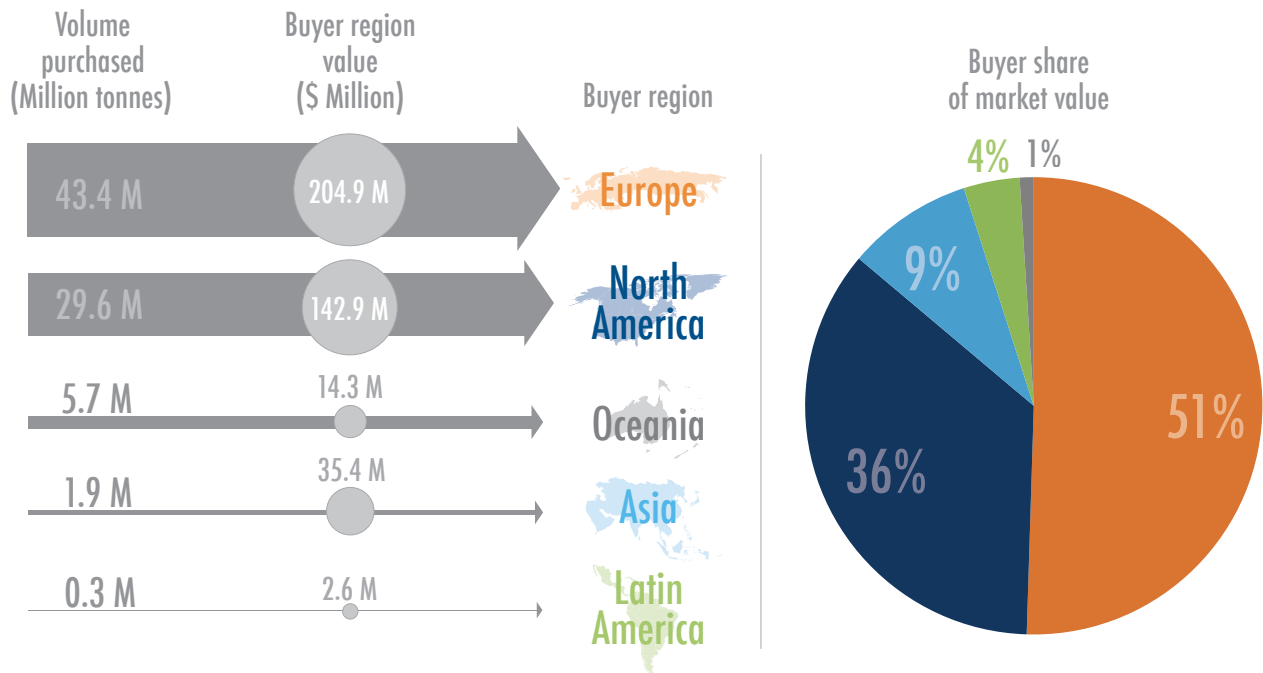
Figure 44: Buyer Sectors' Demand by Project Category, OTC 2012



Notes: Based on 57 MtCO₂e associated with a buyer organization type.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 45: Transacted Volume, Value and Average Price by Buyer Region, OTC 2012



Notes: Based on 81 MtCO₂e associated with a buyer region.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

to be piloted in Entergy's southeastern US service region. Chuck Barlow, Entergy's vice president of environmental strategy and policy, describes the project's potential risk mitigating implications for their service area infrastructure. ***"With operations that include Louisiana, Mississippi, and Texas, Entergy values wetlands as a first line of defense against storm surge and flooding, and their protection and restoration are vital to the sustainability of coastal Louisiana," Barlow says.***

Another inseting example is Swiss retail group Co-op's direct investment in the development of a Gold Standard clean cookstove aimed at benefitting the community in and around Kenya's Oserian Flower Farm – one of Co-op's suppliers of Fairtrade- certified roses. ***"As a responsible retail company it is natural for us to engage in projects that improve the living conditions for the people working along our supply chains" notes Peter Küng, Co-op's Head of Purchasing Flowers & Plants, in the context of its 2012 media outreach.***

While our report survey did not track any direct inseting on the part of 2012 buyers, analysis does indicate a relationship between the types of offsets

being contracted and buyers' business activities or environmental impacts. While not analyzed in this report, suppliers and buyers also describe the important connection between where they do business and the choice of offset project location. As seen in Figure 44, noteworthy examples sectoral offsetting relationships are seen among buyers in the agricultural and forest products sector (73% of offsets transacted from the land-use and forestry sectors); the food and beverage industry (74% of offsets transacted from the land-use and forestry sectors); and manufacturing sector (80% of offsets transacted from energy efficiency and renewable energy projects).

4.5 Where Are Offset Buyers Located?

This report examines buyers' market share not only by the region, but also the country where they or their businesses are located. In 2012, suppliers reported transacting offsets to buyers in 29 countries around the globe, representing three more country locations than in 2011, and from both developed and developing countries.

Regional market dynamics are explored in more depth in the report section Regional Market Deep

Table 14: Volume and Value Transacted by Buyer Region and Top Country Locations, OTC 2012

Location	Volume (MtCO ₂ e)	Value (\$ Million)	% Share (Volume)
Europe	43.4	\$205	54%
Of which United Kingdom	22	\$80	
Of which Netherlands	5	\$24	
Of which France	4.8	\$31	
Of which Germany	4.6	\$22.5	
Of which Switzerland	4.5	\$44	
Of which Sweden	0.4	\$3	
Of which Spain	0.2	\$1.4	
North America	29.6	\$143	37%
Of which United States	28.6	\$137	
Of which Canada	1	\$6.4	
Oceania	5.7	\$14	7%
Of which Australia	5.6	\$14	
Asia	2	\$35	2%
Of which Japan	0.5	\$19	
Of which Korea	0.15	\$1.6	
Latin America	0.3	\$3	0.4%
Of which Brazil	0.2	\$1.5	

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Dive. At a high level, buyers in the EU remained the voluntary offset market's primary source of demand for international offsets from all active project regions – even transacting a small volume of offsets from North America. A full 39% of offsets sold to this region were contracted to offset retailers to supply to their end clients. Combined, European retail offset suppliers are the world's primary hub for purely voluntary carbon management services.

Offset buyers in the US were reported as the most active offset market in a single country. In contrast

to European buyers and in keeping with previous years' findings, US-based offset buyers continued to primarily seek offsets from projects within their border. While some suppliers don't see this dynamic changing any time soon, others point to Microsoft's high-profile, internationally-based offset portfolio as a sign that multinational corporations' offset choices may begin to reflect their growing awareness of offsetting as a tool to address their international business impacts and risks.

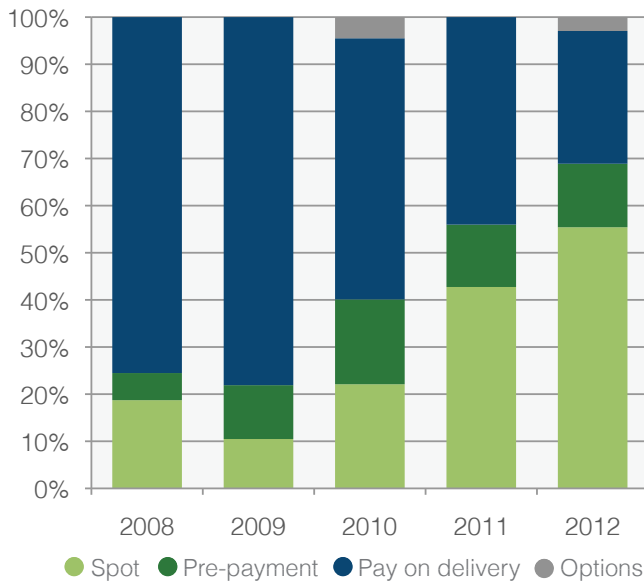
Beyond Europe and North America, offsetting in developing country regions remained muted in 2012. Developing regions worldwide reported carbon price mechanisms under development, however, that may eventually turn some locations from international sources of offset supply into regional sources of demand. Recent examples include several country-level proposals to the World Bank's Partnership for Market Readiness (PMR) that describe countries preparing to design or implement domestic carbon price mechanisms. Costa Rica and Turkey, for example, aim to harness voluntary market activities to inform or underpin their near-term efforts. Other programs, including some of China's domestic pilots and South Africa's draft carbon tax, indicate a willingness to recognize offsets certified to standards that were originally developed for voluntary buyers.

Offset suppliers have long awaited this kind of regulatory affirmation of voluntary market maturity and new market development, but are realizing that developing country-based offsetters require a significant amount of up-front capacity building.

"Buyers in Latin America are generally not yet an educated market," points out South Pole Carbon's Christian Dannecker, "and even if they know to seek out tonnes that use a credible standard, sometimes there is no supply available in their country or the offset price is too high because it's targeted at international buyers."

Colombia's emerging voluntary market, as well as corporate engagement programs through the Santiago Climate Exchange, have already begun engaging the domestic private sector in order to build both domestic supply and capacity for offset market engagement. These efforts have begun to pay off, seeing prominent purchases of domestic offsets from notable companies including Brazil's Natura Cosméticos; Chilean wine producer Concha y Toro; and Brazilian media conglomerate Grupo Abril. Elsewhere, Hilton Asia announced a regional events offsetting program to support Asia-based forestry and clean cookstove

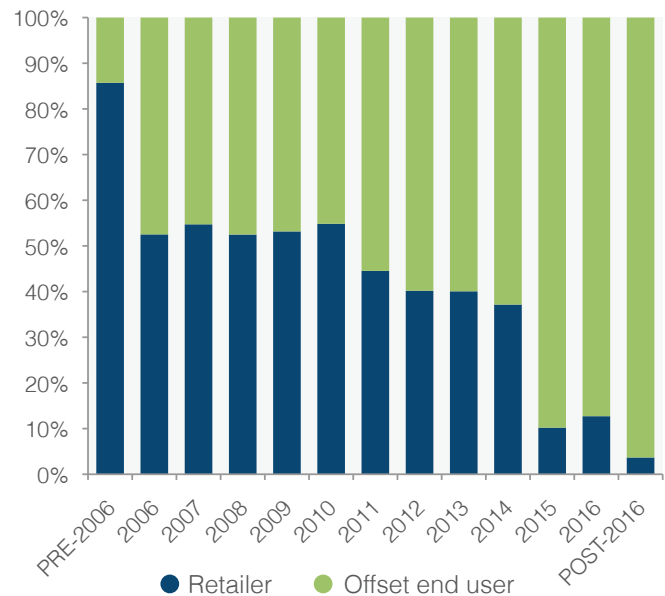
Figure 46: Historical Market Share, Transacted Volume by Payment Method



Notes: Based on 65.5 MtCO₂e associated with a contract type.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Figure 47: Transacted Volume by Vintage and Buyer Type, OTC 2012



Notes: Based on 65.5 MtCO₂e associated with a contract type.

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

projects, while state-owned South African Airways said it was exploring the possibility of implementing a voluntary domestic forestry offset project.

4.6 What Were the Terms of Payment and Offset Delivery?

Offsets contracted voluntarily are obtained “over-the-counter,” where transactions are guided by several types of contract structures, including:

Spot transaction: Offsets and payment are exchanged instantaneously. Some organizations also accept payments to retire offsets on the payee's behalf. This type of transaction may be included in this category or in the “pre-payment” category, depending on the offset project's stage.

Pre-payment versus Pay-on-Delivery (POD): Future offset delivery (may be near or distant future) is paid for up front (Pre-Pay) or upon delivery (POD). Pre-payment is typically preferable to project developers seeking up front project financing, but may incur a discount depending on the potential delivery risk incurred by the buyer.

Firm versus Unit-Contingent delivery: Contracts also specify the quantity of offsets to be delivered, either

as a “firm” volume or a flexible volume contingent upon how many offsets the project eventually issues. Pricing for these different options can vary according to lots of other factors that are described throughout this report.

In 2012, a sizeable portion of market value (64% associated with a contract type or \$170 million) was paid to offset sellers at the point of transaction rather than offset delivery – primarily via spot contracts (35.6 MtCO₂e, up 25% from 2011) and pre-payment for future delivery (8.7 MtCO₂e, down 1% from 2011). Another \$97.5 million will be paid in future years, if and when the projects under contract deliver verifiable reductions. As seen in Figure 46, this finding reflects a significant shift in contract structures favoring upfront payments as the volume of verified tonnes has grown over time, boosting both offset supply and buyer confidence that projects are capable of verifying GHG reductions and delivering offsets.

Some project developers say that the year's lower reporting of investment in new project activities is partly related to just this – a focus on offset delivery and ensuring sustainability of existing projects rather than piloting new projects.

“Now that we have issued credits, we're focusing on moving those rather than on doing complicated

new contracts,” says Conservation International’s Agustin Silvani of the organization’s Peru-based REDD project. “Offset issuance gave us some breathing room. Once you get into a cycle of verifying reductions every year or two, you can focus your energies on finding the capital to support the project.”

The way in which offset payment and delivery are contracted does ultimately influence their price, as seen in Table 15. Here, spot contracts see the lowest unit prices, though this price is the aggregation of millions of contracted tonnes, the prices for which vary highly by other factors like project type and standard (Figure 38).

Contracts specifying a firm delivery of tonnes (as opposed to a delivery volume that is contingent upon the volume of tonnes issued to a project) were associated with the highest average prices. This reflects a lower risk to the buyer if the contract places a liability on the offset supplier to make up any shortfall with tonnes from other projects in the marketplace; from future issuances from the same projects; or via refund or other arrangement.

With regard to forward transactions, as seen in Figure 47 we tracked a larger volume of offsets from future vintages contracted by offset end users, rather than by offset retailers. As seen in several regional figures that track price by vintage, the vast majority of forward contracts were associated with offset projects in North America and thus represent pre-compliance activity, rather than purely voluntary offset project investment. On the purely voluntary side of the marketplace (i.e., the market for offsets from projects in developing countries) less than a dozen forward contracts occurred and primarily between project developers and (again) end buyers of forest carbon offsets.

Table 15: Transacted Volume and Average Price by Payment and Delivery Terms

Payment Type	Delivery Type	Volume (MtCO ₂ e)	Average Price
Spot		35.6 M	\$3.4/t
POD	Unit contingent	13.1 M	\$4.2/t
Pre-pay	Unit contingent	4.7 M	\$5.5/t
POD	Mix, unit contingent and firm	2.1 M	\$5.5/t
Pre-pay	Mix, unit contingent and firm	1.3 M	\$7/t
POD	Firm	3 M	\$9.3/t
Pre-pay	Firm	2.7 M	\$9.3/t

Notes: Based on 65.5 MtCO₂e associated with a contract structure.

Source: Forest Trends’ Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

As one offset retailer puts it, the retail sector’s lack of forward offset contracting is “not for lack of trying.” They and other retailers explain that their investments are primarily tied to individual offset clients’ demand for supporting new project activities, which may remain piecemeal and small as long as abundant supplies of issued offsets are available for the full range of project types.



5. Regional Market Deep Dive

Where's, Who's, and How's
of Voluntary Offsetting in 2012



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

5. Regional Market Deep Dive: Where's, Who's, and How's of Voluntary Offsetting in 2012

5.1 Introduction

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 or their offset projects call home is a starting point to understand regional contributions to market-wide volume and value. This section explores regional trends through the lens of findings that have been presented in previous sections. A global summary of these findings can be found on Section 2.3.

5.2 Explanation of Figures

Figures 49, 50, 54 and 55 illustrate the volume of offsets that have ever been issued and retired by major registries, by vintage and for all years, for projects in each respective region.

In the same figures, the “Primary Transactions” shape summarizes (by vintage) all volumes ever reported in our survey as sold by a project developer to an initial buyer. In theory, the difference between this transaction volume and the volume of issued offsets indicates offsets that have not yet found an initial buyer. In reality, this survey is limited in its ability to track all offset transactions. Therefore, these primary transaction volumes should be considered conservative. It is also critical to understand that while issued offsets 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.

When transaction volumes shown are higher than issued volumes for a particular vintage (Latin American transaction volumes from 2009-2011 are a good example, Section 5.5) and particularly for post-2012 vintage offset transaction volumes, it is likely that offsets have been forward sold and not yet issued.

Finally, percent values reported in Tables 17, 19, 21 and 23 are based on the volumes associated with individual questions. In some cases, this data is too

thin and so regional analysis is omitted to protect respondents' confidentiality.

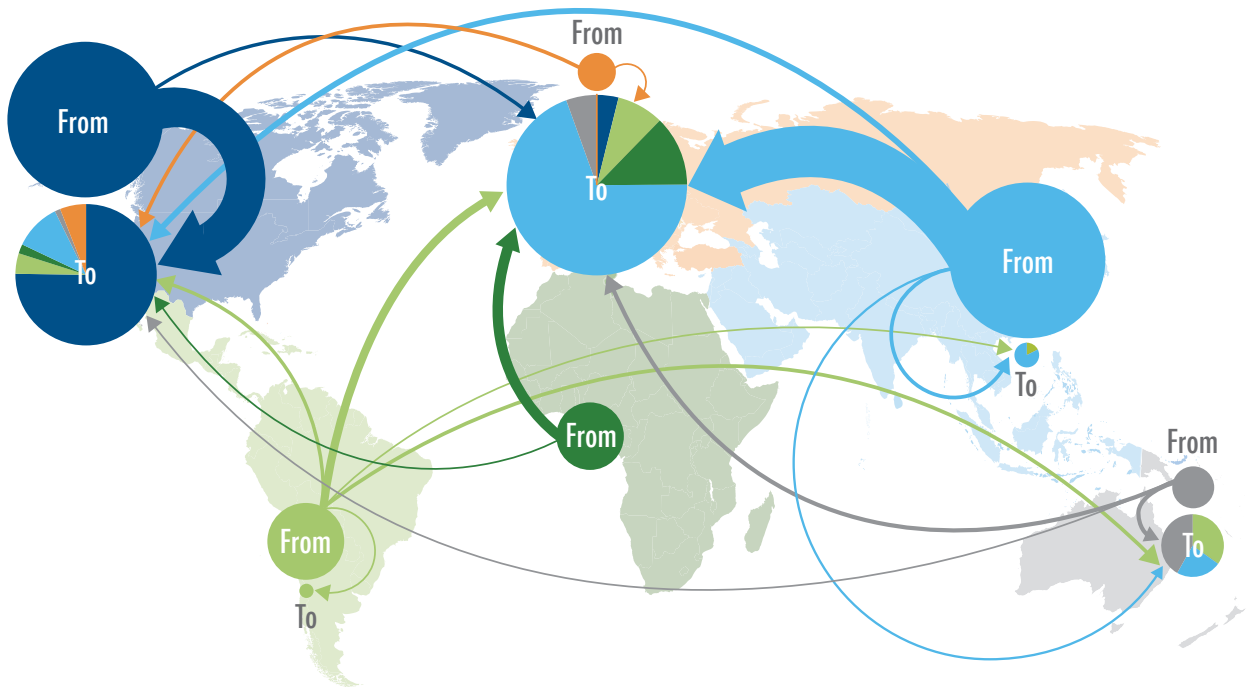
5.3 Asia: Branching Out from Renewables

As in previous years, demand for offsets from Asia-based projects was dominated by low priced renewable energy offsets that met with European buyers in search of affordable, available supplies (see “Issued”, Figure 49) to fill their portfolios. In a dramatic turn from previous years, however, renewable energy offsets occupied a smaller slice of Asia's project mix – which was replaced by a growing proportion of offsets transacted from energy efficiency, fuel switching, and forestry offsets. Overall, Asia-based projects were behind 37% of all offset transactions, but valued only at \$103 million owing to Asia's declining offset prices.

With the continued collapse of CDM prices and the EU's ban on CDM offsets from non-LDC countries that are registered post-2012, suppliers in Asia's most active developing countries – China and India – sought refuge in the voluntary markets as an alternative to the CDM. While 98% of all offsets were transacted to overseas buyers and largely into the secondary market, suppliers acknowledged a limited but growing potential to tap into domestic demand in select countries where governments are cultivating emerging or nascent domestic emissions trading schemes.

Of the total volume of offsets supplied from Asia-based projects, 11 MtCO₂e of offsets were supplied from **China**, down from 16 MtCO₂e in 2011. The fall in transaction volume was owed to a significant scaling back of voluntary market activity by one large regional supplier, paired with a slow year as suppliers awaited more clarity around project eligibility and demand from China's seven voluntary emissions trading schemes, which are scheduled to launch in 2013 and will tap into some free allowances in the first few years of operation. Given China's large existing offset supply, many project developers have been slow to embark on new projects until sufficient demand can soak up existing inventories—potentially accommodating industrial gas offsets banned by the EU ETS post-2012.

Figure 48: Flow of Transacted Volumes by Offset Supplier and Buyer Region, OTC 2012



From ↓ To →	North America	Latin America	Asia	Oceania	Europe
North America	20.3 M	-	-	-	1.2 M
Latin America	1.1 M	0.2 M	0.3 M	1.5 M	2.8 M
Africa	0.7 M	-	-	0.03 M*	3.9 M
Asia	2.5 M	-	1.3 M	1 M	21.5 M
Oceania	0.3 M	-	-	1.8 M	1.7 M
Europe	1.5 M	-	-	-	0.4 M

*Values smaller than 0.1 Million (M) are not shown on map.

Notes: Based on 80 MtCO₂ associated with either offset project or buyer location.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

To support the new cap-and-trade pilots, China's National Development and Reform Commission (NDRC) is set to issue Chinese Certified Emission Reductions (CCERs) from unregistered CDM projects and voluntary projects. Domestic initiatives like the Panda Standard – China's first voluntary carbon standard – are in the process of seeking NDRC's approval of their methodologies as eligible to generate CCERs. Governments in China's five participating cities and two provinces are setting their own limits on offset location and project type, as well as the percentage

of offsets that emitters will be able to use against their emissions reduction targets under each scheme.

Projects in India were behind the bulk of 2012 voluntary transactions from Asia, transacting 12 tCO₂e, up from 7 MtCO₂e in 2011. ***“Earlier there was a trend to own pre-CDM credits on the VCS markets and go for the CDM after registration, but the price crash has forced many players to go straight to the voluntary market and bypass the CDM,”*** notes Kishore Butani, Owner of CARBONyatra, an India-based supplier.

Table 16: Asia by the Numbers, 2012

Reductions / Year	Total, 2012	% Change from 2011
# Survey respondents in region	32	No Change
Volume supplied	29 MtCO ₂ e	+4%
Average price	\$3.5/tCO ₂ e	-9%
Value	\$103 M	-5%
Volume purchased domestically	1.9 MtCO ₂ e	-35%

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Going into 2012, it was assumed that large-scale renewable energy project developers would migrate from the carbon market to other incentives like the renewable energy certificate ("REC") market that might enjoy a more stable policy environment or lower project development costs. In India, however, deficit-ridden state electricity boards reportedly fell behind on payments committed for RECs, so that some project developers refocused away from both the CDM and REC markets in search of business from voluntary offset buyers instead.

Japan, historically the market with the highest reported prices for voluntary carbon offsets, has supported

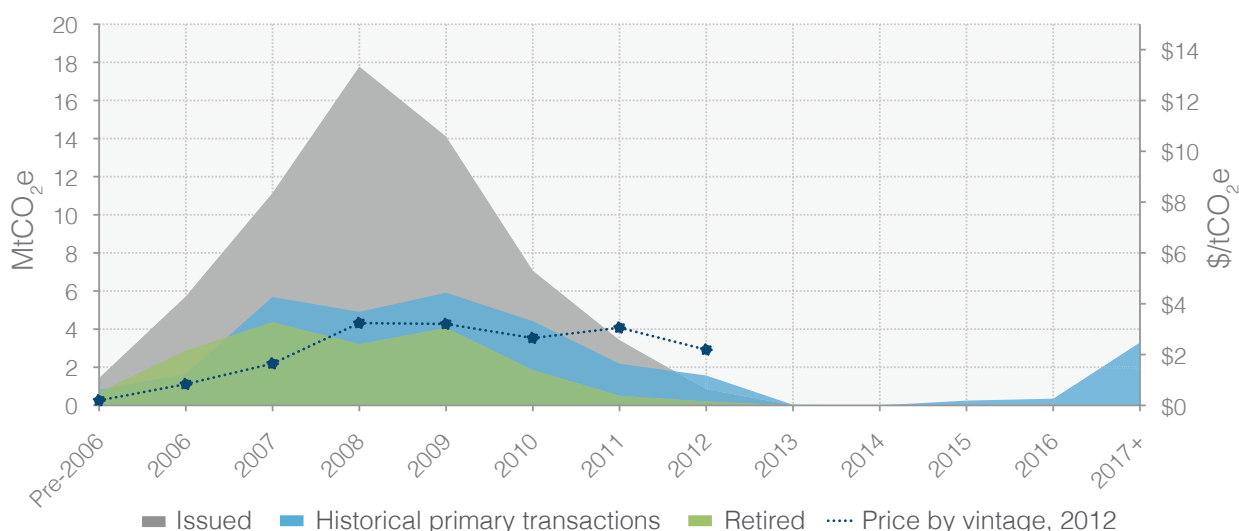
domestic project development primarily through its government-administered J-VER and J-CDM programs which the government has merged into the J-Credit Scheme mechanism this year. In 2012, J-VER transactions were valued at \$19M. To date, buyers have been primarily motivated by CSR and philanthropy, with a preference for forestry.

"Until the next COP in November [2013], the demand-side picture of J-Credits will still be unclear," cautions Kazuyoshi Sasaki, Secretary General of Japan's Certification Center on Climate Change. "There is a bit of lack in direction as project developers wait to hear more about how the J-Credit Scheme might work."

Elsewhere in Asia, over 3 MtCO₂e were transacted from projects in **Taiwan** and **South Korea**. As South Korea readies its emissions trading scheme for a 2015 launch, the Korea Verified Emissions Reductions scheme (K-VER) has been broadening its expertise across project types, its primary verifier KEMCO earning accreditation in 2012 as a VCS validation/verification body.

Last year, K-VER also provided capacity building support to Thailand's equivalent program (T-VER), which is set to launch this October and covers a broad range of project types. Among volumes reported for Southeast Asia, Thailand, Cambodia, Indonesia, Malaysia, and the Philippines together accounted for another 3 MtCO₂e in transactions. In the Lower Mekong Region, and **Vietnam**, capacity-building

Figure 49: Issued, Transacted, Retired Volumes (All Years) and Average Price (2012) by Vintage: Asia



Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013.*

Table 17: Asia: Transacted Offset Types and Offset Buyers, OTC 2012

Top Transacted Offset Types, Asia-Based Offsets, 2012					
Project Category		Project Stage		Standard Use	
Renewables	63%	Issued	67%	VCS	87%
Efficiency & Fuel Switch	18%	PDD	17%	CCX	5.4%
Forestry	15%	Verified (not yet issued)	16%	The Gold Standard	5%
Top Buyers of Asia-Based Offsets, 2012					
Buyer Locations		Buyer Sectors		Buyer Motivations	
Europe	82%	Carbon Market	45%	Resale, Voluntary	45%
North America	9%	Energy	13%	CSR	23%
Asia	5%	Finance/Insurance	11%	Climate Leadership	11%

Notes: Based on 31 MtCO₂ associated with either offset project or buyer location. Survey respondents may not answer every question pertaining to buyers – thus percentages pertaining to buyer sector and motivation may not be aligned.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

continues to dominate efforts in timber-exporting countries like Laos, Cambodia, and Vietnam, with project development still in relatively early stages and operating largely off of a funds-based rather than market-based approach.

5.4 North America: Domestic Programs Shape the Market

It's hardly surprising that in 2012, North American voluntary offset market participants paid much attention to the unfolding of **California's** cap-and-trade program – as well as the state's preparations to connect with Quebec via a linked compliance program in 2013. In terms of transacted offset volume, California market preparations remained fairly steady in 2012 compared to the previous year, but escalating pre-compliance offset prices drove many purely voluntary buyers toward offset types that are ineligible for California use, such as renewable energy.

North American buyers purchased 29.6 MtCO₂e of offsets in 2012, a small increase from the 29.2 MtCO₂e acquired the previous year. The average price of these transactions was \$6.7/tCO₂e – 11% higher than in 2011. If one includes a handful of large, low-priced transactions of CCX offsets, however, the average price for North American offsets fell to \$5.5/tCO₂e in 2012.

The total value of North American demand for both domestic and international offsets was \$143 million, with 64% of that value attributed to California-eligible projects. The region supplied only 23 MtCO₂e offsets in 2012, down 25% from the previous year, with the total market value declining by \$27 million to \$151 million.

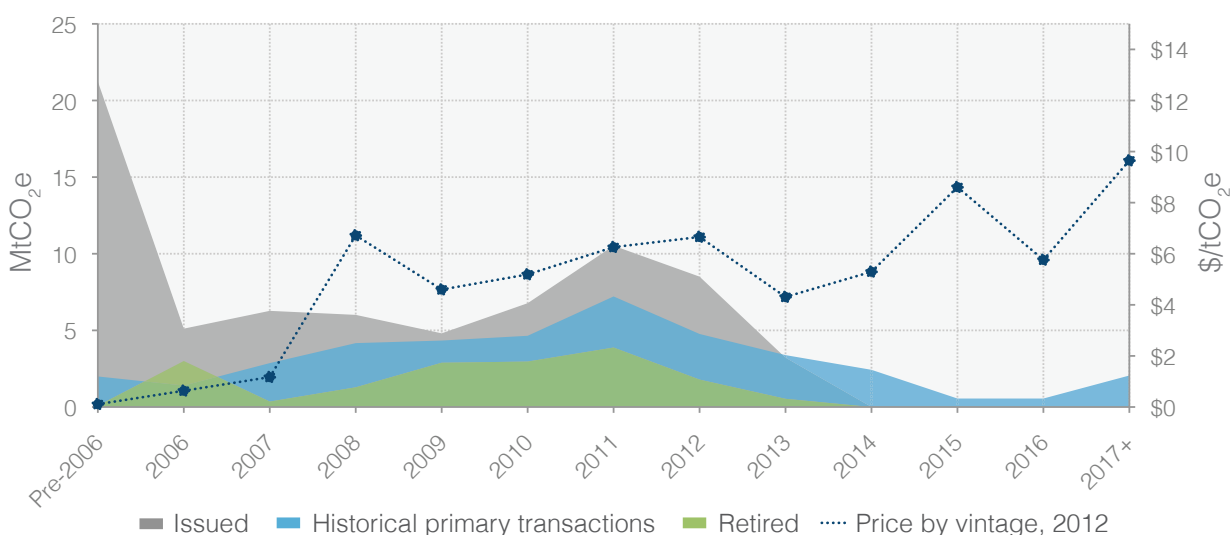
While sales volumes in the North American offset market grew by a slight 1% in 2012, Patrick Pfeiffer, Director of Trading at developer EOS Climate, predicts, **"If the US [economy] continues to recover, you'll**

Table 18: North America by the Numbers, 2012

Reductions / Year	Total, 2012	% Change from 2011
# Survey respondents in region	93	-8%
Volume supplied	23 MtCO ₂ e	-24%
Average price	\$6.7/ tCO ₂ e	+11%
Value	\$151 M	-15%
Volume purchased domestically	30 MtCO ₂ e	+1%

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 50: Issued, Transacted, Retired Volumes (All Years) and Average Price (2012) by Vintage: North America



Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

see a continued increase in voluntary purchases in the US.”

In terms of purely voluntary activity in 2012, a big surprise came in the form of a significant volume of transacted offsets certified through the legacy CCX program, making CCX the third most contracted standard in the region and contributing to an overall rise in volumes last year. A total of 8.3 MtCO₂e of CCX offsets traded

hands, a level of activity driven primarily by voluntary buyers' desire to replenish their portfolios, particularly with offsets valued at an average \$0.1/tCO₂e.

The CCX offset registry remained open in response to customer demand, but there is no longer a legally binding obligation for retirement among the program's original participants. Only seven transaction days occurred in the generally illiquid market last year and

Table 19: North America: Transacted Offset Types and Offset Buyers, OTC 2012

Top Transacted Offset Types, North America-Based Offsets, 2012					
Project Category		Project Stage		Standard Use	
Forestry + Land Use	30%	Issued	66%	CAR	30%
Gases (ODS + N ₂ O)	24.5%	Undergoing Validation	17%	VCS	25%
Methane	24%	Validated	13.5%	CCX	21.5%
Top Buyers of North America-Based Offsets, 2012					
Buyer Locations		Buyer Sectors		Buyer Motivations	
North America	94%	Manufacturing	40%	Pre-compliance	34%
		Events/Entertainment	19%	Climate Leadership	20%
Europe	5%	Energy	16%	Resale, Voluntary	20%

Notes: Based on 53 MtCO₂ associated with either offset project or buyer location. Survey respondents may not answer every question pertaining to buyers – thus percentages pertaining to buyer sector and motivation may not be aligned.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

BOX 3: California Activity Steady, While Prices on the Rise

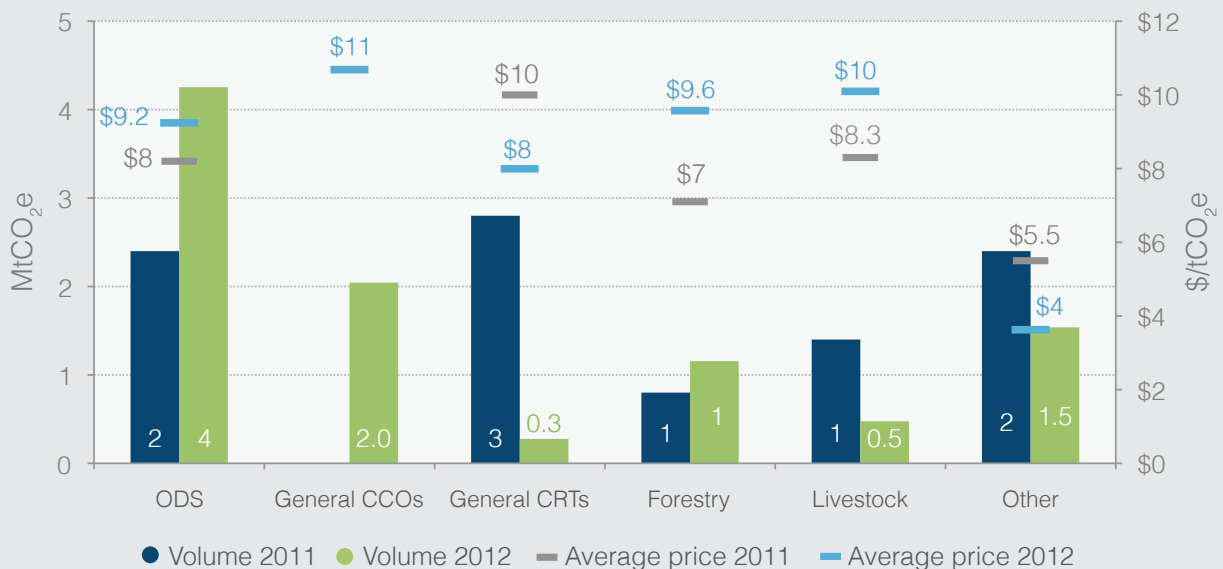
California solidified its environmental credentials in 2006 with the passage of the Global Warming Solutions Act (AB 32), which pledged to reduce the state's GHG emissions to 1990 levels by 2020. A key element of the plan to comply with the landmark legislation was adoption of a cap-and-trade program, the first such comprehensive program in the US. Despite significant challenges, the program officially launched in January 2013 – and with it expectations of increased interest in offsets bound for the California compliance market.

Activity in the offset market for California compliance held steady last year as market designers and participants ensured the program was definitely a “go.” About 9.7 MtCO₂e of pre-compliance offsets were transacted in 2012, just shy of 10 MtCO₂e transacted in 2011. But the prices for California offsets are climbing, with the total value of these offsets increasing by about \$6 million last year while the average price rose by an average \$1.3/tCO₂e.

Technical, legal challenges prevent California growth

Three key factors stunted growth in California offset transactions in 2012: a lack of clarity about the process for converting or establishing official California offsets; the buyers' liability provisions that California regulators have insisted on attaching to compliance offsets; and a lawsuit filed by Citizens Climate Lobby and Our Children's Earth Foundation challenging the cap-and-trade program's offset protocols. But recent developments have cleared the way for a boost in California compliance offset activity in 2013, including a judge's dismissal of the petition challenging the California Air Resources Board's (ARB's) approach to determining offset project additionality in January. *(Continued on next page.)*

Figure 51: Change in Transacted Volume and Average Price, California Offset Types, 2011-2012



Notes: Based on 9.7 MtCO₂e associated with California pre-compliance demand. '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 coal mine and waste water methane, CAR agricultural N₂O, and landfill methane from multiple standards.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Box 3: Continued

California regulators also made some progress in the development of the offset program. In December, the ARB designated both ACR and CAR as offset project registries ("OPRs") and Early Action Offset Programs ("EAOPs"), allowing the two programs to issue offsets under the ARB compliance offset protocols and early action quantification methodologies, although these Registry Offset Credits and Early Action offsets must pass through several additional hurdles post-issuance, before becoming valid compliance instruments. The ARB also dissolved some market uncertainty in 2012 when it released desk verification guidelines – approving verifiers and establishing a computer system for tracking offsets.

The buyers' liability provisions remain an issue for the California pre-compliance market. Under these provisions, regulated entities that surrender offsets for compliance can be held accountable for faulty or fraudulent offsets. If the ARB invalidates the submitted offsets, the entity will once again face a compliance obligation, which brokers say has been a major reason offsets have been discounted compared to allowances.

The invalidation risk has led to the emergence of different grades of offset contracts. California Carbon Offsets ("CCOs") are offsets issued by the ARB under regulation-based offset protocols. For "Golden" CCOs, the seller retains the responsibility to replace any invalidated compliance offsets. Meanwhile, early-action offsets are generated under four ARB-approved early action quantification methodologies (generating Early Action Offsets either as Climate Reserve Tonnes or "CRTs", or ACR Emissions Reduction Tonnes or "ERTs") that are eligible to be converted into ARB-issued offsets after a desk review. CRT deals have dominated in the past, but brokers reported a growing volume of transacted CCOs in 2012 at substantially higher prices (Figure 51).

ODS remains top choice for California pre-compliance

The destruction of ODS sourced from domestic material remains the preferred project type for those looking for pre-compliance California offsets. Buyers are reassured by the quality and accuracy of the emissions reductions created by these projects, a critical consideration when regulators retain the right to force buyers to replace invalidated credits. ODS developers are hopeful that the ARB will support the eventual inclusion of ODS sourced from developing countries, but destruction projects sourced with foreign material are currently ineligible. In 2012, 4 MtCO₂e of ODS pre-compliance offsets were transacted at an average \$9.2/tCO₂e – a 13% increase in price and twice the volume dealt in 2011.

Livestock activity slight, but pipeline looks strong

Pre-compliance transactions of offsets from livestock methane projects remained small, behind only 0.5 MtCO₂e of transacted offsets last year, but future activity is expected to rise with suppliers reporting an anticipated 14 MtCO₂e in their five-year pipeline (Figure 53). With California's offset market projected to be short in future years, demand for livestock offsets is likely to increase substantially, though they are disadvantaged as small projects that need to be aggregated to form meaningful volumes.

Forestry offset prices, pipeline on the rise

Transaction volumes for IFM offsets bound for California buyers grew 44% last year, buoyed by a price increase of an average \$1.3/tCO₂e over 2011. By several accounts, forestry projects may produce the most volume long term, as well. IFM project developers reported the largest 5-year pipeline, expecting to generate 42 MtCO₂e of offsets in 2013-2017. Forestry offsets currently comprise 54% of expected volumes from projects already registered to CAR, while another analysis from ACR estimates that forestry has sufficient technical capacity to generate the program's largest offset volumes over the same period (Figure 52). Urban forestry is the fourth approved project type for California's program and a project by the City of Santa Monica to add 1,000 trees was listed with CAR last year. Because urban forestry projects are costly and challenging for developers, however, the protocol is not expected to produce a significant number of offsets for California's compliance program. *(Continued on next page.)*

Box 3: Continued

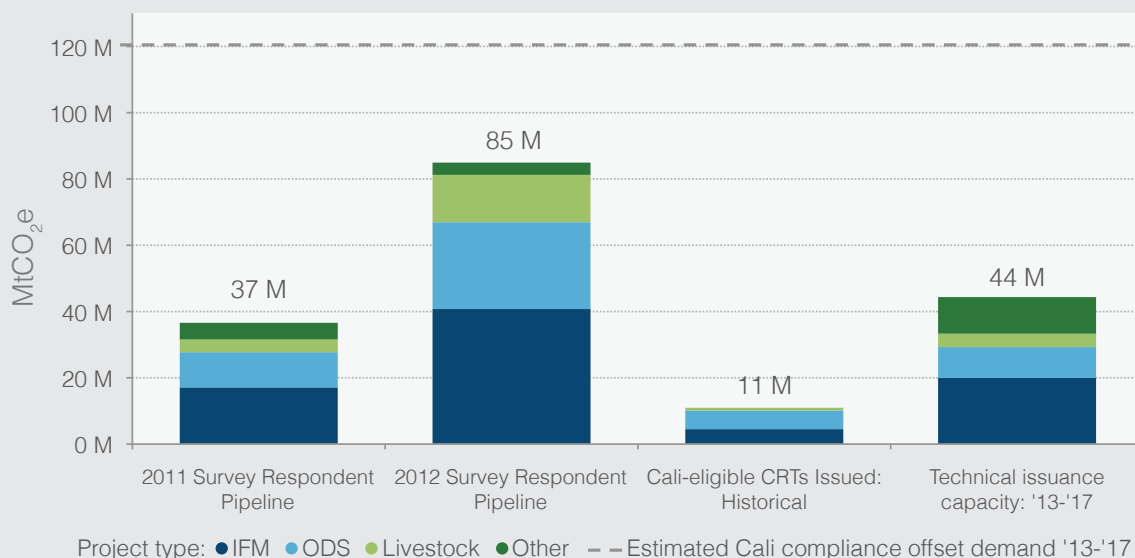
Project types on the California horizon?

As seen in Figure 52, suppliers' projected pipeline from 2013-2017 (85 MtCO₂e) is significantly higher than what ACR analysts estimate to be projects' technical capacity to bring offsets to market (44 MtCO₂e over the same period) – and well below the volume that compliance entities can actually surrender over those five years (120 MtCO₂e total). A few market participants point out, however, that not all compliance entities are likely to use their entire allowable volume of offsets, as small to medium-sized companies in particular may find the allowance market more accessible and less confusing. They may also have less internal capacity than large emitters to actively engage in the offset market.

For those companies that are concerned about the risk of offset undersupply, the board recently announced its consideration of protocols for rice cultivation and coal mine methane capture projects for future program use, and most observers believe it is likely that the two protocols will be approved in some form. ACR's estimate includes prospective "other" new protocols in the coal mine methane capture and rice cultivation categories. Transactions are occurring for coal mine methane projects ahead of possible approval by the ARB, and while no deals were reported for rice projects in 2012, Ecosystem Marketplace has tracked a few projects being piloted under both CAR and ACR programs.

However, the overall price and volume for offsets other than the approved project types both declined in 2012. Developers say it is hard to justify investing in potential compliance protocols, given the ARB's track record of considering, but ultimately declining acceptance of certain project types – as well as the snail's pace of the approval or disapproval process. For example, in 2012 the ARB ultimately decided not to proceed with an oil/gas fugitive emissions protocol (e.g., retrofitting of high-bleed pneumatic device) that it had been considering since the sector will be capped in 2015. ***"If it's not approved by the [ARB], we're not taking the risk that it might be," says TerraPass CEO Erin Craig.*** (Continued on next page.)

Figure 52: Projected California Offset Demand and Supply, Supplier-Reported, CAR Registered Projects' Offsets Pipeline, and ACR-Estimated Technical Capacity for Emissions Reductions, 2013-2017



Notes: Based on 86 MtCO₂e associated with survey-reported California compliance offset project pipelines. "Other" includes coal mine and waste water methane; CAR agricultural N₂O and landfill methane from multiple standards. California-eligible CRT issuance, retirement and estimated annual reductions supplied by CAR. Technical issuance capacity estimates provided by ACR and elaborated in the standard's 2012 report, "Compliance Offset Supply Forecast For California's Cap-and-Trade Program (2013-2020)".

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Box 3: Continued

In September, Tierra Resources' carbon offset methodology for delta wetland restoration was approved by the ACR. Utility Entergy Corp, through its environmental initiatives fund, paid for the methodology as well as the first pilot project to discharge treated municipal wastewater to help restore the wetland's function and increase carbon sequestration. The wetlands methodology pilot focuses on the Mississippi Delta, but work will begin soon to expand the protocol to California. ACR and Tierra hope to complete and publish the protocol within 12 to 18 months from project inception. "We're hoping it will increase the business case for investment into the wetlands," says Sarah Mack, President and CEO, Tierra Resources.

REDD offsets still a long way off

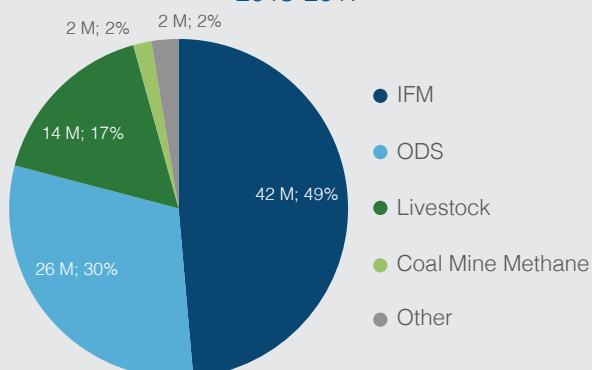
Project developers report that nearly 36 MtCO₂e of REDD offsets are being developed targeting North American compliance programs. The ARB has so far indicated that the only sources of acceptable REDD offsets would come from Acre, Brazil, and Chiapas, Mexico, two areas with which the state has a memorandum of understanding, and those offsets could come into the program as late as 2017-18, as the ARB still has to finalize the regulations governing international offsets.

Carbonfund.org Foundation developed the first VCS plus CCB-validated REDD project in Acre, which contracted its first offsets to UK-based voluntary offset retailer The CarbonNeutral Company in early 2013. ***"We're hopeful California will accept international REDD projects, which would be a huge plus for the REDD markets and shows the influence California has on the voluntary markets," says Brian McFarland, Director of Carbon Projects and Origination.***

Potential legal challenges remain an area of uncertainty for the California program. In November, the California Chamber of Commerce filed a lawsuit to invalidate the state's first official auction by claiming that the ARB exceed its authority under AB 32 in conducting auctions that raise revenues for the state.

But with the program officially up and running, most market participants say that offset buyers understand that some of these environmental markets will always have regulatory or legal risks and are fairly comfortable with the idea that California's cap-and-trade program is here to stay.

Figure 53: Survey Respondents' Estimated 5-Year California Offset Pipeline by Project Type, 2013-2017



Notes: Based on 86 MtCO₂e associated with survey-reported California compliance offset project pipelines. "Other" includes coal mine and waste water methane, CAR agricultural N₂O, and landfill methane from multiple standards

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

the bulk of offset volumes were contracted by parties offsetting their carbon footprints, explains Stephen McComb, Manager of North American markets for CCX administrator IntercontinentalExchange.

Landfill gas projects, once sought for their potential acceptance into a US state or federal cap-and-trade program, lost their luster for pre-compliance buyers since California regulators confirmed that they would not be permitted. US buyers purchased 2.8 MtCO₂e of landfill project offsets last year, representing 13% of US project type market share and valued at roughly \$6.8

million – but down from 2011's 3.4 MtCO₂e valued at \$15 million.

The escalating prices commanded by California-eligible offsets – including ozone depleting substance (ODS) destruction, forestry, and livestock methane projects developed to CAR protocols – pushed some voluntary buyers away from these historically "go-to" project types. In their place, buyers turned their attention to other project types like US-based wind installations, transportation, A/R, energy efficiency, and N₂O management.

Understanding that pre-compliance offset transaction volumes again hovered around the 10 MtCO₂e mark, remaining demand from North American buyers (19.8 MtCO₂e) was motivated by voluntary climate action. As seen in Table 19, the most prominent voluntary actors were those companies desiring to demonstrate climate leadership within their industry or at a policy level. Almost one third of North American offset demand was attributed to multinational corporations, which were behind \$38 million of offset market value.

US-based buyers have reportedly developed a more positive and sophisticated attitude toward offsets – with the launch of the California market and recent rejection of a lawsuit challenging the state's use of offsets clearing the way for a more supportive stance toward offset projects.

“They [offsets] are no longer being trashed in the press, they’re being defended,” says Erin Craig, Chief Executive Officer of developer TerraPass, when describing North America’s changing market dynamic.

In Canada, forestry projects accounted for more than half of the region's relatively scarce offset market activity. Canada's offset market may grow in coming months, primarily in response to the planned link between California and Quebec's cap-and-trade systems via the Western Climate Initiative (WCI). In April 2012, California governor Jerry Brown signed off on the proposed linkage, which the California Air Resources Board (ARB) is scheduled to finalize in June 2013.

While this survey did not track any pre-compliance offset activity in Quebec in 2012, that could change this year, says Lenny Hochschild, managing director for brokerage Evolution Markets. Provincial regulators have approved for compliance use an ODS offset project type, as well as offsets from methane capture at manure storage and landfill facilities. Analysts note that offset demand from regulated entities in Quebec will be significantly smaller than among entities in California.

British Columbia remains a member of WCI, Inc. (successor to the Western Climate Initiative), but is not as far along in plans for a possible regional linkage. In the province, late 2012 was marked by a controversial audit that criticized the credibility of offsets purchased by the Pacific Carbon Trust for use in the region's Carbon Neutral Government program. The British Columbia Office of the Auditor General's report questioned the provincial government's carbon neutrality claims, an argument that was rejected by the Ministry of the Environment and organizations such as the VCS and Offsetters Climate Solutions. David Rokoss, Director of

Corporate Development for Offsetters, attributed the dispute to politics, in anticipation of the May 14 provincial election, and says that his company has not “had any fallout from it.” He explains, “Companies and groups we deal with had a couple of questions, but understand the projects much better than the auditor did.”

5.5 Latin America: REDD Rebounds But Prices Lag

With several Latin American countries taking different routes to reach a low-carbon economy, it is no surprise that 2012 heralded several regional shifts regarding volume, price, standards, policies, and more. The volume of offsets transacted from Latin America-based projects remained steady at 7.3 MtCO₂e, while a 27% drop in the region's average offset price led to a \$21-million decrease in overall value.

Despite this lower market value, Latin American project developers reported a banner year for REDD projects, as the global forest carbon scheme mobilized project and policy developments in countries like Mexico, Brazil, Colombia, Peru, and Chile and sparked amplified interest in REDD among the private and public sectors. Overall, forestry and land-use project offsets were behind 58% of all regional transactions.

Representing a significant shift in Latin American project activities, the region's second most popular project type was clean cookstove distribution. A full 28% (1.6 MtCO₂e) of all clean cookstove project offsets were transacted from Latin America-based projects in several country locations including Peru, Haiti, El Salvador, Guatemala, and Honduras. This is a significant uptick in the number of Latin American

Table 20: Latin America by the Numbers, 2012

Reductions / Year	Total, 2012	% Change from 2011
# Survey respondents in region	43	No Change
Volume supplied	7.3 MtCO ₂ e	+1%
Average price	\$8.3/ tCO ₂ e	-27%
Value	\$61 M	-25%
Volume purchased domestically	0.3 MtCO ₂ e	-81%

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

clean cookstove projects that successfully tapped into carbon finance – with 2012 being the first survey year we have sufficient data to report these market activities.

On the forestry side, 2012 saw Latin American governments form closer ties with independent standards such as the VCS, ACR, and CCB Standards. ACR claimed its first verified forest carbon project in Latin America with Brazil's Boa Vista A/R project. Other standards also expanded their regional footprint, with the VCS reporting new validations for both forest and energy projects in Belize, Brazil, Chile, Peru, and Uruguay.

Overall, 63% of transacted offsets employed VCS, three fourths of which were combined with CCB certification – a substantial contrast to 2011, when only 47% of transacted offsets used the VCS. A full 89% of transacted forestry offsets were reported alongside an independent standard in 2012 compared to 67% in 2011. As more projects are validated and verified by independent standards in Latin America, market participants expect a gradual trend toward their use.

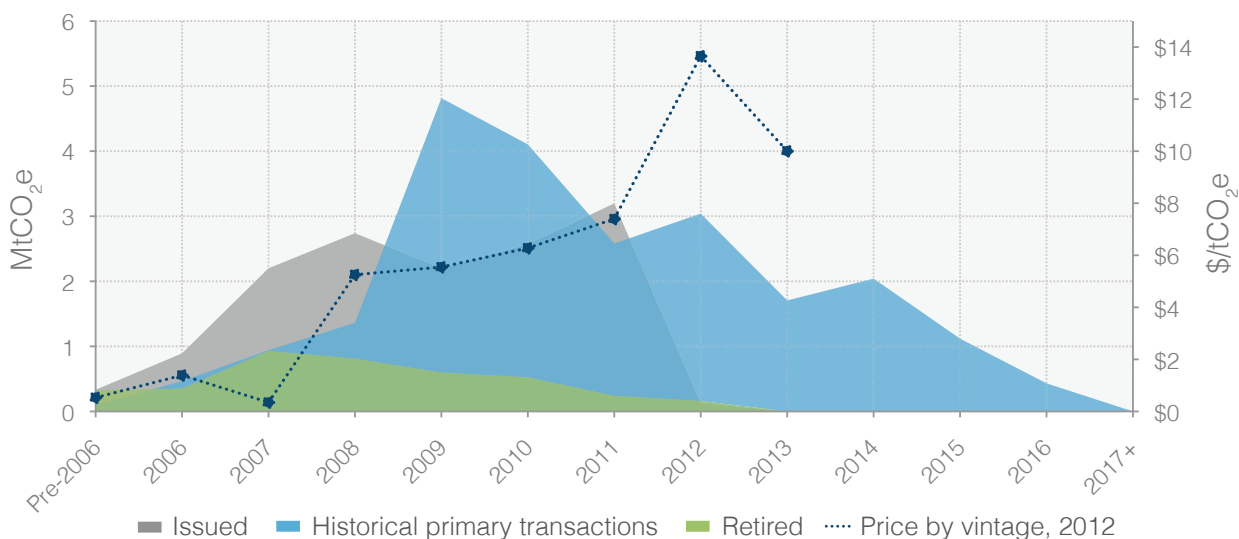
On the policy front, Latin American countries including Colombia, Costa Rica, and Chile are moving ahead with proposals to develop domestic carbon schemes and to potentially seek regional linkages with the support of the VCS and World Bank's Partnership for Market Readiness ("PMR"). Costa Rica advanced the development of its C-Neutral Standard and voluntary carbon market in 2012, in pursuit of carbon neutrality by

2021. The country's program will initially be voluntary as it builds capacity to potentially impose sectoral emissions caps in future. In the meantime, voluntary offsets for the program can be developed in the energy, transportation, agriculture, solid waste management, and sustainable construction sectors – and to a variety of standards including VCS, The Gold Standard and Costa Rica's own Costa Rica carbon offset units.

In 2012, Colombia-based Fundacion Natura also took a first step in domestic program development when it partnered with VCS to jointly establish the necessary framework for a Colombian voluntary carbon market. Fundacion Natura's Roberto Leon Gomez explains that the Colombian Low Carbon Development Strategy is trying to involve the transportation sector, cement plants, and cattle ranching businesses by promoting different channels – including carbon offsetting – for reducing emissions. **"Companies in Colombia are now starting to understand the advantages of getting involved in the early stages of development of a carbon market,"** he says and is optimistic that Colombian companies' desire for domestic projects will spur demand.

The Santiago Climate Exchange (SCX) continued to support domestic capacity for carbon management as the country compiled its submission to the PMR that includes a strongly suggested exploration of domestic offset potential for a future emissions trading schemes. Most recently, SCX launched a mechanism to pair a future vintage reduction (via forward contract) with an

Figure 54: Issued, Transacted, Retired Volumes (All Years) and Average Price (2012) by Vintage: Latin America



Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Table 21: Latin America: Transacted Offset Types and Offset Buyers, OTC 2012

Top Transacted Offset Types, Latin America-Based Offsets, 2012					
Project Category		Project Stage		Standard Use	
Forestry + Land Use	58%	Issued	45%	VCS	63%
Household Device Distribution	24%	Validated	44%	The Gold Standard	25%
Renewables	14%	Verified (not yet issued)	8.5%	CCX	8%
Top Buyers of Latin America-Based Offsets, 2012					
Buyer Locations		Buyer Sectors		Buyer Motivations	
Europe	47%	Carbon Market	54%	Resale, Voluntary	31%
Oceania	26%	Tourism	16%	Resale, Pre-compliance	26.4%
North America	19%	Retail Product Market	14%	Climate Leadership	15%

Notes: Based on 7.6 MtCO₂ associated with either offset project or buyer location. Survey respondents may not answer every question pertaining to buyers – thus percentages pertaining to buyer sector and motivation may not be aligned.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

existing, inexpensive issued unit to address buyers' desire to catalyze new project development while still being able to make immediate and credible claims to carbon neutrality.

All of these programs accommodate international investment and demand for domestic offsets, but have primarily focused on building capacity for domestic offset purchases and project development. It is currently unclear to what extent such discussions will influence domestic offset demand in the short-term. Buyers of Latin American offsets – primarily from projects in Peru (3.4 MtCO₂e) and Brazil (2.5 MtCO₂e) – sought these regional offsets mainly for resale to purely voluntary and future compliance end users in Europe and Oceania, while North American companies were behind a slight 19% of all Latin America offset transaction volumes. At the same time, domestic demand fell to less than 1 MtCO₂e, region-wide.

The year 2012 also saw the Brazilian state of Acre and Mexican state of Chiapas still taking steps to formalize joint environmental goals with the US state of California. News surrounding California's stance on accepting international, sector-based offsets (beginning with REDD, which could be acknowledged starting in 2015) piqued the interest of international actors last year.

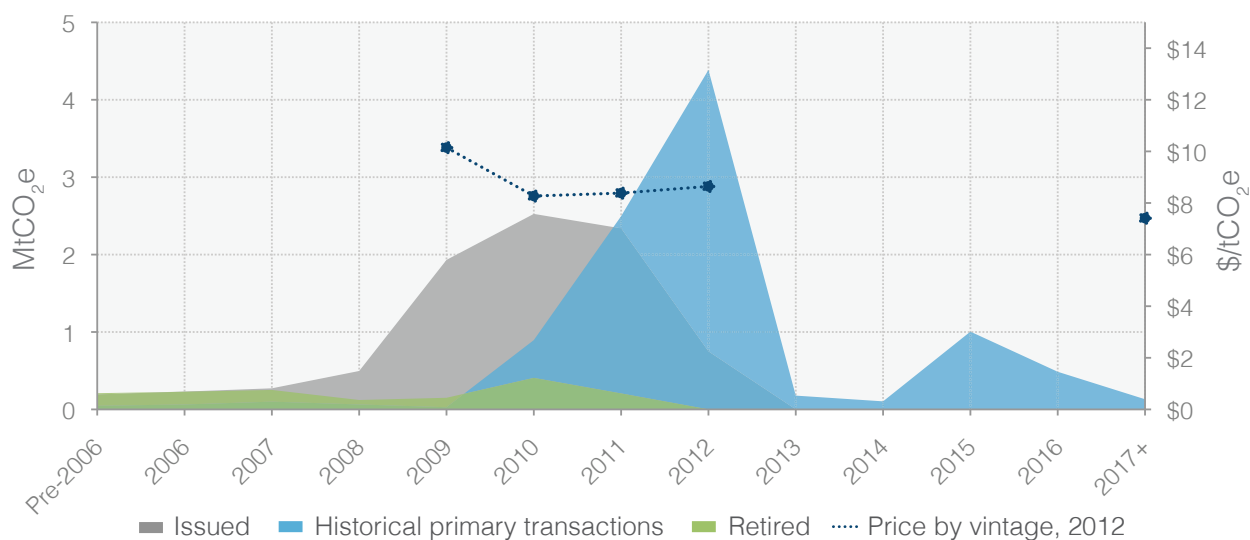
California's policy has received mixed reviews from both foreign and domestic stakeholders. Indigenous communities from Latin American states have voiced support, opposition, and indecisiveness about the REDD offsets program through testimony, letters, and meetings with the ARB. Meanwhile, the REDD Offsets Working Group released a report on various architectural options for REDD in California's program in early 2013 which it will pass on to all three sub-national governments for review in the coming months.

Table 22: Africa by the Numbers, 2012

Reductions / Year	Total, 2012	% Change from 2011
# Survey respondents in region	20	+67%
Volume supplied	8 MtCO ₂ e	+4%
Average price	\$8.3/ tCO ₂ e	+6%
Value	\$66 M	+10%
Volume purchased domestically	<1 MtCO ₂ e	-96%

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 55: Issued, Transacted, Retired Volumes (All Years) and Average Price (2012) by Vintage: Africa



Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

5.6 Africa: Record Activity, Regulations Move Market Forward

Offsets transacted from Africa-based projects reached new heights in 2012, benefitting from intensifying buyer interest in supporting projects with strong additional benefits to the region's ecology and communities. Last year, African project offset transactions were valued at \$66 million as the average price for the region's record activity (8 MtCO₂e transacted) rose slightly to \$8/tCO₂e.

As a region, Africa has traditionally played a small role in the CDM, where project development historically favored least-cost development of large-scale projects in China, India, and Brazil. Registered Africa-based CDM projects make up 3% of all CDM registrations, globally. This may change, following the EU's decision to only allow new project registrations from Least Developed Countries ("LDCs") after 2013, with a few exceptions. The going compliance price for CERs, however, does not exactly inspire new project development.

The voluntary market for carbon offsets is slightly kinder to Africa-based activities, where these projects have historically made up 3% of the VCS project portfolio and an even larger 8% from The Gold Standard. Looking at offset issuance by region, African projects

were behind 4% of all VCS issuances and 18% of Gold Standard volumes.

In 2012, both programs reported significantly sized projects in the region, harnessing two mechanisms – REDD (VCS) and the suppressed demand⁷ baseline approach (The Gold Standard) – that introduce the potential for massive offset generation from non-industrial sources. VCS saw the verification of offsets generated from its largest REDD project to date – the Mai Ndombe project in the Democratic Republic of the Congo ("DRC"), which has the potential to generate and issue over 5 MtCO₂e annually. The Gold Standard likewise saw another large issuance from the LifeStraw water filtration distribution project that employs suppressed demand to account for annual emissions reductions. Since verifying offsets in 2011, the project is capable of issuing 2.1 MtCO₂e annually and so far actually issued 2.7 MtCO₂e in 2011-12.

Africa is also the only region where both Gold Standard-certified and regular CERs make the "top three" list of guiding standards behind transacted offsets. In most cases, surveyed project developers reportedly used the CDM versus going straight to a voluntary market-only standard in order to keep a foot in both marketplaces – in case compliance market CER prices got a boost from any EU decision to restrict offset supply. Some developers reportedly contracted a proportion of their

⁷ See Ecosystem Marketplace's 2012 *State of the Voluntary Carbon Markets* report for a description and discussion around suppressed demand available here: http://www.forest-trends.org/publication_details.php?publicationID=3164

Table 23: Africa: Transacted Offset Types and Offset Buyers, OTC 2012

Top Transacted Offset Types, Africa-Based Offsets, 2012					
Project Category		Project Stage		Standard Use	
Household Device Distribution	59%	Issued	84%	The Gold Standard	63%
Forestry + Land Use	32%	PDD	7%	VCS	31%
Energy Efficiency and Fuel Switching	8%	Validated	6%	CDM/CDM + The Gold Standard	4.7%
Top Buyers of Africa-Based Offsets, 2012					
Buyer Locations		Buyer Sectors		Buyer Motivations	
Europe	85%	Transportation (aviation, Rail, Rental)	40%	CSR	37%
North America	14%	Carbon Market	17%	Climate Leadership	20%
Oceania	1%	Energy	14%	Resale, Voluntary	20%

Notes: Based on 7.6 MtCO₂ associated with either offset project or buyer location. Survey respondents may not answer every question pertaining to buyers – thus percentages pertaining to buyer sector and motivation may not be aligned.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

portfolio to buyers in both markets (with the smaller proportion going to voluntary buyers), while others turned their attention squarely to the voluntary offset market, where they took a hit in terms of transaction volumes. In all cases, the majority of CERs associated with this volume (less than .5 MtCO₂e) were from clean cookstove projects.

As in Latin America, Africa is a region where the volume of offsets transacted outpaces the volume of offsets verified and issued on a registry. As seen in Figure 55, this equates to 5.5 MtCO₂e that has not yet been issued or retired but was transacted by project developers for future delivery. Of this, 1 MtCO₂e was contracted in 2012 – and primarily for reductions occurring in 2012 that were soon to issue. The remainder was forward-contracted by project developers in previous years. As seen in Figure 55's 2012 per-vintage average price, Africa-based projects did not see significant demand for future offset delivery, due in part to dynamics discussed in Section 4.6.

Africa-based offsets were primarily transacted to European buyers, of which a growing proportion was end users motivated by CSR and climate leadership (Table 23). In contrast to the 2011 marketplace, when Africa's largest buyer was the European offset retail market, in 2012 a larger volume of offsets were sold

by retailers to end users as supply became available. Likewise, the volume of offsets supplied by project developers fell from 6 MtCO₂e in 2011 (79% of transacted volume) to 4.7 MtCO₂e in 2012 – or 60% of all transacted offsets from African projects.

Alongside the African offset market's quickening pace of development, decision-makers in the region significantly boosted the region's offset policy profile. Throughout 2012, the South African government contemplated allowing the surrender of offsets from South Africa-based VCS, Gold Standard, and CDM projects against compliance obligations under its draft national carbon tax. In mid-2013, the government released a draft policy discussion paper that included this provision.

The paper, which references the voluntary offset market's performance over time (including findings from this report series), states, "Carbon offset projects can... potentially generate sustainable development benefits within South Africa, including channeling capital to projects that facilitate rural development, create employment, restore landscapes, reduce land degradation, protect biodiversity, and encourage energy efficiency and low carbon growth."

"Offsets will play a considerable role in South African carbon pricing by placing least cost mitigation

options directly in the hands of taxpayers” observes domestic offset retailer Promethium Carbon’s Harmke Immink. **“A hybrid carbon tax/trading mechanism is innovative and places South Africa at the forefront of developing carbon pricing options.”**

The discussion draft notes that a policy paper elaborating the tax’s offset provisions will be released later in 2013. The existing draft states that eligible project activities could include forestry and land-use, waste, community-based and municipal energy efficiency and renewable energy, electricity transmission and distribution efficiency, small-scale renewable energy (up to 15 MW), and transport projects – and potentially rejects the eligibility of industrial gas project offsets.

As of mid-2013, the VCS project database reports two registered South Africa-based projects that have issued offsets (out of 6), while another 13 projects have been registered to The Gold Standard. The CDM features a significantly larger project portfolio of 41 projects with registered PDDs, 10 of which have so far issued CERs.

5.7 Oceania: Suppliers Operate in the Shadow of Compliance Markets

In 2012, voluntary carbon offset suppliers in Australia and New Zealand reacted to new developments in their respective domestic compliance carbon markets, which are candidates for a future market linkage, yet seemingly divergent in strategy.

While suppliers in New Zealand’s forestry-heavy market struggled to attract domestic demand within

a difficult policy environment, Australian suppliers – also facing significant policy uncertainty – managed an upswing in demand to transact 90% of Oceania’s volume, partly in anticipation of Australia’s \$23/tCO₂e federal fixed price carbon scheme, which launched in July 2012 and will transition to a market-set price after three years. All told, the region supplied 7.3 MtCO₂e of transacted offsets (a >100% increase from 2011) at an average price that was nonetheless lower (\$8.8/tCO₂e) as pre-compliance rather than purely voluntary drivers took hold.

Possibilities for project development under Australia’s government-administered Carbon Farming Initiative (CFI) – focused on Kyoto-compliant abatement in domestic agriculture, forestry, land use – are broadening as methodologies are slowly approved for compliance use. One MtCO₂e in Kyoto and non-Kyoto CFI offsets have been issued to date, drawing primarily from landfill gas, piggery, and waste diversion projects. A number of savannah burning and A/R projects have also been registered in the CFI pipeline.

The first CFI contract was signed in July 2012, when Australian airline Qantas agreed to buy up to 1.5 MtCO₂e in credits from a revegetation project to help comply with the carbon tax, with a small proportion for voluntary use. The agreement fell through in early 2013. While suppliers transacted CFI units to pre-compliance and voluntary buyers, the market generally remained cautious toward large, long-term commitments given the uncertainty created by the upcoming federal elections this September. Suppliers say that the CFI, which enjoys bipartisan support, is most likely around to stay, but CFI demand and terms of project eligibility could potentially undergo dramatic change.

As one Australian market participant explains, **“Depending on the outcome of the next election and how that affects the CFI, it’s possible that, instead of emitters being the main purchaser of compliance-grade credits, the government will become the largest customer in the marketplace and CFI credits will be bought and sold through an open government tender process.”**

Australian buyers took a relatively balanced portfolio approach in 2012, drawing from a mix of 60% of offsets from international projects and 40% from domestic projects approved under the government-administered National Carbon Offset Standard (NCOS), with some limited carbon neutrality claims.

Table 24: Oceania by the Numbers, 2012

Reductions / Year	Total, 2012	% Change from 2011
# Survey respondents in region	24	+4%
Volume supplied	7.3 MtCO ₂ e	+>100%
Average price	\$8.8/ tCO ₂ e	-32%
Value	\$65 M	+>100%
Volume purchased domestically	5.7 MtCO ₂ e	+>100%

Source: Forest Trends’ Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

Domestic project development using independent third-party standards remained quiet due to anticipation around the CFI and the dearth of relevant non-Kyoto land. This did not stop some Australian players from engaging in project development overseas, particularly in Southeast Asia, with an eye to generating larger volumes of offsets at lower costs.

In New Zealand, voluntary offset transaction volume fell by over 50% in 2012. With just 19% of offsets sold to domestic voluntary buyers, both Kyoto units and VERs generated through the country's government-administered Permanent Forest Sink Initiative (PFSI) tapped into a limited stock of offshore voluntary buyers in Canada, Germany, and Japan. Suppliers say voluntary demand has diminished not just by domestic buyers due to restrictive guidelines on offsetting and carbon neutrality claims established by the country's Fair Trading Act of 1996, but also by overseas buyers due to the influx of competing offsets from VCS REDD and other projects.

While selling to the occasional voluntary buyer, New Zealand project developers still rely on business from the domestic compliance market via New Zealand's ETS, which continues to tank the price of domestic offsets with its unrestricted import of low-priced international Kyoto units.

Because New Zealand's government has opted not to participate in the Kyoto Protocol's second commitment period, domestic emitters will no longer be able to access Kyoto units starting 2015. While it is unclear what emissions reduction target the government will pursue in place of its Kyoto target, suppliers anticipate that the scrapping of Kyoto units could help recover domestic prices. Price recovery will also depend on how heavily the government intends to influence pricing starting 2015 – whether through auctioning limits to influence supply or through price support measures like a floor price.

Although the PFSI has revolved around the issuance of Kyoto units (AAUs) to date, New Zealand's Ministry of Primary Industries has committed to run the PFSI independently of Kyoto. Landowners working within PFSI have a termination right to exit their 50+-year covenants with the Crown by June 30 this year. While some may exit, others await clarity on what type of new domestic compliance unit will replace PFSI-generated Kyoto units. The Ministry is slated to provide guidance by year end on whether suppliers can claim domestic compliance units under the PFSI starting 2014 or whether AAUs will still be issued until 2015.

To bolster the value of their offsets in the meantime, some suppliers are considering a divide-and-conquer method whereby they sell current vintages of compliance units into voluntary markets, while pushing older vintages to compliance buyers.

“There is also some interest to convert compliance units into some kind of voluntary credit to be traded on a voluntary registry,” says Ollie Belton, Analyst at Permanent Forests New Zealand, noting that the price spreads between VERs and NZ units [NZUs and NZ AAUs] would likely need to be greater before conversion would make sense.

“Right now it's a lot of ambition, time and money without guaranteed payback, so it's really unclear as to whether it's worth it.”

5.8 EU and Non-EU Europe: EU Demand Soars, Turkey Standards Shift

While the EU's participation in the Kyoto Protocol prevents regional suppliers from generating offsets, voluntary buyers in EU member countries have become the largest source of demand for the vast majority of the developing world's offsets. EU-based firms provide project finance and/or offset demand for suppliers in every region – including a small proportion of offsets from North America – at a pace that is ever growing. In 2012, EU-based buyers were the source of 40% of OTC offset market value. European offset suppliers transacted one third of all offsets transacted world-wide, representing 38% of overall market value (\$196 million).

European offset demand grew 34%, from 33 MtCO₂e in 2011 to 43.4 MtCO₂e in 2012. A full half of these

Table 25: Europe by the Numbers, 2012

Reductions / Year	Total, 2012	% Change from 2011
# Survey respondents in region	83	-8%
Volume supplied	1.5 MtCO ₂ e	+3%
Volume purchased domestically	\$43.4/ tCO ₂ e	+34%
Value of domestic purchased	\$205 M	

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

offsets were sourced from projects in Asia (almost all renewable energy) with another 9% (4 MtCO₂e) from Africa-based projects. EU-based suppliers say that the region's continued and predominant demand for renewable energy project offsets is largely attributable to the "portfolio" approach to fulfilling offsetting commitments, as described in sections 2.1 and 4.2. Even before renewable energy offsets were as low-priced as they are in today's marketplace, however, the EU was the prominent buyer location.

Just over half (52%) of all offsets transacted to EU-based buyers in 2012 were sold to carbon offset retailers – who either re-sold the offsets under new contracts or procured offset volumes to fill existing client needs. While most of these contracts were with buyers located within close range, a few EU retailers reported stepping up their work in other regions with emerging markets.

Particularly as North American buyers like Microsoft begin to consider international offsets – reflecting their multinational environmental footprint – EU-based suppliers say the US market in particular is catching the attention of retailers in search of new sources of demand. A few suppliers interviewed for this report noted that the EU market has heavily relied on a few prominent multi-year contracts with large companies that are due to run out. Suppliers are concerned that those buyers might allocate their CSR resources to activities other than offsetting in the future.

Despite these concerns, purely voluntary offsetting by end users motivated 18 MtCO₂e of volumes transacted in the region – most of that supplied by EU-based suppliers. Of this volume, buyers sought 6 MtCO₂e to make good on their CSR commitments. Close behind, another 5.4 MtCO₂e was purchased to demonstrate climate leadership within buyers' industries or – according to suppliers – to demonstrate action in the face of the region's weak response to its faltering carbon price.

"The EU voted against putting pressure on EU enterprises, which led to less upward pressure on the carbon price," explains Bertrand Ramé of French retailer Love the World. "As a result of this decision, corporations that are willing to do something meaningful about their emissions will have to do it voluntarily – through the voluntary offset market." Retailers expect this motivation will become stronger in coming months.

Due to technical limitations to regional supply, a small proportion of the world's offset were sourced from EU-based projects. The vast majority of the 1.5 MtCO₂e

transacted from European projects was from methane projects in Germany that were registered with the Chicago Climate Exchange ("CCX") in the first half of the last decade – before the Kyoto Protocol came into force. These offsets were included among the CCX's handful of large, low-priced transactions to US-based buyers in 2012 (along with several other non-US project locations).

Though the region is limited in its ability to generate offsets, the UK's Woodland Carbon Code – administered by the UK Forestry Commission to incentivize woodland creation – supports the creation of a per-tonne unit that UK-based companies can purchase as an environmental credit. The UK Department for Environment, Food and Rural Affairs (DECC) allows UK companies to claim any support for Woodland Carbon Code projects against their annual emissions reporting – the lone case of a national government allowing voluntary offsetting claims against mandatory emissions reporting.

In response to this opportunity, the UK Forestry Commission has engaged with Markit Environmental Registry to chart a course for moving away from the program's internal registry system and instead host the Woodland Carbon Units (WCUs) on Markit's platform. This report survey tracked a smaller volume of WCUs contracted in 2012, presumably related to a lower program response rate.

Turning to non-EU member offset supply locations in Europe, Turkey was the region's primary source of offset supply – and the 7th largest source of offsets globally. Transaction volumes from Turkey-based projects nonetheless fell by 31% in 2012, as a function of competing lower-priced renewables from Asia-based projects, as well as buyers' shift in attention to

Table 26: Non-EU Europe by the Numbers, 2012

Reductions / Year	Total, 2012	% Change from 2011
# Survey respondents in region	8	+100%
Volume supplied	3.2 MtCO ₂ e	-31%
Average price	\$5/ tCO ₂ e	-42%
Value	\$16 M	-60%

Source: Forest Trends' Ecosystem Marketplace.
State of the Voluntary Carbon Markets 2013.

new locations and sources of supply for Gold Standard offsets. In 2012, we also did not track offset volumes from a relatively sizeable market participant that had responded in previous years. Had they reported the same volume as in 2011-12, market volume still would have fallen by 16%.

The voluntary offset market in Turkey experienced several significant changes in 2012, which influenced the region's falling price and project composition. While Turkey has traditionally been a source of Gold Standard wind and, in recent years, some hydropower offsets for EU-based buyers, in 2012 a larger volume of offsets were sourced from VCS projects in the country and at prices that significantly weighted down the regional average.

In 2012, the region's share of Turkey-based offsets transacted from Gold Standard projects fell from 72% (3.2 MtCO₂e) to 56% (1.8 MtCO₂e). Offsets from Turkey's Gold Standard projects sold for an average \$7.2/tCO₂e – significantly higher than the regional average, which was pulled down by another 1.4 MtCO₂e of transacted VCS offsets priced at an average \$2/tCO₂e.

Last year, Turkey-based offset suppliers expressed concerns about the increasingly large volume of offsets that were eligible for issuance from hydropower projects. Indeed, the region's mix of transacted

project types also changed with the growth in VCS market share. Large hydro projects, which occupied a 2% share of Turkey-based offsets in 2012, grew their market share to 14% in 2012. Hydropower projects of all sizes supplied 1.3 MtCO₂e of transacted offsets from Turkey – up from 0.8 MtCO₂e in 2011. Gold Standard offset project developers in the region also complained about a “bottleneck” in new Gold Standard project approval. Notes one offset supplier, “We had to turn down a lot of demand last year because there were simply no new credits issued.”

These changes in Turkey's market dynamic come at a sensitive time for the region, as Turkey's government contemplates the development of a national MRV framework and potential establishment of a domestic emissions trading scheme to impact the energy sector. Turkey has been closely engaged with tracking and registering voluntary offset projects, as the only real carbon market in the non-EU member country.

Turkey's recent proposal submission to the PMR state that the country desires to harness the lessons learned from its voluntary markets experience to inform a domestic ETS and sector mitigation. In particular, the government has expressed its desire to “link current VCM projects with any future market-based mechanisms in order to let emissions reduction projects continue to benefit from new market(s).”



6. Projections

Striking a New Balance



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

6. Projections: Striking a New Balance

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 continued to unfold over the six months that we collected data and compiled 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 to report their future plans at the project level.

6.1 Suppliers' Market Projections: Summary

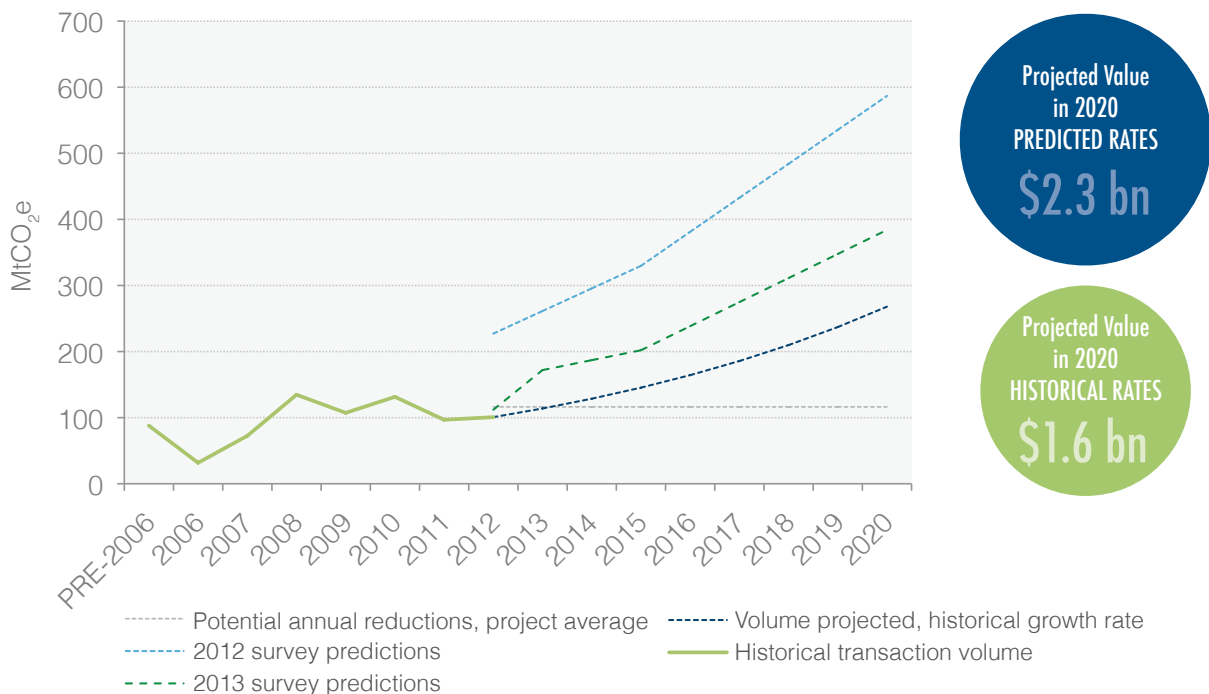
Projects that successfully contracted offsets in 2012 could potentially reduce 54–295 MtCO₂e/year; or 430–2,360 MtCO₂e cumulatively over the next eight years, according to projects' estimated annual reductions. Based on the 2012 average price for voluntary offsets (which is also the historical average price) of \$5.9/

tCO₂e, supporting emissions reductions from existing projects could carry a price tag of \$319–\$1,741 million per year.

This does not account for projects that might exit the market, as discussions with offset suppliers indicate that project developers will indeed abandon carbon project activities and revert back to a business-as-usual scenario if/when carbon revenues prove insufficient. Others, like clean cookstove distributors, say that in the absence of sufficient carbon revenues, they would have to increase the price of stoves sold to end users and thus distribute fewer stoves overall – but would not necessarily cease operations.

Nor does it account for the even larger volumes of emissions reductions from large-scale projects that are not yet online, but are in the pipeline. In another section of our survey, project developers reported that they anticipate bringing an additional 1,440 MtCO₂e online over the next five years, more than voluntary offset buyers have contracted cumulatively to date.

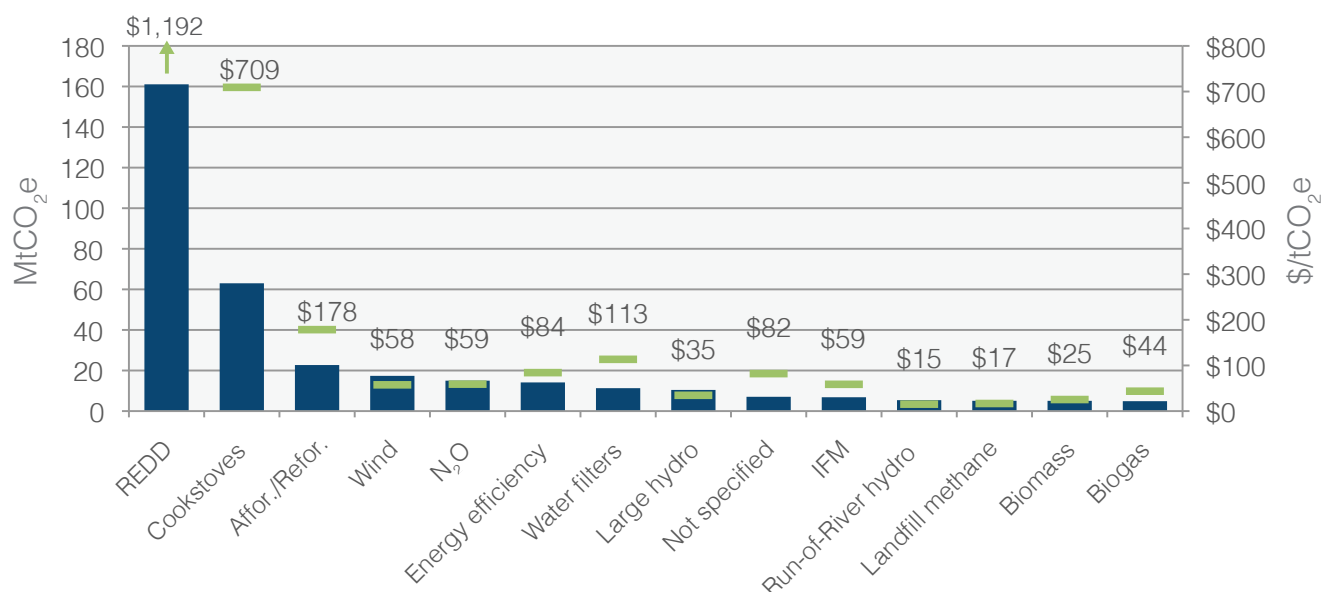
Figure 56: Market Projections, Historical Data and Supplier Predictions



Notes: Based on 87 organization responses.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Figure 57: Market Projections, Supplier-Estimated Project Pipeline Volume and Value, 2013-2017



Notes: Based on 351 MtCO₂e pipeline targeted toward voluntary buyers as reported by suppliers, excluding estimates >50 MtCO₂e and pre-compliance market volumes, which are discussed in Box 3.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

Removing a few large outlier responses from this estimate (>50 MtCO₂e over five years), the total volume of tonnes targeted toward purely voluntary buyers that suppliers expect to bring to market over the next five years is closer to 351 MtCO₂e. Measuring these estimates against the current average price for each project type (Figure 57), the total value of suppliers' offset pipeline adds an estimated \$2.7b over five years (or \$535 million/year) to the potential financial needs of existing projects described at the top of this section. It is important to recognize, though, that projects do not necessarily have to sell every tonne in order to continue supporting project activities.

To absorb these volumes, and according to survey respondents' back-of-the-envelope predictions, suppliers expect an average market growth rate of 17% in 2012-2020. Based on the voluntary carbon market's historical average price of \$5.9/tCO₂e, suppliers' predictions place market value at \$2.3 billion in 2020. Another predictive measure – that of recent years' average growth rate for voluntary offset demand (13% from years 2008 to 2012) – estimates 2020 market value at \$1.6 billion.

6.2 Supplier Estimate Details

This year, 87 survey respondents predicted the overall transaction volume of the voluntary carbon markets in 2012, as well as projected market size and growth through 2020. With all responses weighted evenly, this

year's respondents slightly overestimated the 2012 market in which they sold offsets, predicting that the market transacted 112 MtCO₂e in 2012. This is only 11 MtCO₂e more than was actually tracked.

Looking ahead, suppliers forecasted a 54% growth rate for the 2013 market, expecting that they and their peers will transact 172 MtCO₂e in the current year. To achieve this predicted sales volume in 2013, suppliers would need to transact 71 MtCO₂e more than they did in 2012.

Future year estimates (2013-2020) are more conservative than volumes predicted by our 2012 survey participants participating in the 2011 offset market. Suppliers say this more conservative growth rate is restrained by the market's emerging picture of steady but limited year-on-year demand – but shows continued growth based on the expected emergence of domestic offset demand from developing markets outside of North America and the EU.

6.3 Predicted 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 2013. 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 58 shows 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 2013.

In keeping with previous years' trends, the VCS was again reported as the most sought-after certification, with 118 organizations (27% of respondents) planning to use the standard in 2013 – 2 fewer than in 2012. As seen further down the chart, at least 43 respondents intend to tag VCS forestry certification with the CCB Standards as well.

Close behind the VCS, The Gold Standard gained significant traction with as many responses as were tracked for the VCS in the previous year – and the largest growth in predicted usage numbers of any standard. This includes some responses that were once attributed to the CarbonFix Standard, which will now fall within The Gold Standard's jurisdiction.

Next in line were suppliers that expect to sell offsets certified to CDM methodologies in 2013 – which saw 6 more responses than in 2012. CAR retained its fourth place ranking among carbon accounting standards in 2013, but the number of organizations planning to

use the standard or its registry fell by 2 respondents in 2012. So, too, did prospective users of California Compliance Offset regulation-based protocols, which fell by 4 responses in our 2013 survey.

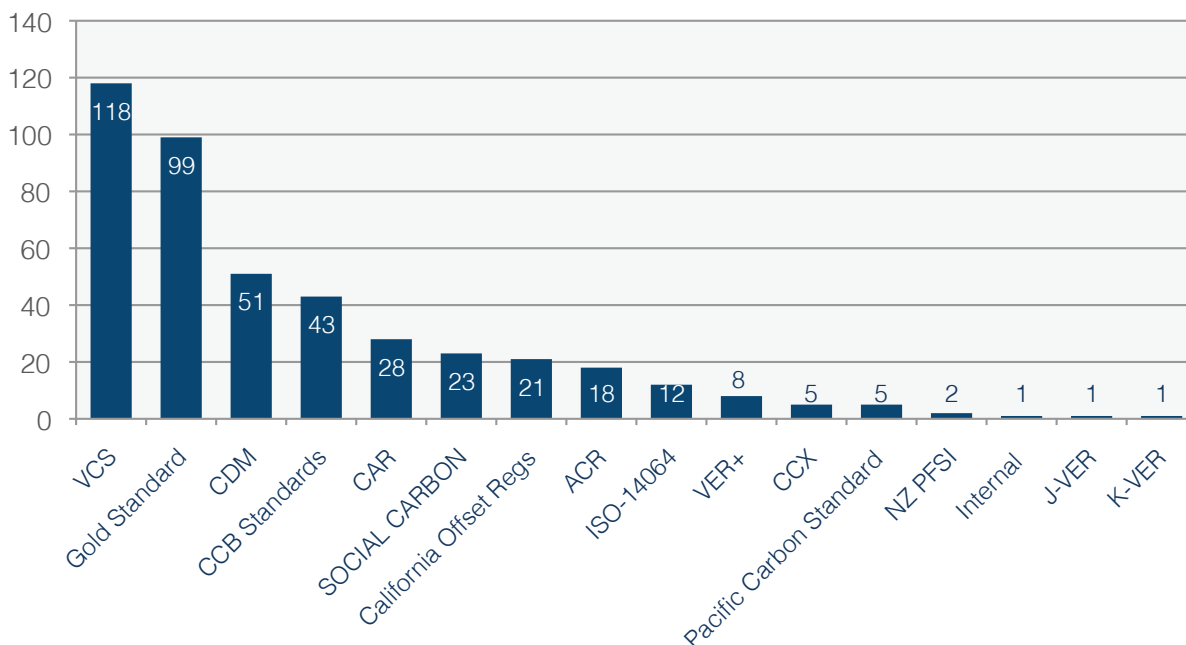
Predicted 2013 usage numbers for ACR were also down by 4 responses, though intended use of its registry (presumably as a California compliance program Offset Project Registry) increased by 12 responses to 34 users.

6.4 The Year Ahead: Striking a New Balance

As seen in the mosaic of project types, regional trends and unpredictable drivers of offset demand presented in this report, our analysis should be viewed only as a starting point for understanding demand in the current year which continues to evolve as both offset buyers and suppliers innovate new ways to mitigate GHGs, influence policy, and communicate their purchases and successes.

Already in 2013, major organizations ranging from Microsoft to the United Nations Environment Programme have renewed or made new offsetting commitments. On the “sell” side, programs like the UN Foundation's Global Alliance for Clean Cookstoves and campaigns Code REDD and Whole World Water are expanding their efforts to raise public awareness of voluntary carbon

Figure 58: Market Projections, Supplier-Estimated Standard Utilization, 2013



Notes: Based on 436 unique responses.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013*.

finance's contributions to forest conservation and sustainable development. Meanwhile, offset suppliers are experimenting with crowd-funding, collective purchase auctions, and wrapping inexpensive issued offsets with forward sales of offsets from early-stage projects to support both existing and future offset project development.

Offset suppliers remain concerned that the collapse of an EU carbon price and exclusion of a host of CDM projects post-2012 will channel an oversupply of compliance instruments into the voluntary markets. Ecosystem Marketplace will continue to closely track this trend throughout the year.

While concerns about the fate of millions of CERs drive some suppliers to distance themselves and their products from the Kyoto offset market, others are focusing on connecting with emerging compliance programs – in California, Australia, South Africa, China, and various regions in Latin America. Here, offset infrastructure providers and market participants are working to bridge the gap between voluntary and compliance programs. As some offsetting activities in these regions shift from voluntary, “pre-compliance”

preparations to full-blown compliance market participation, findings around market size and makeup in this report series will no doubt change substantially in future editions.

In the midst of this dynamic marketplace, voluntary offset market players are also changing their pitch from simply offsetting carbon emissions to relating their on-the-ground experience to broader policy and corporate sustainability objectives.

This involves highlighting the offset project market's potential for rapid response to mitigation opportunities that can supplement slower-moving fund-based actions. Some market players are focused on communicating lessons learned about verification and results-based finance models. Still others are developing a new lexicon around the delivery of vulnerability reduction, health, and other public benefits associated with private sector interventions.

Through a combination of these and other efforts to raise the offset product market profile, suppliers strive to remain relevant as climate policy makers target ever more scalable solutions.



ANNEXES



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

ANNEX 1: Standards

In early 2013, we surveyed standards and registries to explore the volume and types of offsets 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 seven years' worth of historical *State of the Voluntary Carbon Markets* survey data.

At the top of each standard's profile – created for most standards with more than one year's worth of available transaction data (including 2012) – 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 2012; and the market share for different types of offsets that were transacted under each standard in 2012 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 offsets issued by a registry according to the featured standard against volume of offsets 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 offsets issued by a registry according to the featured standard against the volume of offsets that registries have reported retiring from that standard, for all years and in 2011.

A note on our methods

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 more comprehensive. The proportion of market supply that is associated with unreported, private activities remains unknown. Also, we include a key for the "Validated and Transacted Projects by Type" charts at the bottom of each page.

A.1.1 Carbon Project 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 2012, ACR was approved as an Offset Project Registry for California's cap-and-trade program, under which it will help oversee the listing, verification and, issuance of offsets being developed using the California Air Resources Board's compliance or early-action offset protocols. New guidelines ACR released in 2012 include the world's first methodology for deltaic wetland restoration, a nested REDD standard, as well as methodologies for truck stop electrification and agricultural N₂O.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$4.4	12.3	68	2.9
2012	\$7.4	0.5	0	0.05
Ratios	Issued : Transacted		Issued : Retired	
All Years	3 to 1		13 to 1	
2012	7 to 1		58 to 1	
Standard Scope				
Standard Type	Carbon accounting + tagged co-benefits			
Asset Generated	Carbon offset			
Eligible Countries	All			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits	Tagged			
MAX. time b/w verifications (years):	6			

Transacted Project Types, 2012 (by % Share)

Category	Share (%)
AFOLU	49%
Other	40%
Methane	11%
Renewables	0%

Validated Projects by Type (by Count, through 2012)

Category	Count
Other	36
AFOLU	16
Methane	8
Renewables	5
Gases	2
Energy Efficiency & Fuel Switch	1

AFOLU

Renewables

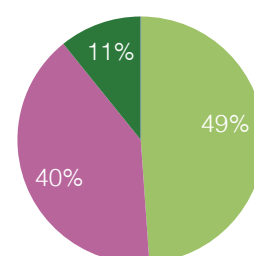
Methane

Gases

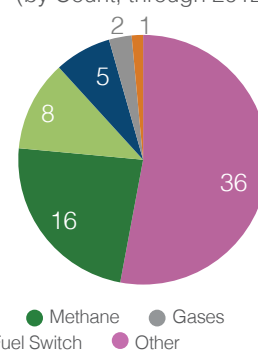
Energy Efficiency & Fuel Switch

Other

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

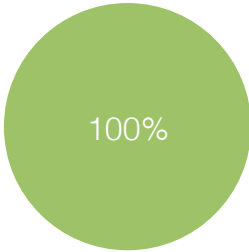
CarbonFix Standard – CarbonFix (Version 3.2, 2011)

The CarbonFix Standard applies to afforestation, reforestation, natural regeneration, and agro-forestry projects that demonstrate a commitment to socio-economic and ecological responsibility. In September 2012 The Gold Standard acquired CarbonFix in order to support its expansion into land use and forestry. Existing CarbonFix projects are being hosted by The Gold Standard and will transition into Gold Standard projects if they meet the rules under The Gold Standard version 3.0.

Transition into Gold Standard projects if they meet the rules under the Gold Standard version 3.0:

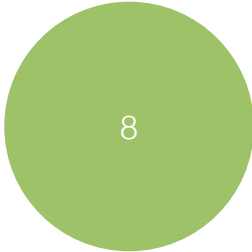
Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$13.9	0.5	8	0.04
2012	\$17.5	0.04	3	N/A
Ratios	Issued : Transacted		Issued : Retired	Issued : Buffer
All Years	3 to 2		16 to 1	N/A
2012	9 to 1		N/A	0.03
Standard Scope				
Standard Type	Carbon accounting + embedded co-benefits			
Asset Generated	Carbon offset			
Eligible Countries	All			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits	√			
MAX. time between verifications (years)	5			

Transacted Project Types,
2012 (by % Share)



100%

Validated Projects by Type
(by Count, through 2012)



8

● AFOLU

● Renewables

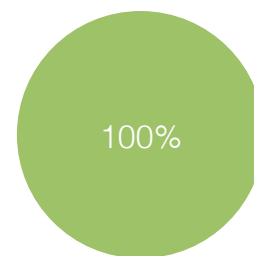
● Methane

● Gases

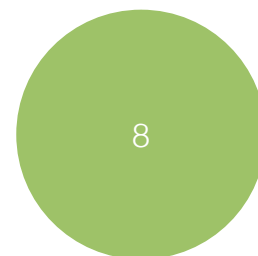
● Energy Efficiency & Fuel Switch

● Other

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

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

After retiring its voluntary cap-and-trade scheme in 2010, in 2011 CCX launched the Chicago Climate Exchange Offsets Registry Program to register verified emissions reductions based on a comprehensive set of established protocols.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$1	21	343	26
2012	\$0.12	8	0	2
Standard Scope				
Standard Type	Carbon accounting only			
Asset Generated	Carbon offset			
Eligible Countries	All			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits	N/A			
MAX. time between verifications (years)	5			

Transacted Project Types, 2012 (by % Share)

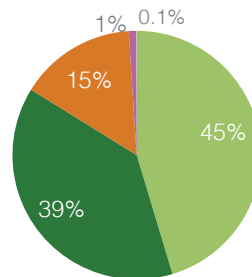
Project Type	% Share
AFOLU	45%
Methane	39%
Energy Efficiency & Fuel Switch	15%
Other	1%
Renewables	0.1%

Validated Projects by Type (by Count, through 2012)

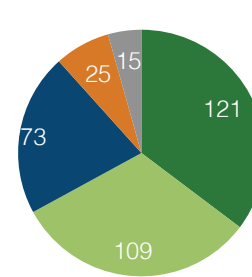
Project Type	Count
AFOLU	121
Methane	73
Energy Efficiency & Fuel Switch	25
Other	15
Renewables	0

● AFOLU ● Renewables ● Methane ● Gases ● Energy Efficiency & Fuel Switch ● Other

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



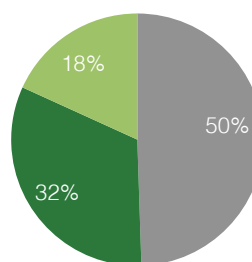
● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

Climate Action Reserve – CAR (Program Manual, 2011)

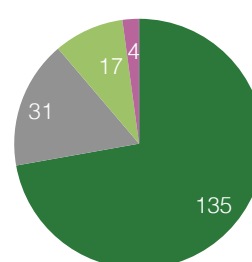
CAR is a non-profit carbon offset registry and standards-setting body. CAR has so far developed several carbon offset protocols for use in the US and in some cases Mexico. In 2012, CAR became an Offset Project Registry for California's cap-and-trade program, under which it will help oversee the registration and issuance of offsets being developed using the California Air Resources Board's compliance or early-action offset protocols. So far, four of CAR protocols have been approved for use in the new compliance market. New guidelines released by CAR in 2012 include specifications for coal mine methane and nitrogen management.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)										
All Years	\$6.9	49	177	5.4										
2012	\$7.1	6.7	51	2.3										
Ratios:	Issued : Transacted		Issued : Retired											
All Years	3 to 5		5 to 1											
2012	3 to 2		4 to 1											
Standard Scope			<div>Transacted Project Types, 2012 (by % Share)</div> <table><thead><tr><th>Category</th><th>Share (%)</th></tr></thead><tbody><tr><td>AFOLU</td><td>18%</td></tr><tr><td>Methane</td><td>32%</td></tr><tr><td>Gases</td><td>50%</td></tr></tbody></table>		Category	Share (%)	AFOLU	18%	Methane	32%	Gases	50%		
Category	Share (%)													
AFOLU	18%													
Methane	32%													
Gases	50%													
Standard Type	Carbon accounting only													
Asset Generated	Carbon offset													
Eligible Countries:	US & Mexico													
Verification Required for:			<div>Validated Projects by Type (by Count, through 2012)</div> <table><thead><tr><th>Category</th><th>Count</th></tr></thead><tbody><tr><td>Methane</td><td>135</td></tr><tr><td>Gases</td><td>31</td></tr><tr><td>AFOLU</td><td>17</td></tr><tr><td>Other</td><td>4</td></tr></tbody></table>		Category	Count	Methane	135	Gases	31	AFOLU	17	Other	4
Category	Count													
Methane	135													
Gases	31													
AFOLU	17													
Other	4													
Projects	√													
Methodologies	√													
Emissions Reductions	√													
Co-benefits	N/A													
MAX. time between verifications (years):	6													

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

Note: Only reports publicly available data on the CAR APX Registry.

* Because CAR does not have a formalized validation stage, the number of projects in this category represents the very first time that a project is verified, as a proxy for validation.

The Gold Standard – GS (Version 2.2, 2012)

The Gold Standard, traditionally focused on renewable energy and energy efficiency, is increasingly taking a landscape approach, with plans to release its A/R requirements and Forestry & Land Use framework in October 2013. The standard body conducts in-house audits of all projects – twice during project development and before registration – and reviews all auditor reports. Projects must score “positive” in two of three categories (environment, social, economic, and technological development) against 12 development indicators.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$11.4	36	226	4.6
2012	\$9.3	9	81	2
Ratios	Issued : Transacted		Issued : Retired	
All Years	1 to 3		2 to 1	
2012:	2 to 3		3 to 1	

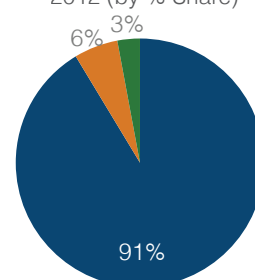
Standard Scope

Standard Type	Carbon accounting + embedded co-benefits
Asset Generated	Carbon offset
Eligible Countries:	All

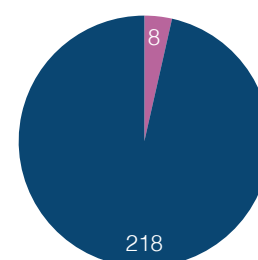
Verification Required for:

Projects	✓
Methodologies	✓
Emissions Reductions	✓
Co-benefits	✓
MAX. time between verifications (years):	5

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

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. In 2012, Plan Vivo undertook a public consultation process on an updated set of standard guidelines, which it plans to release soon.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$7.5	1.4	8	1.1
2012:	\$7	0.3	1	0.2
Ratios	Issued : Transacted		Issued : Retired	
All Years	0.9 to 1		0.9 to 1	
2012	1.2 to 1		1.1 to 1	

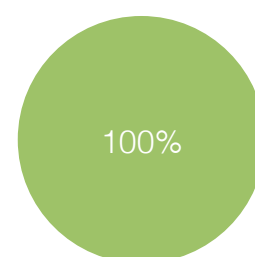
Standard Scope

Standard Type	Carbon accounting + embedded co-benefits
Asset Generated	Carbon offset
Eligible Countries	Developing countries

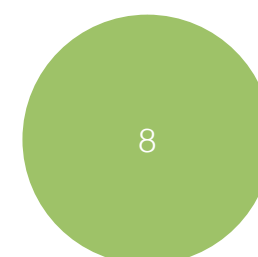
Verification Required for:

Projects	✓
Methodologies	✓
Emissions Reductions	✓
Co-benefits	✓
MAX. time between verifications (years):	5

Transacted Project Types, 2012 (by % Share)



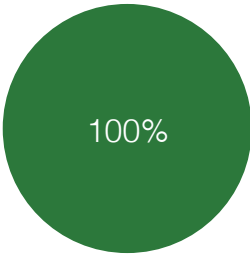
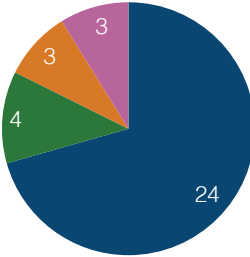
Validated Projects by Type (by Count, through 2012)



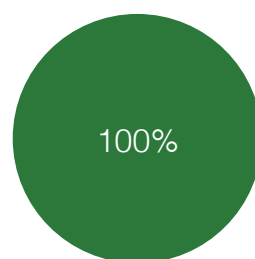
● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

VER+ (Version 2.0, 2008)

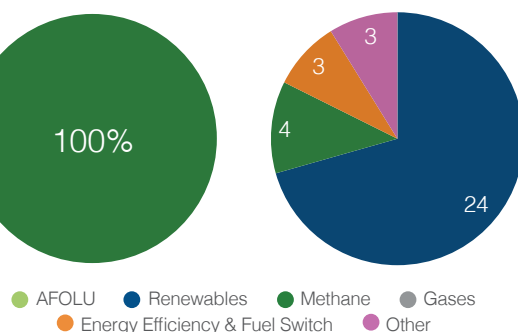
The VER+ Standard is a voluntary offset standard launched by project verifier TÜV SÜD for projects that are not eligible for CDM or JI accreditation but follow the CDM and JI project design methodologies. Projects wishing to receive VER+ accreditation may only be validated and verified by UNFCCC-accredited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

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$5.7	3.5	34	1
2012	\$18.1	0.02	0	0.01
Ratios	Issued : Transacted		Issued : Retired	
All Years	1 to 1		4 to 1	
2012	N/A		N/A	
Standard Scope			<div>Transacted Project Types, 2012 (by % Share)</div>  <div>Validated Projects by Type (by Count, through 2012)</div>  <div><div>● AFOLU</div><div>● Renewables</div><div>● Methane</div><div>● Gases</div><div>● Energy Efficiency & Fuel Switch</div><div>● Other</div></div>	
Standard Type	Carbon accounting only			
Asset Generated	Carbon offset			
Eligible Countries	All			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits				
MAX. time between verifications (years):	N/A			

Transacted Project Types, 2012 (by % Share)

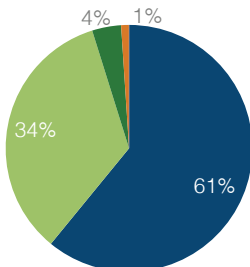
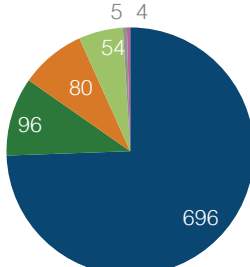


Validated Projects by Type (by Count, through 2012)

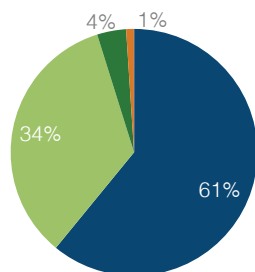


Verified Carbon Standard – VCS (Version 3, 2011)

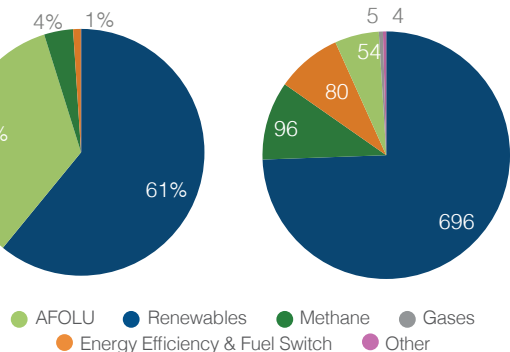
Founded in 2005 by the Climate Group, the International Emissions Trading Association, the World Economic Forum, and the World Business Council for Sustainable Development, the Verified Carbon Standard has become one of the world's most widely used carbon accounting standards, which now aims to pioneer efforts to develop standardized methods that will streamline the project approval process, reduce transaction costs and enhance transparency. Across the world, projects using the VCS Standard have issued more than 120 million offsets.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)																								
All Years	\$5.0	155	935	31																								
2012	\$5.2	34	206	16																								
Ratios	Issued : Transacted		Issued : Retired																									
All Years	7 to 10		4 to 1																									
2012	1 to 1		2 to 1																									
Standard Scope			<div>Transacted Project Types, 2012 (by % Share)</div>  <table><thead><tr><th>Category</th><th>Share (%)</th></tr></thead><tbody><tr><td>Renewables</td><td>61%</td></tr><tr><td>AFOLU</td><td>34%</td></tr><tr><td>Methane</td><td>4%</td></tr><tr><td>Energy Efficiency & Fuel Switch</td><td>1%</td></tr><tr><td>Gases</td><td>1%</td></tr></tbody></table> <div>Validated Projects by Type (by Count, through 2012)</div>  <table><thead><tr><th>Category</th><th>Count</th></tr></thead><tbody><tr><td>Renewables</td><td>696</td></tr><tr><td>AFOLU</td><td>96</td></tr><tr><td>Methane</td><td>80</td></tr><tr><td>Energy Efficiency & Fuel Switch</td><td>54</td></tr><tr><td>Gases</td><td>5</td></tr></tbody></table> <div>● AFOLU ● Renewables ● Methane ● Gases ● Energy Efficiency & Fuel Switch ● Other</div>		Category	Share (%)	Renewables	61%	AFOLU	34%	Methane	4%	Energy Efficiency & Fuel Switch	1%	Gases	1%	Category	Count	Renewables	696	AFOLU	96	Methane	80	Energy Efficiency & Fuel Switch	54	Gases	5
Category	Share (%)																											
Renewables	61%																											
AFOLU	34%																											
Methane	4%																											
Energy Efficiency & Fuel Switch	1%																											
Gases	1%																											
Category	Count																											
Renewables	696																											
AFOLU	96																											
Methane	80																											
Energy Efficiency & Fuel Switch	54																											
Gases	5																											
Standard Type	Carbon accounting + tagged co-benefits																											
Asset Generated	Carbon offset																											
Eligible Countries	All																											
Verification Required for:																												
Projects	√																											
Methodologies	√																											
Emissions Reductions	√																											
Co-benefits	√																											
MAX. time between verifications (years):	none																											

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



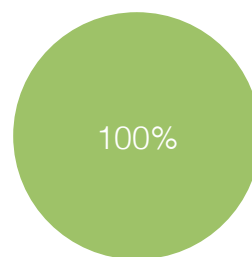
A.1.2 Project Co-Benefits Programs

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

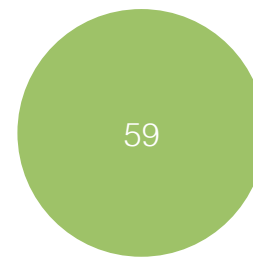
The CCB Standards are project-design criteria for evaluating land-based carbon mitigation projects' community and biodiversity co-benefits. As a co-benefits only standard, GHG reductions must be verified against another underlying carbon standard. Transaction volumes below are from carbon projects tagged with CCB certification. In 2012, CCB and the Verified Carbon Standard introduced a joint project approval and offset issuance process.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$9.5	36	59	1.2
2012	\$8.3	13	15	0.7
Standard Scope			<div>Transacted Project Types, 2012 (by % Share)</div> <div>Validated Projects by Type (by Count, through 2012)</div> <div><div>100%</div><div>59</div></div> <div><div>● AFOLU</div><div>● Renewables</div><div>● Methane</div><div>● Gases</div><div>● Energy Efficiency & Fuel Switch</div><div>● Other</div></div>	
Standard Type	Co-benefits only			
Asset Generated	Certificate			
Eligible Countries	All			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions				
Co-benefits	√			
MAX. time b/w verifications (years):	5			

Transacted Project Types, 2012 (by % Share)



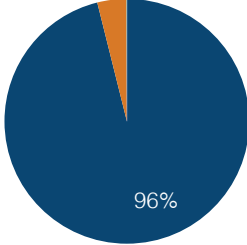
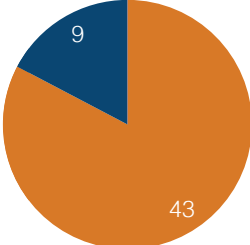
Validated Projects by Type (by Count, through 2012)



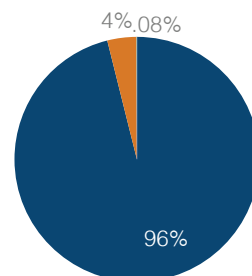
● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

SOCIALCARBON Standard (Version 5.0, 2013)

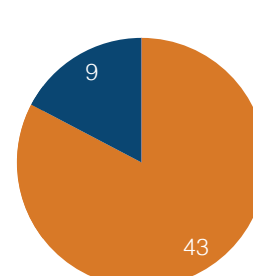
The SOCIALCARBON Standard is a certification program based on the sustainable livelihoods approach that requires project developers to apply Standard indicators that correlate with six aspects of the project: social, human, financial, natural, biodiversity, and carbon. SOCIALCARBON is another "stacking"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

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$6.5	4.6	52	1.9
2012	\$4.3	1.4	2	0.9
Standard Scope			<div>Transacted Project Types, 2012 (by % Share)</div>  <div>Validated Projects by Type (by Count, through 2012)</div>  <div><div>● AFOLU</div><div>● Renewables</div><div>● Methane</div><div>● Gases</div><div>● Energy Efficiency & Fuel Switch</div><div>● Other</div></div>	
Standard Type	Co-benefits only			
Asset Generated	Certificate			
Eligible Countries	All			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions				
Co-benefits	√			
MAX. time between verifications (years):	5			

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

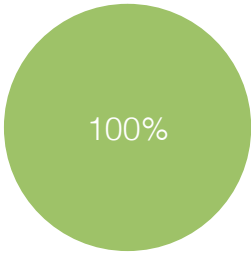
A.1.3 Domestic (Country- or Region-Specific) Programs

Carbon Farming Initiative – CFI (2011)

Enabled by the Carbon Credits (CFI) Act 2011 and launched in 2011 as a part of the Australian Government's Clean Energy Future Plan, the CFI is the first national scheme to regulate the creation and trade of carbon offsets from farming, landfill, and forestry. The CFI uses legislation- and methodology-specific requirements along with positive and negative lists to determine project additionality. An independent expert committee, the Domestic Offsets Integrity Committee, assesses offset methodologies and advises the Minister for Climate Change and Energy Efficiency on their approval. The Clean Energy Regulator is responsible for operating the CFI.

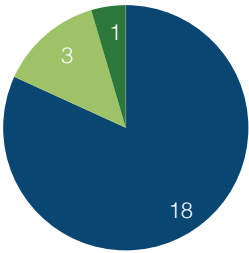
Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
2012	\$12.7	4	22	0
Ratios	Issued : Transacted		Issued : Retired	
2012	1 to 10		None retired	
Standard Scope				
Standard Type	Carbon accounting only			
Asset Generated	Carbon offset			
Eligible Countries	Australia			
Verification Required for:				
Projects				
Methodologies	√			
Emissions Reductions	√			
Co-benefits	√			
MAX. time b/w verifications (years):	6			

Transacted Project Types, 2012 (by % Share)



Category	Share
AFOLU	100%

Validated Projects by Type (by Count, through 2012)



Category	Count
Renewables	18
AFOLU	3
Methane	1

● AFOLU

● Renewables

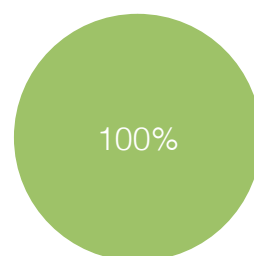
● Methane

● Gases

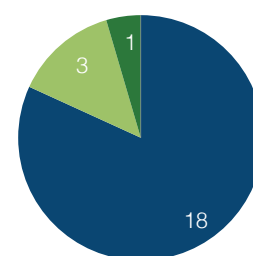
● Energy Efficiency & Fuel Switch

● Other

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

Japan Verified Emissions Reduction 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. J-VER and J-CDM – the other part of Japan's domestic voluntary offset scheme – merged into the J-Credit Scheme in 2013.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$96	0.6	242	N/A
2012	\$85	0.4	62	N/A
Ratios	Issued : Transacted		Issued : Retired	Issued : Buffer
All Years	1 to 3		N/A	
2012	1 to 2		N/A	
Standard Scope				
Standard Type	Carbon accounting only			
Asset Generated	Carbon offset			
Eligible Countries	Japan			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits	N/A			
MAX. time between verifications (years):	N/A			

Transacted Project Types, 2012 (by % Share)

Unknown

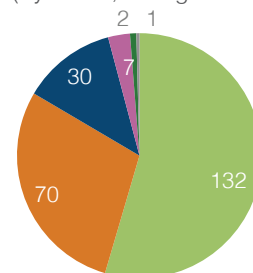
Validated Projects by Type (by Count, through 2012)

Project Type	Count
AFOLU	132
Energy Efficiency & Fuel Switch	70
Renewables	30
Methane	7
Gases	2
Other	1

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



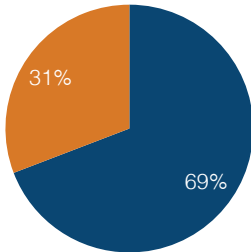
● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

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

Administered by Korea's Ministry of Trade, Industry & Energy (MOTIE) 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. In 2012, K-VER's primary verifier KEMCO earned accreditation as a VCS validation/verification body.

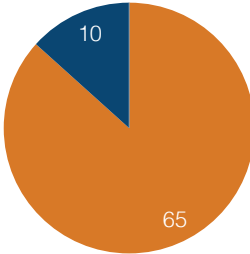
Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$4.6	7.6	323	7.6
2012	\$11.2	0.1	75	0.1
Ratios	Issued : Transacted		Issued : Retired	
All Years	2 to 1		2 to 1	
2012	16.5 to 1		16.5 to 1	
Standard Scope				
Standard Type	Carbon accounting only			
Asset Generated	Carbon offset			
Eligible Countries	Republic of Korea			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits	N/A			
MAX. time between verifications (years):	2			

Transacted Project Types,
2012 (by % Share)



Category	Share (%)
Renewables	69%
Energy Efficiency & Fuel Switch	31%

Validated Projects by Type
(by Count, 2012 only)



Category	Count
Energy Efficiency & Fuel Switch	65
Renewables	10
Methane	1
Gases	1

AFOLU

Renewables

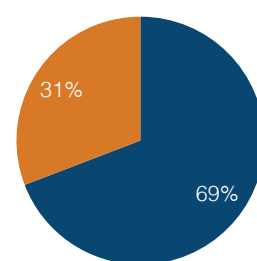
Methane

Gases

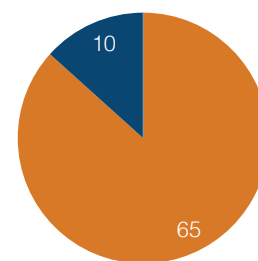
Energy Efficiency & Fuel Switch

Other

Transacted Project Types, 2012 (by % Share)




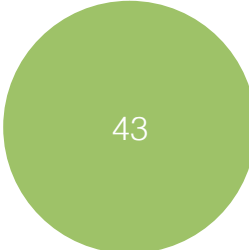
Validated Projects by Type (by Count, 2012 only)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

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. Because New Zealand's government has opted not to participate in the Kyoto Protocol's second commitment period, domestic emitters will no longer be able to access Kyoto units starting 2015. The Ministry of Primary Industries has committed to run the PFSI independently of Kyoto and is slated to provide guidance soon on what type of new domestic compliance unit will replace PFSI-generated Kyoto units.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
All Years	\$10.6	1.5	43	0.05
2012	\$4.3	0.5	UNKNOWN	0.004
Ratios	Issued : Transacted		Issued : Retired	
All Years	1 to 5		4 to 1	
2012	None issued		None issued	
Standard Scope			<div>Transacted Project Types, 2012 (by % Share)</div> 	<div>Validated Projects by Type (by Count, through 2012)</div> 
Standard Type	Carbon accounting only			
Asset Generated	Allowances (AAUs)			
Eligible Countries	New Zealand			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits	N/A			
MAX. time between verifications (years):	N/A			

● AFOLU

● Renewables

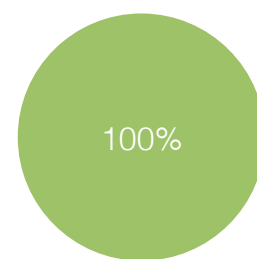
● Methane

● Gases

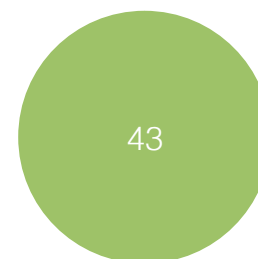
● Energy Efficiency & Fuel Switch

● Other

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



● AFOLU ● Renewables ● Methane ● Gases
● Energy Efficiency & Fuel Switch ● Other

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). This standard was developed by Pacific Carbon Trust, a British Columbia Crown corporation tasked with sourcing offsets to meet the provincial government's carbon neutrality commitment. Originally exclusively owned and transacted by Pacific Carbon Trust, PCUs are now transacted by other parties for the voluntary market.

Utilization	Average Price	Transacted (Mt)*	# Projects Validated	Volume Retired (Mt)
All Years	\$25	0.1	33	1.1
2012	\$25	0.07	6	0.8
Ratios	Issued : Transacted		Issued : Retired	
All Years	8 to 1		1 to 1	
2012	9 to 1		4 to 5	
Standard Scope				
Standard Type	Carbon accounting only			
Asset Generated	Carbon offset			
Eligible Countries	British Columbia			
Verification Required for:				
Projects	√			
Methodologies	√			
Emissions Reductions	√			
Co-benefits	N/A			
MAX. time between verifications (years):	N/A			

Transacted Project Types, 2012 (by % Share)

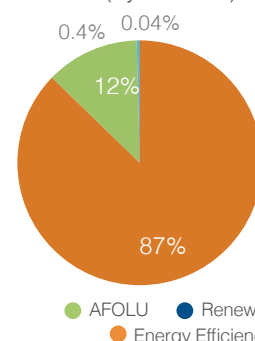
Project Type	% Share
Energy Efficiency & Fuel Switch	87%
AFOLU	12%
Gases	0.4%

Validated Projects by Type (by Count, 2012 only)

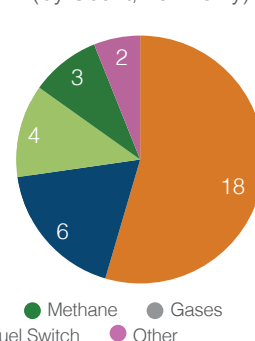
Project Type	Count
Energy Efficiency & Fuel Switch	18
Renewables	6
AFOLU	4
Methane	3
Other	2
Gases	1

● AFOLU ● Renewables ● Methane ● Gases ● Energy Efficiency & Fuel Switch ● Other

Transacted Project Types, 2012 (by % Share)



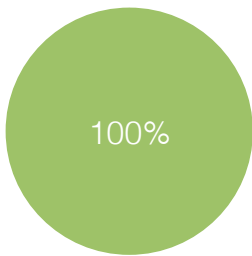
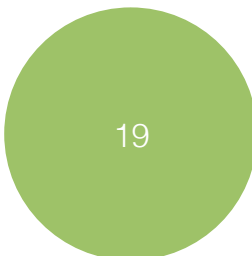
Validated Projects by Type (by Count, 2012 only)



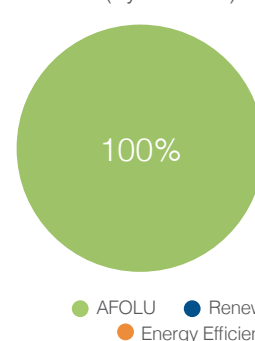
*Transaction volumes here solely capture volumes contracted to voluntary buyers, and hence do not capture the Pacific Carbon Standard's compliance market activities.

Woodland Carbon Code – WCC (Version 1.1, 2012)

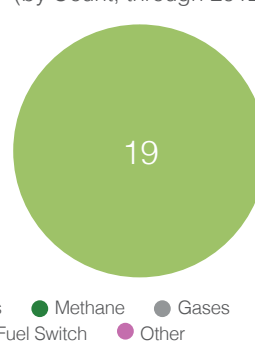
Given the UK's lack of domestic incentives for local action on forestry, the Forestry Commission created the WCC to offset domestic forestry projects using certificates. The WCC uses the project-based method to test additionality and requires projects to meet the UK Forestry Standard's environmental/social criteria. While 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 oversees the development of methodologies. The WCC will go live on Markit in July 2013.

Utilization	Average Price	Transacted (Mt)	# Projects Validated	Volume Retired (Mt)
2012	\$3.5	0.1	19	N/A
Ratios	Issued : Transacted		Issued : Retired	
2012	N/A		N/A	
Standard Scope			<div>Transacted Project Types, 2012 (by % Share)</div>  <div>Validated Projects by Type (by Count, through 2012)</div>  <div><div>● AFOLU</div><div>● Renewables</div><div>● Methane</div><div>● Gases</div><div>● Energy Efficiency & Fuel Switch</div><div>● Other</div></div>	
Standard Type	Carbon accounting + embedded co-benefits			
Asset Generated	Certificate			
Eligible Countries	United Kingdom			
Verification Required for:				
Projects	✓			
Methodologies	✓			
Emissions Reductions	✓			
Co-benefits				
MAX. time between verifications (years):	10*			

Transacted Project Types, 2012 (by % Share)



Validated Projects by Type (by Count, through 2012)



* Verification is required at Year 5, then every 10 years

A.1.4 Standards to Watch

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. Under the standard, projects generate Sustainability Credit Units ("UCSVT BMV Certificates") following certification performed by third-party auditors like the UNESP University, TÜV Rheinland, and public institutions for environmental and social management like the Instituto de Desenvolvimento Econômico e Socioambiental (IDESA). BMV currently has four certified nuclei of project activities in Brazil (Xingu, Arinos, Madeira, and Teles Pires) and another nucleus (Araguaia) in the process of validation.

California Air Resources Board Protocols – ARB Protocols (2011)

The California Air Resources Board (ARB) 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 ARB 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 ARB until the program start date. The ARB recently announced its consideration of protocols for rice cultivation and coal mine methane capture projects for future program use.

Global Conservation Standard – GCS (Version 1.2, 2011)⁸

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)⁹

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 15,000-ha Bamboo plantation as the first pilot project for the Panda Standard. A methodology for the revegetation of degraded land was finalized and approved by the Technical Committee and led to the registration of the Panda Standard's first project in 2012.

The Rainforest Standard (2012)¹⁰

Launched at Rio+20 on June 28, 2012 by five leading environmental trust funds based in five Amazon Basin countries (Bolivia, Brazil, Columbia, Ecuador, and Peru) and Columbia University's Center for Environment, Economy, and Society, The Rainforest Standard (RFS) is the first carbon standard to incorporate biodiversity

⁸ <http://www.globalconservationstandard.org>; <http://mgregistry.com>

⁹ <http://www.pandastandard.org>

¹⁰ <http://cees.columbia.edu/the-rainforest-standard>

outcomes and socio-cultural/socio-economic impacts into carbon accounting. In collaboration with environmental agencies across Latin America, The RFS was designed specifically for REDD to create long-term economic incentives resulting from the sale of forest carbon offsets. The RFS aims to conserve forests and biodiversity in tandem with the provision of sustainable benefits to forest owners and forest-dwelling people.

Swiss Charter Standard – Swiss Charter (Climate Protection by Recycling, 2009)¹¹

Run by SENS International, the Swiss Charter was launched in 2009 to support recycling projects that reduce ozone-depleting chlorofluorocarbons (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. Swiss Charter also requires “natural additionality”: investment case calculations cannot be used to support additionality assumptions. Projects underlying offsets must not be able to yield revenue per se.

Three Rivers Standard – Three Rivers (Version 0.1, 2011)¹²

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.

The Women’s Carbon Standard – WCS (2013)¹³

Developed by the Bangkok-based Women Organizing for Change in Agriculture and Natural Resource Management (WOCAN), the Women’s Carbon Standard (WCS) was founded in early 2013 as the first co-benefits standard focused specifically on integrating and measuring women’s empowerment and participation in carbon mitigation projects. The WCS is a set of project design and implementation requirements that complement existing compliance or voluntary carbon standards, allowing carbon project developers to integrate the WCS into current methodologies. The certification will examine six core elements: assets and income – allowing women to be empowered by controlling their own assets — health, food security, time, and leadership. The project does not have to meet the standard’s requirements on all of the elements, but must receive a score of 51 points or higher to receive WOCAN’s stamp of approval. To date, the WCS has three pilot technologies underway with the support of the Asian Development Bank in Cambodia (biogas digesters), Laos (improved cookstoves), and Vietnam (waste management).

A.1.5 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 offsets for offsetting, as well as program-specific methodologies that will generate Costa Rican Carbon Units (UCCs). The standard uses project-based additionality testing and covers a variety of project types including forestry and land use, energy, methane, fuel switching, N₂O,

¹¹ http://www.sens-international.org/fileadmin/user_upload/sens-international/SENS_International/Downloads/091028_SENS_Int_Brosch%C3%BCre_E.pdf

¹² <http://www.threeriversstandard.com/uploads/soft/111115/ThreeRiversStandard.pdf>

¹³ <http://www.womenscarbon.org/>

and transportation. The program will use an internal, program-administered registry or external registry depending on the type of offsets 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)¹⁴

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)¹⁵

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, offsets 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 offsets issued under The Gold Standard, and VCS. No specific project types or technologies are required beyond meeting independent standard criteria. However, offsets issued from REDD and other AFOLU projects must apply NCOS-approved methodologies.

International Carbon Reduction and Offset Alliance – ICROA (Programme and Policy Framework, 2009)¹⁶

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 third-party independent verifiers. ICROA currently allows CDM/JI, The Gold Standard, Carbon Fix, ACR, VCS, and CAR standards for its members offset services.

¹⁴ <http://www.co2offsetresearch.org/policy/ISO14064.html>; <http://www.scribd.com/doc/55419582/Making-Sense-of-The>

¹⁵ <http://www.climatechange.gov.au/ncos>

¹⁶ <http://www.icroa.org>

Table 27: Carbon and Co-benefits Programs: Where to Find Them

Carbon Accounting Standards			
American Carbon Registry		The Gold Standard	
Governed by:	Winrock International / ACR Advisory Council	Governed by:	The Gold Standard Foundation
Affiliated Registry:	APX, Inc.	Affiliated Registry:	Markit Environmental Registry, APX Inc.
Website:	www.americancarbonregistry.org	Website:	http://www.cdmgoldstandard.org
CarbonFix Standard		Plan Vivo Standard	
Governed by:	CarbonFix e.V., acquired by GS in 2012	Governed by:	Plan Vivo Foundation
Affiliated Registry:	Markit Environmental Registry	Affiliated Registry:	Markit Environmental Registry
Website:	http://www.carbonfix.info	Website:	http://www.planvivo.org
Chicago Climate Exchange		VER+	
Governed by:	Offsets Committee	Governed by:	TÜV SÜD Industrie Service GmbH
Affiliated Registry:	CCX	Affiliated Registry:	BlueRegistry
Website:	http://www.theice.com/ccx	Website:	http://www.blue-registry.com
Climate Action Reserve		Verified Carbon Standard	
Governed by:	Climate Action Reserve	Governed by:	VCS Association
Affiliated Registry:	APX Inc.	Affiliated Registry:	Markit, APX Inc., CDC Climat (until '13)
Website:	http://www.climateactionreserve.org	Website:	http://www.v-c-s.org
Co-Benefits Programs			
Climate, Community and Biodiversity Standards		SOCIALCARBON	
Governed by:	Climate, Community & Biodiversity Alliance	Governed by:	Instituto Ecológica Palmas (Ecologica Institute)
Affiliated Registry:	Markit Environmental Registry, APX Inc.	Affiliated Registry:	Markit, Social Carbon Registry
Website:	http://www.climate-standards.org	Website:	http://www.socialcarbon.org
Domestic (Country- or Region-Specific) Programs			
Brasil Mata Viva		Carbon Farming Initiative	
Governed by:	Working Group FEPAF/UNESP/IMEI/IDESAM	Governed by:	Australia Clean Energy Regulator
Affiliated Registry:	BTAAB Registry	Affiliated Registry:	Internal
Website:	http://brasilmataviva.com.br/index.php	Website:	http://www.climatechange.gov.au/reducing-carbon/carbon-farming-initiative
J-VER		K-VER	
Governed by:	Ministry of Environment of Japan	Governed by:	Korea Ministry of Knowledge Economy
Affiliated Registry:	Internal	Affiliated Registry:	Internal
Website:	http://j-ver.go.jp	Website:	http://kver.kemco.or.kr
NZ Permanent Forest Sink Initiative		Pacific Carbon Standard	
Governed by:	NZ Ministry for Primary Industries	Governed by:	Pacific Carbon Trust
Affiliated Registry:	NZ Emissions Unit Register	Affiliated Registry:	Markit Environmental Registry
Website:	http://www.mpi.govt.nz/forestry/funding-programmes/permanent-forest-sink-initiative.aspx	Website:	http://www.pacificcarbontrust.com
Woodland Carbon Code			
Governed by:	UK Forestry Commission		
Affiliated Registry:	Internal, Markit July 2013+		
Website:	http://www.forestry.gov.uk/carboncode		

ANNEX 2: Registries and Registry Infrastructure Providers

Table 28: Registry Infrastructure Providers

Infrastructure Provider	Market Position	Entities Served (in case of Infrastructure Provider)	Transparency	As of 12/31/2012*			In 2012 Only		
				Projects Listed	VERs Issued	VERs retired	Projects Listed	VERs Issued	VERs retired
APX	Infra-structure	VCS, American Carbon Registry, Climate Action Reserve, The Gold Standard	Project info public; Account info public; Listing eligibility requirements clear	—	62,647,050	10,961,590	431	34,326,435	6,323,607
Australia's Clean Energy Regulator Registry of Offsets Projects	Internal	Carbon Farming Initiative	Most project info public; Some account info public; Listing eligibility requirements clear	22	348,110	—	22	348,110	0
BlueRegistry	Quasi-independent	VER+ and others	Project info public; List of account holders public; Listing eligibility requirements clear	34	3,811,381	1,026,003	0	0	11,500
Chicago Climate Exchange Offset Registry	Internal	CCX	Project info public; List of account holders public; Listing eligibility requirements clear	343	88,958,500	25,967,528	—	0	1,816,493
CDC Climat (Caisse des Dépôts)	Infra-structure	VCS	No public info	—	9,944,381	2,030,838	—	1,825,565	289,955
GHG CleanProjects Registry	Independent	Not applicable	Project information public; List of account holders public; Listing eligibility requirements clear	96	4,985,177	667,498	11	1,977,800	377,258
Japan Verified Emission Reduction (J-VER) Registry	Internal	J-VER	No project info public; Some account info public; Listing eligibility requirements clear	242	169,118	N/A	—	169,000	N/A
Korea GHG Reduction Registry	Internal	K-VER	Project information public; List of account holders public; Listing eligibility requirements clear	—	14,518,306	7,555,827	75	2,396,963	145,072
Markit Environmental Registry	Infra-structure/Independent	VCS; Carbon Fix; CCB Standards; ISO 14064; The Gold Standard; Permanent Forest Sink Initiative; 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	609	75,183,826	22,630,791	172	25,427,388	11,017,066

*Total refers to the entire volume of VERs or projects registered during the lifetime of the registry as of December 2012, except where otherwise noted.

ANNEX 3: Offset Supplier Directory

Offset Supplier	Web address
Ag Methane Advisors, LLC	www.agmethaneadvisors.com
AGT	advancedglobaltrading.com
ALLCOT Group	www.allcot.com
AMBIO S.C. de R.L.	www.theredddesk.org/countries/mexico/info/resources/organisations/cooperativa_ambio_sc_de_rl
Amerex Energy	www.amerexenergy.com
Anthrotect	www.anthrotect.com
Armajaro	www.armajaro.com
Atlântica Simbios C. S. A. Ltda.	www.forestcarbonportal.com/project/carbon-fix-terra-ba
Australian Carbon Traders	www.australiancarbontraders.com
Bio Assets Ativos Ambientais Ltda.	www.bioassets.com.br
BioCarbon	www.biocarbongroup.com
BioCarbon Partners	www.biocarbonpartners.com
Biofilica	www.biofilica.com.br
Bischoff & Ditze Energy GmbH	www.bd-energy.com
Blue Source, LLC	www.bluesource.com
Blue Ventures Conservation	www.blueventures.org
Bonneville Environmental Foundation	www.b-e-f.org
Bosques Amazónicos	www.bosques-amazonicos.com
BP Target Neutral	www.bptargetneutral.com
Brighter Planet	www.brighterplanet.com
Brinkman & Associates Reforestation	www.brinkmanforest.ca
Brokers Carbon	www.brokerscarbon.com
C&D Consultores	www.cydconsultores.cl
C2Invest	www.c2invest.net
Camco Clean Energy	www.camcocleanenergy.com
Canopy	www.canopy.org.au
Carbon Clear Limited	www.carbon-clear.com
Carbon Neutral (AU)	www.carbonneutral.com.au
Carboneutral	www.carboneutral.cl
Carbonfund.org Foundation, Inc.	www.carbonfund.org
CarbonSinkGroup	www.carbonsink.it
CARBONyatra	www.carbonyatra.com
Carbosur	www.carbosur.com.uy
Cassinia Environmental	www.cassinia.com
CECEP Wind-Power Corporation	www.cecwpc.cn
CERPD	www.cerpd.com

CF Partners	www.cf-partners.com
Clean Air Action Corp	www.cleanairaction.com
ClearSky Climate Solutions	www.clearskyclimatesolutions.com
Climate Bridge	www.climatebridge.com
Climate Clean	www.climateclean.net
Climate Friendly Pty Ltd	www.climatefriendly.com
Climate Neutral Group	www.climateneutralgroup.com
ClimateCare	www.climatecare.org
ClimatePartner GmbH	www.climatepartner.com
ClimeCo Corporation	www.climeco.com
CLP Wind Farms (India) Private Limited	www.clpindia.in
C-O2 Consultants	www.c-o2.org
co2balance UK Ltd	www.co2balance.com
CO2logic	www.co2logic.com
Conservation Carbon Company(Pvt) Ltd	www.conservecarbon.org
Conservation International	www.conservation.org
Cool Planet Energy Pty Ltd	www.coolplanet.com.au
CoolClimate Holding, Inc.	www.atmosclear.org
Credible Carbon	www.crediblecarbon.com
E+Carbon	www.persistentenergypartners.com
Easy-Carbon Consultancy Co.Ltd.	www.easy-carbon.com/english/
Eco2librium	www.eco2librium.net
EcoAct	www.eco-act.com
Ecoinvest SA	www.ecoinvestservices.com
EcoPlanet Bamboo	www.ecoplanetbamboo.com
Ecoprogresso	www.ecoprogresso.pt
ecosur america	www.ecosur-america.com
Ecosystem Services LLC	www.ecosystems-services.com
ECOTRUST	www.ecotrust.or.ug
egluro limited	www.egluro.com
EKO Asset Management Partners	www.ekoamp.com
Emergent Ventures International	www.emergent-ventures.com
Emission Reduction Company	www.emissionreductionco.com
Eneco	www.eneco2.com
EnergetixClimate/HELPS	www.helpsintl.org
Energy Mad Ltd	www.energymad.com/nz/
Entergy	www.entergy.com
Environmental Capital LLC	www.encapllc.com
Environmental Credit Corp.	www.envcc.com
EOS Climate, Inc.	www.eosclimate.com
ERA Carbon Offsets Ltd	www.offsetters.ca
Evolution Markets	www.evomarkets.com
Face the Future	www.face-thefuture.com

Fair Recycling Foundation (previously: SENS Internation)	www.fair-recycling.com
FairClimateFund BV	www.fairclimatefund.nl
Finite Carbon	www.finitecarbon.com
Floresta	www.floresta.com
Forest Carbon Ltd	www.forestcarbon.co.uk
Forest Carbon Offsets LLC	www.forestcarbonoffsets.net
Forest Finance Service GmbH	www.co2ol.de
Forests Alive	www.forestsalive.com
Foundation myclimate - The Climate Protection Partnership	www.myclimate.org
Fundación Moisés Bertoni	www.mbertoni.org.py/v1/
FutureCamp Climate GmbH	www.future-camp.de
General Carbon	www.general-carbon.com
GERES	www.co2solidaire.org
GFA Consulting Group	www.gfa-group.de
Green Energy Corporation Ltd	www.greenenergy.hpage.co.in
GREEN EVOLUTION SA	www.green-evolution.eu
Green Mountain Energy Company	www.greenmountain.com
Green Resources	www.greenresources.no
Greenfleet	www.greenfleet.com.au
Greenoxx NGO	www.greenoxx.com
Greenwood Trading AG	www.greenwood-trading.com
Grupo Ecológico Sierra Gorda I.A.P.	www.sierragorda.net
GTE CARBON	www.gte.uk.com
Guizhou Honor Carbon Asset Management Co	www.hy-carbon.net
Hivos Foundation	www.hivos.org
IdleAir, LLC	www.idleair.com
IFS Growth	www.ifsgrowth.co.nz
Impact Carbon	www.impactcarbon.org
Improved Cook Stoves for East Africa Limited	www.ugandacarbon.org
Initiative Développement (ID)	www.id-ong.org
Instituto Ação Verde	www.acaoverde.org.br/v2/mostra_projeto.php?projeto=2
Instituto Perene	www.perene.org.br
Iowa Farm Bureau	www.iowafarmbureau.com
Karbonate	www.karbonate.com
KDF Energy	www.kdfenergy.com
Korea Energy Management Corporation	www.kemco.or.kr
Lavola 1981, SA	www.lavola.com
Lee International	www.go-worldlee.com
Less Emissions Inc.	www.less.ca
Livelihoods Venture	www.livelihoods.eu
Logicor (Group) Ltd	www.logicor.co.uk

Love the World	www.lovetheworld.com
Mavi Consultants	www.maviconsultants.com
Microsol	en.microsol-int.com
Mikro-Tek	www.mikro-tek.com
Mountain Association for Community Economic Development	www.maced.org
Mozambique Carbon Initiatives LDA	www.mozcarbon.co.mz
Mpingo Conservation & Development Initiative	www.mpingoconservation.org
Nationaal Groenfonds	www.nationaalgroenfonds.nl
NativeEnergy, Inc.	www.nativeenergy.com
Nature Services Peru	www.natureservicesperu.com
Nedbank Capital	www.capital.nedbank.co.za/capital/home
Neutralize Carbono	www.neutralizecarbono.com.br
New Forests	www.newforests.com.au
Nexus-Carbon for Development	www.nexus-c4d.org
Nollen Group	www.nollengroup.com
Nova Institute	www.nova.rg.za
Oaxaca Environmental Services (SAO)	www.sao.org.mx
Origins Carbon	
Pacific Carbon Trust	www.pacificcarbontrust.com
Pacific Forest Alliance	www.pacificforestalliance.org
Pacific Forest Trust	https://pacificforest.org
Pangolin Associates	www.pangolinassociates.com
Permanent Forests International Limited	www.permanentforests.com
PrimaKlima -weltweit- e.V.	www.prima-klima-weltweit.de
Pro-Climate	www.proclimate.org
Proyecto Mirador	www.proyectomirador.org
Recast Energy	www.recastenergy.com
SCS Global Services	www.scsglobalservices.com
Sindicatum Sustainable Resources	www.sindicatum.com
Socio-eCO ₂ nomix-Global	
South Pole Carbon Asset Management Ltd.	www.southpolecarbon.com
SPVS	www.spvs.org.br
Strategic HSE Systems INC	www.strategichsesystems.com
Sustainable Capital Group Panama	www.scgpanama.com
Sustainable Carbon	www.sustainablecarbon.com
Swire Pacific Offshore	www.swire.com.sg
Taking Root	www.takingroot.org
TerraPass	www.terrapass.com
Terraprima	www.terraprima.pt
The CarbonNeutral Company	www.carbonneutral.com
The Climate Trust	www.climatetrust.org
The Cochabamba Project	www.cochabamba.coop

The Conservation Fund	www.conservationfund.org
The Nature Conservancy	www.nature.org
The Paradigm Project	www.theparadigmproject.org
The Pure Project	www.purprojet.com
The Trend is Blue Ltd	www.thetrendisblue.com
The Trust for Public Land	www.tpl.org
Tianjin Climate Exchange	www.chinacx.com
TLR Energy Inc	www.tlrenergy.com
UNIQUE forestry and land use	www.unique-forst.de
Unisfera / Planetair	www.planetair.ca
UpEnergy	www.upenergygroup.com
Verus Carbon Neutral	www.verus-co2.com
Vestergaard Frandsen	www.carbonforwater.com
WeAct Pty. Ltd.	www.weact.com.au
Wildlife Works	www.wildlifeworks.com
Wind to Market SA	www.w2m.es
World Land Trust	www.worldlandtrust.org
World Wide Carbon LLC	www.worldwidecarbonllc.com
Yesilfikir	www.yesilfikir.com
Yorkshire Dales Millennium Trust	www.ydmt.org

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SCX | Santiago Climate Exchange (www.scx.cl) aims to redefine climate change mitigation and adaptation as a source of corporate competitiveness and social and environmental inclusiveness.

SCX offers prime CO₂ Neutral certification for products & services differentiation and works with organizations looking to link their climate engagement with their core business – not relying solely on CSR policies. SCX specialists have been active players in country discussions regarding baseline scenarios for climate change, cap-and-trade options, green taxes, and market instruments for environmental regulation.

SCX was founded by ten leading corporate players in Chile, with the aim to develop new business models that foster green investment and sustainability practices in the country and the rest of the Latin American region. Today, SCX is an active catalyst for innovations that change the paradigm of climate change as a source of costs into a more proactive one where public awareness is translated into opportunities for local development. Thus, SCX seeks to become the Latin American hub for ecosystem market building rather than a platform limited to traditional exchange.

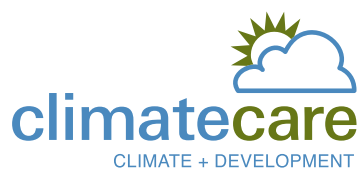
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Baker & McKenzie (www.bakermckenzie.com) was the first law firm to recognize the importance of global efforts to address climate change and the importance of such legal developments to our clients. Our dedicated team has worked on numerous pioneering 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 marketmakers such as Markit and the Voluntary Carbon Standard.



ClimateCare (www.climatecare.org) mobilises the power and scale of private finance to deliver projects with positive environmental and social impacts around the world.

We combine the vision of a social enterprise and the commercial experience of an investment bank. Leveraging mainstream funding, we profitably deliver some of the largest, most successful corporate sustainability initiatives in the world.

From offices in Africa, Europe and Asia Pacific we help many of the world's leading brands, organisations and governments scale up the impact of their initiatives. By investing their resources in projects that directly combat climate change and poverty, improve health and increase community welfare, we build better futures for millions of people around the world.



Ecoinvest (www.ecoinvestservices.com) is a leading VER and CER offset wholesaler and has been a pioneer in the emissions reduction advisory business since 1999. We hold a large portfolio of innovative and attractive projects from a range of methodologies and standards including forestry, renewable energy, cookstoves and agriculture in underdeveloped countries around the world, all with strong community benefits. We have advised over 100 projects spanning diverse sectors and can offer bespoke offsetting and inseting opportunities that are closely aligned to your business. We also offer a range of services related to Carbon & Water Footprinting, Supply Chain Management and Consultancy to help companies measure and report their carbon, water and energy usage which improves efficiency, complies with regulation and saves money.



EcoPlanet Bamboo (<http://www.ecoplanetbamboo.com>) is a global developer of commercial bamboo plantations. We believe that sustainably produced bamboo can replace increasingly endangered tropical timber for all engineered wood products and biomass resources. EcoPlanet Bamboo's mission is to grow a global resource base that can contribute to making bamboo the timber of the 21st century.

EcoPlanet Bamboo conserves and, where possible, expands natural forest within its areas of operation. Our Nicaragua plantations are certified under the FSC's Forest Management category. We work closely with local communities to maintain a strong focus on sustainable environmental and social development, and to adhere to high standards of corporate social responsibility. EcoPlanet Bamboo's first two bamboo plantations have been validated by the VCS, not only sequestering atmospheric carbon dioxide but also reducing emissions from deforestation through the provision of a sustainable alternative fiber to the harvesting of natural forest. EcoPlanet Bamboo's VCS validation goes hand in hand with Gold Level CCBA certification for high biodiversity impacts and positive social impact, including the creation of 350 jobs in communities that were previously suffering from severe poverty.



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GROUP**

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

Sustainability has nothing to do with charity. It is an integral part of entrepreneurship. It is about gradually incorporating ecological assets into the corporate balance sheets. We have to set a price for nature in order to preserve it and continue to be able to use it economically. For this reason, Forest Carbon Group AG initiates, finances, develops and markets forest projects throughout the world. Intact forests are protected, degraded forests are reforested and others are sustainably managed. Our business model enables people in the poorest regions of the world to break the vicious cycle of deforestation, environmental degradation and poverty, and improve their economical as well as social conditions. We also support organisations in North America and Europe to fund nature conservation. At the same time we enable companies mostly in industrial countries to position themselves strategically through investing in these projects, to develop new business opportunities and to secure existing ones. The company is headquartered in Frankfurt am Main, Germany.



The Global Alliance for Clean Cookstoves (www.cleancookstoves.org) is a public-private partnership led by the United Nations Foundation to save lives, improve livelihoods, empower women, and protect the environment by creating a thriving global market for clean and efficient household cooking solutions. The Alliance's 100 by '20 goal calls for 100 million households to adopt clean and efficient cookstoves and fuels by 2020. The Alliance works with hundreds of partners worldwide to help overcome the market barriers that currently impede the production, deployment, and use of clean cookstoves and fuels in developing countries. The Alliance and its partners are engaged in a number of activities to achieve our 100 by '20 goal: setting standards; commissioning research; implementing monitoring and evaluation mechanisms; injecting investor and donor funds into the sector to support entrepreneurship and innovation; and raising awareness about household air pollution.



Love the World (www.lovetheworld.com) is a leader in environmental advisory services and is particularly active in supporting enterprises in developing their carbon strategy. Our main expertise is to assist our clients in measuring, reducing and off-setting carbon footprints generated by activities, products and events.

We are a team of environmental professionals always seeking innovative ways to create value whilst contributing to the fight against global warming. We also assist enterprises in creating the most appropriate communication tools in order to share their environmental commitments with clients, employees and business partners.

Last but not least, part of our revenue is going into the “Love the World endowment fund”, whose role is to finance non-profit organizations in line with our clients’ values and objectives (social, medical, environmental, etc...).



The Family of Forest Trends Initiatives

Ecosystem Marketplace

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

Water Initiative

Protecting watershed services through markets and incentives that complement conventional management

Forest Trade & Finance

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

BBOP

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

the katoomba group

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

Communities and Markets

Supporting local communities to make informed decisions regarding their participation in environmental markets, strengthening their territorial rights



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

Public-Private Co-Finance Initiative

Creating innovative, integrated, and efficient financing to support the transition to low emissions and zero deforestation land use

Learn more about our programs at www.forest-trends.org