



5. Regional Market Deep Dive

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



Ecosystem Marketplace
A FOREST TRENDS INITIATIVE

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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.

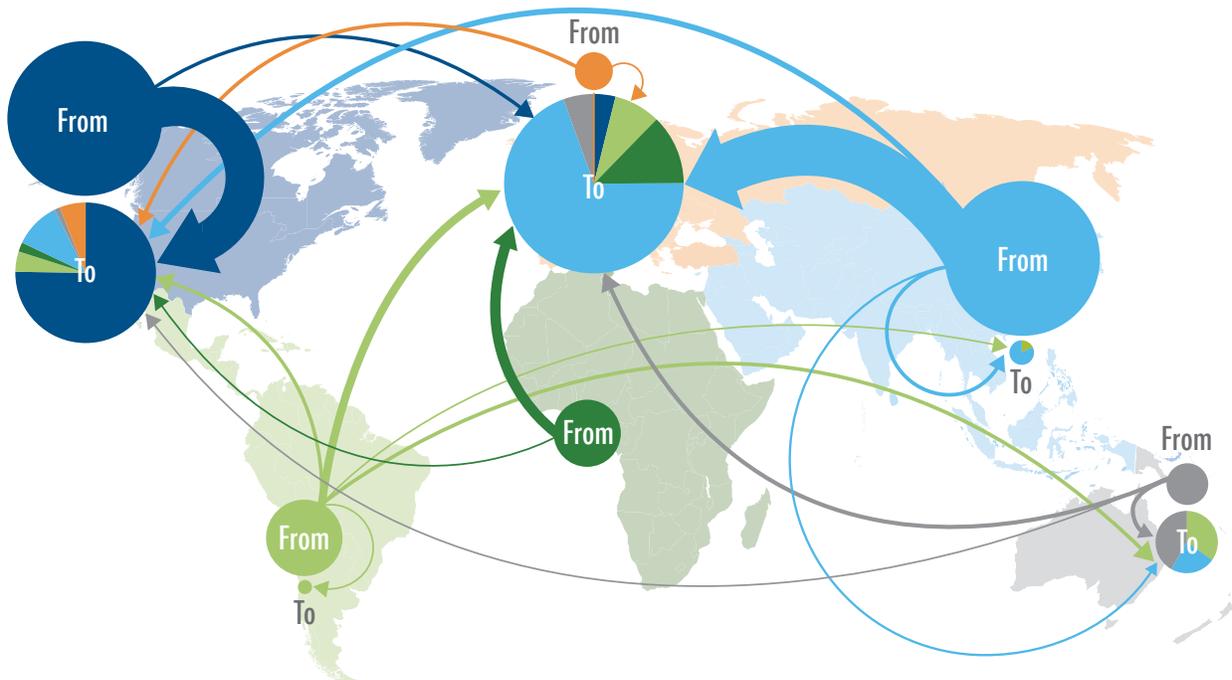
5.3 Asia: Branching Out from Renewables

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

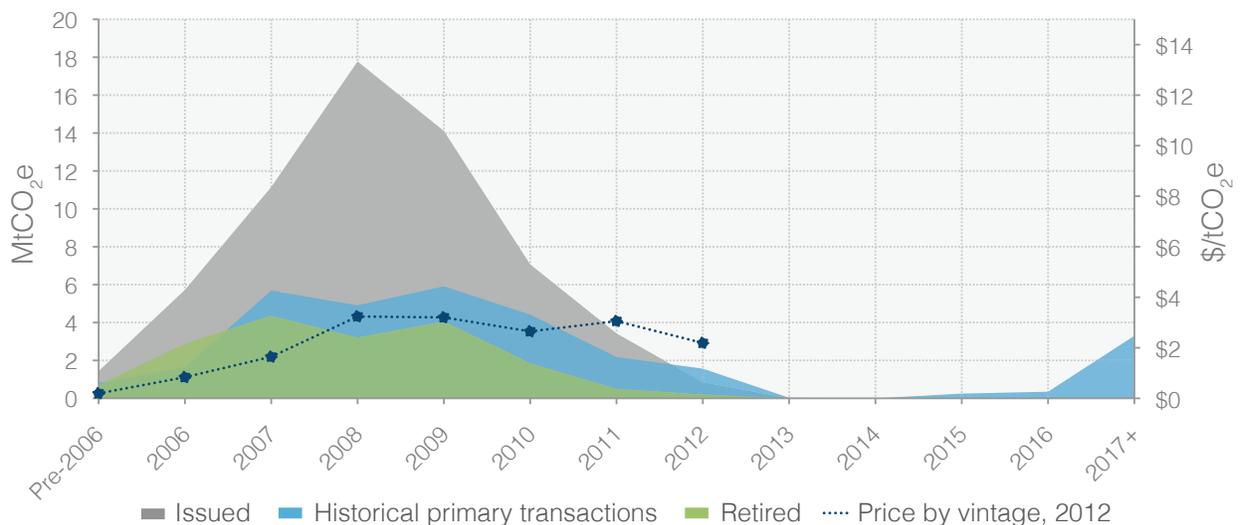
domestic project development primarily through its government-administered J-VER and J-CDM programs which the government has merged into the J-Credit Scheme mechanism this year. In 2012, J-VER transactions were valued at \$19M. To date, buyers have been primarily motivated by CSR and philanthropy, with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

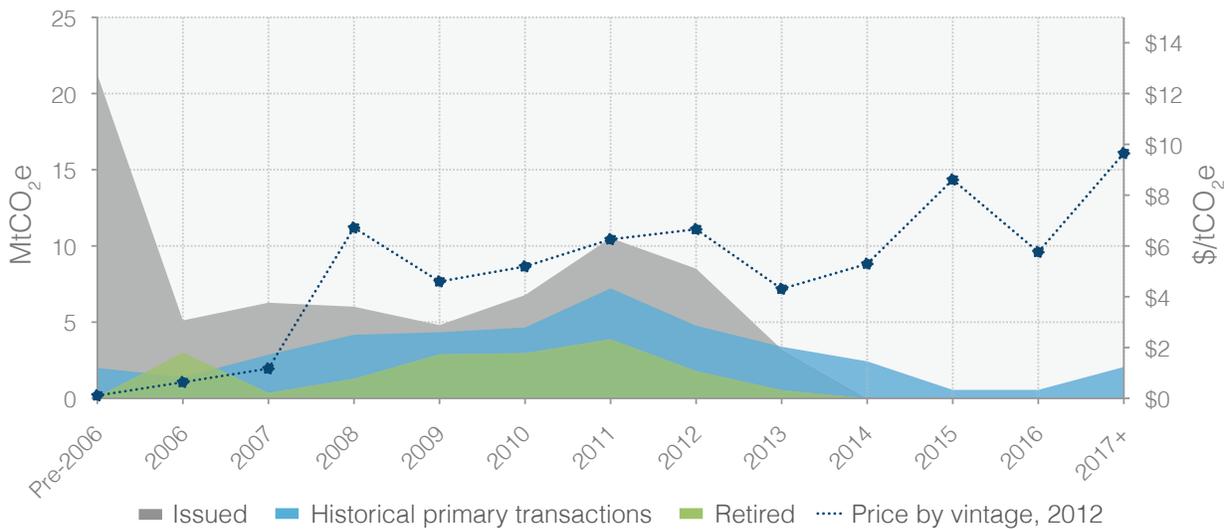
While sales volumes in the North American offset market grew by a slight 1% in 2012, Patrick Pfeiffer, Director of Trading at developer EOS Climate, predicts, **“if the US [economy] continues to recover, you'll**

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

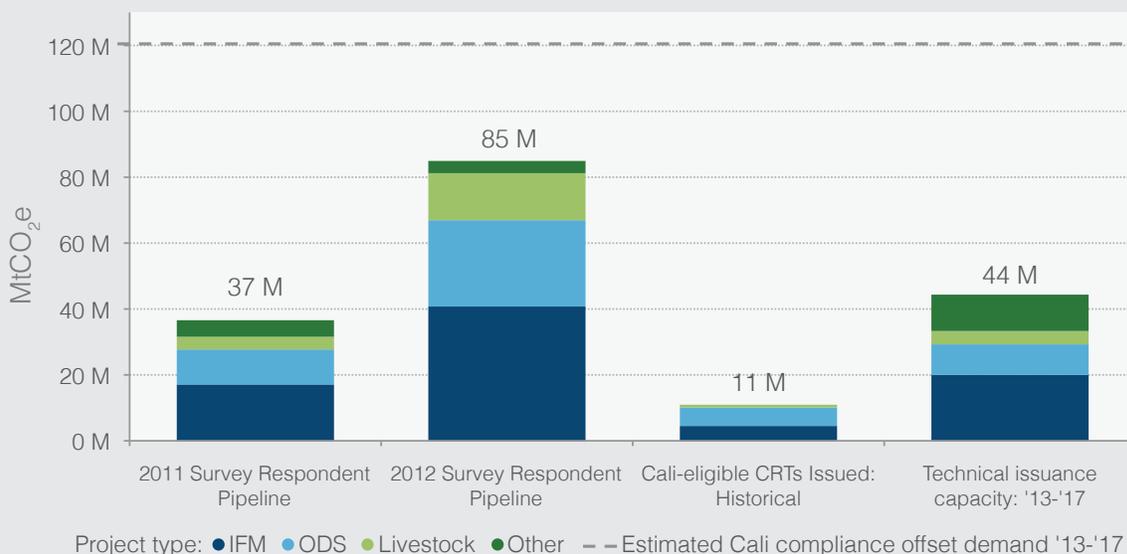
Project types on the California horizon?

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

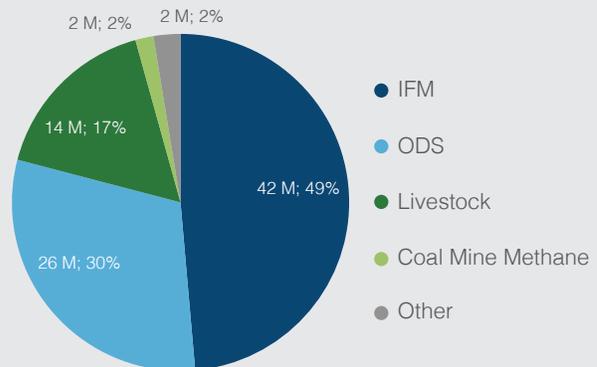
Project developers report that nearly 36 MtCO₂e of REDD offsets are being developed targeting North American compliance programs. The ARB has so far indicated that the only sources of acceptable REDD offsets would come from Acre, Brazil, and Chiapas, Mexico, two areas with which the state has a memorandum 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.

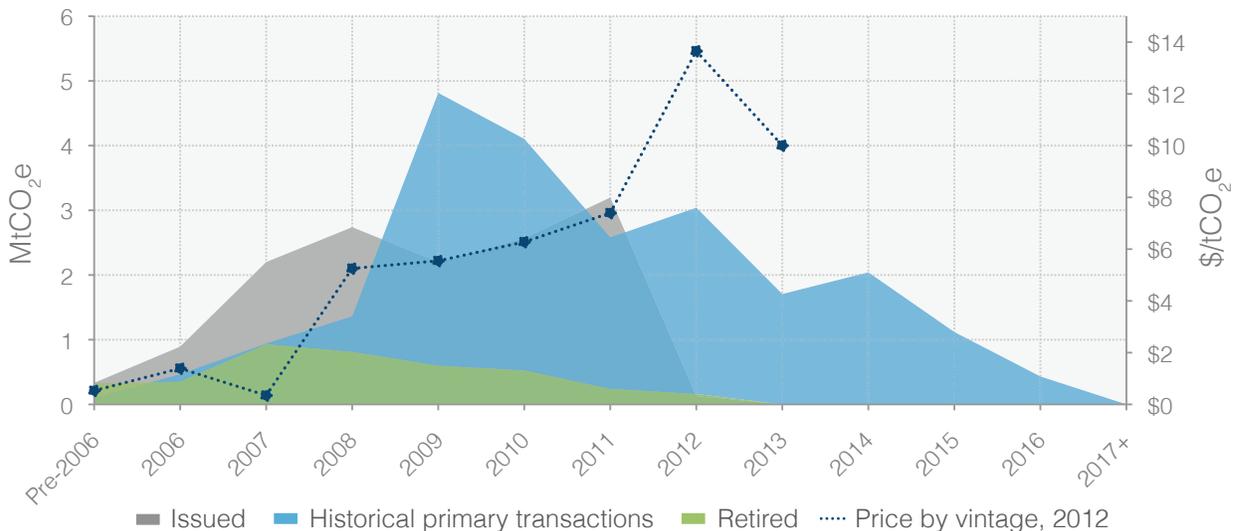
On the policy front, Latin American countries including Colombia, Costa Rica, and Chile are moving ahead with proposals to develop domestic carbon schemes and to potentially seek regional linkages with the support of the VCS and World Bank's Partnership for Market Readiness ("PMR"). Costa Rica advanced 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.

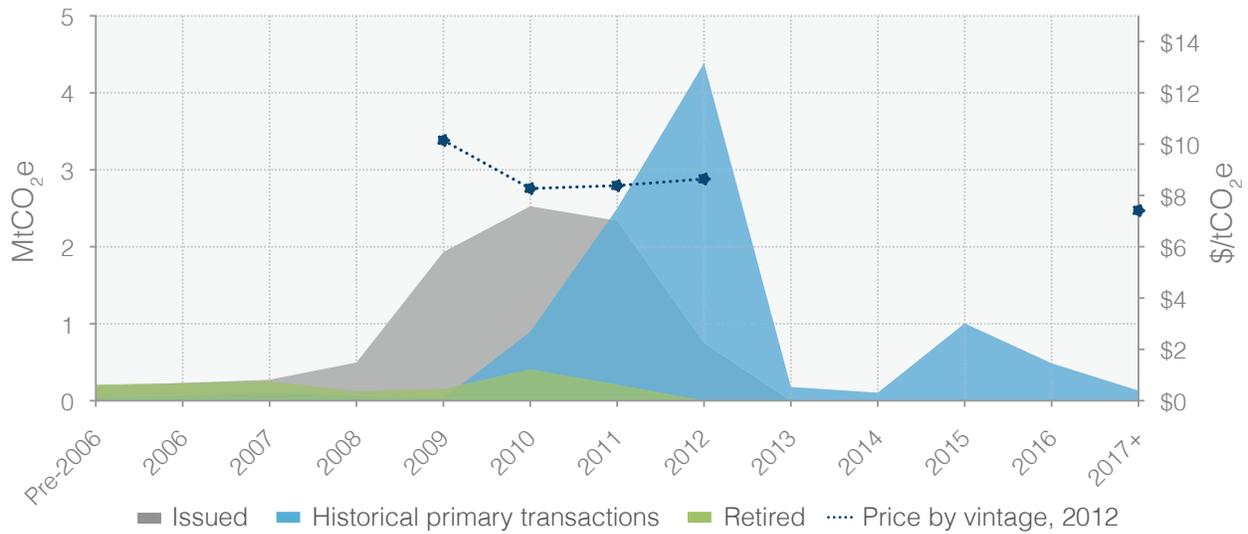
California's policy has received mixed reviews from both foreign and domestic stakeholders. Indigenous communities from Latin American states have voiced support, opposition, and indecisiveness about the REDD offsets program through testimony, letters, and meetings with the ARB. Meanwhile, the REDD Offsets 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 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).”



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