

# DEVELOPING DIMENSION:

## State of the Voluntary Carbon Markets 2012

*Executive Summary*

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*Executive Summary*

**A Report by Ecosystem Marketplace & Bloomberg New Energy Finance**

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# Executive Summary



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

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

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

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

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

Last year, suppliers reported transacting the second-largest market-wide volumes (95 MtCO<sub>2</sub>e) and value (\$576 million) tracked in this report series – and the highest value ever attributed to “over-the-counter” (OTC) transactions (\$574 million). The OTC market reached this new height by transacting 93 MtCO<sub>2</sub>e in 2011.

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

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

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<sup>1</sup> In 2010, we recorded a single trade of 59 MtCO<sub>2</sub>e, priced at less than \$0.02/tCO<sub>2</sub>e. In both last year’s and this report, this outlier is excluded from more detailed market analysis throughout this report.

Markets	Volume (MtCO <sub>2</sub> e)		Value (US\$ million)	
	2010	2011	2010	2011
Voluntary OTC-traded	69	92	414	572
CCX (exchange-traded and OTC-cleared)	62	1	8	.05
Other Exchanges	2	2	11	4
<b>Total Voluntary Markets</b>	<b>133</b>	<b>95</b>	<b>433</b>	<b>576</b>
<b>Total Regulated Markets</b>	<b>8,702</b>	<b>10,094</b>	<b>158,777</b>	<b>175,451</b>
<b>Total Global Markets</b>	<b>8,835</b>	<b>10,189</b>	<b>159,210</b>	<b>176,027</b>

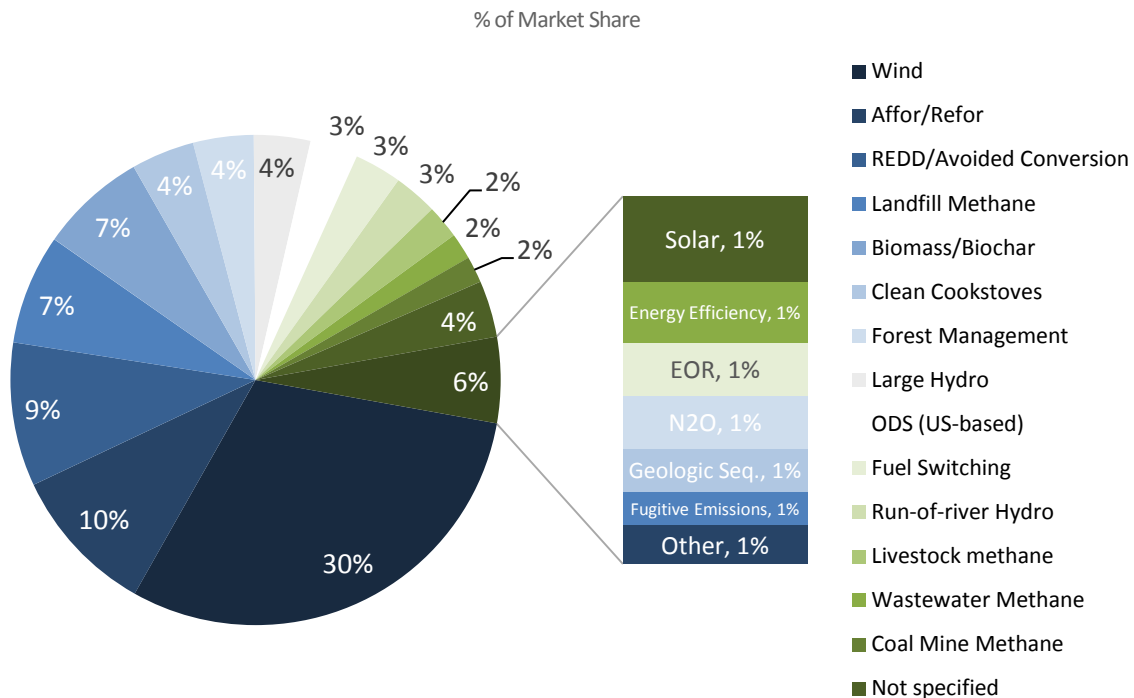
Source: Ecosystem Marketplace and the World Bank's State and Trends of the Carbon Markets 2012. Note: Totals may not add up due to rounding.

## Renewables Wind up Market Share, Clean Development Heats up

Renewable energy projects generated 35 MtCO<sub>2</sub>e or 45% of all transacted reductions in 2011 – roughly the same space occupied by forest carbon credits last year. Of this volume, wind projects blew away other technologies to transact 23.5 MtCO<sub>2</sub>e. Demand for lower-price credits – as well as intensifying price competition among European suppliers – bumped up purchases of older vintages of Asian renewable energy credits, which were abundantly available.

Afforestation/reforestation projects that were in the works for years found their way to market in 2011, to transact the market's second-highest volumes (7.6 MtCO<sub>2</sub>e). While credits from REDD projects dropped 59% from 2010, REDD's still-significant transactions (7.3 MtCO<sub>2</sub>e) and above-average price yielded the highest value of any project type. The drop in transaction volume can be attributed to both political and technical challenges, as well as interest in lower-priced credits.

Figure 1: Market Share by Project Type, OTC 2011



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

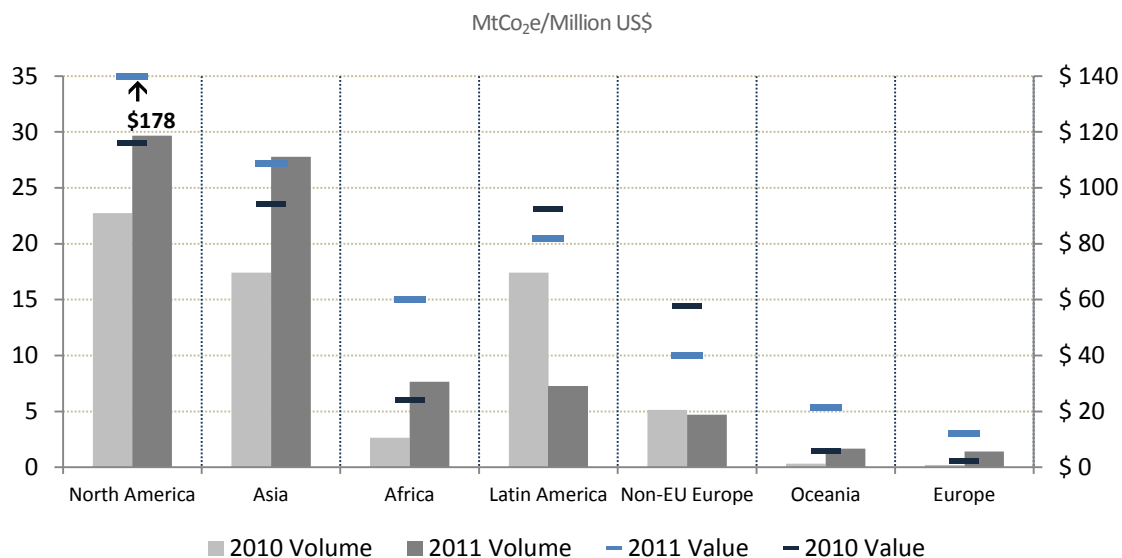
Landfill methane capture also remained popular but saw fewer transactions than in 2010. Biomass projects (including water purification) and clean cookstoves were spotlighted last year, with the latter transacting large volumes as a relatively new project type in this survey.

## North America Leads, Africa Rising in Project Origination

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

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

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



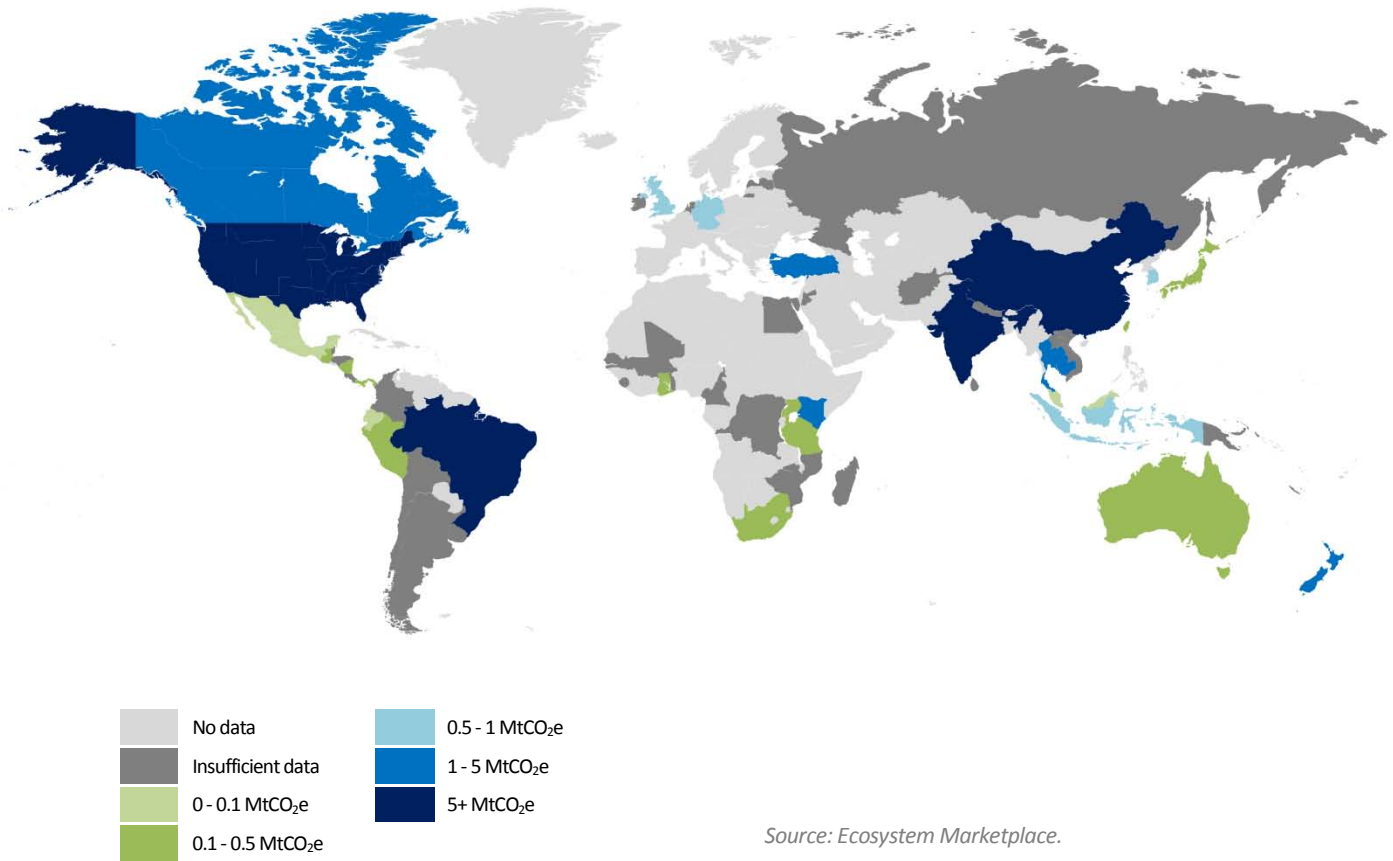
Source: Ecosystem Marketplace. Note: Based on 1843 survey responses.

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

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

Oceania and Europe also saw an increase in transacted volumes from their shores. Despite Australia’s passage of a carbon tax – transitioning to a trading mechanism – suppliers reported an insignificant volume of credits sold for pre-compliance. In Europe, most transaction volumes were reported from pre-Kyoto Protocol vintage credits, but also some credits for woodland creation in the United Kingdom – that are not technically offsets but are denominated and sold in tCO<sub>2</sub>e.

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



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

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

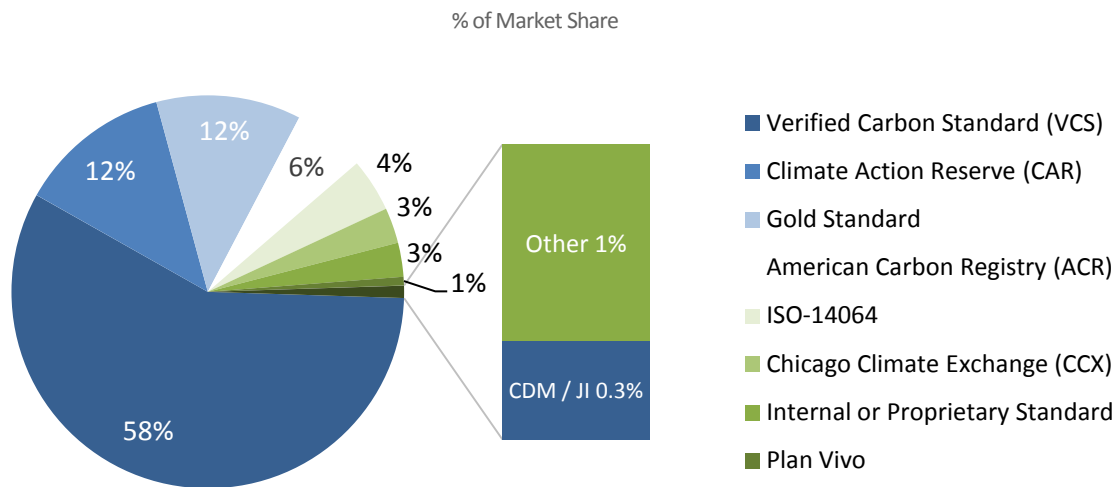
Continuing a 5-year streak at the top, the Verified Carbon Standard saw 41 MtCO<sub>2</sub>e of credits transacted utilizing its standard. Behind VCS, the Climate Action Reserve guided another 9 MtCO<sub>2</sub>e of credits transacted in 2011, and Gold Standard with 8.5 MtCO<sub>2</sub>e.

The rise of domestic standards was a significant trend last year. A number of standards that apply exclusively to domestic projects remained active, while numerous local and national governments initiated voluntary offset projects. Country-specific standards backed 6 MtCO<sub>2</sub>e or 7% of all credits transacted in the VCM in 2011.

Credit prices were highly stratified across the range of available third-party standards. Volume-weighted average prices ranged from less than \$0.1/tCO<sub>2</sub>e for CCX credits to over \$120/tCO<sub>2</sub>e for J-VER credits.



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



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

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

## Record Issuance and Retirement on Registries

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

While suppliers reported that 92% of transacted credits were in their seller accounts on Markit, APX, and CDC VCS registries, we tracked reduced activity from other active registries. The exception was the Japanese government’s J-VER registry and Blue Registry, which saw small volumes of their issued credits transacted in 2011, but still more than the year before. About 2  $\text{MtCO}_2\text{e}$  was transacted and recorded in organizations’ internal registries – roughly the same volume as in 2010.

## Purely Voluntary Buyers Gain Traction, Pre-Compliance Steady

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

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

NGO, government, and individual buyers split a remaining 4%. Purchases for individual offsetting remained small (1.2 MtCO<sub>2</sub>e) but were still more than double the volume reported in 2010. The remaining category of “other” buyers includes credits transacted by sporting associations, universities, and other miscellaneous buyers. It also includes offsets sold to individuals as investments rather than for offsetting emissions, the subject of debate and legal action in recent months.

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

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

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

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

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

European buyers maintained their lead as the largest source of offset demand, transacting 33 MtCO<sub>2</sub>e worth \$204 million – a little over 1/3 of overall OTC market value in 2011. With regards to both country-level and purely voluntary demand, the US came out on top – purchasing 19 MtCO<sub>2</sub>e for purely voluntary purposes, and

with 12.4 MtCO<sub>2</sub>e going directly to end users. We tracked another 10 MtCO<sub>2</sub>e of offsets transacted for California pre-compliance purposes, at an average price of \$8/tCO<sub>2</sub>e – for a total value of \$85 million in 2011. To the north, Canada’s voluntary buyers transacted 58% less volume in 2011 (1 MtCO<sub>2</sub>e). Oceania saw growth through increased offset transactions in both Australia and New Zealand. We tracked a small 5 MtCO<sub>2</sub>e or 7% market share from credits transacted to buyers based in developing countries in Asia, Latin America, and Africa. This represents a 32% decrease in volumes transacted to developing country buyers in 2011 and is mostly attributed to fewer transactions by buyers in Latin America – where a few large transactions in 2010 were not repeated last year.

## Suppliers Await Steady Long-Term Growth in Global Markets

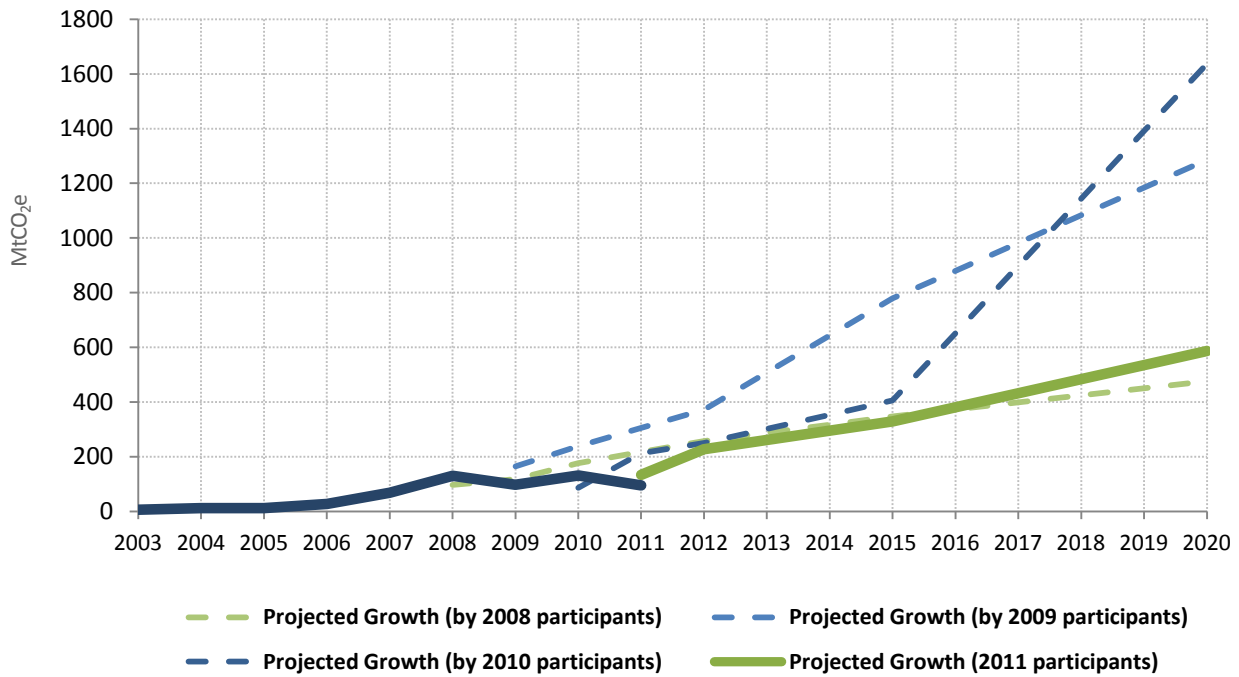
Turning back to the global market, suppliers forecasted a 70% growth rate for the 2012 market, expecting that they and their peers will transact 227 MtCO<sub>2</sub>e this year. To achieve this predicted sales volume in 2012, suppliers would need to transact 132 MtCO<sub>2</sub>e more than they did last year.

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

future market growth. Even based on this year’s comparably conservative estimates of market growth, the cumulative volume of transactions suppliers expect to see through the end of 2016 (1,500 MtCO<sub>2</sub>e) is four times the volume they reported in their project pipelines for the same period.

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

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



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



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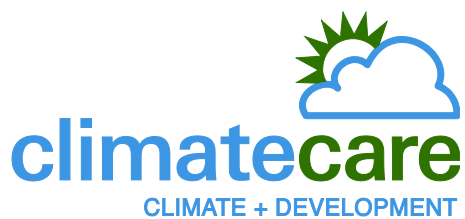
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