DEVELOPING DIMENSION:
State of the Voluntary Carbon Markets 2012

Executive Summary
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A Report by Ecosystem Marketplace & Bloomberg New Energy Finance

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Acknowledgments:

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Cover:

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**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 voluntary reported by 312 offset suppliers, seven exchanges, and all major registries.

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

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

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

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

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

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

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

¹ In 2010, we recorded a single trade of 59 MtCO₂e, priced at less than $0.02/tCO₂e. In both last year’s and this report, this outlier is excluded from more detailed market analysis throughout this report.
Table 1: Transaction Volumes and Values, Global Carbon Market, 2010 and 2011

<table>
<thead>
<tr>
<th>Markets</th>
<th>Volume (MtCO₂e)</th>
<th>Value (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary OTC-traded</td>
<td>69</td>
<td>414</td>
</tr>
<tr>
<td>CCX (exchange-traded and OTC-cleared)</td>
<td>62</td>
<td>8</td>
</tr>
<tr>
<td>Other Exchanges</td>
<td>2</td>
<td>11</td>
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<tr>
<td>Total Voluntary Markets</td>
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<td>433</td>
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<tr>
<td>Total Regulated Markets</td>
<td>8,702</td>
<td>158,777</td>
</tr>
<tr>
<td>Total Global Markets</td>
<td>8,835</td>
<td>159,210</td>
</tr>
</tbody>
</table>

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

Renewables Wind up Market Share, Clean Development Heats up

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

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

Figure 1: Market Share by Project Type, OTC 2011

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](image)

*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$_2$e.
VCS Prevails in Market Share While Domestic Program Standards Fetch Highest Average Prices

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

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

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

Credit prices were highly stratified across the range of available third-party standards. Volume-weighted average prices ranged from less than $0.1/tCO₂e for CCX credits to over $120/tCO₂e for J-VER credits.
Credits with a high average price (>\$8/tCO₂e) 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/tCO₂e 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/tCO₂e) 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 MtCO₂e was transacted and recorded in organizations’ internal registries – roughly the same volume as in 2010.

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

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

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

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

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

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

European buyers maintained their lead as the largest source of offset demand, transacting 33 MtCO2e worth $204 million – a little over 1/3 of overall OTC market value in 2011. With regards to both country-level and purely voluntary demand, the US came out on top – purchasing 19 MtCO2e for purely voluntary purposes, and with 12.4 MtCO2e going directly to end users. We tracked another 10 MtCO2e of offsets transacted for California pre-compliance purposes, at an average price of $8/tCO2e – for a total value of $85 million in 2011. To the north, Canada’s voluntary buyers transacted 58% less volume in 2011 (1 MtCO2e). Oceania saw growth through increased offset transactions in both Australia and New Zealand. We tracked a small 5 MtCO2e or 7% market share from credits transacted to buyers based in developing countries in Asia, Latin America, and Africa. This represents a 32% decrease in volumes transacted to developing country buyers in 2011 and is mostly attributed to fewer transactions by buyers in Latin America – where a few large transactions in 2010 were not repeated last year.

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

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

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

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

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

Source: Ecosystem Marketplace. Note: Based on 85 organizations.
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SCX offers a CO2 Neutral certification for products & services differentiation, and works with organizations looking to link their climate engagement with their core business and competitiveness - not relying solely on CSR policies. SCX’s experience has been the base for the discussion in Chile of a tax reform that would include a tax-and-trade system applied over corporations’ carbon footprint and the role of local offsets to reduce the potential tax base. Overall, SCX hopes to perform the role of an active catalyzer of innovations that change the paradigm from climate change as a source of costs, to a more proactive one, where public awareness is translated into opportunities for local development. Thus, SCX seeks to be a hub for market building rather than a limited traditional exchange.
ClimateCare (www.climatecare.org) is an independent ‘profit for purpose’ organisation committed to tackling climate change, poverty and development issues. Our unique climate and development model funds ground-breaking projects spanning renewable energy, water purification and clean cookstove technology, cutting emissions and transforming millions of lives worldwide.

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

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

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

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

With offices in the UK, India, Spain, Turkey and the United States, Carbon Clear is ideally positioned to help our global clients develop leading-edge carbon management practices in their operations and supply chains. We develop and source high quality carbon credits, conduct carbon footprints, provide carbon reduction advisory services, and help organisations to comply with carbon-related legislation. Carbon Clear is a founding member of the International Carbon Reduction and Offset Alliance (ICROA), and a member of the advisory board developing the British Standards Institute’s PAS 2060 specification for Carbon Neutrality.
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Entergy has been an industry leader in carbon reductions since 2001, when it was the first U.S. utility to voluntarily commit to stabilize CO₂ emissions at or below year 2000 levels. As a founding member of the American Carbon Registry, Entergy has provided funding for restoration of degraded deltaic wetlands, an offset methodology that will quantify how wetland restoration reverses climate change and explores solutions to help pay for rebuilding the Gulf of Mexico’s disappearing coastal wetland.

The Forest Carbon Group AG (FCG) (www.forestcarbongroup.de) develops, finances and markets worldwide forest projects with high social and ecological benefits, and supports companies in implementing their carbon strategies. It is motivated by the need for forestry that does not jeopardise livelihoods, which sustainably utilises forests and natural resources, and uses forestry management to restore damaged habitats.

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