3. Market Infrastructure

Standards and Registries

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3. Market Infrastructure: Standards and Registries

3.1 Third-Party Offset Project Standards and Certifications

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

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

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

2012 KEY FINDINGS

- For the first time, suppliers that reported using a standard said that 100% of all their transacted offsets used an independent third-party standard instead of an internal or proprietary standard.
- Existing and new standards are innovating methodologies to measure and verify the delivery of co-benefits, including some efforts to bypass carbon quantification entirely and instead support "impact" projects. Examples include the development of Gold Standard Water Benefit Certificates, the Women's Carbon Standard, Vulnerability Reduction Credits, and the BBOP Standard on Biodiversity Offsets.
- In 2012, the VCS retained its position as the market's most popular third-party standard, when VCS-approved project methodologies were behind a record transaction volume of 43 $MtCO_2e$. Demand for Gold Standard offsets topped the 10 $MtCO_2e$ for the first time in the standard's history, while Chicago Climate Exchange projects around the world grew their market share from 3% in 2011 to 12% last year. Only one third of CCX offsets were from agriculture, forestry, and land-use projects in the US.
- Offsets from REDD projects that are or aspire to be certified to both VCS and CCB more than doubled in 2012. These projects, combined with Gold Standard-certified offsets, made up 73% of all transaction volumes that quantified project co-benefits or were implemented in forest areas that feature additional non-carbon forest product certification. Country-specific standards backed an additional 9.5 $MtCO_2e$ or 13% of all offsets transacted in the voluntary carbon markets in 2012.
- 42.5 $MtCO_2e$ or 43% of all transacted offsets were reported as being issued at the time of transaction. Overall, of the 312 $MtCO_2e$ of verified offsets that have ever been issued and tracked on a registry, 21% of this volume (66 $MtCO_2e$) was issued in 2012.
- 96% of all offsets issued in 2012 were housed on a registry hosted by APX Inc. (34 $MtCO_2e$ issued in 2012) or Markit Environmental Registry (25 $MtCO_2e$ issued in 2012). A few domestic registries like the Clean Energy Regulator's offset register under Australia's Carbon Farming Initiative also issued their first offsets in 2012.

[5] 21 $MtCO_2e$ of transacted offsets were not reported alongside a response on their use of a project standard, so the standards breakdown for this volume is unknown

Streamlining expertise and process

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

Building out co-benefits

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

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

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

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

Tapping into voluntary programs' experience

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

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

Crediting the link between carbon and water

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

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

Tackling "other" land-use emissions

While movement on climate-smart agriculture in international negotiations has been slow, the voluntary carbon standards and projects have continued to elevate technical rigor and accessibility for this project type. VCS approved its first soil carbon methodology in 2012, based on a versatile sampling method that may potentially apply to other landscapes including wetlands and peatlands. ACR and CAR introduced new N_2O fertilizer management methodologies, while ACR saw expansion of its California Rice Production methodology to the US Mid-South, as well as new methodologies for Grazing Land and Livestock Management and Avoided Conversion of Grasslands to Croplands. The Gold Standard, too, is exploring accreditation of climate-smart agriculture through its new alliance with Fairtrade and the FSC.

Targeting the hard-to-reach places

The Gold Standard's micro-scale scheme gained traction in 2012, reportedly seeing a significant amount of new project development that leverages the scheme's lower audit costs for projects in developing countries that will generate under 10,000 tCO_2e/year. The Gold Standard's 2012 alliance with Fairtrade further strengthened the network through which the standard can bring carbon finance to smallholders. Plan Vivo also updated its standard guidelines to cover all community-based land management activities, aiming to offer more integrated certification services for smallholder activities.

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

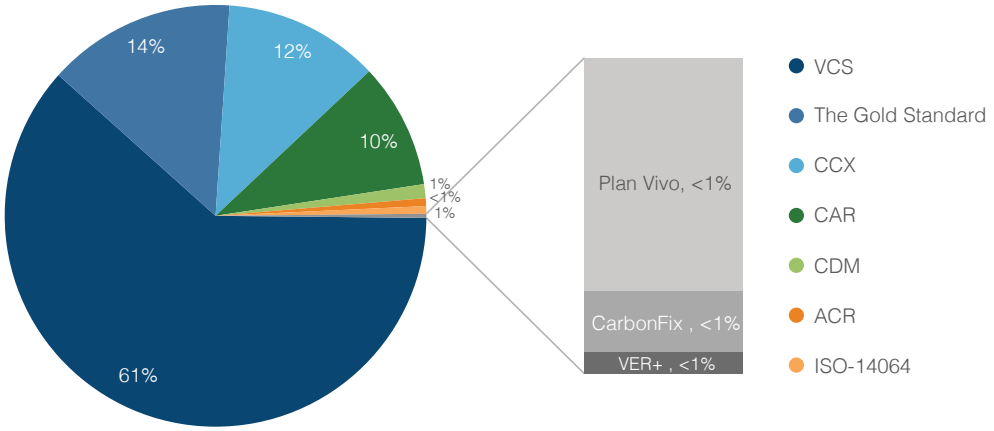
Note on figures

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

3.2 Third-Party Standards Usage in 2012

In 2012, the VCS retained its position as the market's most popular third-party standard, when VCS projects were behind a record transaction volume of 43 $MtCO_2e$. This represents 61% of all offsets utilizing an

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



Notes: Based on 70 $MtCO_2e$ associated with the use an independent third-party project standard.

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

independent third-party carbon standard (Figure 33), or 53% market share if one includes domestic offset standards (Figure 9). Last year, 52% of transacted VCS offset volume was from renewable energy projects, compared to 60% in 2011. On the flip side, VCS forestry offsets made up a growing proportion of the standard's portfolio, transacting 13 $MtCO_2e$ or 30% of VCS volumes.

Demand for Gold Standard offsets topped the 10 $MtCO_2e$ mark for the first time in the standard's history, with much of the increase in transaction volume owing to heightened interest in the clean cookstoves and water filter distribution space.

Volumes transacted from Chicago Climate Exchange projects around the world grew their market share from 3% in 2011 to 12% last year. Of this 8.3 $MtCO_2e$, only one third of CCX offsets were from agriculture, forestry, and land-use projects in the US – worldwide, CCX offsets were sourced from another nine locations including Costa Rica, Germany, Brazil, India, and China. CCX volume largely came from a trickle of high-volume, low-priced bilateral transactions of offsets generated before 2009.

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

Even in light of plunging prices in the CDM market, a limited 0.7 $MtCO_2e$ of CDM offsets ("CERs") reportedly found their way into the hands of voluntary buyers. Offset suppliers say this volume is bound to increase as a growing number of CDM project developers seek a market exit strategy that will help recoup some of the losses incurred in the distressed compliance program.

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

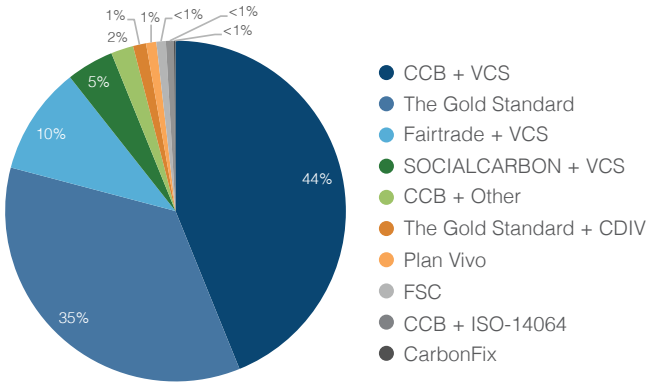
Among other programs, both Plan Vivo and the CarbonFix program saw smaller transaction volumes in 2012, together comprising less than 1% of market share. Even so, the Plan Vivo project register reported two new projects registered in early 2013 and several new projects that submitted their first documentation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

Co-benefits standards and project area certifications

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

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

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



Notes: Based on 31.5 $MtCO_2e$ associated with the use of an additional co-benefits standard or project area label.

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

The volume of offsets contracted from REDD projects that are or aspire to be certified to both VCS and CCB more than doubled in 2012 as demand for the combination grew market-wide, with growth in activities tracked in Latin America, Africa, and Asia. Across regions, CCB was applied to 95% of transacted VCS forestry offsets (12 $MtCO_2e$ of 13 $MtCO_2e$).

VCS projects that applied the SOCIALCARBON certification saw transaction volumes drop slightly to 1.3 $MtCO_2e$ in 2012. As in previous years, certified SOCIALCARBON offsets were primarily transacted from fuel switching and biomass projects in Brazil, though 2012 did see some interest in forestry offsets with SOCIALCARBON certification as well.

The Gold Standard program differentiates between projects that are developed exclusively for voluntary offset buyers and those that are targeted to the CDM's compliance carbon markets and also seek additional Gold Standard certification. Around half of the .7 $MtCO_2e$ that was transacted from CDM projects in 2012 was additionally certified to The Gold Standard. These Gold Standard projects transacted a small proportion of CERs to voluntary buyers – compared to the bulk of Gold Standard VERs sold to voluntary buyers.

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

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

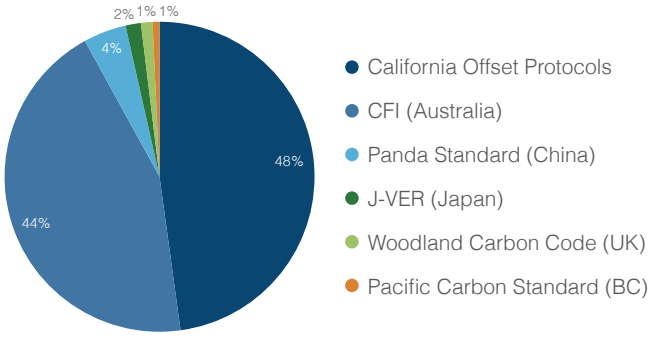
In 2012, 1.7 $MtCO_2e$ of VCS offsets were sourced from project areas where communities engaged in Fairtrade labeled productive activities. Currently, however, there are no offsets labeled by any of these programs under any carbon accounting standard. In 2012, The Gold Standard established the voluntary carbon market's first formal link with both Fairtrade and FSC programs so that the benefits of both the carbon mitigation project and other certified activities will be "bundled" in one offset – and in the case of Fairtrade-labeled offsets, will be sold according to Fairtrade program specifications.

Domestic standards

Country-specific standards backed a record 9.5 $MtCO_2e$ or 13% of all offsets transacted in the voluntary carbon markets in 2012. Aside from China's Panda Standard for forestry and land-use projects, all participating standards were developed or are administered by the public sector. For this reason, many of them service compliance markets but sell offsets into the voluntary market, too.

Domestic offset market activity was almost evenly split between offsets developed to California's regulation-based offset protocols and Australia's CFI, both reporting roughly 4 $MtCO_2e$ in 2012 transactions. Behind these programs, New Zealand's Permanent Forest Sink Initiative ("PFSI") and China's Panda Standard contributed just under 0.5 $MtCO_2e$ apiece, both focused on domestic A/R activities. Voluntary demand for PFSI units in NZ was modest, with some support from overseas buyers but limited domestic demand.

Figure 35: Market Share by Domestic Project Standard, 2012



Notes: Based on 18 $MtCO_2e$ associated with the use of an additional co-benefits standard or project area label.

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

Out of the domestic programs, Japan's J-VER program continued to draw the highest prices, at $85/tCO$_2$e for forestry offsets contracted to domestic buyers motivated by philanthropic and CSR purposes. United Kingdom's Woodland Carbon Code had a quiet year compared to 2011, but moving into 2013 piloted its first grouped validation scheme in support of reduced validation costs for small-scale forest carbon project developers.

3.3 Offset Prices by Standard Utilized

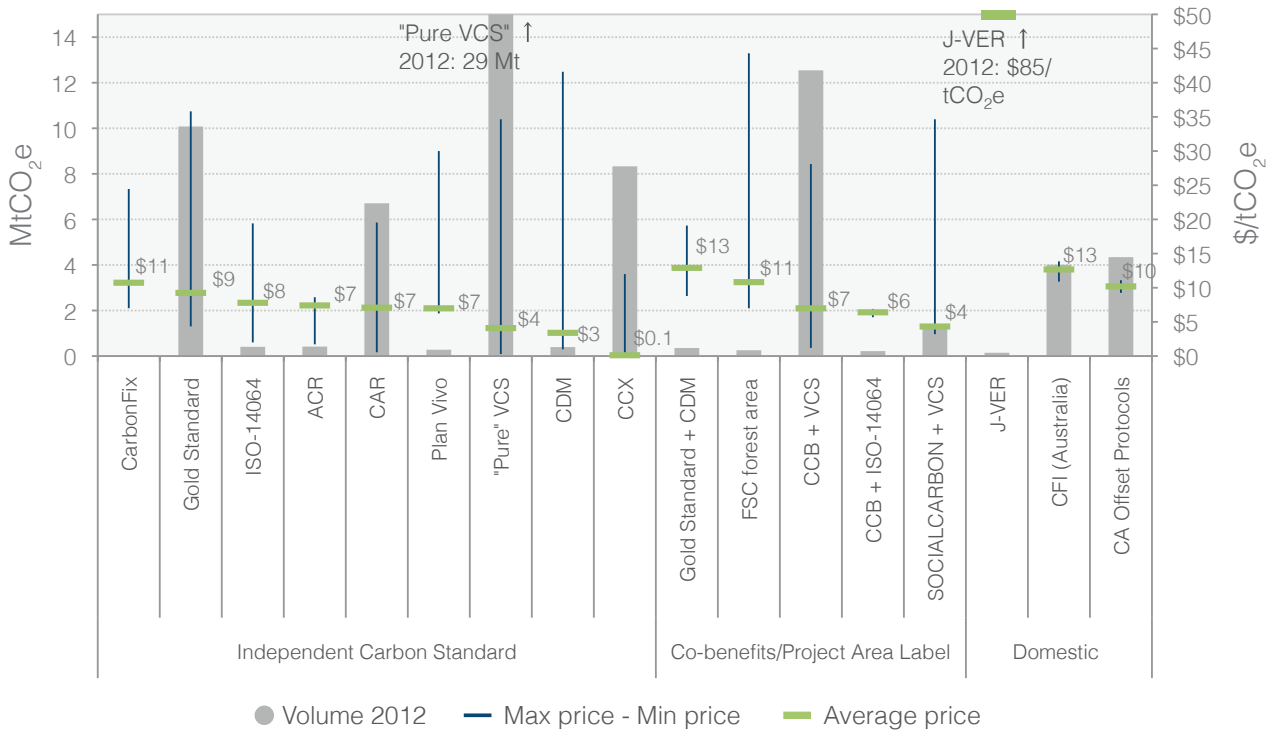
In 2012, volume-weighted average prices ranged from under $0.1/tCO$_2$e for CCX offsets to $85/tCO$_2$e for offsets from Japan's J-VER program.

As in 2011, offsets certified to CarbonFix or The Gold Standard commanded the highest average prices ($10.7/tCO$_2$e and $10/tCO$_2$e, respectively), though both average prices were slightly to significantly lower than 2011 levels. While both these standards and Plan Vivo certify project benefits in addition to carbon accounting, they are only included under "Independent Carbon Standard" in Figures 36 and 37 to avoid redundancy. Gold Standard CERs are included under the co-benefits category, however, to demonstrate the variation in price between these and non-Gold Standard CERs.

For several activities in the marketplace (ISO-14064 and ACR-certified projects, and projects implemented in FSC-certified forests) significantly smaller transaction volumes correlated with higher average prices. ACR offset prices rose from $5.7/tCO$_2$e in 2011 to $7.4/tCO$_2$e in 2012, reflecting above average prices paid by US-based buyers like The Walt Disney Company and Chevrolet. Meanwhile, pre-compliance program offsets under the CAR program, California regulation-based offset protocols, and Australia's CFI converged at a range between $7/tCO$_2$e and $12.7/tCO$_2$e as offsetting preparations picked up in the respective regions. While California regulation-based protocols and the CFI saw offset prices fall within a narrow range, CAR program offsets varied more widely as some of the program's offsets (including low-priced landfill methane offsets and high-priced livestock methane offsets) continued to be sold to purely voluntary buyers at prices that varied from "typical" pre-compliance offset prices.

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

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



Notes: Based on 70 MtCO$_2$e associated with the use of an independent third-party project standard.

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

Within this category, prices ranged from an average $1.4/tCO$_2$e for VCS energy efficiency project offsets to an average $9/tCO$_2$e for a small volume transacted from VCS clean cookstove distribution project offsets.

Beneath VCS, CDM project offsets without any additional Gold Standard certification transacted at an average $3.4/tCO$_2$e, while those with Gold Standard certification – while very rarely reported – averaged $13/tCO$_2$e. This premium was primarily tied to household device delivery projects or projects employing other unique technologies in unique locations.

3.4 Offset Prices by Standard and Project Stage

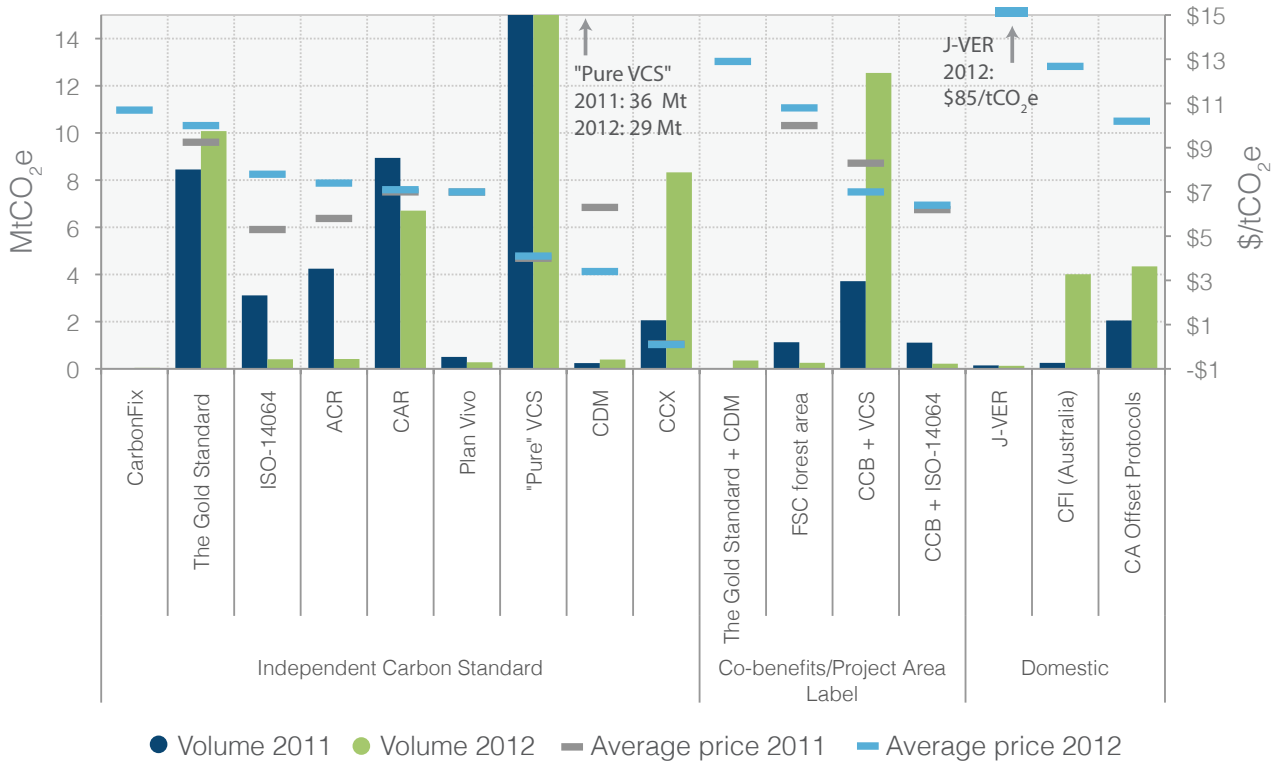
Because 76% of transaction volumes were concentrated around the market's top five independent standards, it is helpful to understand the variables within those standards that influence price. Figure 38 examines some of the voluntary market's leading project types (according to type and dominant standard)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

42.5 MtCO$_2$e or 43% of all transacted offsets were reported as being issued at the time of transaction. Even so, a few project types (particularly VCS forestry) reported offset transactions that predominantly occurred in projects' early, pre-verification stages. Both here and in the clean cookstove distribution market, buyers paid more for offset contracts occurring at later stages in the project cycle.

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

"Looking back five years ago, Gold Standard offsets from cookstove projects were trading at €15 to €16 per tonne [approximately $20/tCO$_2$e], and multi-

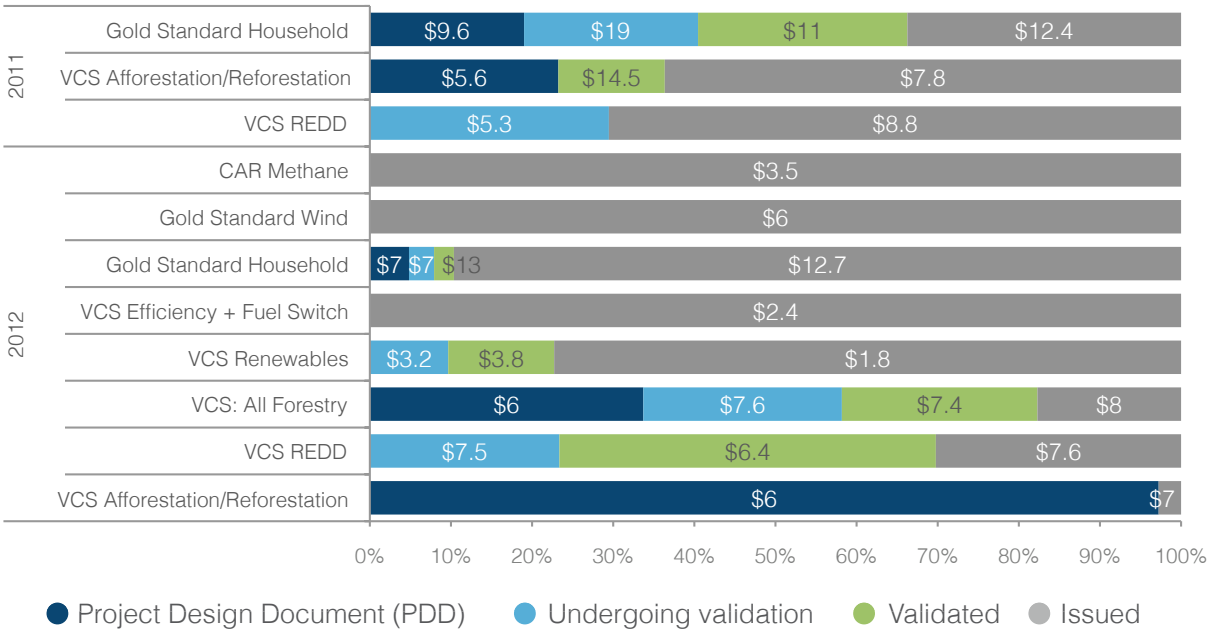
Figure 37: Transacted Volume and Average Price by Various Project Standards and Certifications, 2011-2012



Notes: Based on 70 MtCO$_2$e associated with the use of an independent third-party project standard.

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

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



Notes: Based on 50 $MtCO_2e$ in 2012 and 4 $MtCO_2e$ associated with use of select project standards, project types and project stages.

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

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

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

3.5 Offset Project Registries: Tracking the Trades

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

Registries as a whole reported record activity again in 2012 as registry use and offset issuance have become a key requirement for market participation. Of the 312 $MtCO_2e$ of verified offsets that have ever been issued and tracked on a registry, 21% of this volume (66 $MtCO_2e$) was issued in 2012. As also seen in 2011, much of this volume was made up of older vintage offsets issued by VCS renewable energy projects, corresponding with the voluntary market's dominant offset transaction activities in 2012.

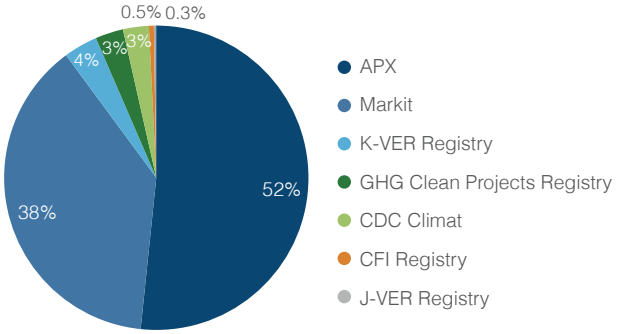
While the volume of offsets retired on a registry rose for major registries run by Markit and APX (17 $MtCO_2e$, up 60%), the overall volume of retirements was pulled downward due to lower offset retirement rates through the CCX Offsets Registry. If CCX historical and 2012 retirement volumes are removed, 2012 represented a record year for offset retirements (18 $MtCO_2e$ in 2012).

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

Major registries see record activity, new functionality

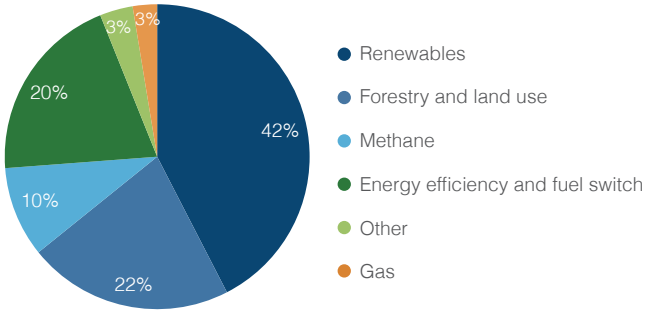
APX – servicing CAR, VCS and, most recently, ACR – experienced significant growth, issuing 34 $MtCO_2e$,

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



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

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



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

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

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

The Markit Environmental Registry – which services 10 carbon standards – also saw heightened activity, issuing 25 $MtCO_2e$ in 2012, or 34% of all offsets ever issued by Markit.

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

Infrastructure providers ramp up support for jurisdictional programs

As domestic carbon programs launch, major registries are increasingly targeting their support to jurisdictional programs – all subnational to date. In 2012, ACR and CAR registries, both underpinned by APX – became official Offset Project Registries ("OPRs") under California's new cap-and-trade program and saw an uptick in new projects listed and offsets coming online for use under state-approved Early Action Quantification Methodologies and California's compliance offset protocols.

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

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

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

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

Registry	Issued, All Years	Issued, 2012	Retired, All Years	Retired, 2012
	$MtCO_2e$			
Markit	75	25	23	11
APC	63	34	11	6
CCX	89	0	26	2
K-VER	15	2	8	0.1
CDC Climat	10	2	2	0.3
GHG CleanProjects	5	2	0.7	0.4
Blue Registry	4	0	1	0.01
CFI	0.3	0.3	0	0
J-VER	0.2	0.2	N/A	N/A
TOTAL	312	76	66	20

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

Providers, partnerships see flux

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

Registries support beyond-carbon dialogue

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

The customer isn't always right

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

3.6 Registry-Reported Activity in 2012

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

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

As in previous years, Markit Environmental Registry and APX Inc. were the most active registry service providers in the offset marketplace – as the virtual "homes" of most major offset programs. While the Markit registry platform has issued the largest volume of offsets across all years (75 $MtCO_2e$), standards utilizing the APX platform issued a larger volume in 2012. Even if 2012's 6.4 $MtCO_2e$ Gold Standard issuance is removed, APX issued volumes were slightly higher than Markit's (27.8 $MtCO_2e$). The rest of APX issuance volumes came from ACR (3 $MtCO_2e$), CAR (1 $MtCO_2e$) and, most prominently, VCS (14.7 $MtCO_2e$). Another 19.7 $MtCO_2e$ from VCS were issued on the Markit platform, where, in our 2013-14 report, Gold Standard issuance and retirement will also be tracked.

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

Domestic registries like the Clean Energy Regulator's offset register under Australia's Carbon Farming Initiative issued their first offsets in 2012. The Chicago Climate Exchange Offsets Registry Program, first launched in 2011 following the close of CCX's exchange platform, also oversaw some OTC activity for offsets from projects developed using CCX protocols. The CCX Registry nevertheless reported a significant drop in the volume of offsets retired. Registries seeing <100,000 tCO_2e of their offsets transacted in 2012 included the Canadian Standards Association's GHG Registry and Blue Registry for VER+ offsets.

Standards bodies that responded to our survey reported that the largest volume of issued offsets were from VCS renewable energy projects, followed by The Gold Standard. This is in line with the large proportion of registered projects in this category (42% - Figure 40). VCS offsets were also retired in larger volumes than offsets from any other standard (16 $MtCO_2e$). As with all issuances and retirements reported by registries, some of this volume was most likely transacted in previous years and was only issued – and so eligible for retirement – for the first time in 2012. This is particularly the case for project types like forestry and clean cookstove distribution, where project developers have only begun to issue offset volumes in the last 2-3 years.

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