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Unlocking Potential

State of the Voluntary Carbon
Markets 2017

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State of the Voluntary Carbon Markets 2017

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Introduction

Every year, corporations, governments, non-profits, and individuals concerned about climate change reach into their wallets to pay for emissions reductions happening somewhere else in the world. Why?

Carbon offsets¹ are units of greenhouse gas emissions, measured in metric tonnes of carbon dioxide equivalent (tCO₂e) that have been reduced, avoided, or sequestered and that can be bought and sold to compensate for emitting that tonne elsewhere. The market for carbon offsets can be split into compliance and voluntary segments, depending on whether or not buyers and sellers are driven by regulatory requirements. The **voluntary markets** are driven by companies, organizations, and individuals who decide to voluntarily reduce their impact on climate change. It often serves as a source of innovation and inspiration, incubating projects and ideas that are too unproven for current **compliance markets**.

Last year, voluntary **suppliers** transacted 63.4 million (M) tCO₂e, sold to the tune of \$191.3M.^{2,3} These offsets came from **projects** in 65 countries, representing every major region of the world (Figure 1).

The largest number of transacted offsets originated in Asia, and the fewest transacted offsets came from projects in Oceania. While buyers purchased offsets from a multitude of project types in all regions, the bulk of renewables



Nepalese man cooking Daal-bhat, Nepal.
Photo by Svetlana Ostrea/Shutterstock.

¹ All terms in bold green text are defined in the Glossary in Appendix 2 of the main report, [Unlocking Potential: State of the Voluntary Carbon Markets 2017](#).

² Note that in our research, we track activity in both the **primary** and **secondary** offset markets as an indicator of total market activity. This includes offsets sold by **project developers** and those sold by intermediaries (offset **retailers** or **brokers**). In some cases, offsets can be sold by a project developer to a retailer, and then by a retailer to an **end buyer**. This counts as two separate **transactions** in our reports.

³ All monetary values are reported in US\$ (\$) unless otherwise noted.

offsets originated in Asia and European⁴ countries, and the bulk of forestry and land-use offsets came from Latin America and the Caribbean,⁵ as well as Africa. Across all projects, average prices varied significantly by region, from \$1.2/tCO₂e in Europe to \$4.9/tCO₂e in Oceania.

In addition to the price, other common factors that often play a role in buyer purchasing decisions are the offsets' associated co-benefits and location. **Co-benefits** are the additional benefits that projects deliver beyond the measured emissions reductions, for example, by protecting threatened rainforests through tree-planting projects or improving community health through clean cookstoves projects. Some buyers choose projects based on their location, preferring offsets produced in certain countries or even specific communities.

Another factor to consider when examining the regional dynamics of the voluntary carbon market is the state of the compliance market. In countries and regions that have strong compliance markets, voluntary markets are often smaller. In places that are either considering or preparing to launch a compliance market, it is not uncommon to see an increased “pre-compliance” supply and demand for voluntary offsets, as companies and organizations prepare to enter a regulated market. Given this interplay between the two market segments, it is difficult to get a full picture of the voluntary market, especially at a regional level, without noting the state of compliance markets. Hence, although our data is exclusively from voluntary market activities, we identify notable developments in both the voluntary and compliance markets in each region's “Developments to Watch” section.

Every year since 2007, Forest Trends' Ecosystem Marketplace has released its *State of the Voluntary Carbon Markets* report (available [here](#)), which looks at the size, scope, and value of the market, identifies different participants, and reports on major developments in this space.

This regional mini-report accompanies the ***Unlocking Potential: State of the Voluntary Carbon Markets 2017*** report and focuses specifically on the regional dynamics of the voluntary carbon markets in six distinct regions (Africa, Asia, Europe, Latin America and the Caribbean, North America, and Oceania) in 2016. All locations in this report are referring to the location of the project where the offset was produced, or “*originated*,” as opposed to the headquarters location of the offset producer, intermediary, or end buyer. The following sections provide regional and, where applicable, country-specific data. For a full list of country-specific data, please see the Appendix beginning on page 18.

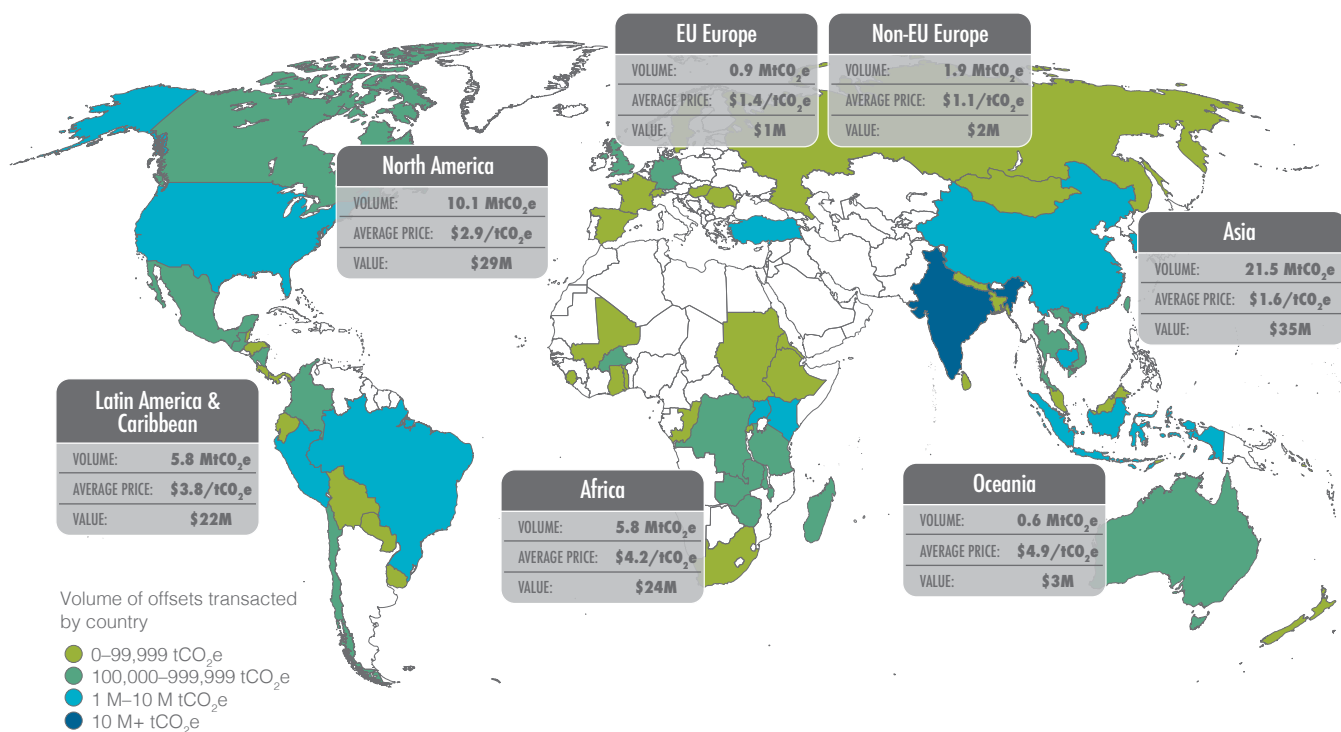
For more information about our methodology or the current state of the voluntary markets, please visit the [State of the Voluntary Carbon Markets 2017](#)* report.

*Kelley Hamrick and Melissa Gallant, *Unlocking Potential: State of the Voluntary Carbon Markets 2017* (Washington, DC: Forest Trends, 2017). Available at <http://forest-trends.org/releases/p/sovcm2017>.

⁴ In this report, “Europe” includes European Union countries and non-EU European countries including Turkey, Russia, and Georgia.

⁵ In this report, “Latin America and the Caribbean” includes Mexico. “North America” includes the United States and Canada.

Figure 1: Market Size of Offsets Transacted by Project Origination Region and Country, 2016



Notes: Based on 769 transactions representing 46.5 MtCO₂e in 2016.

Table 1: Market Size of Offsets Transacted Worldwide,* 2016

Volume	Average Price	Value**
46.6 MtCO ₂ e	\$2.5/tCO ₂ e	\$116M

* Not all survey respondents identified the country of origin for all of their offsets. Hence, the data in this report is not based on the full dataset presented in our *State of the Voluntary Carbon Markets 2017* report. Instead, it is based on the total volume for which we know the offset's country of origin. In the *State of the Voluntary Carbon Markets 2017* report, the total volume reported was 63.4 MtCO₂e, the average price was \$3.0/tCO₂e and the total value was \$191.3M. These values include all data (with and without known country of origin).

** Market value is volume-weighted.

Africa

Table 2: Market Size of Offsets Transacted from Africa, 2016

Volume	Average Price	Value
5.8 MtCO ₂ e	\$4.2/tCO ₂ e	\$24M

Project Category	Volume	Value
Forestry and land use	50%	49%
Energy efficiency and fuel switching	27%	22%
Household devices	18%	23%
Renewables	2%	3%
Other	2%	2%

Standard	Volume	Value
Gold Standard	52%	53%
Verified Carbon Standard (VCS)	VCS + Climate, Community & Biodiversity (CCB) Standards	42%
	Only VCS	2%
CDM	2%	3%
Plan Vivo	2%	4%

Africa, with the lowest per-capita GDP and fastest-growing population, is one of the regions most vulnerable to climate change. This is exacerbated by the fact that many African countries lack the resources or technical capacity to adapt to or mitigate climate impacts. Voluntary carbon projects, then, play a needed role in channeling finance to local communities, businesses, and landscapes. As a result, many offsets sold from projects in Africa have associated co-benefits; that is, the offsets don't just reduce carbon but also provide additional environmental or development benefits (such as local jobs, improved health, or biodiversity protection).

Historically, Africa has been one of the smaller regions in terms of the volume and value of the voluntary carbon market. However, in 2016 we tracked a total of 5.8 MtCO₂e African offsets transacted, a volume larger than offsets transacted from Oceania and Europe, and nearly equal to those transacted from Latin America. The total value of offsets originating in Africa was \$24M, almost 20% of the global market value. At an average of \$4.2/tCO₂e, African offsets sold for higher prices than all other regions except Oceania.

Respondents reported transacting offsets from nineteen countries in Africa, fourteen of which are classified as least-developed countries (LDCs) by the United Nations. Offsets originating in **Uganda** (1.6 MtCO₂e) and **Kenya** (1.3 MtCO₂e) combined accounted for over half the total volume and value on the continent. Although Ugandan offsets made up the highest volume, at \$3.1/tCO₂e, they had one of the lowest average prices among African countries (though still higher than the global average of \$2.5/tCO₂e), resulting in a total value of \$5M. Meanwhile, Kenyan offsets sold at a higher average price (\$5.4/tCO₂e) and had the greatest value among African countries at \$7M. Fewer offsets sold from **Ethiopia** (58 KtCO₂e), but they commanded the highest average price in the region;

at \$11.3/tCO₂e, the average price for offsets from Ethiopia was over twice the African average and quadruple the global average.

In 2016, forestry and land use continued to be the project category producing the most offsets in Africa, but energy efficiency and fuel switching replaced household devices (which includes clean cookstoves) as the second-most common category. Forestry and land-use projects include **Reducing Emissions from Deforestation and Forest Degradation (REDD+)**, agro-forestry, improved forest management, and afforestation/reforestation projects, among others. In **Madagascar, Zambia**, and the **Democratic Republic of Congo (DRC)**, over 75% of the volume and value of the country's offsets were from forestry projects. While household devices projects sold almost as many offsets as forestry and land-use projects in 2015, sales of those offsets made up only 18% of the volume sold in 2016. Clean cookstoves were the dominant project type in **Ethiopia**, where 70% of the country's volume and 80% of its value came from cookstove offsets.

In 2016, energy efficiency and fuel switching overtook household devices as the second-largest project category by volume. In 2015, efficiency and fuel switching offsets made up just 4% of the African market, but in 2016 that market share rose to 27%, driven by growth in **Ghana** and **Uganda**. Worldwide, efficiency and fuel switching offsets were most often large, industrial-sized projects in middle-income countries. In contrast, most energy-related projects in Africa were community-oriented, focused on providing energy to previously rural, energy-poor areas.

This emphasis on sustainable development, as opposed to solely carbon reduction, was also evident in the **standards** used to certify African offsets. The Gold Standard, Verified Carbon Standard (VCS) with Climate, Community & Biodiversity (CCB) Standards, and Plan Vivo, all of which focus heavily on co-benefits,⁶ made up a combined 96% of the volume of transacted African offsets compared to 31% globally. The Gold Standard held the majority in the African market by both volume and value, followed by VCS. Of the VCS offsets transacted in Africa, 95% were also certified by CCB, compared with 23% worldwide.

Developments to Watch:

- **South Africa's** emissions trading scheme has been scheduled to launch for years now, but an official launch date still hasn't been announced. However, officials did release draft rules in June 2016, which state that companies could purchase offsets **verified** under the Clean Development Mechanism (CDM), VCS, or Gold Standard to meet 5–10% of their required emissions reductions.
- In November 2016, the London Stock Exchange listed the world's first REDD-linked bond, issued by the International Finance Corporation. The \$152 million bond invests in offsets from **Kenya's** Kasigau Corridor Project and offers investors the option to be repaid in either cash or carbon offsets.⁷
- **Ethiopia** announced a new \$68M project funded by the World Bank and other donors that leverages carbon offsets to help achieve the country's goal to become net carbon neutral by 2025. The Oromia Forested Landscape Program is set to receive up to \$50 million over the next ten years for verified carbon offsets, along with an additional \$18 million over five years for REDD+ capacity building.⁸

⁶ The Gold Standard and Plan Vivo are carbon standards that incorporate co-benefits requirements within their design, while the Climate, Community & Biodiversity (CCB) Standards are co-benefits standards managed by and most often used alongside the Verified Carbon Standard (VCS).

⁷ "London Stock Exchange welcomes world first bond to protect forests and deepen carbon-credit markets." London Stock Exchange Group. November 8, 2016. Accessed June 27, 2017. <http://www.lseg.com/resources/media-centre/press-releases/london-stock-exchange-welcomes-world-first-bond-protect-forests-and-deepen-carbon-credit-markets>.

⁸ Gebreselassie, Elias. "Ethiopia looks to carbon trading as it gears up to be net carbon neutral by 2025." Mongabay.com. March 05, 2017. Accessed June 27, 2017. <https://news.mongabay.com/2017/03/ethiopia-looks-to-carbon-trading-as-it-gears-up-to-be-net-carbon-neutral-by-2025/>.

Asia

Table 3: Market Size of Offsets Transacted from Asia, 2016

Volume		Average Price	Value
21.5 MtCO ₂ e		\$1.6/tCO ₂ e	\$35M
Project Category	Volume		Value
Renewables	65%		34%
Forestry and land use	13%		38%
Energy efficiency and fuel switching	13%		16%
Methane	5%		5%
Household devices	3%		7%
Standard	Volume		Value
VCS	Only VCS	68%	41%
	VCS+CCB	10%	25%
	SOCIALCARBON	2%	1%
Gold Standard	13%		28%
CDM	6%		4%
ISO-14064	1%		0%

Asia has traditionally been the source of the highest volume of voluntary offsets sold. Many projects first appeared in China, India, and Korea with the launch of the first Kyoto Protocol under the CDM back in 2005. Countries required to reduce emissions under the Kyoto Protocol were able to purchase CDM offsets to help meet their emissions reductions goals. As compliance demand for CDM offsets has waned in the past decade, some of these project developers have turned to the voluntary markets to sell their offsets. Now, with the advent of a national Chinese cap-and-trade program and the current Korean cap-and-trade program, some project developers have shifted back towards seeking compliance buyers for their eligible offsets.

Offsets produced in Asia last year had the highest transaction levels of any region, totaling 21.5 MtCO₂e in sales. While this is more than double the transactions in North American offsets, the next largest source, the higher volumes were accompanied by lower average prices. Overall, the average price of offsets from Asia was lower than the price from every other region except Europe. However, across Asia, prices varied greatly by country and project, from below \$0.5/tCO₂e to over \$50/tCO₂e. Lower-priced offsets generally came from large renewable energy projects in **India** and **China**, and higher-priced ones came from project types like forestry, biogas, and clean cookstoves, often from countries in Southeast Asia.

Looking at overall market value, forestry and land-use offsets made up the largest share of the Asian voluntary market by value (38%). At an average of \$12.4/tCO₂e, forestry and land-use projects had the highest average price of any project category in Asia and therefore, while only 13% of total volume, made up the largest share of value. REDD+ and afforestation/reforestation projects were the most common types within the forestry and land-use category. These offsets came primarily from countries with both high-value tropical rainforests and a high risk of deforestation. In **Indonesia**, for instance, forestry and land-use projects made up 95% of the country's 1.8 MtCO₂e in volume and 94% of its \$6M in value.

While forestry and land-use projects comprised the majority of the Asian market's value in 2016, renewables projects made up the majority (65%) of its volume. In **India**, **China**, and **Vietnam**, wind, hydropower, and biomass/biochar were the most common offsets transacted. While prices for renewables offsets from Asia ranged from under \$0.5/tCO₂e to almost \$20/tCO₂e, the offsets sold at an average of \$1.0/tCO₂e. This average is lower than offsets

coming from other (non-renewables) Asian projects, and the comparatively lower prices resulted in a lower overall value for these offsets. In **China**, for instance, renewables projects made up 73% of the country's transactions by volume, but just 25% of the value.

Nearly all offsets transacted in Asia were issued by VCS, the most common standard used in all countries except **Vietnam**, where Gold Standard was prevalent. Projects in **Indonesia** and **Cambodia**, home to most of the region's forestry and land-use offset sales, transacted VCS offsets that were also CCB-certified. In **Indonesia**, almost all the VCS-issued offsets were also certified by CCB.

Developments to Watch:

- **China** is planning to launch the world's largest cap-and-trade program this year. The nation-wide program is expected to combine and expand on eight pilot programs in cities and provinces across the country.
- The World Bank-led Partnership for Market Readiness granted \$8M to **India** and \$3M to **Thailand** to support development of national market-based mechanisms for greenhouse gas (GHG) mitigation.
- In February 2016, officials in **Kazakhstan** announced plans to temporarily suspend the country's emissions trading scheme (ETS) to develop a new methodology and eliminate gaps in the current system. Kazakhstan's ETS was first enacted in 2013, but received opposition from the business community, particularly over the size of non-compliance fines. The ETS is scheduled to re-open in 2018.
- **Japan** issued its first five sets of offsets in its Joint Crediting Mechanism (JCM) in 2016. JCM is a government-administered program that partners with developing countries to invest in carbon offset projects whose emissions reductions are then split between Japan and the host country. As of January 2017, Japan has signed agreements with 17 countries, and the government expects to produce up to 100 MtCO₂e through the JCM by 2030. The first five transactions, which all occurred in 2016, produced a total of 493 offsets from projects in **Indonesia**, **Mongolia**, and **Palau**.

2MtCO₂e

Japan's draft climate action plan will focus on encouraging voluntary emissions cuts by local industries. Japan has long had voluntary carbon offsetting schemes, the latest of which is the J-Credit scheme, launched in 2013 by the Ministry of Environment (MOE). To date, the MOE reported that almost 2 MtCO₂e offsets have been issued from 567 projects.

Europe

Table 4: Market Size of Offsets Transacted from Europe,* 2016

Volume	Average Price	Value
2.8 MtCO ₂ e	\$1.2/tCO ₂ e	\$3.5M

*In this report, "Europe" includes European Union countries and non-EU European countries including Turkey, Russia, and Georgia.

Project Category	Volume	Value
Renewables	44%	44%
Methane	33%	28%
Forestry and land use	10%	Insufficient data**

Standard	Volume	Value
Gold Standard	59%	Insufficient data
VCS	23%	Insufficient data
Woodland Carbon Code	5%	Insufficient data
No third-party standard	1%	Insufficient data
Other	1%	Insufficient data

**Ecosystem Marketplace only reports a data point if three or more organizations provide data in order to protect confidentiality of our respondents.

Voluntary carbon projects typically occur in the absence of compliance regulation; in cases where a compliance market exists, the voluntary projects must take place in unregulated sectors or risk having their emissions double counted under both voluntary and compliance markets. As such, few voluntary projects have taken hold in countries participating in the European Union's Emissions Trading Scheme (EU ETS), or those with individual emissions reductions targets (like Switzerland and Norway). Instead, most organizations based in these countries help develop projects *outside* of Europe or resell offsets coming from other countries to European buyers. For voluntary offsets produced in Europe, most come from **Turkey**.

Last year, respondents reported transactions from projects in 11 European countries, selling a total of approximately 2.8 MtCO₂e of offsets valued at \$3.5M. With roughly 6% of the global market, Europe is the second smallest producer of offsets for the voluntary market, after Oceania. European offsets had the lowest average price of any region, however this was driven mainly by a handful of large projects. Among small projects, those that transacted fewer than 5 KtCO₂e in offsets, the average price was \$35.0/tCO₂e.

Similar to previous years, **Turkey** remained the largest European supplier of offsets for the voluntary market, with respondents reporting almost 2 MtCO₂e of offsets transacted from wind, hydro, and landfill methane project types. These offsets sold for a value of approximately \$2.2M, almost two thirds of the Europe-wide value. **Germany** is Europe's second-largest supplier to the voluntary market, with methane being the dominant project category there. The remaining nine European countries with reported transactions were each home to only one or two transactions—fewer than we are able to disclose due to confidentiality requirements. Among countries in the EU ETS, the average volume sold was less than 100 KtCO₂e, compared with the global per country average of almost 700 KtCO₂e.

Developments to Watch:

- After receiving funds through the World Bank's Partnership for Market Readiness beginning in 2013, **Turkey** has undertaken studies and developed a roadmap for establishing an ETS. Government researchers are now investigating the projected economic impacts of a potential ETS.
- In May 2017, the **Netherlands'** Minister of Environment announced the launch of a Green Deal Pilot National Carbon Market. The market is a platform for buying and selling carbon offsets in sectors not included in the EU ETS.
- A **Russian** environmental non-profit organization, Russian Carbon Fund bought voluntary carbon offsets from Aera Group using blockchain technology—a decentralized cryptocurrency technology that eliminates the chance of fraud.⁹



*Wind turbines in Turkey.
Photo by Alaattin Timur/Shutterstock.*

⁹ "Aera and Russian Carbon Fund pioneer the first worldwide carbon credit transaction using blockchain." Aera The Climate Finance Group. March 14, 2016. Accessed June 26, 2017. <https://aera-group.fr/aera-and-russian-carbon-fund-pioneer-the-first-worldwide-carbon-credit-transaction-using-blockchain/>.

Latin America and the Caribbean

Table 5: Market Size of Offsets Transacted from Latin America and the Caribbean,* 2016

Volume	Average Price	Value
5.8 MtCO ₂ e	\$3.8/tCO ₂ e	\$22M

*In this report, "Latin America and the Caribbean" includes Mexico.

Project Category	Volume	Value
Forestry and land use	71%	63%
Renewables	18%	10%
Household devices	5%	8%
Gases	5%	18%
Methane	1%	0%

Standard	Volume	Value
VCS	VCS+CCB	43%
	Only VCS	24%
	VCS+SOCIALCARBON	15%
Gold Standard	9%	13%
Other	5%	19%
Plan Vivo	3%	6%
CDM	1%	1%
Internal or Proprietary Standard(s)	0%	1%
ISO-14064	0%	1%

Buyers continue to show interest in and support for purchasing forestry and land-use offsets from Latin America, home of the world's largest tropical rainforest, the Amazon. This is not just limited to voluntary offset buyers: several Latin American countries have also received payments for forest carbon emissions reductions from other countries' governments through bi-lateral agreements. National or sub-national programs in **Colombia**, **Guyana**, and **Brazil** are currently the only government-run programs in the world to receive payments for their emissions reductions from other governments, to date.

On the voluntary markets, forestry and land-use offsets dominated most (71%) of the sales for the region overall and for many individual countries. In **Peru** and **Chile**, nearly all (96%) offsets sold came from forestry and land-use projects, like tree planting, agro-forestry, or other land management projects. In **Colombia**, **Bolivia**, and **Brazil**, forestry and land-use offsets commanded a smaller portion of the market, but still comprised the majority (>50%) of all offsets sold. While forestry and land-use offsets typically earned higher average prices than other project categories in 2016, the reverse was true in Latin America and the Caribbean; at \$4.0/tCO₂e, forestry offsets averaged the second-lowest price among all project categories transacted in the region. This could, in part, be due to several larger-sized forest carbon projects producing offsets in these areas. Most the forest carbon offsets transacted came from REDD+ projects, which can produce hundreds of thousands of offsets a year, allowing sellers to contract large volumes and lower their prices.

A smaller amount of offsets sold from Latin America came from renewables projects, mainly from large hydropower and biomass/biochar projects. The lower value is consistent with the relatively low prices we tracked worldwide:

large hydropower offsets sold for a global average of \$0.2/tCO₂e and biomass/biochar offsets sold at a global average of \$2.0/tCO₂e.¹⁰

The majority of offsets transacted in Latin America and the Caribbean were issued by VCS, and many of these offsets were co-certified by an additional co-benefits standard. Nearly all forestry offsets were certified under both VCS and the CCB standard, while another 15% of offsets transacted were certified by VCS and the SOCIALCARBON standard (which was developed by the Brazilian NGO Ecologica Institute and is mostly found only in Latin America). The majority of biomass/biochar offsets (69%) were issued from the VCS and SOCIALCARBON, along with a few REDD+ and fuel-switching transactions.

Developments to Watch:

- In preparation for **Mexico's** compliance emissions trading program set to begin in 2018, the voluntary carbon trading platform MexiCO2, working with the Mexican Ministry of Environment and Natural Resources, signed an agreement with the German development agency Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to support an emissions trading simulation platform for businesses starting in summer 2017. The simulation platform will allow businesses to practice trading in preparation for the upcoming compliance program.
- **Colombia** launched a Voluntary Carbon Market Platform in August 2016, following six years of education and awareness-building. The platform is managed by the Colombian Stock Exchange in cooperation with the Ministry of Environment and Sustainable Development and with technical support from Fundación Natura.
- **Colombia** also launched an approximately \$5/tCO₂e tax on fossil fuels in December 2016, effective January 2017. More recently, the country announced that regulated entities can offset 100% of their emissions instead of paying the tax. All of these offsets must originate in Colombia and can be approved by voluntary standard bodies, such as the Verified Carbon Standard or Gold Standard, or by the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism.



*Tree nursery in the Ecuadorian Amazon.
Photo by Dr. Morley Read/Shutterstock.*

¹⁰ Kelley Hamrick and Melissa Gallant, *Unlocking Potential: State of the Voluntary Carbon Markets 2017* (Washington, DC: Forest Trends, 2017).

North America

Table 6: Market Size of Offsets Transacted from North America,* 2016

Volume	Average Price	Value
10.1 MtCO ₂ e	\$2.9/tCO ₂ e	\$29M

*In this report, "North America" includes the United States and Canada.

Project Category	Volume	Value
Methane	43%	30%
Transportation	22%	2%
Forestry and land use	14%	41%
Gases	13%	15%
Other	5%	6%
Energy efficiency and fuel switching	3%	6%
Renewables	0%	1%

Standard	Volume	Value
CAR	48%	49%
ISO-14064	21%	2%
ACR	18%	29%
VCS	13%	15%
Other	1%	4%

While California and select Canadian provinces have compliance carbon markets or pricing instruments, neither the United States (US) nor Canada has ever hosted a robust national cap-and-trade program or carbon tax. Instead, the first US-wide carbon trading activity was conducted through businesses participating in the voluntary Chicago Climate Exchange. Following the subsequent failure of a national cap-and-trade bill in the late 2000s, many carbon offset projects in the region turned all their hopes to voluntary instead of compliance buyers.

Those buyers have largely responded: survey respondents reported transacting 10.1 MtCO₂e offsets from North American projects, comprising 22% of the global market in 2016. Nearly all of these offsets came from the **United States** (10 MtCO₂e), with only 0.1 MtCO₂e coming from **Canada**. The average price of offsets in all of North America was only slightly higher than the global average of \$2.5/tCO₂e. However, average Canadian prices (\$11/tCO₂e) were much higher than US prices (\$2.8/tCO₂e). This is, in part, due to the variation in project categories between the two countries. While forestry offsets dominated the Canadian market, the US market was more evenly split among several project categories, including methane, transportation, gases, and forestry and land use.

As in previous years, the largest portion of US offsets sold came from methane projects (43%). Many of these projects appeared in the late 2000s in anticipation of a US-wide cap-and-trade program. After the proposed legislation failed in the US Congress in 2009, and following the exclusion of landfill methane projects from California's cap-and-trade program, many of these projects looked to find voluntary buyers and now occupy a substantial portion of the market. Following methane, 22% of offsets sold in 2016 came from transportation projects. Despite the high-ranking position in the market, no offsets from transportation projects were sold close to the region's average price of \$2.9/tCO₂e. As a matter of fact, transportation offsets' value was only 2% of the total value tracked in 2016.

While several standards, including VCS and ACR, have methodologies (typically called protocols in compliance markets) for transportation projects, most of the offsets tracked were recognized under the ISO-14064 standard.

Forestry and land-use offsets showed the opposite trend; while consisting of only 14% of total market volume in North America, they earned 41% of total market value. Most of these North American forestry and land-use offsets came from improved forest management project types, but several afforestation/reforestation, rice cultivation, and urban forestry projects also sold offsets. Both improved forest management and rice cultivation offsets share the distinction of being marketable to both voluntary buyers and—if approved by California's Air Resources Board (ARB)—to California-Québec compliance buyers.

Voluntary activity in this region continues to advance alongside, and even spur innovation in, compliance markets, such as the California-Québec cap-and-trade program. Both of these markets have included many methodologies originally developed by voluntary standard bodies. California has adopted several protocols originally developed for the voluntary market, most recently one for rice management in 2015. The ARB continues to follow the development of new voluntary methodologies and is, for example, debating the potential inclusion of international REDD+ offsets.

It appears that the Canadian province of Ontario—which plans to join the California-Québec program—may follow California's lead in adopting and building on existing methodologies from both voluntary and compliance programs. Ontario has contracted the Climate Action Reserve (CAR), a voluntary standard body and a California-approved offset **registry**, to develop up to 13 offset protocols for use in Ontario, Québec, and potentially other provinces. The Reserve, along with several environmental consultancies, will examine the potential for Ontario to adopt methodologies from other existing programs such as: the California-Québec cap-and-trade program, Alberta's Specified Gas Emitters Regulation, British Columbia's Emissions Offset Regulation, protocols created by Canada's National Offset Quantification Team and various government departments, the Regional Greenhouse Gas Initiative, and the Clean Development Mechanism.

Developments to Watch:

- The US president Trump announced in June 2017 his decision for the **United States** to withdraw from the Paris Agreement. In the wake of the announcement, over 1,400 US cities, states, universities, and companies have announced their intention to commit to the Paris Agreement. These mitigation efforts are expected to largely rely on a combination of state and local-level policy and voluntary actions.
- The **Colorado** Carbon Fund, a platform for buying and selling Colorado-produced offsets, changed hands last year from The Climate Trust to the locally-based Natural Capital Solutions. Natural Capital Solutions is looking to increase visibility of the program and expand its scope—possibly through the inclusion of grassland restoration or soil bio-sequestration projects.
- The state of **Washington's** Clean Air Rule, announced in September 2016, imposes emissions caps on organizations that emit 90.7 KtCO₂e or more annually. Starting January 2017, the rule allows for offsetting under select methodologies from projects based in Washington only. Local industry groups have filed lawsuits against the ruling, which are still pending decisions.
- The municipality of Squamish is the most recent to join the **British Columbia**-based Community Carbon Marketplace, which seeks to connect local buyers with local carbon offset projects. Two other active municipalities in this program are Duncan and Comox; Duncan became the first local government to become carbon neutral under the program in 2017.
- In 2016, **Canada's** prime minister told provincial governments that they have until 2018 to implement a carbon price, or the federal government will impose one on them. Jurisdictions without a carbon price already have introduced legislation for carbon pricing or cap-and-trade programs. While details remain scarce for many of the provincial plans, they might allow for offsets in the future—including, perhaps, those generated under voluntary standards.

Oceania

Table 7: Market Size of Offsets Transacted from Oceania, 2016

Volume	Average Price	Value
0.6 MtCO ₂ e	\$4.9/tCO ₂ e	\$3M
Project Category	Volume	Value
Renewables	51%	3%
Forestry and land use	49%	97%
Standard	Volume	Value
VCS	60%	16%
CFI	36%	74%
Plan Vivo	3%	8%
ISO-14064	1%	2%

In Oceania, voluntary offset activity has long interacted with, and been influenced by, compliance regulatory actions. This remains especially true as both the New Zealand and Australian governments grapple with their existing emissions reductions programs. New Zealand's emissions trading scheme, which started in 2008, is currently undergoing a government review that might increase demand for domestic New Zealand compliance offsets. Meanwhile, Australia enacted a carbon tax in 2013 only to repeal it in July 2014 following the election of a new political party. Now, the government has an AU\$2.25B (US\$1.67M)¹¹ Emissions Reduction Fund (ERF), which purchases offsets starting at the lowest bid price until the government fulfills its desired volume (called a reverse auction). As of September 2017, AU\$2.2B (US\$1.63M) has been spent by the ERF, but future funding remains unclear.

The continuing political uncertainty around carbon markets and policies in Australia and New Zealand has contributed to low voluntary transaction activity in Oceania, as many GHG-emitting businesses are taking a wait-and-see approach. While voluntary offsetting rose slightly last year, compared to 2015, it remained well below the record transactions reported in 2012 (7.3 MtCO₂e) when companies tested the pre-compliance waters before Australia's mandatory carbon tax was instituted the following year. However, the 0.6 MtCO₂e sold secured the highest average price per tonne of all regions at \$4.9/tCO₂e.

The bulk (96%) of last year's volume came from **Australia**. Of the 535.2 KtCO₂e transacted, around half represented forestry offsets—most of which originated from the country's own Carbon Farming Initiative (CFI) or from the Verified Carbon Standard—and half represented renewables offsets. The former transacted at an average price of \$9.8/tCO₂e, while the latter transacted at less than \$1/tCO₂e.

The remaining 4% of offsets sold from projects based in **East Timor, Fiji, New Zealand, and Vanuatu**. They also included the first REDD+ transactions from the Pacific Islands. The vast majority of these offsets were produced by forestry and land-use projects, most often REDD+ or afforestation/reforestation projects. These countries are often home to only one or two projects, so we can't disclose more detailed information about them or their transactions due to confidentiality restrictions. Common offset standards here were the Gold Standard, the ISO-14064 standard, and Plan Vivo.

¹¹ This conversion is based on the 2015 yearly average currency exchange rate, provided by the US Internal Revenue Service. The actual exchange rate varies depending on when the Emissions Reduction Fund pays Australian projects for emissions reductions. Since the first payments occurred in 2015, all ERF prices are converted to US Dollars using the 2015 exchange rate.

Developments to Watch:

- **Australia's** Emissions Reduction Fund has spent almost AU\$2.2B (US\$1.63M) of its AU\$2.55B (US\$1.67M) contracting offsets. While the program is the self-proclaimed “central component” in the Australian government's emissions reductions policies, currently there are no known plans to increase funding.
- **Australia's** Safeguard Mechanism, enacted on July 1, 2016, could create a compliance cap-and-trade program in the future. The mechanism requires large polluters to cap their emissions below the highest amount they emitted during one year between 2009 and 2014, and if businesses exceed that amount, they must purchase domestic offsets. However, this year, the government allowed businesses to adjust their cap to 2016–2017 levels.
- **Australia** is expanding its voluntary Carbon Neutral Program to create a National Carbon Offset Standard for Buildings and a National Carbon Offset Standard for Precincts. The program sought input on its draft standards through February 2017 and is now finalizing the standards.



Solar facility in the northern territory of Australia.
Photo by Joe Ferrer/Shutterstock.

Conclusion

There are many paths to a low-carbon world. Carbon markets are one toolbox that can be used to make emissions reductions—and voluntary carbon offsets are one tool to accomplish this in a cost-effective way.

As countries around the world look to make good on their Paris Agreement promises, there is growing interest in the role of carbon pricing instruments. In their Nationally Determined Contributions, countries representing 58% of greenhouse gas emissions¹² said they are considering the use of carbon pricing to achieve their climate goals—and that's not counting those countries or jurisdictions that have already implemented a carbon tax or cap-and-trade program. With this heavy focus on regulatory action, the question then becomes, what role will the voluntary market play in the future of climate change mitigation?

A few potential roles for voluntary offsetting are beginning to emerge, especially at the regional level. Many countries with compliance programs may choose to incorporate existing voluntary market standards and methodologies into their regulatory/compliance programs. Recent examples include:

- In 2016, the Canadian province of **Ontario** contracted the voluntary standard body the Climate Action Reserve to evaluate existing voluntary and compliance project methodologies for potential use in their offsetting program.
- In 2016, the government of **South Africa** officially confirmed that they will allow the use of domestic offsets developed under select voluntary standards into their upcoming carbon tax.
- In 2017, the government of **Colombia** similarly confirmed that local offsets developed by voluntary standards can be used by companies complying with the country's new fuel tax.

Another future role for voluntary markets could be to encourage companies, organizations, and individuals not covered by compliance markets to reduce their emissions, while driving finance to local projects. As a case in point, the **Netherlands'** recent launch of a national carbon market for this purpose is only the latest in several European initiatives around local offsetting, including programs in the **United Kingdom** and **Italy**.

Overall, the future role of the voluntary market will depend heavily on how voluntary offsetting will and will not be incorporated into the Paris Agreement. Between now and 2020, when the Agreement enters into force, countries will continue to negotiate the details of implementing the Agreement. These decisions may restrict voluntary offsetting opportunities in the future—or could encourage the use of voluntary offsets as a way to go beyond national targets or to direct finance towards smaller, experimental projects that can be difficult to regulate. The International Carbon Reduction and Offset Alliance (ICROA) is currently convening voluntary market actors in workshops to address these challenges and opportunities.¹³

Outside of the Paris Agreement, voluntary offsets will continue to play a vital role in global emissions reductions, especially for entities that want to reduce emissions beyond the levels required under compliance programs. In the United States, whose president recently announced his plan to withdraw from the Paris Agreement, voluntary offsetting (and other activities) may be the way of the future as over 1,400 domestic cities, states, universities, and businesses have announced their intention to uphold the United States' commitments in the agreement.

One thing is certain. Despite the many potential futures for voluntary offsets, demand from individuals, non-profits, and will remain—either in the absence of or in addition to government regulation on climate change.

¹² World Bank and Ecofys, *Carbon Pricing Watch 2017* (Washington, DC: World Bank, 2017), http://www.climateactionprogramme.org/images/uploads/documents/Carbon_Pricing_Watch.pdf.

¹³ International Carbon Reduction & Offset Alliance, *Workshop: Scaling Voluntary Action Within the Framework of the Paris Agreement* (Barcelona: International Carbon Reduction & Offset Alliance, 2017), http://www.icroa.org/resources/Pictures/Workshop%20Report_I4C_2017_FINAL.pdf.

Appendix: Country Market Data

The following compilation of tables only includes countries with at least three reported transactions. This practice protects the confidentiality of our survey respondents.

Africa

Democratic Republic of Congo

Volume	Average Price	Value
144.4 KtCO ₂ e	\$2.7/tCO ₂ e	\$384.8K
Project Category	Volume	Value
Forestry and land use	100%	100%
Standard	Volume	Value
VCS	100%	100%
VCS+CCB*	100%	100%

*In the Appendix, all VCS+CCB and VCS+SOCIALCARBON data is presented as a subset of the VCS data. In this case, 100% of offsets transacted from the Democratic Republic of Congo were also certified under the CCB.

Ethiopia

Volume	Average Price	Value
58.3 KtCO ₂ e	\$11.3/tCO ₂ e	\$656.5K
Project Category	Volume	Value
Forestry and land use	30%	20%
Household devices	70%	80%
Standard	Volume	Value
Gold Standard	100%	100%

Ghana

Volume	Average Price	Value
87.3 KtCO ₂ e	\$6.7/tCO ₂ e	\$581.1K
Project Category	Volume	Value
Energy efficiency and fuel switching	64%	55%
Forestry and land use	3%	2%
Household devices	33%	43%
Standard	Volume	Value
CDM	53%	43%
Gold Standard	44%	55%
VCS	3%	2%

Kenya

Volume	Average Price	Value
1.3 MtCO ₂ e	\$5.4/tCO ₂ e	\$7.1M
Project Category	Volume	Value
Energy efficiency and fuel switching	7%	7%
Forestry and land use	66%	56%
Household devices	27%	37%
Standard	Volume	Value
CDM	5%	5%
Gold Standard	49%	56%
VCS	46%	39%
<i>VCS+CCB</i>	45%	39%

Madagascar

Volume	Average Price	Value
237.3 KtCO ₂ e	\$6.0/tCO ₂ e	\$1.4M
Project Category	Volume	Value
Forestry and land use	76%	85%
Other	1%	4%
Renewables	23%	12%
Standard	Volume	Value
Gold Standard	1%	4%
VCS	99%	96%
<i>VCS+CCB</i>	76%	85%

Malawi

Volume	Average Price	Value
442.7 KtCO ₂ e	\$4.7/tCO ₂ e	\$2.1M
Project Category	Volume	Value
Forestry and land use	61%	80%
Household devices	35%	17%
Other	4%	3%
Standard	Volume	Value
Gold Standard	39%	20%
Plan Vivo	9%	15%
VCS	53%	65%
<i>VCS+CCB</i>	53%	65%

Tanzania

Volume	Average Price	Value
119.2 KtCO ₂ e	\$6.8/tCO ₂ e	\$810.1K
Project Category	Volume	Value
Energy efficiency and fuel switching	13%	10%
Forestry and land use	19%	25%
Household devices	1%	0%
Renewables	67%	64%
Standard	Volume	Value
Gold Standard	81%	75%
Plan Vivo	17%	23%
VCS	1%	2%
VCS+CCB	1%	2%

Uganda

Volume	Average Price	Value
1.6 MtCO ₂ e	\$3.1/tCO ₂ e	\$5.0M
Project Category	Volume	Value
Energy efficiency and fuel switching	62%	42%
Forestry and land use	20%	37%
Household devices	14%	14%
Other	4%	7%
Standard	Volume	Value
Gold Standard	80%	62%
Plan Vivo	5%	11%
VCS	15%	26%
VCS+CCB	13%	24%

Zambia

Volume	Average Price	Value
190.4 KtCO ₂ e	\$4.9/tCO ₂ e	\$939.1K
Project Category	Volume	Value
Forestry and land use	100%	99%
Household devices	0%	1%
Standard	Volume	Value
VCS	100%	100%
VCS+CCB	100%	99%

Asia

Cambodia

Volume	Average Price	Value
1.0 MtCO ₂ e	\$4.8/tCO ₂ e	\$5.0M
Project Category	Volume	Value
Energy efficiency and fuel switching	1%	1%
Forestry and land use	35%	52%
Household devices	49%	33%
Renewables	15%	14%
Standard	Volume	Value
Gold Standard	32%	36%
VCS	68%	64%
VCS+CCB	35%	52%

China

Volume	Average Price	Value
3.3 MtCO ₂ e	\$2.2/tCO ₂ e	\$7.2M
Project Category	Volume	Value
Energy efficiency and fuel switching	6%	7%
Forestry and land use	20%	67%
Methane	1%	0%
Renewables	73%	25%
Standard	Volume	Value
CDM	4%	5%
Gold Standard	5%	8%
VCS	91%	87%
VCS+SOCIALCARBON	11%	7%

India

Volume	Average Price	Value
10.0 MtCO ₂ e	\$0.6/tCO ₂ e	\$6.4M
Project Category	Volume	Value
Energy efficiency and fuel switching	3%	10%
Forestry and land use	0%	3%
Household devices	0%	6%
Methane	2%	0%
Renewables	95%	80%
Standard	Volume	Value
CDM	11%	16%
Gold Standard	3%	20%
ISO-14064	2%	1%
Plan Vivo	0%	2%
VCS	83%	61%
VCS+CCB	0%	1%

Indonesia

Volume	Average Price	Value
1.8 MtCO ₂ e	\$3.3/tCO ₂ e	\$6.0M
Project Category	Volume	Value
Forestry and land use	95%	94%
Renewables	5%	6%
Standard	Volume	Value
Gold Standard	2%	5%
VCS	98%	95%
VCS+CCB	95%	94%

South Korea

Volume	Average Price	Value
3.4 MtCO ₂ e	\$1.3/tCO ₂ e	\$4.5M
Project Category	Volume	Value
Energy efficiency and fuel switching	100%	100%
Standard	Volume	Value
Gold Standard	0%	3%
VCS	100%	97%

Viet Nam

Volume	Average Price	Value
1.0 MtCO ₂ e	\$3.4/tCO ₂ e	\$3.3M
Project Category	Volume	Value
Household devices	1%	2%
Renewables	99%	98%
Standard	Volume	Value
Gold Standard	100%	100%

Europe**Germany**

Volume	Average Price	Value
570.1 KtCO ₂ e	\$0.6/tCO ₂ e	\$327.9K
Project Category	Volume	Value
Methane	100%	100%
Standard	Volume	Value
VCS	96%	92%
Other	4%	8%

Turkey

Volume	Average Price	Value
1.9 MtCO ₂ e	\$1.1/tCO ₂ e	\$2.2M
Project Category	Volume	Value
Methane	24%	25%
Renewables	76%	75%
Standard	Volume	Value
Gold Standard	100%	99%
VCS	0%	1%
VCS+SOCIALCARBON	0%	1%

Latin America

Bolivia

Volume	Average Price	Value
19.3 KtCO ₂ e	\$10.0/tCO ₂ e	\$193.2K
Project Category	Volume	Value
Forestry and land use	89%	77%
Household devices	11%	23%
Standard	Volume	Value
Gold Standard	100%	100%

Brazil

Volume	Average Price	Value
3.2 MtCO ₂ e	\$2.8/tCO ₂ e	\$9.1M
Project Category	Volume	Value
Forestry and land use	66%	37%
Gases	8%	45%
Methane	2%	0%
Other	0%	1%
Renewables	25%	17%
Standard	Volume	Value
CDM	1%	0%
Gold Standard	2%	2%
VCS	89%	53%
<i>VCS+CCB</i>	<i>29%</i>	<i>23%</i>
<i>VCS+SOCIAL CARBON</i>	<i>26%</i>	<i>17%</i>
Other	8%	45%

Chile

Volume	Average Price	Value
203.3 KtCO ₂ e	\$5.6/tCO ₂ e	\$1.1M
Project Category	Volume	Value
Forestry and land use	96%	95%
Renewables	4%	5%
Standard	Volume	Value
VCS	100%	100%
VCS+CCB	96%	96%

Colombia

Volume	Average Price	Value
135.6 KtCO ₂ e	\$6.2/tCO ₂ e	\$844.7K
Project Category	Volume	Value
Forestry and land use	78%	92%
Methane	22%	8%
Standard	Volume	Value
CDM	22%	8%
Gold Standard	1%	2%
VCS	77%	90%
VCS+CCB	77%	90%

Guatemala

Volume	Average Price	Value
164.0 KtCO ₂ e	\$6.6/tCO ₂ e	\$1.1M
Project Category	Volume	Value
Forestry and land use	7%	4%
Household devices	90%	95%
Renewables	3%	1%
Standard	Volume	Value
CDM	3%	1%
Gold Standard	90%	95%
VCS	7%	4%

Honduras

Volume	Average Price	Value
57.9 KtCO ₂ e	\$3.5/tCO ₂ e	\$202.9K
Project Category	Volume	Value
Energy efficiency and fuel switching	17%	Insufficient data
Household devices	40%	0%
Renewables	43%	0%
Standard	Volume	Value
Gold Standard	57%	82%
VCS	43%	18%

Mexico

Volume	Average Price	Value
143.5 KtCO ₂ e	\$5.4/tCO ₂ e	\$768.9K
Project Category	Volume	Value
Forestry and land use	44%	67%
Household devices	25%	18%
Renewables	31%	15%
Standard	Volume	Value
CDM	18%	7%
Gold Standard	29%	19%
Internal	17%	17%
ISO-14064	19%	23%
Plan Vivo	17%	33%
VCS	1%	1%

Peru

Volume	Average Price	Value
1.5 MtCO ₂ e	\$4.4/tCO ₂ e	\$6.4M
Project Category	Volume	Value
Forestry and land use	96%	94%
Household devices	4%	6%
Standard	Volume	Value
Gold Standard	4%	6%
VCS	96%	94%
VCS+CCB	84%	89%

North America

Canada

Volume	Average Price	Value
110.2 KtCO ₂ e	\$11.0/tCO ₂ e	\$1.2M
Category	Volume	Value
Forestry and land use	88%	84%
Methane	3%	5%
Other	9%	10%
Renewables	0%	1%
Standard	Volume	Value
Gold Standard	4%	6%
ISO-14064	18%	9%
VER+	3%	5%
VCS	9%	10%
Other	66%	70%

United States

Volume	Average Price	Value
10.0 MtCO ₂ e	\$2.8/tCO ₂ e	\$27.6M
Category	Volume	Value
Energy efficiency and fuel switching	3%	6%
Forestry and land use	13%	39%
Gases	14%	16%
Methane	43%	31%
Other	5%	5%
Renewables	0%	1%
Transportation	22%	2%
Standard	Volume	Value
ACR	18%	30%
CAR	48%	51%
ISO-14064	21%	2%
VCS	13%	15%

Oceania

Australia

Volume	Average Price	Value
535.2 KtCO ₂ e	\$4.8/tCO ₂ e	\$2.6M

Category	Volume	Value
Forestry and land use	47%	97%
Renewables	53%	3%

Standard	Volume	Value
CFI	37%	82%
VCS	63%	18%

Our Supporter



Good Energies Foundation (<http://www.goodenergies.org>) supports sustainable systems that can prevent poverty and disruption caused by climate change in the Global South. Good Energies Foundation was established in 2007 and founded as an integral part of Good Energies Inc., a private equity company specialised in investing in the renewable energy and energy-efficiency industries. Good Energies Foundation's historical mission is the alleviation of future poverty in the Global South by mitigating climate change. Good Energies Foundation initially leveraged its know-how in solar photo-voltaic to provide access to clean energy, especially in the area of rural electrification. At a later stage, climate-change related solutions were added to the portfolio, including sustainable reforestation models. As temperatures rise, we believe that innovative solutions are urgently needed to prevent the future displacement and impoverishment of the world's most vulnerable populations.

Our Sponsors



BCP (BioCarbon Partners) is one of the leading African-based forest carbon offset development companies in the REDD+ (Reducing Emissions from Deforestation and Degradation) sector. BCP's mission is making forest conservation valuable to people. BCP focuses on achieving long-term conservation solutions for African dryland forests, through local presence, community empowerment and strong partnerships. Our REDD+ activities are validated and verified to the highest of international standards and include the VCS verified Lower Zambezi REDD+ Project in Zambia (CCBA triple gold Validated). BCP is also developing a large-scale REDD+ activity in Zambia's Luangwa Ecosystem through the 5 year USAID-funded Community Forests Program. BCP combines an entrepreneurial approach with a core philosophy of caring for people and environments to catalyze deforestation reduction in ecosystems of global biodiversity significance. More information about BCP can be found at www.biocarbonpartners.com.



Numerco is an award-winning independent energy and commodities company with a leading reputation in the renewable and carbon industry. Dedicated to reducing the impact of climate change, Numerco has a global reach extending beyond 30 countries, sourcing sustainable products from more than 200 partners and delivering them to organisations to meet their environmental goals. Specialising in international voluntary markets with an in-depth knowledge of regional programmes and industry-wide schemes, Numerco offers customers unparalleled access to the evolving environmental commodity markets. All products are certified to accredited standards and frameworks including CDM, VCS, Gold Standard, CAR and RECs.

Numerco provides a reliable and transparent platform to source products used to neutralise or reduce greenhouse gas emissions and present them effectively and efficiently to valued customers. The company's direct engagement throughout the process has wider social and economic benefits to communities involved in the projects and our extensive expertise and knowledge enables the development and financing of new projects. Founded in 2013 and based in London, Numerco has won awards three years consecutively from Environmental Finance Magazine. Visit <http://numerco.com> for more information.

**BioCarbon Fund**

The BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) is a multilateral fund, supported by donor governments and managed by the World Bank. Established in 2013, it promotes reducing greenhouse gas emissions from the land sector, from deforestation and forest degradation in developing countries (REDD+), and from sustainable agriculture, as well as smarter land-use planning, policies and practices. The ISFL supports programs in Colombia, Ethiopia, and Zambia. An additional program in Indonesia is under consideration.

The project-level initiative of the BioCarbon Fund was established in 2004 as a public-private sector initiative managed by the World Bank to support afforestation/reforestation as well as sustainable agricultural management projects through the purchase of emission reductions or carbon credits. Most of the projects supported by the Fund are registered with the UNFCCC's Clean Development Mechanism (CDM), while some including the first REDD+ initiative in Africa (Madagascar CAZ REDD project) and the Kenya Agricultural Carbon project are associated with Verified Carbon Standard (VCS).

BioCarbon Fund has over 20 projects located in 16 countries spread across five continents and they have been pioneers in demonstrating the generation of multiple revenue streams through a combination of financial returns from the sale of carbon credits with increased local incomes and productivity from sustainable land management practices. More information about the BioCarbon Fund can be found at www.biocarbonfund.org.



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