



Capitalizing on Coastal Blue Carbon

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Introduction to Coastal Blue Carbon Markets and Carbon Finance

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Restore America's Estuaries

RESTORE AMERICA'S ESTUARIES ALLIANCE

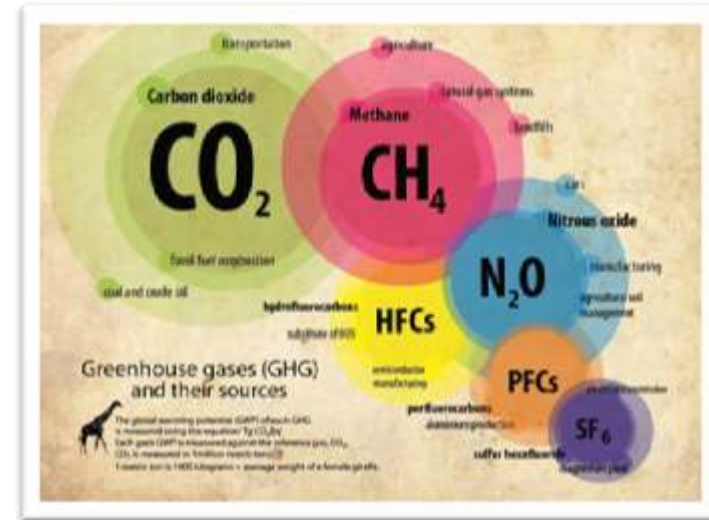


Carbon Markets



Carbon Markets

- CO₂ and other GHGs are global pollutants
- GHGs can be defined in discrete, measurable units - in tons of CO₂ equivalents - **CO₂e**



- All GHGs \neq . CH₄ GWP of 21 to 34, N₂O GWP of 310
- Market consists of all payments for third-party emissions reductions, called “offsets”
- Either government regulation (“compliance”) or voluntary

Compliance Markets

- Required by regulation to reduce emissions
- Regulated entities obtain and surrender allowances or offsets to meet targets
- Cap and trade enables trading of allowances, financial benefit for achieving reductions
- United Nations Clean Development Mechanism provides offsets for Kyoto Protocol Signatory Countries and buyers in the European Union Emissions Trading Scheme



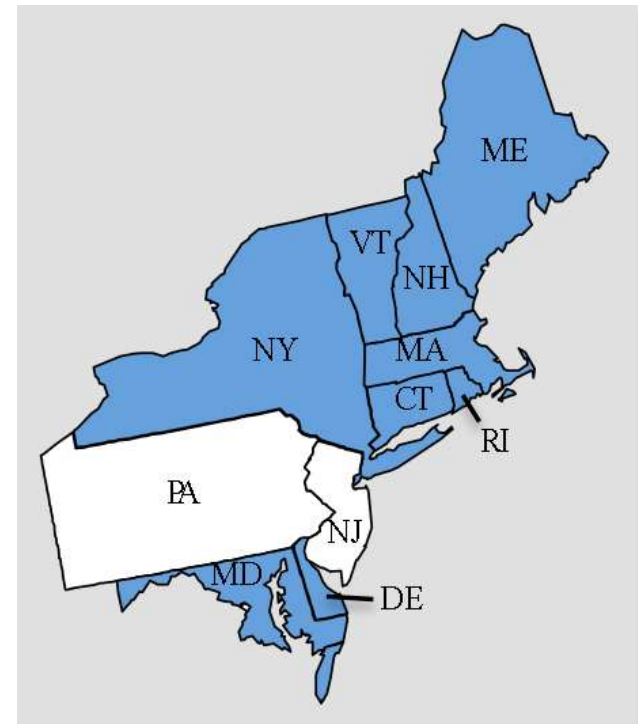
California Global Warming Solutions Act

- Reduce state's GHG emissions to 1990 levels by 2020
- Cap set in 2013 at 2% below 2012 levels, annual reductions of 3%
- All major industries and 85% of emissions sources
- Allowances are granted and auctioned, proceeds of > \$500 million
 - Awarded \$21 million in 2015 to 12 projects that restore wetlands that sequester GHGs and have other benefits
- Offsets may be used to meet up to 8% of obligation
- Five approved offset types including forestry
- Considering rice cultivation and Reduced Emissions from Deforestation and Degradation (REDD) forest projects from Brazil and Mexico



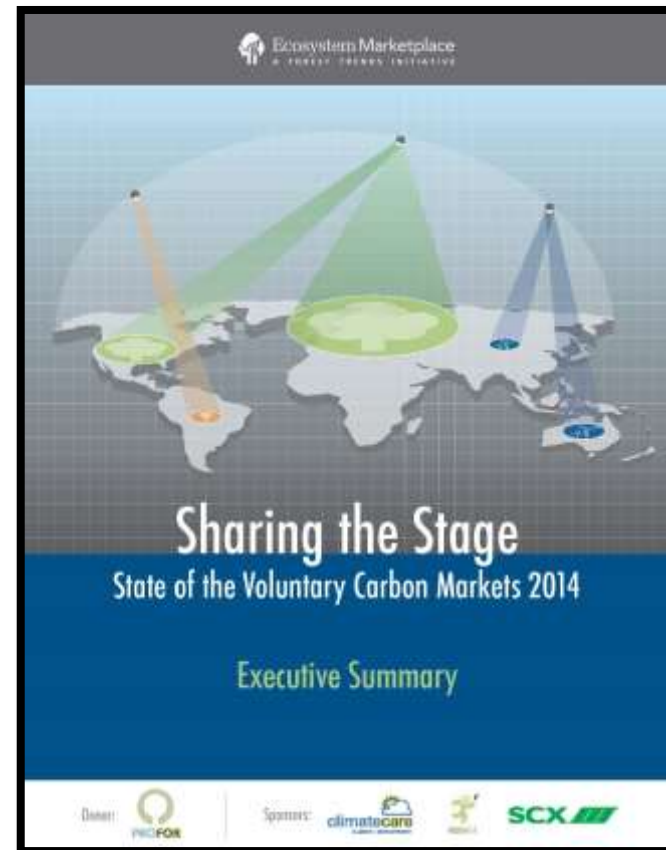
Regional Greenhouse Gas Initiative

- 9 NE states (CT, DE, ME, MD, MA, NH, NY, RI, & VT), cap and reduce power sector emissions
- In addition to allowances, RGGI allows offsets for up to 3.3% of power plant obligation
- Five offsets categories including forestry, offsets not yet a factor



Voluntary Carbon Markets

- 844 million tons of voluntary offsets worth \$4B since tracking began
- 76 million tons of offsets in 2013 worth \$349M, \$78 N. Am, \$4.90/ton
- 20% of the market is “early stage impact investment”
- 45% of offsets in 2013 were from forestry and land use projects, to 32% in 2012
- Project market value in 2020 of \$1.8B
- Why? To meet climate change and corporate social responsibility goals



Voluntary Carbon Markets

- **Standards** for offset quality and integrity
 - General requirements and guidance on GHG accounting
 - Procedures for validation and verification



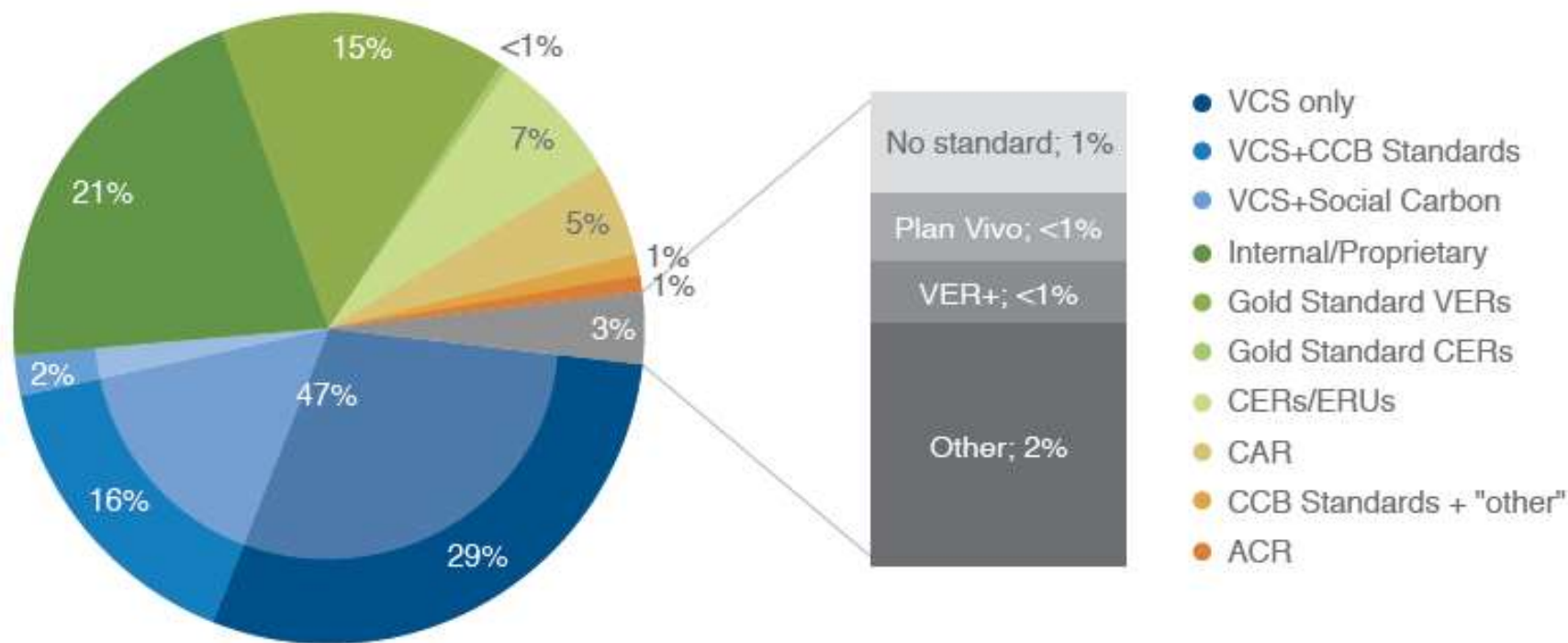
- **Registries** ensure credits are tracked, retired, prevent double-counting
- **Methodologies** provide step-by-step requirements for estimating and monitoring emissions following accepted scientific good practice

Key Principles of GHG Offset

Real	Demonstrate that reductions have actually occurred
Additional	Ensure reductions result from activities that would not happen in the absence of a GHG market
Permanent	Mitigate risk of reversals Verify reductions ex-post
Verified	Provide for independent verification that emission reports are free of material misstatements
Owned unambiguously	Ownership of GHG reductions must be clear
Not harmful	Avoid negative externalities
Practicality	Minimize project implementation barriers

Voluntary Markets

Figure 11: Market Share for Popular Independent Third-Party Standards and Certifications (% Share)

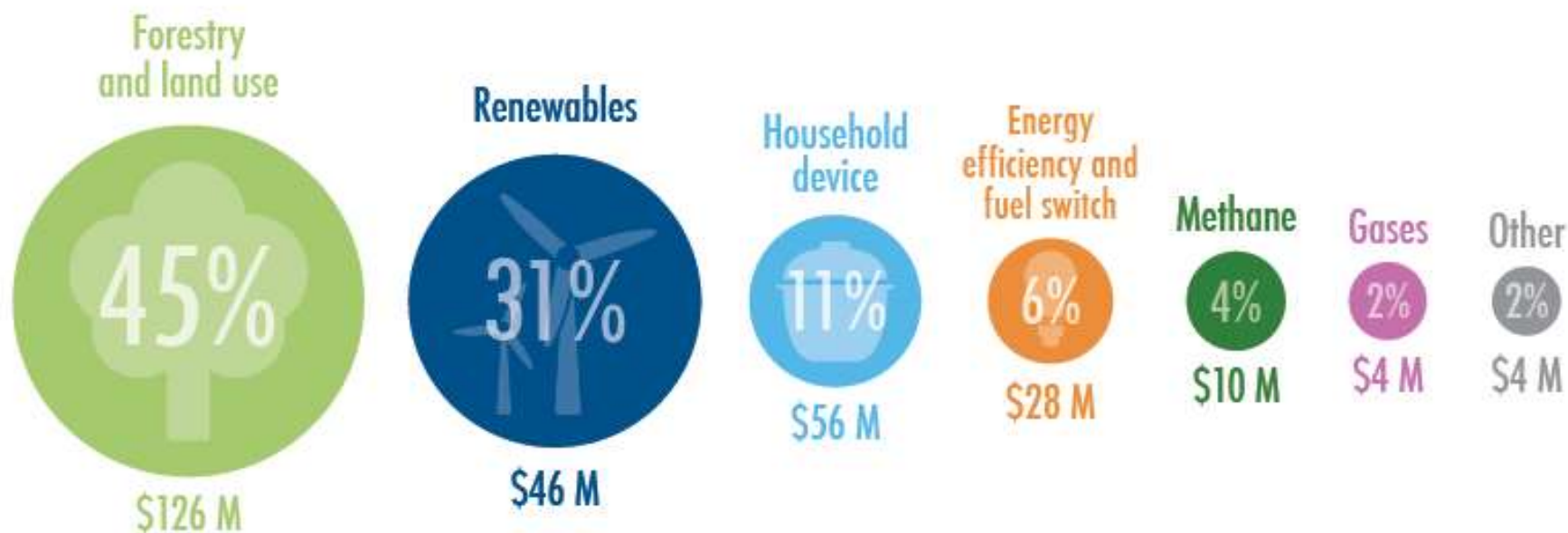


Notes: Based on responses representing 60 MtCO₂e in transacted offset volume.

Source: Forest Trends' Ecosystem Marketplace. *Sharing the Stage: State of the Voluntary Carbon Markets 2014*.

Voluntary Markets

Figure 22: Market Share and Value by Project Category, 2013 (% Share and \$ Million)



Bubble size: Volume

Percentage: Market share

\$: Market value

Notes: Based on survey responses representing 60 MtCO₂e transacted.

Source: Forest Trends' Ecosystem Marketplace. *Sharing the Stage: State of the Voluntary Carbon Markets 2014*.

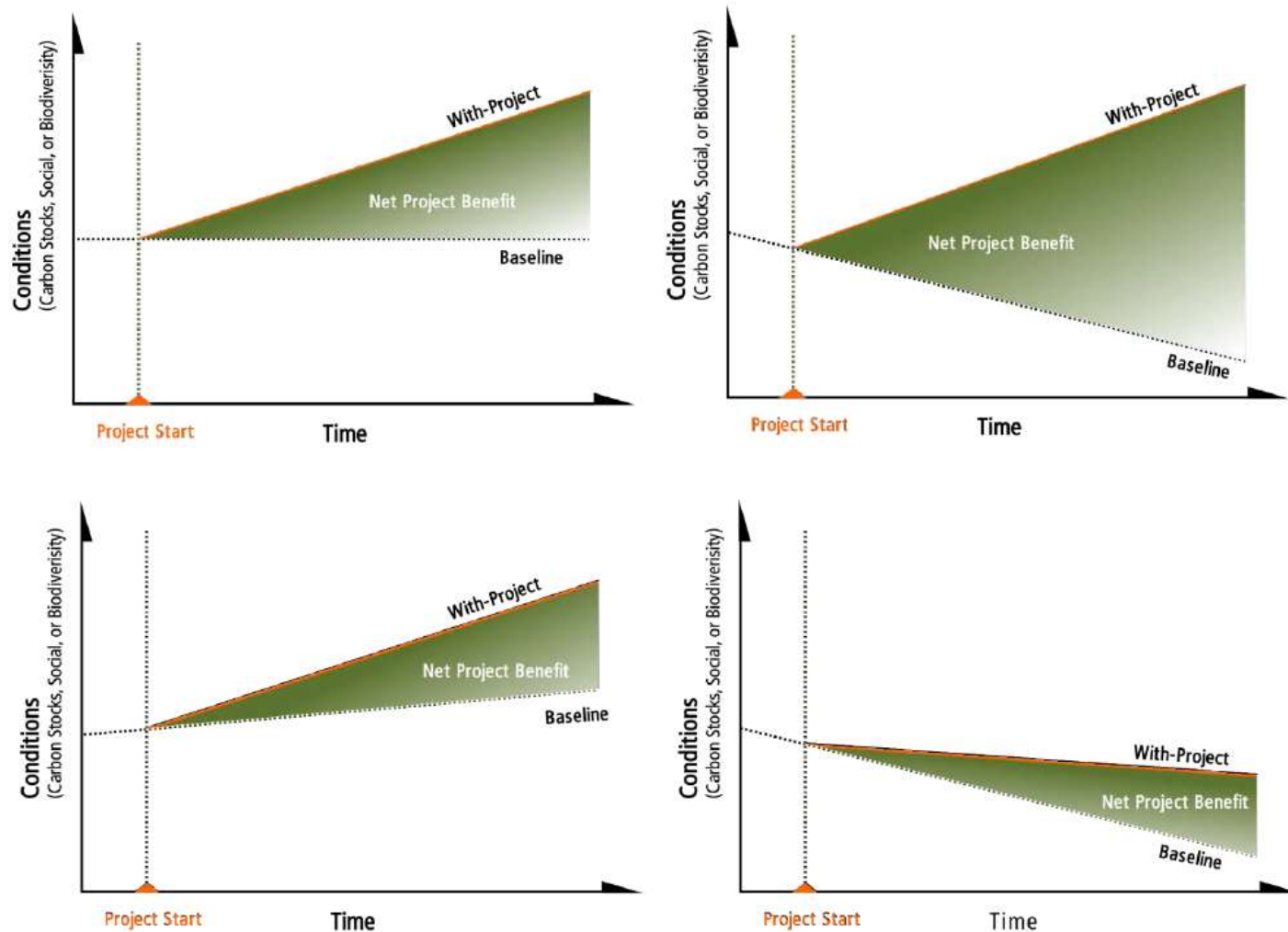
Wetland Activities with Potential GHG Benefits

- **Restoration** of tidal wetlands and seagrasses
- **Creation** of tidal wetlands (e.g. beneficial use)
- **Conservation/avoided loss** of existing tidal wetlands and seagrass beds



Baseline vs. With-Project Scenarios

Figure 1. Four Hypothetical Baseline Scenarios that Illustrate the Net Positive Impacts of a Project



Enabling Blue Carbon Finance

VCS WRC Requirements

Methodology
Development

Project
Development

GHG Emission
Reductions and
Removals



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