

Introduction to the Climate Action Reserve and California Offsets



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November 3, 2011



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Background and History

- Nonprofit organization founded as the California Climate Action Registry by state legislation in 2001
 - Encourage actions to reduce emissions
 - By developing protocols to track GHG emissions and reductions and having those emissions verified and publicly reported
- Renamed and expanded in 2008
 - Mission remains to encourage actions to reduce emissions



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Objectives of the Reserve

- Ensure that emission reduction credits (offsets) have true environmental integrity
- Show that carbon offsets can be a useful tool in addressing climate change
- Provide a offset registry that is rigorous while streamlined and user-friendly
- Link voluntary carbon markets with emerging compliance markets (CA C&T, WCI, RGGI...)
- Provide expertise on offset standards and policy



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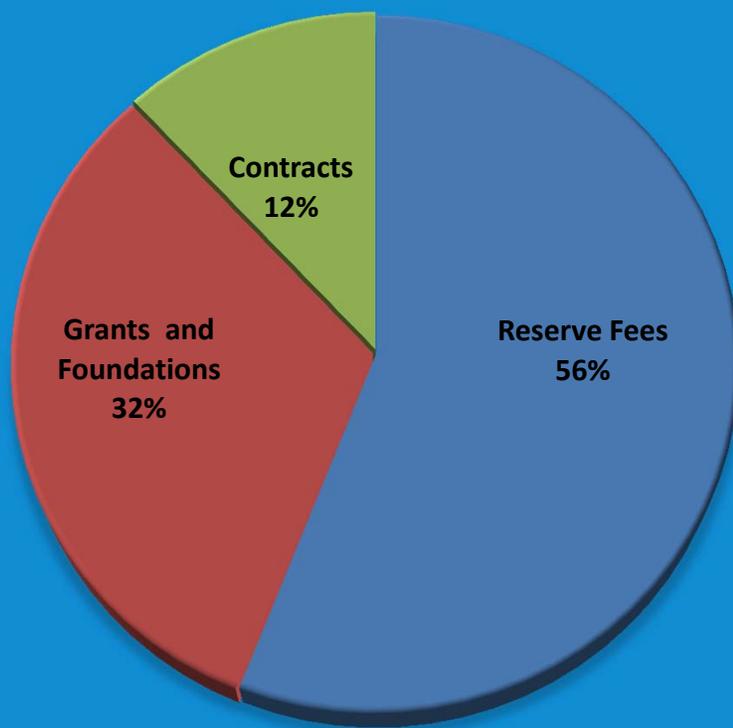
Board of Directors

- Linda Adams, California EPA (ret.) - Chairman of the Board
- Peter Miller, NRDC – Board Secretary
- Jeff Kightlinger, Metropolitan Water District – Board Treasurer
- Randy Armstrong, Shell Oil Company
- Steve Corneli, NRG Energy
- Cynthia Cory, California Farm Bureau Federation
- Dr. Francisco Barnes, National Institute of Ecology (Mexico)
- Peter Liu, New Resource Bank
- James Mack, British Columbia Ministry of Environment (Canada)
- Nancy McFadden, Office of the Governor of California
- Betsy Moler, Federal Energy Regulatory Commission (ret.)
- Tim Profeta, Nicholas Institute at Duke University
- Jan Schori, Sacramento Municipal Utility District (ret.)
- Stephan Schwartzman, Environmental Defense Fund



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Annual Budget: \$3.7 Million



- Headquartered in Los Angeles
- A 501(c)3 nonprofit organization
- Employ 27 full time staff
- Registry software system built and maintained by NYSE Blue

Offset Integrity



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- **Real**
 - Can be measured to a high degree of accuracy
 - Is based on an activity that has occurred, not one that is projected to occur in the future
- **Additional**
 - Occurs outside of any regulatory requirement
 - Would not have occurred but for the incentive provided by a GHG market
- **Verifiable**
 - Can be (and has been) independently verified
- **Enforceable**
 - Ownership is undisputed and enforcement mechanisms exist to ensure all program rules are followed
- **Permanent**
 - Is removed from the atmosphere for a minimum of 100 years



What We Do

1. Develop High Quality Standards

- Convene stakeholders and lead development of standardized protocols for carbon offset projects

(Real, Permanent, Additional)

2. Manage Independent Third Party Verification

- Training and oversight of independent verification bodies

(Verifiable)

3. Operate a Transparent Registry System

- Ensure ownership to emission reductions
- Maintain a public registry of approved projects
- Issue and track serialized credits generated by projects

(Enforceable)



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What makes the Reserve different?

Recognition

Recognized and Supported by:

- California Air Resources Board
- States of Pennsylvania and New Mexico
- Verified Carbon Standard (VCS)
- Leading environmental organizations:
 - Environment America
 - Natural Resources Defense Council (NRDC)
 - Environmental Defense Fund
 - Sierra Club
 - Wilderness Society



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What makes the Reserve different?

Transparency

- Unparalleled transparency makes the Reserve unique
- Public reports include:
 - All protocols and associated documents
 - List of all account-holders
 - List of all projects and all project documents
 - List of all issued CRTs for every project
 - All retired CRTs



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What makes the Reserve different?

Performance Standard

- Why a performance standard is different
 - The hard work is upfront
 - Assess industry practice as a whole, rather than individual project activities
- Minimize transaction costs
- More certainty in amount of credits
- Lower risk for developers and investors
- Faster project processing



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What makes the Reserve different?

Separation of Roles

- Is not affiliated with the State of California
- Reserve does not fund or develop projects
- Does not take ownership of offsets
- Is not an exchange
- Is a 501(c)3 not-for-profit organization
- Independent third-party verification
 - Consistent with international standards
 - Accreditation done by ANSI
 - Assiduous oversight of verifiers



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What makes the Reserve different?

Linking Multiple Markets

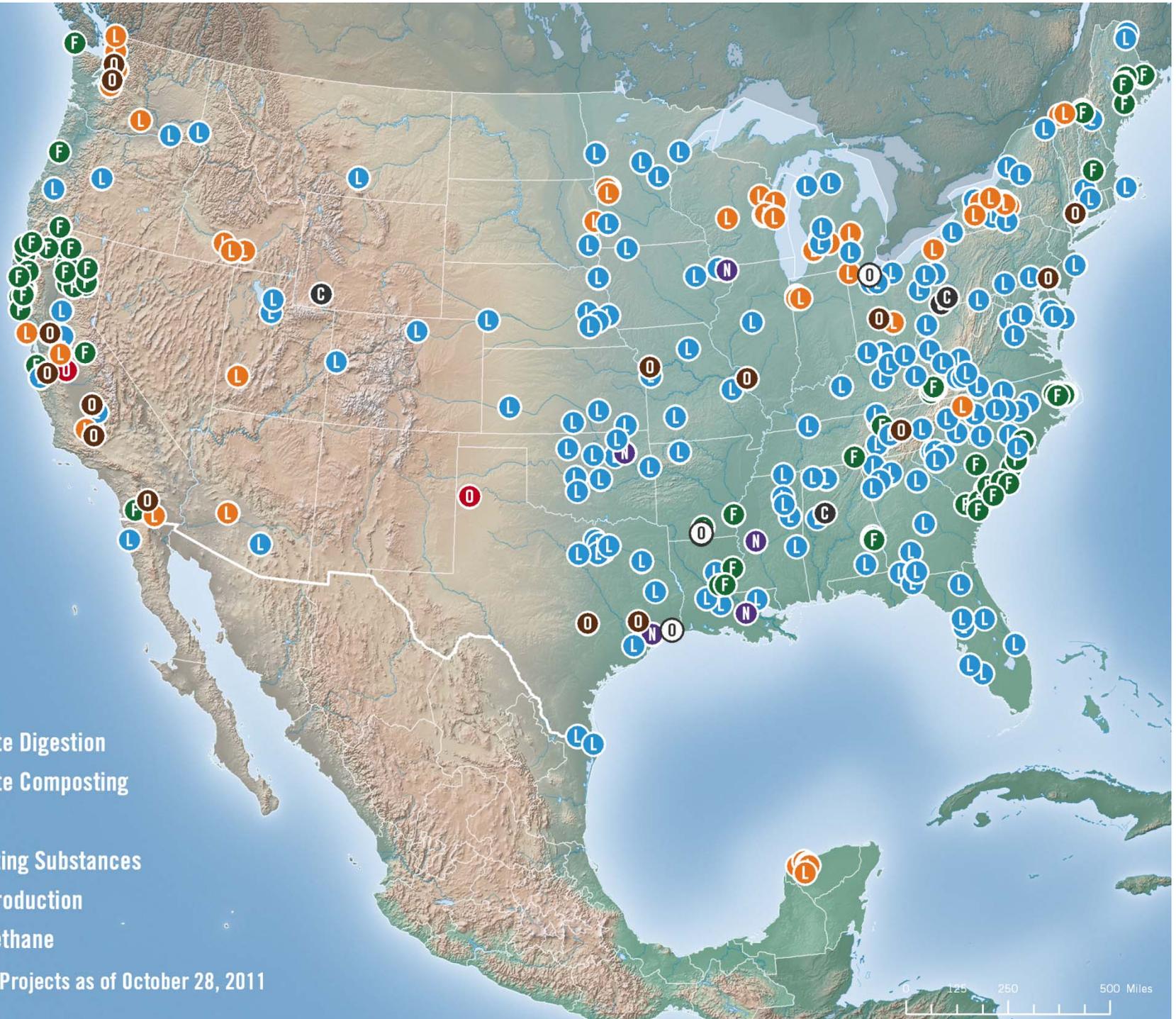
- CRTs are purchased by buyers in different markets for a variety of reasons
- Primary market is California cap-and-trade buyers
- Western Climate Initiative
- CEQA compliance
- Voluntary corporate buyers
- Retailers/individual voluntary buyers



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- Forest
- Livestock
- Organic Waste Digestion
- Organic Waste Composting
- Landfill
- Ozone Depleting Substances
- Nitric Acid Production
- Coal Mine Methane

Listed & Registered Projects as of October 28, 2011

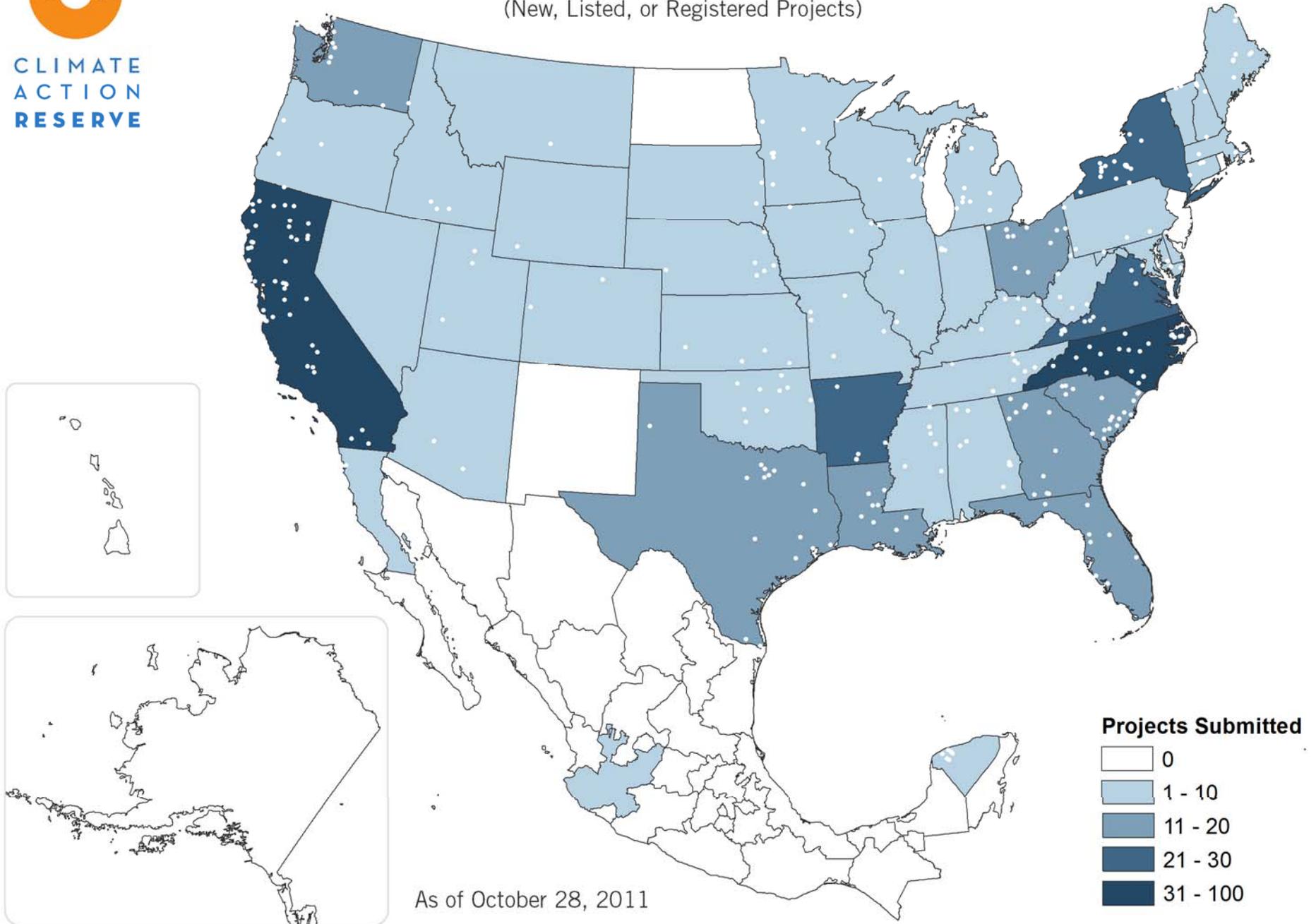




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Projects Submitted by State

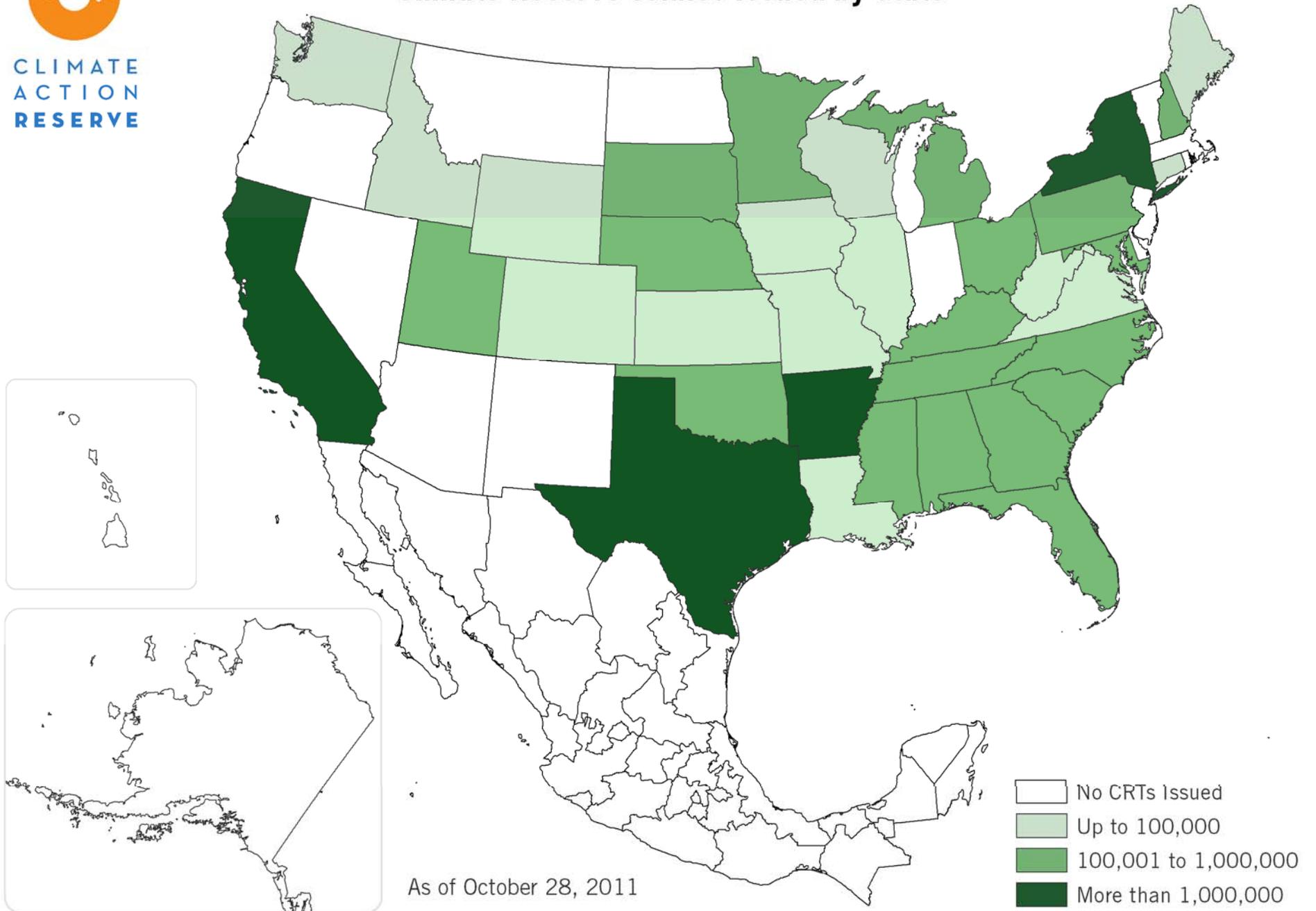
(New, Listed, or Registered Projects)





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Climate Reserve Tonnes Issued by State





Reserve Stats

CRTs registered **18 million**

CRTs retired 2.5 million (14%)

Account holders **410**

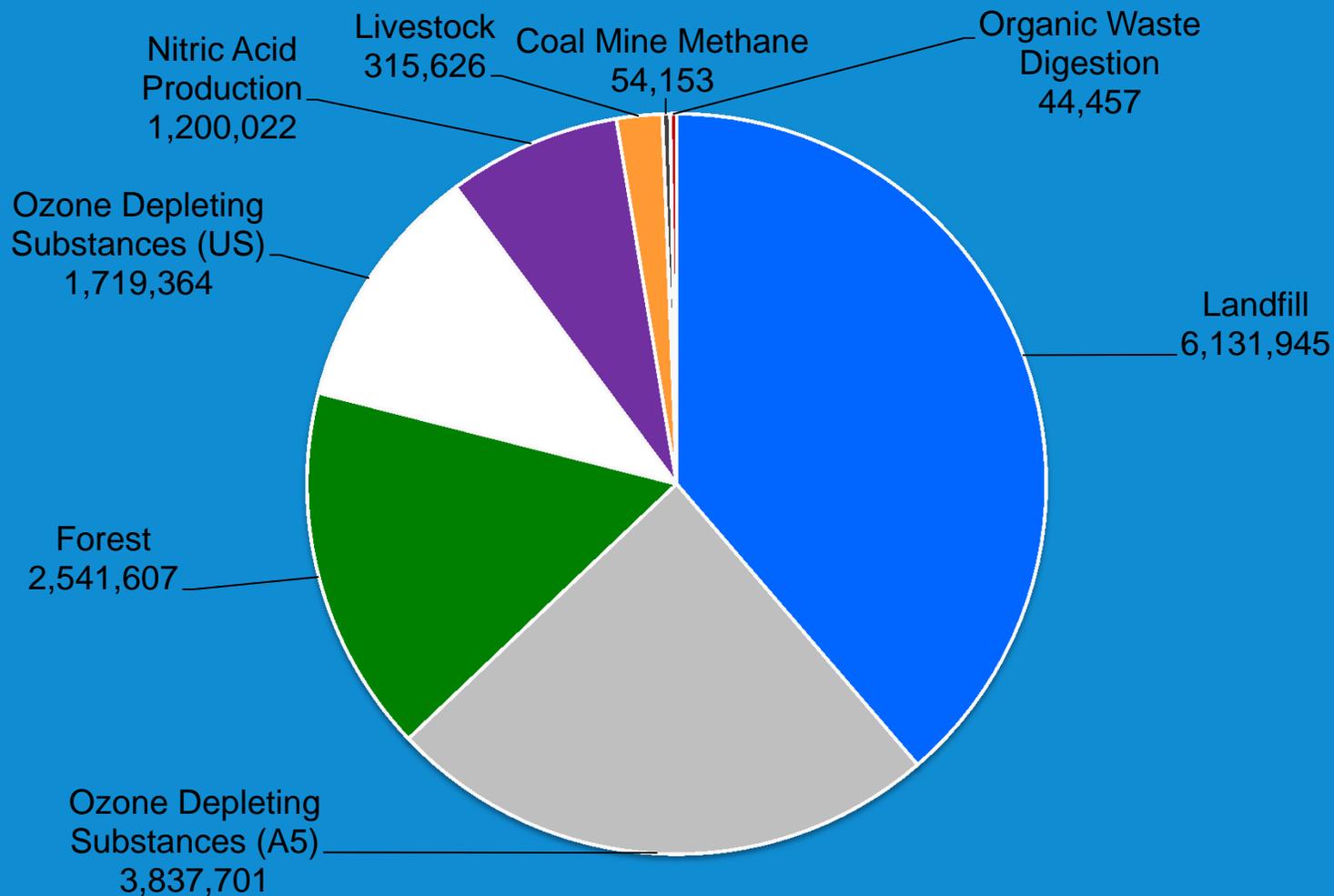
Projects submitted **481**

Registered 117

U.S. States with Projects **44**



CRT Issuance by Type

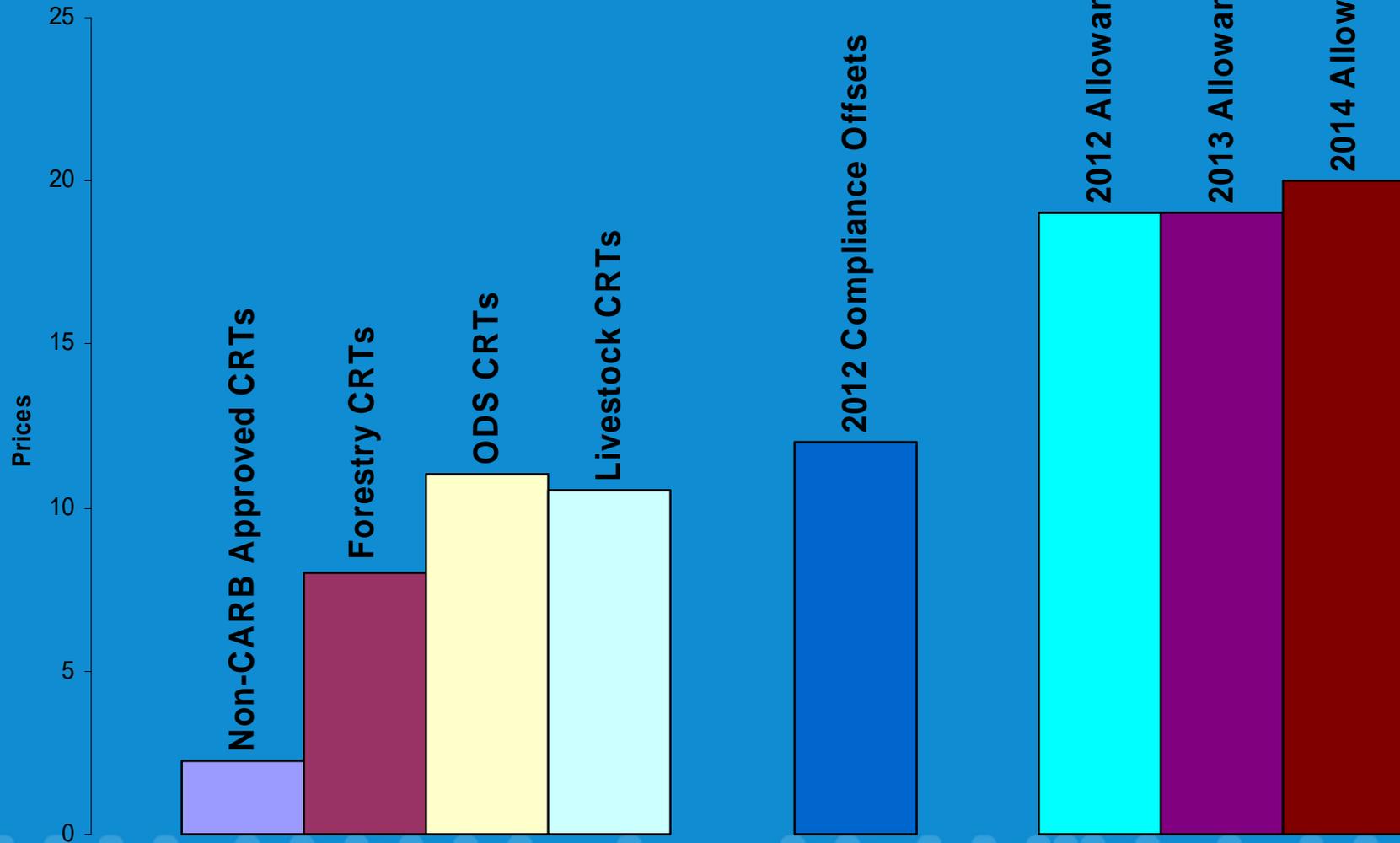


Pricing for California Carbon Compliance Instruments

Recent data from Evolution Markets and Green Exchange



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Our Protocols

- Developed with broad public input
- Goal is to create a uniform standard that is widely recognized and builds on best practice
 - We incorporate the best elements of other protocols
 - We do not adopt methodologies from other sources (i.e. CDM, Gold Standard, VCS, project developers, etc.)
- Designed as step-by-step instructions on project implementation



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Existing Protocols

- **Forestry** (Reforestation, Improved Forest Management, Avoided Conversion)
- **Urban Forestry**
- **Livestock Methane Capture**
- **Ozone Depleting Substances (US)**
- Landfill Gas Capture
- Organic Waste Digestion
- Coal Mine Methane
- Nitric Acid Production
- Organic Waste Composting
- Livestock Methane Capture (Mexico)
- Landfill Gas Capture (Mexico)
- Ozone Depleting Substances (Article 5 Countries)

ARB Approved



Protocols In Progress

- Forestry Project Protocol (Mexico)
 - following a nested REDD+ approach
- Agriculture
 - Rice Cultivation
 - Nutrient Management
 - Cropland Management
- Others Under Consideration
 - Energy Efficiency and Renewables in Mexico
 - Adaptation to Canada

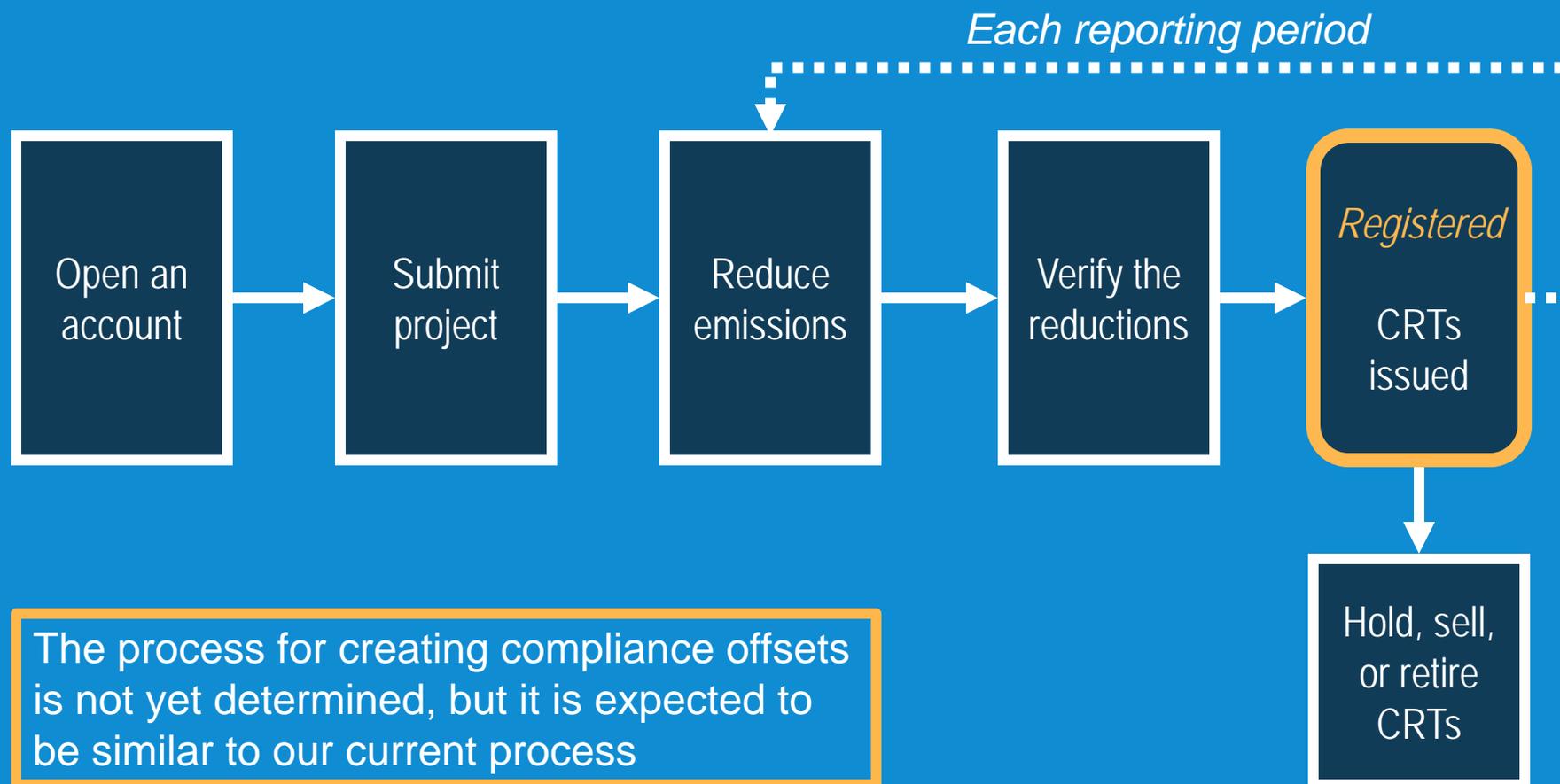


Compliance Protocols

- **Forestry**: biological sequestration in forests for 100 years
 - Improved Forest Management
 - Reforestation
 - Avoided Conversion
- **Urban Forestry**: sequestration in urban tree plantings for 100 years
- **Livestock**: capture and destruction of methane from manure using anaerobic digestion
- **ODS**: destruction of potent GHGs from appliances and foams from U.S. sources



The Reserve process





The Participants

Emitters	Finance	Oversight
<ul style="list-style-type: none">• Voluntary buyers of credits• Compliance buyers of credits• Generators of credits (sources of emissions reductions)	<ul style="list-style-type: none">• Project developers• Brokers• Retailers	<ul style="list-style-type: none">• Standards development• Registries• Regulatory Agencies• Verification bodies
<p><i>EXAMPLES</i></p> <ul style="list-style-type: none">• <i>Pacific Gas & Electric</i>• <i>United Parcel Service</i>• <i>News Corporation</i>• <i>Dairy farmers</i>• <i>Forest owners</i>• <i>Municipalities</i>	<p><i>EXAMPLES</i></p> <ul style="list-style-type: none">• <i>TerraPass</i>• <i>The Climate Trust</i>• <i>Evolution Markets</i>• <i>3Degrees</i>• <i>Blue Source</i>• <i>Element Markets</i>	<p><i>EXAMPLES</i></p> <ul style="list-style-type: none">• <i>Climate Action Reserve</i>• <i>Chicago Climate Exchange</i>• <i>California Air Resources Board</i>• <i>Scientific Certification Systems</i>



Verification

- Verification bodies (VBs) must get accredited to ISO standards by American National Standards Institute (ANSI)
- Lead Verifiers must take protocol-specific and general Reserve training and demonstrate competency
- VB submits NOVA/COI form and if approved proceeds to verification activities
- Developer hires accredited and trained VB
 - VB assesses project and documentation and makes determination as to the accuracy of reported CRTs
 - Project documents, verification report and verification opinion submitted to the Reserve for review and approval



Buying & Selling CRTs

- Must have an account with the Reserve to hold CRTs
- No financial transactions within the system, only transfers between accounts
 - Not a trading exchange for spot transactions
- Forward sales are very common
- How to trade?
 - Purchase directly from a project developer
 - Purchase through a Trader/Broker/Retailer
 - Purchase futures on an exchange



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Fee Structure

- Account Maintenance: \$500/year
- Project Listing: \$500/project
- CRT Issuance: \$0.20/tonne
- CRT Transfer: \$0.03/tonne
- Retirement: Free



Cap-and-Trade in California

- AB32 passed in 2006
 - Basic CA law on climate—Reduce to 1990 baseline by 2020
- Cap-and-trade regulation adopted by California Air Resources Board in Dec 2010
 - Final version expected to be adopted by board on October 20
- Program begins Jan 1, 2013 and runs through 2020
- Divided into three compliance periods
 - Narrow scope for 1st period: ~600 largest industrial sources
 - First compliance deadline: November 1, 2014
 - Broad scope beginning Jan 1, 2015



Offsets for Compliance

- Compliance obligation can be fulfilled with a mix of allowances and offsets
- Up to 8% of compliance obligation can be fulfilled with offsets
 - Example: If your emissions are 1 million mtCO₂e, then you can use up to 80,000 offsets for that period
- Offsets can only come from projects under approved protocols
- Project must be registered with CARB or a CARB-approved registry
 - If registered with a registry, then credits must be retired/canceled and reissued by CARB

California Carbon Market



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Compliance Period	Year	Allowance Budget (mt CO ₂ e)	Total Offset Demand
First (narrow scope)	2012	165,800,000	39,064,000
	2013	162,800,000	
	2014	159,700,000	
Second (broad scope)	2015	394,500,000	91,784,000
	2016	382,400,000	
	2017	370,400,000	
Third	2018	358,300,000	83,104,000
	2019	346,300,000	
	2020	334,200,000	



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The Reserve in the California Cap and Trade Program

- Four Climate Action Reserve project protocols have been adopted by ARB
 - We expect others to be considered early next year
- The Reserve expects to be formally approved by ARB as an Offset Registry next year
 - May be others as well
- Early-Action Offsets
 - Projects under four approved protocols of vintages 2005-2014, listed by February 2015
 - Must go through additional desk verification



Buyer Liability

- ARB may find that an offset is invalid if
 - Amount of credits is overstated by more than 5%
 - Project is not in accordance with all local, state, and national environmental, health and safety regulations during reporting period
 - Credits have been issued by another program for the same period
- If found invalid, ARB will remove the offsets from the account where they are currently located, whether retired or active
 - Except forest projects, for which forest owner is required to replace any retired credits



Buyer Liability Time Frame

- ARB can find credits invalid within eight years, except for the following:
 - For Livestock, Forest and Urban Forest, liability is only for three years if the project is verified by a different verifier within three years.
 - For ODS, liability is only three years if it is re-verified by a second verifier within that time.
 - ODS projects have only a one-year crediting period

Contact Information



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