

# L&C CARBON, LLC

## *Carbon Markets: Big Picture and Current Status*

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Oregon/Washington SAF

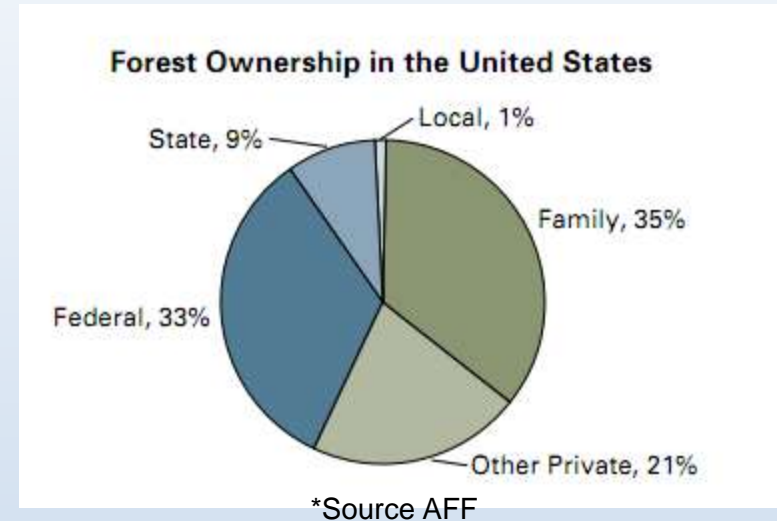
Joint State Conference

# Overview

- OSWA interest in forest carbon
- International, National & Regional carbon market developments
- Methodologies & eligibility rules
- Carbon offset market prices
- Where is the market headed?

# Oregon Small Woodlands Association

- Over 3,000 members
- Two subsidiaries (L&C Carbon & Woodlands Carbon Company)
- US Family forestlands (235 million acres), 35% of forestland ownership
- AFF, and OSWA want to make sure family landowners part of national discussion on carbon offsets



# Woodlands Carbon Company

- Formed in partnership with American Forest Foundation
- Based on CCX
- 11 landowners under contract
- ~3,000 acres forestland
- First sale of offsets to Bend Broadband



<http://www.woodlandscarbon.com/>

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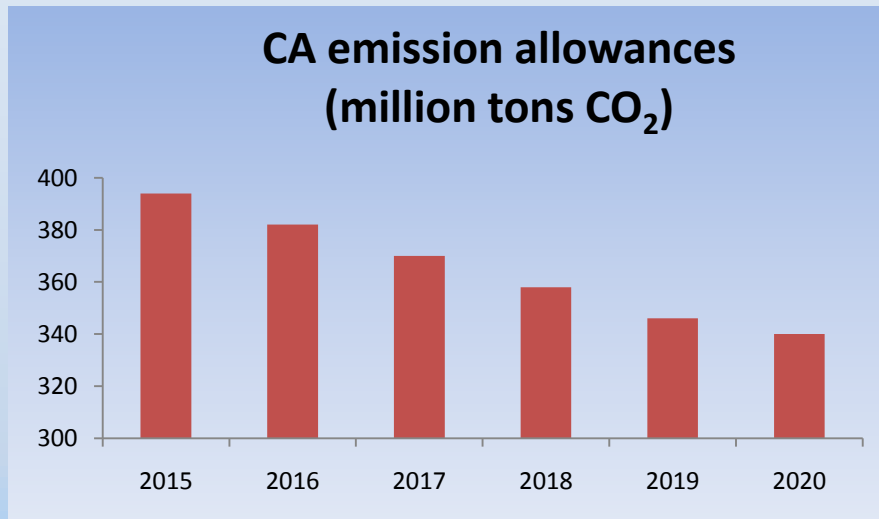
- OSWA, CE2 Capital Partners (2010)
- Focus on the pre-compliance market



# Market Drivers

## Government

“Cap” on GHG emissions



## Private sector

Carbon Disclosure Project



Rolls-Royce

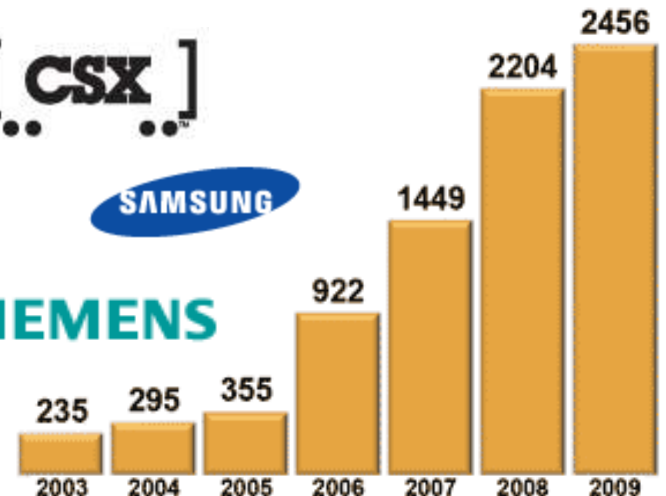


Xcel Energy®

Number of responding companies



SIEMENS



# International carbon developments

- Kyoto Protocol set to expire 2012
- Agreed to reduction commitments not met
- Efforts at post-Kyoto agreements have failed to date
- Decline in nuclear power use
  - Japan Tsunami
  - Germany's move away from nuclear power
- Bi-National agreements
  - Norway-Indonesia



# The Carbon World Has Changed





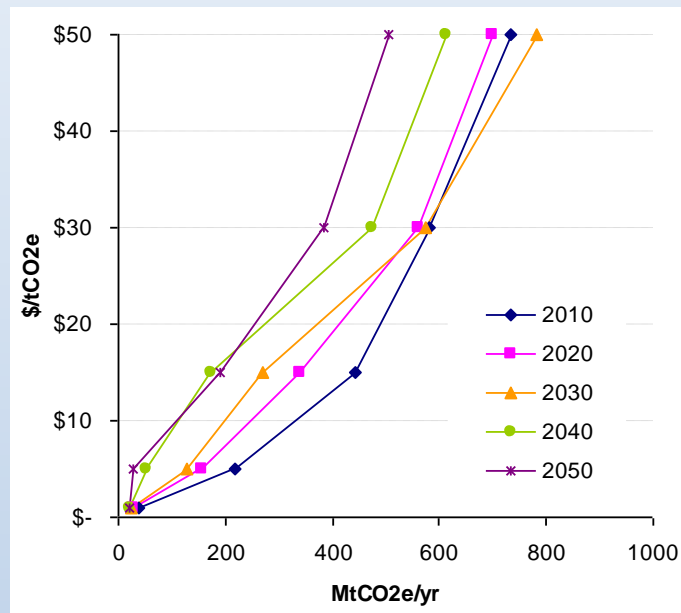
# Federal Cap and Trade

- Series of Federal “Cap and Trade” bills over the last decade
- All failed to pass

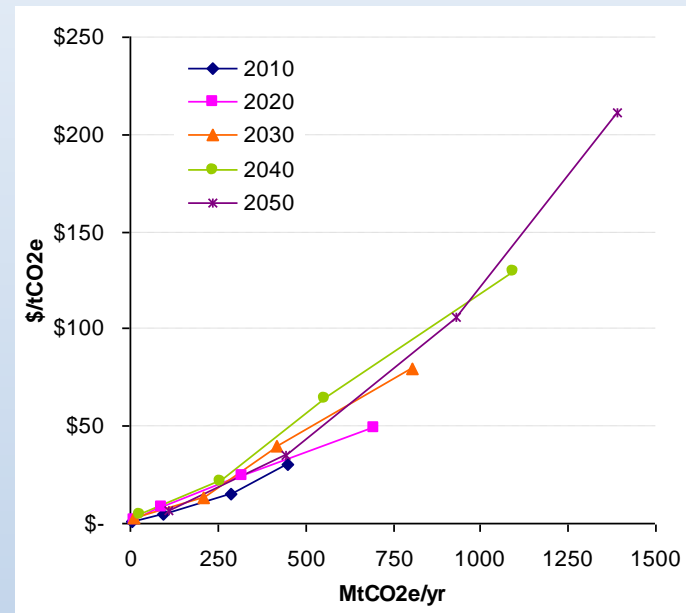
Bill Number and Title		Introduced	Reported by Committee	Passed	Sponsor
<b>108<sup>th</sup> Congress</b>					
S. 843	Clean Air Planning Act of 2003	9-Apr-03			Sen. Thomas Carper [D-DE]
<b>110<sup>th</sup> Congress</b>					
S. 280	Climate Stewardship and Innovation Act of 2007	12-Jan-07			Sen. Joseph Lieberman [I-CT]
S. 1766	Low Carbon Economy Act of 2007	11-Jul-07			Sen. Jeff Bingaman [D-NM]
S. 2191	Lieberman-Warner Climate Security Act of 2007	18-Oct-07	5-Dec-07		Sen. Joseph Lieberman [I-CT]
<b>111<sup>th</sup> Congress</b>					
H.R. 2454	American Clean Energy and Security Act of 2009	15-May-09	21-May-09	26-Jun-09	Rep. Henry Waxman [D-CA30]
S. 1733	Clean Energy Jobs and American Power Act	30-Sep-09	5-Nov-09		Sen. John Kerry [D-MA]

# Federal agency analysis of potential legislation & impacts of carbon prices on offset supply

**Figure 1: Total Domestic Forest and Agriculture Offset MACs for constant (a) and rising (b) prices (avg MtCO<sub>2</sub>e yr<sup>-1</sup>)**

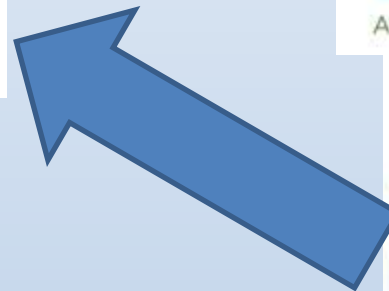


(a)



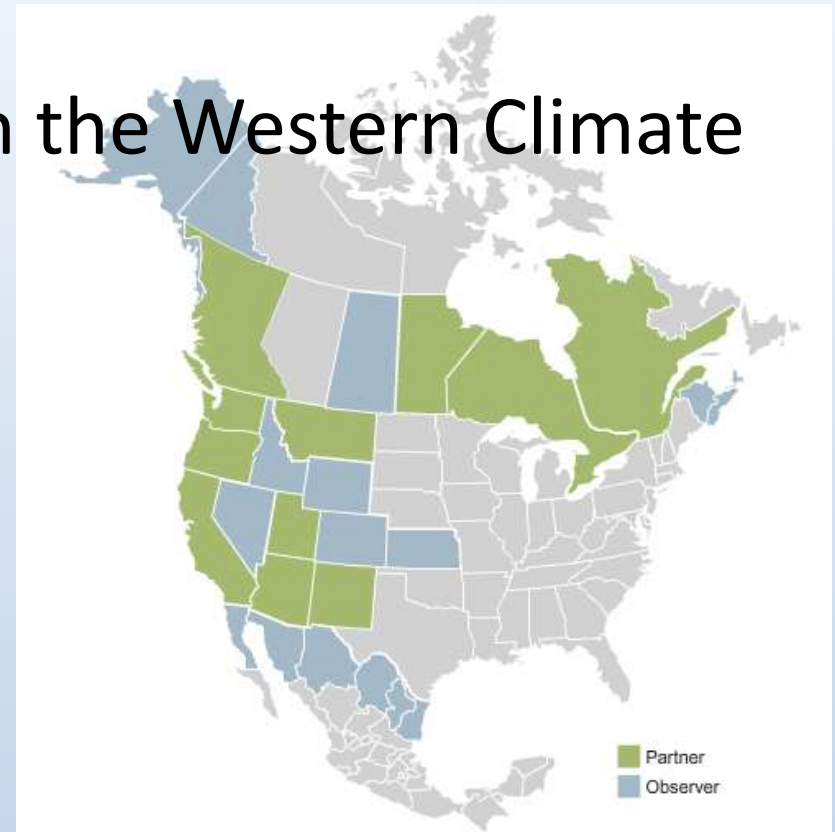
(b)

# State/Regional markets emerge



# California program linkages

- States and provinces in the Western Climate Initiative



# AB 32 Market in California

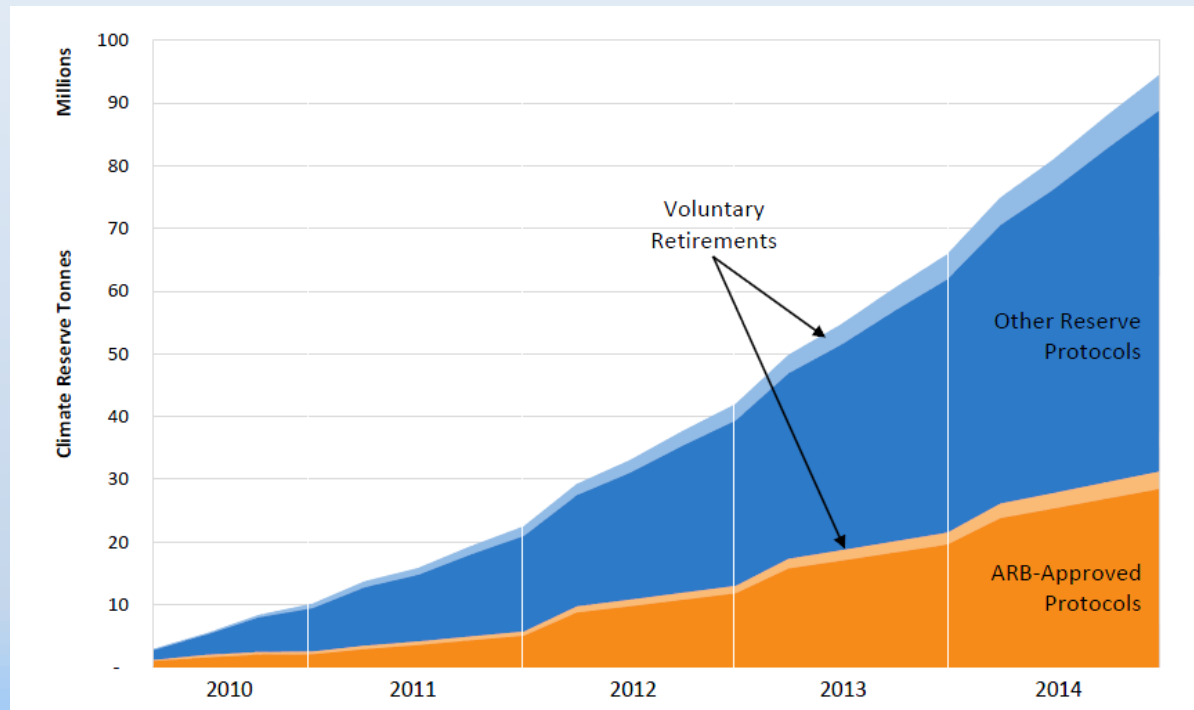
- Expected cap and trade system to start in 2012
- **Phase 1:** 2012 cap on utility sector
- **Phase 2:** 2015 other C producing industries
  - Including Pulp & Paper manufactures
- Program administered by the CA Air Resources Board (ARB)
- Set a cap and lower it over time, driving demand for offsets

# AB 32 Market in California

- 2012 Floor price for offsets at \$10/ton
- Allowances = 2.7 billion tons (2012 to 2020)
- Offsets will be 8% of “compliance obligation”
- ARB will need ~230 million offsets per year

# AB 32 Market in California

- Of the four approved ARB protocols, two of them are Forestry
- Opportunity for forestry (or other offsets)





# Forestry offsets are in demand

- 2009--140 million tons of carbon sold
  - (Source: Ecosystem Marketplace)
- Transaction value of \$2.4 billion
- 13% of the offsets market in 2009
- 24% of the offsets market in 2010
- Buyers like forestry offsets
  - Landfill methane not as compelling



# Forestry methodologies & carbon program rules

- Each registry / program is different
- Contract length & obligations

Carbon Registry/Program	Contract length (years)	Forest Certification Program	Type of forest management	Forest landowner eligibility
Climate Action Reserve (CAR)	100 - 199	SFI, FSC, ATFS	Natural forest management	Public & Private
American Carbon Registry (ACR)	40	SFI, FSC, ATFS	Landowner defined	Private
Verified Carbon Standard (VCS)	20 to 100	FSC only	Landowner defined	Public & Private

# L&C Carbon new IFM methodology

- Under review by ACR
- Attempting to expand eligibility to family forest landowners and other segments of the forestland ownership base

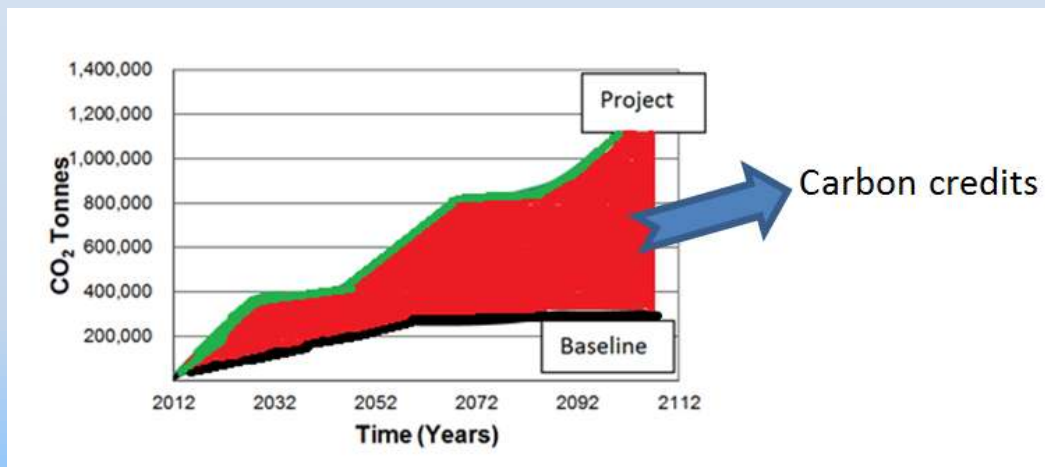


# L&C Carbon Approach

- Connect the landowner with a carbon program that is consistent with their values and objectives
  - Long term contracts, conservation oriented
  - Shorter term contracts, multiple-use orientation

# Improved Forest Management (IFM)

- IFM includes timber harvesting
- IFM—Long term forecast of carbon stocks under a Project and Baseline scenario
- Creditable acres = operable forest acres

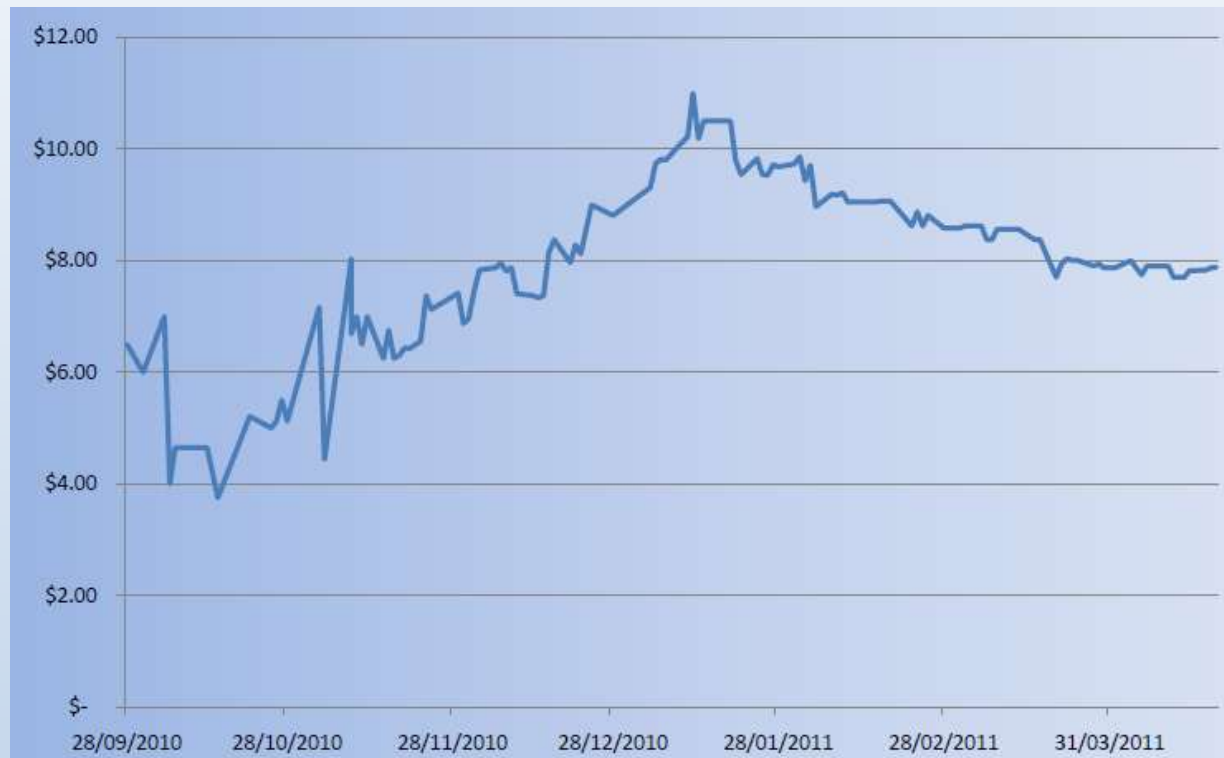


# Project implementation process



# Carbon offset prices

- California, Early Action Credits



Source:  
Evolution Markets



# Carbon offset prices

- CAR
  - Early Action Credits ~\$8/ton
- VCS & ACR 30% to 40% lower than CAR tons
  - \$5 to \$6/ton
- Forest carbon credits, not just carbon stocks
- PNW forests ~1 to 5 tons credits/acre/year

# Where do things go from here?

- Federal action not expected in near term (next 3 to 5 years)
- Investor interest in 2012 ARB compliance market
- “All eyes on California”
  - Will there be enough forestry offsets to meet demand?
  - Will forestry offsets lose market share to other offset sectors
- Role of the Voluntary Market

# Helpful sources for more carbon information

- USFS Tools for C inventory & management
  - ✓ <http://nrs.fs.fed.us/carbon/tools/>
- Carbon Online Estimator
  - ✓ <http://www.ncasi2.org/COLE/>
- Ecosystem Marketplace
  - ✓ <http://www.ecosystemmarketplace.com/>
- US DOE 1605b Forestry Appendix
  - ✓ [http://www.eia.doe.gov/oiaf/1605/Forestryappendix\[1\].pdf](http://www.eia.doe.gov/oiaf/1605/Forestryappendix[1].pdf)
- LinkedIn groups
  - ✓ <http://www.linkedin.com/>



# Thank You!

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