

Offsets – Challenges and Opportunities

EPRI Greenhouse Gas Emission Offset Policy Dialog
April 7, 2010
Robert Parkhurst





Quick Overview

- **PG&E's experience with offsets**
- **Development timeframe**
- **Forecast of supply**
- **Actions to increase supply**



What is the ClimateSmart™ program?

Voluntary PG&E program to make customers carbon neutral

- Cost is based on usage – \$0.00254 per kWh and \$0.06528 per therm.

Option for participants to demonstrate environmental leadership

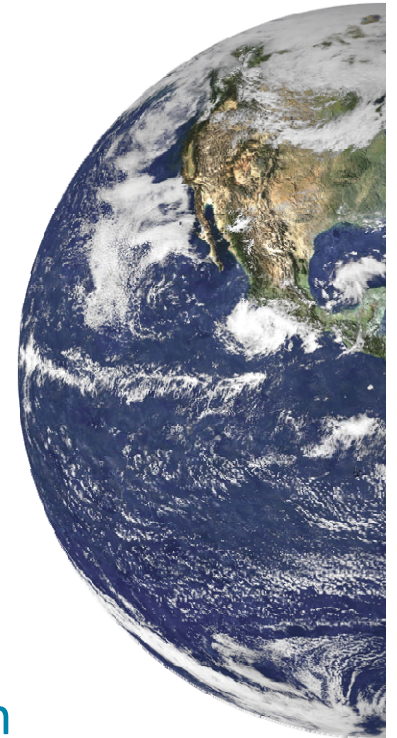
- Developed with the help of environmental groups, regulators, and other stakeholders.

Way to road test the Climate Action Reserve protocols and infrastructure

- Livestock methane capture, Forest sequestration, Landfill gas capture, Ozone Depleting Substance destruction, Urban forest sequestration

Funding to develop new protocols

- PG&E funded the development of four protocols





ClimateSmart™ Projects



Photo Credit:
Sempervirens Fund



Lompico Headwaters Forest
14,000 metric tons



Dairy Methane Capture
75,000 metric tons

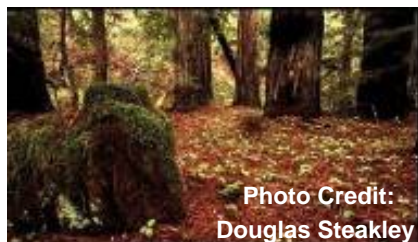


Photo Credit:
Douglas Steakley



**Garcia River, Big River and
Salmon Creek Forests**
900,000 metric tons



Arcata Community Forest
40,000 metric tons



**Refrigerants from
California Appliances**
160,000 metric tons



Landfill Methane Capture
137,750 metric tons



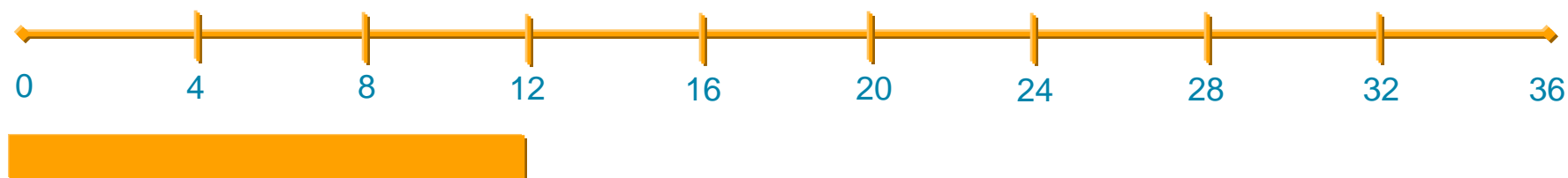


Historical Timelines to Develop Protocols

Protocol	Development Started	CAR Board Approval	First Tons Issued	Months for Issuing First Tons
Forest	Apr 2003	Sep 2005	Jul 2008	63
U.S. Livestock	Spring 2006	Jun 2007	Feb 2009	35
Urban Forest	Sep 2006	Aug 2008		
U.S. Landfill	Jul 2007	Nov 2007	Jan 2009	18
Mexico Livestock	Aug 2008	Jul 2009		
Mexico Landfill	Aug 2008	Jul 2009		
Organic Waste Digestion	Nov 2008	Oct 2009	Mar 2011	28
Coal Mine Methane	Feb 2009	Oct 2009	Jun 2010	16
Nitric Acid Production	May 2009	Dec 2009	Dec 2010	19
Ozone Depleting Substances	Jul 2009	Feb 2010	May 2010	10
Organic Waste Composting	Dec 2009	Jun 2010		
Mexico Forest	Apr 2010	Dec 2011		
Cropland Management	Feb 2011			
Rice Cultivation	Feb 2011			



Timeframes for Offset Development and Commercialization



Protocol Development timeframe = 12 month average

Activities:

- Research
- Method Development
- Public Input



Project Development timeframe = 20 month average for first projects

Activities:

- Financing
- Construction/ Field Work
- Permitting
- Contracting



Verification timeframe

Approx. 8 months for first project

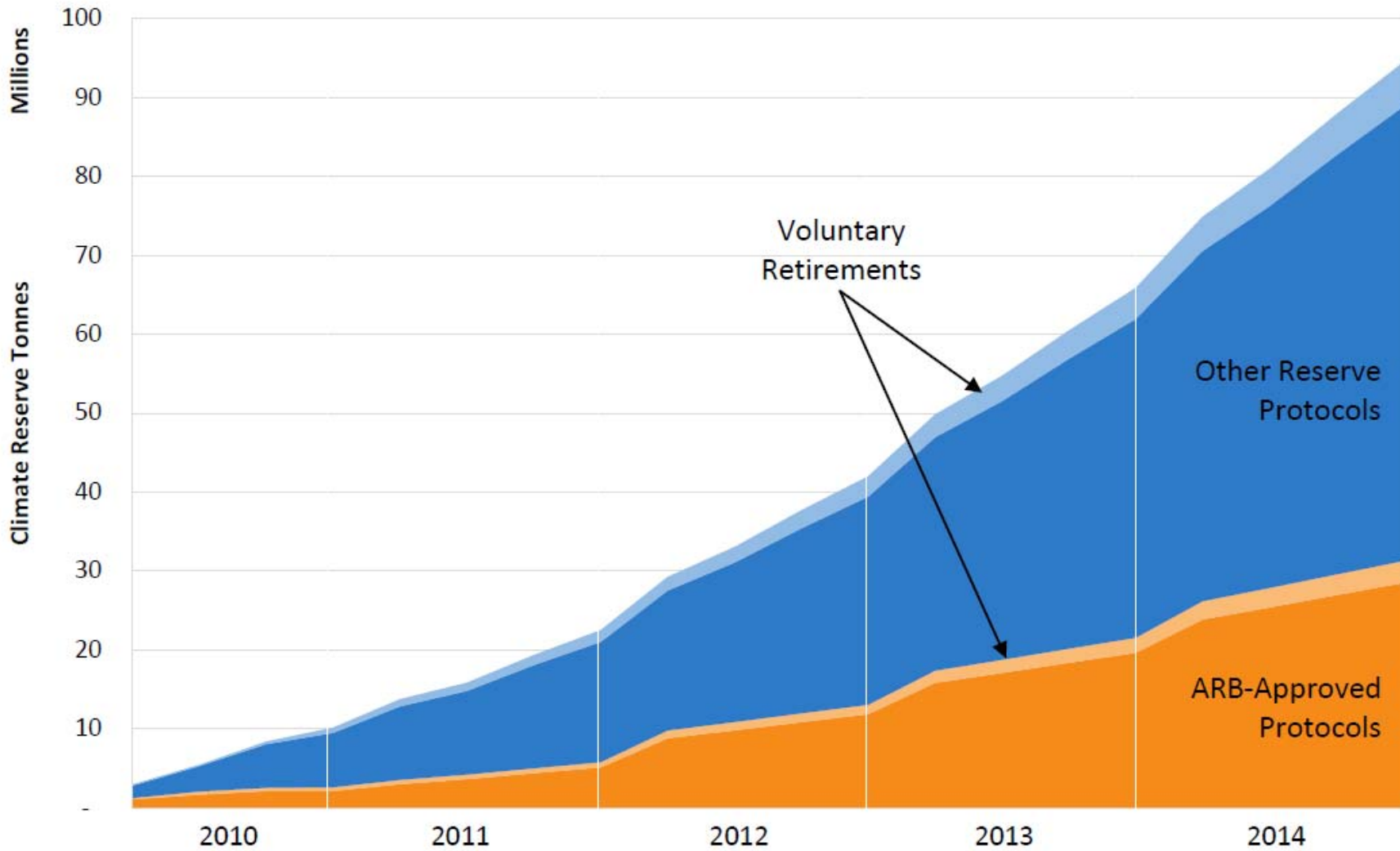
Activities:

- Field Visits
- Paperwork Auditing
- Follow-up

- **Development of a new category of offsets can take more than two and a half years to produce tradable offsets.**



CAR Offset Forecast



Source: Climate Action Reserve (Nov 2010)



Additional Protocols

To increase offset supply in the first compliance period, ARB could adopt 2 to 3 of the following protocols.

- Landfill – vintages 2005 to 2012
- Imported ODS
- Nitric Acid Production
- Pneumatic Controller
- Coal Mine Methane



Offset Limit

- Each covered entity can surrender up to 8% of their annual compliance obligation using offsets
- If a covered entity does not surrender up to 8%, they cannot transfer that potential to another party or use it in another compliance year



Actions to Promote a Robust Offset Market

- **Process for approving early action offsets**
- **Process for transitioning early action offsets to compliance offsets**
- **Additional protocols**
- **Flexibility to bank credits or carryover unused offset limit**



Thank you

Robert Parkhurst

**Long Term Energy Policy
245 Market Street
San Francisco, CA 94105**

415-973-1470

RTP8@pge.com