



Urban Forestry Offsets for Cap and Trade Compliance

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Powering forward. Together.



Outline

- SMUD Utility and Emissions Profile
- SMUD Shade Tree Program
- Cap and Trade Procurement
- Urban Forestry Offsets Opportunities and Challenges

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SMUD Utility and Emissions Profile

- Publicly Owned Utility serving most of Sacramento County and small portions of Placer
- 2011 Retail Sales: 10,385,013 MWh
- 2010 Electricity Mix: 51% Natural Gas, 25% Large Hydro, 24% Renewables
- 2010 Retail Emissions Footprint: 2,489,245 Metric Tonnes (~29% below 1990 levels)
- Sustainable Energy Supply goal: 90% below 1990 levels by 2050
- Energy Efficiency goals 15% reduction in electricity demand by 2020

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SMUD Shade Tree Program

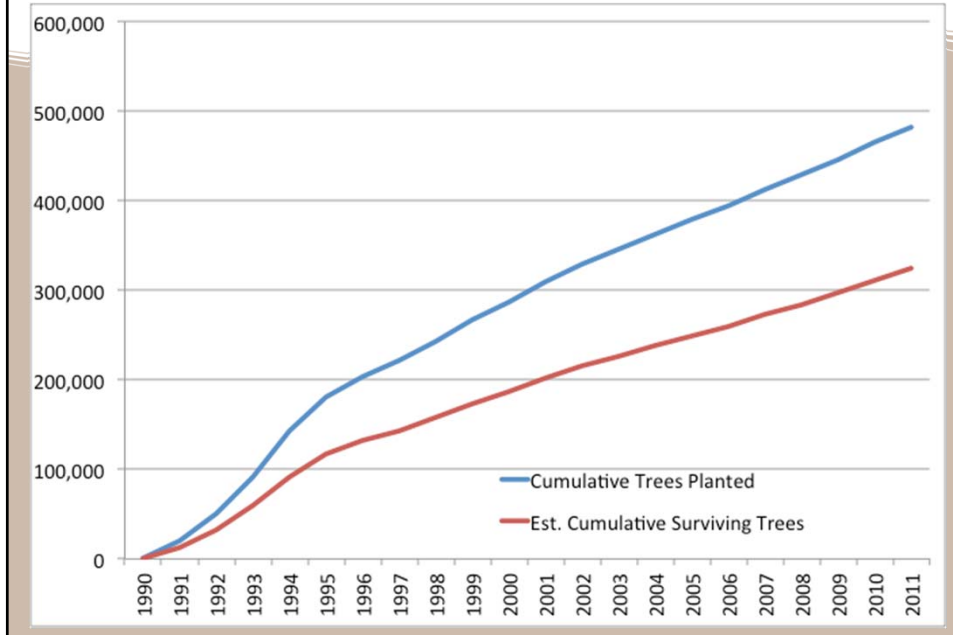


- Partnership with Sacramento Tree Foundation
- Free Shade Trees Delivered to Customer Homes, along with stakes, ties and consultation from STF Community Forester
- Up to 10 trees per SMUD Customer Home or Business
- Program Initiated in 1990, with 480,000 trees planted to date, primarily driven by energy efficiency benefits

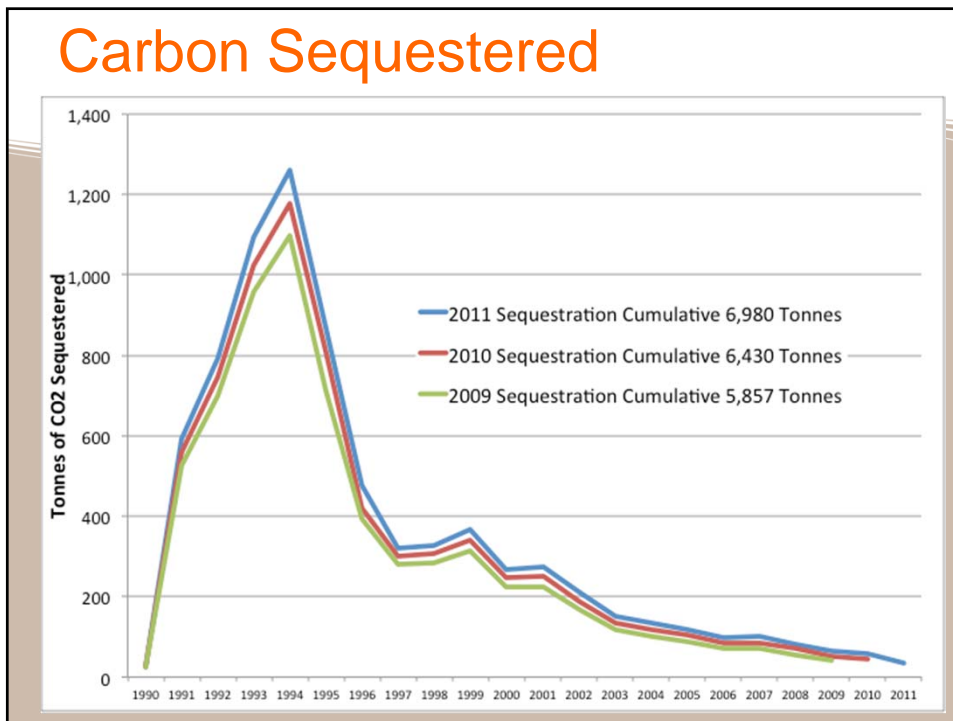


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Cumulative Trees Planted



Carbon Sequestered



SMUD Cap and Trade Procurement

- Currently expected to receive more free allowances than have compliance obligation due to:
 - Early investment in renewables
 - Aggressive energy efficiency
 - Efficient natural gas generation
- Nonetheless, expect to procure offsets up to 8% limit if price advantage outweighs perceived risks
 - Planning solicitation for this summer
- Regulatory risks will likely drive offset type and terms of contracts in the near-term
- As program continues, diversification will likely emerge as best protection

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Urban Forestry Offsets Challenges



- Tree mortality is a real concern, species selection, customer care, urban environment a challenge
- Ownership of tree and tree site unclear, creates risk for program administrator
- Uncertainty around verification costs, timing of net benefits
 - Takes many years for successful program to become economic to pursue verification, carbon value not likely to be the primary driver
- Uncertainty around regulatory risk for reversals generally for forestry projects
- Uncertainty around changing climate and 100 year permanence, potential large site replacement cost

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Urban Forestry Offsets Opportunities



- Program is an energy savings opportunity for customers, saving up to 40% on cooling bills on average (or in my case, nearly eliminating my cooling bill)
- Goodwill from customers is hard to put a value on, excellent public engagement tool
- Carbon savings component can expand program and leverage customer contact and readiness
- Additional Collateral benefits could be significant
 - Air emissions
 - Urban Heat Island mitigation
 - Flood protection
 - Aesthetics
- Potentially good nexus with CEQA offset projects

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Summary



- SMUD would like to register and verify own shade tree program, have been reporting its sequestered carbon for 15+ years, still waiting for clear business case
- Opportunity for those looking to market urban forestry offsets in cap and trade somewhat limited by regulatory window and risk
- A number of challenges with this project type, perhaps most significant being uncertainties around cost of permanence
- Opportunities for cobenefits to a community enormous, carbon not likely to be the sole or even primary driver in a successful program

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