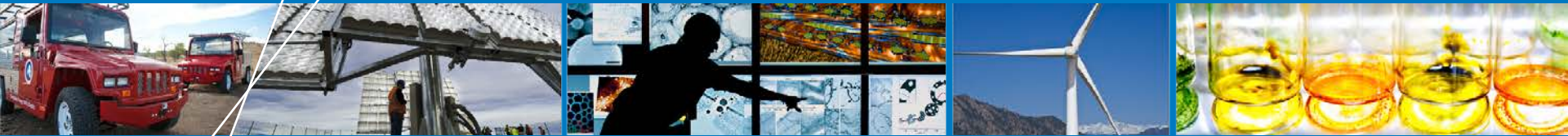


# Changing Dynamics in the Voluntary Market



**Renewable Energy Markets Conference  
Sacramento, California**

**Jenny Heeter**

**December 4, 2014**

# Purchasing Options are Expanding

## Existing and emerging purchasing methods

Utility green pricing

Competitive supplier

Unbundled Renewable Energy Certificates (RECs)

On-site renewables

Power purchase agreements

Community choice aggregation

Community solar

Large customer renewable energy tariff

Direct project investment/crowdfunding

## Value proposition

- Match all or part of electricity consumption with renewable energy
- Meet corporate sustainability goals

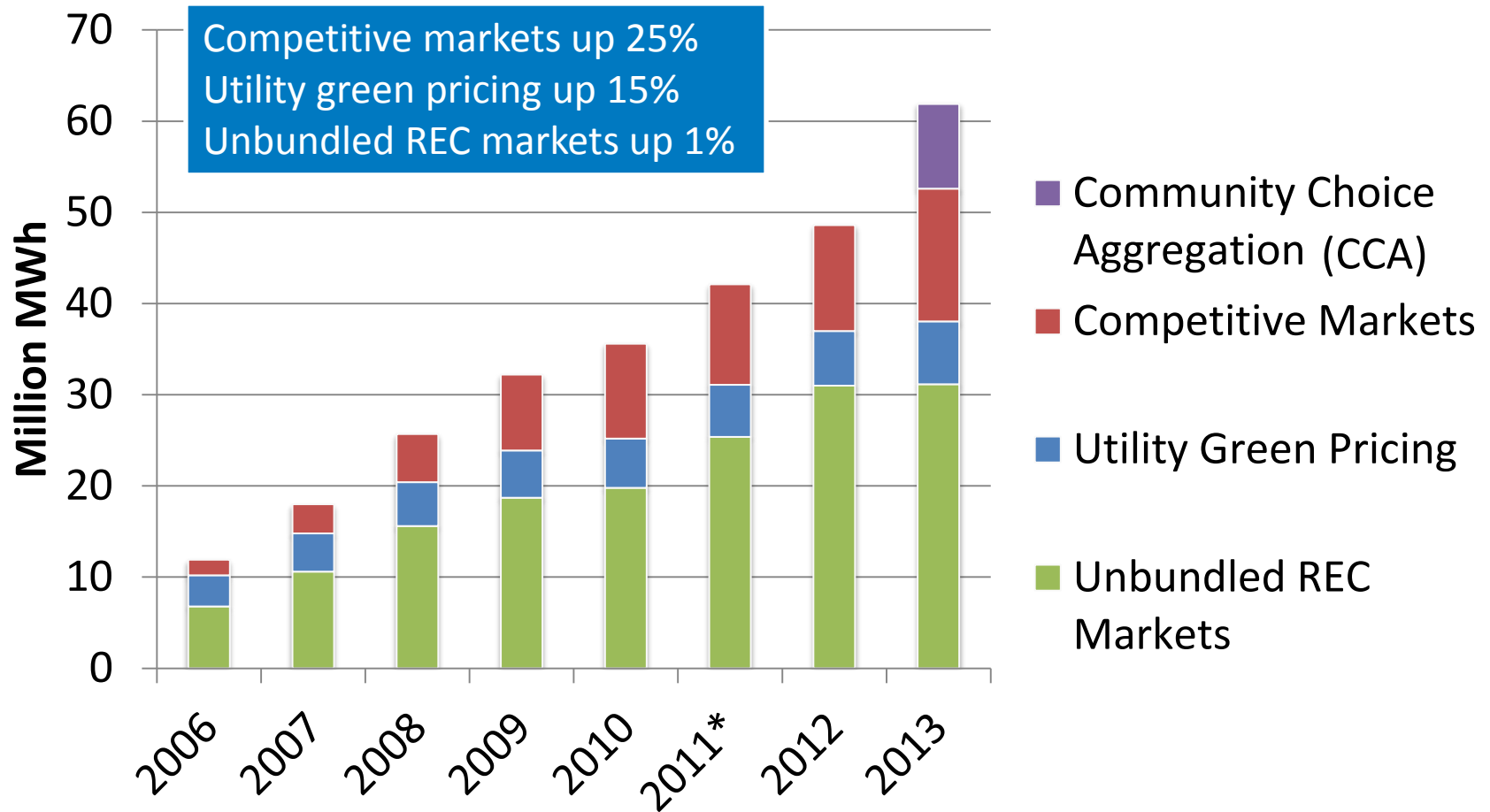
- Provide location for renewable development
- Potentially lower electricity bill
- Meet municipal GHG reduction targets
- Support local solar development
- Potential price hedge

## REC treatment

Purchaser keeps RECs

Purchaser does not necessarily keep RECs

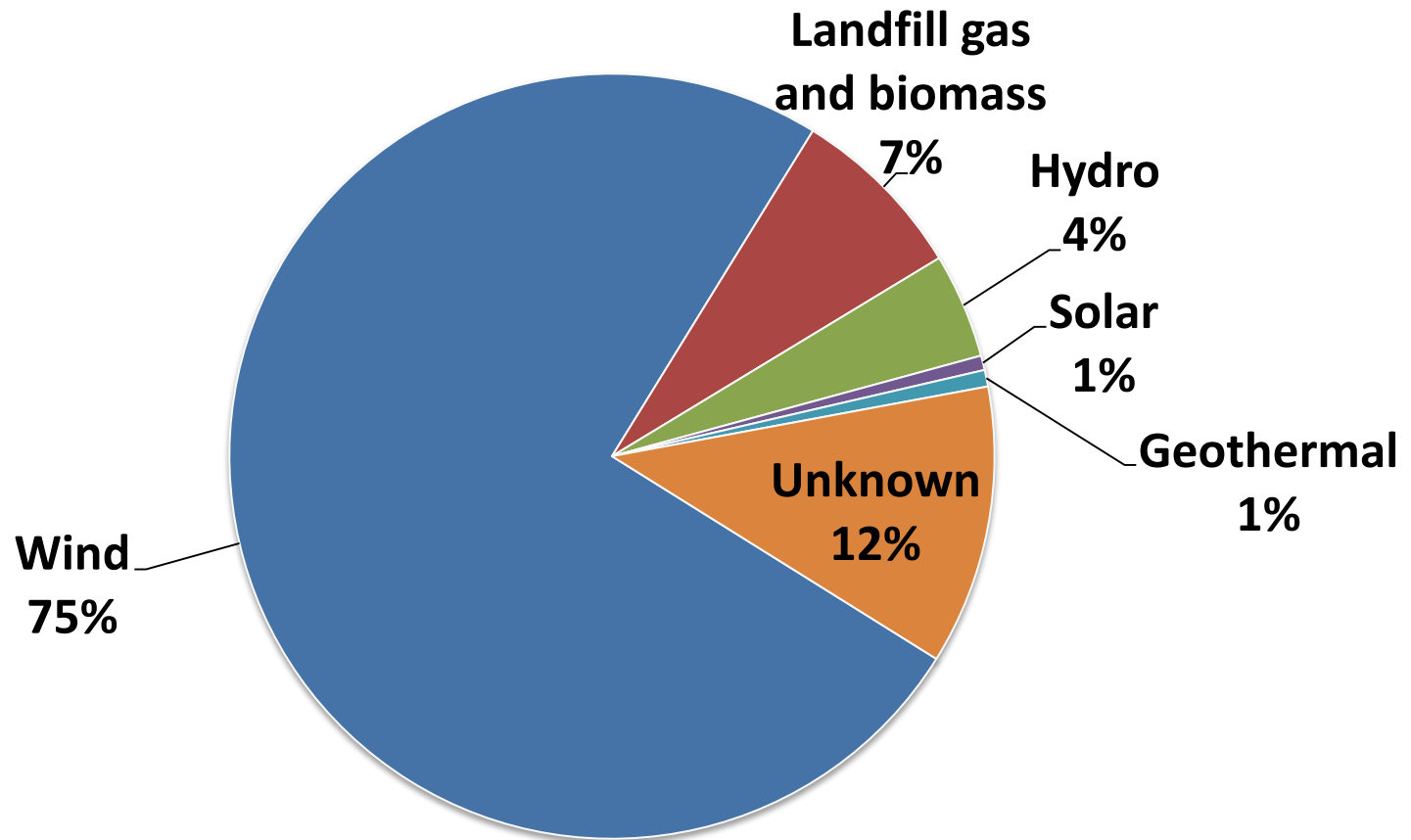
# Voluntary Market Increases to 62 Million MWh



*The overall voluntary market continues to exhibit strong growth, with the largest increase coming from the competitive markets.*

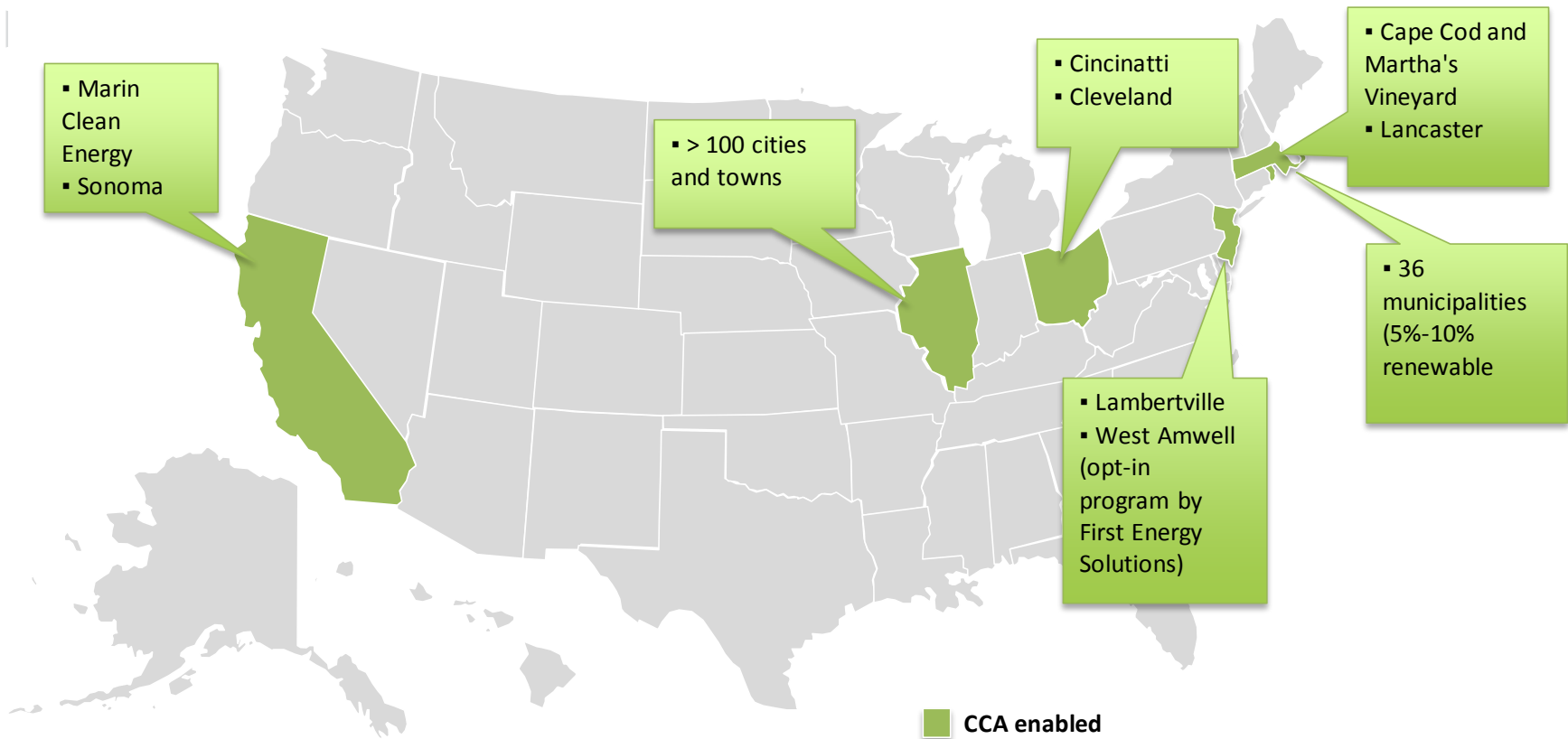
\*Voluntary sales for 2011 are estimated as the mid-point of 2010 and 2012 sales.

# Voluntary Supply Dominated by Wind



*In 2013, 75% of the supply for the voluntary market came from wind. Solar energy provided approximately 2.5% of supply for utility green pricing programs.*

# CCAs Support 9 million MWh of RE



*CCAs supported 9 million MWh of renewable energy; 2.4 million customers participating. Some CCAs are interested in sourcing more local supply.*

# Major Green Pricing Programs Increase

- **Sales by utility green pricing programs increased 15% between 2012 and 2013.**
  - Some of our Top 10 programs saw large increases in sales. Other programs still losing customers and sales.
    - PGE increased sales by 26%
    - Austin Energy increased sales by 16%.
    - CPS Energy increased sales by 14%.
    - TVA was new to our Top 10 list with nearly 200,000 MWh in sales.

# A Few Utilities Offering RE Tariffs; Success Remains to Be Seen

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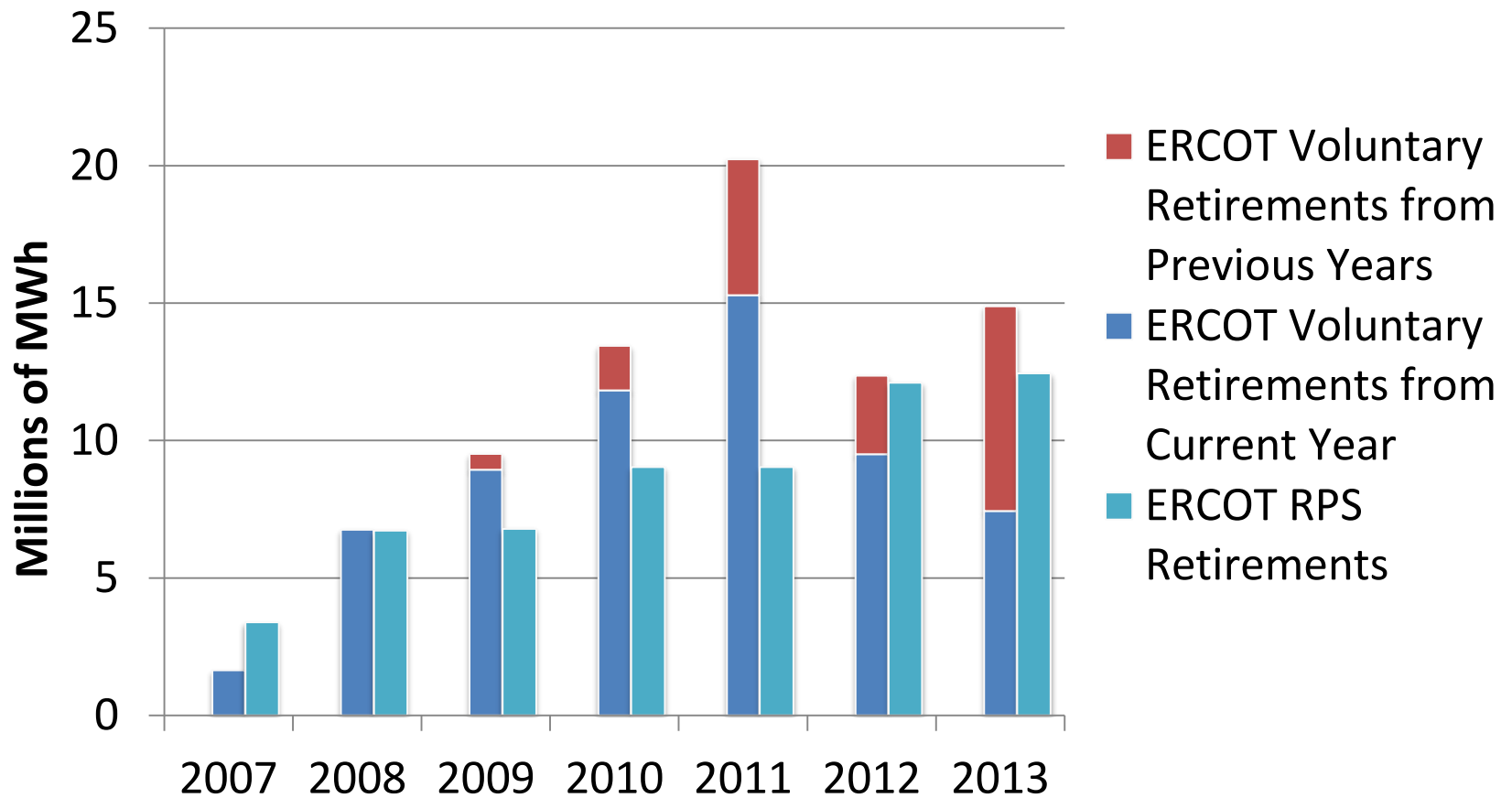
- **Duke, NV Energy, and Dominion Virginia have created renewable energy tariffs for large customers**
- **Action underway in Oregon to establish a renewable energy tariff; per House Bill 4126**
- **Tariff rates typically include fees and administrative charges, plus the cost of the renewable energy resource**
- **Subscription rates TBD**

# Utilities Using Mix of Unbundled and Bundled RECs; Contract Length Varies by Procurement Mechanism

Contract length	Unbundled RECs	RECs bundled with electricity	Owned by utility	RECs produced by utility consumers
≤1 year	46%	0%	0%	0%
2-5 years	52%	0%	0%	19%
6-10 years	2%	5%	<1%	4%
11+ Years	0%	95%	>99%	77%
<b>Percent of total procurement</b>	55%	36%	7%	2%



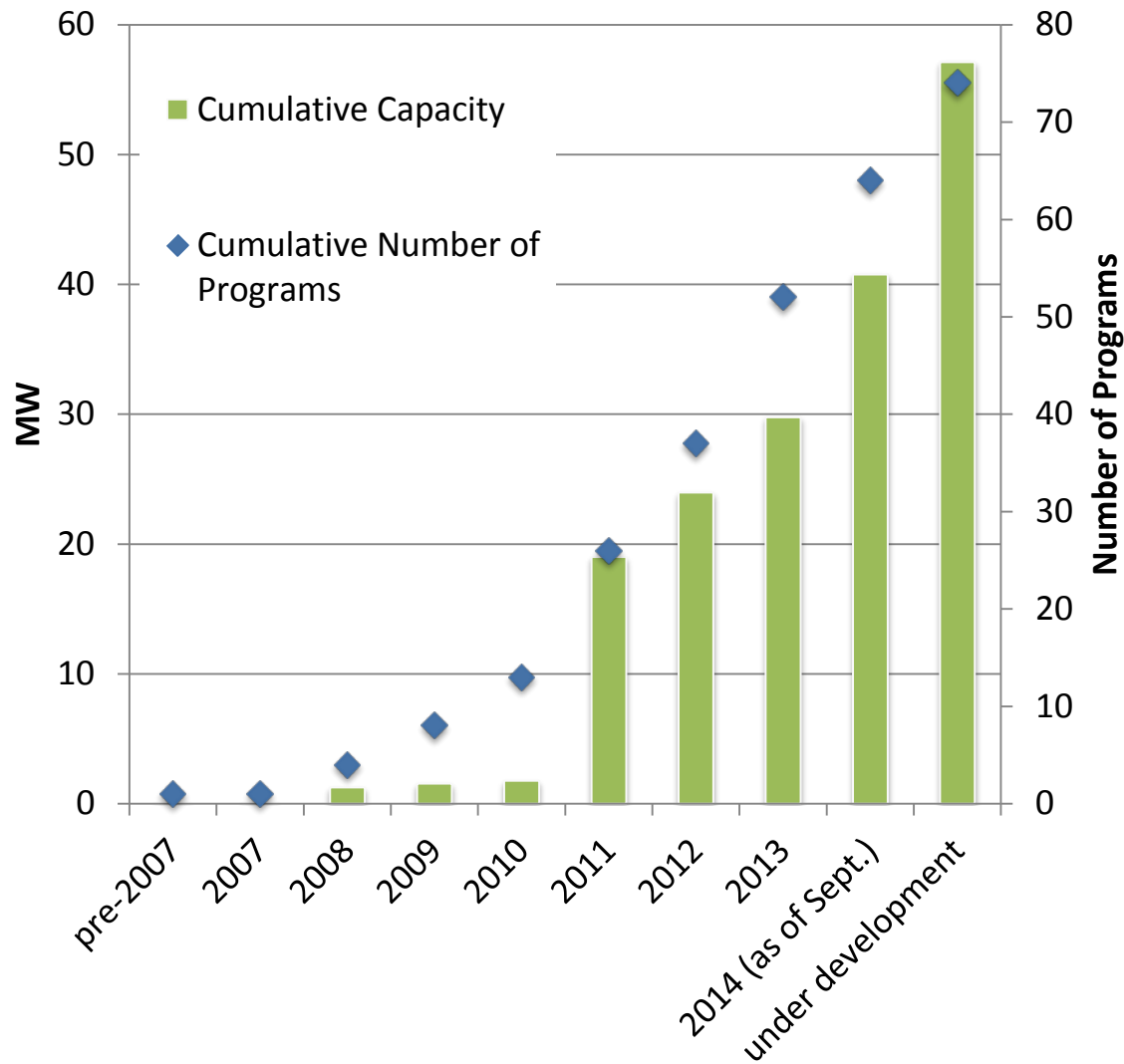
# Voluntary Action in Texas Increase from 2012; Still Below 2011 Levels



*Voluntary retirements in ERCOT increased slightly in 2013, when retirements for previous years are included. In 2013, 7.4 million MWh were for retired for 2013 and 7.5 million MWh were retired for previous years.*

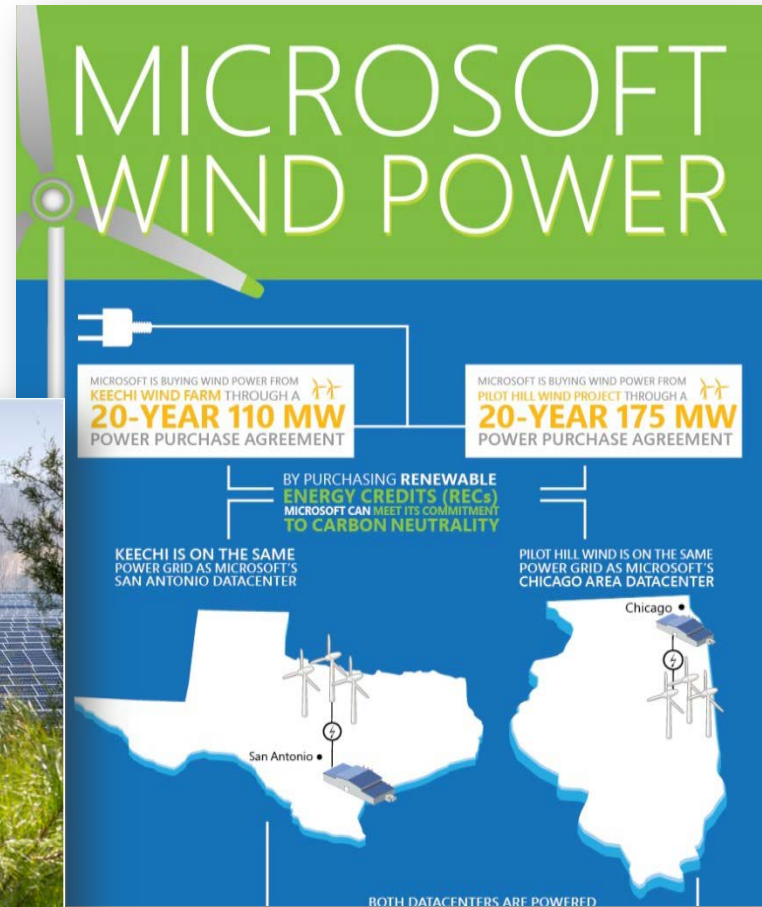
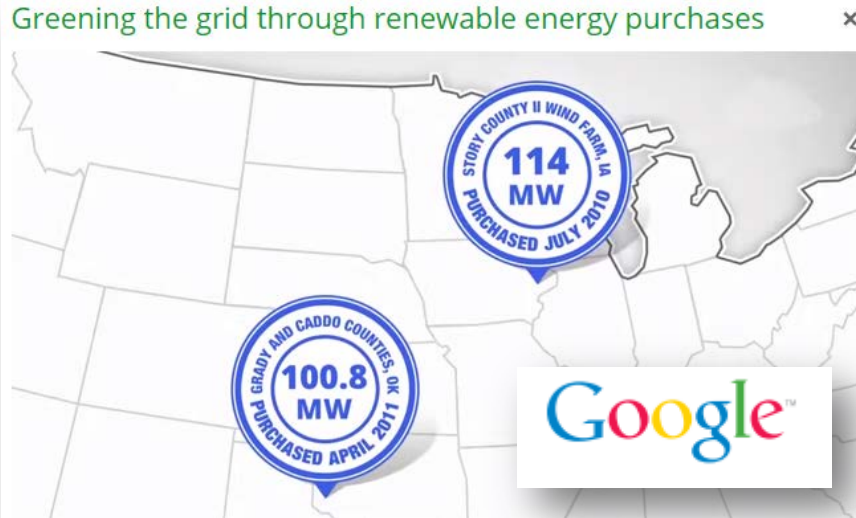
Source: ERCOT, 2008-2014

# Strong Growth for Community Solar



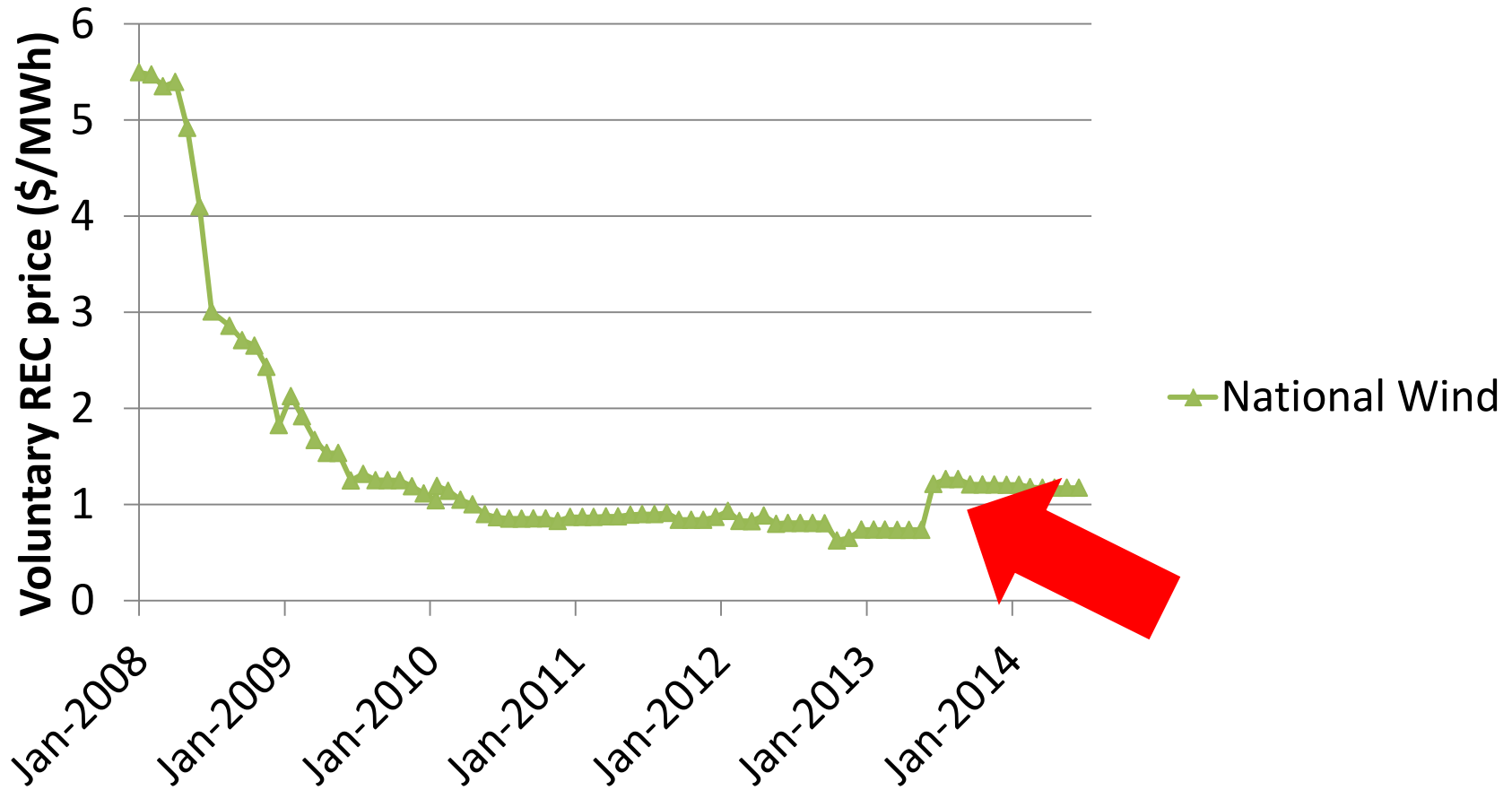
- *Community solar is a popular niche within the voluntary market, and a number of additional programs are planned. The installed capacity to date is still quite small ( $\approx 40$  MW) in the context of the larger green power market.*
- *Large scale community solar programs are under development in California, per AB 43.*

# Washington Post: “Using the Web? Congrats, you’re an environmentalist”



*The largest 70 information and communications technologies (ICT) companies purchased 8.4 million MWh of RE in 2013.  
Data centers alone account for ~2% of U.S. electricity use.*

# Voluntary REC Prices Up to >\$1/MWh in 2013



*Voluntary REC prices started to rise in mid-2013 after years of decline; September prices more than \$1/MWh. The increased price may be due to tightening in the Texas market. By fall 2014, prices had declined to under a dollar, with a few trades less than \$0.80/MWh.*

# Summary

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- Green power market totaled 62 million MWh in 2013, up from 48.6 million MWh in 2012.
- Approximately 5.4 million customers are purchasing green power; 2.4 million of those are participating in CCAs.
- Utility green pricing sales and competitive market sales increased by 15% and 25%, respectively, while the unbundled REC market saw very modest growth and was nearly flat.
- REC prices in 2013 increased to >\$1/MWh; have since declined.
- Community solar continues to expand.
- ICT sector makes up more than 10% of voluntary market; is procuring in innovative ways.

# Additional Information

U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy

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### Lead Story

#### Alameda Municipal Power Offers New 100% Renewable Energy Option

Alameda Municipal Power (AMP) of California has announced a new voluntary program offering its customers the option to purchase 100% renewable energy. On behalf of program participants, AMP will purchase Green-e Energy certified renewable energy certificates ... [See full story](#)

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### Hot Off the Press

- [Made with Renewable Energy: How to Identify Green Consumer Products](#)
- [Solar Renewable Energy Certificate \(SREC\) Markets: Status and Trends](#)
- [Status and Trends in U.S. Compliance and Voluntary Renewable Energy Certificate Markets \(2010 Data\)](#)
- [Role of Renewable Energy Certificates in Developing New Renewable Energy Projects](#)
- [Consumer Attitudes About Renewable Energy](#)
- [Voluntary Green Power Market Forecast through 2015](#)
- [Guide to Purchasing Green Power: Renewable Electricity, Renewable Energy Certificates, and On-Site Renewable Generation](#)

### News

- [Walmart Introduces Industrial Wind Turbine at Distribution Center in California](#) | August 2012
- [US Army Announces \\$7 Billion Request for Proposal to Purchase Renewable Energy for Up to 30 Years](#) | August 2012
- [BMW and Green Mountain Energy Offer RECs for Electric Vehicles](#)

### Renewable Energy Certificates

Environmental attributes sold separately from electricity.

### On-site Renewable Energy Systems

### Green Power Topics

- [Community Renewable Energy Development](#)
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- [REC Prices](#)
- [REC Tracking Systems](#)
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### Top Ten Utility Green Power Programs

The annual ranking of leading utility green power programs.

### Renewable Energy Markets Conference

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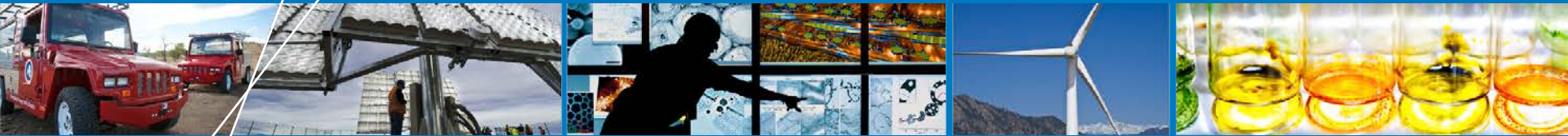
Publications



**Full report available:**

<http://www.nrel.gov/docs/fy15osti/63052.pdf>

<http://greenpower.energy.gov>



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