

# State of the Voluntary Renewable Energy Markets



**Renewable Energy  
Markets 2009  
Conference**

**Lori Bird, NREL**

**September 14, 2009  
Atlanta, GA**

# State of the Markets – How Bad is It?



# Overview

---

What does the renewables supply-side look like?

- Wind and solar installations and development trends

What about voluntary market demand?

- How has historic economic crisis affected voluntary RE purchases?
- Review of 2008 data, limited 2009 data – the real impact of the financial crisis?
- Key issues for the industry

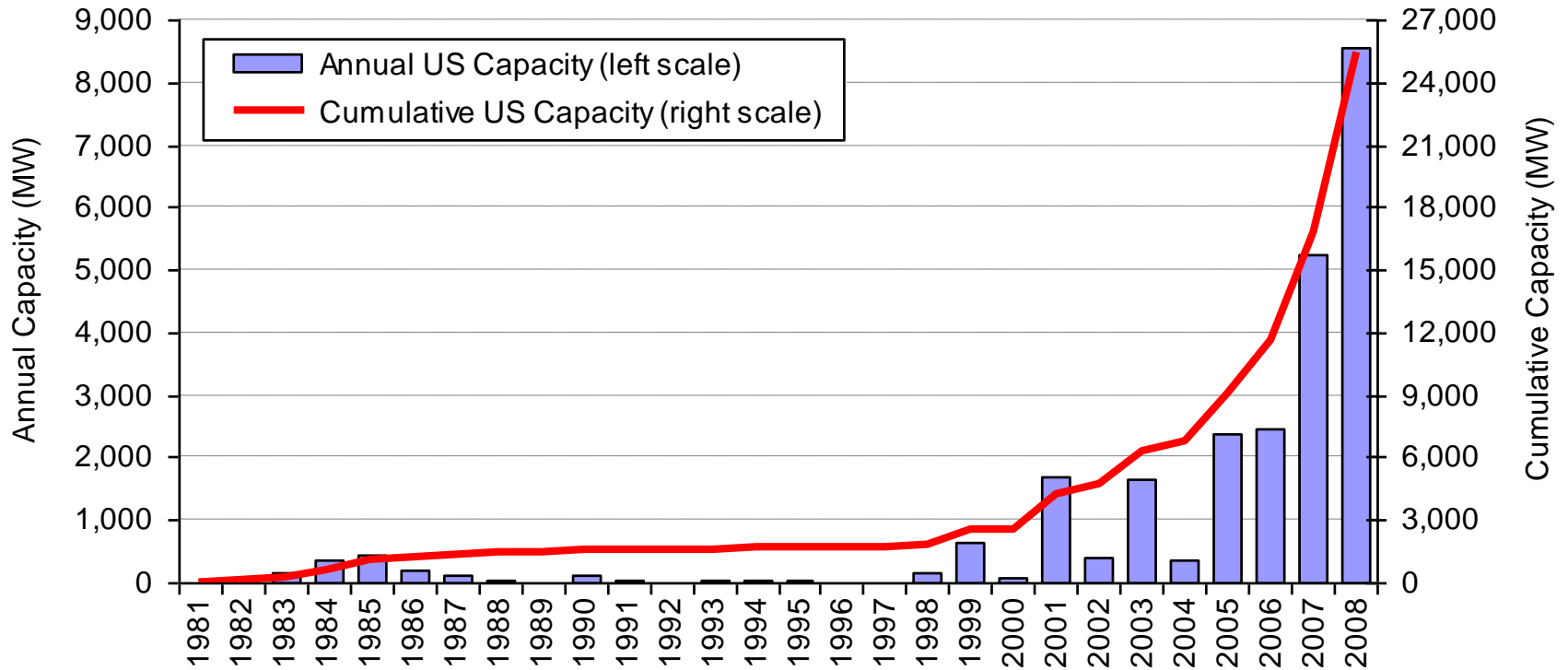


# Pace of Renewables Development

- What is the pace of renewable energy development in U.S.?
- Financial crisis has slowed and delayed some RE development, impacts likely largest in 2009



# U.S. Installed Wind Capacity- 4 Yrs. Growth

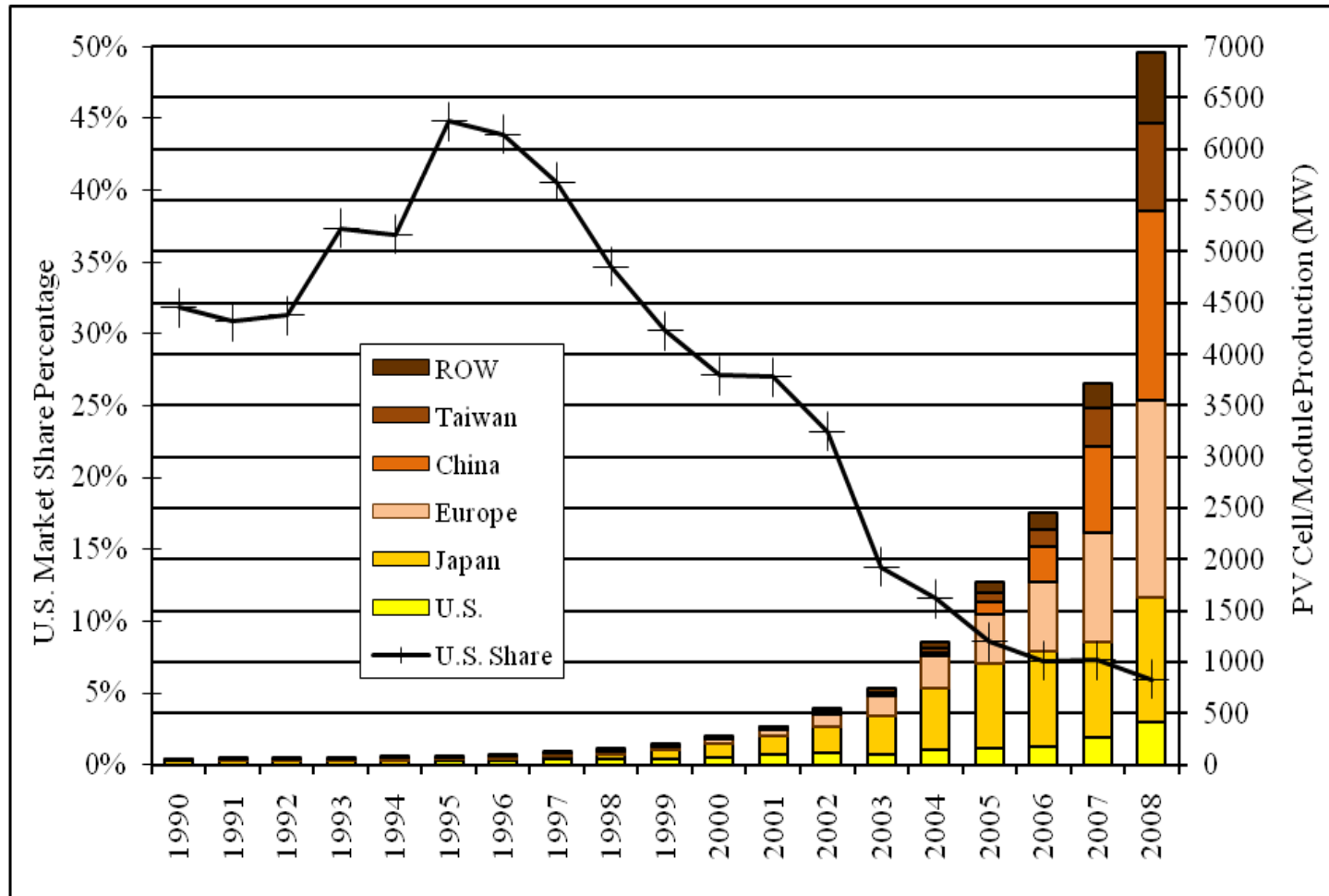


2008: 8,558 MW wind added; \$16 billion investment

2009: 4,000 MW of wind added midyear (compared to 2,900 MW by mid 2008) but reduced turbine orders and lower level of manufacturing

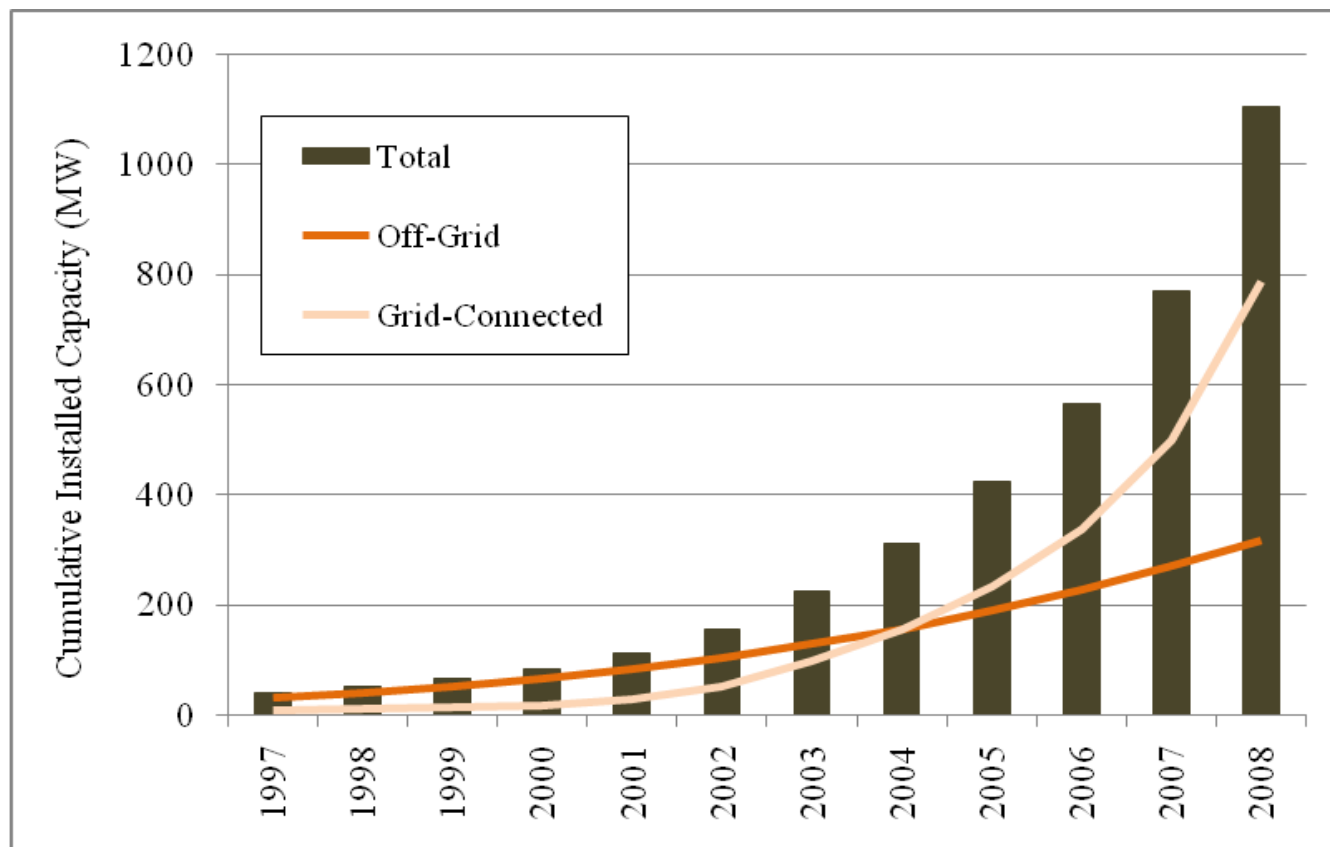
Sources: 2008 Wind Market Report; LBL and AWEA July 2009 Qrtly Report

# PV Production Surged in 2008



PV production surged globally just as economy declined

# U.S. PV Installations Through 2008



Solar PV capacity grew 44% in 2008;  
grid connected installations growing faster; module  
prices falling

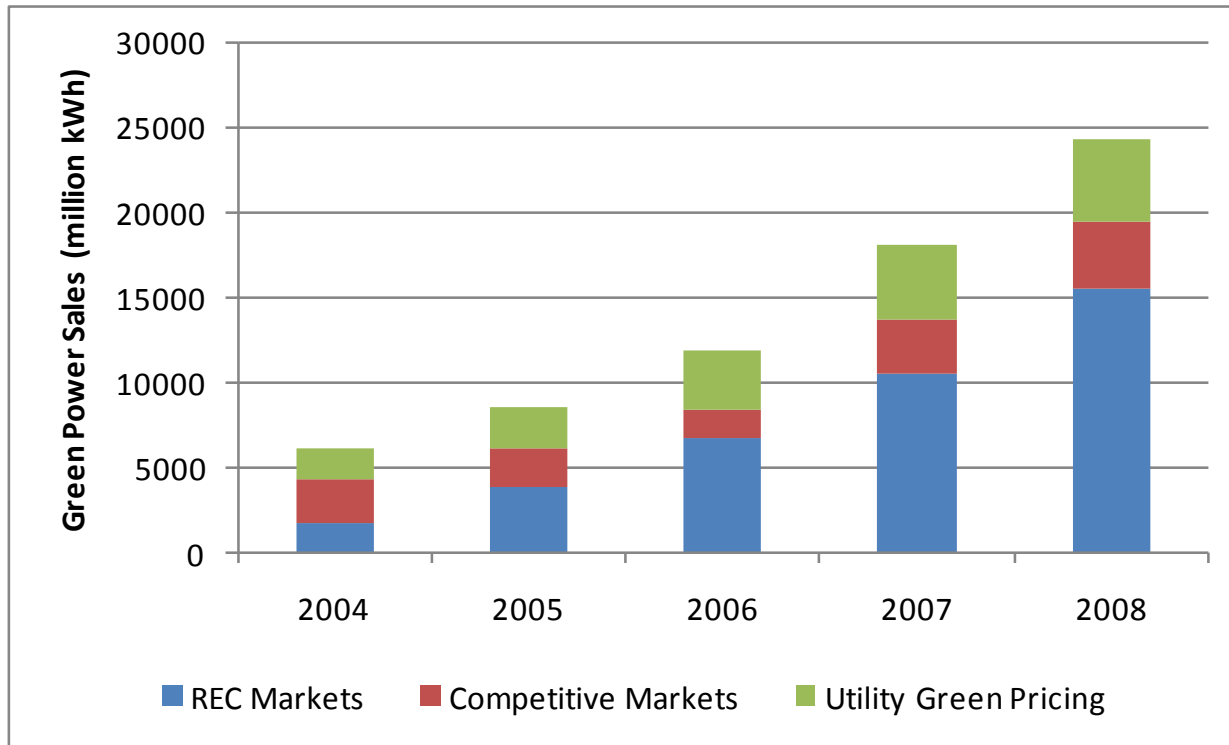
# How is Voluntary Renewables Market Fairing?

- Are consumers voluntarily buying renewable energy in the economic downturn?
- 2008 purchase volume up significantly, but story is mixed
- Some utility programs lost customers, but customer gains in competitive and RECs markets
- Many programs made up for residential customer losses with increased sales to commercial
- 2009 growth appears much slower, based on limited data





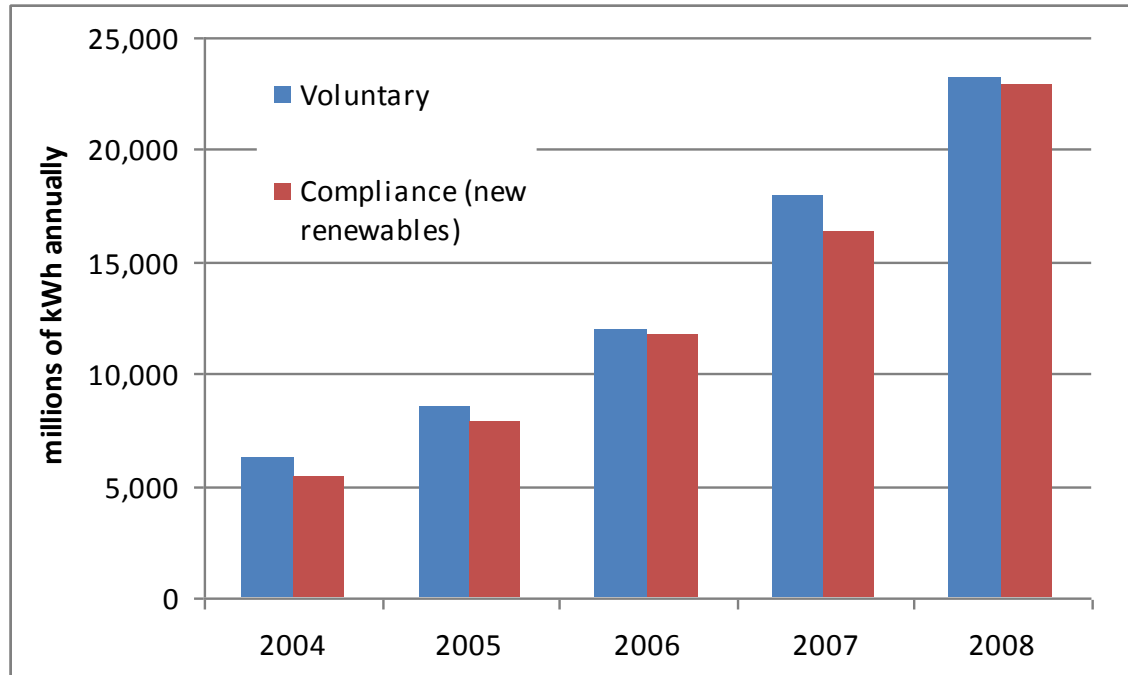
# U.S. Voluntary Green Power Sales



Market Segment	% Change 2008
Utility Green Pricing	9%
Competitive Markets	22%
REC Markets	47%
<b>Retail Total</b>	<b>34%</b>

REC market sales leading the growth; utility programs slower growth (impacted by loss of FPL)

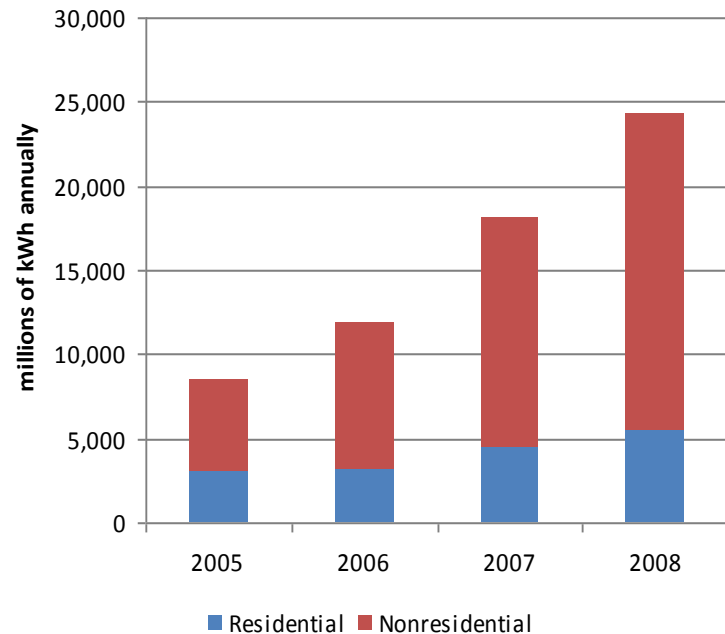
# Voluntary vs. Compliance RE Markets



- Voluntary renewable energy markets have been sizable, on par with generation required to meet state RES targets
- Compliance market requirements increase significantly in coming years

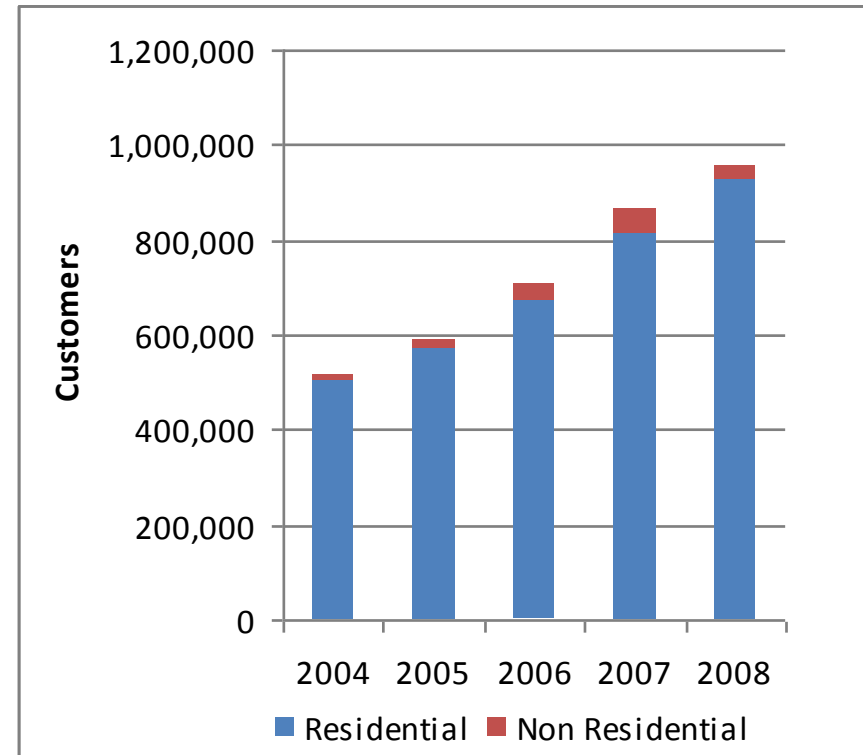
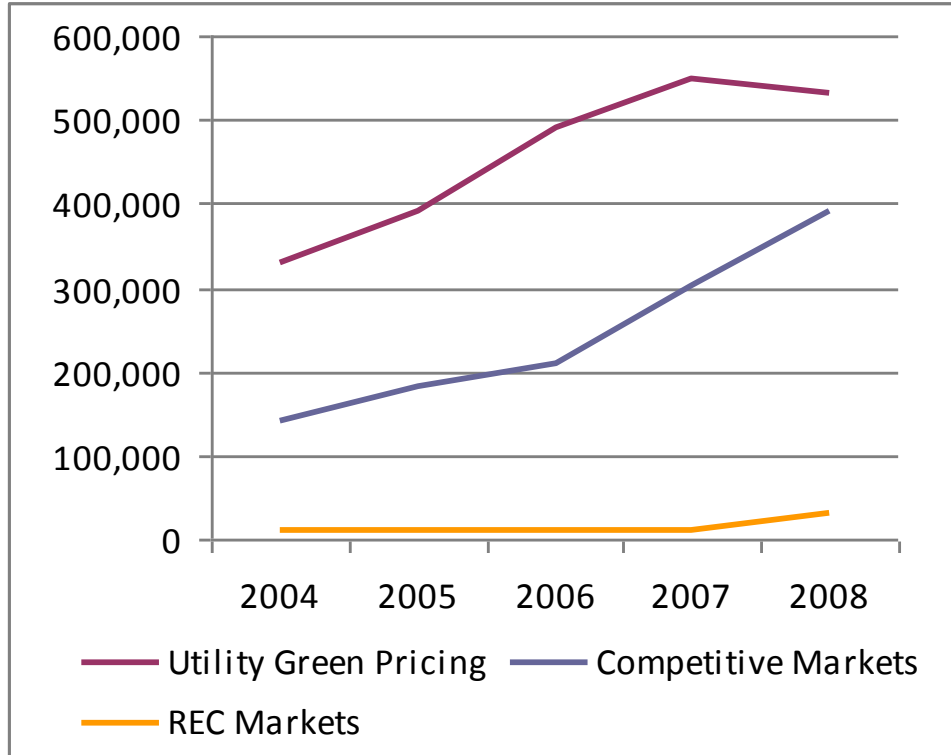
Data sources: LBNL, NREL 2009.

# Nonresidential Purchases Continue to Dominate



- Large new purchases in first half of 2008 drove bulk of increase
- Slowed in second half 2008, shift to smaller, new purchases
- Some commercial customers reducing purchase size
- What about 2009?
  - EPA Green Power Partnership Program had substantial growth in new Partners in 2009 (200 new partners from 1100)
  - Approx. 4% increase in EPA GPP purchases through 8/09 to 17.4 million MWh

# Customer Numbers Up, But Mixed

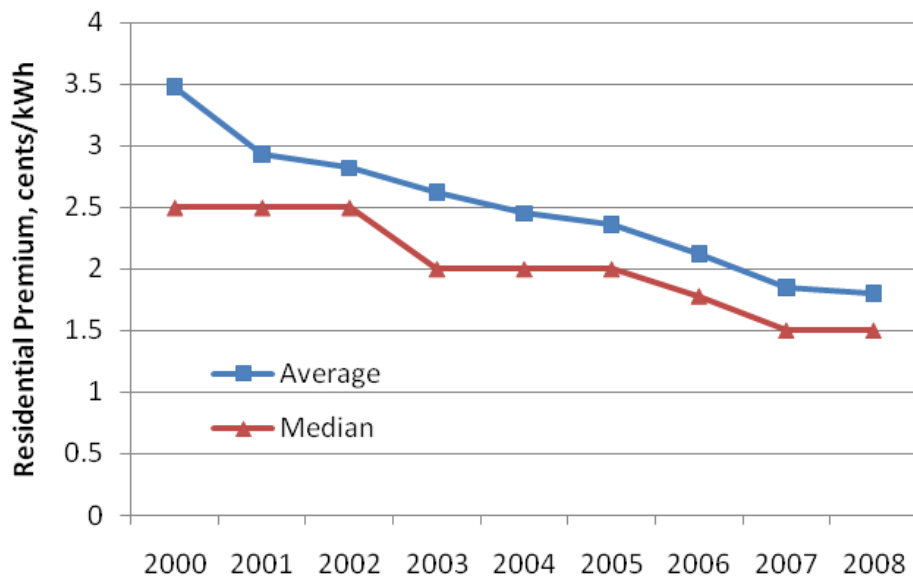


-- Overall customer numbers up (13%), but slower growth than in past, growth of 20% annually last several years

-- Utility green pricing customers fell (loss of large program – FPL); some programs lost customers but commercial sales grew

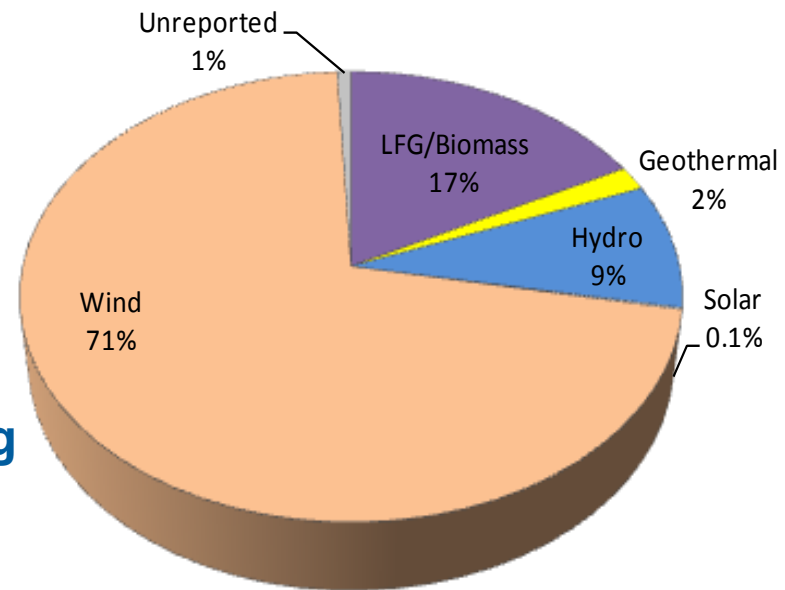


# Green Power Premiums and Resources



**Retail premiums have been declining steadily over time as result of increasing competitiveness of renewables (higher natural gas prices)**

**Wind dominant resource supplying voluntary markets**



# Renewable Energy as GHG Offsets

RECs are not same as GHG offsets

- Offsets must pass “additionality” screen to ensure that they are additional to business as usual

More than 25 U.S. marketers selling GHG offsets sourced at least in part from renewables

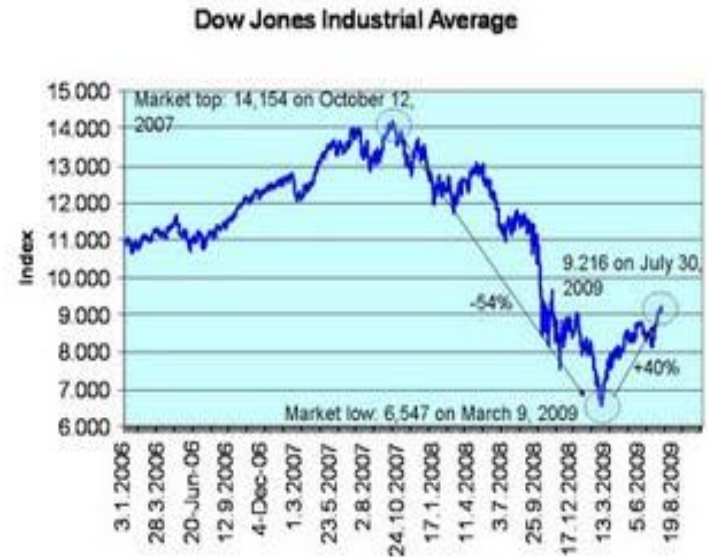
Estimated 250,000 tons of offsets sourced from U.S. based RE/EE (about 340,000 MWh equiv)

Retail price range from \$5-\$40/ton

Issue: pre-cap market – once caps are instituted in U.S. renewables may not have claim to emission reduction to be able to provide “offset”

# Overall Solid Growth in 2008, But 2009?

- Limited data on 2009 so far, but growth in sales appears to be significantly slower
- Significant new commercial purchasers but smaller volume and some existing purchases cutting back
- Anecdotal information from utility programs about losing customers, others seem to be holding their own -- regional differences



# Key Issues for Voluntary Markets Going Forward

---

Treatment of renewables under cap and trade programs

- RGGI states adopted voluntary market set asides in 2009
- Will other regional/federal cap and trade programs have set asides for the voluntary renewables market?

Interaction with state and potential federal RPS

- Interaction with federal REC trading system
- Competition for renewable energy supplies, as policies ramp up
- Some question need for voluntary markets

What is the appropriate level of marketing costs, administrative costs, and transparency?

Near term impact of the financial crisis on market participation