

# Encouraging Energy Efficiency Investments Among Farmers

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EXTENSION

*Solutions in your community*



June 26, 2014

# My Goal for Today

Recruit UME educators to develop an energy outreach program targeting Maryland farmers.

Three reasons why Maryland farmers should be thinking about energy efficiency.

1. EmPOWER Maryland
2. State Renewable Portfolio Standard (RPS)
3. EPA's new Clean Power Plan

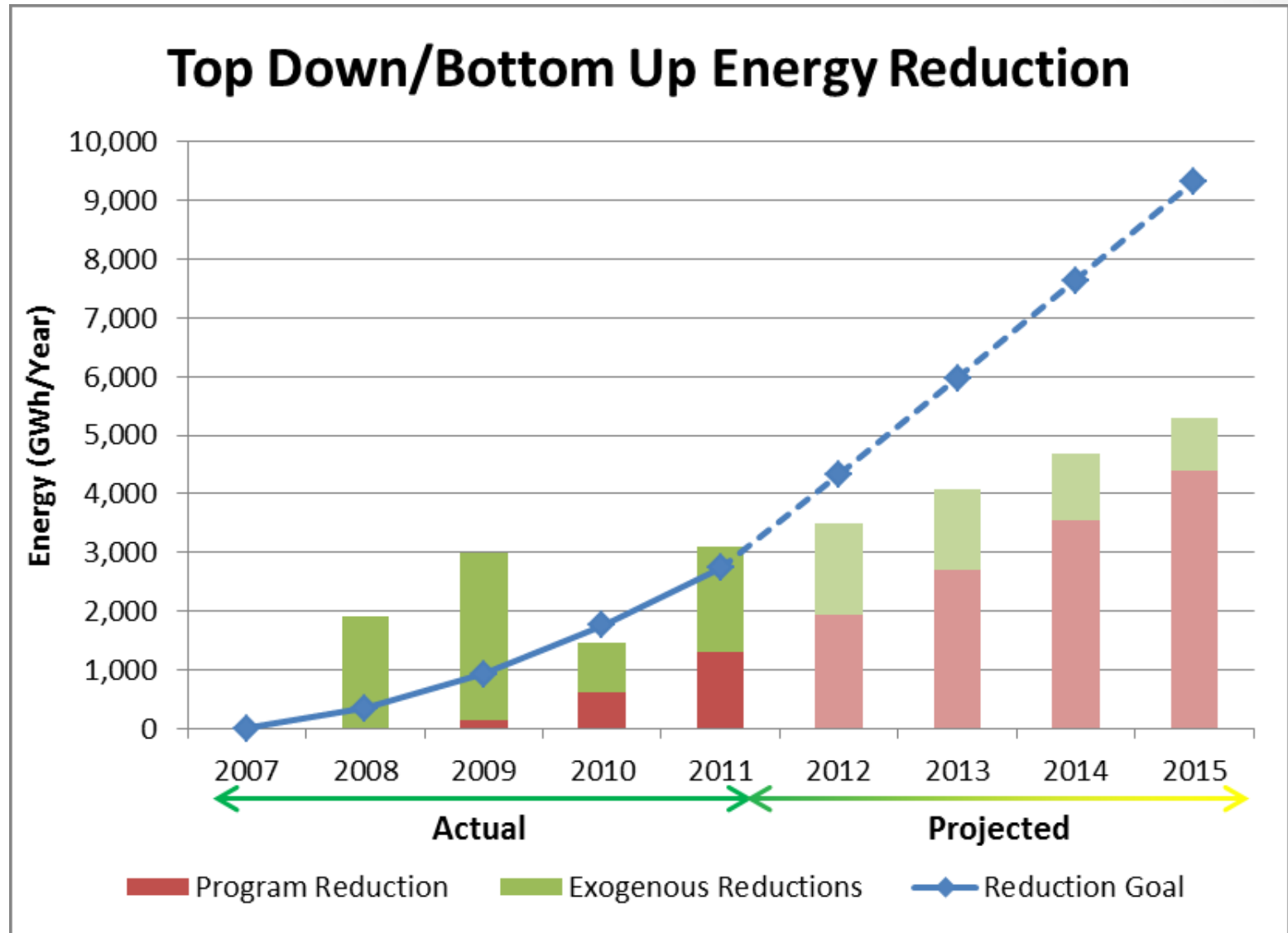
# EmPOWER Maryland

## Goals

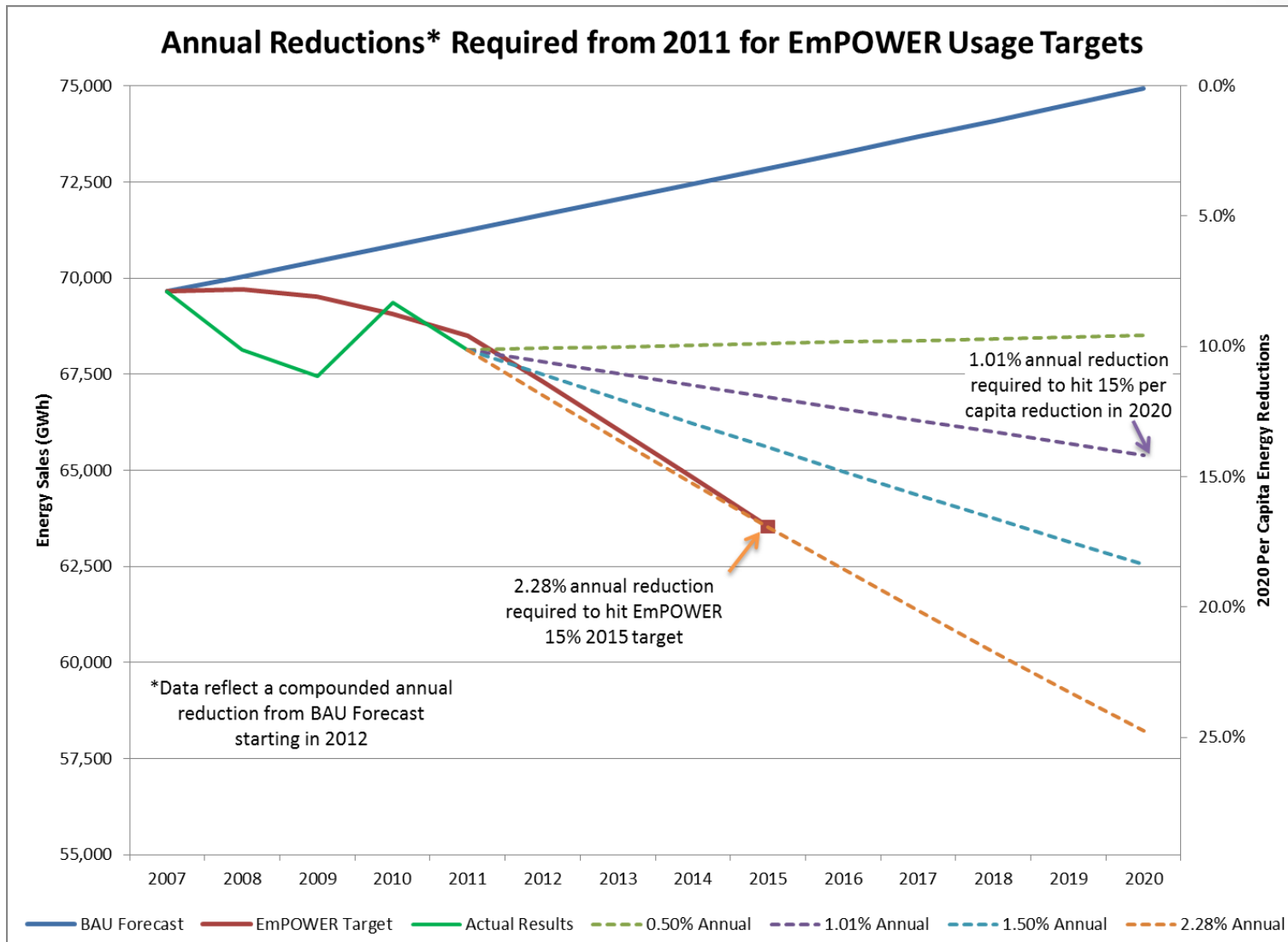
Reduce energy consumption by 15 percent  
by 2015

New goals for electricity & gas beyond 2015  
now discussed

# EmPOWER: Success so Far



# EmPOWER: Goals Beyond 2015



# EmPOWER Maryland

## How

1. Lighting and appliance rebates for homeowners
2. Home Performance with ENERGY STAR
3. **Commercial lighting rebates, and energy efficiency services for industrial facilities**
4. **Kathleen A. P. Mathias Agriculture Energy Efficiency Program**

# Utility-Sponsored Programs

- All five energy utilities active in the State offer generous subsidies for energy efficiency.
- Subsidies are not targeting farms per se, but apply to Commercial & Industrial customers.
- Farmers can claim both subsidies for their home (residential) and facilities and operations (Commercial & Industrial ).



# Rebates & Incentives Offered by Utilities: Delmarva

- Existing buildings, e.g.,
  - Light Fixtures & Controls (max \$1,000,000)
  - Commercial Water Heating (max \$1,000,000)
  - Energy Savings Studies
- 10% bonus incentive money installing multiple energy efficient measures
- Enhanced incentives to small businesses
- Special incentives to new buildings

# Rebates & Incentives Offered by Utilities: Delmarva

- Custom Projects
  - Projects that provide a simple payback within 18 months without an incentive are not eligible.
  - Projects must generate a minimum annual energy savings of 25,000 kWh and pass a utility benefits cost test to be eligible
  - Limited to \$250,000 in incentives per program year
  - Incentives for any project shall not exceed 50% of the total installed project cost.

# MEA Program: Kathleen A. P. Mathias Agriculture Energy Efficiency Program

- Goal: Showcase successful energy efficiency investments applied to the agricultural sector
- Competitive grants ranging in size from \$25,000 to \$200,000
- Program was funded in 2013 and 2014 (now closed)
- Future funding possible

# How EmPOWER is funded?

- Utility-sponsored programs funded by regulated electricity rates.
- MEA programs funded by the Regional Greenhouse Gas Initiative (RGGI).
- The Department of Energy allocates funds for some pilot programs.

# Renewable Portfolio Standard

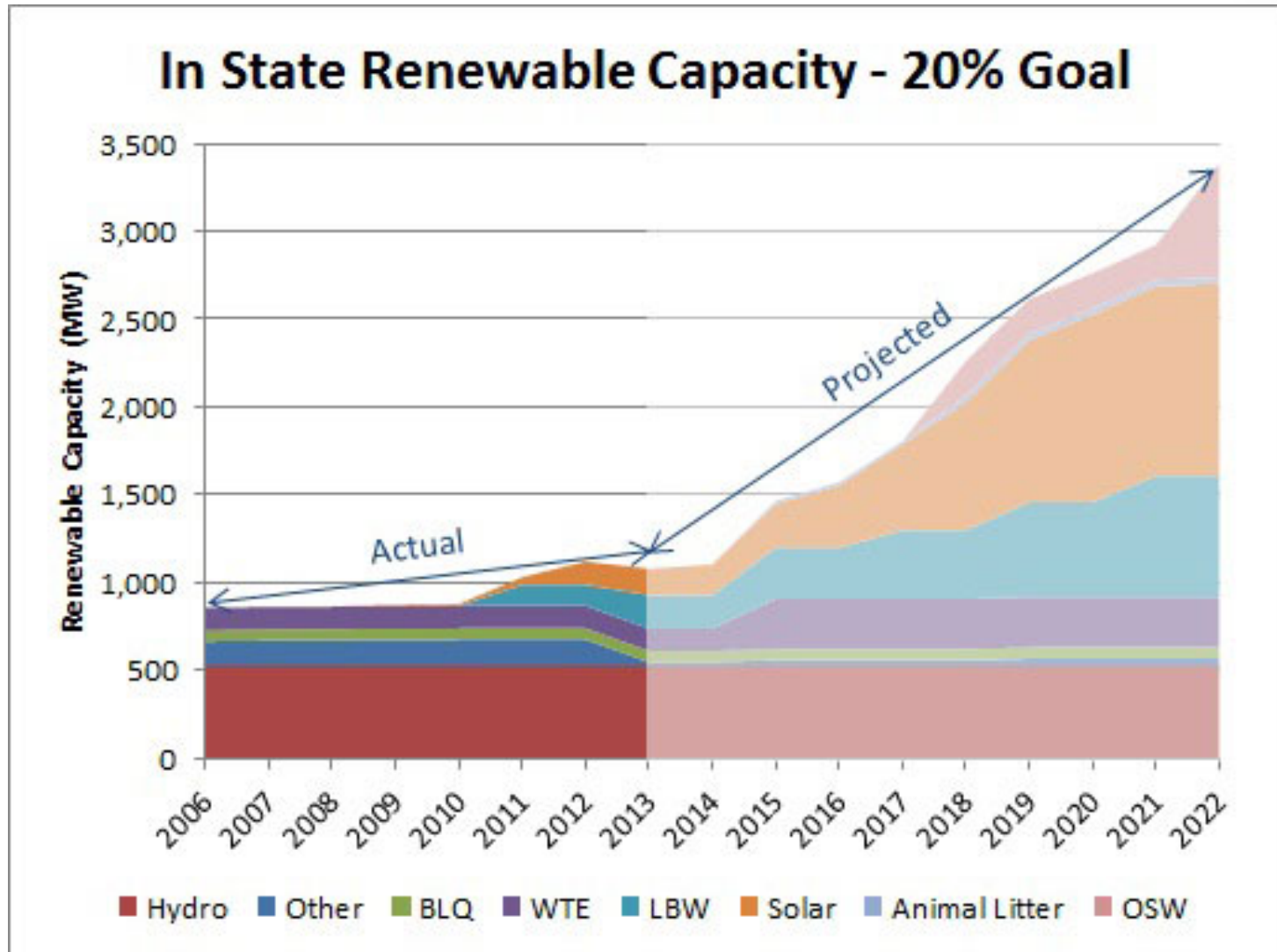
- Goal

20 percent of Maryland's Electricity be generated from renewable energy sources by 2022, including 2 percent from solar energy.

- How

1. Solar: Commercial and Residential
2. Landbased and Offshore Wind
3. **Waste to Energy**
4. **Animal Waste**

# How Will We Meet the RPS Goal?



# Levelized Cost of Electricity (2012 \$/MWh)

• Geothermal	47.9
• Natural Gas-fired	64.4-66.3
• Wind	80.3
• Hydroelectric	84.5
• Advanced Nuclear	86.1
• Conventional Coal	91.3-95.6
• Biomass	102.6
• Advanced Coal	103.8-128.4
• <b>Solar PV</b>	<b>130.0</b>
• <b>Wind – Offshore</b>	<b>204.1</b>
• <b>Solar Thermal</b>	<b>243.1</b>

Source: DOE

# Price of Electricity in the US

Rank	State	Cents/kWh
1	HI	38.51
2	NY	20.87
3	CT	19.51
4	AK	18.66
5	VT	17.36
6	NH	17.33
6	MA	17.33
8	RI	16.86
9	CA	15.94
10	NJ	15.93
11	ME	15.22
12	MI	14.14
13	MD	13.57

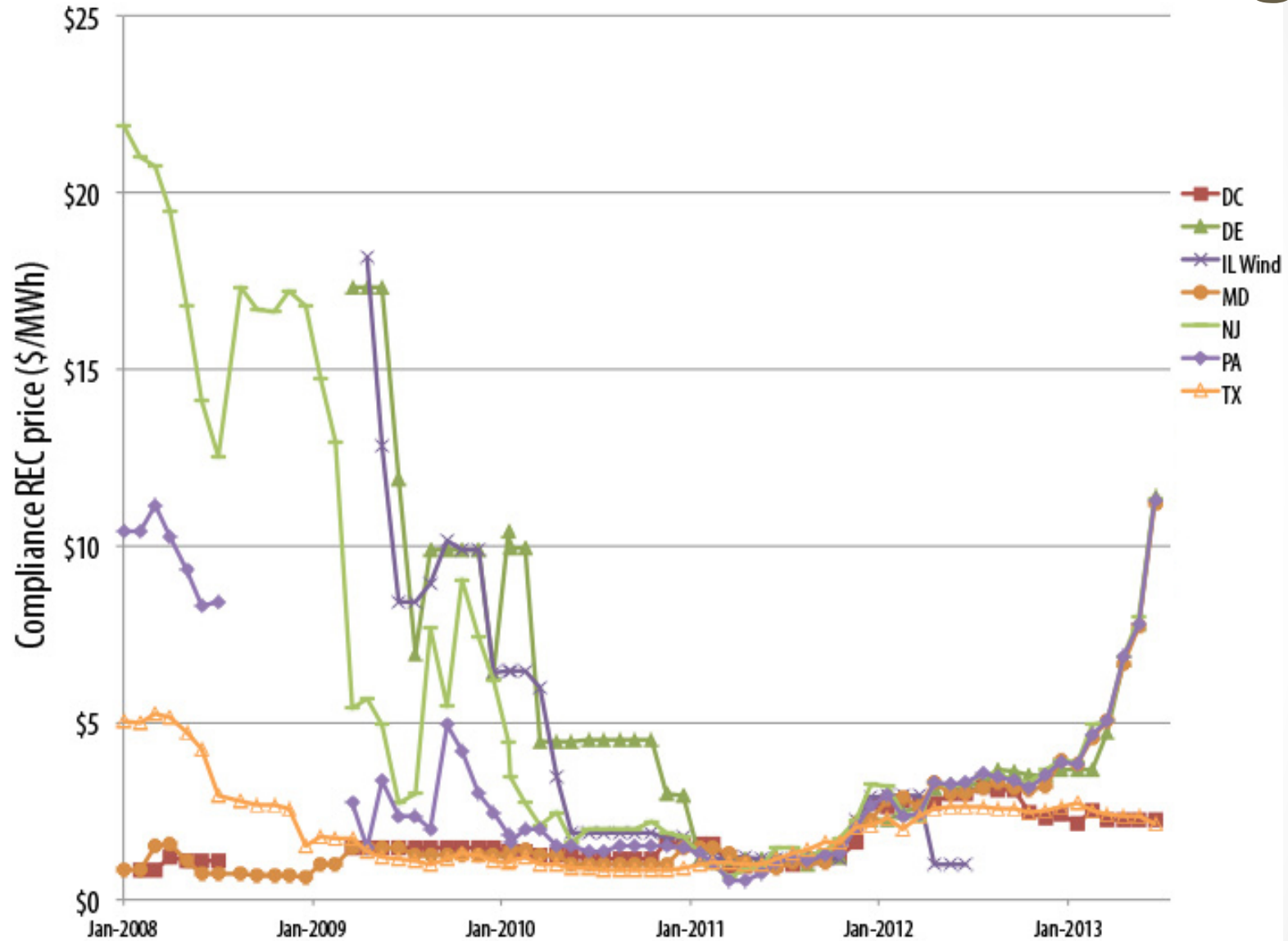
Source: EIA



# Incentives for Renewable Energy

- Maryland-Eligible Renewable Energy Credits (RECs)
  - Farms can apply for certification as a Renewable Energy Facility and generate RECs.
  - RECs are traded in a market and thus provide a payment to the renewable facilities.
  - In Maryland, two types of RECs:
    - Tier 1: solar, wind, qualifying biomass, methane from a landfill or wastewater treatment plant, geothermal, and ocean.
    - Tier 2: hydroelectric power other than pump storage generation, poultry litter, and waste-to-energy.

# Incentives for Renewable Energy



Compliance market (primary tier) REC prices, January 2008 to July 2013

Source: [Marex Spectron](#) (2013).

# Incentives for Renewable Energy

- Clean energy production tax credit:
  - 0.50-0.85 cents/kWh state income tax credit for electricity generated by qualified resources.
  - Max \$2,500,000 for first installation
  - Deadline December 31, 2015
- Bioheat Tax Credit Program
  - \$0.03/gallon tax credit up to \$500 for individuals and corporations that purchase Bio-Heating Oil for the purpose of space and water heating.

# EPA's New Clean Power Plan

- Goal

Reduce carbon emissions from the power sector by 30 percent from 2005 levels by 2030.

- How

1. State specific goals
2. **Energy efficiency (about 50% of the reduction)**
3. Standards
4. Renewable energy
5. Market-based instruments

# Take Aways

- We are moving toward a carbon constrained world
- Higher electricity prices are most (highly) likely
- Energy efficiency is the *transition fuel* for the next 10-15 years
- Maryland will soon be desperate to find cost-effective ways to reduce energy demand

**Can Maryland Agricultural sector deliver?**

# UME Energy Outreach Program

- **Educate** farmers on opportunities to invest in energy savings technologies
- **Identify** barriers to investments
- **Assist** farmers in eliminating the barriers
- **Share** experience with other UME educators and farmers

# Next Steps

- Work with UME educators to refine the needs.
- Collaborate with the Public Service Commission and Maryland Energy Administration to tailor the program to the needs.

# Quick Survey

- What types of farms are you working with?
- Grains.....\_\_\_\_\_
- Nursery/Greenhouse.....\_\_\_\_\_
- Dairy.....\_\_\_\_\_
- Poultry.....\_\_\_\_\_



# Quick Survey

- Before today's presentation, how much did you know about EmPOWER Maryland? (Check one)
- A lot, nothing was new..... \_\_\_\_\_
- A fair amount, but I learned something..... \_\_\_\_\_
- A little..... \_\_\_\_\_
- Never heard of this..... \_\_\_\_\_

# Quick Survey

- Before today's presentation, were you aware of the generous subsidies for energy efficiency investments offered in the State?

yes \_\_\_\_ no \_\_\_\_

- Did any of your clients (or yourself) take advantage of the generous subsidies for energy efficiency investments offered in the State?

yes \_\_\_\_ no \_\_\_\_

- Have you ever discussed energy issues with your clients?

yes \_\_\_\_ no \_\_\_\_

# Quick Survey

- If yes, which of the following issues have you discussed with your clients? (Check all of the issues that apply)

High energy bills..... \_\_\_\_\_

Investments in energy efficiency..... \_\_\_\_\_

Investments in renewable energy..... \_\_\_\_\_

Energy security/reliability..... \_\_\_\_\_

Climate change impacts..... \_\_\_\_\_



# Quick Survey

- If no, please indicate for which of the following reasons?  
(Check all of the reasons that apply)
- Lack of time..... \_\_\_\_\_
- Not relevant for my clientele..... \_\_\_\_\_
- Others:

Thank you!

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