Encouraging Energy Efficiency Investments Among Farmers

Sébastien Houde
Extension Specialist
Department of Agricultural and Resource Economics
University of Maryland
shoude@umd.edu
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

Top Down/Bottom Up Energy Reduction

Source: MEA
EmPOWER: Goals Beyond 2015

Annual Reductions* Required from 2011 for EmPOWER Usage Targets

*Data reflect a compounded annual reduction from BAU Forecast starting in 2012

Source: MEA
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?

Source: Maryland.gov
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
- Solar PV: 130.0
- Wind – Offshore: 204.1
- Solar Thermal: 243.1

Source: DOE
## Price of Electricity in the US

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<th>Rank</th>
<th>State</th>
<th>Cents/kWh</th>
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<tr>
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<tr>
<td>13</td>
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*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
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................................................................._____

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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

• Would you be interested to work on energy issues with your clients? yes ___ no___

• If yes, rank the following issues in order of importance for you and your clients? (1 is the most important issue, and 5 is the least important)
  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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