Best Practices in State-Level Energy Efficiency

Maggie Molina, Program Director & Annie Gilleo, Senior Analyst
Utilities, State, and Local Policy Program
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Presentation to Delaware Energy Efficiency Advisory Council
The American Council for an Energy-Efficient Economy (ACEEE)

- ACEEE is a 501(c)(3) nonprofit that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors
- 50 staff; headquarters in Washington, D.C.
- Focus on end-use efficiency in industry, buildings, & transportation
- Other research in economic analysis; behavior; energy efficiency programs; national policy; utilities, state, & local policy
- Funding:
  - Foundation Grants (52%)
  - Contract Work & Gov’t. Grants (20%)
  - Conferences & Publications (20%)
  - Contributions & Other (8%)

aceee.org/@ACEEEEdc
Why Energy Efficiency?

- Lowers costs to all customers
- Lowers risks
- Reduces emissions
- Improves utility system reliability
- Improves customer satisfaction
- Promotes local economic development, energy affordability, and resilience
- Participant benefits: comfort, affordability, property values

ACEEE
American Council for an Energy-Efficient Economy
Levelized Cost of Electricity

Source: The Best Value for America’s Energy Dollar, ACEEE, 2014 and Lazard 2014
Cost Trends by Year

Source: The Best Value for America’s Energy Dollar, ACEEE, 2014
# Electric Savings of Leading States

<table>
<thead>
<tr>
<th>State</th>
<th>2013 net incremental savings (MWh)</th>
<th>% of retail sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhode Island</td>
<td>161,831</td>
<td>2.09%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>1,116,442</td>
<td>2.05%</td>
</tr>
<tr>
<td>Vermont</td>
<td>99,074</td>
<td>1.78%</td>
</tr>
<tr>
<td>Arizona</td>
<td>1,317,329</td>
<td>1.74%</td>
</tr>
<tr>
<td>Hawaii</td>
<td>159,056</td>
<td>1.67%</td>
</tr>
<tr>
<td>Michigan</td>
<td>1,284,863</td>
<td>1.51%</td>
</tr>
<tr>
<td>Oregon</td>
<td>676,046</td>
<td>1.43%</td>
</tr>
<tr>
<td>Washington</td>
<td>990,143</td>
<td>1.35%</td>
</tr>
<tr>
<td>California</td>
<td>3,223,733*</td>
<td>1.25%</td>
</tr>
</tbody>
</table>

* 2012 data; 2013 data wasn’t available yet
## Sample of ramp-ups in recent years

### Electricity Targets and Savings for Utilities Covered by EERS

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Massachusetts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Target</td>
<td>1.40%</td>
<td>2.00%</td>
<td>2.40%</td>
<td>2.50%</td>
<td>2.55%</td>
<td>2.60%</td>
</tr>
<tr>
<td>Achieved Savings</td>
<td>1.25%</td>
<td>1.68%</td>
<td>2.07%</td>
<td>2.40%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Maryland** |         |         |         |         |         |         |
| Average Target | 1.00%   | 1.25%   | 1.25%   | 1.65%   | 1.65%   | 1.65%   |
| Achieved Savings | 0.59%   | 0.66%   | 1.31%   | 1.65%   |         |         |

| **Pennsylvania** |         |         |         |         |         |         |
| Average Target | 1.00%   | 1.00%   | 1.00%   | 1.00%   | 0.77%   | 0.77%   |
| Achieved Savings | 0.23%   | 1.00%   | 1.03%   | 0.97%   |         |         |

| **Arkansas** |         |         |         |         |         |         |
| Average Target | 0.25%   | 0.50%   | 0.75%   | 0.75%   | 0.90%   |         |
| Achieved Savings | 0.11%   | 0.23%   | 0.50%   | 0.90%   |         |         |

| **Arizona** |         |         |         |         |         |         |
| Average Target | 1.25%   | 1.75%   | 2.00%   | 2.25%   | 2.25%   |         |
| Achieved Savings | 0.98%   | 1.38%   | 1.66%   | 1.74%   |         |         |

*Coops must achieve 75% of IOU targets*
States ramping up energy savings
Comprehensive Strategy to Scale up Energy Efficiency as a Resource

- Get the utility business model right:
  - Program cost recovery
  - Address throughput incentive, i.e. decoupling
  - Allow earnings opportunity, i.e. performance incentives
- Set specific EE targets that align with business model
Electricity Savings in 2013: EE Targets

Source: ACEEE, 2015 (forthcoming)
Electricity Savings in 2013: EE Targets and Business Model Tools

Source: ACEEE, 2015 (forthcoming)
Current status of utility business model and EE targets

• Most states have program cost recovery
• 25 states with EE performance incentives (2 more pending); only 3 of these have penalties
• 12 states with electric decoupling; 14 states with lost revenue adjustment mechanisms
• 24 states with electric EE targets
In addition to targets and utility business models…

- Clear, stable, long-term regulatory support
- Proper cost-effectiveness test(s) for screening programs, EM&V practices
- Proper estimation of avoided costs
- Sound integrated resource planning practices
- Meaningful stakeholder engagement
Program Portfolio Best Practices

- Portfolio Diversity: across customer classes, and program strategies
- Emerging Technologies and Practices
- Participation Rates
- Consistency in marketing and program design
- Financing as a complementary strategy
Energy Trust of Oregon: 2015 Proposed Electric Savings

- Existing Buildings: 31%
- Production Efficiency: 31%
- New Buildings: 8%
- Existing Homes: 10%
- New Homes & Products: 10%
- NEEA: 10%

52.9 aMW goal
3.1 cents/kWh levelized

National Grid MA: 2011-2013
Electricity Savings

- Large - C&I Retrofit: 33%
- Large - C&I Lost Opp: 19%
- Residential Lighting/Appliances: 14%
- Residential Retrofit & Lost Opp: 14%
- Residential Education: 3%
- Residential Behavior: 3%
- Low Income Retrofit: 10%

Source: REED Database
ACEEE Next Big Things Study
(Summer 2015)

1. Appliances & standards (RF, CW, CD)
2. New construction programs & codes
3. Advanced lighting design & controls
4. Very efficient packaged AC for residential & commercial
5. Smart manufacturing and buildings
6. Strategic energy mgmnt for large C&I
7. Reduce key plug loads
8. Real-time feedback & advanced thermostats
9. Whole building retrofits
10. Combined heat & power
11. Conservation voltage reduction
12. Advanced water heaters
13. Residential LEDs
14. Industrial fans, pumps & compressors
Program Spotlight: Help My House

WHAT: On-bill financing program with eight participating cooperatives in South Carolina

HOW: Whole-house approach

RESULTS:
• Average home cut electricity use by 34%
• Average net savings of $288 per year
• High degree of customer satisfaction (even among non-participants)
ACEEE resources on EE Programs

- [Gamified Energy Efficiency Programs](#) Feb. 2015
- [Expanding the Pie: High Participation](#) Jan. 2015
- [Small to Medium-Sized Mfrs](#) Jan. 2014
- [Apartment Hunters](#) Dec. 2013
- [Intelligent Efficiency](#) Oct. 2013
- [Financing for Multi-Tenant Buildings](#) August 2013
- [Leaders of the Pack](#) June 2013
- [Next Generation Programs](#) Jan. 2013
Energy Efficiency: Integrating Technology, Policy and People

Panels:

- Strategic Energy Management
- Sustainability
- Smart Manufacturing
- Beyond Best Practices
- Policy and Resource Planning
- Delivering Results

NEW! Networking Café

This year’s Summer Study kicks off with a Networking Café. Sponsored by the Northwest Industrial SEM Collaborative, the Café will provide an opportunity for attendees to share their thoughts about the emerging issues within industrial energy efficiency.

The conference ends with an “Open Space” informal session for people to convene on issues that emerged from presentations, papers, and the Café.

#SSI15 @ACEEEdc
http://aceee.org/conferences
Thank you!
Contact Information:

Maggie Molina
mmolina@aceee.org
202-507-4004

Annie Gilleo
agilleo@aceee.org
202-507-4002