A New Era of Energy Efficiency as a Resource

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Energy Efficiency has been a valuable, reliable, cost-effective resource, which provides 8-10% of MA electricity needs.
Requirements of MA Statutes

• **Green Communities Act (GCA):** Electric and natural gas resource needs shall first be met through all available, cost-effective energy efficiency and demand reduction resources. [Section 21 (a)]

• **Global Warming Solutions Act:** Set economy-wide greenhouse gas emission reduction goals for the state that will achieve GHG reductions of 10% to 25% (DEP to determine) below statewide 1990 GHG emission levels by 2020, and a reduction of 80% below 1990 GHG emission levels by 2050.
Recommended Electric Energy Savings Goals

Annual Energy Savings, % of Retail Sales

- 2009: 1.18%
- 2010: 1.36%
- 2011: 1.70%
- 2012: 2.14%

- 2009: 1.50%
- 2010: 1.70%
- 2011: 2.01%
- 2012: 2.70%

- Consultant
- PA Plan
Growth in Annual Energy Savings (MWh)
Over 18,000 GWh Cumulative Annual Energy Savings in 2020 (3% Savings Scenario)

EE would provide about 27% of total energy resource needs in 2020. Together with the energy savings from the 1991-2006 programs, EE would provide about 35% of total energy resource needs in 2020.
EE To Meet the GHG Reduction Targets

The Global Warming Solutions Act, which requires GHG reductions of 10% to 25% from the 1990 level by 2020, will likely influence the highest energy savings levels in both the near and long term, parallel to the assessment of energy efficiency potential and the acquisition of all available cost-effective energy efficiency as required by the GCA.
Recommendations

• The line must bend down (there must be a *reduction*, not just a reduction in growth)

• The electricity sector is crucial and is one of the “easiest” sectors in which to get GHG reductions (perception of policy makers)

• EE is the “best” way to get GHG reductions in the electricity sector (easiest and cheaper, and EE provides *net economic benefits*)

• Do and learn, don’t delay to plan or study
Large Funding Increases in Many States

Growth of existing markets and new markets; some of the largest funding increases are expected in populous “up-and coming” states

**Top-10 Energy Efficiency Markets in 2020**

<table>
<thead>
<tr>
<th>Rank</th>
<th>2008 Budget ($M, nominal)</th>
<th>2020 Spending Projections</th>
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<tbody>
<tr>
<td></td>
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<td>High ($M, nominal)</td>
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<tr>
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<td>Medium ($M, nominal)</td>
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<tr>
<td>1</td>
<td>CA 1,014</td>
<td>NY 808</td>
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<td>2</td>
<td>NY 288</td>
<td>CA 538</td>
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<tr>
<td>3</td>
<td>NJ 196</td>
<td>MA 477</td>
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<td>4</td>
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<td>IL 449</td>
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<td>5</td>
<td>MA 149</td>
<td>NJ 424</td>
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<tr>
<td>6</td>
<td>WI 140</td>
<td>OH 375</td>
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<td>7</td>
<td>MN 137</td>
<td>NC 283</td>
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<td>8</td>
<td>FL 124</td>
<td>PA 274</td>
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<tr>
<td>9</td>
<td>CT 114</td>
<td>WI 270</td>
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<tr>
<td>10</td>
<td>TX 106</td>
<td>MI 265</td>
</tr>
</tbody>
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Top-10 ($M) 2,447 4,164 7,277
%

% of U.S. 78% 55% 58%

Other States ($M) 686 3,342 5,247
%

% of U.S. 22% 45% 42%

Source: Chuck Goldman, LBNL
Increasing Energy Savings

Annual electricity savings are projected to rise to 0.58%-0.93% of retail sales by 2020 in Medium and High Cases.

Projected Incremental Annual Electric EE Savings

Source: Chuck Goldman, LBNL
Key Challenges

• Vision
• Political will
• Inertia (stuck in what we have been doing)
• Resource allocation
  – Funding pressures, ratepayer impacts
• EE workforce and infrastructure
• If utility administration, EE business model

It can and must be done, for customers, for the economy, for the planet (but it won’t be easy)
How to get there?

• Overall premise: programs and program designs to acquire all available cost-effective EE are different than the program designs we have now or have used in the recent past

• This should be fully understood and be prominent in everything we do regarding programs and program strategies

• Not certain what will work – and don’t have much time to study and pilot before doing

• Do and learn approach
EE Programs for the Future

• Deeper savings first, then broader
• Save 25-70% in customer facilities, instead of 5-25% (as in many current programs)
• “Finance” over time, reduce upfront barriers, and also reduce pressure on ratepayer funds
• Zero (net zero) energy buildings for all new construction (crucial in faster growing areas – build it right the first time)
• Voluntary programs and cap and trade not likely to be enough; will need increased
Program strategies and (re)design

- Deeper savings first, then broader
- Going deeper: savings of 25-70% in customer facilities, instead of 5-20% (as in many current programs)
- Going broader (once we learn how to achieve deeper savings more readily): higher savings by reaching more customers
- Integrated delivery of electric and gas programs
- Integrated EE and CHP, and fully coordinated delivery of renewables
- Address the imbalance of up-front program participant cost and multi-year bill savings through multi-year on-bill repayment of financing
- Explore targeted community efforts and other opportunities (direct inst.)
- Enhanced public information outreach/program marketing
- Training and workforce development
- Quality control, performance assurance, and cost control