Macroeconomic Impact Analysis of New York’s Energy Efficiency Programs

*Using REMI Software*

New York State Energy Research & Development Authority
August 4, 2011
Why do we do this?

• Everybody wants to know about jobs

• Enables us to quantify the benefits of what we do

• The benefits are very substantial
### Benefit/Cost Ratios for NYSERDA Energy Efficiency Programs Through 2010

<table>
<thead>
<tr>
<th>Benefit Source</th>
<th>Present Value of Benefits (Constant Millions $2008)</th>
<th>Cumulative Benefits (across benefit sources) (Constant Millions 2008$)</th>
<th>Program Administrator Cost (PAC) Test</th>
<th>Total Resources Cost (TRC) Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Benefits</td>
<td>$2,493</td>
<td>$2,293</td>
<td>4.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Non-Energy Impacts</td>
<td>$1,130</td>
<td>$3,623</td>
<td>6.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Price Suppression Effects</td>
<td>$169</td>
<td>$3,792</td>
<td>6.5</td>
<td>2</td>
</tr>
</tbody>
</table>

• Macroeconomic impacts increase benefit-cost ratios
New York Energy $mart℠ Program Background

- Program funding initiated in July 1998
- Program funds collected by utilities through a “system benefits charge” & administered by NYSERDA
- Current funding level = $175 million per year
- Total expenditures = ~$1.4 billion through 2010 (2010 dollars)
REMI

• **Input-output model**: Uses transaction tables or a matrix representation of a region’s economy to estimate the impact of changes in one industry’s output on others and on consumers, government, and foreign suppliers. Contains a detailed representation of transactions in NY economy, & interrelationships among industries and sectors.

• **“Dynamic” capabilities**: Allows for behavioral responses to compensation, price, and other economic factors over time.

• Allows for **year-by-year** analysis.
General New York Energy $mart\textsuperscript{SM}
Study Assumptions

• Assumes Program ends in 2010 to measure impacts of programs run through 2010 only

• No market transformation assumed

• No health impacts measured

• Energy prices held constant
Positive Impacts Modeled

- **Spending**: The increased demand for goods and services resulting from the spending of SBC and co-funding monies in the New York economy.

- **Direct Bill Savings**: The increased disposable income and lowered production costs to residential and business customers related to energy bill savings.

- **Price Suppression**: The increased disposable income and lowered production costs to residential and business customers that result from the slightly lower system-wide electricity prices caused by efficiency installations.
Negative Impacts Modeled

- **SBC Charge**: The decreased disposable income and increased production costs for residents and business owners resulting from electric ratepayer funding of program spending.

- **Co-Funding Cost**: The co-funding cost to residential and business program participants resulting in reduced disposable income and an increased cost of production over the life of the installed efficiency measures.

- **Energy Industry Impact**: The decreased revenues for companies in the energy industry related to the decreased demand for electricity, natural gas, and petroleum products.
Employment Impacts of New York Energy $mart\textsuperscript{SM}

Estimated Job Impacts due to Program Spending through 2010 (1)

Net cumulative jobs added through 2010: 4,000
Net cumulative job years added through 2010: 24,300
Net cumulative job years added through 2024: 69,100

Notes:
(1) Efficiency measures are assumed to carry a 15 year life. Results are truncated to end within 15 years after program spending stops.
(2) Includes program spending for the full portfolio of New York Energy $mart\textsuperscript{SM} programs but does not take account for all possible program benefits.
Job Impact: *Program and Co-Fund Spending*
Job Impact:  *SBC Spending as Cost to Consumers*
Employment Impacts of New York Energy $mart℠

Estimated Job Impacts due to Program Spending through 2010 (1)

| Net cumulative Jobs added through 2010: | 4,000 |
| Net cumulative Job Years added through 2010: | 24,300 |
| Net cumulative Job Years added through 2024: | 69,100 |

Job creation ratio through 2010:
1.1 net jobs per GWh achieved (cumulative annual)

Notes:
(1) Efficiency measures are assumed to carry a 15 year life. Results are truncated to end within 15 years after program spending stops.
(2) Includes program spending for the full portfolio of New York Energy $mart℠ programs but does not take account for all possible program benefits.
Questions and Comments?