Evolving Energy Efficiency Programs to Focus on CO2 Reduction:

Implications for Program Evaluation

Energy Evaluation Asia Pacific
Bangkok, Thailand

OCTOBER 30-31, 2019
A US perspective with global parallels.

AGENDA

• Overview
• Historical Perspective
• 2019
• GHG Reduction Programs
• Reflection
Energy Program Evaluation exists to support clean energy objectives.

To stem the effects of climate change, the focus is shifting to address GHG reductions.
Energy programs in the US are largely regulatory-driven.

**Historical Perspective**

**E V O L U T I O N  O F  E N E R G Y  P O L I C Y  O V E R  T I M E**

- **1970s**
  - Conserve Energy

- **1980s**
  - Avoid Building New (Nuclear) Plants

- **1990s**
  - Competitive Markets

- **2000s**
  - Grid Reliability

- **2010s**
  - Greening of Supply
Program Evaluation has also evolved

Insights into markets, technology, decision-making, and behavior change

1985 1995 2005 2019

New concept and models, demonstrating the reality of energy efficiency

Regulatory oversight focused on quantifying savings, net impacts and precision
Fast Forward to 2019

Climate change is REAL

Energy sector is a significant contributor

Electricity production is a significant contributor of GHG emissions

EMERGING RATIONALE:

Achieve Reductions in GHG Emissions
Efficiency, Yes, but ... GHG reductions are MOST important.

Focus is on utilizing all the green energy available.

Grid management support through EE, DR, Electrification, Storage.

Provide capacity at very specific times of day and at very specific locations on the grid.

What is changing?

The Shift Toward GHG Reduction Programs...
EXAMPLE: 2019 Clean Energy Optimization Pilot (CEOP)

INITIATED BY:

PARTNERSHIPS WITH CALIFORNIA UNIVERSITY SYSTEMS:

University of California
California State University

KEY PERFORMANCE METRIC:
• GHG Reductions
• GHG reductions: whole-campus level

APPROACHES MAY INCLUDE:
• EE, DR, Cogen, renewables, clean transport, energy storage

CUSTOMER PARTICIPATION:
• Customer flexibility
• Customer decides how to achieve reductions!
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<th><strong>PROGRAM GOAL</strong></th>
<th><strong>APPROACH</strong></th>
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<td>Outcomes focused on GHG reductions</td>
<td>Pay for Performance: Moving away from measure / project specific incentives and approvals</td>
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<table>
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<tr>
<th><strong>BENEFITS</strong></th>
<th><strong>KEY EVALUATION ELEMENTS:</strong></th>
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<tr>
<td>- Reduces silo’ing</td>
<td>- Benefits = reduced emissions</td>
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<tr>
<td>- Allows electrification</td>
<td>- Evaluation: IPMVP protocols</td>
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<td>- Customer empowered</td>
<td>- Normalized metered energy consumption analysis techniques</td>
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<td>- Scalable</td>
<td>- Process evaluation: optimize design, test scalability</td>
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Stepping Back...
Fundamental Challenges Ahead

• As these programs change, how does the role of program evaluation change?

• How can we ensure that the efforts of program evaluation are relevant?
Are we framing the correct evaluation questions?
Summary

• Traditional utility-sponsored EE programs will continue

• The urgent need for GHG reductions is resulting in a new portfolio of energy programs

• Evaluation will be serving new and different needs.
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