Measuring it Right
Best Practices in the Selection and Implementation of Cost-Effectiveness Tests

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National Home Performance Council
The National Home Performance Council

- National, non-profit organization

- Supports whole-house upgrade programs through research, convening, and communications projects

- Addresses problems that limit growth and development of whole-house programs
NHPC Stakeholders

• Federal agencies (DOE)
• State energy offices (NASEO, MD, NY, TX)
• Program implementers (CSG, ICF)
• Utility sector (EEI, LIPA, and currently reaching out to several others)
• Industry (NAIMA, ABM)
• Real estate (Eco-Brokers / AEEREP)
• Non-profit stakeholders (ACEEE, ASE, EPC)
NHPC Current Projects

- Cost-effectiveness testing
- Data collection and transfer standards
- Smart grid and whole house energy efficiency upgrades
- Incorporating energy efficiency data in MLS systems and appraisals
March 2011: A group of energy efficiency practitioners creates working group at the national Affordable Comfort Inc. (ACI) conference to address cost effectiveness tests

Stakeholders include:

- State officials
- Program sponsors and implementers
- Contractors
- Evaluators
Stakeholder Concerns

- Stakeholder concern: cost-effectiveness tests are becoming a significant constraint on the growth of the energy efficiency industry, particularly whole-house programs

- Questions:
  - What exactly is the problem(s)
  - What can be done to solve it?
Problems

- RIM makes programs virtually impossible, but no longer used by any state
- Programs having difficult time clearing tests, with the TRC the most-discussed hurdle
  - Participant contributions
  - Other test features, such as application at measure level
- Excellent programs, some with strong track records, constrained or jeopardized by tests
Test Problems and Issues

• Tests preventing programs from getting off the ground

• Tests imposing significant constraints on existing programs

• Tests threaten longevity of existing programs
Public Policy Issues

• Makes achievement of EEPS goals more difficult

• Prevents consumers from taking advantage of opportunities to save energy and, potentially, lower bills over the long term

• Limits potential of energy efficiency to reduce energy costs within utility service territory
White Papers

- NHPC White Paper: “Measure it Right”
  - Released in draft form in September 2011
  - Final paper released June 2012
  - http://www.nhpcri.org/publications

- NHPC Commissioned Paper by Tim Woolf, Synapse to be released at NARUC July 2012
White Paper Recommendation

- Use Societal Cost Test applied at the program level with best practices
  
  If not then…

- Total Resource Cost Test applied at the program level -- but only if best practices can be applied
  
  If not then…

- Use Program Administrator Cost Test at the program level if practical/cost reasons prevent best practices
SCT/ TRC Best Practices

• Tremendous diversity in the way that tests are implemented
• Some variation desirable, but also important to consider best ways to do tests
• Best practices should be designed to achieve underlying intent of tests
• Initially identified nine best practices, but list can be expanded and refined
1) Best Practice: Apply at Test Appropriate level

- Tests at portfolio, program, project, or measure level all have uses, but should not be used equally to determine program approval
- Program and Portfolio-level testing are best, as they allow market transformation
- Use measure-level testing as advisory: causes problems if used to shape whole-house programs or approve individual jobs
2) Best Practice: Ensure that Avoided Costs Measured Accurately

- Avoided energy costs
- Avoided capacity costs
- Avoided T&D costs
3) Best Practice: Recognize Spillover / Market Transformation

- Spillover and market transformation effects need to be taken into account.
- Should be considered especially where free-riders are also calculated.
4) Best Practice:
No Arbitrary Caps for EULs

• Some programs impose arbitrary caps on effective useful life (EUL) of energy efficiency measures

• For measures with long life-spans, no reason that measures should not be valued for the duration of their useful life
5) Best Practice: Evaluate Appropriate Time Frame

• More complex energy efficiency programs typically have long start-up periods;
• Costs front-loaded in first few years;
• Mature programs’ experience demonstrates that costs fall over time
• Develop ways to ensure that costs spread over time
Use Treasury bonds or similar rate to reflect cost to society as a whole rather than WACC so as to reflect the low-risk nature of energy efficiency investments
7) Best Practice: Recognize all Energy Savings

- All fuel savings should be captured, not just those provided by the utility sponsoring the program
- An issue when gas and electric services are provided by separate utilities
- Consideration of bulk fuels also an issue
8) Best Practice: Recognize Non-Energy Impacts

- Studies consistently find non-energy impacts important
  - Comfort and health issues particularly important for consumers
- Non-energy *costs* should be considered if relevant
- Significant impact on TRC
## Application of Fixes Home Performance Example

<table>
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<th>Scenario</th>
<th>TRC Today</th>
<th>TRC Cost Adjusted</th>
<th>TRC w/NEBs</th>
<th>PACT</th>
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FAIL PASS PASS PASS

ACEEE- M.Kushler and C. Neme
9) Best Practice: Recognize Future Costs of Environmental Compliance

- Recognize future costs of environmental regulation if they are quantifiable and almost certain to occur

- Examples: EPA regulations
• Program Administrator Test has significant benefits:
  • Simpler and less expensive to administer
  • Compares the cost of efficiency to the cost of supply-side measures
  • Useful for considering bill impacts

Use PAC if Best Practices Not Feasible
Tests are Important Analytic Tools

- Testing is important and can help to ensure that programs have real benefits

- But tests should be used mindfully -- larger goals important
  - Reduce consumer bills
  - Reduce energy consumption
  - Meet EEPS goals
Key Issues: Rates and Bills

• Key public policy concern: rates and bills
• Energy efficiency can cause rates to rise
• But *bill* impact can be negligible for smaller programs
• Larger programs can keep bills down over the longer term by delaying or preventing creation of new generation, transmission and/or distribution costs
Comments / Questions
Please Contact Us

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Thank you!