Considering Non-Energy Benefits in Cost-Effectiveness Tests

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Common cost-benefit tests (1)

Tests that do NOT incorporate NEBs

Utility Test

- costs and energy benefits to the utility, shareholders, ratepayers

Participant Test

- costs and energy benefits to program participants

Total Resource Cost Test (TRC)

- costs and benefits to the utility, shareholders, ratepayers, participants, society at large

Societal Test

- like TRC, but includes externalities

Ratepayer Impact Measure (RIM) test

- *Designed to measure rate changes*

Common cost-benefit tests (2)

Tests that DO incorporate NEBs

Public Purpose Test

- based on TRC, but seeks to incorporate broad range of NEBs

Total Market Effects Test (TMET)

- Lifecycle costs and benefits (incl. NEBs) to participants and non-participants (spillover)

Program Efficiency Test

- like TMET, but only program implementer costs

In practice, inclusion of NEBs has been limited due to lack of agreed upon method for valuation

Current Practice

- TRC most common, used by approximately half of the states
- Utility Cost, RIM, Participant Cost and Societal Tests often used along with TRC
- Public Purpose Test used for low-income programs in a few states
- Others used largely for program evaluation, not for cost-effectiveness determination

Modifying Cost-Benefit Tests

- Need to agree on rigorous method
- Incorporate value of NEBs by:
  - Adding value of NEBs to benefits side
  - Discounting participant costs by set %
- Allow multi-year program costs and lifecycle savings
  - Many MT programs have high ramp-up costs in early years

Incorporating NEBs

- TRC

  Cost-effectiveness = Energy Benefits/Costs

- Add value of NEBs (Public Purpose Test)

  CE = Energy + Non-energy Benefits/Costs

- Discount NEBs from cost side

  CE = Energy Benefits/Program Cost +

  (x%) Participant Cost

Example: HPwES Program

Program cost	$ 20M
Participant cost (~5900 jobs @ ~$6,800 each)	$ 39M
Benefits	$ 53M
NEB value(76%)	$ 40M
NEB cost (75%)	$ 30M

- TRC
  $53M/$59M = **0.89**
- TRC + NEB value
  $93M/$59M = **1.6**
- TRC – NEB cost
  $53M/$29M = **1.8**

Other Methods: NY

- Cumulative Program Costs and Benefits
  - HPwES 2006: TMET 1.4 and PET 2.2
  - HPwES 2001-06: TMET 2.24 and PET 3.28
- Additional benefit scenarios add value of:
  - NEBs
  - Price effects
  - Macro-economic impacts to tests

Other Methods (ME)

- Non-Quantifiable Cost Effectiveness Test:
  - Allow programs that don't pass cost tests but clearly demonstrate other benefits
  - Requires program to meet statutory goals
    - increase consumer awareness
    - create more favorable market conditions
    - promote sustainable development)
  - Requires portfolio to pass Modified Societal Test