# RECONSIDERING THE TRC

ACEEE SUMMER STUDY
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# Acknowledgements & Thanks




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- Reviewers
- Panel Leader

# EFG Consulting



## Areas of Expertise

- Program Design
- Policy Development
- Building Codes
- Evaluation
- Cost-Effectiveness

## Range of Clients

- Govt. Agencies
- Advocates
- Regulators
- Utilities

Clients in more than 10 states/provinces, plus regional, national and international organizations.

# Presentation Overview



1. Overview of 5 Cost-Effectiveness Tests
2. Problems with the TRC
3. Options for Addressing the TRC's Problems

# The 5 Tests

| | Partic. | RIM | TRC | SCT | PACT |
|---|---|---|---|---|---|
| **Benefits** | | | | | |
| Primary Fuel(s) Avoided Supply Costs | | ✓ | ✓ | ✓ | ✓ |
| Secondary Fuel(s) Avoided Supply Costs | | | ✓ | ✓ | |
| Primary Fuel(s) Bill Savings (retail prices) | ✓ | | | | |
| Secondary Fuel(s) Bill Savings (retail prices) | ✓ | | | | |
| Other Resource Savings (e.g. water) | ✓ | | ✓ | ✓ | |
| Environmental Benefits | | | | ✓ | |
| Other Non-Energy Benefits | | | Rarely | In Theory | |
| **Costs** | | | | | |
| Program Administration | | ✓ | ✓ | ✓ | ✓ |
| Measure Costs | | | | | |
| Program Financial Incentive | | ✓ | ✓ | ✓ | ✓ |
| Customer Contribution | ✓ | | ✓ | ✓ | |
| Utility Lost Revenue | | ✓ | | | |

# Which Test is Predominant?



- Many jurisdictions use multiple tests
  - Don't have to pass all
  - Provides useful insights into range of issues
- TRC or SCT primary test most jurisdictions
  - PACT is primary in a few states (e.g., MI & CT)
  - RIM not primary anywhere any more?

# Problems with the TRC



- Doesn't include non-energy benefits (NEBs)
  - "apples" (all costs) to "oranges" (only energy bens)
  - Societal test includes NEBs in theory, but not practice
- Never applied to supply investments
  - Puts DSM at competitive disadvantage

# Are TRC Problems Important?



- Maybe not critical in the past…
  - Simpler programs
  - Smaller DSM budgets
  - Smaller DSM goals
- Increasingly important today
  - Much more aggressive goals
  - Program strategies that emphasize NEBs
  - NEBs often worth more than energy benefits

# TRC and Home Performance

## (screening without NEBs)



| | | | | |
|---|---|---|---|---|
| **Costs** | | | | |
| Measures | | | | $7,500 |
| Administration | | | | $1,500 |
| Total | | | | $9,000 |
| | | | | |
| **Benefits** | | | | |
| | Therms | kWh | kW | |
| Energy Savings | 300 | 750 | 0.6 | |
| Savings Life -Yrs | 20 | 10 | 10 | |
| Avoided Cost/Unit | $1.35 | $0.14 | $115 | |
| Value | $ 4,645 | $ 1,020 | $ 682 | $ 6,347 |
| | | | | |
| **Net Benefits** | | | | **$ (2,653)** |
| | | | | |
| **Benefit-Cost Ratio** | | | | **0.71** |

# Remediation Options



1. Adjust cost to “energy portion only”
2. Add NEBs to screening
3. Switch tests – to the PACT/UTC

# Cost Adjustments



## Advantages

- "apples to apples"
- Fewer cost-effective programs fail screening

## Disadvantages

- More $ on evaluation
- Needs to be repeated
  - Early adopters different
  - Program changes
- Difficult to be prospective
- Not economically optimal
  - Cost reduction can be less than value of NEBs

**Summary:** better than nothing; help for selected programs.

# Add NEBs to Screening



## Advantages

- Most accurate choice
- All societally cost-effective programs pass

## Disadvantages

- Lots more $ on evaluation
  - If addressing all key NEBs
- Needs to be repeated
  - Early adopters different
  - Program changes
- Difficult to be prospective
- Very complex, controversial

**Summary:** theoretically ideal, but will never happen.

# Switch to PACT/UCT



## Advantages

- "apples to apples"
- Simplest choice
- Least expensive option
- Symmetry w/supply side
- Utility ratepayer optimal

## Disadvantages

- Not societally optimal
  - But rate-payer optimal

**Summary:** most workable solution for utility regulation now.

# Application of Fixes

## (Home Performance example)



| | Scenario | | TRC Today | TRC Cost Adjusted | TRC w/NEBs | PACT |
|---|---|---|---|---|---|---|
| **Costs** | | | | | | |
| Measure Costs | | $7,500 | | | | |
| Rebate | 33% | $2,500 | $2,500 | $2,500 | $2,500 | $2,500 |
| Participant | 67% | $5,000 | $5,000 | $5,000 | $5,000 | |
| Administration | | $1,500 | $1,500 | $1,500 | $1,500 | $1,500 |
| | | | | | | |
| Customer Attribution of Costs | | | | | | |
| Energy Reasons | | 50% | | | | |
| Non-Energy Reasons | | 50% | | | | |
| Cost Adjustment | | $ (3,750) | | -$3,750 | | |
| | | | | | | |
| Total Costs | | | $9,000 | $5,250 | $9,000 | $4,000 |
| | | | | | | |
| **Benefits** | | | | | | |
| Energy - Avoided Costs | | $ 6,000 | $6,000 | $6,000 | $6,000 | $6,000 |
| Non-Energy | | $ 6,000 | | | $6,000 | |
| | | | | | | |
| Total Benefts | | | $6,000 | $6,000 | $12,000 | $6,000 |
| | | | | | | |
| **Net Benefits** | | | -$3,000 | $750 | $3,000 | $2,000 |
| | | | **FAIL** | **PASS** | **PASS** | **PASS** |

# Many Programs Affected



- Used Home Performance as Example…
- But Issues Apply to Many Others
  - C&I retrofits
  - New Construction
  - Rooftop PV
  - Etc.

# Questions?



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