

PERSPECTIVES ON PROGRAM INFLUENCE AND COST EFFECTIVENESS: MOVING FORWARD FROM THE RECENT US DEBATES

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OVERVIEW OF PAPER & PRESENTATION

- » Context and rationale
- » Recent US debate on EE
 - Program attribution
 - Cost effectiveness

- » Presentation focuses on *attribution*
 - See paper for cost effectiveness

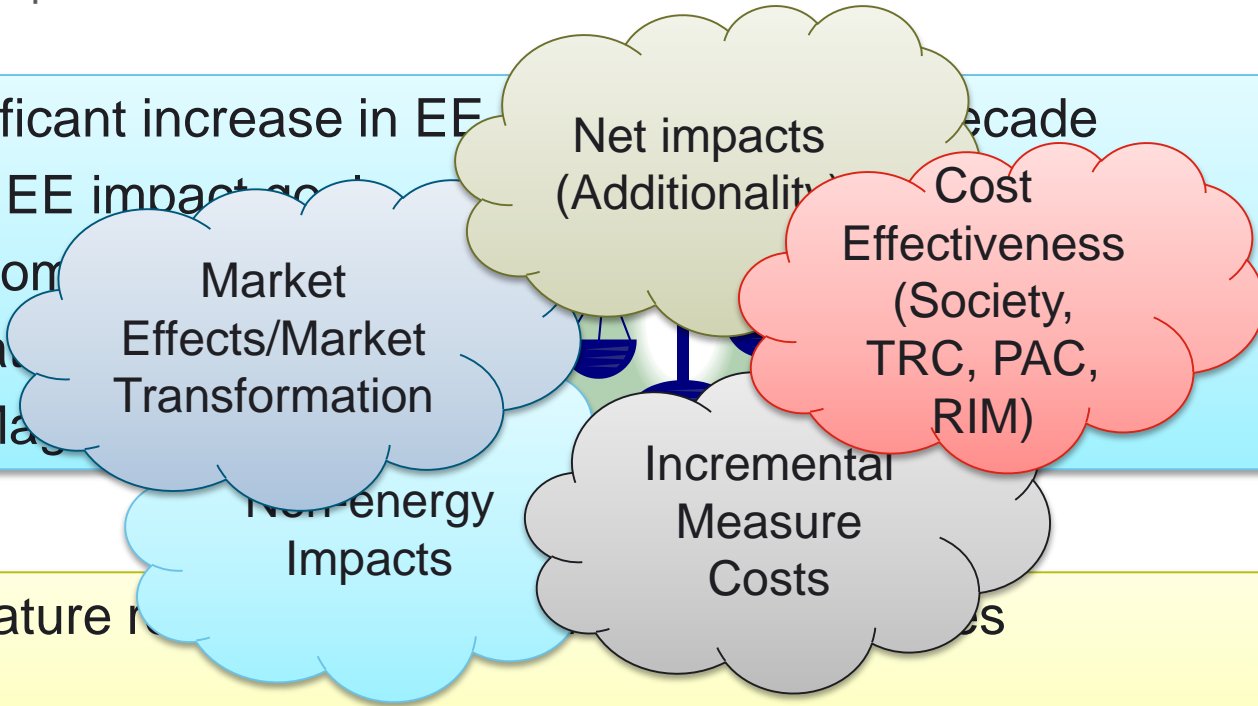
- » Key take away
 - Attribution studies are critically important to EE
 - Must continue despite challenges

HISTORY/CONTEXT/RATIONALE

Why this paper?



- » Significant increase in EE
- » High EE impact cost
 - Some
- » Debate
 - Mas



- » Literature r
- » Alternative recommendations
 - Goal is sustainable/defensible approach to valuing EE

PROGRAM ATTRIBUTION DEBATE

Net Versus Gross

Gross – full amount of direct program participants

Net

- Impacts that are “program-induced”
- Would not have happened anyway (“free riders”)

Net should include long-term impacts and spillover

Net of Free Riders (NOFR)

Net-to-gross Ratio (NTGR)

- Fraction of estimated net to gross impacts
- Applied to gross program savings claims
- $NTGR \times Gross = Net$ impacts

NTGR usually from program-specific evaluation study

Generally accepted framework among evaluators in US...*until recently*

PROGRAM ATTRIBUTION DEBATE

Recent criticisms of NTG in practice

Criticism 1. Estimating free ridership is **intractable**

Criticism 2. Evaluations ***overestimate*** free ridership

Criticism 3. Underestimates of program effects lead to ***pre-mature abandonment*** of efficiency programs

PROGRAM ATTRIBUTION COUNTERPOINTS

Counterpoints

Criticism 1. Estimating free ridership is **intractable**

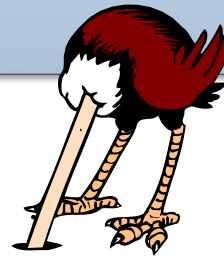
Counterpoint → Most attribution work difficult.

Difficulty ≠ intractability

Difficulty $f(\text{willingness})$

(e.g., to wait/test properly, continue to advance methods).

Not measuring, not an answer.



PROGRAM ATTRIBUTION COUNTERPOINTS

Counterpoints

Criticism 2. Evaluations *overestimate* free ridership

Counterpoint → Some legitimate concern of bias in residential self reports.

Case for bias weaker in non-residential sector.

Factor that may downwardly bias FR estimates from self reports → desire to continue \$.

NOFR studies likely miss long-term effects.

PROGRAM ATTRIBUTION COUNTERPOINTS

Counterpoints

Criticism 3. Underestimates *lead to pre-mature abandonment*

Counterpoints  Critics provide few examples.

More evidence for counter hypothesis

- NTG ignored/programs slow to adapt

Purpose is to sustain/increase effects

Improvements likely to manifest in  attribution

ATTRIBUTION DEBATE

- » Healthy challenging of assumptions and methods
- » Important to help educate decision makers on limitations




A WORD ON CLIMATE CHANGE

- » Climate change = additional pressure
 - More important to take action, don't bog down in evaluation?
 - Counter view
 - ***Each \$ has high opportunity cost*** and must be put to its fullest, most effective use to reduce GHGs

RECOMMENDATIONS

Re Program Attribution Research

- » Conduct attribution studies to assess near-term and long term effects  include free ridership, spillover and market effects
- » View NOFR as indicator of marginal efficacy, not long term
- » Make clear that FR and NTG estimates are uncertain & caveat
- » Frame NTGR as directional (e.g., high, moderate, low)

RECOMMENDATIONS

Re Program Attribution Research

- » Recognize some degree of FR is unavoidable and acceptable
 - Moderate FR does not mean *abandon ship* or *complacency*
 - Case dependent, depends on multiple factors

- » Consider portfolio-level adder for spillover and market effects

- » Include longitudinal market studies to assess “all in” efficiency

FINAL WORDS

Re Program Attribution Research

Go forth and evaluate!

- Let not perfection be the enemy of the good
- View thy results humbly and with appropriate questioning
- Continuously improve methods
- Attribution only one of many inputs to program decisions

QUESTIONS?

SUPPLEMENTAL SLIDES RE COST EFFECTIVENESS

COST EFFECTIVENESS (C-E) TESTS



Test	Benefits	Costs
Total Resource Cost Test (TRC)	Generation, transmission and distribution savings Environmental externalities	Generation, transmission and distribution Program costs paid by the administrator Participant incremental measure costs
Participant Cost Test (PCT)	Bill reductions Incentives Non-energy benefits	Bill increases Participant incremental measure costs Non-energy costs
Program Administrator Cost Test (PAC)	Generation, transmission and distribution savings	Generation, transmission and distribution Program costs paid by the administrator Incentives
Ratepayer Impact Measure Test (RIM)	Generation, transmission and distribution savings Revenue gain	Generation, transmission and distribution Revenue loss Program costs paid by the administrator Incentives
Societal Cost Test	Generation, transmission and distribution savings Environmental externalities Non-energy benefits Participants avoided equipment costs (fuel switching only)	Generation, transmission and distribution Program costs paid by the administrator Participant incremental measure costs Non-energy costs

COST EFFECTIVENESS (C-E) TESTS

- » Two periods of significant debate in US over C-E tests
 - Late 1980s/early 1990s
 - TRC vs. RIM
 - Last 5 years
 - PAC and SCT vs. TRC

COST EFFECTIVENESS (C-E) TESTS

- » Recent elements of TRC critiques
 - Lowering the discount rate
 - Removing 20-year cap on effective useful life (EUL)
 - Including non-energy benefits (NEBs)
 - Improving estimation of incremental measure costs & excluding costs that are not EE related
 - Questioning relevance of incremental cost element

RECOMMENDATIONS

Re Cost Effectiveness

- » Calculate C-E using a range of tests
 - Greatest weight or primacy on the **TRC test**
 - with ***environmental externality*** costs!
 - TRC should **not be a hard**, across the board **cap**
 - ***MT programs*** should look to ***PAC*** and ***forecasts*** of TRC
 - SCT should be assessed periodically, even if only qualitatively

- » Assess non-energy impacts (NEIs) based on relative import
 - Use for program design
 - Caution with quantification for C-E
 - Ensure parallel treatment of costs and benefits

THANK YOU



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