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ENERGY

Attribution of Non-Utility Energy Efficiency Benefits to Utility Programs – SAG Presentation

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Defining the Issue: Attribution

Attribution of non-utility energy efficiency (EE) benefits to utility sponsored EE programs is an emerging topic:

- Some attribution of non-utility EE programs is occurring, but on a limited basis
- Most attribution efforts have started with building efficiency codes from local governments or parallel EE programs from the Federal government (e.g., ARRA)
- Attributing non-utility EE program benefits to utility EE programs turns on how certain areas are defined and applied: impact evaluation, net-to-gross and the parallel consideration of non-energy benefits (NEBs), spillover and free ridership

Defining the Issue: Attribution

One way to define the attribution discussion is:

Attribution refers to the practice of determining what impacts should be included as energy efficiency savings that can be attributed to a specific program during a specific time period and, also, how to incorporate parallel (e.g., non-utility) energy efficiency efforts that support the specific utility-sponsored energy efficiency program.

... of course elaboration on a definition is always helpful ...

Source: *Interactions Between Energy Efficiency Programs Funded under the Recovery Act and Utility Customer-Funded Energy Efficiency Programs (LBNL-4322E – March 2011 and Lessons Learned and Next Steps in Energy Efficiency Measurement and Attribution: Energy Savings, Net to Gross, Non-Energy Benefits, and Persistence of Energy Efficiency Behavior (Skumatz - CIEE, Nov. 2009)*

Defining the Issue: Attribution

Further Detail to Define “Attribution”

- Utility Programs: Typical “utility” sponsored EE programs are measured and the net effects of only the utility program are calculated and reported
- Non-Utility Programs: Non-utility EE programs (e.g., governments, municipalities) may explicitly target specific behaviors or equipment that may already be targeted by utility programs
 - These non-utility efforts are not different from other market influences since they also affect participants’ motivation for taking action
 - There are key differences:
 - **Size** – non-utility, government sponsored programs tend to have a more potent market impact
 - **Coordination and/or Targeting** – non-utility programs tend to be explicitly coordinated with, or at least targeted at, specific utility EE programs

There are a number of key points to consider due to the advancement and proliferation of non-utility programs:

- *Key Questions:*
 - Should EM&V net out the effect of non-utility programs as it does for other market messages?
- OR**
- Is the fact that a non-utility program explicitly coordinated/targeted with/at the utility program evidence that the impacts should NOT be netted out?

Attribution Around the U.S. – Rating and Disclosure Policies

Comparison of U.S. Commercial Building Energy Rating and Disclosure Policies

	Legislation				Building Type & Size Threshold			Disclosure				Rating System		Additional Elements	
	Jurisdiction	Short Name	Enacted	Effective	Gov't	Commercial	Multi family	Public Website	Gov't	Transaction	Tenants	Energy Star	Other	Utility Support	Audit/Improvement Requirement
Cities	Austin	Energy Conservation Audit & Disclosure (ECAD) Ordinance	Nov 2008	June 2011	✓	10K SF+	Audits	-	✓	Buyers	-	✓	ACLARA	-	Audits & mandatory upgrades for multifamily buildings
	District of Columbia	Clean and Affordable Energy Act of 2008	July 2008	2010 -2014	10K SF+	50K SF+	50K SF+	✓	✓	-	-	✓	Energy Star Target Finder	-	-
	New York City	LL No. 476-A	Dec 2009	2010 - 2013	10K SF+	50K SF+	50K SF+	✓	✓	-	-	✓	-	-	ASHRAE level II audits & RCx, public building audits & upgrades
	San Francisco	Existing Commercial Buildings Energy Performance Ord.	Feb 2011	2011 - 2013	10K SF+	10K SF+	-	✓	✓	†Buyers, Lessees, Lenders	✓	✓	-	†	ASHRAE level I or II audits every 5 years
	Seattle	CB 116731	Jan 2010	2011 - 2013	10k SF+	10K SF+	5+ units	-	✓	†Buyers, Lessees, Lenders	✓	✓	-	✓	-
States	California	AB 1103	Oct 2007	2012 - 2014	†	5K SF+	-	-	✓	Buyers, Lessees, Lenders	-	✓	-	✓	Mandatory upgrades to be developed under AB 758
	Washington State	Efficiency First SB 5854	May 2009	2011 - 2013	10K SF+	10K SF+	-	-	-	Buyers, Lessees, Lenders	-	✓	-	✓	Audits for public buildings with low ratings
Under Consideration	Massachusetts	Building Energy Asset Labeling Program	-	-	10K SF+	10K SF+	10K SF+	TBD	-	-	-	TBD	Asset & Operational	-	ASHRAE level II audits and modeling
	Portland, OR	High Performance Green Building Policy	-	-	-	20K SF+	20K SF+	-	✓	-	-	✓	-	-	Mandatory upgrades for blds w/ scores <30

† Required by previous action

Source: Institute for Market Transformation

To access this document online, see www.imt.org/rating or www.buildingrating.org

For more information, please contact Caroline Keicher, Institute for Market Transformation at (202) 525-2883, caroline@imt.org



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Attribution Around the U.S. – Rating and Disclosure Policies

Examples of Energy Building and Rating Disclosure Policies Mandated at the State and City Levels:

Jurisdiction	Property Types	Energy Information Required			Disclosure Type		
	All residential units; exceptions noted	Efficiency Checklist	Utility Data	Evaluation/Audit	Public Display	To Potential Buyers	To Potential Tenants
Alaska	✓	-	✓	-		✓	-
Austin, TX	≤4 units, separate multifamily requirements	-	-	✓	multifamily audit results	✓	-
Kansas	new residences ≤4 units	✓	-	-		✓	-
Maine	✓	✓	-	voluntary standards	✓	voluntary standards	✓
Montgomery County, MD	✓	-	✓	-		✓	-
Nevada	≤4 units	✓	✓	-		✓	-
New York	✓	-	✓	-		✓	✓
Santa Fe, NM	new residences	-	-	HERS rating or similar	✓	✓	-
South Dakota	new residences ≤4 units	✓	-	-		✓	-

Attribution Around the U.S. – “Setting the Stage”

Summary of utility funded EE programs around the U.S. – “setting the stage nationally”:

- Nearly all states have at least one utility or other program administrator that offers EE programs
 - Utilities administer programs in ~30+ states – third parties or state agencies administer programs in 9 states
 - 15 States have consistently spent more than 1% of annual utility revenues on EE over the last decade, although commitment levels vary significantly among states
- At least 20 states have passed EE resource standards and more states are considering EE resource standards - EE standards that will require a significant investment in EE

Sources: ACEEE 2010 – *State Energy Efficiency Resource Standard Activity 2010 and Federal Energy Regulatory Commission, “Renewable Energy and Efficiency Standards and Goals.*

Approaches to Attribution

Given the increased focus on EE Programs and building code requirements across the US, a strong argument has surfaced that it is time to consider adjusting how impact analysis is conducted to account for EE benefits beyond the utility-based program.

- Evaluation and attribution methods have reached a point that they could evolve to provide stronger results for the next generation of programs.
- Two primary factors have complicated methodologies applied to energy efficiency programs.
 - Transition to more behavioral, outreach and other non-measure-based programs (e.g., education, advertising), making it especially hard to “count” impacts, and
 - Increased chatter in the marketplace, in which consumers may be influenced by any number of utility programs by the host/territorial utility (e.g., the “portfolio”) as well as influences from activities independent of the local utility.

Source: *Lessons Learned in Energy Efficiency Measurement and Attribution* by Skumatz – CIEE November 2009

Approaches to Attribution: Program Analysis

Certain elements of standard EE program analysis should be examined and possibly altered to incorporate non-utility EE benefits.

Impact Evaluation

- Program design changes based upon overall goals (e.g., upfront market assessments)
- Gaps and method improvements – modeling approaches used for assessing behavioral programs
- Baseline and overlap issues – upfront use of vetted baseline data

NTG

- Standard NTG calculations should be reexamined to determine if they appropriately address a broader participant population
- Altering the application of free riders and the spillover effect (e.g., including or excluding both) since the population of participants widens with attempting to attribute non-utility EE benefits

NEBs

- NEBs have not been quantified in Illinois EM&V to date, and measurement presents a challenge, but they represent a real (typically positive) effect of programs and, thus, should be considered for inclusion if attribution is pursued.
- NEBs would be considered in design, benefit/cost analysis, marketing and other areas

Other Variables

- Persistence – understanding education, outreach and behavioral programs
- Measure lifetimes are a key element of calculating program savings and understanding how new programs should be measured to properly change program design going forward

Source: Lessons Learned and Next Steps in Energy Efficiency Measurement and Attribution: Energy Savings, Net to Gross, Non-Energy Benefits, and Persistence of Energy Efficiency Behavior (Skumatz - CIEE, Nov. 2009)

Approaches To Attribution - Options

Conceptually, there are a number of potential approaches that could be used to address and resolve issues related to attribution of savings from programs.

1st Option

Allow administrators of utility-customer funded programs to claim credit for energy savings from coordinated or joint programs.

2nd Option

Allow administrators of utility-customer funded programs to receive credit for energy savings if they partner with parallel non-utility programs and increase their overall savings targets to reflect this new situation.

3rd Option

Keep utility customer and other-funded rebate programs separate and distinct, avoiding attribution questions entirely.

4th Option

Negotiate partial or proportional credit for energy savings achieved by both program administrators.

Source: *Interactions Between Energy Efficiency Programs Funded under the Recovery Act and Utility Customer-Funded Energy Efficiency Programs* (LBNL-4322E – March 2011)

Attribution Around the U.S. – ARRA Funded Programs

Attribution and Savings Impacts – Example of ARRA* and parallel local EE program administrator (PA) – ARRA offers EE programs through Federal funding and the question of attributing the federal funded benefits to the local PA arose:

- Most states reviewing the attribution issue have not settled on exactly what to report and how to attribute savings
- A number of states have decided to give full credit for any savings achieved to the utility while others have decided to give proportional credit
- Berkley Labs found that more refined state and utility reporting guidance could produce consistent approaches to estimating energy savings impacts claimed by multiple program administrators

Full credit of savings to PA	Proportional credit of savings to the PA	Strict Separation of ARRA and PA Savings	Unresolved
CA, FL, MA, MI, MN, NC	HI, ME, WI	NY	CO, OR

* ARRA is the American Recovery Reinvestment Act

Source: Interactions between EE Programs Funded under ARRA and Utility Customer-Funded EE programs (Berkley Labs – March 2011).

Attribution Around the U.S. – ARRA Funded Programs

ARRA Case Studies:

- **Hawaii:**

- Hawaii delegated ARRA funds to a third-party administrator of the utility customer-funded programs for existing solar hot water rebate costs, but then added low-interest financing, all of it presented as a unified package to the consumer
- ARRA funds were also used to add a refrigerator recycling program
- Proportional savings were attributed to the local utility program

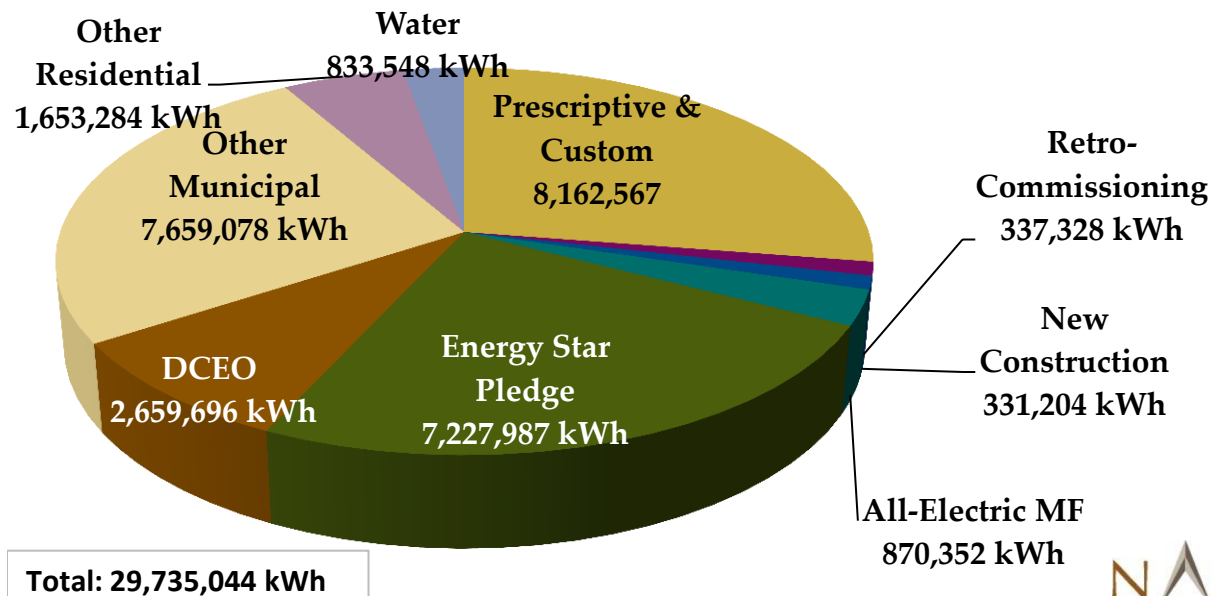
- **Wisconsin:**

- The WI Department of Administration used ARRA funds for new programs to weatherize large, multifamily buildings (20+ units per structure)
- The program was created to weatherize approximately 3,000 units in apartment buildings across WI
- Proportional savings were attributed to the local utility program

Attribution Around the U.S. – Illinois Pilot Program

In Illinois, the 2009-2010 ComEd Community Energy Challenge integrated local villages and municipalities into utility-managed EE programs – none of the savings were claimed by the utility since it was a pilot.

- The 2009-2010 ComEd Community Energy Challenge (CEC) was a year-long competition among ten Illinois communities to reduce energy consumption while advancing sustainability goals. Designed and sponsored by ComEd, in cooperation with the Illinois Department of Commerce and Economic Opportunity (DCEO) and the Metropolitan Mayors Caucus, the CEC was a pilot project in ComEd's 2008-2010 Energy Efficiency and Demand Response Plan (2008-2010 Plan).
- *CEC participants collectively achieved 29,735,044 kWh in gross energy savings over the course of the program year (Figure ES1). They achieved these savings using established municipal delivery channels, resources, relationships and authorities to promote energy efficiency and drive utility program participation – Gross Savings were as follows:*



Conclusions and Recommendations

A number of conclusions and recommendations should be considered going forward:

Defining the Issue

- All parties should agree on a single definition of attribution to properly move forward with attributing non-utility savings to a utility program
- Program analysis of NTG, NEBs, etc., should be assessed and understood at the outset of establishing programs that are intended to include non-utility benefits

Non-Utility Programs

- Early analysis of which non-utility programs would potentially be included in utility EE programs should be assessed
- Determine how the parallel non-utility program could be managed along with the utility program

Approaches to Attribution

- Understand the four approaches to attributing benefits and decide which option should be applied to the attribution effort – this should be done at a program level
- Parties should agree on how attribution will be handled for each program at the outset

Continue to Assess

- Since this is a new and evolving area of EE utility program measurement and evaluation, ongoing assessment of other states' approaches to attribution must be monitored closely

Recommendations: The SAG should move forward with assessing the above conclusions and determine (i) which non-utility programs need consideration, (ii) once programs are identified, develop a partnership with outside EE providers to assess how to move forward and (iii) also determine the appropriate next steps before the ICC or other appropriate government body.

Key CONTACTS



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