

## **Try, Try, Try: Looking at alternative free-ridership estimation techniques**

*Latisha Younger-Canon, Navigant*

*Jane Hummer, Navigant*

*Chelsea Lamar, Navigant*

*Dan Violette, Navigant*

Survey-based methods are now commonly used for estimating net savings (NS) or net-to-gross (NTG) factors from energy efficiency (EE) programs. In recent years, certain survey methods and structures have become prevalent, often for good reasons; but, it is important for evaluators to consider the range of different methods that are available and to make good choices regarding their application.

This poster presents findings from three survey-based structures, including 1) a basic scoring approach conducted by phone, 2) a basic scoring approach conducted online, and 3) an enhanced range and likelihood approach conducted online.

Using survey data from a study of Midwestern trade allies serving both residential and commercial and industrial (C&I) customers, results indicate that while there are some differences based on methodological approach most respondents identified a free-ridership estimate that fit into the upper and lower bounded range identified by the respondent.

More research is needed, but findings show promise for the implementation of alternative approaches. Continued research should focus on implications of priming respondents with project information and the costs and benefits of enhanced fielding methods.



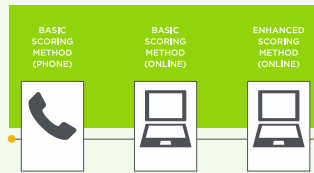
# TRY, TRY, TRY:

## LOOKING AT ALTERNATIVE FREE-RIDERSHIP ESTIMATION TECHNIQUES



### PROBLEM STATEMENT

- Survey-based methods are now commonly used for estimating net savings (NS) or net-to-gross (NTG) factors from energy efficiency (EE) programs.
- In recent years, certain survey methods and structures have become prevalent, often for good reasons; still, it is important for evaluators to consider the range of different methods that are available and to make good choices regarding their application.
- In many territories, regulators have expressed interest in alternative free-ridership estimation techniques.
- This poster looks at the results of three approaches:**



### METHODOLOGY

KEY ELEMENTS OF APPROACH	2015 BASIC (PHONE)	2016 BASIC (WEB)	2016 ENHANCED (WEB)
Priming questions on multiple program influences	✓	✓	✓
Measure-specific direct free-ridership questions	✓ (top tier measures only)	✓ (all measures)	✓ (all measures)
Priming questions on pre-program sales		✓	✓
Actual, measure-level program data visible to respondent while answering questions		✓	✓
Enhanced free-ridership questions (upper and lower bounds of program influence)			✓

### WEB SURVEY ALLOWS USE OF REAL PROGRAM DATA

The following table shows the approximate quantities of measures installed through KCP&L's program in 2016, according to program records.

MEASURE NAME	NUMBER OF UNITS SOLD WITH KCP&L REBATES IN 2016
Central air conditioner - SEER 15	26
Central air conditioner - SEER 16	48
Heat pump - SEER 15	20
Heat pump - SEER 16	61
Heat pump - SEER 17	37
ECM furnace fan	

### SCREENSHOT OF RANGE QUESTIONS

To better assess the influence of the program, we are looking for your views on lower and upper bounds on the number of rebated measures that were installed due to the influence of the KCP&L program. Please provide the **smallest believable number** (lower bound) of units that were influenced by the program.

Central air conditioner - SEER 15

Central air conditioner - SEER 16

Heat pump - SEER 15

Heat pump - SEER 16

Heat pump - SEER 17

Please provide the **largest believable number** (upper bound) of units that were influenced by the program.

Central air conditioner - SEER 15

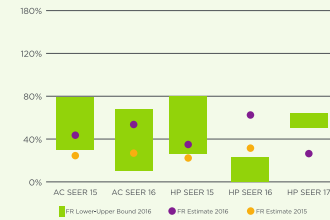
Central air conditioner - SEER 16

Heat pump - SEER 15

Heat pump - SEER 16

Heat pump - SEER 17

### FINDINGS



- Results show that FR estimates derived from the basic online approach fall within the lower and upper bounds established in the enhanced method in all but two measure categories.
- FR estimates from both 2015 and 2016 are close together in all but two categories.
- There is anecdotal evidence that at least one respondent found the lower and upper bound estimates cognitively easier to estimate than a direct free-ridership estimate.

### RECOMMENDATIONS

- The goal of this poster was to set out the choices among survey-based NTG methods and contribute to the body of information available to help evaluators select the method(s) that best fits their needs.
- The scoring approach has become prevalent in certain settings, but there are also other survey-based methods that should be considered. Each method poses its own challenges in implementation, and will have its pros and cons. Evaluators need to be aware of the available methods and the underlying assumptions that can result in one method being judged as better than another.
- More research is needed, but findings show promise for the implementation of alternative approaches with free-ridership estimates in similar ranges regardless of survey approach.
- Continued research should focus on implications of priming respondents with project information and the costs and benefits of enhanced fielding methods. Further, testing additional validation methods could shed further light on ways to refine the estimation of self-reported free-ridership.



LATESHA YOUNGER-CANON  
Marketing Consultant  
latesha.youngercanon@navigant.com  
608.491.2348

JANE HUMMER  
Marketing Consultant  
jane.hummer@navigant.com  
303.728.2006

CHELSEA LAHAR  
Marketing Consultant  
chelsea.lahar@navigant.com  
302.583.2673

DAN VIOLETTE  
Marketing Director  
dan.violette@navigant.com  
616.416.9030