

# Memorandum

**To:** Fernando Morales, AIC; Jennifer Morris, ICC  
**From:** The Opinion Dynamics Evaluation Team  
**Date:** October 9, 2019  
**Re:** AIC Retail Products Initiative Participant Survey – Variable-Speed Pool Pump Findings and Recommendations for ISR and NTG Assumptions

## Introduction

The AIC Retail Products Initiative, implemented by CLEAResult, partners with retailers and manufacturers to sell a number of discounted products, including LEDs, advanced power strips, advanced thermostats and variable-speed pool pumps. These discounts encourage customers who are reluctant to pay full price for these energy-efficient products to forego less efficient alternatives. As part of the evaluation of the 2018 Retail Products Initiative, we conducted a survey with participants who purchased rebated variable-speed pool pumps. As part of the survey, we collected data to estimate an in-service rate and net-to-gross ratio. This memo presents results and offers recommendations for updates to the Illinois Technical Resource Manual Version 8.

## Key Findings

### In-Service Rate

In-service rate (ISR) represents the percent of Initiative-rebated products installed at the time of the survey. As can be seen in Table 1, ISR is 100% for variable-speed pool pumps.

Table 1. Variable-Speed Pool Pump ISR

In-Service Rate	n
100%	66

### Net-to-Gross Ratio

Net-to-gross ratio (NTGR) accounts for estimates of participant free ridership (FR) and spillover. The FR rate is 0.24 and participant spillover is 0, resulting in an overall NTGR of 0.76, as shown in Table 2.

Table 2. Variable-Speed Pool Pump NTGR

Free Ridership	Participant Spillover	NTGR	n
0.24	0.00	0.76	61

## Methods

### Survey Sampling and Fielding

Opinion Dynamics completed a web-based survey with a total of 66 participants who purchased Initiative-rebated variable-speed pool pumps. Opinion Dynamics sent an email invitation and two reminders to all participants with valid email addresses. All participants were asked to verify receipt and installation of their rebated product and a series of questions to inform NTGR. Table 3 shows number of survey respondents relative to the total number of 2018 Retail Product participants and the number of participants included in the final sample frame.

Table 3. Summary of Sample Design

Metric	Result
Total participants	197
Participants in final sample frame	194
Survey completes	66

### In-Service Rate Methodology

We asked participants to verify receipt of variable-speed pool pumps and whether the products were installed at the time of the survey. We calculated in-service rate (ISR) by dividing number of pool pumps reported as installed at the time of the survey by the number of pool pumps that participants received per the program tracking database.

#### Equation 1. ISR Calculation

$$ISR = \frac{\text{Products Installed and Operational}}{\text{Prodcuts in Program Tracking Data}}$$

Using the equation above, we developed an ISR for each respondent. We averaged individual respondent ISRs to arrive at an aggregate Initiative-level estimate for each product. We did not need to account for measure quantity, because each participant could only receive one Initiative-rebated variable-speed pool pump.

### Net-to-Gross Methodology

Variable-speed pool pump recipients were asked a series of questions relating to FR and spillover. Opinion Dynamics developed a NTGR using the algorithm outlined in the Prescriptive Rebate (With No Audit) Protocol section of the Illinois Technical Reference Manual for Energy Efficiency Version 6.0 (IL TRM V6.0). The estimate of NTGR includes FR and participant spillover (see Equation 2 below).

#### Equation 2. NTGR Calculation

$$NTGR = 1 - \text{Free Ridership} + \text{Participant Spillover}$$

### Free Ridership

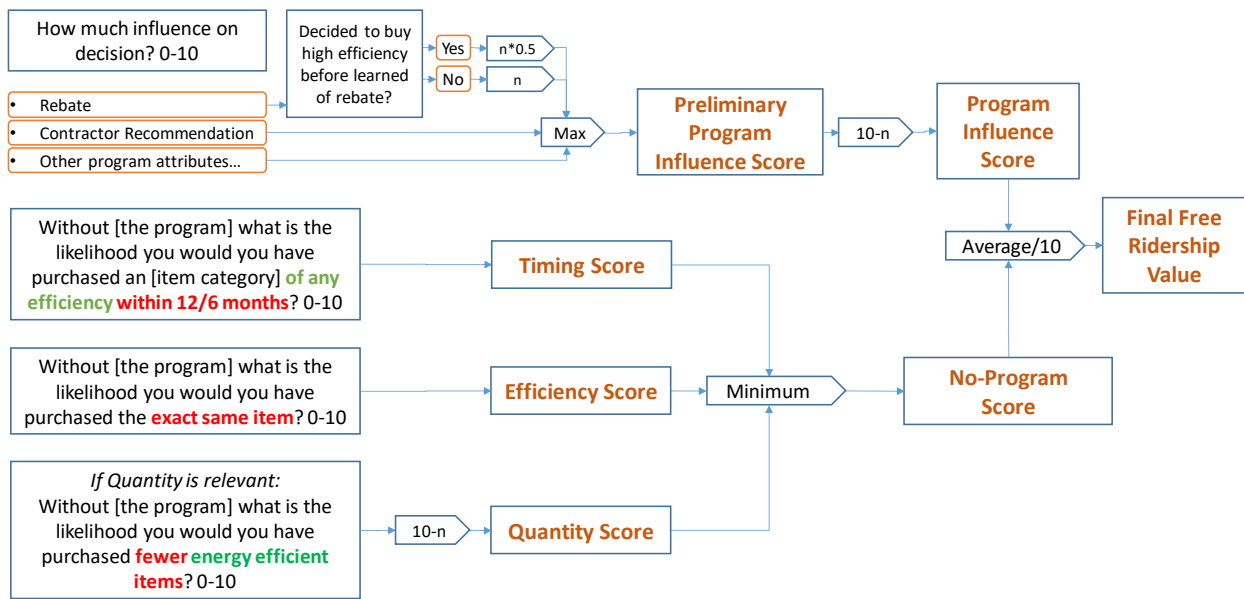
FR represents the portion of participants who would have purchased program bulbs in the absence of program interventions. The Retail Products Initiative encourages customers to purchase efficient products by reducing the purchase price so that the price is closer to that of less efficient alternatives. The Initiative also educates customers about the benefits of energy efficient products. The final FR score accounted for both avenues of program influence.

As prescribed in the IL TRM V6.0, Opinion Dynamics calculated FR as the average of two distinct scores – a program influence score and a no-initiative score.

- **Program Influence Score.** This score is based on the importance of Initiative components, including the Ameren Illinois rebate, information on the Ameren Illinois website, information from in-store materials or store employees, and information from a contractor (when appropriate). The score also accounts for the timing of program awareness relative to the decision to purchase Initiative-rebated product.
- **No-Program Score.** This score is based on the participant’s self-reported likelihood to have installed the exact same type of energy efficient equipment at the same time without the program.

Figure 1 illustrates the scoring algorithm.

Figure 1. FR Calculation Diagram



(Source: IL TRM V6.0)

To address the possibility of conflicting responses, Opinion Dynamics included a consistency check consisting of an open-ended question asking respondents to describe in their own words the influence of the Initiative on their decision to purchase Initiative-rebated product(s). Consistent with the IL TRM V6.0 instructions, Opinion Dynamics consultants analyzed individual responses and their consistency with other survey responses. Using expert judgement, we adjusted the FR score in cases where open-end responses resolved

the inconsistencies and omitted respondents from the analysis in five cases where open end responses did not resolve inconsistencies.

### Spillover Methodology

Participant spillover results from the installation of non-rebated energy efficient products by Initiative participants that were influenced by initiative interventions. Survey respondents were asked whether they purchased and installed other energy efficient products without incentives after purchasing Initiative-rebated products. Those who did, were then asked to rate the influence of the initiative on their decision to purchase non-rebated products. More specifically, participants were asked the following two survey questions to determine Initiative attribution:

- How important was your experience in the <PROGRAM> in your decision to implement this measure, using a scale of 0 to 10, where 0 is not at all important and 10 is extremely important? (**referred to as Measure Attribution Score 1**)
- If you had not participated in the <PROGRAM>, how likely is it that your organization would still have implemented this measure, using a 0 to 10 scale, where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? (**referred to as Measure Attribution Score 2**)

Leveraging responses to questions above, Opinion Dynamics calculated Attribution Score using formula specified in the equation below. This is consistent with Method 1 for establishing spillover attribution in IL TRM V6.0.

#### Equation 3. Calculation of Spillover Score

$$\textit{Attribution Score} = \textit{Average} (\textit{Measure Attribution 1}, (10 - \textit{Measure Attribution 2}))$$

Participants qualified as spillover candidates if the Attribution Score exceeded 5. We followed up with spillover candidates to verify and record the exact scope of their energy efficient project in order to determine project savings. We did not identify any cases of verifiable participant spillover.