REBEL WITH CAUSATION

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Upstream program evaluation, with incentives paid to wholesale distributors, have been the problem child of net impact evaluations for years. Purchasers are often unaware of the program's existence, and distributors can only provide second-hand reports of how buyers are making decisions. In addition, high program penetration means that self-selected non-participating distributors do not provide a good comparison group for evaluating net effects. The challenge grows as the trend is toward more upstream and midstream incentive programs due to the high volume and high cost-effectiveness compared to providing incentives to each buyer.

Our evaluation of California's 2013-2014 upstream commercial HVAC programs offered by San Diego Gas and Electric, Southern California Edison, and Pacific Gas and Electric Company, under the supervision of the California Public Utilities Commission, attempted to address this issue by linking purchaser self-reports and distributor self-reports.

Our methodology assumed that there were three main causal pathways of influence which impacted both the HVAC equipment distributor and buyer. We derived these assumptions from the program logic model provided from the IOUs. Distributors and buyers are both important when evaluating program attribution of this nature, and both were taken into consideration to formulate an overarching attribution score. The three causal pathways were based on the program structure which:

1. Influenced distributors to stock high efficiency units, and whether what was in stock influenced what buyers purchased when their unit failed.
2. Encouraged distributors to promote high-efficiency units, and whether buyers were influenced by recommendations to purchase high efficiency units.
3. Reduced the price of high efficiency units by providing incentives to distributors and how buyers were influenced by lower prices.

Purchasers were asked about influences on their decision making, while distributors were asked about program influence on their practices. Responses from the two interviews were linked to estimate program influence on the purchase along each causal path and an overall program net to gross was estimated.

The final report showed program influence on distributor behavior upstream, and how these changes in behavior influenced the ultimate sale downstream. By linking the responses, we calculated causation from program to buyer even though the buyers of the equipment are unaware of the program. We completed the research in the summer of 2016. Interviews were completed with 20 distributors and 90 buyers. The method used is applicable to evaluating free ridership on programs where the program design does not involve direct program to purchaser influence.

The results of the data collection and net-to-gross (Attribution) expansion analysis resulted in an overall attribution (NTGR) score of 64% (±6% at the 90% Confidence Interval) for the upstream program.