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| **From:** | Jesse Smith |
| **To:** | OCE |
| **Subject:** | NJCEP Protocols to Measure Resource Savings |
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My comments here are specifically in reference to the memo on free-ridership. In my view the memo is inaccurate and shouldn't be incorporated into energy savings projections partly due to the following:

1. The chart implies that type of program participation is significant, and makes no mention of client return on investment (ROI). In fact, ROI will probably have the most significant influence on behavior. It's highly likely that as client ROI increases, so would free-ridership rates.
2. There are likely myriad other effects that would influence outcomes. For example, the rebound effect, whereby entities consume higher amounts of energy typically in the form of increased comfort or leisure (thermostatic setpoint increase, higher mileage driving, etc.) after having purchased energy saving measures. While there's no consensus, direct rebound effects appear to vary across measures, and frequently average up to 30%. (See http://www.ukerc.ac.uk/asset/3B43125E-EEBD-4AB3-B06EA914C30F7B3E/)
3. Even if we lived in a world where spillover and free-ridership were the only - or at least dominant - effects, we wouldn't be able to tell much about their effects by surveying program participants after they've already had work completed. There are many problems with this approach. A) We're asking them about a state of future affairs in which they already know the outcome. Ex. Suppose a client has a deathly fear of damage to her floor, and her sensitivity to rebates is dependent on the combination of estimated ROI and her projected likelihood of floor damage. After the work is completed, she learns that her flooring fears were totally unfounded. If we survey this customer about whether she would participate in the future, the unrealized floor damage will very likely disappear as an obstacle, but only because she's already learned the outcome of the experiment. As a result, she's likely to claim that she would participate at lower rebate levels than she would have claimed at the project planning phase because of this knowledge. B) In some instances people may realize the intent of survey question design, and consequently overstate the impact of the rebates on their decision because they have a vested interest in ensuring the program continues to offer rebates in the future.
4. The cited studies don't appear to be designed to be compared against one another to determine spillover and free-ridership effects across various programs, years, geographies, and incentive levels. They were designed to make comparisons of these effects within a given program in order to optimize that program's funding.

One potential solution to some of these problems is to implement controlled trials of energy saving measures. The basic trial design is to take a large group of similar, eligible participants and randomize them into into two groups. One group participates in a program, the other group does not. Both groups subsequently have their energy usage measured. Randomized controlled trials (RCTs) obviate both the need to understand and model each and every potential effect on energy savings, and the reliance on suspect post-hoc survey data.

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