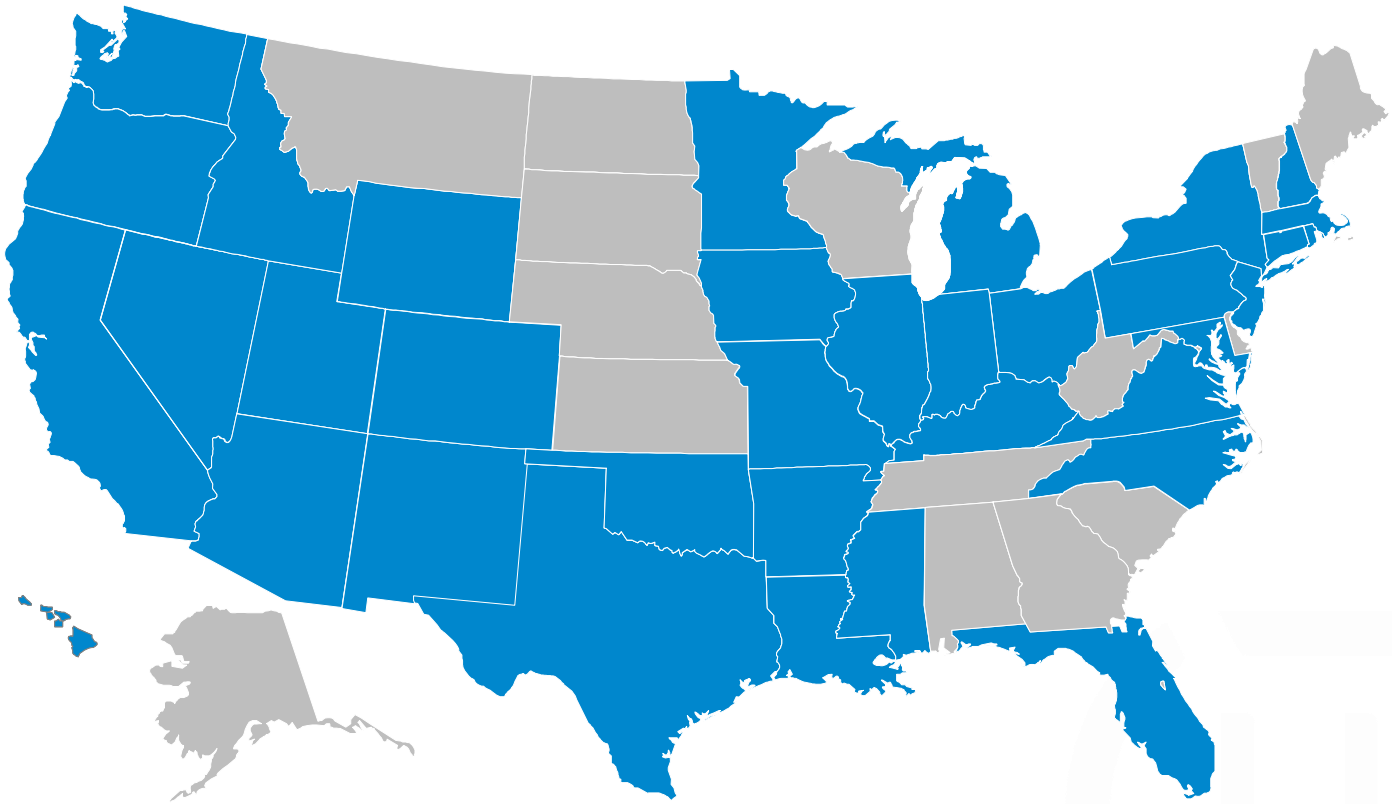
AB 802 Workshop Day 2
Opower: metered data and experimental design in practice

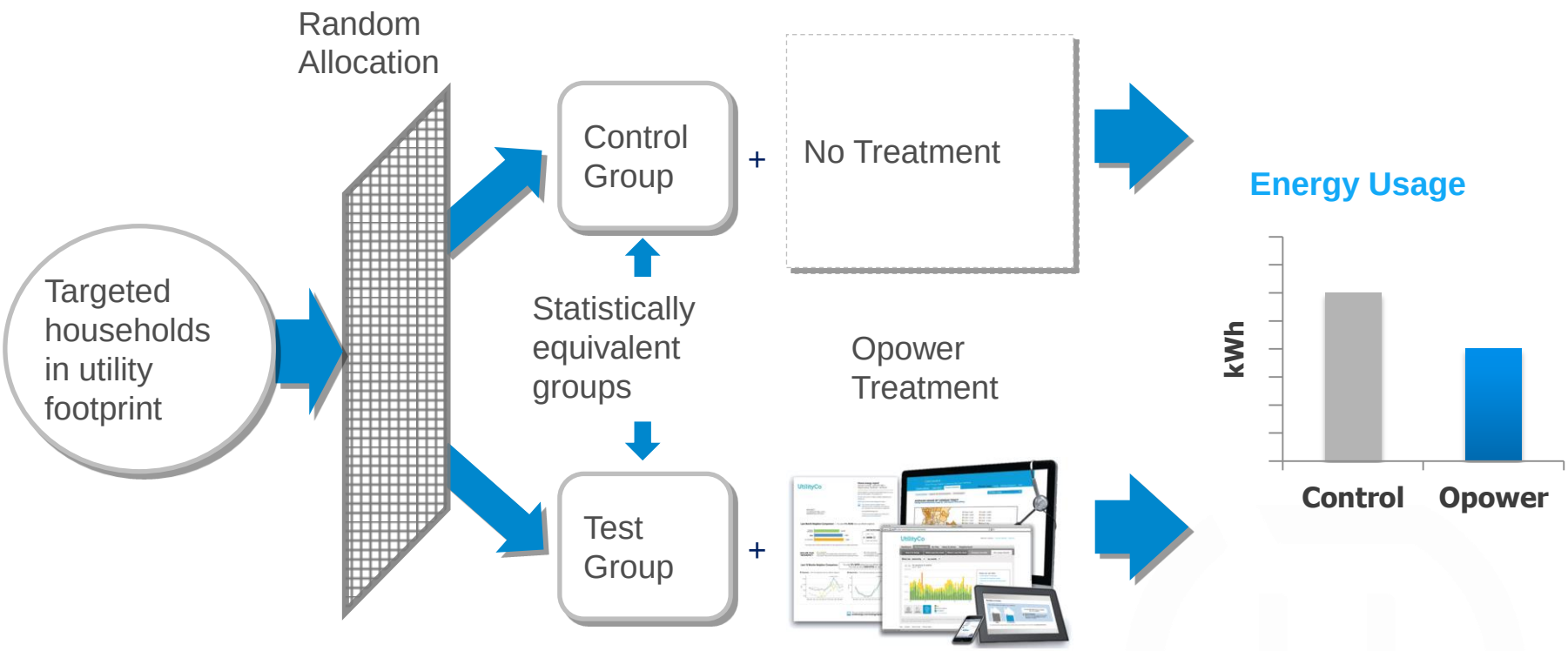
OPOWER

Opower is an approved EE resource in 35 states



Opower approved as an EE Resource (35)

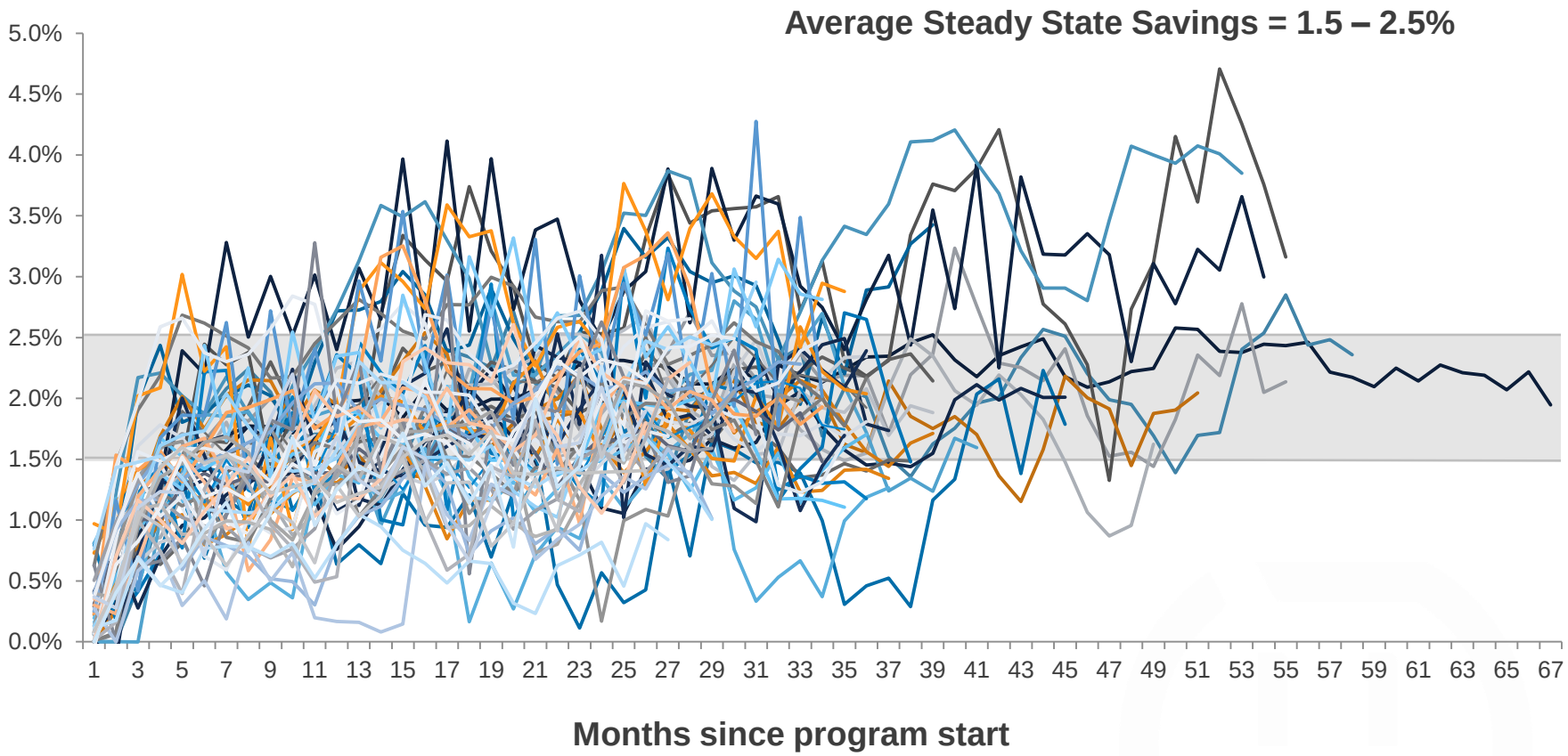
Behavioral EE: RCT + Opt-Out Program Design= Scalable, Unbiased Results

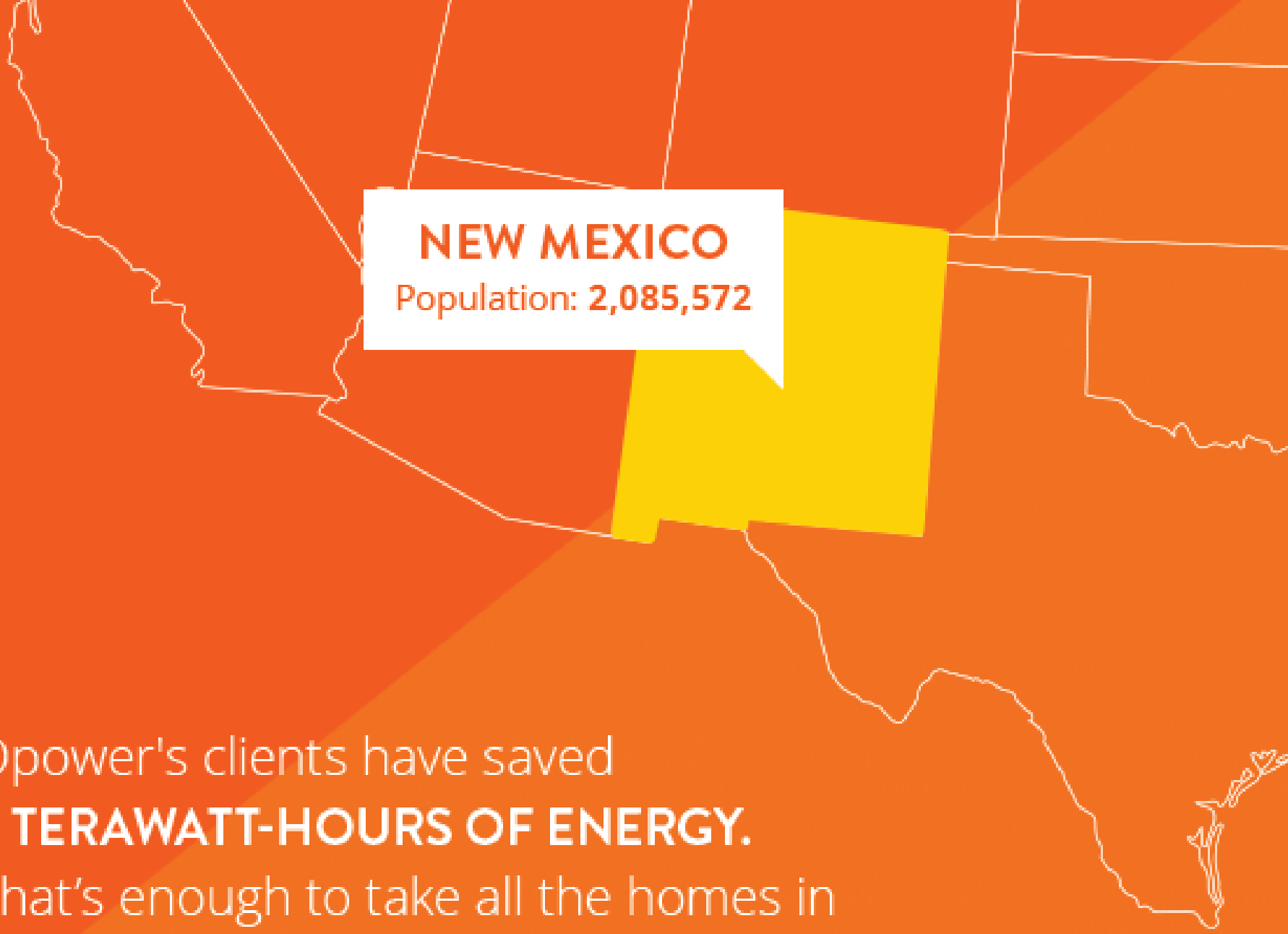


Large-Scale Data Analysis

- Follows experimental design blueprint
- Clearly isolates impact of reports
- Follows NAPEE guidelines
- Endorsed by ACEEE, DOE
- Used in PUC filings in dozens of states

More than 250 program years of savings





Opower's clients have saved
8 TERAWATT-HOURS OF ENERGY.
That's enough to take all the homes in
NEW MEXICO OFF THE GRID FOR A FULL YEAR.

BDR M&V Step 1: Customer-Level Regression Baselines

Measures difference in treatment and control household usage during event hours in conditional on:

Recent hourly customer usage
Usage during event hours in the same day of the week in four weeks prior to BDR season

Hourly usage in the same month last year (when available)
Usage during event hours in the same day of the week of the same month last year

Average seasonal usage
Average summer, winter, and annual usage in the year prior to the BDR season

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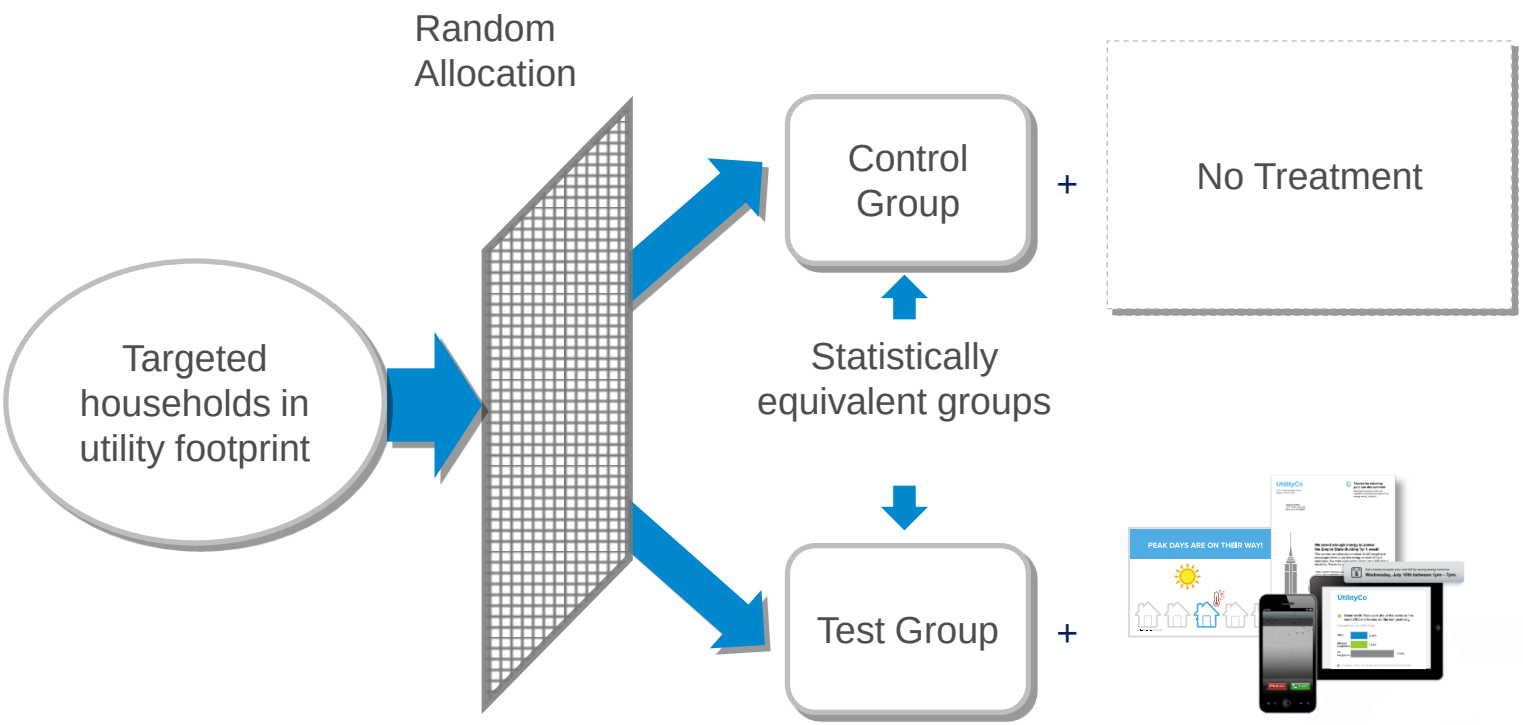
BDR M&V Step 2: Randomized Controlled Trial



Large-Scale Data Analysis

- Follows experimental design blueprint
- Clearly isolates impact of BDR
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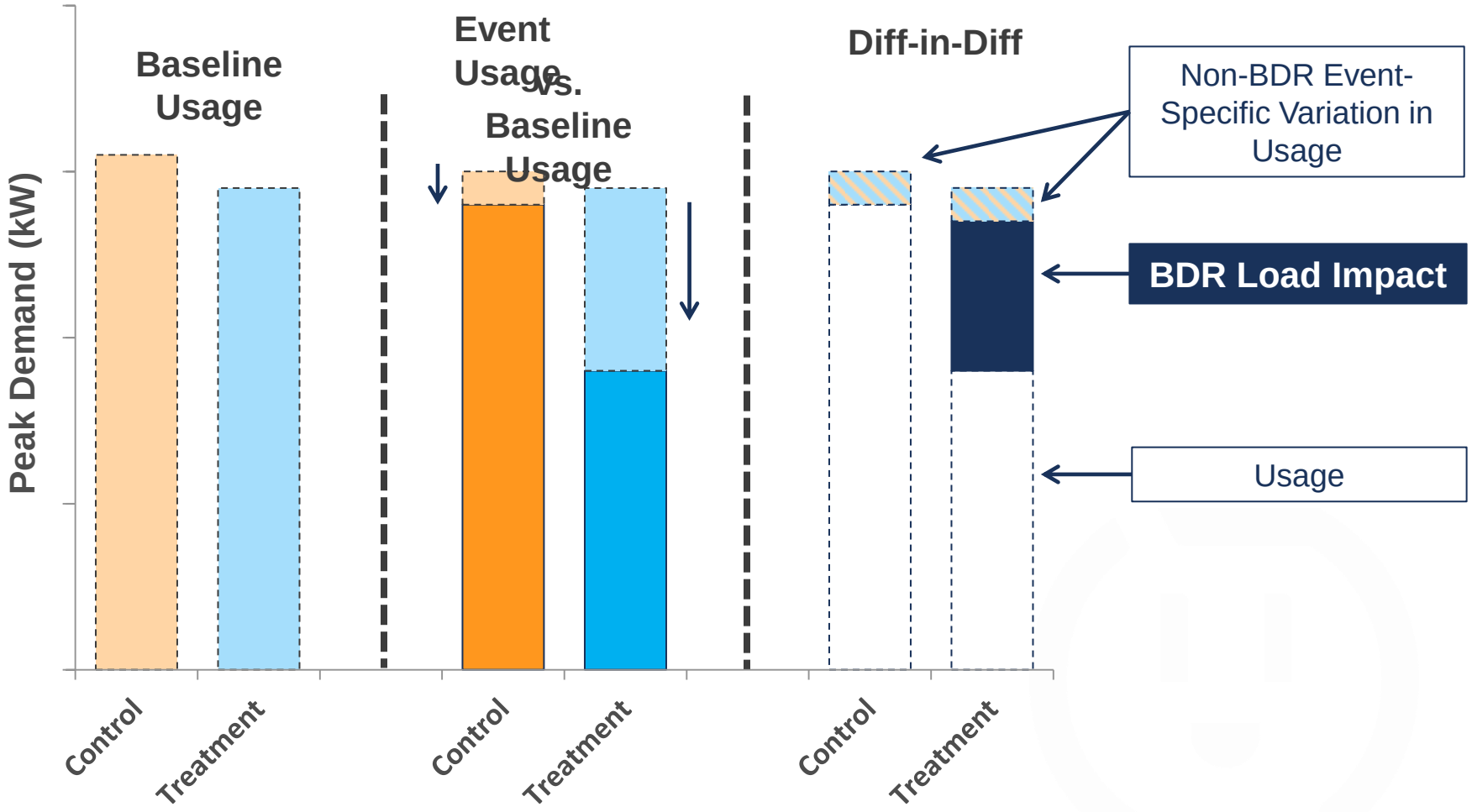
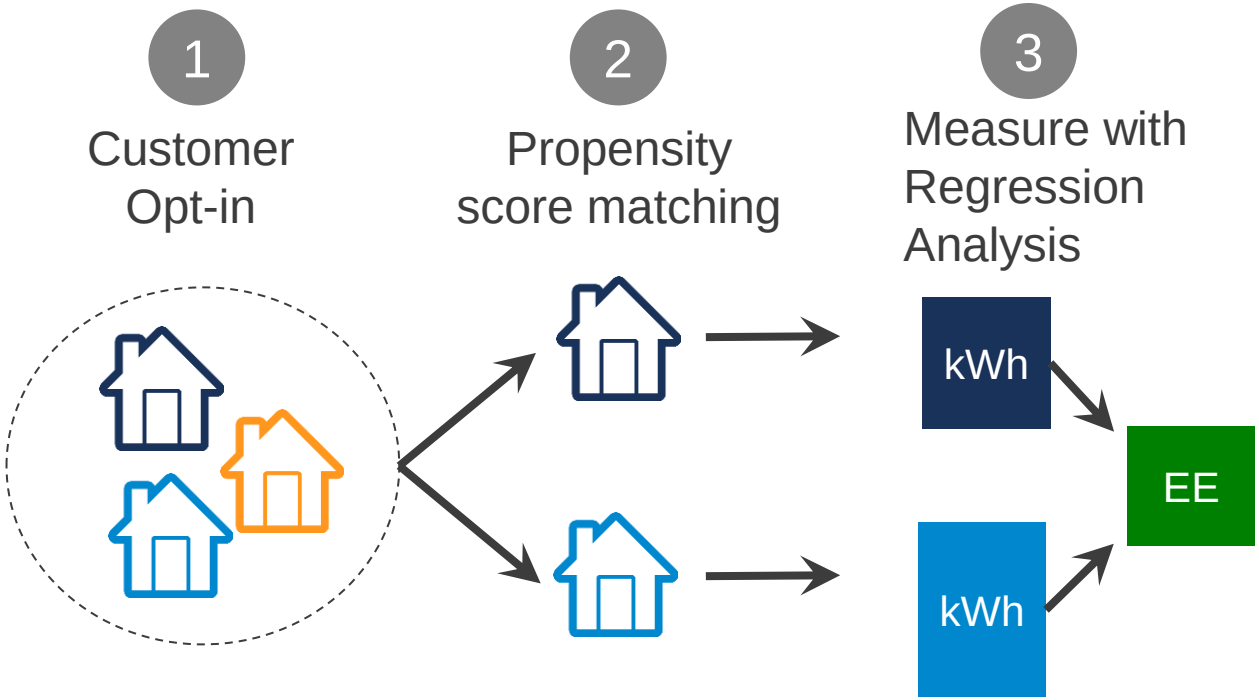
Behavioral DR: Combining RCT with Baseline Usage in a Simple Diff-in-Diff Model



Web EM&V: Propensity Score Matching



Data to match

- Electricity usage in each 12 months prior to web opt-in
- Customer tenure
- Flags for recip/control in each HER wave

Web Opt-in **Treatment**

Highly similar **Control**

Dissimilar **Excluded**