One Way or Another: Using One Program to Generate Energy and Water Savings in Multi-Family Complexes

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Today’s Presentation

• Introducing the 10-10-10 Multi-Family Program
• Challenges (and victories) in developing valid population and setting up experimental design
• Status of the program
The 10-10-10+ Multi-Family Program

Program Overview

• Behavior Intervention Pilot – focuses on influencing multi-family complexes to reduce consumption of:

   Electricity by 10% + Gas by 10% + Water usage by 10%+

   ▪ Use multiple behavior-change strategies
   ▪ Experimental design to test effectiveness
   ▪ Target both property managers/owners and tenants
   ▪ Partnership of electric, gas, and water agencies

• Benchmarking – developed an aggregation approach that can benchmark independently or upload data to EPA’s Energy Star Portfolio Manager
A Multi-Everything Program

in Southern California

• Multi-partner: 1 electric, 1 gas, and 3 water providers
• Multi-family: Engage both property managers/owners and tenants
• Utilize a combination of behavior change interventions
• Opt-in and Opt-out participant groups
Behavior Intervention Strategies
Multiple Opportunities for Property Manager and Tenant Engagement

• Feedback/Benchmarking
  ▪ Quarterly Letter to Managers – Comparative Energy & Water Use for entire complex

• On-site Marketing – Tenant Tips, Newsletters, Customized

• Competitions
  ▪ Complex to Complex
  ▪ City to City

• Commitment
  ▪ Commit to 10% savings goals

• Rewards
  ▪ Awards to complexes with highest energy reductions
Multiple Participant (Treatment) Groups

Randomized Control Trial (RCT) Experimental Design

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<th>Treatment</th>
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<td>Treatment Group 1</td>
<td>360 Complexes</td>
<td>Behavior Messaging to Complex Property Managers</td>
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<td>Treatment Group 2</td>
<td>360 Complexes</td>
<td>Behavior Messaging Letter + Onsite Marketing to Tenants</td>
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<td>Control Group</td>
<td>360 Complexes</td>
<td>No Treatment</td>
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Developing the Eligible Population

*Harder Than You’d Guess*

- Identify what addresses might be MF complexes
- Roll up multiple parcels/addresses to complexes
- Aggregate tenant and common area accounts to the complex level
- Match up electric and gas populations
- Find and integrate water accounts in eligible population complexes

| 19,995 | 4,071 | 2,354 |
| Complexes in target area | 15+ units & >= 1 electric account | Eligible Population |
A Look at the Eligible Population

*Geographic Distribution of Complexes by zip code*

- From 4,071 plausible complexes, confidently matched 2,354 complexes in geographically contained area
- 175 complexes (in green) of the 2,354 have water identified water accounts
Plans for the Experimental Design

Anticipated Sampling Strategy

For the sample:
- Include all complexes with cleaned data available for all 3 resources
- Limit to a manageable geographic area

Sample
- 2 Treatment groups
- 1 Control group

Pilot Program Eligibility = All MF Complexes must have mapped electric/gas accounts and 15-100 tenant units
Sampling for RCT Experimental Design

*Actual Sampling Strategy*

- Use the entire eligible population as our sample – 2,354 complexes
  - 650 complexes for Treatment 1 (benchmark/usage reports via mail) Opt-out
    - This gives an excellent buffer in case we see smaller than expected savings
  - 650 complexes for Treatment 2 (reports + on-site/repeat contacts) Opt-in
    - Actual participation target is 390, the larger starting sample gives us room for a lower compliance rate than expected
  - Remainder (1,054 complexes) for Control group
- Two dimensional energy stratification + a water stratum for optimal electric, gas, and water savings capture
From Planning to Action

*Refinements Maximize Opportunities for Engagement and Savings*

• Send the relatively low-cost reports to reach more T1 participants than originally planned → max exposure & ensure measurability of minimum savings

• Create large group from which to recruit T2 participants → flexibility to adjust for opt-in take rate
  - Recruit T2 group in geographically contiguous neighborhoods to minimize cost
  - Recruit until the target participation numbers are reached, then stop
  - T2 treatments will engage both property managers & tenants
Conclusions & Program Status

*Take-aways about multi-everything program development*

- It’s possible to obtain and integrate data from different electric, gas, and water providers who want to work together.
- Aggregation for benchmarking and comparative feedback is hard and time-consuming.
- Even with strict matching rules, can develop and populate a meaningful and evaluable experimental design.

*Vanguard program for energy & water users in multi-family complexes almost ready for launch*

- Report and competition designs nearing completion
- Recruitment about to start; anticipate will take several months to recruit Opt-Ins
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