What Makes a Difference?
Getting the Most from an On-line Audit & Feedback Program

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What You’ll Learn Today

• About Oklahoma Gas & Electric’s Custom Energy Reports program
• Objectives of the study
• Analysis approach
• Overall program effects
• What aspects of the program design & delivery make a difference in its effectiveness and/or could improve it
Custom Energy Reports (CER) Program

Program overview

- Web-based energy use audit and report(s), customized for homes in Oklahoma
- Designed to help OG&E’s residents reduce energy use by providing information
- Opt-in program, open to all residential customers
- More than 23K participants since 2008
- Program has undergone changes over time
  - Periodic promotional campaigns
  - On-site to on-line audits
  - Paper to on-line reports
About This Study

Purpose:
• Help OG&E decide whether to claim savings and/or modify program delivery
• Obtain indicators rather than specific savings estimates

Research Questions:
• Has the CER program had an impact on electricity use?
• Do the savings vary by program year?
• What is the nature of that impact across months since enrollment?
• What do customers say about their actions & satisfaction?
Approach We Used

• Participant surveys
  o 111 participants via phone and on-line
  o Used to assess satisfaction and identify actions taken

• Fixed-effects regression models
  o Multi-year model to determine overall savings
  o Separate models to compare results by program year & pattern of savings over months since report received

• Sample Frame
  o 23,176 participants with at least one year of pre- and post-participation billing data
  o Participation 2008 through 2012
Savings Model Specification
Regression Analysis

• Participant data only (own control group)
• Dependent variable: 30-day normalized monthly kWh
• 12 months pre- thru 12 months post-participation bills
• Simple specification
  o Weather
  o Monthly dummies
  o Customer-specific constant
  o Participation dummy
Overall Program Results

- Statistically significant per-participant savings of 13.0 kWh per-month, 1.3% of baseline use
- Participation and results vary a lot by participation year
  - Participation highest in years with active promotion
  - Savings estimates most significant and credible in years with high participation
- Vast majority took 1 audit and report; 3% of participants asked for more than 1 report
- 67% of surveyed participants said they took action after receiving the recommendations

![Pie chart showing 33% Took action and 67% No action taken]
Savings Vary Across Program Years

Results

- Savings estimates significant and reasonable in years with most participants
- Savings not reliably measurable, by this method, in low-participation years

Average Per-Participant Savings by Participation Year

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Monthly Savings (kWh)</strong></td>
<td>16.303</td>
<td>15.442</td>
<td>27.286</td>
<td>3.399</td>
<td>59.370</td>
</tr>
<tr>
<td><strong>Savings % of Usage</strong></td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.9%</td>
<td>0.2%</td>
<td>4.0%</td>
</tr>
<tr>
<td><strong>Statistical significance</strong></td>
<td>**</td>
<td>**</td>
<td>*</td>
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<tr>
<td><strong>Number of Participants</strong></td>
<td>7,519</td>
<td>14,240</td>
<td>458</td>
<td>261</td>
<td>156</td>
</tr>
</tbody>
</table>

** 95% confidence  * 90% confidence
Savings Vary Within Program Year

Results

- Statistically significant savings in 8 of 12 months, in program years with promotional campaigns & many participants
- No savings until 2 months after enrollment, all years
- Degradation pattern visible

Average Monthly Savings, PY 2009 Participants
Marketing Matters A Lot
Results

- 93% of enrollment occurred during mail campaigns

Oct 2007-Sep 2009:

310,000 pieces of direct mail sent

260,000 more with more marketing materials

21,556 customers enrolled then
Actions Participants Reported Taking

Immediate Actions

- Lighting usage and temperature adjustments most common (among those who took action)
Actions Participants Reported Taking

Longer-Term Actions

- Almost 80% said they took longer-term actions
- Light bulbs and HVAC tune-up most common
Customer Satisfaction
Survey Results

• About 65% of participants said Custom Energy Report was *extremely* useful; 13% said not useful
• More than 80% rated satisfaction with OG&E very high
• Customer recommendations for program improvement:
  o Provide more customer-specific info in reports
  o Have utility rep follow up on recommendations
  o Offer a phone app with the recommendations
  o Almost half would like opportunity to set energy saving goals for their household and to receive regular emails or direct mail encouraging them to reach those goals
Summary of Findings

• **Savings?** Yes, this opt-in audit/feedback program has generated energy savings, and of the same magnitude as many opt-out programs

• **Patterns?** Savings vary considerably by program year (promotion level) and across months within each year

• **Customer Satisfaction?** Customers value the information; would like more, and more active, interaction with both the program and the utility
Conclusions and Recommendations

1. Strong promotion matters a lot for opt-in program. Marketing has had a positive impact on both enrollment and savings. And high participation seems necessary for reliable estimation of savings.

2. Follow-up information may help customers maintain savings. Participants said they would like more feedback about their energy use and ways in which they could save.

3. On-line delivery of reports makes sense. Setting default option for reports to web access matches trends in customer preferences, probably saves money, and can also facilitate the tracking of previous recommendations.