

Home Energy Feedback Devices

NEUAC Conference 2009
Kate Scott





In-home feedback displays





Blue Line PowerCost™ Monitor



- Low-cost
- Self-installed



Survey groups

Wanted to test and compare two potential program design models

Direct-install:

Home Energy Review group

- Received monitor at no cost during HER
- Reviewer performs installation and explains device
- Sample stratified by region, age of home and primary heat source
- Sample size: 200

Self-install:

Early Adopter group

- Purchased monitor online for \$29.99
- Self-installed the device
- Device pre-programmed with customer's utility rates
- Sample stratified by region
- Sample size: 170



The study

- Two surveys
 - First survey after monitor installed for one week
 - Second survey after 6 months
- Non-participant survey to create baseline
- Pre and post billing data analysis

First survey:
Home Energy Review
group



- Response rate 89%
- Became familiar with unit quickly
- Look at unit often
- High satisfaction rates
- Low willingness to pay
- 87% would recommend to a friend
- 71% believe that they have reduced energy consumption as a result of having this device

First survey:
Early Adopter group



- Response rate 78%
- Overall, set up went quickly
- Some had difficulty with installation and/or programming display unit
- Look at monitor often
- High satisfaction rates
- Low willingness to pay
- 84% would recommend to a friend
- 58% believe that they have reduced energy consumption as a result of having this device

Second survey



HER and EA groups

- Who was still using the monitor?
 - 64--66% still using the monitor
 - 20--27% said monitor was no longer functional
 - 8--14% said monitor is functional but they are no longer using it
- For those still using monitor, the majority are still checking often
- Majority believe monitor has changed their use of energy
- High satisfaction rates for those still using
- Majority would recommend to a friend

Participant feedback



Likes and dislikes

- Features participants noted as most useful:
 - Instantaneous Consumption
 - Instantaneous Costs
 - Also liked temperature and clock functions
- Primary suggestions for improvements:
 - Simplification of programming
 - Computer interface (for tracking trends)
 - Sensitivity—doesn't read usage below .3kW
 - Signal strength
 - Battery life (re-programming after battery change also a concern)
 - Ability to pinpoint end uses (specific appliances)



Other suggestions

- Natural gas meter
- Reset along with monthly meter reading to sync with electricity bill
- Great tool for teaching children/family
- Most valuable knowledge gained in first few months—many suggestions to pass on to friends or distribute on a borrowed basis
- Alarm during high-usage or self-set goals
- Indoor temperature gauge
- Wanted more tips on how to save energy and how to use monitor to reduce energy consumption



Conclusions

- May or may not result in direct energy savings—for all households (including control group) energy consumption slightly declined
- Other valuable components to consider
 - Education
 - Encouragement to do other energy conservation measures
 - Heightened awareness of energy usage
- Most technology is not quite there--but lots to explore/develop



Thank you!

For more information contact:

kate.scott@energytrust.org

503-459-4079