Behavioral Economics in Practice
Mickey Lee, Project Manager
MBA BPI
Portland Oregon

With background support from
Reema Vashi, Sr. Project Manager, Multifamily Division
Energy Trust of Oregon
MPower Oregon

Application → Screening → Energy Assessment → Scope of Work → Efficiency Services → Construction → Immediate Savings
MPower Project Pipeline 2014-2015
3256 Homes

Delivering savings where it matters most. MPower will help affordable housing communities throughout the state of Oregon save an estimated 20% or more on utility bills.
City of Portland population = 650,000
Affordable housing units in the state = 650,000
Committed Owners and Sponsors
housing
Affordable vs. Market rate

**Common Barriers**
- Lack of Info
- Lack of Control
- Owner pays some if not all utilities

**Unique Barriers**
- Basic needs are primary
- Trust is king
- Technology can be a challenge
- Language

**Helpful Traits**
- Larger sense of community
- Naturally keep costs down based on scarcity when paying own bills
Stages of Engagement

- Gain trust
Stages of Engagement

- Gain trust
- Educate
Stages of Engagement

- Gain trust
- Educate
- Incentivize
Stages of Engagement

- Gain trust
- Educate
- Incentivize
- Take Action and Commit
Working with Owners
Assess
Inform & Install
Monitor
Assess

Owner/sponsor representative can choose which programs to focus on and get more in-depth than the following examples.
ENERGY

Do you have the ability to control the temperature in your home?  O Yes  O No

If you answered “yes” to the question above, in the winter what temperature do you typically keep you home at?  _______

Do you turn off your air conditioner when you leave your home?  O Yes  O No  O N/A

What forms of transportation do you use most to get around?  *(check all that apply for work, home, fun)*

O Car
O Train
O Motorcycle
O Subway
O Bike
O Bus

Other forms of transport:  ______________________________________

WATER

Do you notify property maintenance staff of leaky faucets and toilets?  O Yes  O No

Are you interested in faucet fixtures that use less water?  O Yes  O No

Do you turn off the faucet when you brush your teeth?  O Yes  O No
RECYCLING

How familiar are you with your city or town's recycling requirements?
- Very familiar
- Somewhat familiar
- Not at all familiar

Which of these do you recycle?
- Metal
- Plastic
- Paper
- None

How many disposable plastic bottles do you estimate you use each week? ______

HEALTHY LIVING

Are you interested in learning about non-toxic cleaning products?
- Yes
- No

Are you interested in learning about strategies to eliminate pests without the use of harmful chemicals?
- Yes
- No

Are you interested in learning more about healthy food, gardening and other activities?
- Yes
- No
Culture and Sense of Place

- Do you feel safe? If not what would make you feel safer?

- Energy reduction is important to all of us for different reasons. Why is it important to you and how does your family work to save energy?

- What would you change about your community if you could and why?
Hands On Tools

- Niagara Conservation Shower Coach 5 Minute Shower Timer
- Save Our Sea Ice
- Save Energy
  - Turn off lights when not in use
Monitor

wegowise

Detailed Data per Month (Deselect All)
Click a square to show or hide an item on the graph

Click & drag to zoom in

- 331x509
- 792.0x612.0
Tenant Engagement and Installation of Sub-metering Case Study
## Results

### 2011-2013

<table>
<thead>
<tr>
<th></th>
<th>CCF's p/day</th>
<th>% difference from 2011 to 2012</th>
<th>% difference from 2012 to 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>5.5</td>
<td>3.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Feb</td>
<td>5.6</td>
<td>3.7</td>
<td>3.1</td>
</tr>
<tr>
<td>Mar</td>
<td>5.6</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Apr</td>
<td>5.5</td>
<td>3.7</td>
<td>3.8</td>
</tr>
<tr>
<td>May</td>
<td>6.9</td>
<td>3.0</td>
<td>3.4</td>
</tr>
<tr>
<td>June</td>
<td>5.8</td>
<td>2.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Jul</td>
<td>6.2</td>
<td>2.9</td>
<td>5.3</td>
</tr>
<tr>
<td>Aug</td>
<td>6.2</td>
<td>2.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Sept</td>
<td>5.4</td>
<td>3.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Oct</td>
<td>5.1</td>
<td>3.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Nov</td>
<td>3.8</td>
<td>2.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Dec</td>
<td>3.5</td>
<td>2.7</td>
<td></td>
</tr>
</tbody>
</table>

Measured only Feb-Nov for all 3 years.

- **Sub meters installed**: 39% Difference after install yet b4 toilets installed.
- **Low flow toilets installed**: 14% additional difference after install yet b4 irrigation
- **Irrigation split installed**: -30% Difference after install due to "neighbor borrowing"
Same Property
Overall Savings from 2011 - 2013
Next property, same owner, anything different?
Next property, same owner, anything different?

- 70 units
- Language barrier
- Cultural differences – large families
- Water water water
- 6+ month install
- Carrot – washers
Advanced Notice
Tenants told in late May early June

- May
- June
- July
- Aug
- Sep
- Oct
Property Projections

15 Year Utility Cost and Savings Cash Flow

- Pre Retrofit
- Post Retrofit
- Debt Service
- Savings
Projected savings for Tenants

15 Year Utility Cost and Savings Cash Flow

- Pre-Retrofit
- Post-Retrofit
- Debt Service
- Savings
Applying Behavioral Economics for Underserved Communities

Common Mistake: In the effort to *deeply* understand our customers, we often *lose focus* of what we are really trying to accomplish.

**Market Barriers**
- Lack of Capital
- Lack of Education & Info
- Complex Processes and Forms
- Cultural or Language Barriers
- Lack of Resources

**Cognitive Barriers**
- Lack of Self Control
- Future Discounting
- Decoy Effect & Framing
- Choice Overload
- Social Norming

Program, Technology, Tools & Interventions vs. Design Techniques, Positioning, & Graphics
Contact Info

MPowerOregon
Mickey Lee
mickeyl@mpoweroregon.com
503.501.5543

Energy Trust of Oregon
Reema Vashi
reema.vashi@lmco.com
503.278.3076