On-Bill Financing Spurs Water and Energy Retrofits

Thursday, July 18th 2013
10:00am-11:00am PDT/1:00pm-3:00pm EDT

Speakers:

Bill Blair: How$martKY™ Program Coordinator, Mountain Association for Community Economic Development

Lauren Casey: Climate Protection Program Manager, Sonoma County Regional Climate Protection Authority

Energy Efficiency for Everyone
How$martKY™

Energy Efficiency for Everyone

On-Bill Financing
What is How$martKY?

It is an on-bill financing program designed to use energy savings to pay for energy efficiency improvements to a customer’s residence. The cost of the improvements appear on the customer’s electric bill over time.

It is an investment in the Electric Meter by the utility and is not a personal loan to the customer. It does not affect the participating customer’s credit.
The Four Rural Electric Co-Ops Involved in this Pilot

Electric Distribution Service Areas

PSC Regulated Rural Electric Utilities
- Big Sandy RECC
- Blue Grass Energy Cooperative
- Clark Energy Cooperative
- Cumberland Valley Electric
- Farmers RECC
- Fleming-Mason Energy Cooperative
- Grayson RECC
- Inter-County Energy Cooperative
- Jackson Energy Cooperative
- Jackson Purchase Energy Corporation
- Kenergy Corporation
- Licking Valley RECC
- Meade County RECC
- Nitro RECC
- Owen Electric Cooperative
- Salt River Electric Cooperative
- Shelby Energy Cooperative
- South Kentucky RECC
- Taylor County RECC

PSC Regulated Investor Owned Utilities
- American Electric Power (AEP)
- Duke Energy Kentucky, Inc.
- Kentucky Utilities Company (KU)
- Louisville Gas and Electric Company (LG&E)

TVA Regulated Utilities
- Hickman-Pulaski Counties RECC
- Pennyville RECC
- Tri-County REMC
- Warren RECC
- TVA West Kentucky RECC

Multi-Service Areas
- Jackson Energy Cooperative & KU
- Meade County RECC & LG&E
- Municipal Utilities

Kentucky Public Service Commission, July 14, 2009

Kentucky has 30 municipal systems serving over 300,000 customers. Twelve of these are provided wholesale power by the Tennessee Valley Authority (TVA) and are regulated by them. The others are self-regulated by the municipality. The boundaries for the municipal systems were either derived from the Public Service Commission’s certified service maps, or from boundaries submitted for informational purposes to the PSC from the municipals. If the municipal service area boundaries were unknown, a circle was placed around the urbanized area.
1. Customer wants to save money on utility bill.

2. Utility determines best upgrade package that can be financed out of projected savings.

3. Utility oversees efficiency upgrades at no upfront cost to customer.

4. As part of utility service, the meter is assigned a fixed monthly charge to pay off the upgrade.
**Example 1**

Double Wide Mobile Home with Electric Furnace Replaced with an Energy Efficient Heat Pump

<table>
<thead>
<tr>
<th>Cost of Improvements</th>
<th>Rebates &amp; Incentives</th>
<th>Project Fees @ 3% over 15 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7,350</td>
<td>-1,970</td>
<td>$5,649</td>
</tr>
<tr>
<td></td>
<td></td>
<td>= $39/mo</td>
</tr>
</tbody>
</table>

Projected 6061 kwh/yr savings  

- $39/mo  
- $12/mo  

Avg. reduction  

Fixed charge  

Immediate savings
Example 2

Single-story home with improperly sized Heat Pump receiving additional insulation & air sealing

$12,067 Cost of Improvements
- $2,000 Rebates & Incentives

$10,067 + 5%

$10,570 @ 3% over 15 yrs = $73/mo

Projected 7979 kwh/yr savings → $103/mo Avg. reduction
- $73/mo Fixed charge
  - $30/mo Immediate savings
## Status Report

<table>
<thead>
<tr>
<th>Status To Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In Process</td>
<td>12</td>
</tr>
<tr>
<td>Completed Retrofits</td>
<td>123</td>
</tr>
</tbody>
</table>

237 Energy Assessments have been completed.
Program Stats

- Average Projected Yearly Electric Savings: 4808 kWh
- Average Projected Monthly Electric Cost Savings Per House: $45.00
- Average How$martKY Monthly Charge per Retrofit: $35.80
- Average Job Cost Thus Far: $7,000
- % of Participating Households that are LMI: 48%
Investment in Housing Stock

Total dollars spent on all households: $827,755

Total dollars spent at LMI households: $369,268

Capital deployed: $603,167

Capital deployed to LMI: $272,002

The gap has been filled by buy-downs and rebates.
Comparison Results - Single Family Home

Estimated Savings: $44
Average Monthly Savings: $52; the on-bill financing charge: $22
Weather Normalized Savings of: 31%
Comparison Results - Double Wide Home

Estimated Savings: $55
Average Monthly Savings: $146; the on-bill financing charge: $30
Weather Normalized Savings: 69%
kWh Savings & Behavioral Change

Estimated Savings: $25
Average Monthly Savings: $35; the on-bill financing charge: $18
Weather Normalized Savings: 28%
Lessons Learned During The How$mart KY On-Bill Financing Pilot Program
Biggest Lesson: How To Do It Wrong

- Ask the Wrong Question
- Use the Wrong Data (Assume)

SURPRISE!!
How To Do It Wrong

ENERGY CONSERVATION
You're Doing It Wrong
Lack of Information = Unpleasant Surprises

People turn down the thermostat to save money.

But they don’t realize that their behavior is actually costing them *more* money.
Lessons Learned From The Pilot

- Efficiency Is Cheap
- Efficiency CAN Pay For Itself
- Each Home is Absolutely Unique
- Where We Should Invest Our Money
- Incentives Really Drive Participation. So Do Heat Pumps!
Efficiency Is Cheap! For Example:

An average house would need 104 solar panels to offset its energy use, at a cost of $125,000 before incentives.

An efficient house (75% better than code) would need 26 panels at a cost of $31,000 before incentives.

The total cost to build the efficient home is about half the other.
Bang For Your Buck – Air Sealing

Infiltration and exfiltration is more important than windows, doors, insulation or HVAC equipment.

Labor-intensive, detail-oriented air sealing using inexpensive materials has a better payback than any other improvement.

Effective air sealing - even expensive spray foam - generally has a better payback than most other upgrades.
Air Sealing and Duct Sealing Pay for the Bling

- Savings From Air Sealing
- Savings From Duct Sealing

Money to Pay for Heat Pump or Insulation
Each Home is Unique – Never Assume!

There are many variables, so do the math!
Each Home is Unique – Ask Questions

- Are some parts of the home more difficult to heat and cool?
- Where do you feel the least comfortable?
- Do any of your doors and windows feel drafty?
- Do you like to adjust the thermostat frequently?
- What do you want to accomplish with this audit?
Where Should We Invest Our Money?

- Upgrading Insulation
- Installing Insulation
- HVAC Equipment
- Programmable Thermostats
- Air/Duct Sealing

These are general results. Always do the math!
Efficiency is an Investment.

- Energy Efficiency
- Other Upgrades

- Savings
- Comfort
- Durability
- Lower Carrying Costs

- Lower Comfort
- Less Durability
- Higher Carrying Costs

Most Other Expenditures Don’t Pay You Back!
Quotes From Happy Customers

Fleming Mason Energy

“After the work was done, our house was the warmest it has been in 24 years. And the air-conditioning is great, too. I truly appreciate all the work and wish we could have done it sooner.”

Big Sandy RECC

“Having had the work done, living in our house is like going from dark to daylight. Our home is so much more comfortable. We’ve used the heat and the A/C already because of the warm spring, and we couldn’t be happier.”
Lessons Learned From Our Energy Advisors

Tina Preece
“If the customers hate each other, don’t make the investment.”

Bruce Aaron Davis
“Woolery will take care of it.”

Mary Beth Nance
“Make sure you get ALL of the paperwork signed.”
Other Lessons

Data that isn’t analyzed is a wasted resource.

Periodically document and reflect upon the lessons you are learning.

Regularly review the lessons you have already learned.

That way you won’t forget to apply them!
Acknowledgements

Roy Honican
- “Complete the entire envelope.”
- Sorry, Roy’s very best quotes are NSFW.

Rick Hall
- “Prescription without diagnosis is malpractice. If you don’t test, you don’t know.”
The Next Phase of How$martKY

H$KY 2.0

We are working with three of our original four utility partners on creating a slightly tweaked program. We are adding a risk-mitigation fund to lessen the financial risk to the utility partners, funded by the retrofit project fees. We are also offering a full-service option that allows the utilities to let us conduct the program.

We are currently in the process of working with our partners and the Public Service Commission to get a permanent tariff approved.

We hope to get more interest this year from other utility partners.
What the Heck Did They Just Say?

The Floor Is Open for Your Questions and Comments.
Want More Information?

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Pay As You Save®

Tariffed On-Bill Financing System

Applied Solutions – On-Bill Financing Webinar

Lauren Casey
Sonoma County Regional Climate Protection Authority
July 18, 2013
Why Pay As You Save®?

• Rapidly increase customer participation
• Serve all types of customers (single and multi-family, owners and renters)
• Increase program effectiveness to meet or exceed program goals
• Free-up existing rebate funds for more strategic purposes
How PAYS® works

PAYS allows customers to pay for upgrades over time through a utility bill surcharge.

PAYS eliminates barriers that typically keep customers from purchasing energy and water efficiency measures.

How much does it cost?

What if I move?

Will it save me money?
How PAYS® removes barriers

Enables participants to purchase measures with:

• No upfront payments, credit checks, liens, or debt obligations
• The assurance that surcharge is lower than estimated savings
• A guarantee that they will pay only while they remain at the location
• The promise that failed measures will be repaired or payment obligation will end
How PAYS® works

The PAYS® Financing Model

- **Capital Provider**: Supplies funds to pay for contractors.
- **Utility**: Sends amount billed regardless of collections. Pays surcharge with water bill.
- **Certification Agent**: Pays for completed work.
- **Certified Contractor**: Installs program measures.
- **Customer**: Receives energy efficiency measures.

Reduce energy use. Save money. Create jobs.
BASIC
High efficiency toilets, showerheads, aerators

BASIC PLUS
CFLs, high-efficiency clothes washer, standard dry-summer, drought-tolerant landscaping

CO-PAY (requires upfront cost):
On-demand hot water recirculation pumps, enhanced landscaping, luxury clothes washers, matching dryers, high efficiency refrigerators
Windsor PAYS® Results

- In 7 months of field-operations has served 4% of all residential units
- Average savings of:
  - 10% of energy use
  - 20% of indoor water use
  - $15 per month in net utility costs
• Design created high offer acceptance rate
• Self-financing allowed for lost revenue amelioration
• Rate and billing modifications made for easier program roll out
• Rebate budget now pays for more advanced measures
• Contractors play important role in marketing
BayREN PAYS®

• Bay Area Regional Energy Network (BayREN)

• In scoping conversations with four municipal water utilities:
  – City of Hayward
  – East Bay Municipal Utility District
  – San Francisco Public Utilities Commission
  – Town of Windsor
More Information

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