Inclusive Financing for Energy Efficiency Upgrades

Harnessing the strength of a utility tariff to open the clean energy economy for all

Prepared for the National Energy & Utility Affordability Coalition
June 26, 2017

Holmes Hummel, PhD
Introduction to Inclusive Financing for Energy Efficiency

• Making the case for more inclusive solutions

• Inclusive financing through tariffed on-bill programs

• Field experience with inclusive financing based on PAYS®
Paying for cost effective efficiency upgrades

After all rebates and public funds are applied, customers face these options for the balance:

- Pay Cash
- Pay with Credit
- Decline the upgrades
Addressing first-cost barriers:
Addressing first-cost barriers:

Rebate

Upfront Cost

SAVINGS

Year 10
Addressing first-cost barriers with funding and financing:
“Are you a renter?”

“Do you have a good credit score?”

“Do you have solid income?”
Barriers to Financing in the Clean Energy Economy: Example - Property Ownership

More than \( \frac{1}{3} \) of all U.S. households are in homes they don’t own.

Source: U.S. Census Bureau, 2015
Inclusive financing for energy efficiency is reaching underserved market segments in the U.S.
Cooperative Leadership Matters

More than 90% of persistent poverty counties in the U.S. are served by electric cooperatives.

Rural communities are leading the way on inclusive financing, and are offering assistance.
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FINANCING INSTRUMENTS AFFECT ACCESS

FINANCING SECURED BY TARIFF

UTILITY

CUSTOMER

Clean Energy Works
**FINANCING INSTRUMENTS AFFECT ACCESS**

**UTILITY**

FINANCING SECURED BY **TARIFF**

**CUSTOMER**

Distributed Solution Providers typically **do not have tariff authority**

**CUSTOMER**

Loans, Leases and Liens are used instead

**DISTRIBUTED SOLUTION PROVIDERS**

Efficiency
Solar
Storage
Smart grid

...Yet barriers persist

Clean Energy Works
**PAY AS YOU SAVE® (PAYS®)**

PAYS offers all utility customers the option to access cost effective energy upgrades using a proven investment and cost recovery model that benefits both the customer and utility.

**ON-BILL COST RECOVERY TIED TO METER**

**PAY AS YOU SAVE® and PAYS® are trademarks of Energy Efficiency Institute, Inc.**
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PAYS® Offer –
Here’s how it works:

- Energy saving upgrades are installed in your home or building, and you pay nothing upfront. The utility pays for the installed energy solution.

- To recover its costs, the utility puts a fixed charge on your electric bill that is significantly less than the estimated energy savings from these upgrades.

- You have no loan, no lien, and no debt associated with this transaction; just lower utility bills and a more comfortable home.

- When the utility recovers its costs, your obligation to pay ends.

- If you leave this location sooner, or if an upgrade fails and is not repaired, your obligation to pay ends if you have followed your responsibilities.
Opt-in Tariff for On-Bill Energy Efficiency:
Approved by Utility Commissions in Kansas, Kentucky, and Arkansas

The model tariff here is based on the most recent filing, unanimously approved in Arkansas.

Pay As You Save® and PAYS® are trademarks of Energy Efficiency Institute, Inc.
Paying for cost effective efficiency upgrades

After all rebates and public funds are applied, the remaining balance yields these options:

- Pay Cash
- Pay on Credit
- Decline the upgrades
After all rebates and public funds are applied, the remaining balance yields these options:

- Pay Cash
- Pay on Credit
- Decline the upgrades

Inclusive financing offer

Loan

Markets

Capital

Billions

Millions

$ Thousands

Hundreds

Rebates

Public Funds

Rate-Payer or

Customers

Tariff

Utility

$ Billions

of low cost capital available

$ Hundreds

Billions

of low cost capital available

$ Millions

millions

annually

Investment

In upgrades

$ Per participant

Thousands

Paying for cost effective efficiency upgrades
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<table>
<thead>
<tr>
<th>Attributes</th>
<th>On-Bill Loan</th>
<th>PAYS® Tariff</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No upfront participant cost</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>• No credit or income qualification required</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Renters are eligible</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Estimated savings <strong>must exceed</strong> cost recovery charges by 20%</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Participant accepts an opt-in utility tariff <strong>tied to meter</strong></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Cost recovery is through a fixed charge on the utility bill</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>• Participant accepts tariff with disconnection for non-payment</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Payments end if upgrade fails and is not repaired</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>• Tariff remains in effect for subsequent customers at that location until cost recovery is complete</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Example Transaction:  

Single story home, upgraded with insulation, air sealing, and heat pump

- **Investment:** $10,000
- **Cost Recovery Period:** 15 years
- **Cost of Capital:** 3%
- **Estimated Savings:** $100 / month
- **Charge:** -$70 / month
- **Net Savings to Customer:** $30 / month, ~30% of savings
- **Energy Savings:** 8,000 kWh / year

Source: Briefing by MACED, the program operator for the How$mart KY program. This sample has conveniently round numbers; average investment size is ~$7500.
**PAY AS YOU SAVE® (PAYS®)**

### Comparison for building efficiency upgrades

<table>
<thead>
<tr>
<th>Category</th>
<th>Loans</th>
<th>PAYS®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Eligibility</td>
<td>50%</td>
<td>2X</td>
</tr>
<tr>
<td>Offer Accepted</td>
<td>~10%</td>
<td>5X</td>
</tr>
<tr>
<td>Deal Size</td>
<td>$3300</td>
<td>2X</td>
</tr>
<tr>
<td>Default Rate</td>
<td>0.3%</td>
<td>10X</td>
</tr>
</tbody>
</table>

Investment acceleration is a product of these multiples.

- No consumer loan, lien, or debt
- Reaches renters and low-income
- Higher uptake rates
- Deeper energy & carbon savings

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Result of switching to more inclusive financing: Surge in Investment

Comparing last (and best) 4 months of HELP (Loan) with first 4 months of HELP PAYS® (Tariff):

- **Doubled** customers seeking assessments, and *more than a third* were multi-family (compared to 0 previously).

- Among customers receiving assessments, **100% opt-in** for multi-family rental units, and >80% for single family.

- **Doubled** the scale of capital improvements from an average of $3000 to above $6000 to get deeper energy savings (~30%).

\[
\text{Double customers} \times \text{Double project size} =
\]

- **Quadrupled** investment, soaring from $225k to $1 million.


Ouachita Electric Cooperative
Example Investment Portfolio:

• **2,400+** efficiency assessments with offers to invest
• **1,400+** investments: More than half of customers say “Yes!”

• **~$5,700** per building, with co-payment from customer
• **$8+ million** invested
• Less than **0.1%** charge off

• **Annual Savings:**
  – **3.2 million kWh**
  – **386,000 therms**
  – **5,200 tons carbon**

Source: Midwest Energy, reporting results through August 2015
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Clean Energy WORKS