Getting Our Ducts in a Row: Using Evaluation Results to Create a Statewide Weatherization Program

Dr. Katherine Johnson, Johnson Consulting Group

2015 IEPEC Conference — Long Beach, California
Arkansas is Known For ...

The Clintons

The world corporation and biggest private employer in the world – 2 million employees; world’s largest retailer

And Energy Efficiency!
Collaboration in Arkansas

- Arkansas has made tremendous gains in a few years
- Now viewed as a major leader in energy efficiency in the Southeast
- These significant accomplishments are due to the hard work of the Parties Working Collaborative (PWC) established by the Arkansas Public Service Commission in 2006.
- The PWC members include the seven investor-owned gas and electric utilities, the Evaluation, Measurement & Verification (EM&V) contractors, program implementers, and intervenor groups.
Arkansas Public Service Commission Ordered a New Statewide Program

- Joint funding between electric and gas utilities for whole house energy assessment and energy efficiency services including auditing, insulation, and infiltration reduction features.
- Comprehensive technical standards following best practices with a single set of standards and coordinated with federally-funded weatherization services requirements.
- Offer financing mechanisms that encourage installation of multiple cost-effective measures and explore viability of current options in use, such as the Home Energy Affordability Loan (HEAL) program.
Commission Requirements (Continued)

- Eliminate duplication of programs that prevent trade allies to work together or create customer confusion.
- Active participation in the reorganization of Weatherization Assistance Program (WAP) to optimize its coordination with utility funded weatherization services and leverage available personnel and federal funding.
- Effectively market coordinated Electric and Gas utility weatherization services including the HEAL program.
Methodology

The PWC quickly engaged in a multi-step process designed to identify current strengths and weaknesses of the program models used in by the IOUs, and to identify weatherization best practices that could be incorporated into this new program approach that would meet the Commission’s overall objectives. Activities included:

- Review and compare current weatherization programs offered across the state;
- Review most recent EM&V program evaluations to identify strengths and weaknesses of these current program strategies;
- Conduct a gap analysis to identify gaps in current program delivery platforms; and
- Review weatherization “best practices” through a literature review.
Review EM&V Results

Key Findings

- The current Arkansas Weatherization Program (AWP) design is not effective.
- In contrast, a joint Weatherization Program offered by a natural gas utility, AOG, and an electric utility, OG&E, exceeded program energy & participation goals in PY2014.
- Several other Arkansas utilities are developing effective weatherization program offerings that could expand to be important components of a unified statewide approach.
- EM&V evaluations pointed out numerous opportunities for joint-utility program collaboration in Arkansas.
Review Current Program Designs

- The programs were specifically highlighted in Commission Order No. 7;
- The programs included an energy audit as part of the program offering; or
- The programs included cost-effective measures specifically designed to improve building envelopes, such as air sealing, duct sealing, or insulation
## Conduct a Gap Analysis

<table>
<thead>
<tr>
<th>GAP Analysis</th>
<th>AWP</th>
<th>AOG</th>
<th>Center Point</th>
<th>Empire</th>
<th>EAI</th>
<th>OG&amp;E</th>
<th>Source Gas</th>
<th>SWEPCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility Joint Collaboration</td>
<td>All Utilities</td>
<td>AOG WX</td>
<td>HEAL</td>
<td>Res. WX</td>
<td>HES</td>
<td>OG&amp;E WX</td>
<td>HES</td>
<td>HPWES</td>
</tr>
<tr>
<td>Dual Fuel Program Offerings</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Direct Install</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Comprehensive “Whole House” Approach</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Leverages National Brands</td>
<td>N/A</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Leverages Federal Funding Sources</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Leverages other Non-Federal Funding Programs</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

- Green - gap in current program offering
- ✔️ = Addressed in current program
- NA = not applicable for this program
## Review of Industry Best Practices

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scale through joint implementation</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Integrated marketing, efficiency measures</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Integrated and consistent training on program protocols, guidelines, installation best practices</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Standardized rebate levels</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Fuel-Blind Approach</td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Regular Communications with Key Stakeholders</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible platform to accommodate market changes</td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Key Program Elements

The key program elements of this approach are as follows:

- A *comprehensive assessment* of the customer’s home;
- *Direct installation* of immediate (low-cost) energy saving measures;
- *Installation* of a set of weatherization measures, including insulation and air sealing, based on the funding levels provided by the utilities; and
- *Management* of the contractors that deliver the home assessments and installations, requiring standardized protocols, energy assessment tools and quality control.
Core Measures

- Ceiling (Attic) Insulation
- Wall Insulation
- Air Infiltration
- Faucet Aerators (Direct Install)
- Low-Flow Showerheads (Direct Install)
- Advanced Power Strips (Electric Only-Direct Install)
- ENERGY STAR® (CFLs) (Electric Only-Direct Install)
- ENERGY STAR® LED (Electric Only-Direct Install)
- Duct Sealing
Other Utility Offerings (OUO)

- Central Air Conditioner Tune-Ups
- Window Film
- HVAC Equipment
- Window Repair
- Door Repair/Replacement
- Roofs-Minor Repair
Marketing/Outreach Activities
Conclusions

These activities led to the development of a statewide program with the following unifying elements:

- **Consistent approach** across all utilities to comprehensive audit for eligible customers;

- **Consistent contractor requirements** across all utilities such as the Building Performance Institute (BPI) or the Residential Energy Services Network (RESNET) and;

- **Ongoing coordination** by utilities and key stakeholders to monitor implementation, trouble-shoot problems and develop consistent solutions, review and recommend additional or substitute measures as technologies develop to ensure a consistent weatherization approach across the seven IOUs.
On December 9, 2014, the Commission unanimously approved the PWC’s recommended approach and directed that the IOUs to begin implementation of the Core Program in January 2016. Furthermore, the Commission provided the following summation of the PWC’s efforts:

- The Commission congratulates the PWC for its continued excellence in achieving the benefits offered by collaboration and commends the active participants in the PWC Weatherization Working Group and the Independent Evaluation Monitor for their work and service in the public interest of Arkansas (Commission Order No. 22, p. 11 of 13).
Acknowledgments & Thank Yous

- The authors would like to thank the members of the PWC, the program implementers and evaluators who assisted in the development of this consistent approach.
- The authors would also like to thank the Arkansas Public Service Commissioners Colette Honorable, Chairman, Olan W. Reeves, Commissioner, and Elana C. Wills, Commissioner, for their guidance and support of the PWC in pursuing energy efficiency in new and creative ways.
Contact Information

Dr. Katherine Johnson, President
Phone: 301 461 4865
Email: kjohnson@johnsonconsults.com
Website: www.johnsonconsults.com