

Successful Low-Income Energy Efficiency Programs

Achieving Deep Savings and Broad
Participation

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Energy affordability and access to energy efficiency services remain a problem for low- and moderate-income households

- Higher energy costs as a share of income than more affluent households
- Older and less efficient appliances, equipment, and homes
- Lack of discretionary capital to invest in energy efficiency measures
- For renters, the “split incentive” problem and lack of authority to make property modifications
- Utility programs have historically overlooked this sector

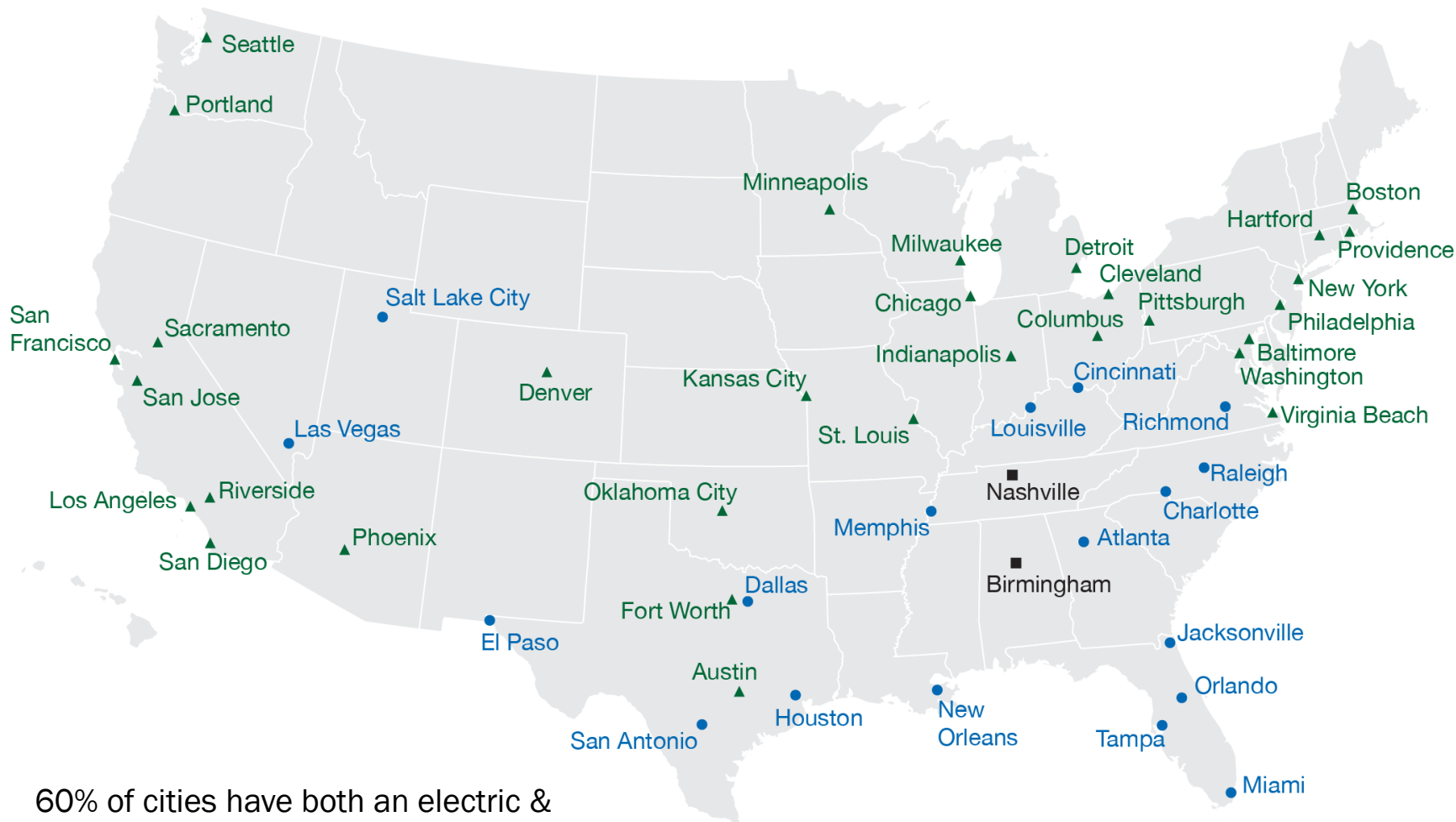
Multiple benefits of energy efficiency for low-income households

- **Lower monthly bills** (residents)
 - More disposable income, reduced stress, more money spent in the local economy
- **Improved housing** (residents)
 - Better health and safety, increased property value, lower maintenance costs, greater housing satisfaction
- **Local economic development** (community)
 - More local jobs, improved quality of life, increased property value
- **Less power used** (utilities and community)
 - Reduced environmental pollutants, improved public health, avoided excess costs of increased power generation, capacity, and transmission investments



Which low-income efficiency programs are high performers?

And what can we learn from them?

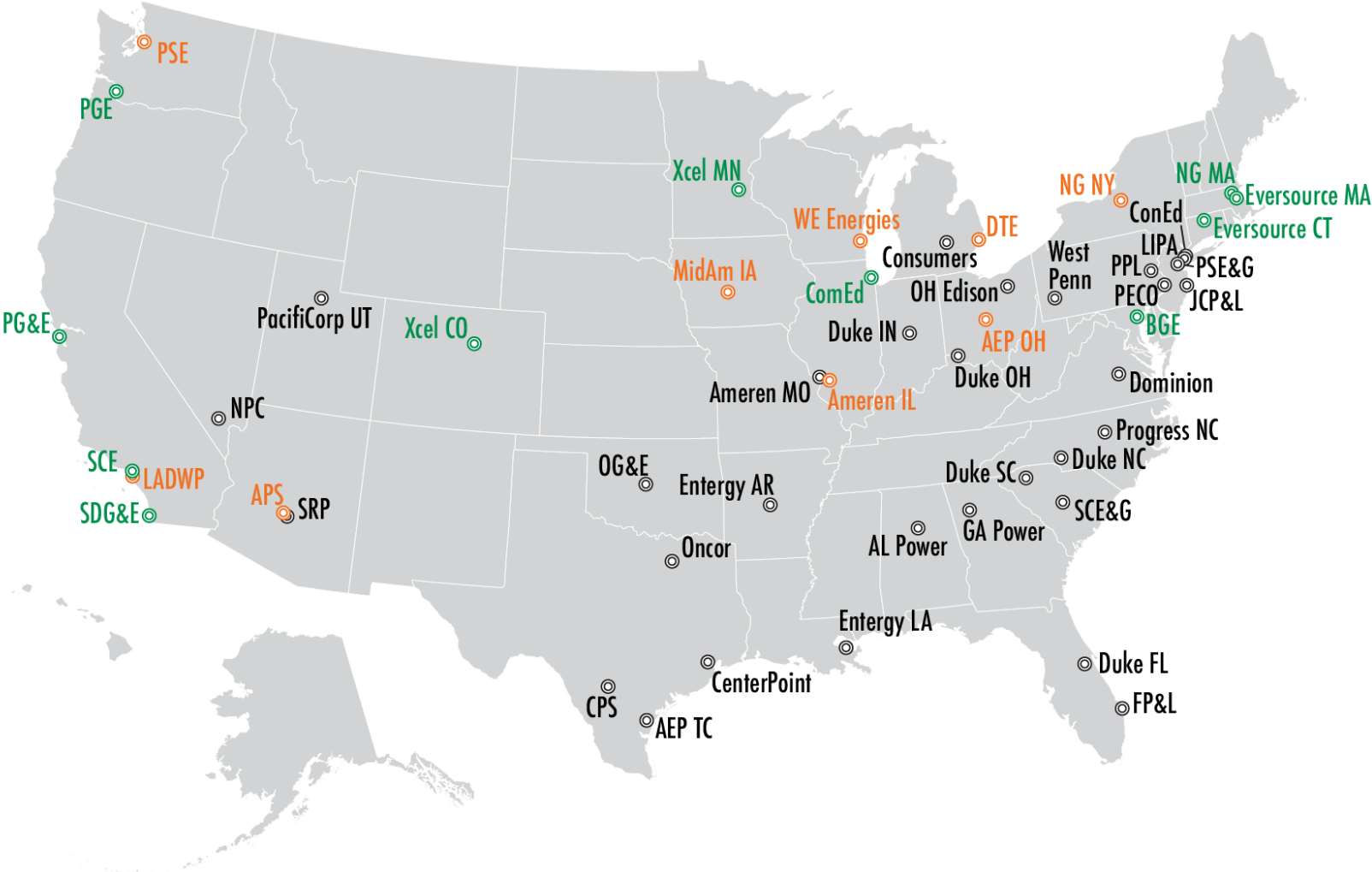


60% of cities have both an electric & natural gas efficiency program

2 cities did not have low-income programs

- ▲ Served by both electric and gas utility low-income programs
- Served by only electric utility low-income program
- Served by neither electric nor gas low-income programs

2017 Utility Energy Efficiency Scorecard



Source: American Council for an Energy-Efficient Economy

● Top 10 Utility ● 11-20 Utility

Key Metrics

- Maximizing participation
- Driving deep savings for participants
- Maximizing savings across low-income customer base
- Widely regarded as a best practice program

High participation

Electric utility	State	2015 low-income customers served	Participants as % of LI customers	Broad participation rank
National Grid	RI	10,500	8.17%	1
PG&E	CA	100,573	6.12%	2
DTE Energy	MI	39,675	6.01%	3
National Grid	MA	16,807	5.98%	4
Eversource	MA	14,120	5.42%	5

Natural gas utility	State	2015 low-income customers served	Participants as % of LI customers	Broad participation rank
Connecticut Natural Gas	CT	4,036	11.27%	1
DTE Energy	MI	39,675	10.25%	2
San Diego Gas & Electric	CA	20,209	6.22%	3
National Grid	RI	3,300	4.72%	4
SoCal Gas	CA	80,316	4.25%	5

Deep savings for participants

Electric utility	State	2015 low-income program savings (MWh)	2015 low-income customers served	Savings per program participant (kWh)	Deep savings rank
Entergy New Orleans	LA	1,335	220	6,066	1
Oncor	TX	23,044	4,669	4,935	2
CenterPoint Energy	TX	3,843	1,023	3,756	3
AEP TX	TX	6,026	1,745	3,453	4
CPS Energy (City of San Antonio)	TX	13,759	4,051	3,396	5

Natural gas utility	State	2015 low-income program savings (MMtherms)	2015 low-income customers served	Savings per program participant (therms)	Deep savings rank
Columbia Gas of Ohio (Nisource)	OH	0.66	2,085	316	1
Oklahoma Natural Gas Co.	OK	0.09	311	289	2
NW Natural	OR	0.05	231	216	3
We Energies/Focus on Energy	WI	0.78	3,748	208	4
CenterPoint Energy	MN	0.37	1,799	205	5

Savings across customer base

Electric utility	State	2015 low-income program savings (MWh)	Savings per LI customer (kWh)	Savings per LI customer rank
Eversource	MA	23,490	90.1	1
National Grid	MA	21,850	77.8	2
Seattle City Light	WA	5,907	65.1	3
CPS Energy	TX	13,759	56.1	4
Eversource	CT	14,098	54.9	5

Natural gas utility	State	2015 low-income program savings (MMtherms)	Savings per LI customer (therms)	Savings per LI customer rank
Connecticut Natural Gas	CT	0.45	12.61	1
We Energies/Focus on Energy	WI	0.78	6.19	2
ConEdison	NY	1.54	5.14	3
Philadelphia Gas Works	PA	0.65	5.11	4
Washington Gas/DC SEU	DC	0.23	5.09	5

Successful programs outside our data set

- Statewide approaches

California, Massachusetts, Vermont, and Wisconsin

- Rural programs

Ouachita Electric Cooperative's HELP PAYS

Roanoke Electric Cooperative's Upgrade to \$ave

- **Both follow Pay As You Save model**
- **Neither program is income-qualified or collects demographic data**

Strategies for success

1. Statewide coordination

- **Example: Ohio utilities and the Home Weatherization Assistance Program (HWAP) Policy Advisory Committee**

2. Single point of contact for customers and for contractors.

- **Example: United Illuminating Home Energy Solutions—Income Eligible program**

3. Market segmentation and targeted program offerings.

- **Example: CenterPoint Energy, Minnesota**

Strategies for success

4. Emphasis on quality control and training
 - **Example: Massachusetts utilities and the Low-Income Energy Affordability Network (LEAN)**
5. Leveraging of diverse funding sources to focus on comprehensive dual-fuel or fuel-neutral upgrades including health and safety measures.
 - **Example: Columbia Gas of Ohio WarmChoice**
6. Accommodation of health and safety measures through program design and relaxed cost-effectiveness requirements.
 - **Example: Energy Outreach Colorado**

Strategies for success

7. Prioritizing measures achieving deep savings.

- **Example: Oncor**

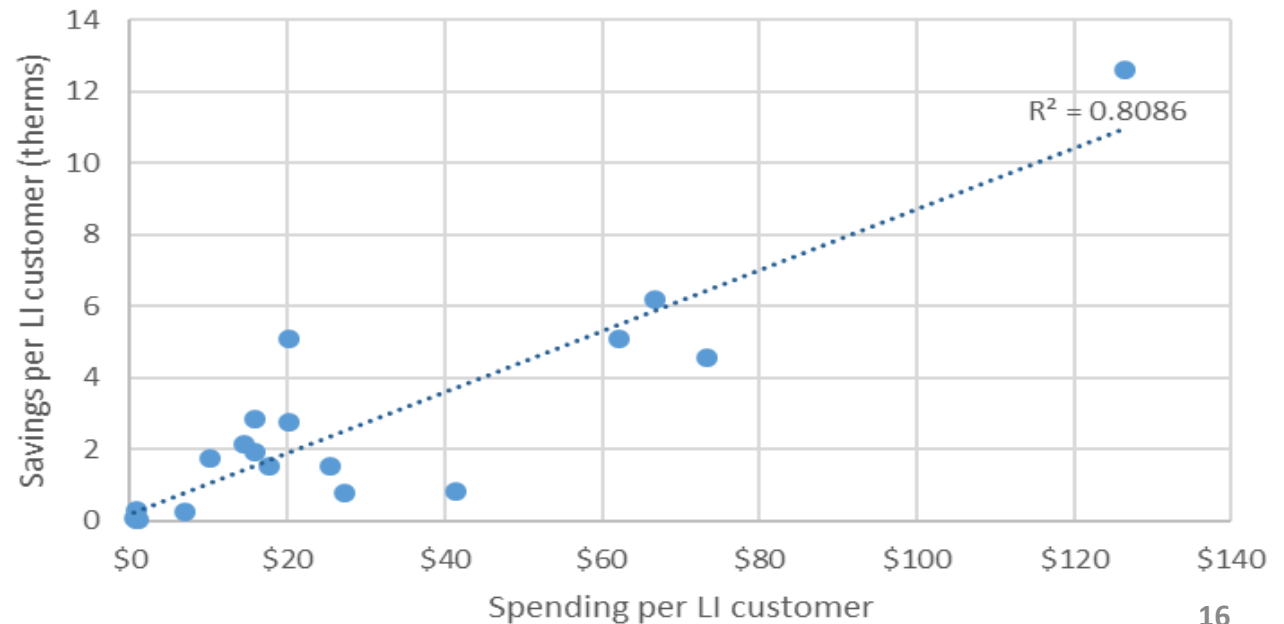
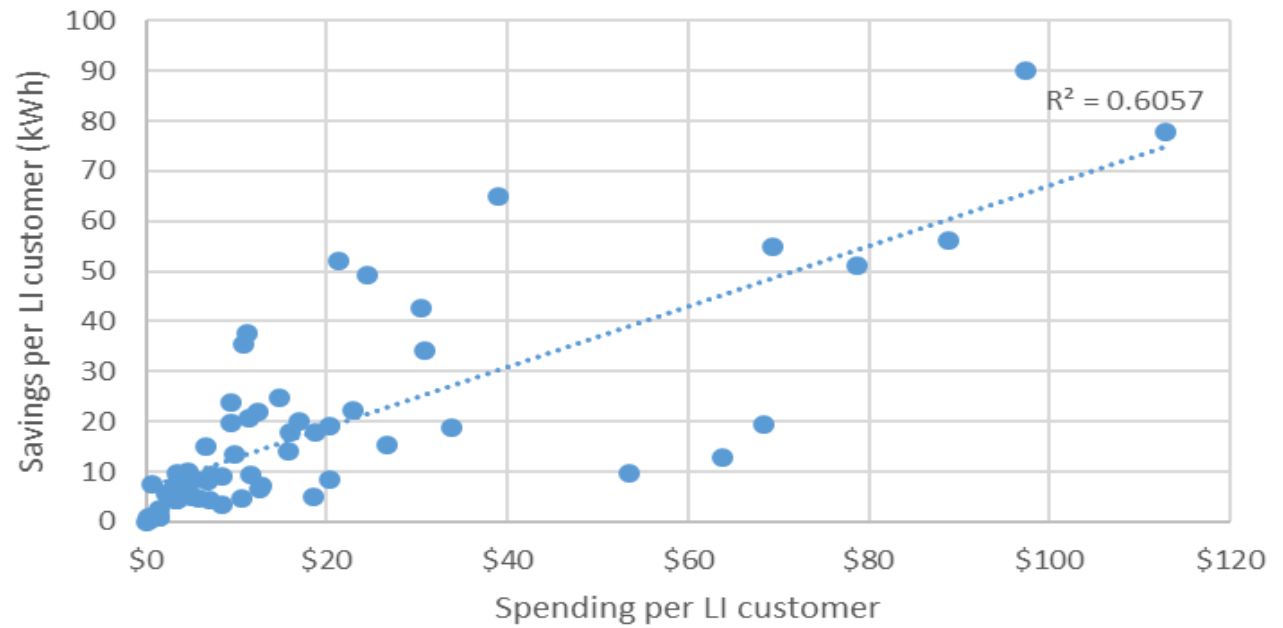
8. Formation of partnerships to market and deliver services to hard-to-reach customers.

- **Example: DTE Energy**

Balancing savings and participation

- Analysis showed little or no relationship between savings per participant and participation rates
- Similarly, no relationship between savings per participant and overall savings for the low-income customer base
- Increased participation was correlated to higher savings for the low-income customer base
 - $R^2=0.18$ for electric programs and $R^2=0.55$ for gas programs

Funding matters



State policy matters

- Of the 13 states with top performing low-income programs...
 - **10** had requirements for some minimum level of support for low-income efficiency programs
 - **All 13** had special cost-effectiveness provisions for low-income energy efficiency programs
 - **10** states facilitated coordination of funding, administration, or implementation between utility and WAP programs.

Some final thoughts

- High-achieving programs tended to rely on multiple strategies, not just one
- Both seeking to maximize participation and deliver deep savings to participants are valid approaches
 - **Over time, may be able to achieve both**
- State policy support and secure funding are key ingredients for success

Thank You!

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Pacific Grove, CA

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