



Reaching the Hard to Reach: Low-Income and Multifamily Energy Efficiency Programs

Ariel Drehabl and Stefen Samarripas

American Council for an Energy-Efficient Economy

May 1st, 2017



The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

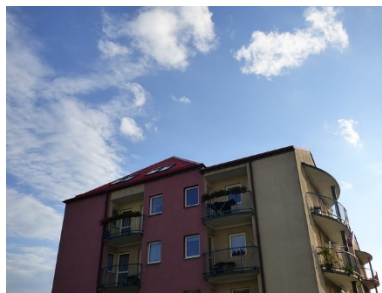
Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

aceee.org @ACEEEdc

ACEEE
American Council for an Energy-Efficient Economy

Presentation overview

1. Low-income and multifamily program landscape
2. Multifamily specific programs
3. Low-income programs
4. Remaining challenges & opportunities

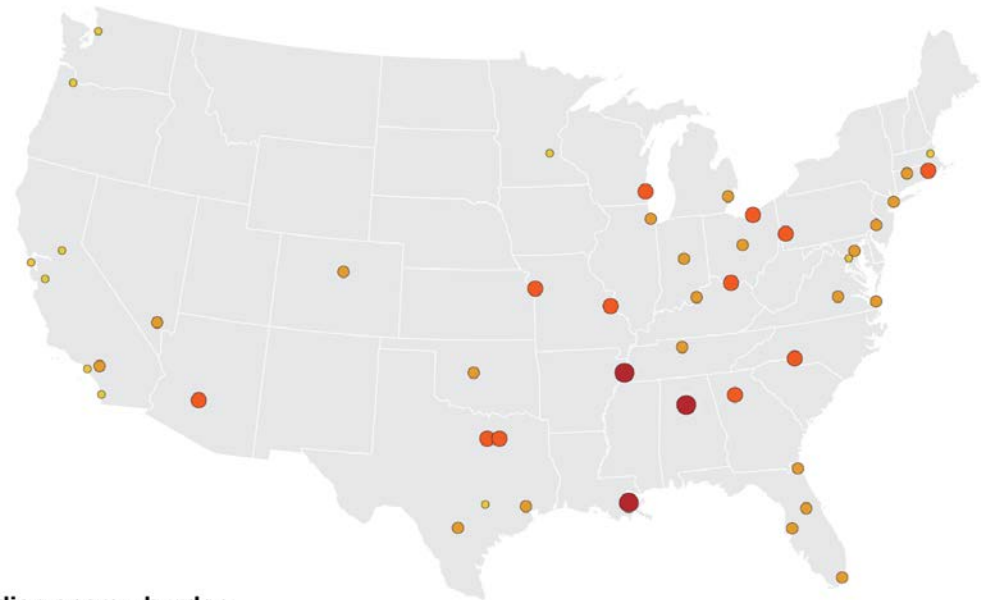


Why are low-income and multifamily households hard to reach?

- 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
- Higher energy costs as a share of income than more affluent households

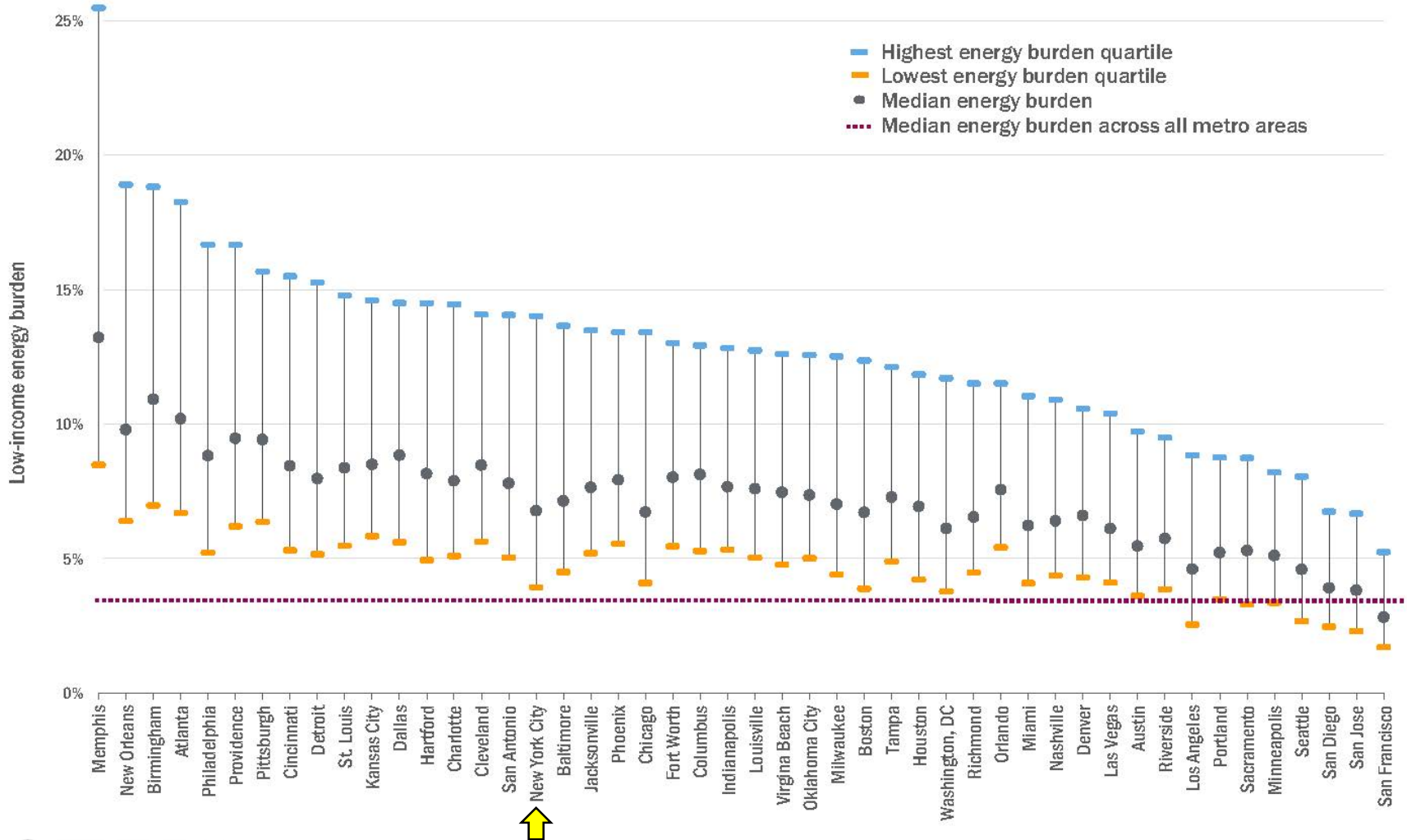
High energy burdens

- Low-income households pay more per square foot
- Nationally, low-income and multifamily energy burdens are more than three times higher than non-low-income households
- Median NYC energy burdens:
 - Low-income 6.8% (7.2% *nationally*)
 - Low-income multifamily 5.7% (5.0% *nationally*)
 - City average 3.7% (3.5% *nationally*)
- NY PSC's 2016 Energy Affordability Policy of 6% burden across state



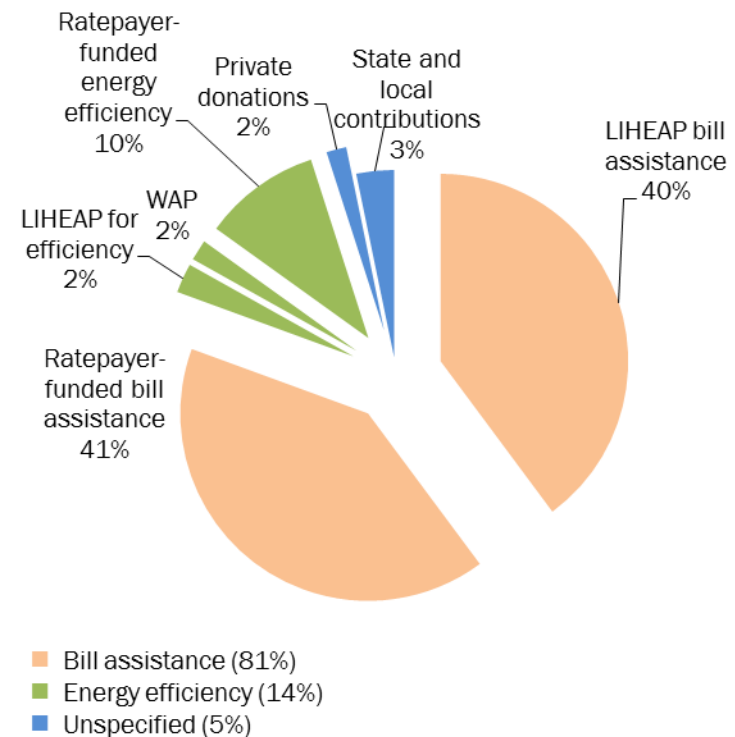
Median energy burden
● 5+% ● 4-5% ● 3-4% ● 1-3%

Range of energy burden quartiles for low-income households in the 51 largest MSAs



Program landscape

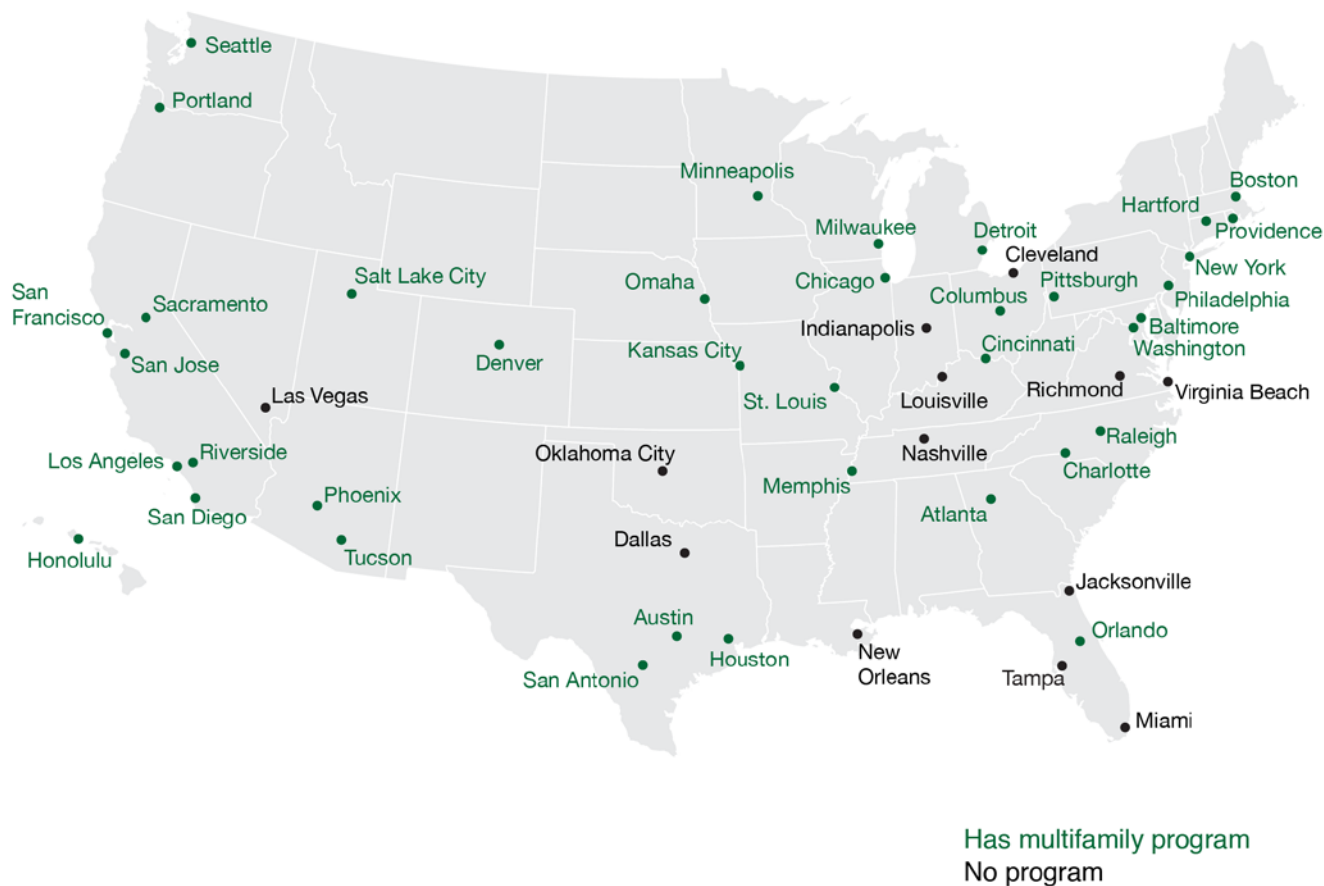
- Funding for low-income efficiency programs:
 - Ratepayer funding
 - Weatherization Assistance Program
 - LIHEAP funding for efficiency
- Low-income and multifamily program customer bases differ
 - Households vs. building owners
- Low-income and multifamily programs not mutually exclusive
 - But most low-income programs overwhelmingly serve single family



Multifamily Housing Markets Trends

(Data from US Census Bureau American Community Survey 2014 Estimates)

Research overview



This research updates ACEEE's 2013 assessment of multifamily energy efficiency programs in US metropolitan areas with the most multifamily households. Using recent housing, policy, and utility-sector data we document how these programs have changed in the context of dynamic housing markets and statewide policy environments.

Housing Market Trends

- Multifamily households occupy roughly a fifth of the national housing market.
 - These households occupy two-fifths of the New York City (NYC) metro area.
- Renters occupy nearly 90% of all multifamily homes
 - Only 17% of multifamily buildings in the NYC metro area are master-metered.
- Multifamily households increased 6.4% between 2011 and 2014 in the NYC metro area.



Image Source: Ben Frederick Realty 2017

Housing Market Trends

- Most multifamily buildings were built before 2000, with a large number built before 1980.

Metropolitan areas with the most multifamily units built 1979 or earlier

Metropolitan area	Percentage built 1979 or earlier
New York-Newark-Jersey City	79%
Cleveland-Elyria	73%
Providence-Warwick	72%
Pittsburgh	68%
Chicago-Naperville-Elgin	66%
Urban Honolulu	65%
Boston-Cambridge-Newton	65%
Los Angeles-Long Beach-Anaheim	64%
Hartford-West Hartford-East Hartford	64%
San Francisco-Oakland-Hayward	64%
Philadelphia-Camden-Wilmington	63%



Image Source: A Chicago Sojourn Blog 2014

Multifamily Program Characteristics

Comprehensive Multifamily Programs



Comprehensive
Not comprehensive

Multifamily Programs

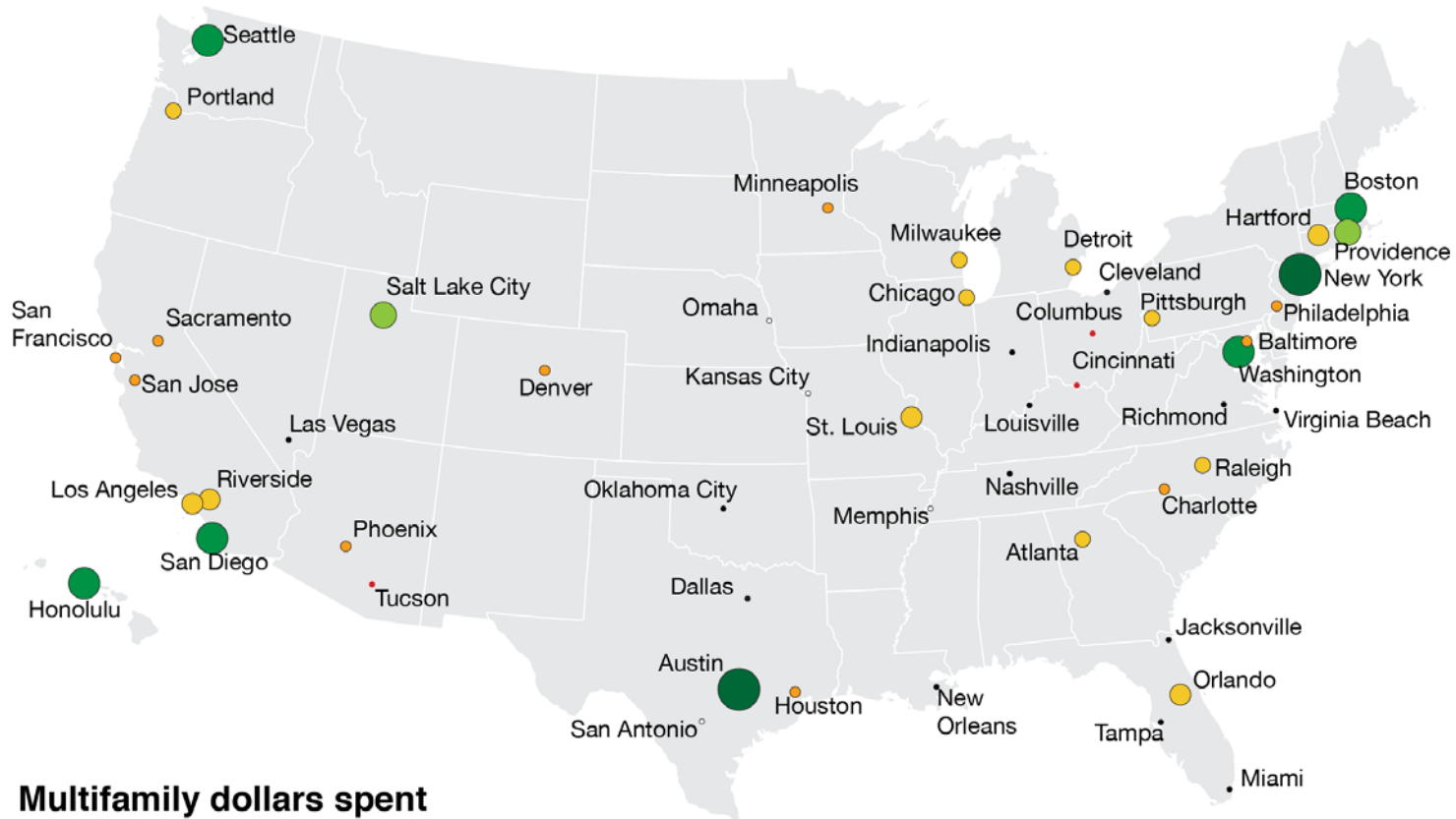
- \$291.1 million spent on multifamily programs in 2015 - nearly tripled from 2011.
- Average multifamily program spending is still no more than 6% of total energy efficiency spending in metro areas.
- Spending on NYC multifamily programs accounted for 23% of all energy efficiency program spending.

Multifamily electricity and natural gas sales by US Census Bureau region

Region	Total multifamily sales (MMBTU)	Multifamily share of all sales
Northeast	434,711,070	27%
Midwest	333,032,970	12%
South	327,772,829	6%
West	227,779,372	10%
All regions	1,323,296,241	11%

Source: EIA 2012, 2016a, 2016b

Multifamily Program Spending



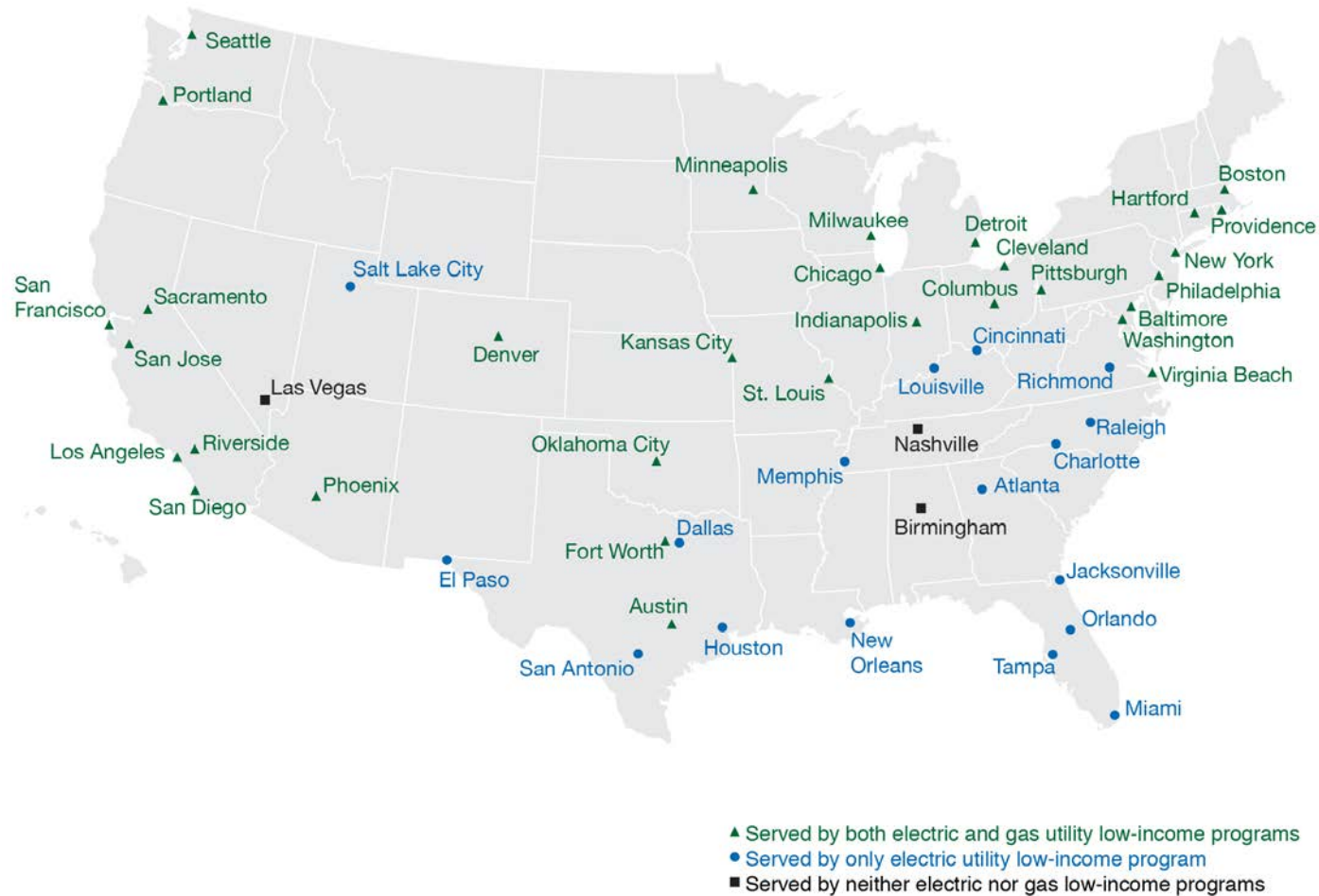
**Multifamily dollars spent
as a percentage of
total energy efficiency spending**

● >15% ● 10-15% ● 8-10% ● 5-8% ● 3-5% ● 1-3% ● <1% ○ No data ○ None

Low-Income Baseline Assessment

(Data from surveys sent to utilities and utility demand side management reports)

Low-income baseline overview



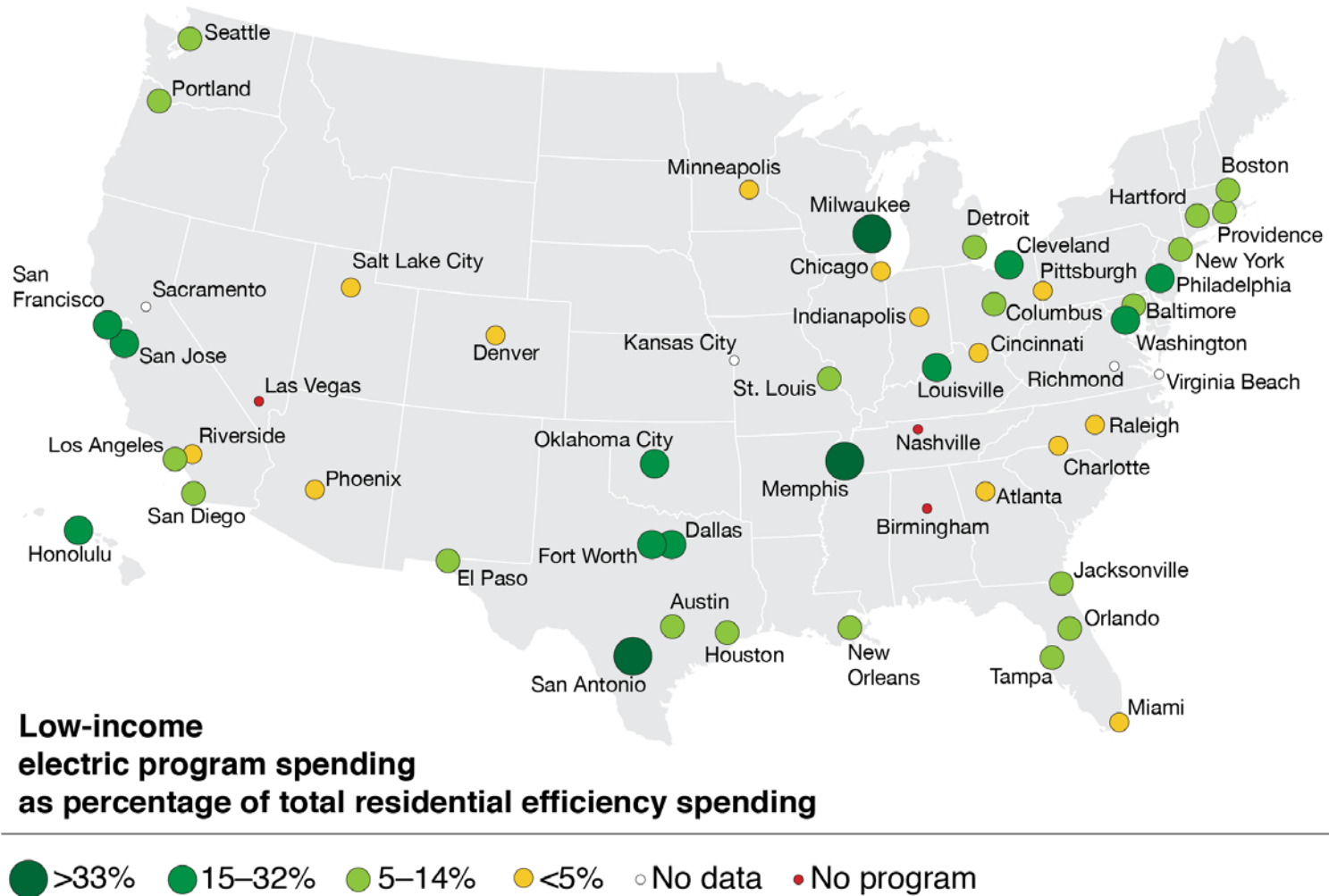
This research assesses the 51 largest MSAs and the low-income energy efficiency programs from the largest electric and natural gas utility serving each MSA

NYC Low-Income Spending and Savings

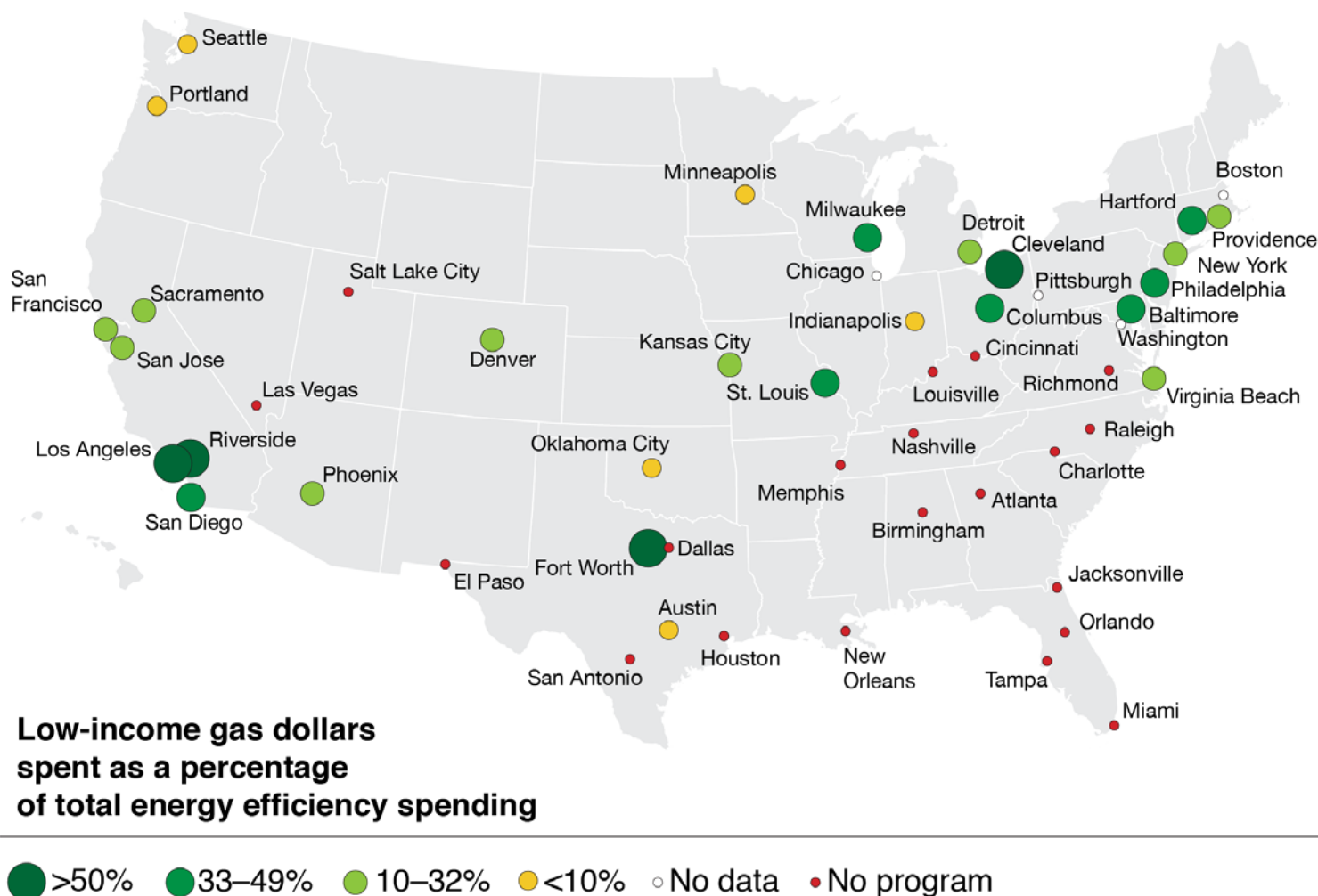
For programs serving Con Ed and National Grid customers

Electric Spending	NYSERDA (for Con Ed customers):	\$4,933,450
Natural Gas Spending	NYSERDA (for National Grid customers):	\$7,645,304
	NYSERDA (for Con Ed customers):	\$8,017,028
	Con Ed funding:	\$3,360,000
Electric Savings	NYSERDA (for Con Ed):	7,882.9 MWh
Natural Gas Savings	NYSERDA (for National Grid):	1.07 MMtherms
	NYSERDA (for Con Ed):	1.55 MMtherms
	Con Ed funding:	1.0 MMtherms

Electric low-income program spending



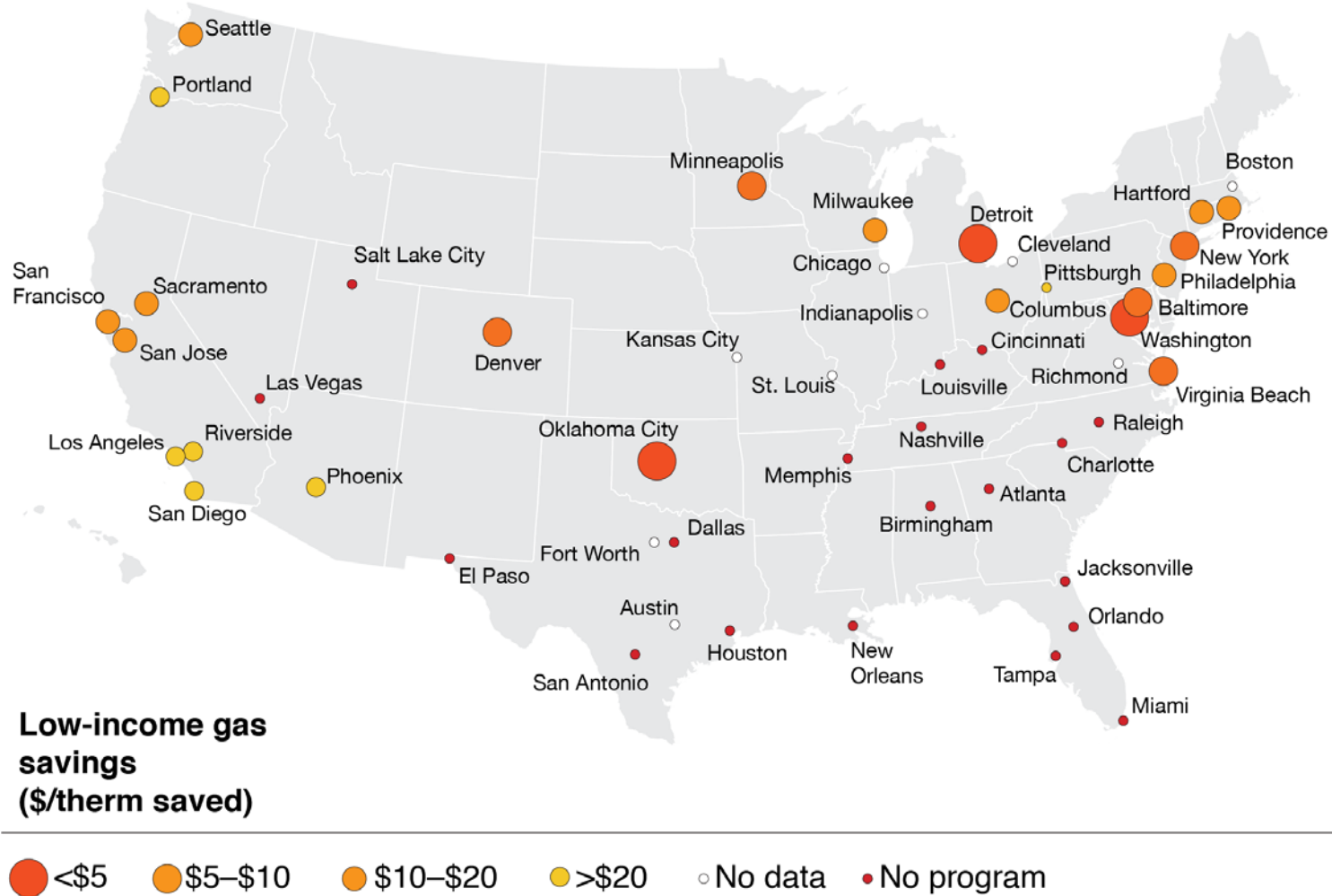
Natural gas low-income program spending



Low-income electricity savings (\$/kWh saved)

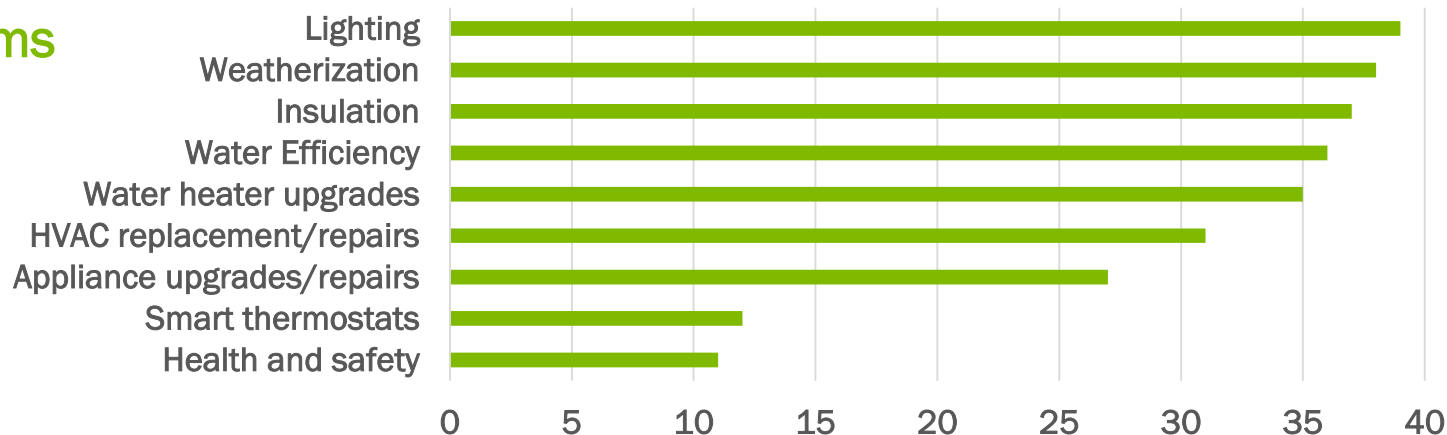
- Red circle: <\$0.50
- Orange circle: \$0.50–\$0.75
- Light orange circle: \$0.75–\$1.00
- Yellow circle: >\$1.00
- White circle: No data
- Red dot: No program

Natural gas low-income program savings

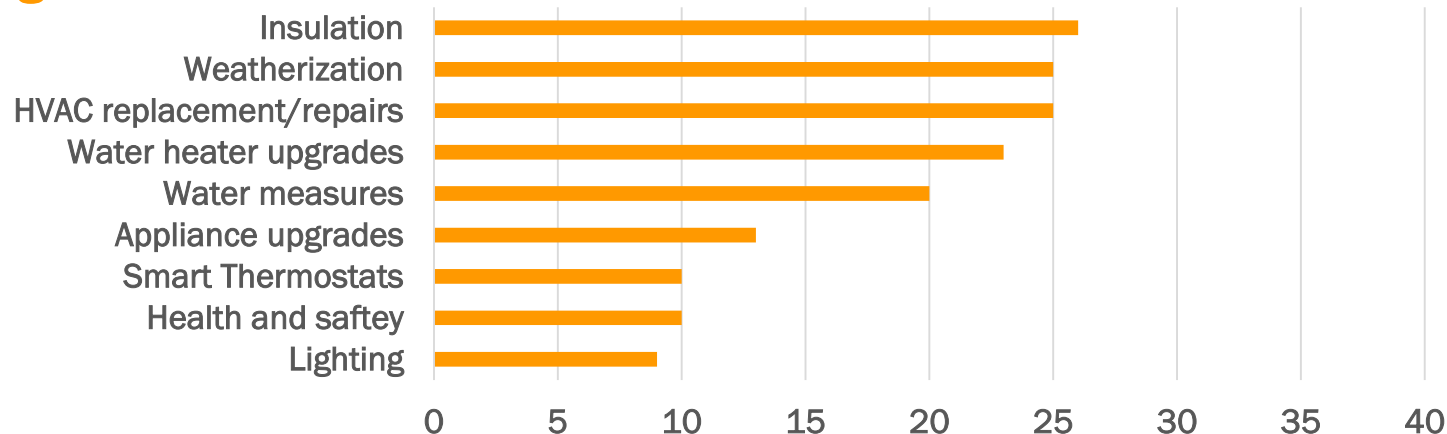


Low-income program measures by utilities serving 51 largest MSAs

Electric Programs

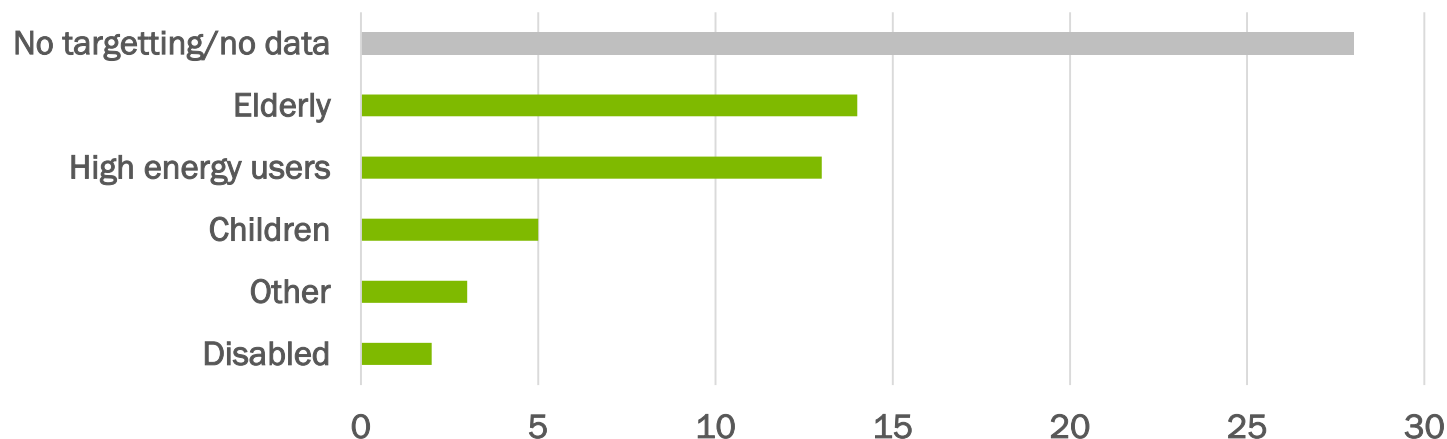


Natural Gas Programs

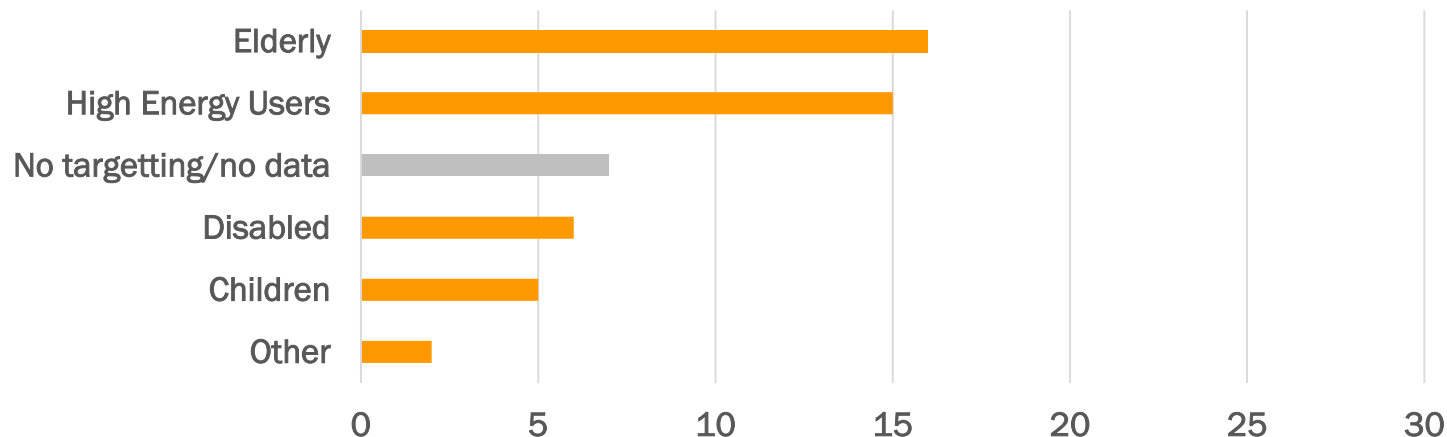


Low-income program targeting by utilities serving the 51 largest MSAs

Electric Programs

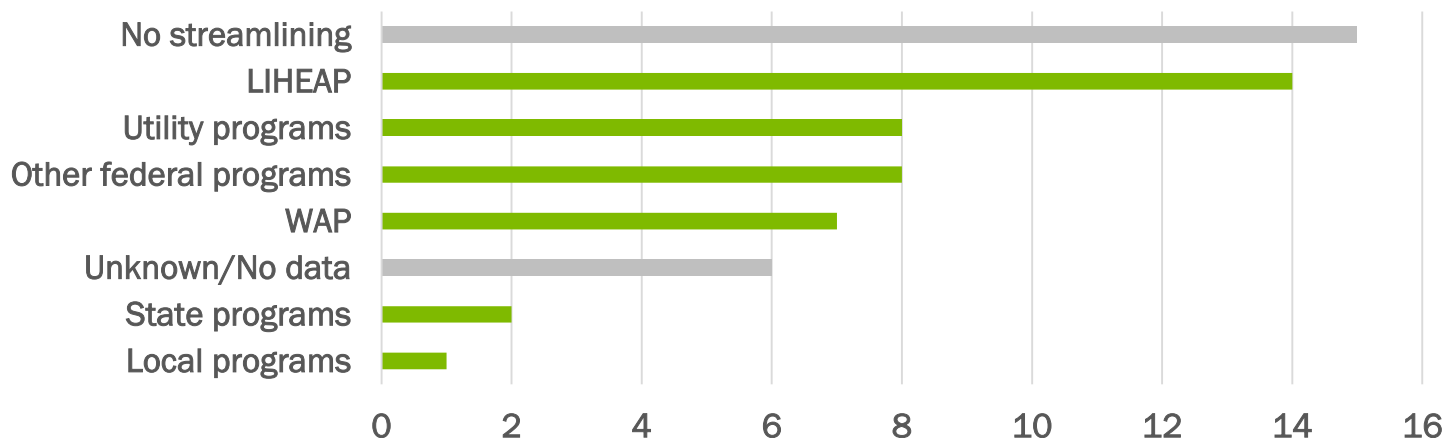


Natural Gas Programs

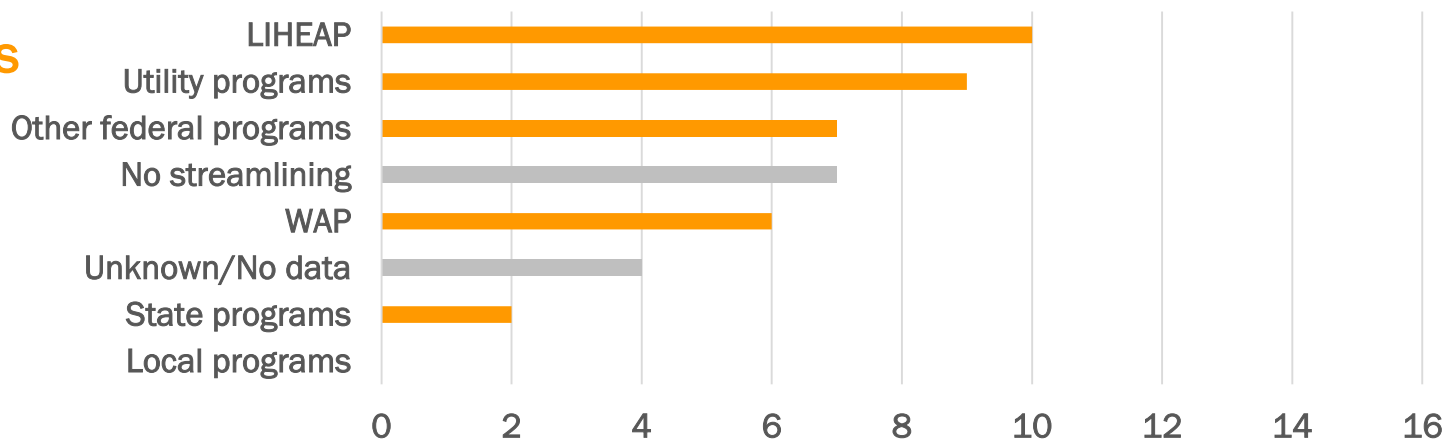


Low-income program streamlining by utilities serving the 51 largest MSAs

Electric Programs



Natural Gas Programs

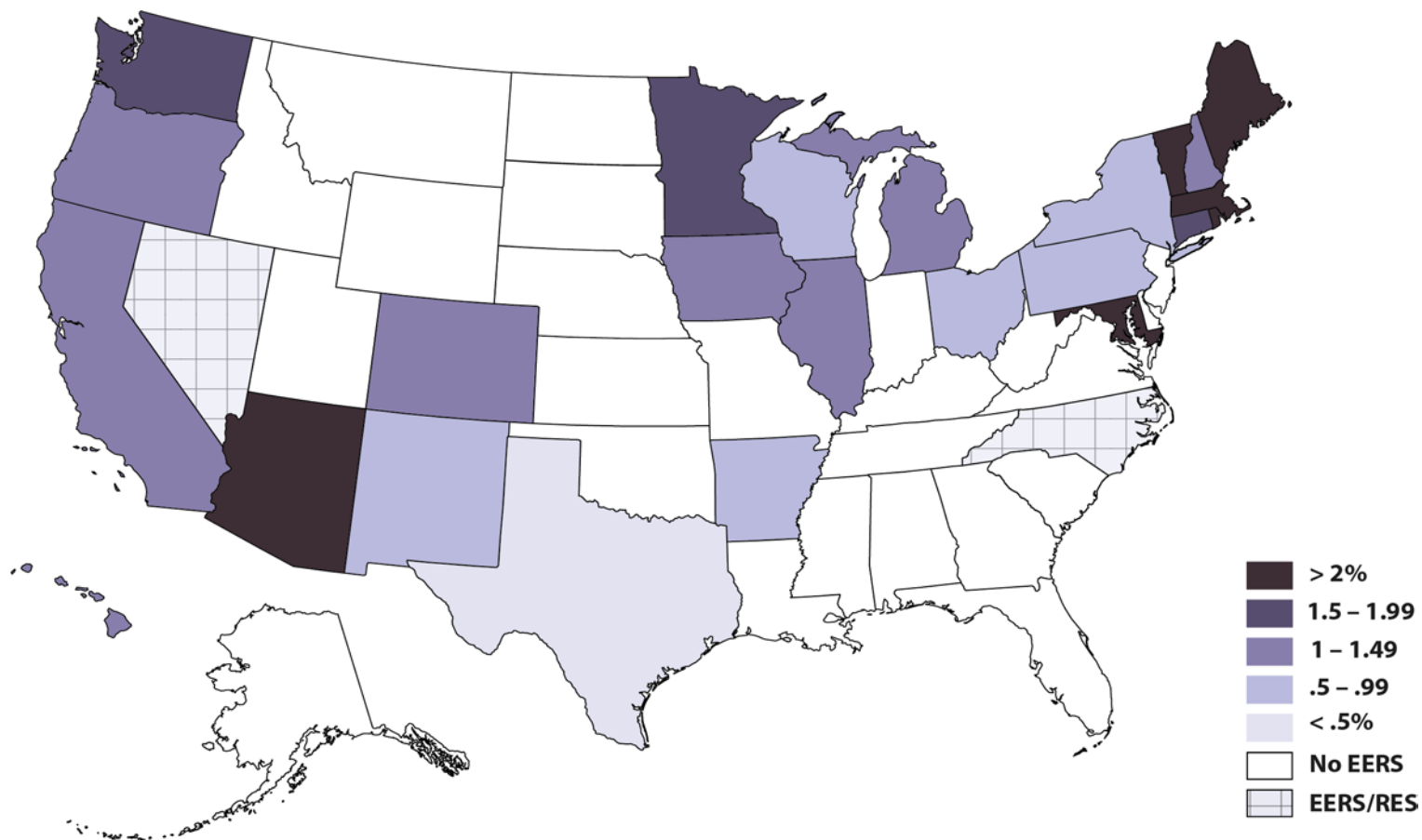


Remaining Challenges and Opportunities

Remaining low-income and multifamily challenges & opportunities for NYC

- While accounting for cost effectiveness, there may be opportunities to increase low-income and multifamily spending.
 - **PUCs can set carve-outs for required spending, savings, or participation from low-income programs or adjust cost-effectiveness standards for low-income programs**
- There are opportunities to increase savings targets over time.

State EERS Adoption and Savings Targets





Remaining low-income and multifamily challenges & opportunities

- Incorporating more best practice elements.
- Include multiple benefits of energy efficiency in cost-effectiveness tests.
 - NY State's TRC does not explicitly address nonenergy benefits, but NY PSC generally recognizes low-income specific benefits for low-income program funding.
- Collect, track, and report demographic data on program participation.



Additional multifamily challenges & opportunities

- Unsubsidized low-income multifamily buildings are still largely underserved.
 - **Two-thirds of affordable multifamily units in New York do not receive housing subsidies.**
- Multifamily building owners need better access to financing for efficiency upgrades.
 - **Offer on-bill financing options.**
 - **Partner with local lenders such as community development finance institutions (CDFIs) to provide low-interest loans.**

ACEEE Resources

Low-Income Program Resources

- ❖ Low-Income Baseline Assessment, forthcoming
- ❖ Building Better Energy Efficiency Programs for Low-Income Households, 2016: aceee.org/research-report/a1601
- ❖ Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities, 2016: aceee.org/research-report/u1602
- ❖ Low-Income Energy Efficiency Programs: Best Practices and Clean Power Plan Compliance, 2016: <http://aceee.org/white-paper/cpp-low-income>

Multifamily Program Resources

- ❖ More Savings for More Residents: Progress in Multifamily Housing Energy Efficiency, 2017: <http://aceee.org/research-report/u1702>
- ❖ Reaching More Residents: Opportunities for Increasing Participation in Multifamily Energy Efficiency Programs, 2016: <http://aceee.org/research-report/u1603>
- ❖ Multiple Benefits of Multifamily Energy Efficiency for Cost-Effectiveness Screening, 2015: <http://aceee.org/multiple-benefits-multifamily-energy-efficiency>
- ❖ Apartment Hunters: Programs Searching for Energy Savings in Multifamily Buildings, 2013: <http://aceee.org/research-report/e13n>

Utility Working Groups

- ❖ Multifamily Utility Working Group
- ❖ Low-Income Utility Working Group

Questions?

Ariel Drehobl

Local Policy Research Analyst

Email: adrehobl@aceee.org

Phone: 202-507-4038

Stefen Samarripas

Local Policy Research Analyst

Email: ssamarripas@aceee.org

Phone: 202-507-4031

