

Welcome: U.S. DOE's LEAD Tool in Action

We'll be starting in a few minutes

- Session will be recorded
- All participants are muted
- Chat is disabled, please ask questions through the questions pane
- Answer poll questions throughout



U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY &
RENEWABLE ENERGY

U.S. DOE's LEAD Tool in Action: How Stakeholders are using Data to Drive their Decisions

August 3, 2020



AGENDA

- LEAD Tool Overview
 - Data and Website Updates
 - Stakeholder Examples
- Speakers
 - National Grid
 - State of Kentucky
- LEAD Tool Demonstration
- Q&A

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Kentucky: Using LEAD Tool Data to Fund Energy Efficiency Programs Where Energy Affordability Assistance Is Needed Most

The Kentucky Office of Energy Policy (OEP) used the U.S. Energy's (DOE's) web-based Low-Income Energy Affordability Data (LEAD) Tool to identify areas of their state with energy affordability challenges. The tool enables organizations and stakeholders to understand energy burden by geographic area and inform strategic decisions. Kentucky OEP staff allocated funds to relevant areas where these services have the highest potential and can reduce energy burden.

What is the LEAD Tool?

The LEAD Tool is designed to help states, communities, and other stakeholders create better energy strategies and programs by improving their understanding of low-income housing and energy characteristics.

The LEAD Tool provides interactive state-, city-, and county-level graphs and data by household income level, including:

- Housing characteristics
- Heating fuel type
- Average annual energy expenditure
- Average energy burden

The LEAD Tool is based on 5-year averages from U.S. Census Bureau and DOE's Energy Information Administration data.
(Source: LEAD Tool factsheet)

Identifying Areas of Greatest Need

Funded in part through DOE's State Energy Program (SEP), responsible for administering state-led energy programs, addressing energy affordability is through grants to organize repairs and weatherization upgrades in areas of greatest need. Kentucky OEP staff identified local nonprofit areas, and informed them of grants available to support home energy upgrades.

Kentucky OEP's 2019 grant funding allocation process included identifying counties where the average energy burden was higher than 60% of area median income (AMI) (Figure 1). Average energy burden in Kentucky for households earning less than 60% of area median income (AMI) is 17%. Kentucky OEP staff then identified local nonprofit areas, and informed them of grants available to support home energy upgrades.

1 DOE, Low-Income Energy Affordability Data (LEAD) Tool: www.energy.gov/eere/alsrc/maps/leadtool.
2 Kentucky Energy and Environment Cabinet, Office of Energy Policy website: <https://eeec.ky.gov/Energy/Pages/default.aspx>.
3 American Council on an Energy-Efficient Economy (ACEEE). (2018). "Blog post: How energy efficiency can boost resilience." <https://www.aceee.org/blog/2018/04/how-energy-efficiency-can-boost-resilience>.

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National Grid: Using the LEAD Tool to Target Energy Affordability Services to Eligible Customers in New York

Utilities of all types and sizes can use the U.S. Department of Energy's (DOE's) Low-Income Energy Affordability Data (LEAD) Tool to access information about communities they serve. For example, utilities can identify the number of customers within a service territory likely to meet certain program eligibility criteria, such as household income level or housing type. Investor-owned utility company National Grid used the LEAD Tool to support implementation of its Home Energy Affordability Team (HEAT),² a weatherization program for income-eligible residential natural gas customers in its service territory on Long Island, New York. The HEAT program is representative of National Grid's efforts to assist residential utility service customers with energy affordability. Using data, graphs, and charts from the LEAD Tool, National Grid was able to determine how many households may be eligible for the program. The company then compared LEAD Tool results on the number and geographic distribution of eligible households with internal enrollment data to inform additional marketing efforts.

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(Source: LEAD Tool factsheet)

1 DOE, Low-Income Energy Affordability Data (LEAD) Tool: www.energy.gov/eere/alsrc/maps/leadtool.
2 National Grid, "Manage your utility bills with our Energy Affordability Program" (2017). https://www.nationalgridus.com/media/pdf/billing-payments/om860-energy-affordability_182729-28329.pdf.

Speakers

Krystal Laymon
*U.S. Department of
Energy*



Carolyn King
National Grid



Kenya Stump
*Kentucky Office of
Energy Policy*

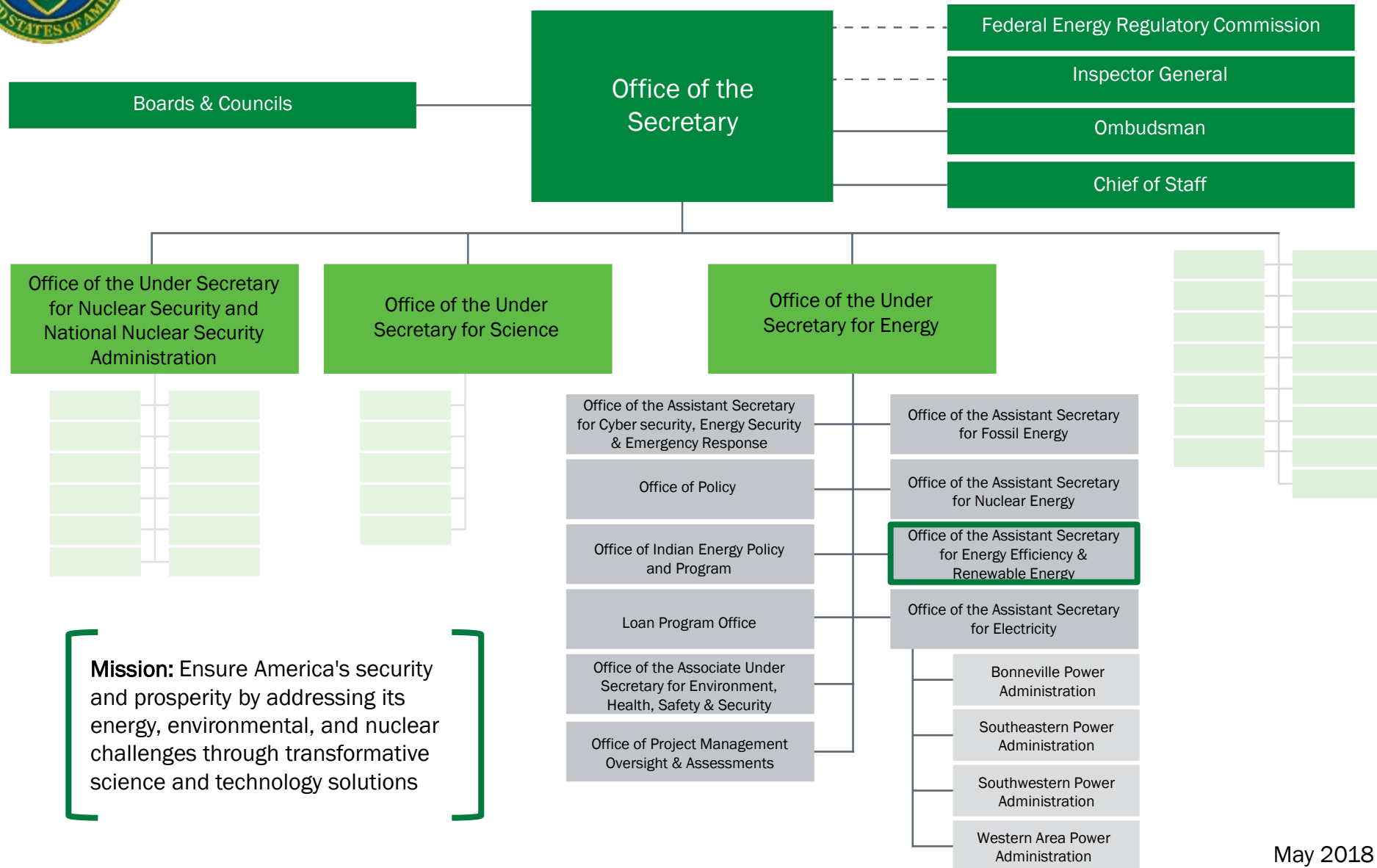


Poll #1

Have you used the LEAD Tool before?



U.S. Department of Energy



May 2018

Low-income Energy Resources and Projects

Solar in Your Community Challenge

- \$5 million prize competition designed to incentivize the development new approaches to increasing electricity affordability and solar adoption in America to improve solar access for nonprofits, faith-based organizations, state and local governments, and low- and- moderated income communities



<https://www.energy.gov/eere/solar/solar-your-community-challenge>

Clean Energy for Low Income Communities Accelerator (CELICA) Toolkit

- Case studies, issue briefs, data tools, and templates on advancing energy affordability and equitability for low-income households



<https://betterbuildingsinitiative.energy.gov/CELICA-Toolkit>

National Community Solar Partnership

- Coalition of community solar stakeholders working to expand access to affordable community solar to every American household by **2025**
- Seeking participants for multi-stakeholder teams of state, local, and tribal governments; utilities; businesses; nonprofit organizations; and more.
- If you're interested in joining the Partnership or learning more, send an email to community.solar@ee.doe.



<https://www.energy.gov/eere/solar/national-community-solar-partnership>

Clean Energy for Low-Income Communities Accelerator (CELICA) Toolkit

- **Goal** : Provide an overview of tools, resources, and models for developing low-income energy efficiency and renewable energy programs
- Product of Better Buildings Initiative and 2-year partnership with over 30 stakeholders from public, private, and non-profit sectors
- Types of resources in CELICA Toolkit:
 - Case Studies/Promising Practices
 - Issue Briefs
 - Data Tools
 - Templates

CELICA Toolkit: <https://betterbuildingsolutioncenter.energy.gov/CELICA-Toolkit>



Outcomes - Clean Energy for Low-Income Communities (CELICA)

CELICA partners successfully leveraged resources to commit up to \$335 million to help 155,000 low income households access energy efficiency and renewable energy benefits, and demonstrated promising program models for:



Single Family

Example: **State of Connecticut** and CT Green Bank's bundled energy efficiency and solar program has been so successful that solar PV systems are owned by households in low income communities as much as those in non-low-income areas.



Low-Income Community Solar

Example: **State of Michigan** Energy Office's low income community solar program partnered with Cherryland Coop and NMCCA to deliver \$350/yr in additional savings for participating, previously weatherized, low income households.



Multifamily Affordable

Example: **District of Columbia** is incentivizing building owners to serve 100,000 low income households with 240-300MW solar PV.

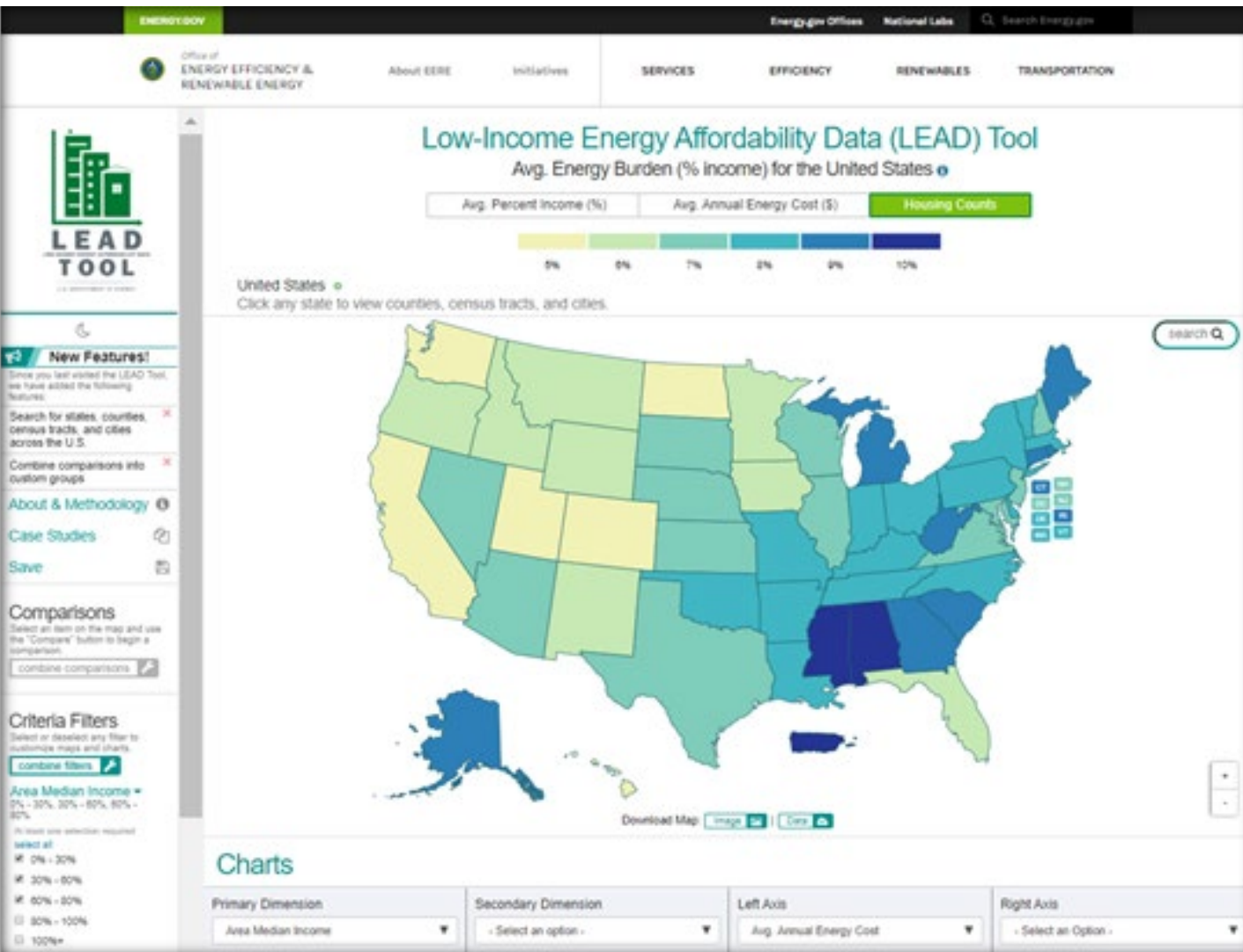
Overview – Low-Income Energy Affordability Data (LEAD) Tool

Goal: help communities with energy policy and program planning by **improving understanding** of low- and moderate-income household and energy characteristics

- LEAD Tool provides data, such as energy burden, to stakeholders to **make data driven decisions**

Energy burden: The percent of gross household income spent on energy cost

- National average energy burden for low-income households: 8.6% (3 times higher than for non-low income households)



Screenshot of the LEAD Tool website:

<https://www.energy.gov/eere/slsc/maps/lead-tool>

Data Available – Low-Income Energy Affordability Data (LEAD) Tool

Geographic levels:

- National
- 50 States plus D.C. and Puerto Rico
- County
- City
- Census tract

Households at different income levels:

- Area Median Income: 0-30%, 30-60%, 60-80%, 80-100%, and 100%+
- Federal Poverty Level: 0-100%, 100-150%, 150-200%, 200-400%, 400%+

Number of occupied housing units and energy expenditures by:

- Tenure (homeowners or renters)
- Housing unit primary heating fuel type
- Building year of first construction
- Building type (by housing units or structure)

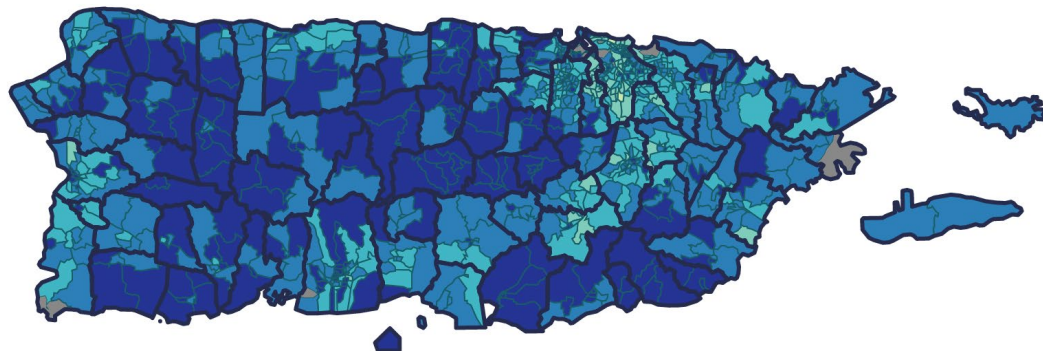
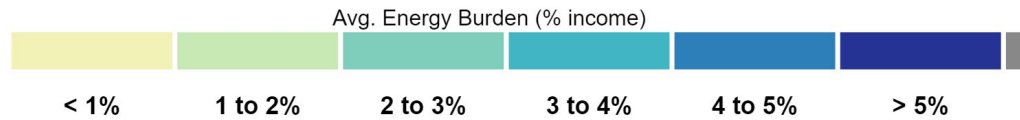
Cost of energy:

- Average monthly energy expenditures
- Average energy burden as a percentage of income spent on energy

Data comes primarily from the U.S. Census American Community Survey 5-Year Public Use Microdata Samples and is calibrated to U.S. Energy Information Administration electric utility (Survey Form-861) and natural gas utility (Survey Form-176) data

Graphic Features– Low-Income Energy Affordability Data (LEAD) Tool

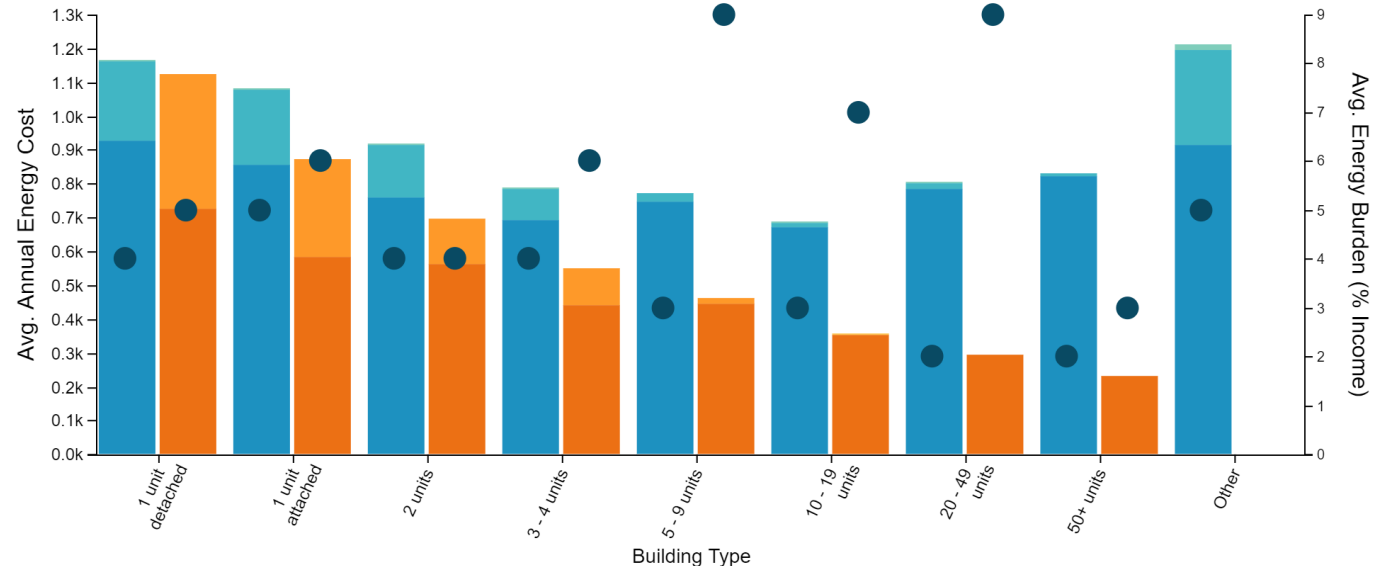
Maps can show energy burden, energy costs, and housing counts by geographic level



Average energy burden in Puerto Rico by Census tract

Source: LEAD Tool <https://www.energy.gov/eere/slsc/maps/lead-tool?scenarioId=5f0c9f0ee4aec>

Charts can compare energy burden, energy costs, and housing counts by geographic level, housing type, building age, occupancy, and income level



Comparison of average energy cost by housing type between the county Orocovis Municipio and the whole territory of Puerto Rico

Source: LEAD Tool <https://www.energy.gov/eere/slsc/maps/lead-tool?scenarioId=5f0c9f0ee4aec>

Coming Soon! – Low-Income Energy Affordability Data (LEAD) Tool Data Update

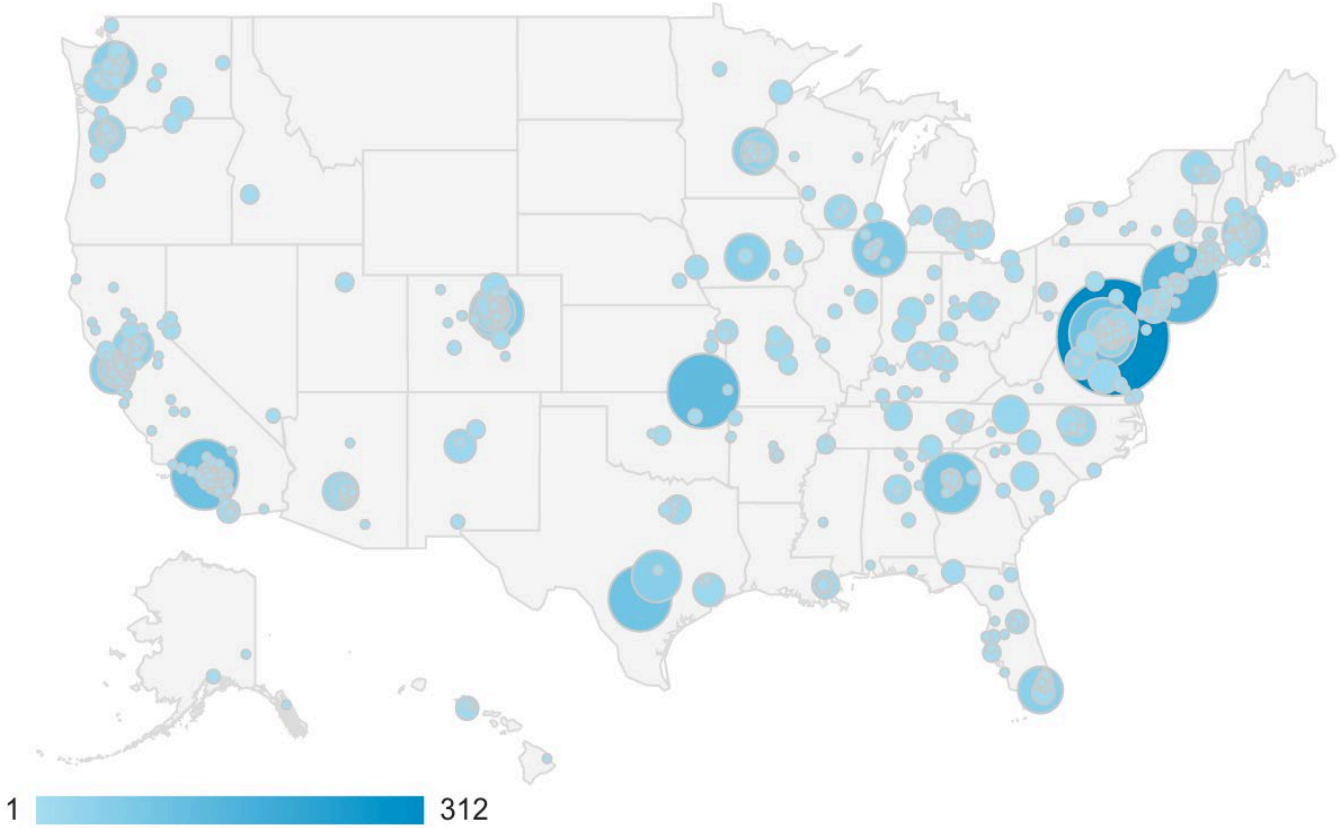
– New data!

- 2018 U.S. Energy Information Agency (EIA) electric utility and natural gas utility data
 - Calibrated with the U.S Census American Community Survey 2018 5-Year Public Use Microdata Samples
- Housing categories added from “other”
- Mobile home or trailer
 - Boat, RV, van, etc.
- State Median Income (SMI) Model
- Small user interface improvements based on user feedback
- Send us your feedback and questions: LEAD.Tool@ee.doe.gov

Since the LEAD Tool launched in July 2019...

Top user cities in United States:

- New York City, NY
- West Pleasant View, CO
- Ashburn, VA
- Coffeyville, KS
- Los Angeles, CA
- Atlanta, GA



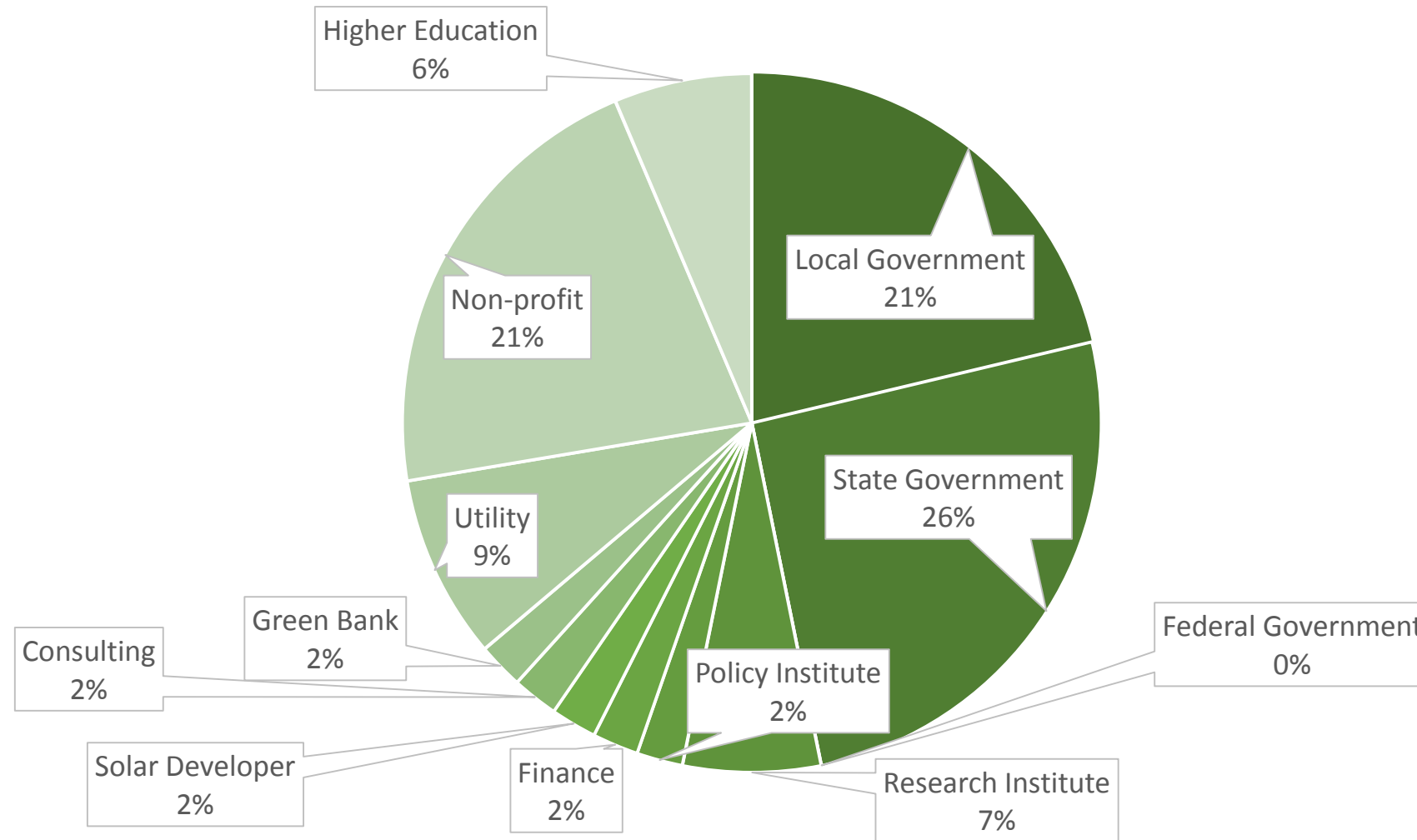
8,488
Site Visitors

800
Image Downloads*

2,700
Data Downloads*

Breakdown of LEAD Tool Stakeholders

LEAD Stakeholders by Sector*



*Based on knowledge of ~50 known stakeholders who have reached out to DOE

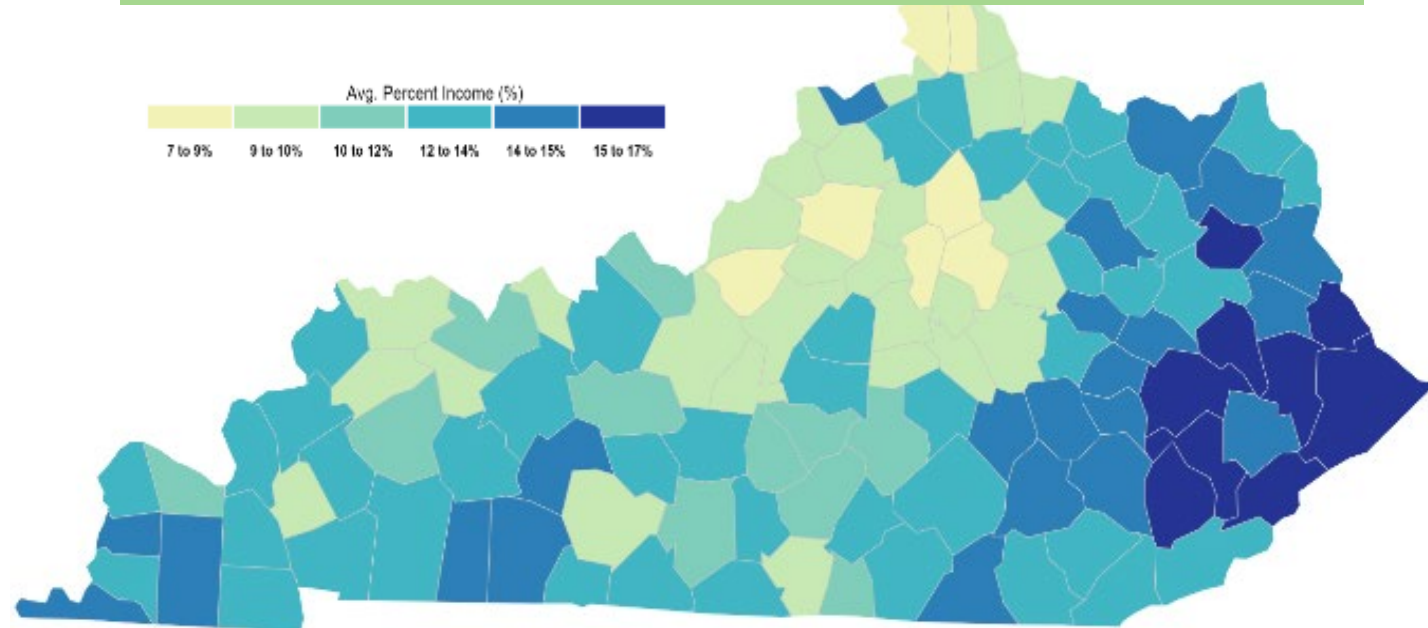
LEAD Tool Use Example: Kentucky Office of Energy Policy (OEP)



Above: HDA staff and volunteers build new energy-efficient affordable housing for Kentucky residents

Right: Average annual energy burden for households earning up to 60% AMI by county in Kentucky

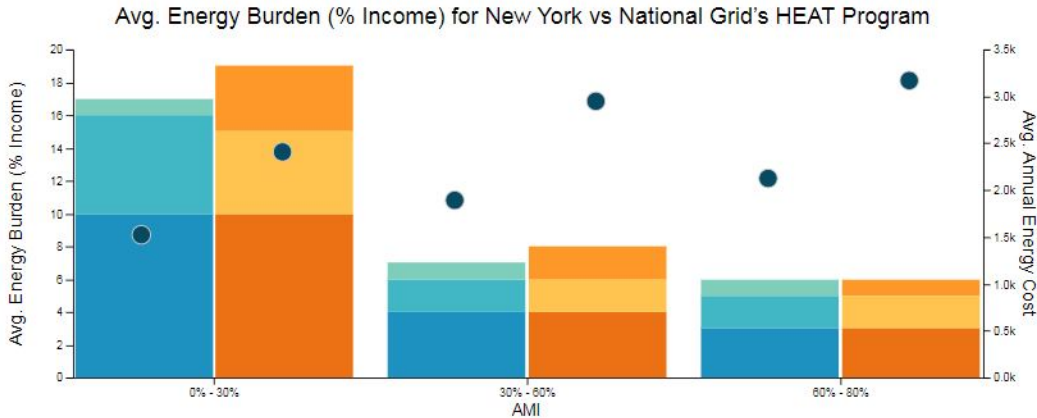
To determine which affordable housing organizations to grant funding to, Kentucky's OEP used LEAD Tool data to identify areas across the state with high energy burden in households earning less than 60% of Area Median Income (AMI). Whereas average energy burden in Kentucky for households earning less than 60% AMI is 11%, there are concentrations in both eastern and western Kentucky where the average is as high as 17%, so Kentucky's OEP selected organizations in these areas.



LEAD Tool Kentucky Use-case:
<https://www.energy.gov/eere/slsc/downloads/kentucky-using-lead-tool-data-fund-energy-efficiency-programs>

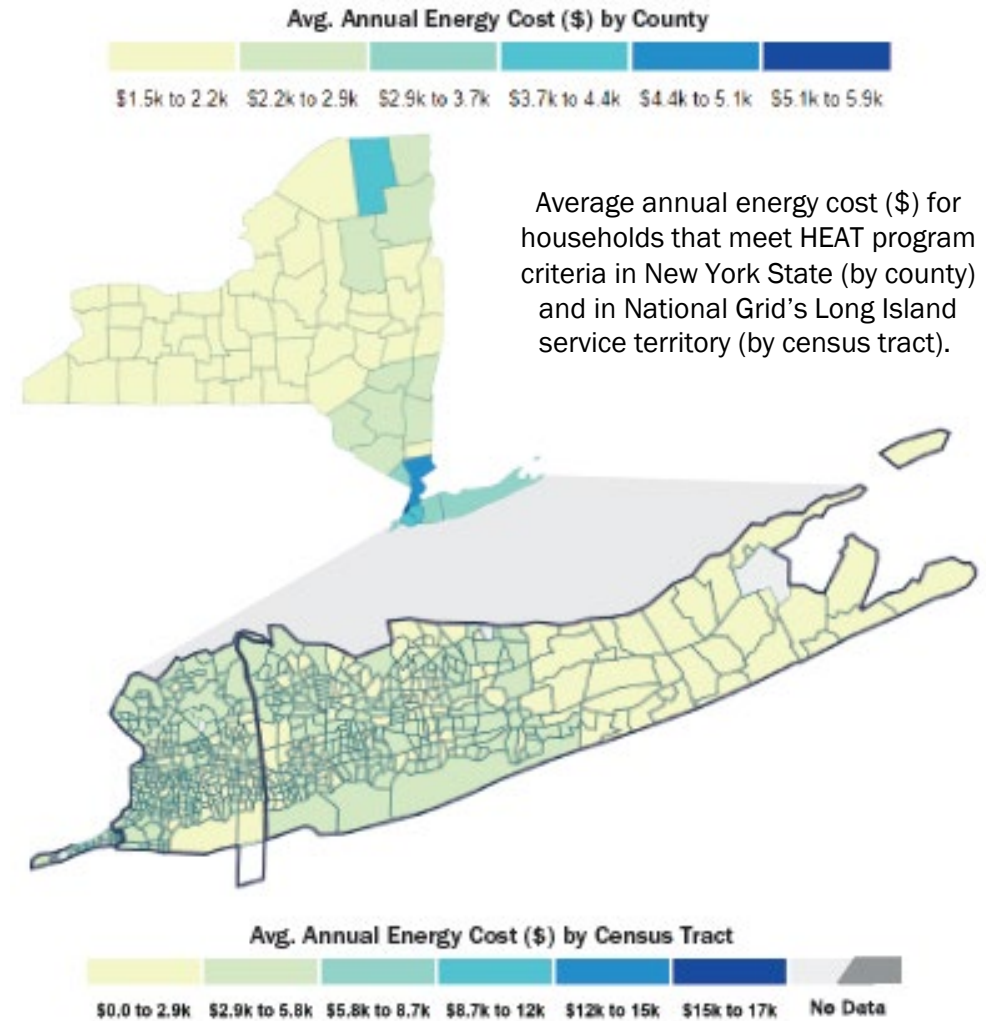
LEAD Tool Use Example: National Grid – Long Island, NY

Investor-owned utility company, National Grid, used the LEAD Tool to support implementation of its Home Energy Affordability Team (HEAT), a weatherization program for income-eligible residential natural gas customers in its service territory in Long Island, New York. Using data, graphs, and charts from the LEAD Tool, National Grid was able to determine how many households may be eligible for the program and compare with internal enrollment data to inform additional marketing efforts.



- New York**
 - Electricity
 - Gas
 - Other
 - Avg. Annual Energy Cost
- National Grid's HEAT Program**
 - Electricity
 - Gas
 - Other
 - Avg. Annual Energy Cost

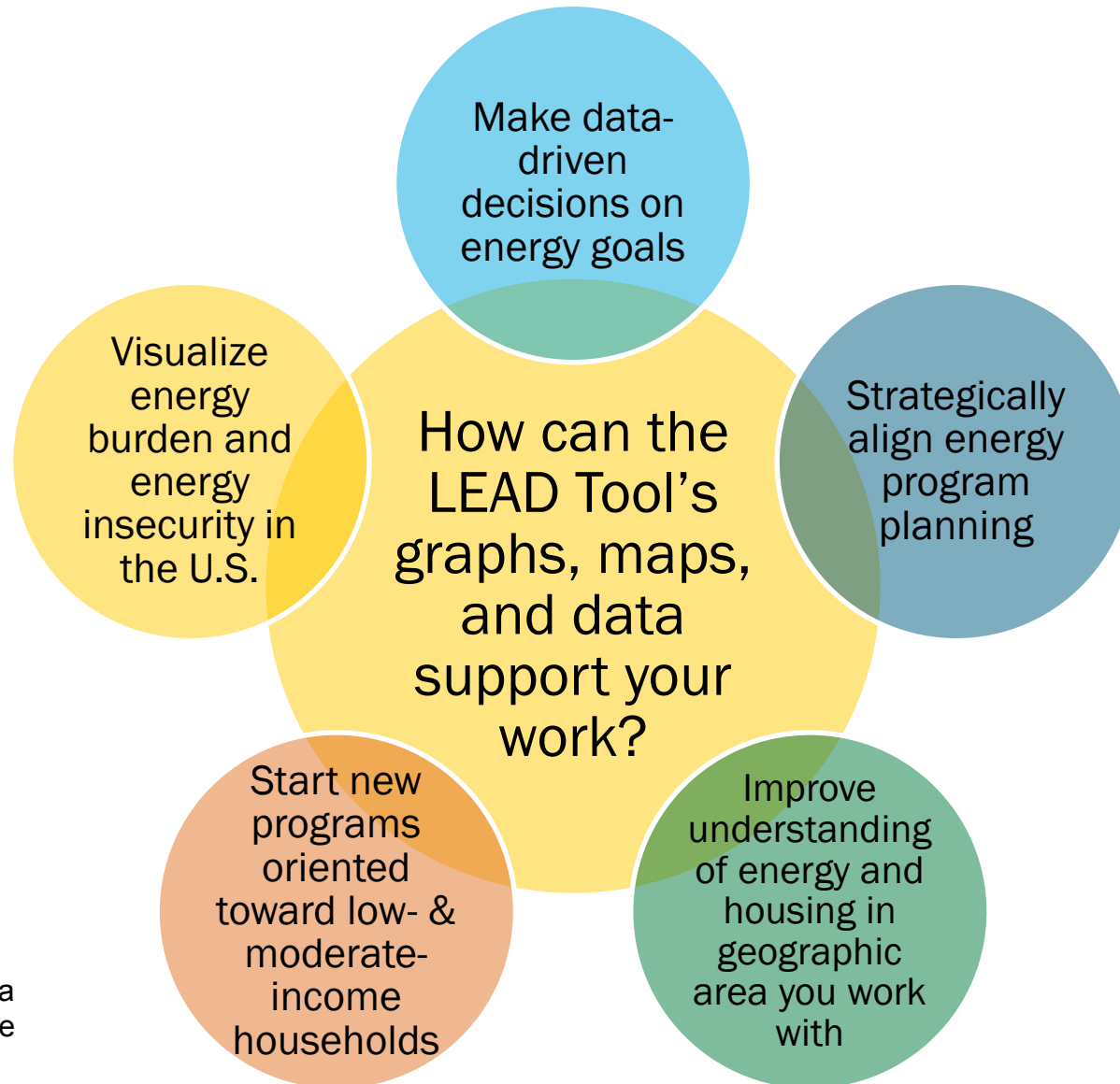
Housing counts and average energy burden (% income) by building age for households that meet HEAT program criteria in National Grid's Long Island service territory.



Average annual energy cost (\$) for households that meet HEAT program criteria in New York State (by county) and in National Grid's Long Island service territory (by census tract).

LEAD Tool National Grid Use-case:
<https://www.energy.gov/eere/slsc/downloads/national-grid-using-lead-tool-target-energy-affordability-services-eligible>

Value of the LEAD Tool for Energy Stakeholders



(The LEAD Tool is not meant to be used as a program management tool, or as a substitute for program or policy evaluations)

What stakeholders have said about the LEAD Tool:

"Having access to the LEAD tool allowed us to understand the extent of energy burdens in Philadelphia. The DOE staff was very supportive in guiding us to take advantage of the tool and make it useful for our work, even going so far as to develop a data set for Philadelphia specifically."

~ Philadelphia Energy Authority

"The LEAD tool has assisted us in better understanding the intersection between energy burden, housing types, demographics and access to services. Having consistent and comprehensive data is key to sound program and policy development. The LEAD tool has been instrumental to our work."

**~ State Energy Office
Minnesota Department of Commerce**

Contact Information

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Carolyn King
National Grid

National Grid Home Energy Affordability TeamSM

Helping with HEATSM

August 3, 2020



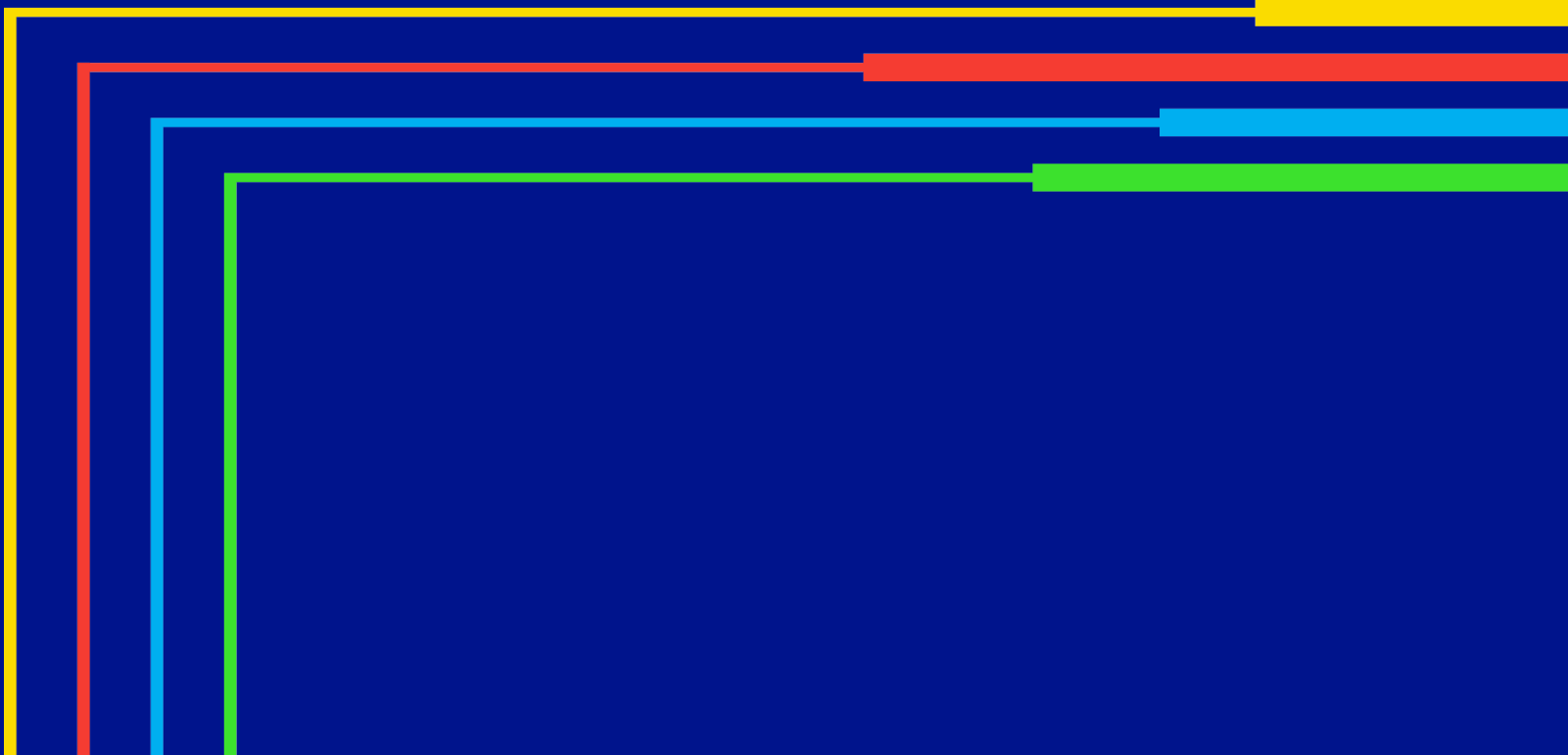
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Introduction

National Grid

Who we are
What we do

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National Grid – Our People in the US

In the US, we are making energy more affordable, safe and reliable for all customers, delivering electricity to approximately 3.3 million customers in Massachusetts, New York and Rhode Island.

In gas, we are the largest distributor of natural gas in the northeastern US, serving approximately 3 million customers, also in Massachusetts, New York and Rhode Island.

Our organisation has over

22,000

employees across the UK and US

74% of our workforce is based in the US

26% of our workforce is based in the UK

A working environment where everyone feels secure and able to thrive

24.3%

of our workforce are female

The average age of our employees is **44** with a collective total of almost **295,000 years** experience

Our workforce spans

59 nationalities

18.1%

of our workforce are from minority, racial or ethnic heritage

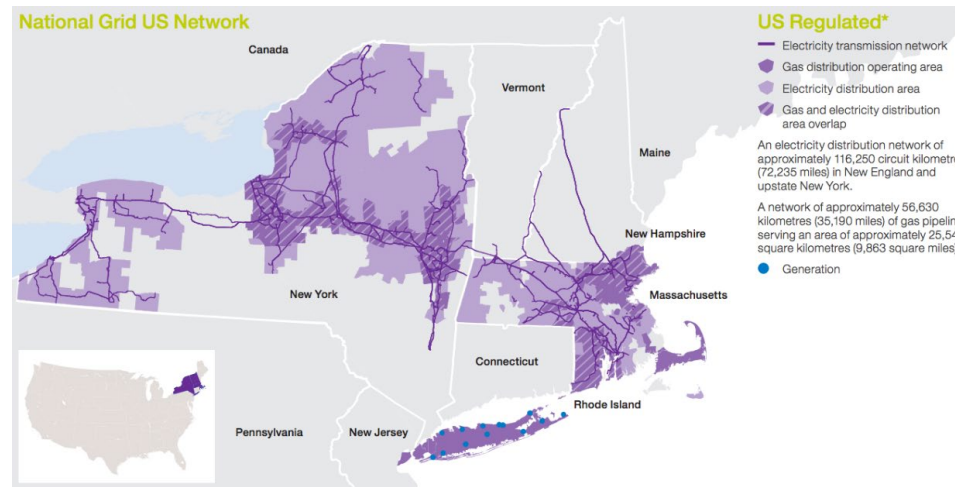
A strong commitment to ongoing development

Safeguarding future talent through the promotion of STEM as an exciting career plan

Engaged and talented teams with the knowledge, training, skills and experience to deliver

National Grid – Our Customers in the US

Each and every one of us at National Grid is helping to keep customers warm, ensuring the lights stay on and, ultimately, that the energy needs of people in Massachusetts, New York and Rhode Island are met every day.



The US core business has on average

7 million

customers

Our US customers cover **3 main categories:**

Residential: Over **3 million electric and 3 million gas** customers

Commercial: Nearly **400,000 electric and 350,000 gas** accounts with business in mind

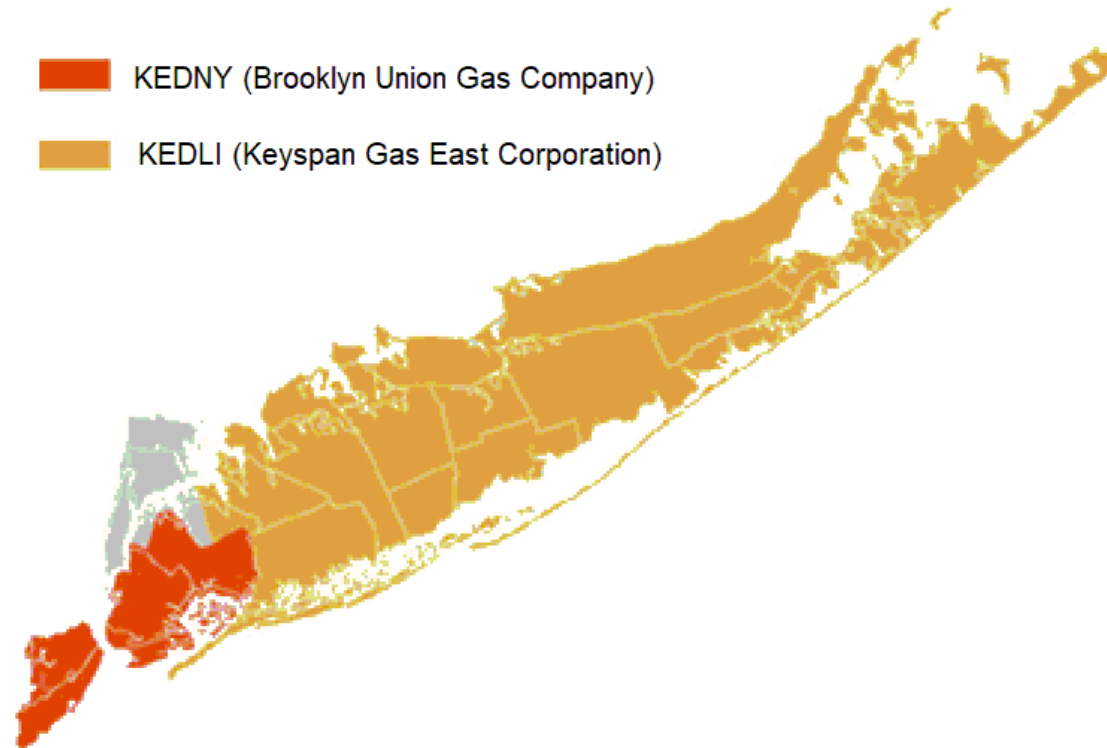
Wholesale/Federal Energy Regulatory Commission (FERC): **Over 300** customers using our transmission and distribution network every day

National Grid – Our Customers in Downstate New York

KEDNY (The Brooklyn Union Gas Company)

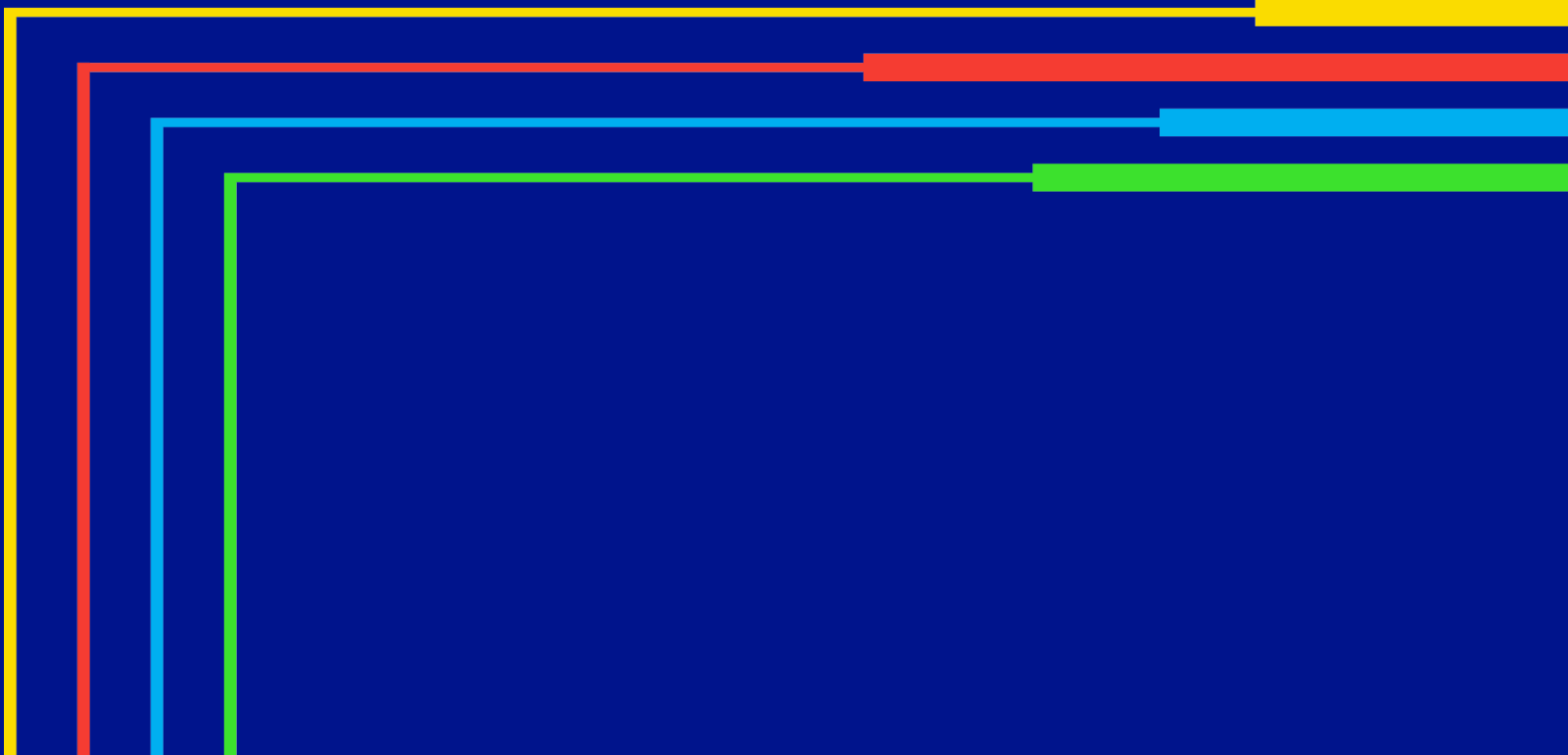
KEDLI (KeySpan Gas East Corporation)

- 4,000 employees in downstate New York
- 1,800,000 million natural gas customers
- 12,000 miles of existing natural gas pipelines
- 113 miles of new gas main installed since 2016



Home Energy Affordability TeamSM

Income
Eligible
Energy
Efficiency
Program



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HEATSM – Program Scope

- The goals of the program are to achieve energy savings and reduce bill impacts through education and implementation of energy efficiency measures and increase the health, safety, and resiliency of income eligible customers' homes.
- The program was filed as a component of the Company's KEDNY & KEDLI Joint Proposal and approved in December 2016.
- Approved budget: \$1.75 million total for administration, implementation and incentives, with a 15% cap on administrative costs.
- CLEAResult was selected as the program's implementation vendor through the Company's procurement process.
- The program was branded as HEATSM and launched in April 2017.

HEATSM – Program Delivery

- **Tier 1 – Marketing and Outreach**

National Grid’s marketing team targets Energy Affordability Program (EAP) participants and customers who received HEAP payments through various marketing channels.

- **Tier 2 – Home Energy Assessment & Health and Safety Check**

The HEA is a “walk-through” style energy evaluation of a customer’s home, focusing on how all the household systems work together, and identifying any elements of concern or areas for improvement. As part of the HEA, the gas appliances, heating system and gas energy-consuming equipment are examined to determine their impact on the home’s energy efficiency.

- **Tier 3 – Prescriptive Measures**

The prescriptive measures are recommendations from Home Energy Assessment and Health and Safety Test which may include the following: Smart Programmable Thermostat, Air Sealing, Duct Sealing, CO Detector, Attic Prep Work, Attic Insulation, Attic Hatch, Air Leakage Sealing, High Efficiency Heating Equipment, Energy Star Tankless Water Heater, Energy Star Storage Tank Water Heater

- **Tier 4 – Custom Measures**

The custom measures are recommendations from the Home Energy Assessment and Health and Safety Test which may mitigate identified issues with health and safety and/or improve the resiliency of the home. This may include but is not limited to smoke detectors, T&P drip tubes, ventilation improvements, and emergency referrals that may necessitate collaboration with the HEAP.

HEATSM – Customer Stories



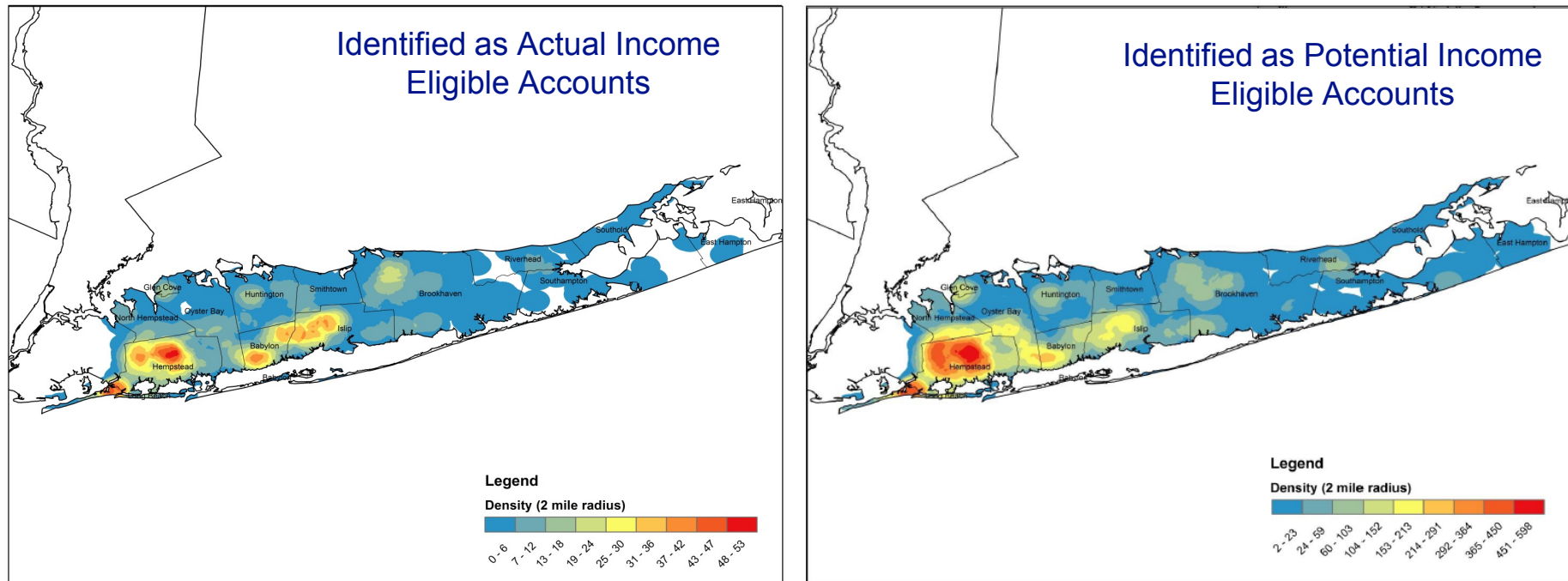
- Joan K. is 85 years old, receives SNAP. Her daughter urged her to apply for HEATSM
- HEATSM performed an audit and high CO levels were detected in the flue of the boiler. No other issues were identified.
- Joan's savings are used for her living expenses so she was over income for Heating Emergency Repair and Replacement (HERR) program.
- HEATSM replaced the boiler.



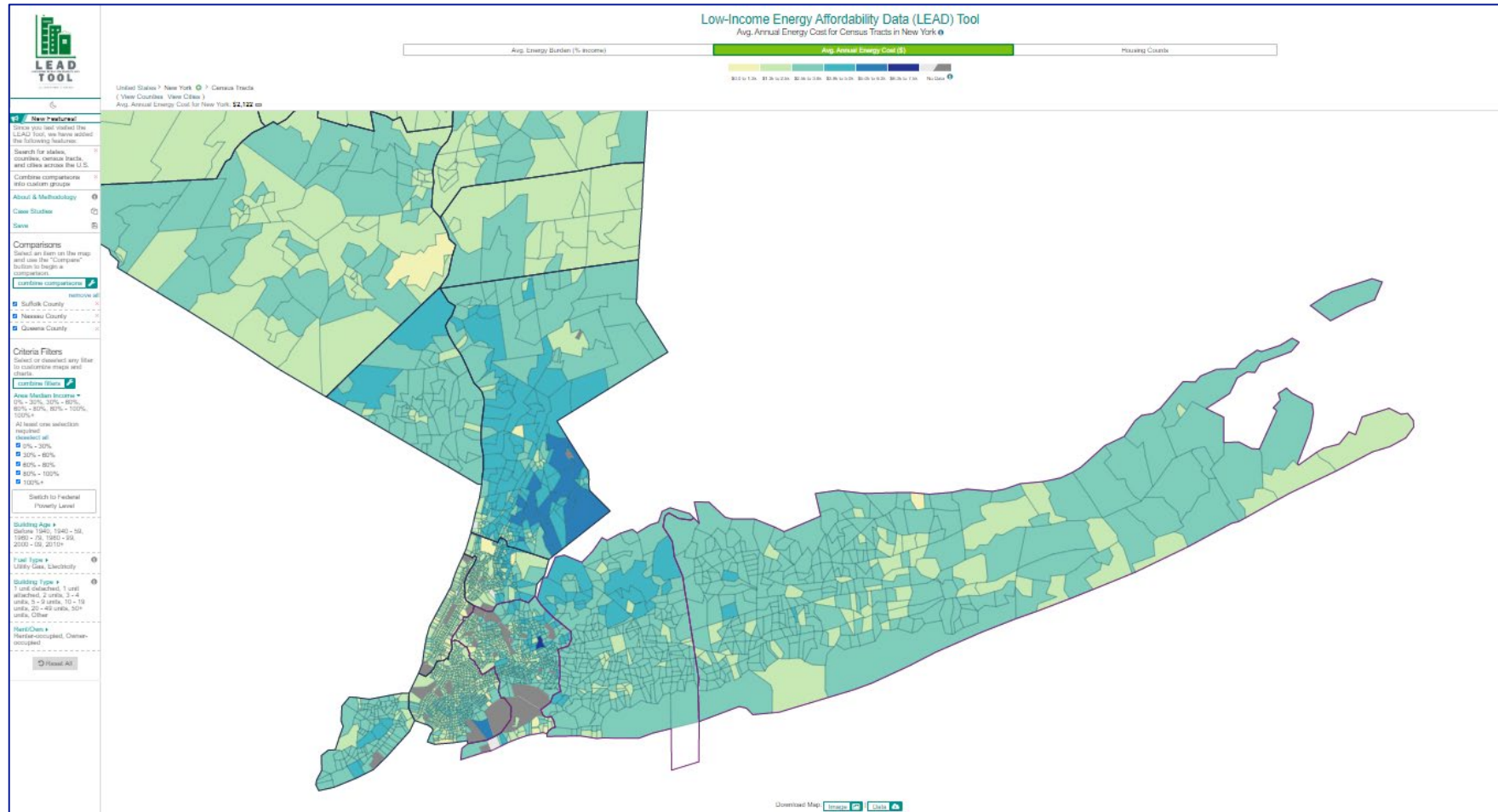
- Joon-woo P. cares for his wife who is undergoing chemotherapy. English is a 2nd language in their home. Their annual income is \$10,000, and they qualify for HEATSM, HEAP and SNAP.
- A gas leak was reported by the electric utility while performing an energy efficiency audit. National Grid responded and found the boiler and DHW were unsafe so they locked and tagged the appliances. When HEATSM arrived to evaluate the house, the family was using a propane cooktop to heat the home.
- HEATSM worked with Joon-woo through an interpreter to guide him through the HERR program. The family received a boiler through HERR and HEATSM replaced the DHW. HEATSM made additional repairs to make the home safe.

HEATSM – Identifying Income Qualified Applicants

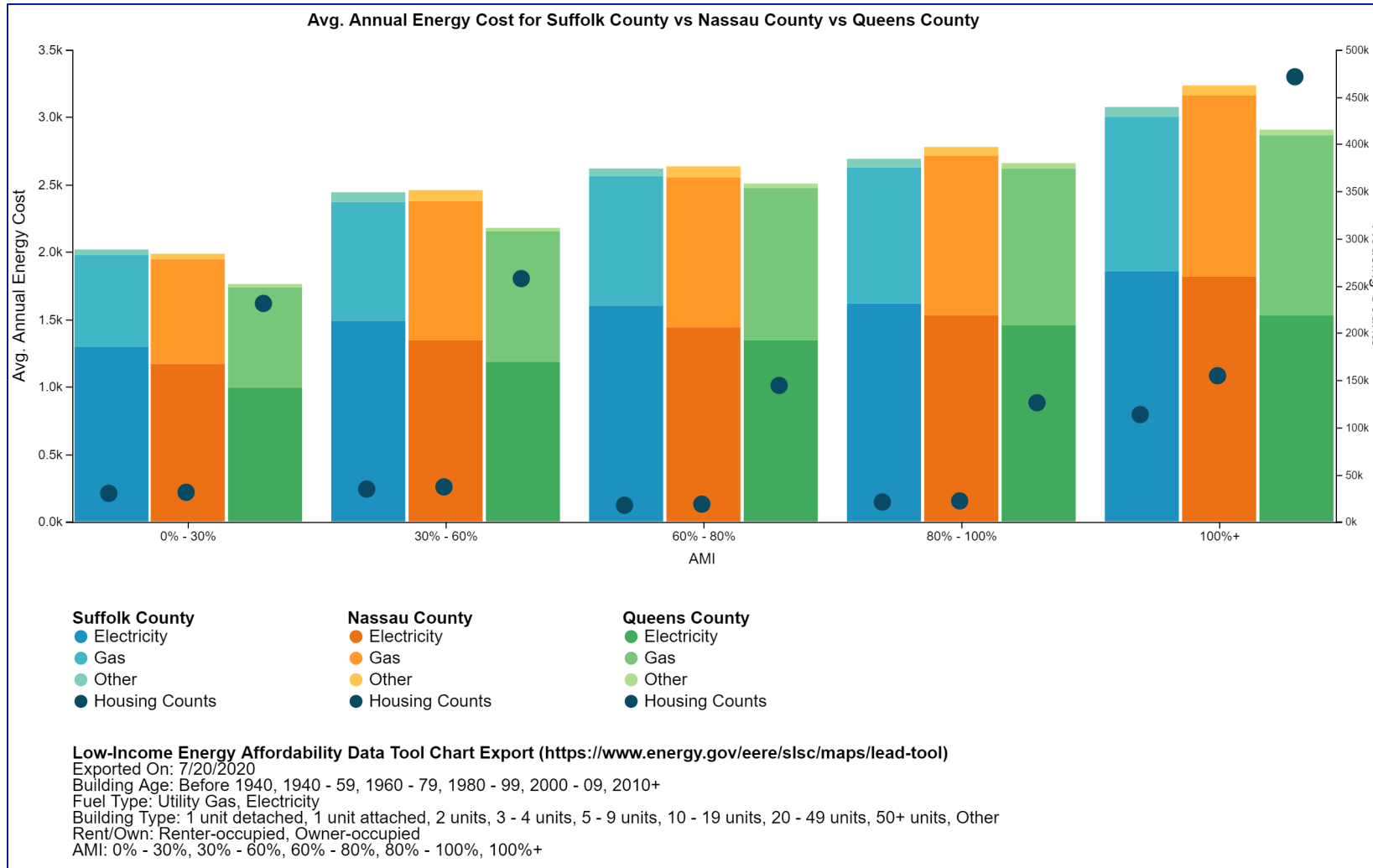
Geographic Analysis - Queens (Far Rockaway), Nassau, Suffolk



HEATSM – Identifying Energy Burden with the LEAD Tool



HEATSM – Presenting Comparisons Across Counties



Thank you

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(4328)

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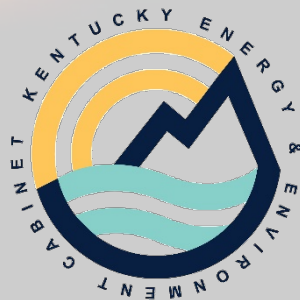
Kenya Stump

Kentucky Office of Energy Policy

Kentucky's Use of LEAD Tool

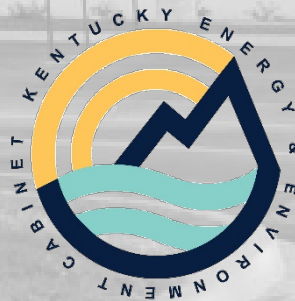
KENYA STUMP

KENTUCKY OFFICE OF ENERGY POLICY



Office of Energy Policy's Mission

To support the utilization of Kentucky's energy resources for the betterment of the Commonwealth while protecting and improving our environment.



Office Goals

Be the customer-driven recognized State Energy Policy Authority.

Enhance the economic opportunities and benefits to Kentucky citizens and industry through expansion of current markets and the development of market opportunities for Kentucky.

Effectively implement federal and state energy programs to leverage federal State Energy Program funding and other funding sources by identifying and working with partners who can deliver cost-effective and credible energy programs that reduce energy costs, enhance resilience, and increase emergency preparedness.

Enhance the energy resilience and security of the Commonwealth by identifying opportunities to increase our ability to respond effectively to an energy disruption and to recover quickly and to **maintain the uninterrupted supply of energy resource to the Commonwealth that are affordable.**



Energy Affordability Basics

Energy Affordability can be thought of as the *quality of our energy systems where the costs and needs of the system are balanced with the ability of users to pay.*

Energy Security is thought to mean the uninterrupted availability of energy sources that is affordable.

Energy insecurity exists with other insecurities such as food and housing; yet, energy insecurity doesn't get as much "attention" even though it is part of the foundation for individuals realizing their potential as members of our society.

The lens or perspective being utilized to discuss energy affordability is specific to the stakeholder or policy; therefore having a common language is important to ground discussions.



LEAD Tool Dispels Myths

Urban versus rural housing

Renters versus owners

Multi-unit versus single unit housing

Mobile versus stationary

Fuel types



LEAD Tool is our Guiding Light

Is the first step in program development

Aids the Office in identifying geographic areas for targeted assistance programs

Helps the Office look for grant partners serving specific areas



LEAD Tool Breaks Down Barriers





ALL TOGETHER

LEAD Tool Enables States to Find Commonality and Learning Opportunities



“Knowing where things are, and why, is essential to rational decision making”

~ Jack Dangermond, Environmental Systems Research Institute (ESRI)



Contact

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502-782-7083

<https://eec.ky.gov/Energy/Pages/default.aspx>

Data has a better idea



LEAD Tool Demonstration

<https://www.energy.gov/eere/slsc/maps/lead-tool>

Post-Webinar Survey

In order for us to better understand how users are using the LEAD Tool and what future features to include to make the Tool more beneficial for users, please fill out a short survey upon exiting the webinar.

THANK YOU!

Q & A:

Please use the questions box to ask a question or leave a comment.

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Contact

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Share your story!

If you are using the LEAD Tool, let us know how it's going or send us your questions:

LEAD.Tool@ee.doe.gov

Resources

- [DOE Low-Income Affordability Data \(LEAD\) Tool](#)
- [Kentucky: Using LEAD Tool Data to Fund Energy Efficiency Programs](#)
- [National Grid: Using the LEAD Tool to Target Energy Affordability Services](#)
- [Low-Income Energy Library: Federal Resources and Tools](#)
- [Low-Income Community Energy Solutions](#)
- [National Community Solar Partnership](#)
- [Clean Energy for Low-Income Communities Accelerator \(CELICA\) Toolkit](#)