



2022 NATIONAL ENERGY & UTILITY AFFORDABILITY COALITION CONFERENCE

Rising with Resiliency

June 27–30, 2022



NATIONAL ENERGY & UTILITY AFFORDABILITY COALITION



2022 NATIONAL ENERGY & UTILITY AFFORDABILITY COALITION CONFERENCE

Rising with Resiliency

Leveraging Equity Data to Build Energy, Health, and Housing Coalitions


Will Bryan, Director of Research, SEEA

Joy A. Ward, Research Associate, SEEA

Andrew Robison, Research Analyst, TEPRI

Agenda

- Energy Insecurity: An Overview
- Research and Stakeholder Engagement in Rural Alabama
- Research and Stakeholder Engagement in South Texas
- How Stakeholders Can Address These Issues?



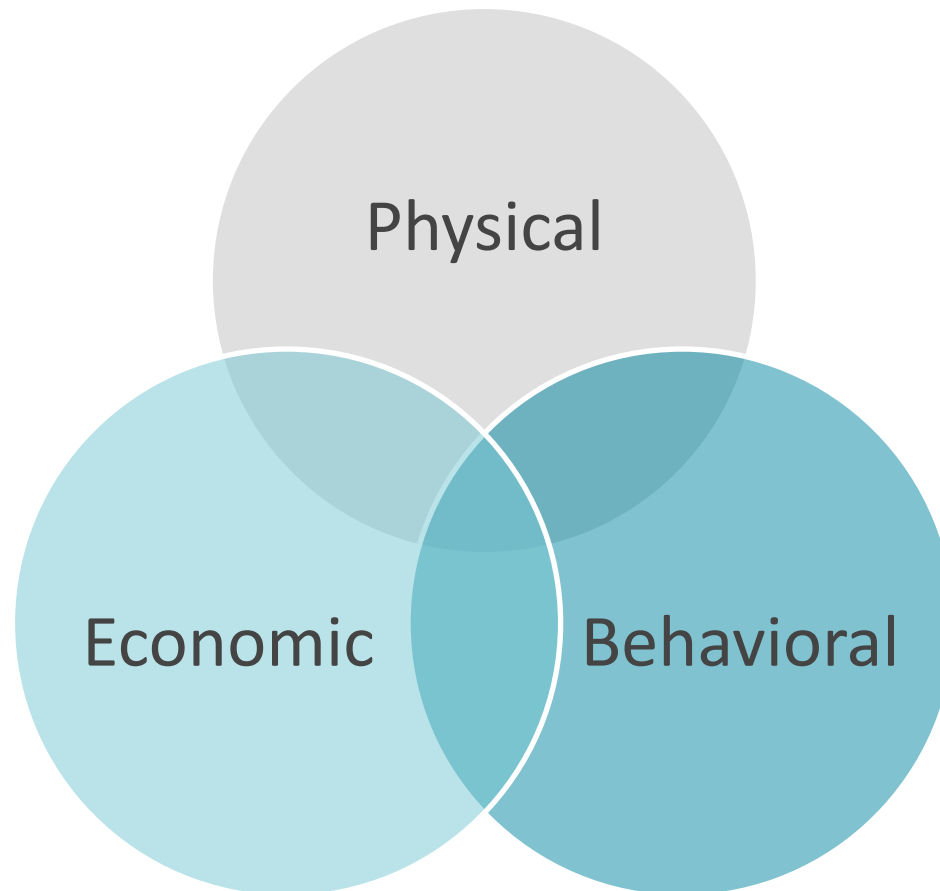
The Southeast Energy Efficiency Alliance (SEEA) promotes energy efficiency as a catalyst for economic growth, workforce development and energy security across 11 southeastern states including Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Virginia.

SEEA's Core Services



Energy Insecurity in the South

One out of every three people in the South faces **ENERGY INSECURITY**, “an inability to adequately meet household basic energy needs” including heating, cooling, and lighting.



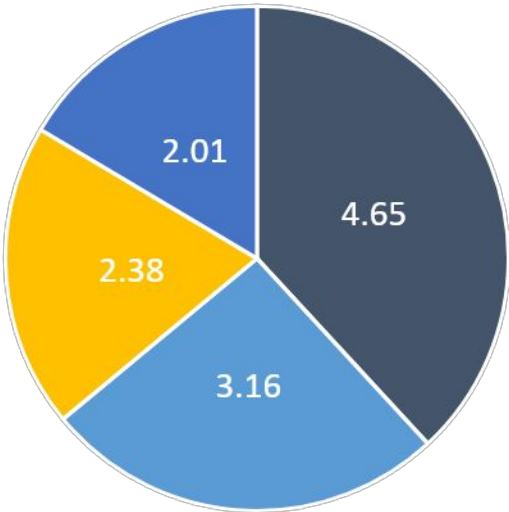
Energy insecurity was common in the South, even before COVID-19.

The **dark blue** section in these pie charts demonstrates the need among Southern households (millions of households.)

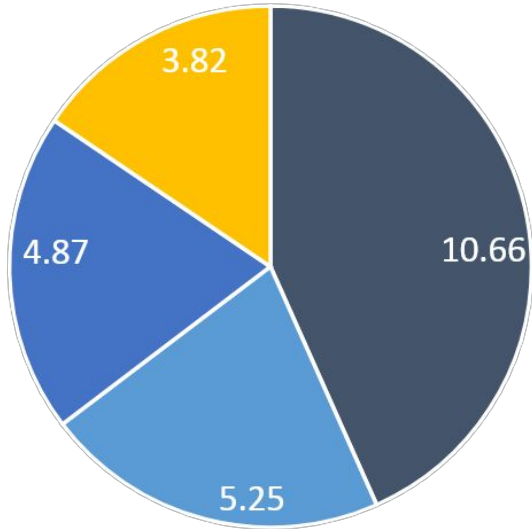
- South
- West
- Midwest
- Northeast



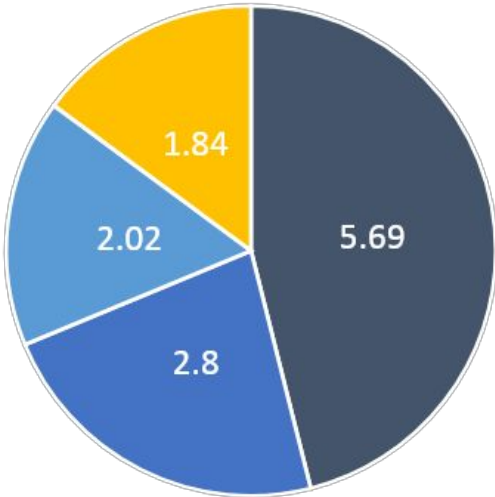
Home at Unhealthy Temperature



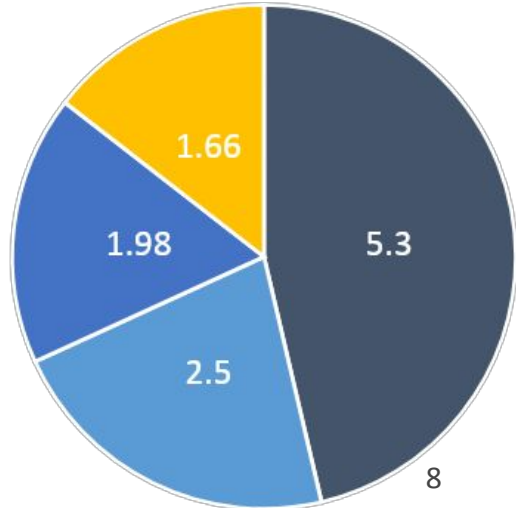
Reduce Food/Medicine



Disconnected/Stop Service Notice

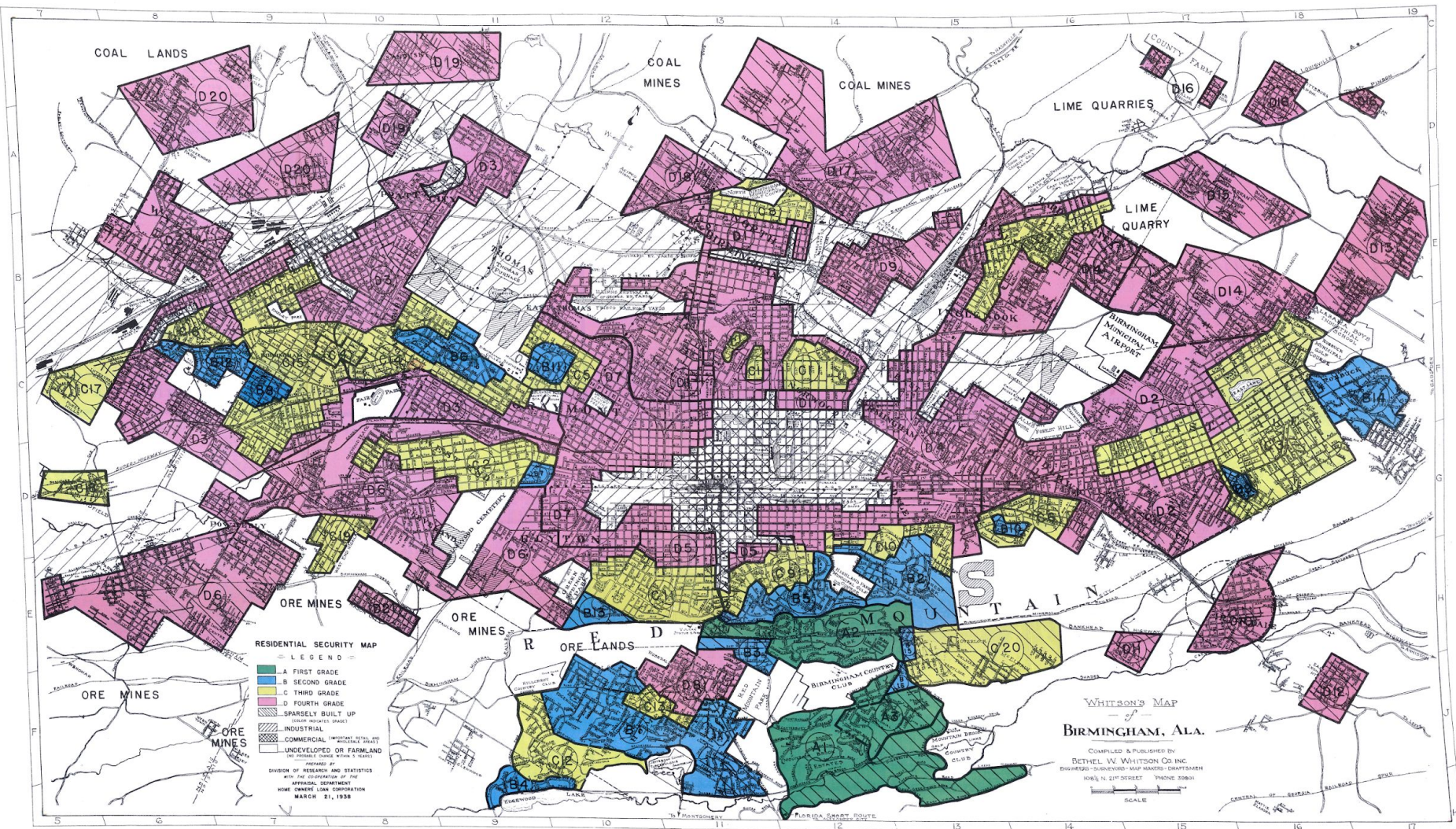


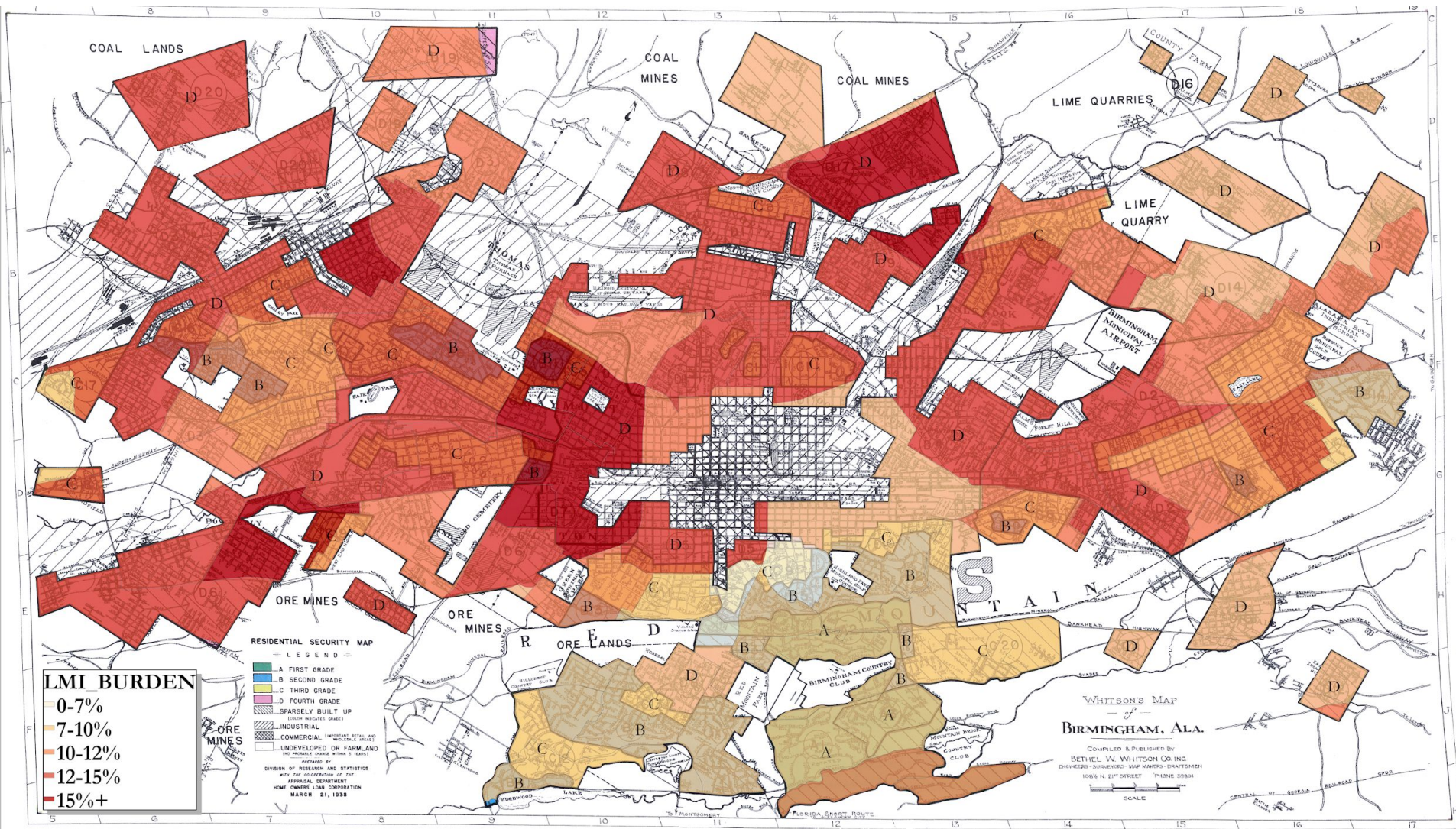
Unable To Use Heat/Cooling Equipment



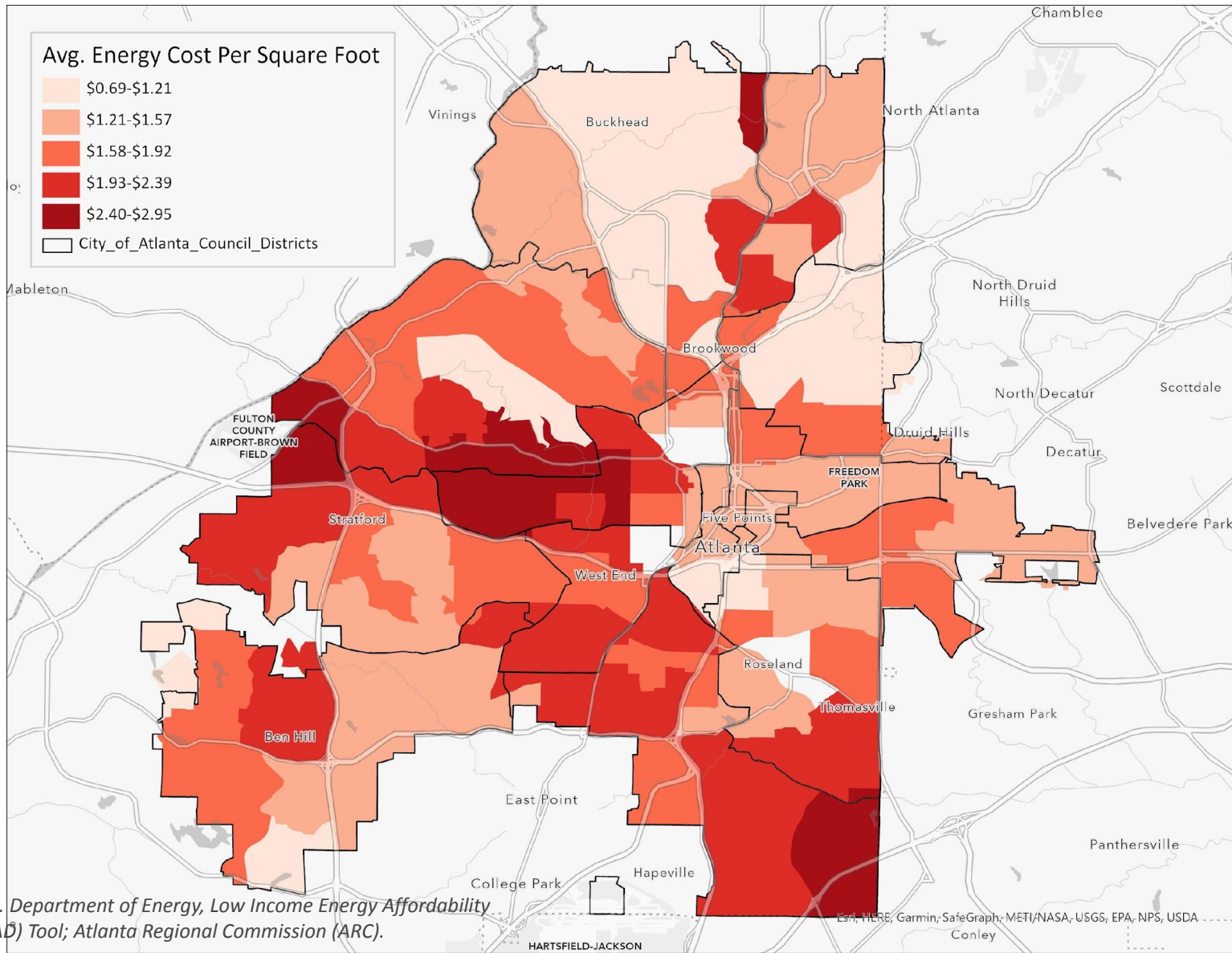
Data: U.S. Energy Information Agency (EIA), Residential Energy Consumption Survey (RECS)

Energy insecurity is rooted in the past.





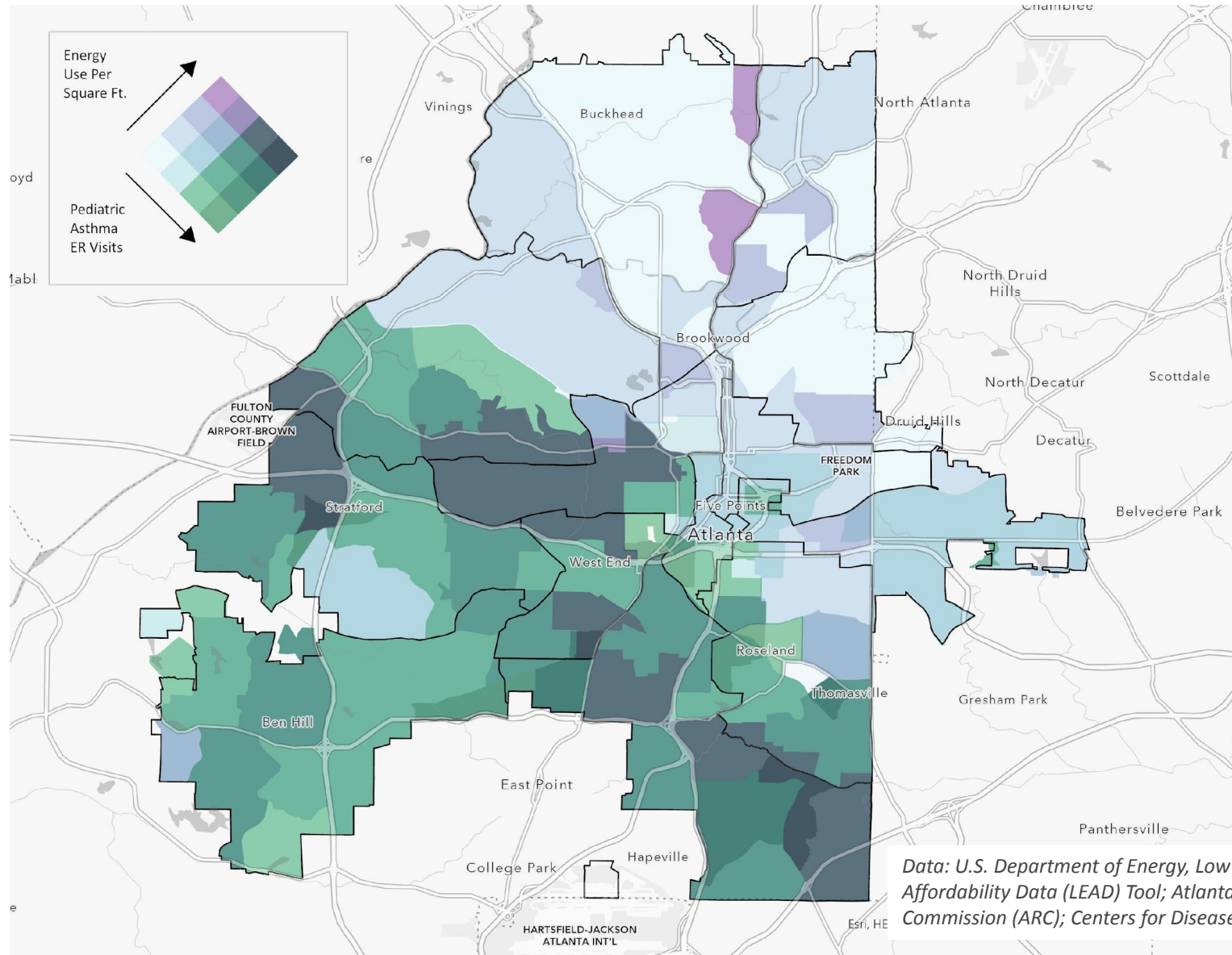
Energy insecurity is not just an issue of incomes



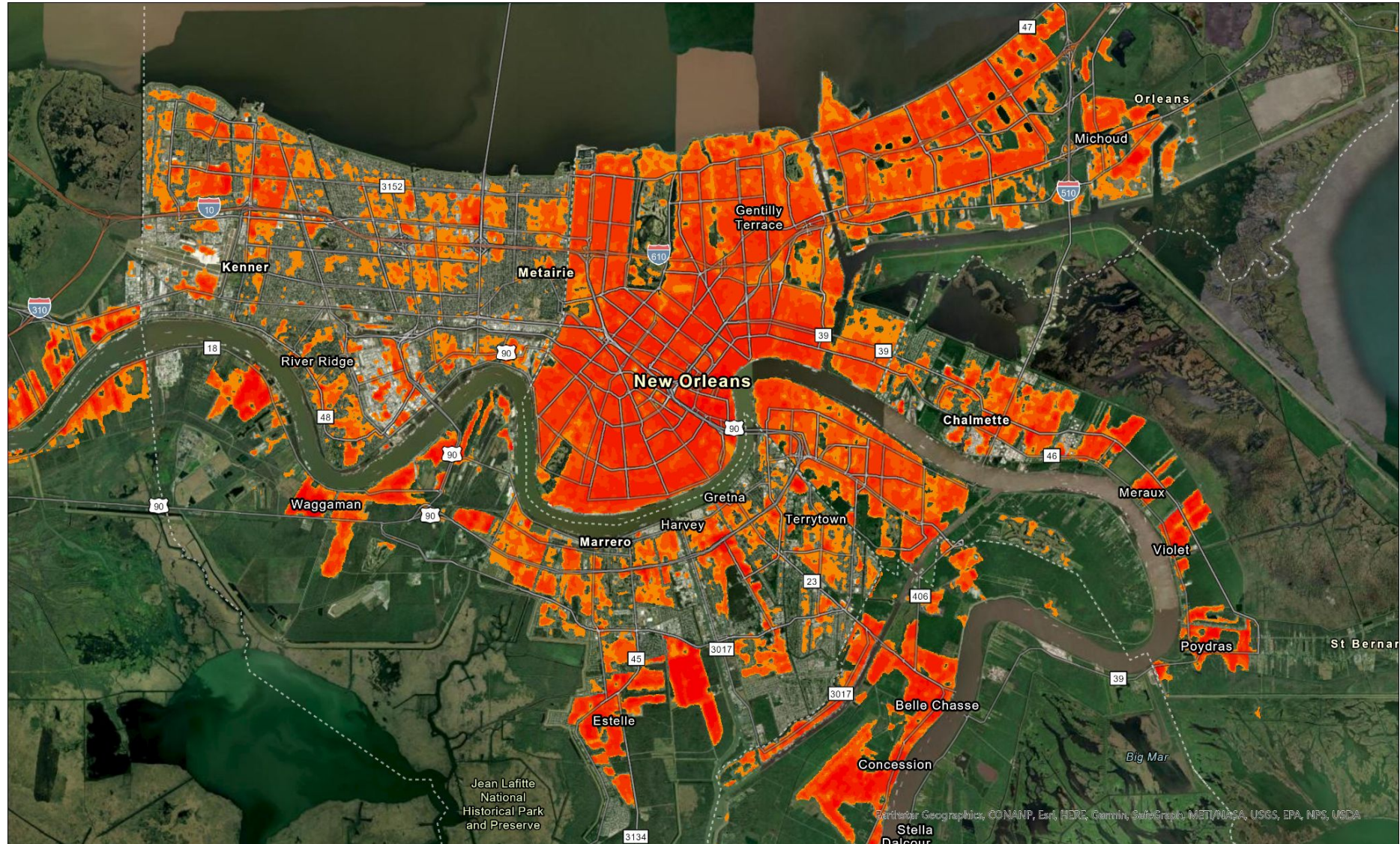
Data: U.S. Department of Energy, Low Income Energy Affordability Data (LEAD) Tool; Atlanta Regional Commission (ARC).

ESRI, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

Unaffordable Homes Are Unhealthy Homes



Energy insecure communities are vulnerable to extreme weather and other disaster events.



ENERGY EQUITY INSPECTOR

Southern States

Pick State (Top Map & Table)
All

Map 1. Counties of All. Color shows average EAG per LMI households.

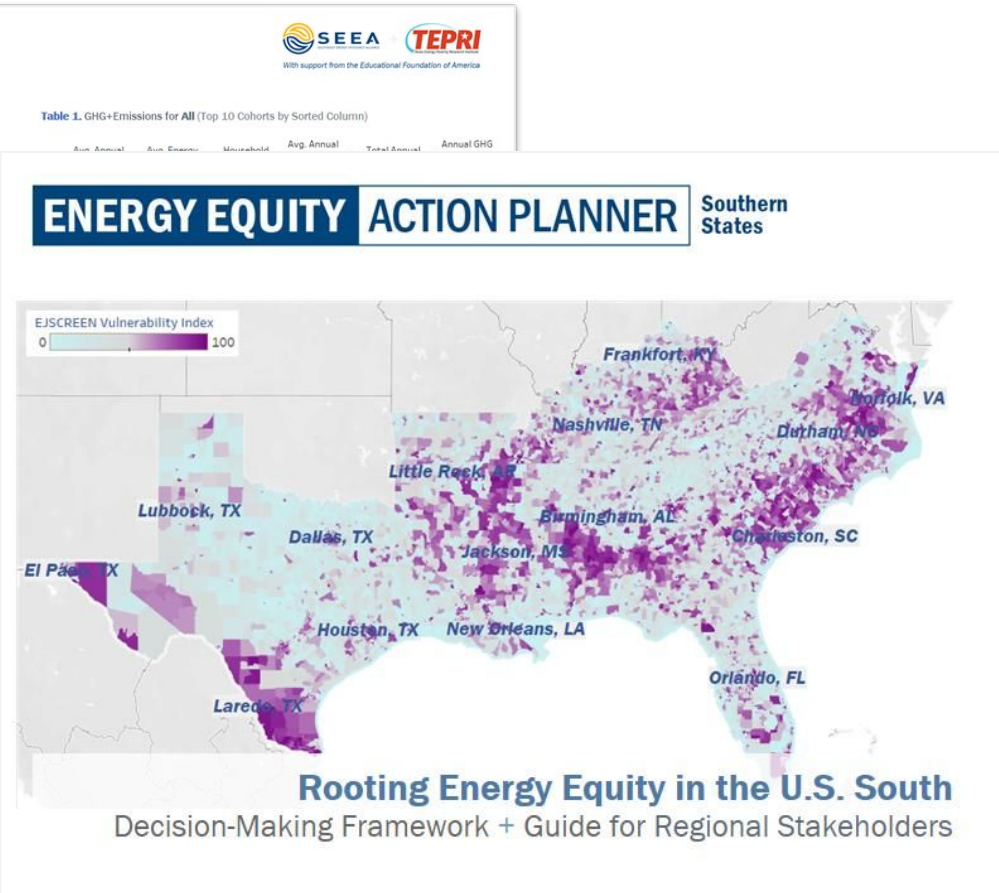
Pick State (Bottom Map & Table)
GA

Map 2. Counties of Georgia. Color shows average EAG per LMI households.

Cohort Category
0-30% Owners, Old
0-30% Owners, New
0-30% Renters, Old
0-30% Owners, New
0-30% Owners, Old
0-30% Renters, New
0-30% Renters, Old
0-30% Renters, New
30-60% Owners, Old
30-60% Renters, Old

Data Sources: U.S. Dept. of Energy's eGRID database ([data.epri.com/publications/Pages/default.aspx?ID=162&Title=eGRID Data Summary Report - 2012](https://www.data.epri.com/publications/Pages/default.aspx?ID=162&Title=eGRID%20Data%20Summary%20Report%20-%202012)). The LEAD Tool models natural gas sales totals (EIA), 2019 "Form EIA-861" ("Emissions & Generation")

Questions? Please contact Jacquie Moss, Research Fellow, TEPRRI (jacquie@txenergy-poverty.org).



Get Started »

LOCATE Geography	DESCRIBE Characteristics	MEASURE Values
<p>State</p> <p>Congressional District</p> <p>County</p> <p>City</p> <p>ZIP Code</p> <p>Census Tract</p> <p>Balancing Authority (BA)</p>	<p>Cohort (60 types)</p> <ul style="list-style-type: none"> – Income Group (%-AMI) – Tenure (Rent, Own) – Building Type (SF, MF, Other) – Vintage (Older, Newer) <p>Energy Poverty Status (High/Low)</p> <p>Locale Type (Urban/Rural)</p> <p>Social Vulnerability (High/Low)</p>	<p><i>By Household or Cohort:</i></p> <p>Energy Costs</p> <p>Annual Income</p> <p>Energy Burden</p> <p>Affordable Energy</p> <p><i>By Geographic Unit:</i></p> <p>Vulnerability Index</p> <p>Air Toxic Respiratory Index</p> <p>Share Pop. LMI</p> <p>Share Pop. BIPOC</p> <p>Share Pop. Linguistically Isolated</p> <p>GHG Emission Rate (by BA)</p> <p><i>Both/Either:</i></p> <p>Energy Affordability Gap</p> <p>Electricity Costs</p> <p>Annual GHG Emissions Estimate</p>

Investments in housing are investments in energy infrastructure and equity.

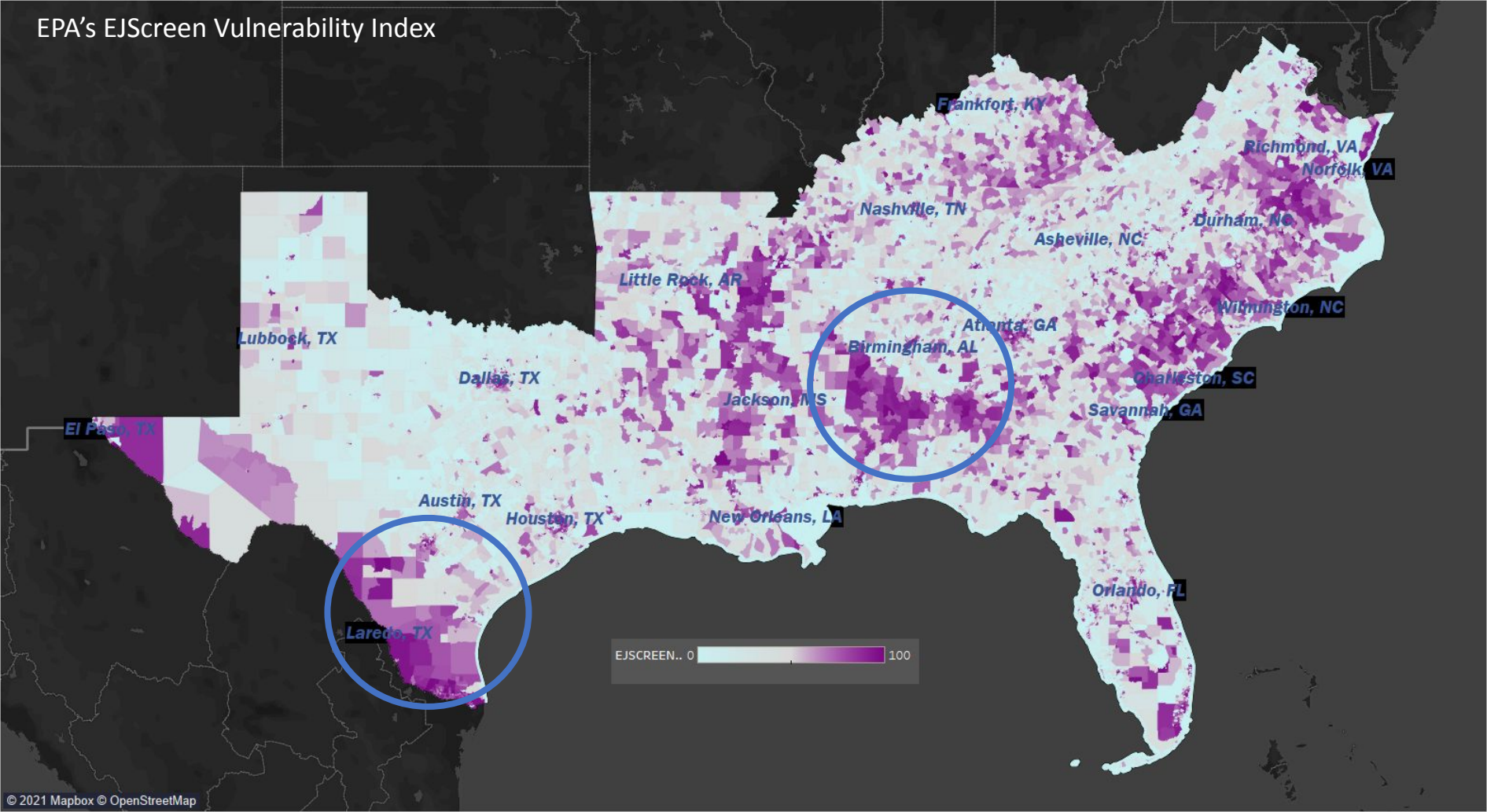


Supporting Alabama Black Belt Communities with Research and Technical Assistance

Key Definitions

- **Energy Burden:** percentage of annual income that a household pays to cover all energy bills. The U.S. Department of Housing and Urban Development (HUD) considers spending more than 6% of income on energy bills unaffordable. Energy burden is an important indicator of energy insecurity but is not a stand in for energy insecurity.
- **Energy Affordability Gap:** measures the amount that households spend on energy over an affordable limit of 6% of annual income.
- **Low- to Moderate-Income (LMI)** in our research is generally based on Area Median Income (AMI) using a range of 0-80% AMI. Some of our data sources use Federal Poverty Level (FPL) and the generally accepted range for LMI is $\leq 200\%$ FPL.
- **Greenhouse Gas (GHG) Emissions** are gases that trap heat or longwave radiation in the atmosphere and contribute to climate change. In this study, we measured GHG emissions from electricity generation as carbon dioxide equivalents (CO_2e). Our data source measures CO_2e from carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

The Alabama Black Belt and South Texas



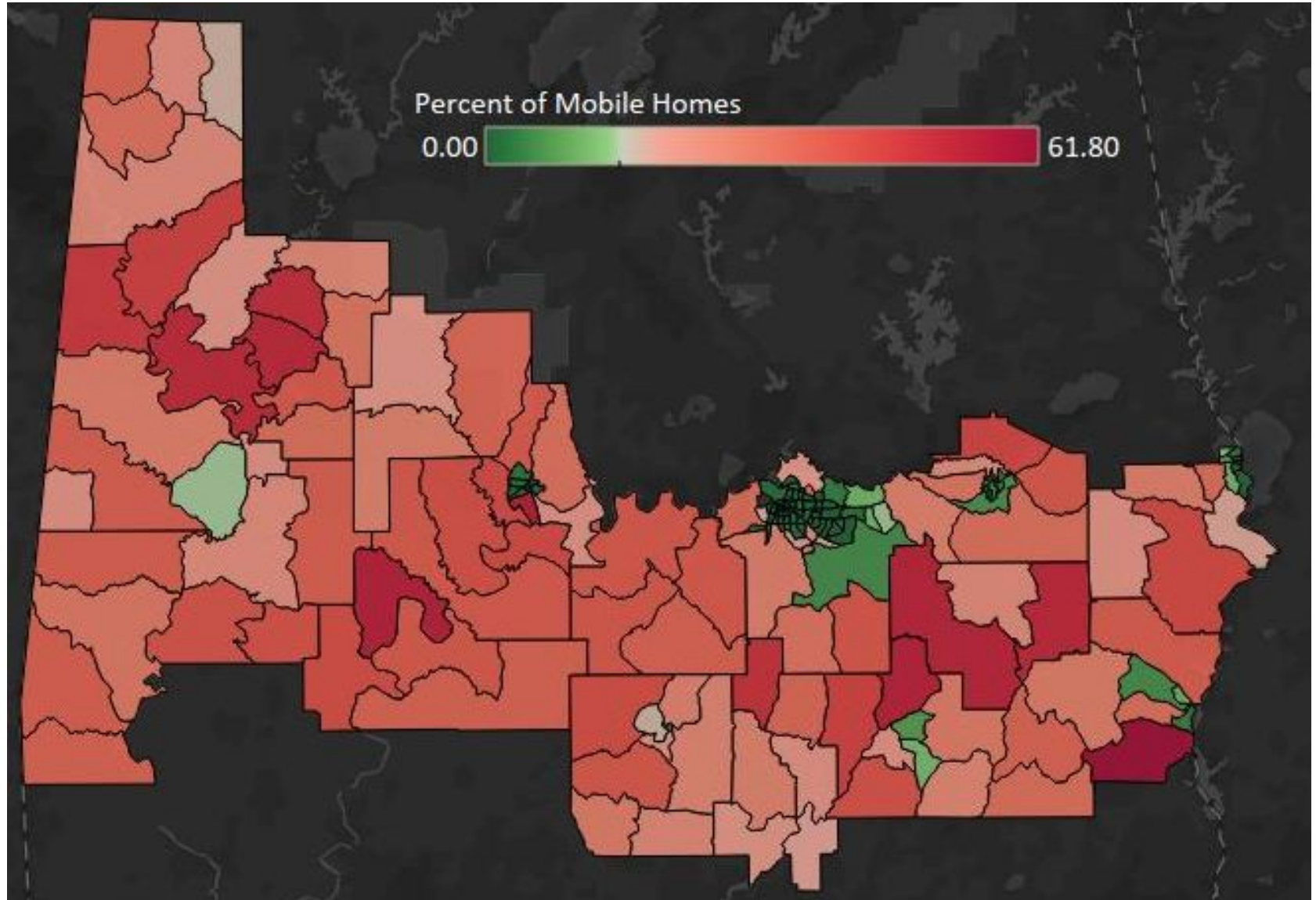
EJSCREEN Vulnerability Index is a demographic index that is an average of two factors measured at the block group level — %-low-income and %-BIPOC, which represents people who identify as Black, Indigenous, and People of Color. Higher vulnerability tracts have a Vulnerability Index above 50%.

The Alabama Black Belt: Poverty on a Rich Land

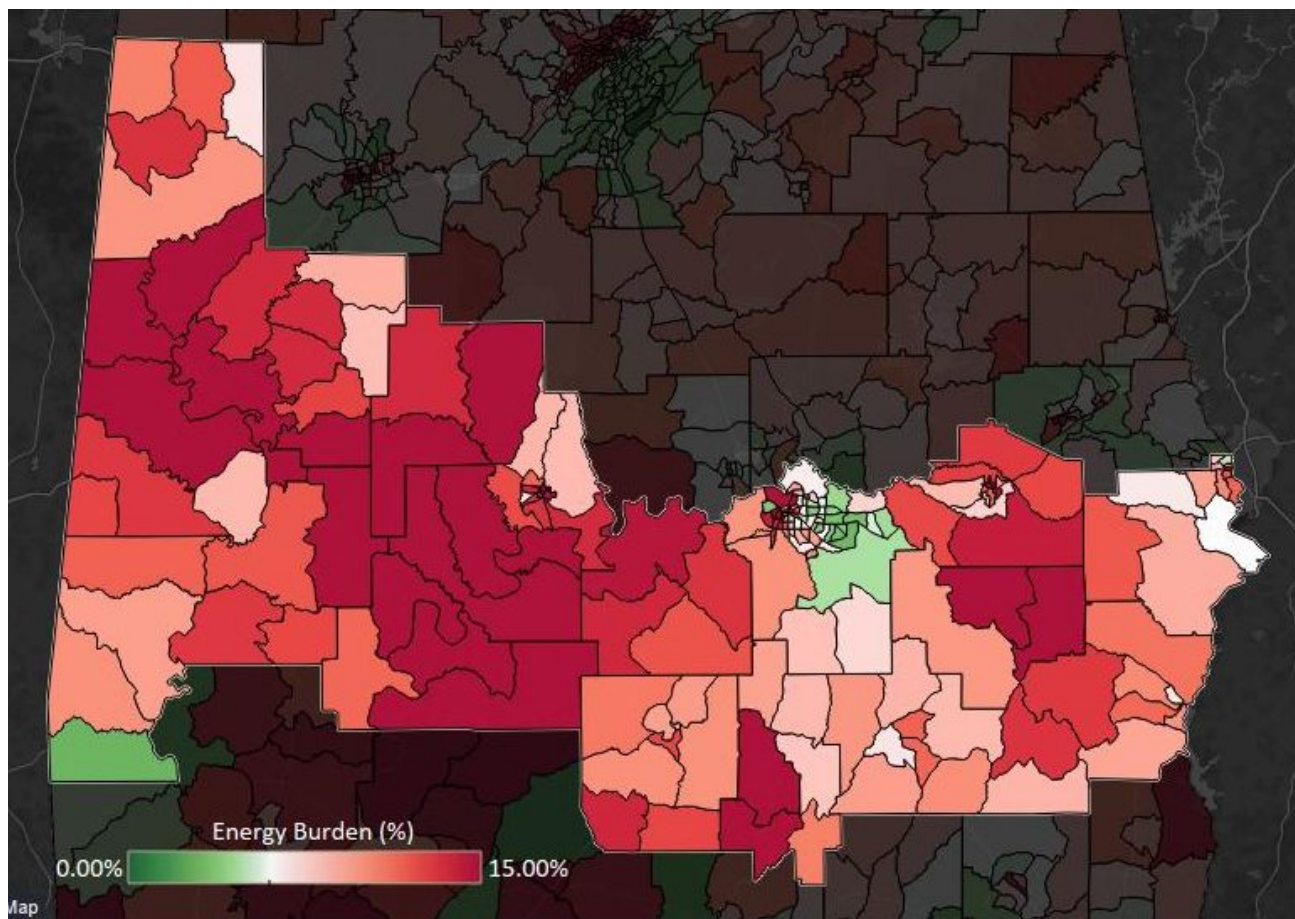


Credit: Library of Congress

Unaffordable and Inefficient Housing



Energy Burdens in Black Belt Alabama



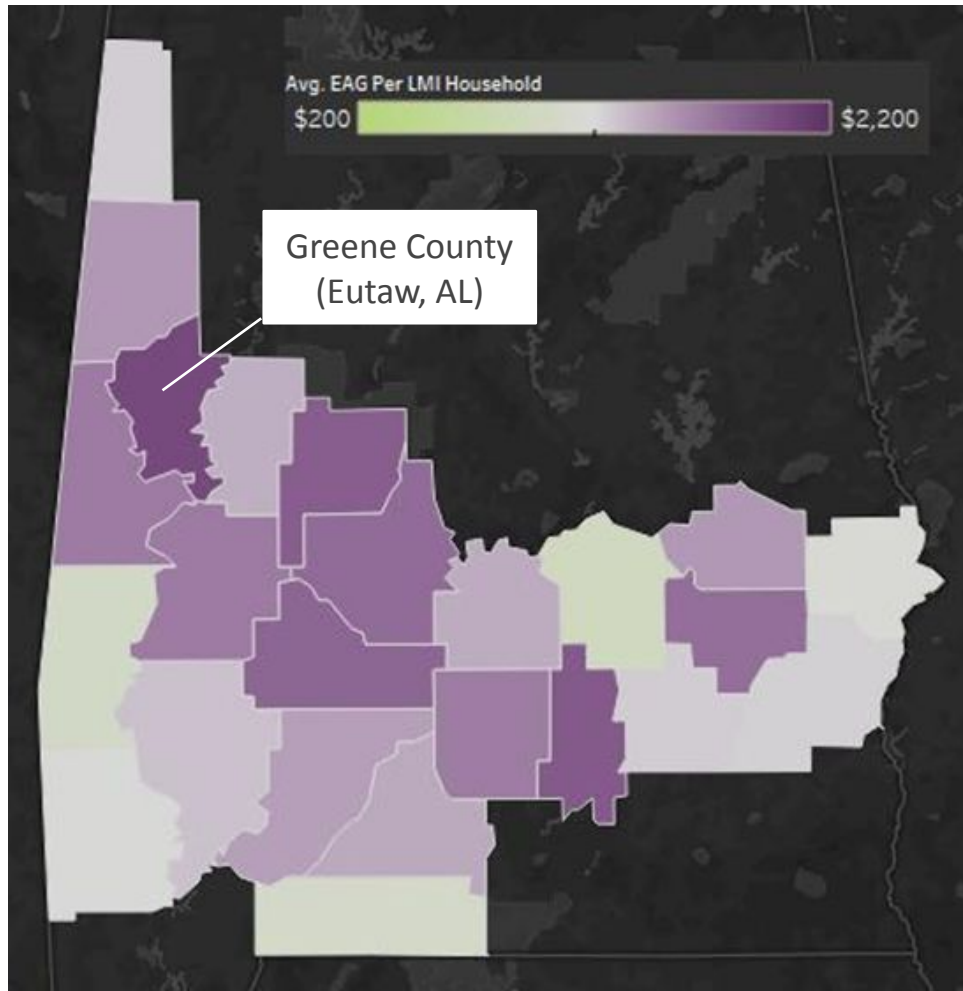
Avg. Energy Burden (all households):
9.9%

Avg. Energy Burden (LMI households):
17.2%

Avg. Energy Costs (all households):
\$2,575

Avg. Energy Costs (LMI households):
\$2,473

Energy Affordability Gap: Exacerbating Household Financial Strain



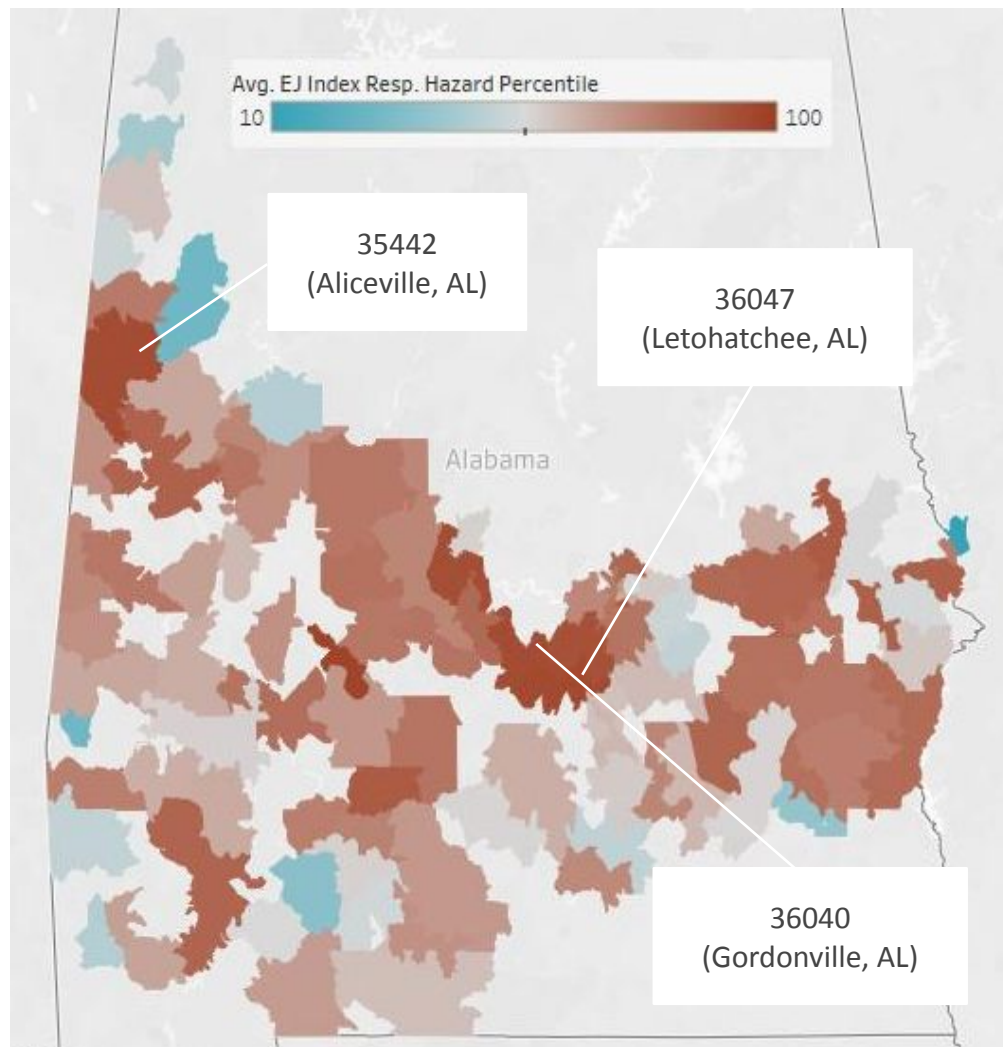
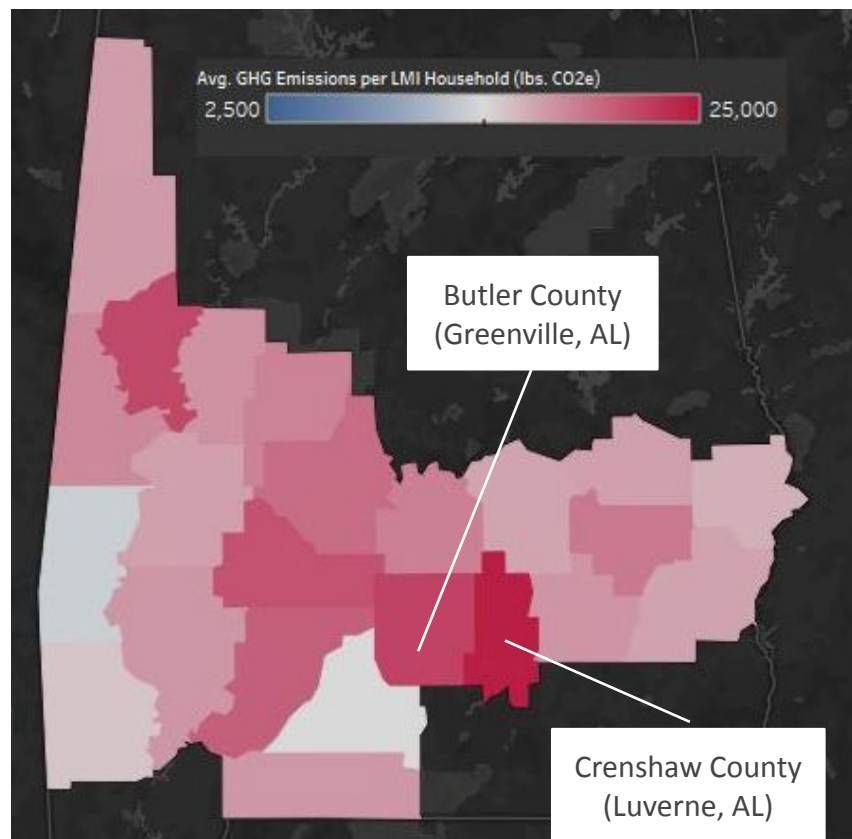
Household Energy Affordability Gap
in Greene County:

\$1,996/year or \$166/month

That's about **half** of what
the average low-income
family **spends on food** for
an **entire year**.



Emissions and Respiratory Hazards



Who will benefit from investments?

Energy Burden
and Affordability
Gap per LMI
Household

Cohort Category	Avg. Annual Energy Costs	Avg. Energy Burden	Household Count	Avg. Annual EAG Per Household	Total Annual EAG by Row	Annual Sum GHG Emissions (lbs CO2e)
0-30% Owners, Newer SF	\$2,960	28%	4,909	\$2,304	11M	92M
0-30% Owners, Older SF	\$2,787	28%	10,628	\$2,179	23M	185M
0-30% Owners, Newer "Other"	\$2,815	27%	6,575	\$2,167	15M	132M
0-30% Owners, Older "Other"	\$2,725	28%	938	\$2,123	2M	16M
0-30% Renters, Older SF	\$2,698	27%	10,363	\$2,053	21M	189M
0-30% Renters, Newer "Other"	\$2,656	28%	3,551	\$2,053	7M	67M
0-30% Renters, Newer SF	\$2,549	26%	3,585	\$1,929	7M	65M
0-30% Renters, Older "Other"	\$2,334	25%	820	\$1,733	1M	13M
30-60% Renters, Newer "Other"	\$2,798	14%	1,318	\$1,626	2M	26M
30-60% Renters, Older SF	\$2,839	14%	5,442	\$1,593	8M	105M

Total Energy
Burden and
Affordability Gap
by Housing
Cohort

Cohort Category	Avg. Annual Energy Costs	Avg. Energy Burden	Household Count	Avg. Annual EAG Per Household	Total Annual EAG by Row	Annual Sum GHG Emissions (lbs CO2e)
0-30% Renters, Older SF	\$2,698	27%	10,363	\$2,053	21M	189M
0-30% Owners, Older SF	\$2,787	28%	10,628	\$2,179	23M	185M
30-60% Owners, Older SF	\$2,804	14%	10,757	\$1,547	15M	185M
60-80% Owners, Older SF	\$2,835	9%	8,215	\$955	6M	148M
0-30% Owners, Newer "Other"	\$2,815	27%	6,575	\$2,167	15M	132M
0-30% Renters, Newer MF	\$1,674	20%	8,855	\$1,142	10M	115M
30-60% Renters, Older SF	\$2,839	14%	5,442	\$1,593	8M	105M
0-30% Renters, Older MF	\$1,845	22%	6,873	\$1,304	9M	95M
0-30% Owners, Newer SF	\$2,960	28%	4,909	\$2,304	11M	92M
30-60% Owners, Newer SF	\$2,694	12%	4,809	\$1,384	6M	83M

Building Stakeholder Coalitions



CLEAN AIR. HEALTHY COMMUNITIES.



THE PEOPLE'S
JUSTICE COUNCIL

GREENWORKS
DESIGN/BUILD



ALABAMA

Interfaith Power & Light

A faith-based response to climate change

Supporting South Texas Communities



*Our mission is to advance
**affordable, reliable, and
sustainable** energy solutions for
low-income and underserved
communities in Texas.*



Our Work



RESEARCH & EVALUATION

Advance collective knowledge about low-income consumers and their relationships to energy.



DECISION TOOLS

Develop tools to stakeholders make more informed decisions about serving energy needs.



STAKEHOLDER FORUMS

Connect professional peers from power sector, social services, and housing.

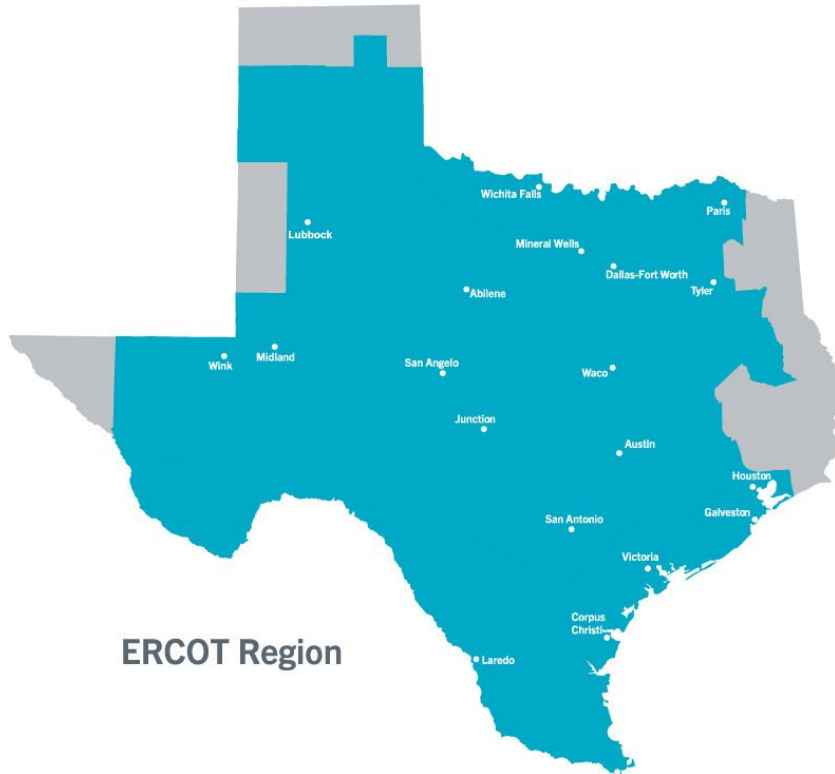


OUTREACH & EDUCATION

Reinvent energy consumer engagement for more effective programs.

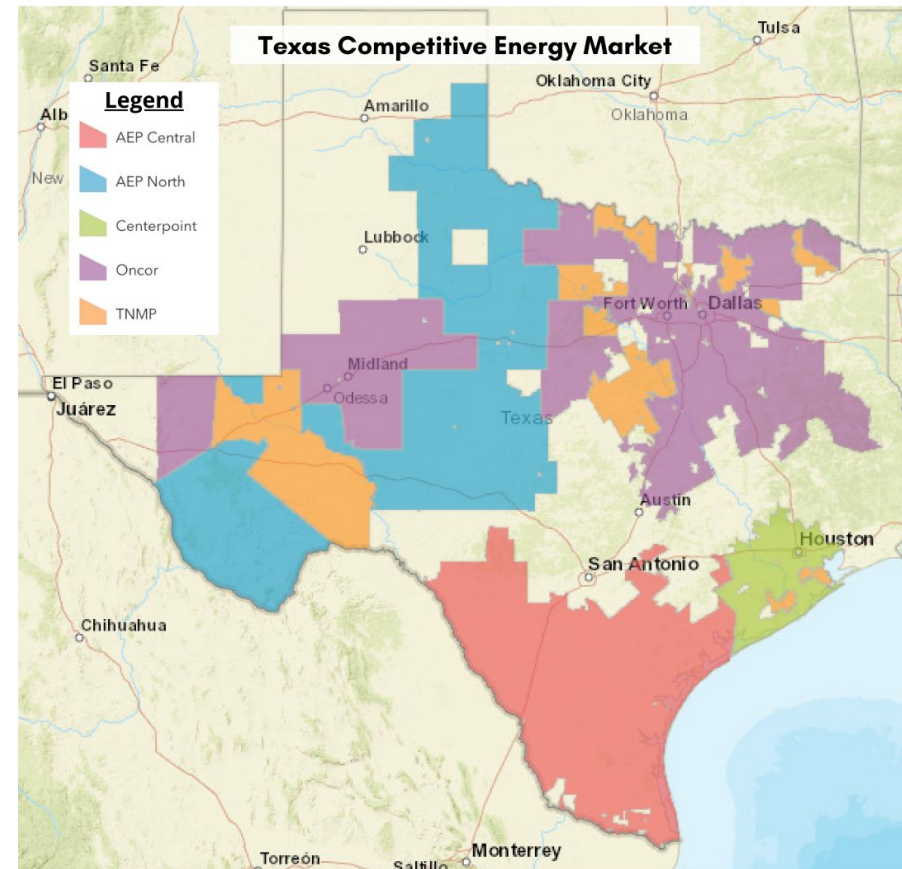
Everything's Weirder in Texas

Left image: Courtesy of ERCOT
Right image: Courtesy of Houston Advanced Research Center (HARC)



ERCOT Region


90% of Texas electricity load is in
ERCOT service area



75% of Texas households have
'electricity choice'

Electric Plan Choice


Recommended plans in your area

**100% Renewable**

Gexa Saver Deluxe 12
Gexa Energy

15.6¢ PER KWH
AT 1000 KWH

MORE INFO


★★★★☆ 4.1

100% Renewable

A+ BBB | Rated "A+"

Satisfaction Guarantee ⓘ


CHECK AVAILABILITY

**High Customer Satisfaction**

Smart Edge 24
TXU Energy

18.5¢ PER KWH
AT 1000 KWH


MORE INFO

★★★★★ 5.0

A+ BBB | Rated "A+"

Satisfaction Guarantee ⓘ


CHECK AVAILABILITY

**Popular Plan**

Maxx Saver Select 12
4Change Energy

15.9¢ PER KWH
AT 1000 KWH

MORE INFO

★★★★☆ 4.4

A+ BBB | Rated "A+"

Satisfaction Guarantee ⓘ

CHECK AVAILABILITY

🔌 Tips for moving ▾

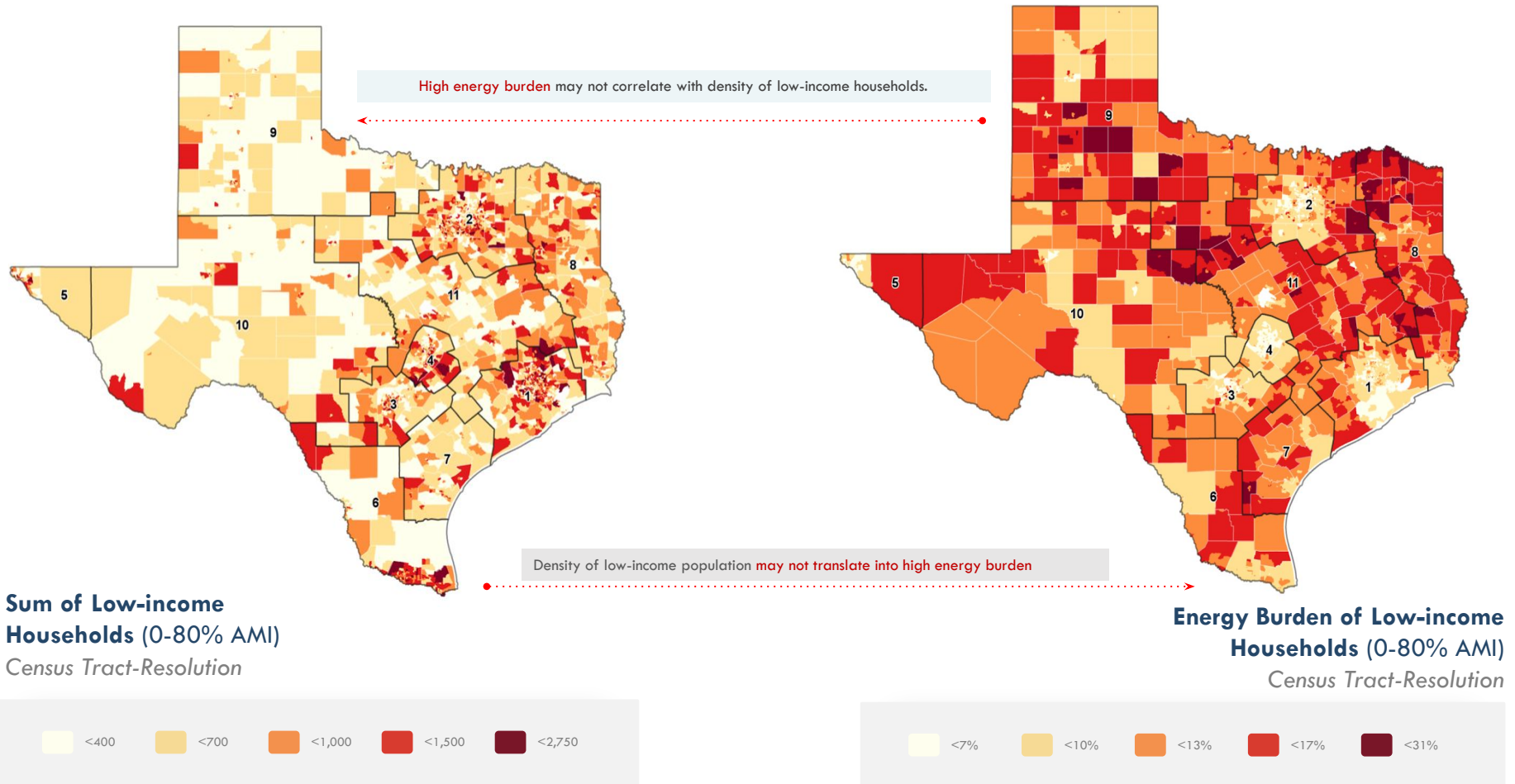
🔌 Tips for switching ▾

We found **62 plans** for 77004 ZIP code

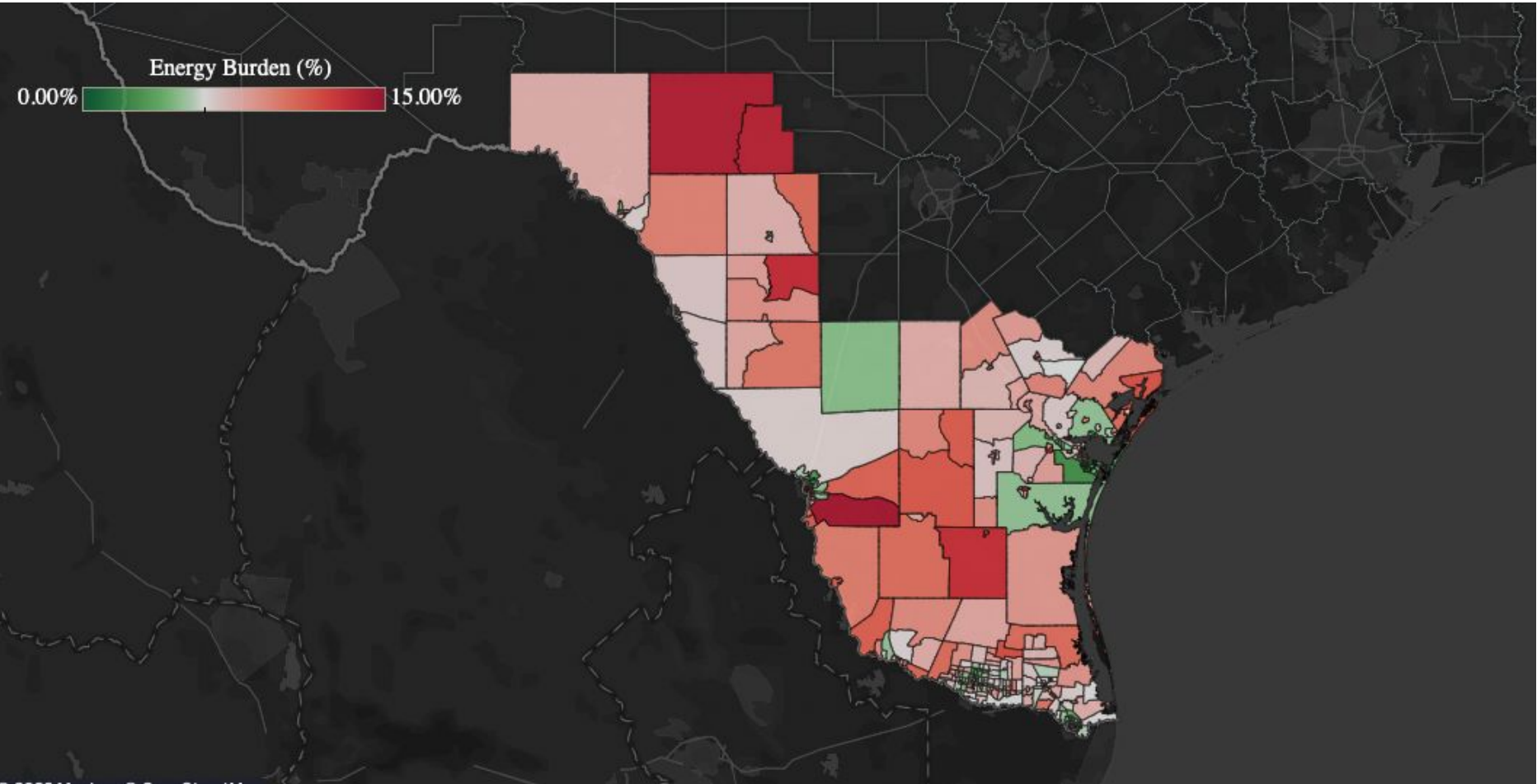
Edit

Density of Low-income Households Compared to High Energy Burden Average

Mapped by TEPRI (2019) | Data Source:
U.S. Department of Energy, 2018,
Low-Income Energy Affordability Data (LEAD),
with population data from 2015 5-Year
American Community Survey (U.S. Census)



Energy Burdens in South Texas



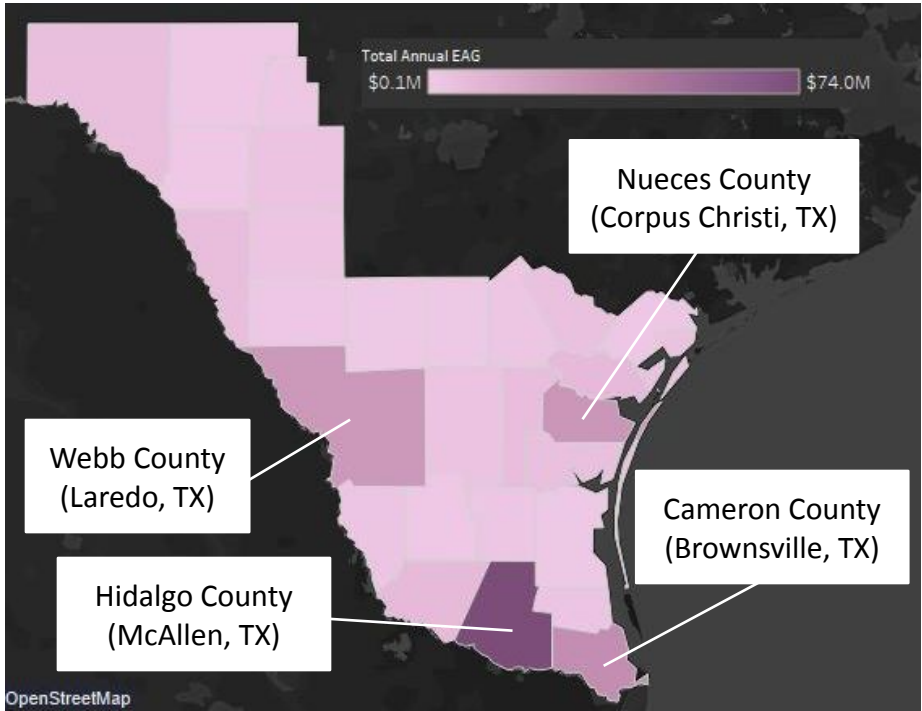
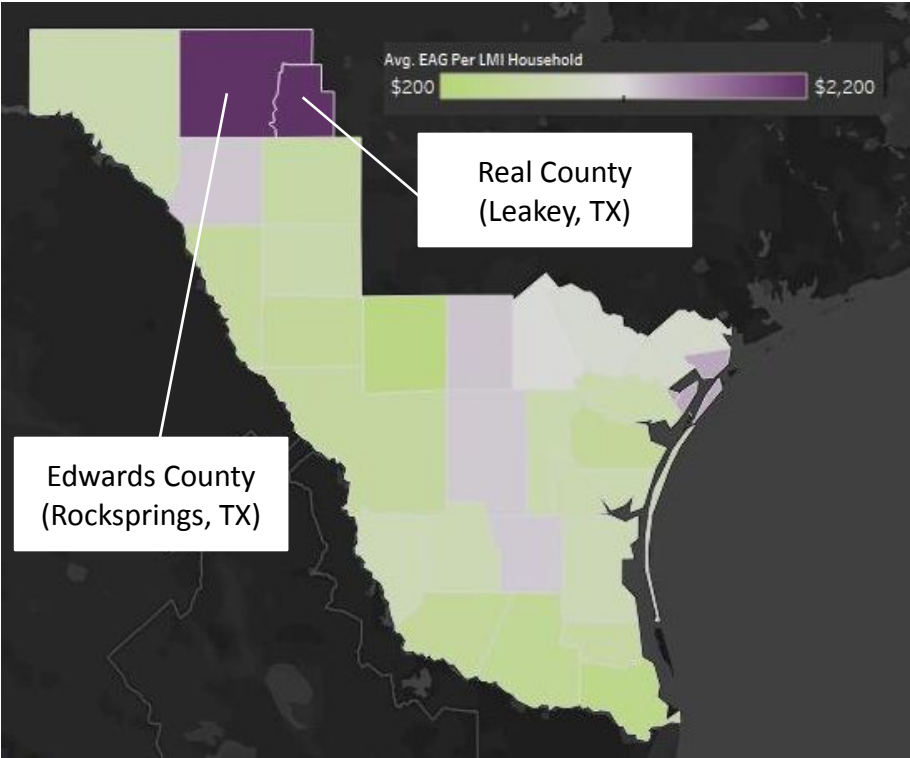
Average Energy Burden for LMI Households (0-80% AMI): **10.8%**
Average Energy Burden for Lowest-Income Households (0-30% AMI): **14.7%**
Average Annual Energy Burden for LMI Households (0-80% AMI): **\$1,886**

Energy Burden by County

South Texas counties with the highest number of households experiencing extreme energy burdens

County, State	Household Count Extreme EB (>10%)		Share Households with Extreme EB (>10%)		Household Count High EB (6-10%)		Share Households with Very High EB (6-10%)	
	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability
Hidalgo, TX	60,200	616	29%	22%	37,471	338	17%	13%
Cameron, TX	25,344	2,115	25%	24%	19,665	1,274	19%	15%
Webb, TX	17,787		29%		13,366		21%	
Nueces, TX	13,821	2,640	20%	7%	14,495	3,708	20%	10%
Starr, TX	5,341		33%		4,386		28%	
Maverick, TX	5,045		33%		2,601		17%	
San Patricio, TX	3,506	1,586	26%	16%	2,735	1,818	22%	18%
Jim Wells, TX	3,248	337	27%	35%	2,543	131	23%	13%
Kleberg, TX	3,036		29%		2,008		18%	
Val Verde, TX	2,573	1,256	32%	20%	1,068	893	13%	16%

Energy Burden & Affordability Gap (By Geography)



Historical Housing Practices in South Texas - Colonias

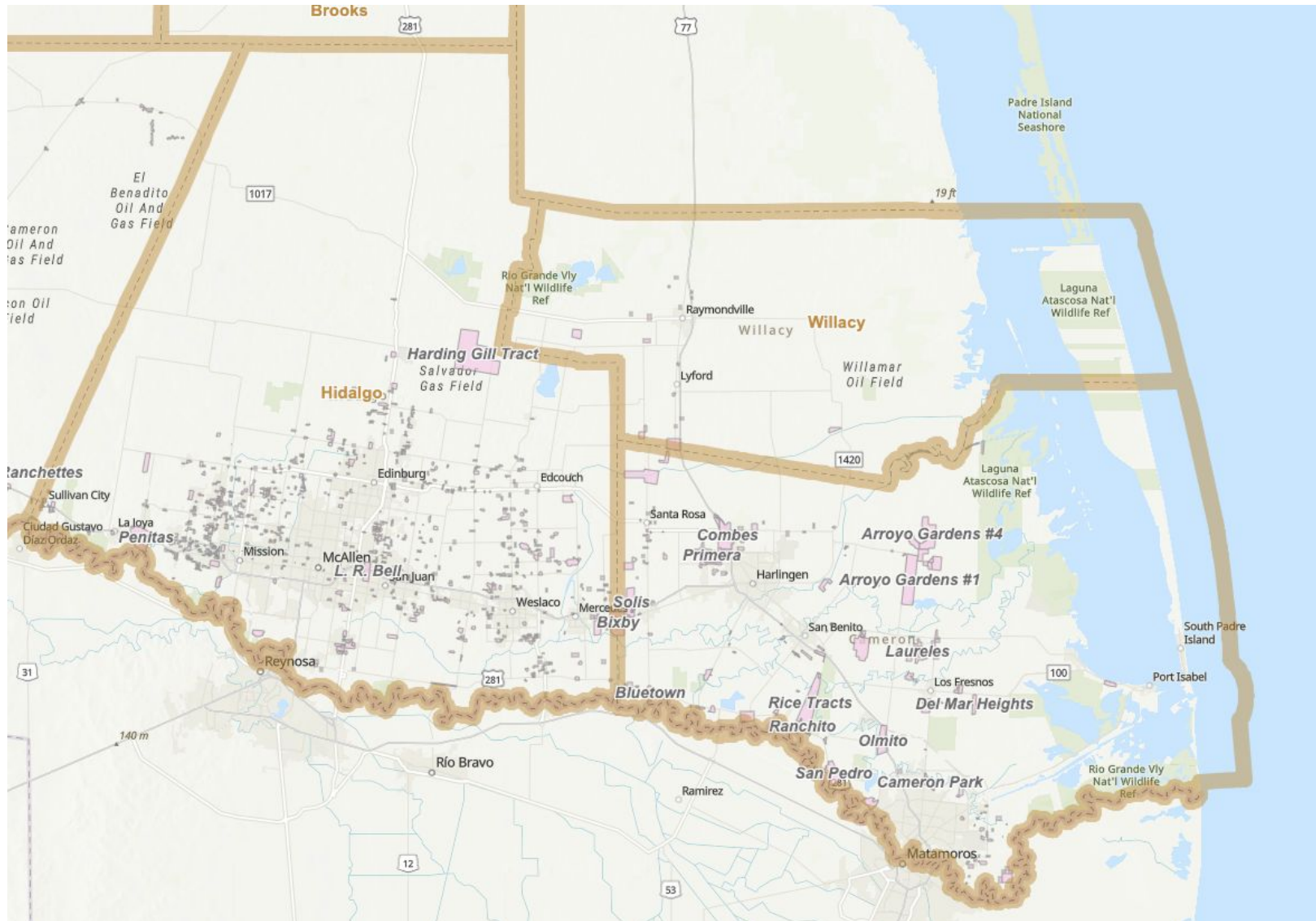


A home in a colonia near Brownsville, TX.
Source: Emily Ryder Perlmeter, *Houston Chronicle*



Colonia housing with water tank.
Source: Emily Ryder Perlmeter, *Houston Chronicle*

Colonias in Hidalgo, Cameron, and Willacy Counties

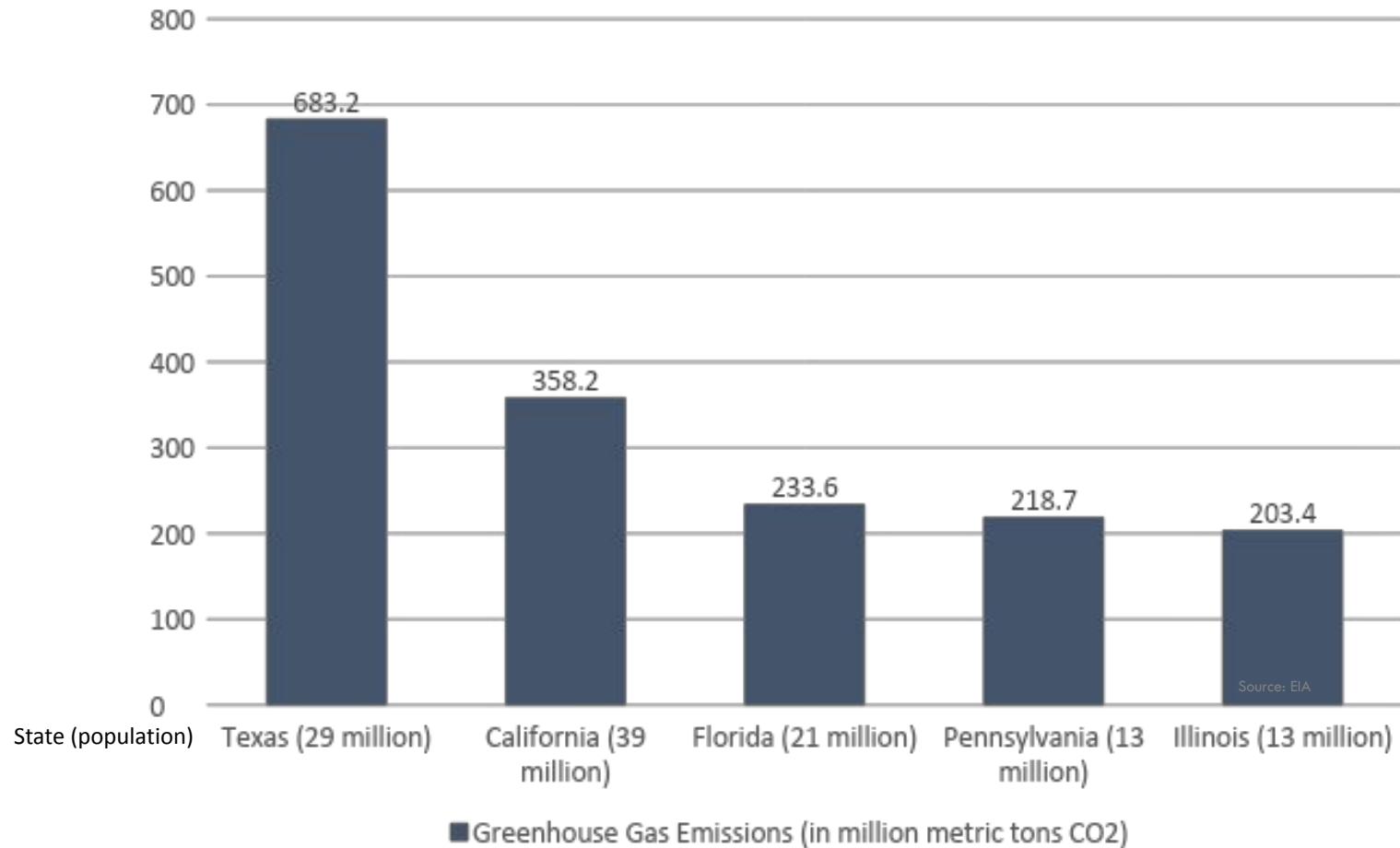


Energy Burden and Affordability Gap (Housing Cohort)

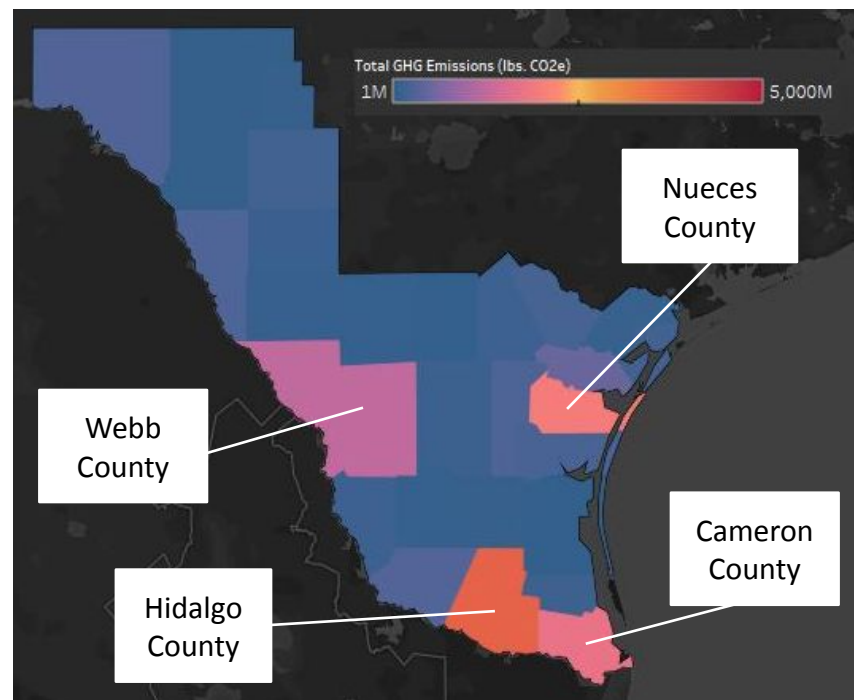
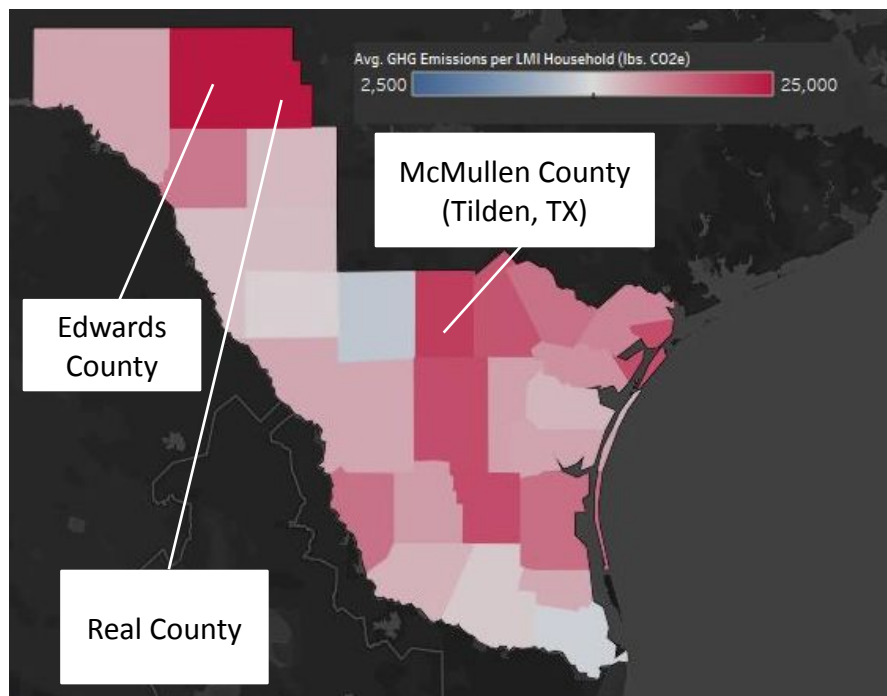
Energy Burden
and Affordability
Gap per LMI
Household

Cohort Category	Avg. Annual Energy Costs	Avg. Energy Burden	Household Count	Avg. Annual EAG Per Household	Total Annual EAG by Row	Annual Sum GHG Emissions (lbs CO2e)
0-30% Owners, Older SF	\$2,116	17%	25,861	\$1,346	36M	418M
0-30% Owners, Newer SF	\$2,153	16%	41,383	\$1,280	48M	670M
0-30% Renters, Older SF	\$1,977	17%	20,449	\$1,230	26M	321M
0-30% Owners, Newer "Other"	\$1,920	15%	10,417	\$1,098	10M	148M
0-30% Owners, Older MF	\$1,798	14%	75	\$1,062	0M	1M
0-30% Renters, Newer "Other"	\$1,808	16%	4,997	\$1,025	5M	71M
0-30% Renters, Newer SF	\$1,837	14%	19,345	\$1,024	19M	279M
0-30% Owners, Older "Other"	\$1,795	15%	2,451	\$1,022	2M	33M
0-30% Renters, Older "Other"	\$1,786	15%	1,565	\$991	2M	23M
0-30% Owners, Newer MF	\$1,600	14%	111	\$786	0M	2M
30-60% Owners, Older SF	\$2,095	9%	24,020	\$712	19M	400M
0-30% Renters, Older MF	\$1,287	13%	13,779	\$651	9M	143M
30-60% Owners, Newer SF	\$2,152	8%	26,398	\$629	14M	426M
0-30% Renters, Newer MF	\$1,320	12%	24,764	\$627	15M	273M
30-60% Renters, Newer "Other"	\$1,904	8%	2,197	\$575	1M	32M
30-60% Renters, Older SF	\$1,981	8%	10,097	\$556	6M	162M

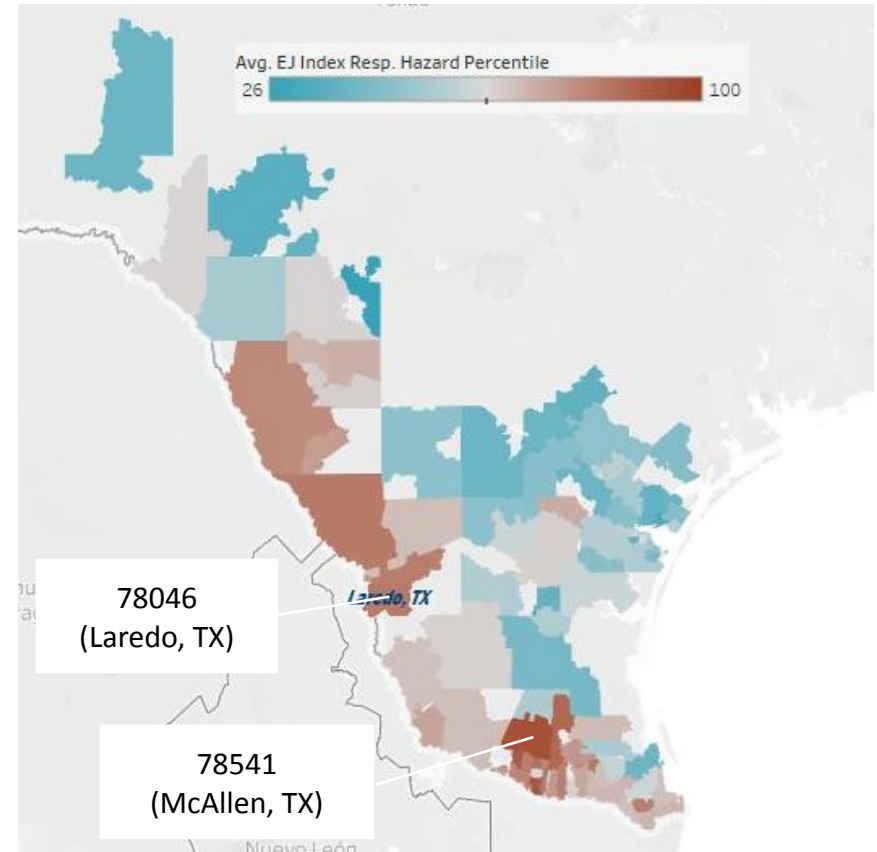
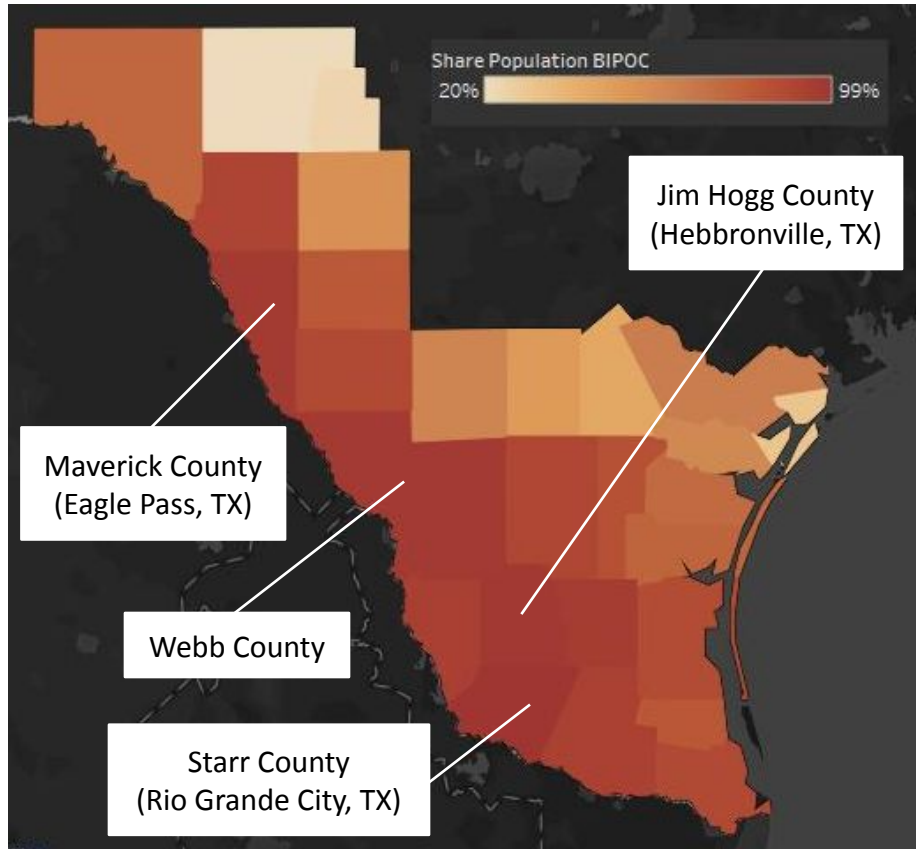
Texas Leads the Nation in GHG Emissions



GHG Emissions by County



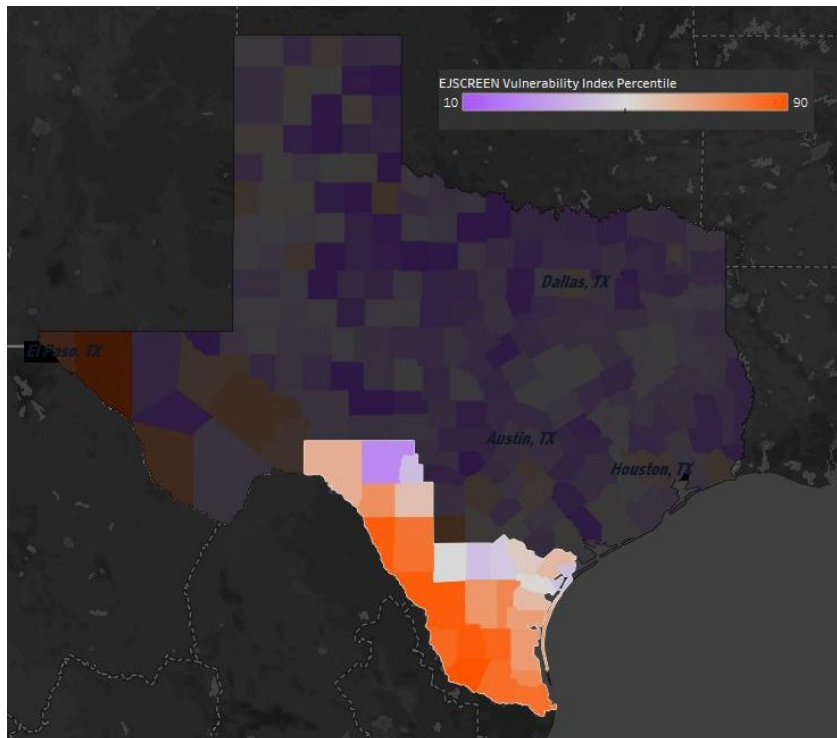
Demographic & Health Indicators (By Geography)



Community Vulnerability in South Texas

City, State	Total Household Count		EJSCREEN Low-Income Percentile		EJSCREEN BIPOC Percentile		EJSCREEN Vulnerability Index Percentile	
	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability
Corpus Christi, TX	65,388	26,886	64	23	74	49	72	39
Laredo, TX	71,058		80		93		88	
Brownsville, TX	56,784		83		87		88	
Mcallen, TX	48,571	2,745	67	19	79	55	77	42
Edinburg, TX	46,761		76		90		85	

Cities with the highest number of households in South Texas.



- **EJSCREEN Vulnerability Index:** an index value showing the relative risk faced by residents of each location for vulnerability to environmental hazards
- **“Higher vulnerability”:** groups the population by census tracts with a vulnerability index at or over 51%.

Demographic & Health Indicators

County, State	Total Household Count		EJSCREEN BIPOC Percentile		Avg. EJ Index Resp. Hazard Percentile	
	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability	Higher Vulnerability	Lower Vulnerability
Hidalgo, TX	225,598	2,745	87	55	79	38
Cameron, TX	109,802	8,022	84	23	68	39
Webb, TX	71,674		93		76	
Nueces, TX	74,109	38,260	74	47	55	38
Starr, TX	15,865		97		69	
Maverick, TX	15,914		93		80	
San Patricio, TX	13,143	9,579	67	31	53	34
Jim Wells, TX	11,807	976	81	54	66	38
Kleberg, TX	10,580		68		60	
Val Verde, TX	8,250	6,605	88	30	70	31

Competitive Market Electricity Rates on the Rise

Prices jump in Texas' deregulated power market

Average rate of residential electric plans offered on Texas' Power to Choose website, in cents per kilowatt hour:



NOTE: Rates based on customers using 1,000 kWh per month.

Chart: Mitchell Schnurman/DMN • Source: [Powertochoose.org](https://www.powertochoose.org) data provided by Association of Electric Companies of Texas • [Get the data](#) • Created with [Datawrapper](#)

Image Source: Dallas Morning News

TEPRI Coalition Building



Energy Opportunities Coalition

TEXAS ENERGY POVERTY
RESEARCH INSTITUTE



Energy Opportunities Coalition (EOC) –

Coalition of Texas energy stakeholders to help shape and inform the future of energy equity research in Texas. The EOC is a forum for meaningfully contributing to TEPRI's research agenda.

Community Voices in Energy Efficiency

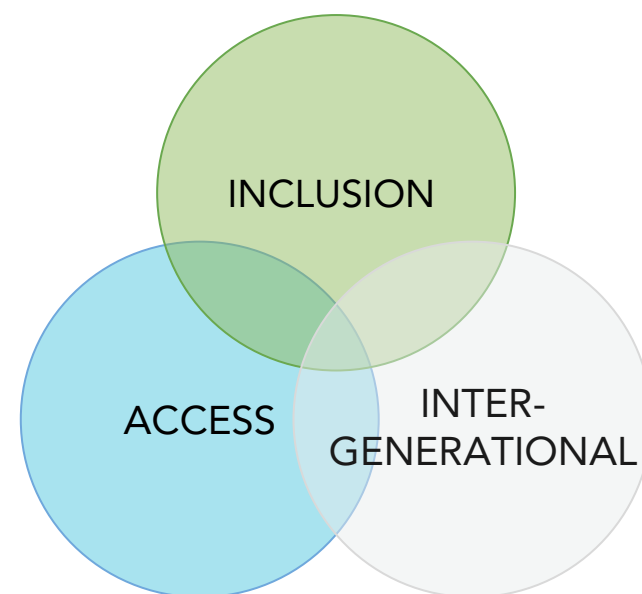
(CVEE) – support community-based organizations (CBOs) in unlocking energy and cost savings for the low-income communities they serve and help amplify their voices in shaping energy efficiency programs and services.

Expanding membership and representation across Texas. Direct engagement with community stakeholders in South Texas

How Stakeholders Can Address these Issues

Who is Responsible?

P	Power: Those who have positional authority to make decisions, provide resources, change the scope or halt the process.
I	Influence: Those who may informally impede or advance progress using personality and/or politics.
C	Consideration: Anyone who is affected by your work, who may need to act on the solution, or who you may want to influence.
K	Knowledge: Those who have context, expertise or insight relevant to your problem-solving effort.



Energy Equity Framework

Developed by the Strelo Group



Screenshot from Action Planner (right) shows the Stakeholder Type as “Affordable Housing” and the energy equity factor as “Equitable Access.”

ENERGY EQUITY ACTION PLANNER Southern States

Stakeholder Type Affordable Housing

Equitable Access

**Power
Influence
Consideration
Knowledge**

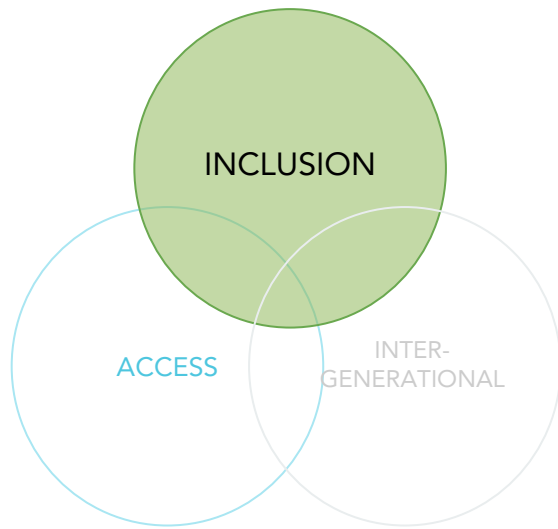
Activities + Objectives to Advance Energy Equity

P	Enhance the availability and ability to purchase highly-efficient building technologies by BIPOC households	P
	Expand access to distributed generation for BIPOC households	P
	Expand access to energy efficiency resources for BIPOC renters in all housing types and vintages	P
	Expand access to information about energy conservation resources and activities among BIPOC households	P
	Lower energy use intensities and improve the efficiency of housing for BIPOC households	P
	Reduce energy cost burdens on BIPOC households	P
I	Expand access to parks and green infrastructure for BIPOC households	I

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Questions? Please contact William Bryan, wbryan@seealliance.org.



Screenshot from Action Planner (right) shows the Stakeholder Type as “Electricity and/or Gas Utility” and the energy equity factor as “Procedural Inclusion.”

ENERGY EQUITY ACTION PLANNER Southern States

Stakeholder Type Electricity and/or Gas Utility

Procedural Inclusion

Power
Influence
Consideration
Knowledge

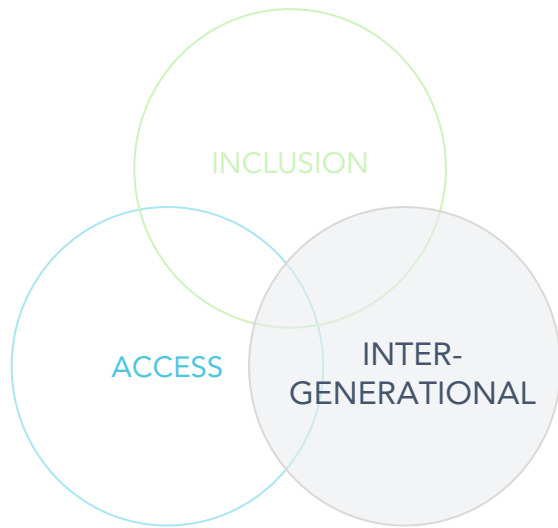
Activities + Objectives to Advance Energy Equity

P	Enhance outreach to vulnerable BIPOC households and facilitate access to energy assistance information	P
	Enhance transparency of utilities and regulators about programs, policies, and operations	P
	Ensure that utilities and PUC's more fully represent the demographic makeup of the communities that they serve	P
	Facilitate meaningful participation in utility/PUC decision-making by impacted BIPOC communities	P
I	Ensure that energy efficiency funding is tied to non-energy benefits provided by energy efficiency programs and policies	I

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Questions? Please contact William Bryan, wbryan@seealliance.org.



Screenshot from Action Planner (right) shows the Stakeholder Type as “Banking/Finance” and the energy equity factor as “Intergenerational Equity.”

ENERGY EQUITY ACTION PLANNER Southern States

Stakeholder Type Banking / Finance

Intergenerational Equity

**Power
Influence
Consideration
Knowledge**

Activities + Objectives to Advance Energy Equity

	Enhance opportunities for BIPOC communities to be employees and owners of clean energy and energy efficiency businesses	K
	Expand protections for utility customers, especially related to utility disconnections for nonpayment	K
	Improve the ability of BIPOC communities to shelter in place during disaster events and recover quickly in the aftermath	K
K	Mitigate climate-related impacts on BIPOC communities	K
	Reduce the likelihood that BIPOC communities will be disproportionately burdened by disaster events	K
	Reduce the long-term health damages to BIPOC communities caused by generating and transmitting energy	K
	Reduce the long-term health damages to BIPOC communities caused by inefficient housing	K

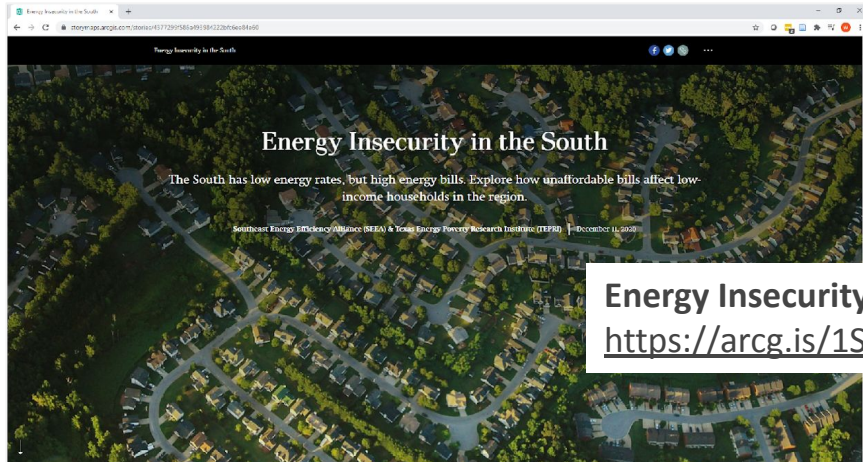
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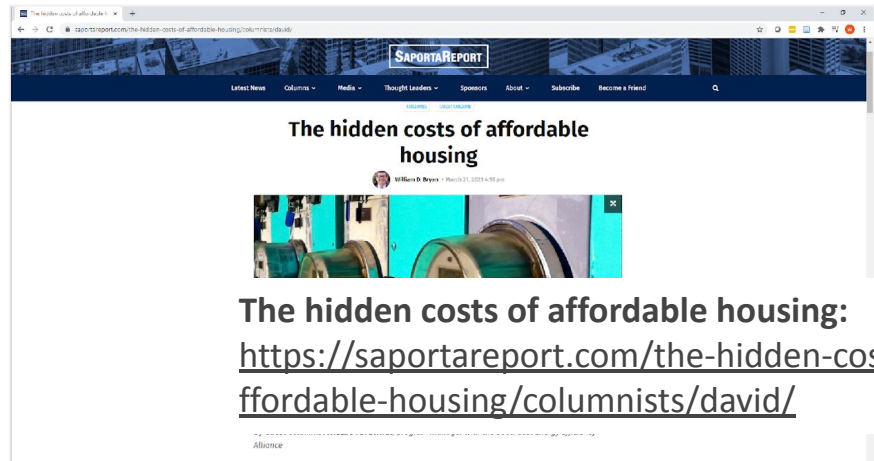
Questions? Please contact William Bryan, wbryan@seealliance.org.

Continuing the learning

- SEEA:
 - www.seealliance.org
- TEPR:
 - www.txenergypoverty.org



Energy Insecurity in the South:
<https://arcg.is/1S1r510>



The hidden costs of affordable housing:
<https://saportareport.com/the-hidden-costs-of-affordable-housing/columnists/david/>



ENERGY INSECURITY FUNDAMENTALS FOR THE SOUTHEAST

February 2021



Key Findings

- Millions of Southerners struggle to pay their monthly electric and gas bills. More customers are cost-burdened in the South than in any other part of the country, and one out of every three people in the region has trouble paying their energy bills.
- SEEA believes "energy insecurity" is a vital framework for understanding how the benefits and burdens of generating, transmitting, and consuming energy are distributed across communities in the Southeast.
- Energy insecurity is the product of multiple factors, including the lack of access to efficient housing and advanced building technologies, low household incomes, high energy costs, and coping behaviors that can place residents at a higher risk of health and safety threats.
- The physical, economy, and behavioral dimensions to energy insecurity cannot be fully captured by a single metric like energy burden. Rather, energy insecurity is most accurately measured through a combination of metrics and approaches.
- Energy cost burden is a valuable metric to understand the economic dimensions of energy insecurity, but it has limitations and should not be used as a stand-in for energy insecurity.

Energy Insecurity Fundamentals in the Southeast:
https://issuu.com/seealliance/docs/report_energyinsecurity_02_15_2021_v1

Southeast Energy Summit

October 3-5, 2022 | Atlanta, GA



After a two-year hiatus, the [Southeast Energy Summit](https://southeastenergysummit.com) is returning to Atlanta for three days to reconnect with friends and colleagues, explore innovative efficient energy solutions, and plan for a brighter, more prosperous future in the Southeast.

Tickets and sponsor opportunities are available now! Learn more at southeastenergysummit.com