



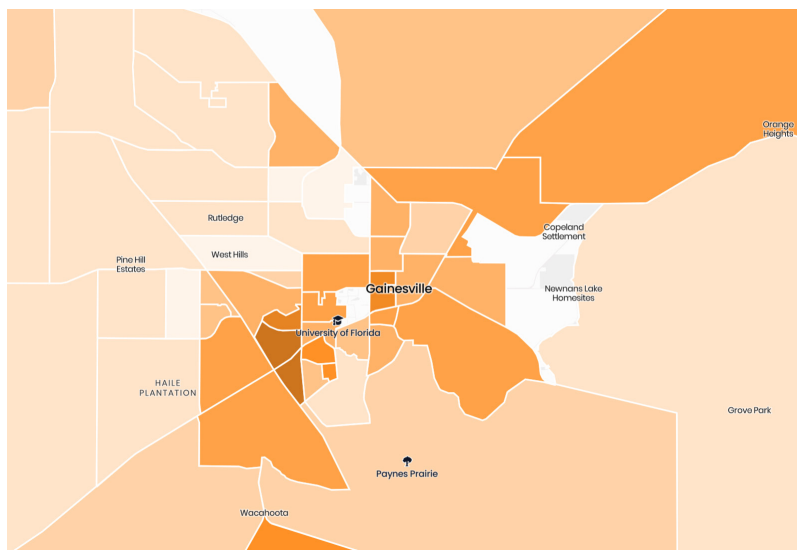
ENERGY BURDEN IMPACTS: FLORIDA IN FOCUS FOR SIERRA CLUB - FLORIDA CHAPTER

Impacts of Energy Burden for Gainesville

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Prepared by Greenlink Analytics, Inc.

Energy Burden in Gainesville at a Glance

GEM Map of Gainesville



Gainesville (Alachua County)

On average, households nationally pay about 4.1% of their income on energy (gas and electricity) bills. As of 2019, Gainesville's average energy burden is 4.5% in 2019, .4% higher than the national average. However, the energy burden is not distributed evenly across neighborhoods. When energy burden is mapped across the city, data reveals that energy burden disproportionately impacts residents in the Northeastern and Central portions of the city. For 2019, the 5% least burdened tracts in the city have an average energy burden of 1.8%, below the national average, whereas the 5% most burdened tracts have an average energy burden of 11%, 2.7x higher than the national average.

The table below shows how Gainesville compares on energy burden and how it's changed over time.

Table 1. Median Energy Burdens Over Time

	2013 Overall	2019 Overall	Change
Gainesville (Alachua)	6.2%	4.5%	-1.7%
Florida	4.5%	3.8%	-0.7%
Florida Cities	4.8%	3.8%	-1.0%
National ¹	4.8%	4.1%	-0.7%

Gainesville's Energy Burden: Change Over Time and Neighborhood Disparities

In 2013, Gainesville's median energy burden of 6.2% was above the national average and sitting at the unaffordable energy burden threshold of 6% (Table 1). It was, however, above the Florida median of 4.5%. Energy burden decreased by 1.7% by 2019 but remained well above the national average. The data show wide disparities between the top 5% most burdened and 5% least burdened census tracts in the city². The 5% least energy burdened tracts had a median burden of 1.8% in 2013 and 1.8% in 2019, below the national average in both years. By comparison, the 5% most burdened tracts in the city had an energy burden of 14.8% in 2013 and 11% in 2019, indicating continuing levels of severe energy burdens in these neighborhoods across time.

Table 2, below, shows how the number of households living with the highest energy burdens changed between 2013 and 2019. Gainesville saw its total number of households decrease from 96042 in 2013 to 94143 in 2019.

1. National data from the US Energy Information Administration (Forms 861 and 176) and the US Census.
2. Most and least burdened tracts are defined by the household-weighted average census tract energy burden from 2013-2019 and represent the top and bottom quintiles. National data from the US Energy Information Administration (Forms 861 and 176) and the US Census.

Energy Burden in Gainesville at a Glance

Table 2. Number of Households in High and Severe Energy Burden (Gainesville)

Total HH 2013: 96043

Total HH 2019: 94143

	High Energy Burden (>6%)	Severe Energy Burden (>10%)
2013	43334	27433
2019	32746	20478

Intersectional Issues: Equity Indicators Correlated with Gainesville's Energy Burden

Energy burden in Gainesville is connected to a cluster of health and housing inequities. Across these years of data, Gainesville's energy burdens are strongly correlated with income stress and mental health. It shows moderate correlations with other housing and health issues such as renter occupied households, multi-family households, lack of access to healthcare, and asthma rates. Given these relationships, there may be opportunities to improve outcomes by increasing efforts that emphasize health, housing, and energy. Identifying these relationships may open doors for interdisciplinary collaboration outside City Hall, as well as interdepartmental collaboration within City Hall, ultimately advancing strong equity improvements at large.

Centering Energy Justice

Unequal and disproportionate rates of energy burden can be found in certain geographic areas and racial groups throughout Gainesville. In 2019, the census tracts within the top 5% had an average energy burden of 11%, whereas the census tracts within bottom 5% had an average energy burden of 1.8%. It is unclear how many non-white racial groups were within the top 5%, however 100% of the White population were within the bottom 5%. Given these geographic and racial disparities, setting energy justice targets in policy and program design is imperative to ensuring the clean energy transition is deployed equitably.

Summary

- Gainesville experiences energy burdens 7.6% higher than the national average.
- Since 2013, energy burden has decreased by 1.7% across the city and 3.8% across the most burdened communities. The number of households with unaffordable energy costs has fallen by 17,543 although 53,224 continue to face high energy burdens. Over this time period, a 6.1x disparity exists in Gainesville's average energy burdens between the 5% least burdened and 5% most burdened communities, which highlights the need for additional resources to address energy burden in top burdened neighborhoods.
- Energy burden in Gainesville is connected to other inequities: Income stress and mental health show strong positive correlations with energy burden ($R > .7$).
- Other moderately positive correlated inequities ($R > .5$) include renter occupied households, multi-family households, lack of access to healthcare, and asthma.
- 100% of the White population were within the bottom 5% of energy burden.

Footnotes

Income stress and mental health are strongly correlated with energy burden ($R > .7$) Housing (renters/multi family) and health related factors such as lack of healthcare access and asthma are also moderately correlated ($R > .5$) It is seen that owner and single family has the opposite correlation to energy burden ($R < -.5$)



Sharanya Madhavan

DATA SCIENTIST

Sharanya is a Data Scientist at Greenlink Analytics. She applies advanced geospatial data science techniques to acquire and generate new data sets for the Greenlink Equity Map (GEM). She also performs statistical analysis and develops other software solutions to further study the intersection of utility burdens and racial and social equity. Sharanya received her Bachelor's in Industrial Engineering from Purdue University and Master's in Environmental Conservation with a concentration in Environmental Observation and Informatics from the University of Wisconsin-Madison. She is an advocate for equitable food access and enjoys volunteering within the sustainable farming community in her free time.



Angelica Chavez Duckworth

GEM STRATEGIC DEVELOPMENT MANAGER

Jellie is the GEM Strategic Development Manager at Greenlink Analytics. She helps guide the development of the Greenlink Equity Map (GEM) to improve equitable processes and programming across the U.S. Jellie is a trilingual, community-centered climate justice professional focused on addressing the climate crisis at the intersections of health and cultural equity.

Jellie holds a Bachelor's Degree in Sociology with an emphasis in Cultural Anthropology from the University of Missouri - Kansas City.



Matt Cox, PhD

CEO & EXECUTIVE DIRECTOR

Matt Cox, PhD, is the CEO and Executive Director of Greenlink Analytics, a clean energy research non-profit based in Atlanta, GA. In this role, Matt provides domain expertise for Greenlink's energy and resource analysis software tools and serves as an expert on energy efficiency strategies, renewable energy deployment, and system operations in the electric power sector.

He is the author of over 100 scientific publications in energy policy, renewable energy, energy efficiency, economic development, and job creation, the social and environmental impacts of energy use, and water policy.



Michael Gilley

PROGRAM MANAGER

Michael is the Program Manager at Greenlink Analytics. Michael assists in optimizing workflow efficiencies, project management, and scalability.

Prior to joining Greenlink, Michael was a Sr. Manager, Partner Success and a Sr. Editor, at FloSports. During his time at FloSports, Michael led the successful launch of 2 channels, FloMarching and FloBowling, overseeing growth from their infancy to profitability. He brings a wide array of experience to Greenlink including graphic design, user design, department management, and production management.