



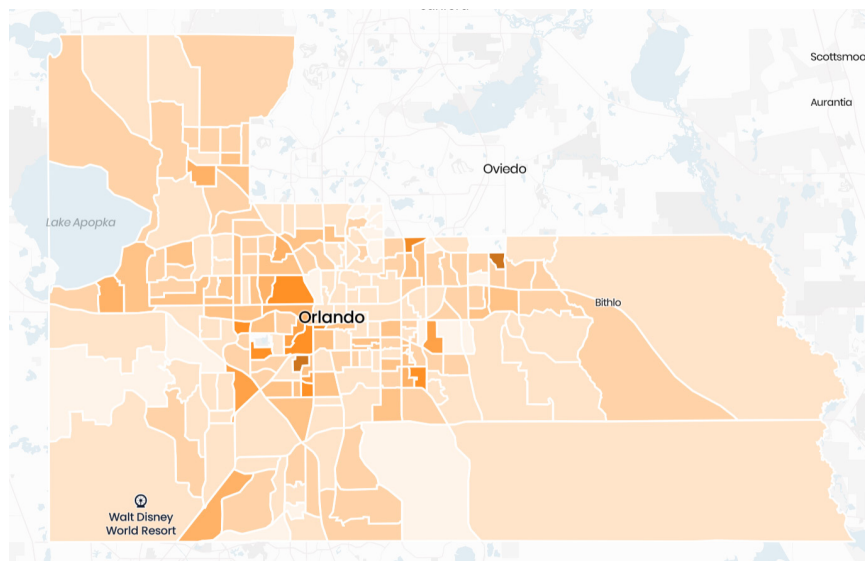
# ENERGY BURDEN IMPACTS: FLORIDA IN FOCUS FOR SIERRA CLUB - FLORIDA CHAPTER

## Impacts of Energy Burden for Orlando

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Prepared by Greenlink Analytics, Inc.

# Energy Burden in Orlando at a Glance

## GEM Map of Orlando



## Orlando (Orange County)

On average, households nationally pay about 4.1% of their income on energy (gas and electricity) bills. As of 2019, Orlando’s average energy burden is 3.9%, .2% lower 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 it disproportionately impacts residents in the Western and Southwestern 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 9.2%, 2.4x higher than the national average.

The table below shows how Orlando compares on energy burden and how it has changed over time.

**Table 1. Median Energy Burdens Over Time**

	2013 Overall	2019 Overall	Change
Orlando (Orange County)	4.6%	3.9%	-0.7%
Florida	4.5%	3.8%	-0.7%
Florida Cities	4.8%	3.8%	-1.0%
National <sup>1</sup>	4.8%	4.1%	-0.7%

## Orlando's Energy Burden: Change Over Time and Neighborhood Disparities

In 2013, Orlando’s median energy burden of 4.6% was under the national average. It was, however, above the Florida median of 4.5%. Energy burden decreased by .7% by 2019 and remained below the national average. This improvement was driven primarily by income – as incomes increased, energy costs also increased but at a slower rate than incomes grew. The data show wide disparities between the top 5% most burdened and 5% least burdened census tracts in the city<sup>2</sup>. The 5% least energy burdened tracts had a median burden of 1.8% in 2013 and 2019, below the national average in both years. By comparison, the 5% most burdened tracts in the city had an energy burden of 9.8% in 2013 and 9.2% 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. Orlando saw its total number of households increase from 413727 in 2013 to 457892 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 Orlando at a Glance

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

Total HH 2013: 413727

Total HH 2019: 457892

	High Energy Burden (>6%)	Severe Energy Burden (>10%)
2013	147977	81584
2019	136455	71500

## Intersectional Issues: Equity Indicators Correlated with Orlando's Energy Burden

Energy burden is concerning not only because of the financial strains it produces alone, but also because it is connected to and may exacerbate other inequities. Many communities are facing a cluster of equity challenges at once. Across these years of data, Orlando's energy burdens are strongly correlated with income stress and moderately correlated with chronic health issues, such as asthma and mental health, as well as renter occupied households. Given these relationships, there may be opportunities to improve outcomes by increasing efforts that emphasize energy, health, and housing. 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 Orlando. In 2019, the census tracts within the top 5% had an average energy burden of 9.2%, whereas the census tracts within bottom 5% had an average energy burden of 1.8%. By comparison, 36% of the Black and/or African American population and 9% of the Latine/x and Hispanic population were within the top 5%, whereas 64% 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

- Orlando experiences energy burdens 130% higher than the national average.
- Since 2013, energy burden has decreased by .7% across the city and .6% across the most burdened communities.
- The number of households with unaffordable energy costs has fallen by 21,606, although 207,955 continue to face high energy burdens. Over this time period, a 5.1x disparity exists in Orlando'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 Orlando is connected to other equity issues: Income stress is strongly correlated with energy burden in Orlando ( $R > .7$ ). Renter occupied households, asthma rates, and mental health rates show moderate correlations with energy burden ( $R > .5$ ).
- Census tracts within the top 5% had an average energy burden of 9.2%, whereas the census tracts within bottom 5% had an average energy burden of 1.8%.
- 36% of the Black and/or African American population and 9% of the Latine/x and Hispanic population were within the top 5% of energy burden, whereas 64% of the White population were within the bottom 5%.

## Footnotes

Income stress is highly correlated with energy burden in Orlando ( $R > .7$ ) Moderate correlations are also seen with asthma and mental health and renter population ( $R > .5$ )





## 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.