



greenlink equity map

Honolulu, HI

6 Years of Energy Burden Impacts

February 2021

Prepared by Greenlink Analytics



6 Years of Energy Burden Impacts:

Honolulu in Focus

February 2021

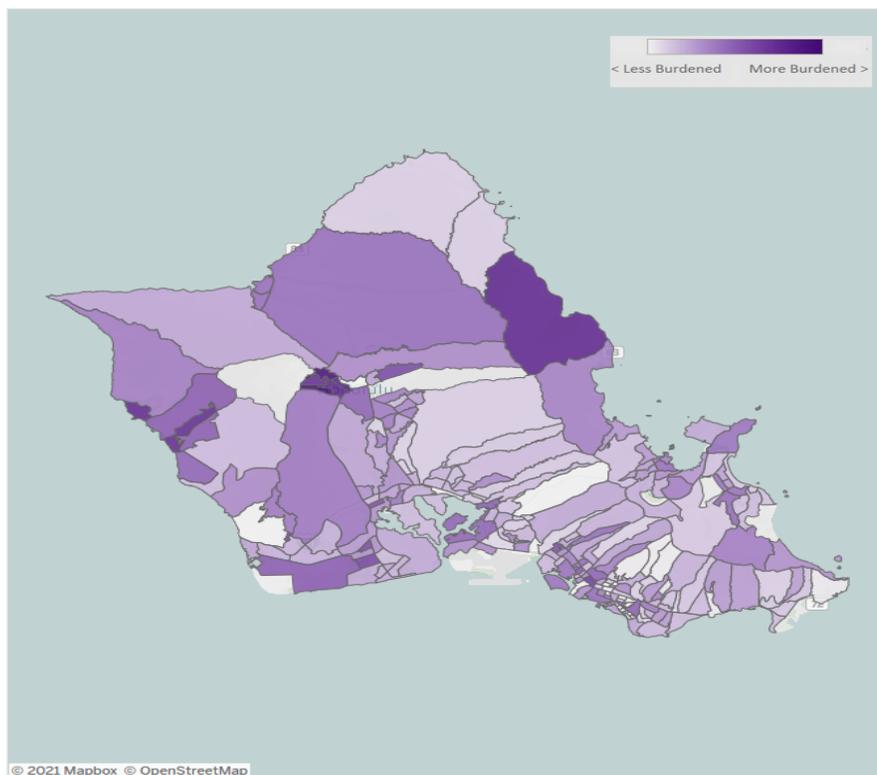


Figure 1. 2019 Honolulu Energy Burden ranges from 0.3% to 13%¹

Thanks to generous support from the Energy Foundation in partnership with Bloomberg Philanthropies, the 25 cities of the Bloomberg Philanthropies American Cities Climate Challenge (ACCC) are receiving a 6 Years of Energy Burden Impact report with information on the current

¹ Clear tracts have insufficient data. Energy burden is the percent of income that a household spends on electricity and gas bills; an energy burden over 6% is considered “high” or “unaffordable” while a burden over 10% is considered “severe”. Honolulu and Honolulu County are used interchangeably in this report.



energy burdens that residents of their city face, how that burden has changed over time, and how other equity indicators are related to energy burden.

Energy Burden in Honolulu at a Glance

On average, households nationally pay about 3.6% of their income on energy (gas and electricity) bills. Honolulu is currently the **17th** most energy burdened city out of the Climate Challenge cities. Across the city, Honolulu’s average energy burden is 3.3% as of 2019, 0.9 times the national average. When energy burden is mapped across the city by neighborhood (Figure 1), the data shows that energy burden disproportionately impacts some residents more than others. For 2019, the 20% least burdened tracts in the city have an average energy burden of 2.0%, below the national average, whereas the 20% most burdened tracts have an average energy burden of 6.0%, demonstrating high energy burdens in these neighborhoods. The table below shows how Honolulu compares on energy burden and how it has changed over time.

Table 1. Median Energy Burdens Over Time²

	2013 Overall	2019 Overall	Change
Honolulu	3.1%	3.3%	0.2%
Hawaii	3.8%	3.5%	-0.3%
25 ACCC Leadership Cities	4.4%	4.0%	-0.4%
National³	3.8%	3.6%	-0.2%

Honolulu Energy Burden: Change Over Time and City Disparities

In 2013, Honolulu’s median energy burden of 3.1% was below the national average (Table 1). It was also below the Hawaii median of 3.8%. Energy burden increased by 0.2% by 2019 but remained below the national average. This improvement was driven primarily by an increase in incomes - energy costs increased, but at a slower rate than incomes grew. Figure 2 shows how energy burden has changed over time tract-by-tract in Honolulu. Even though burden is decreasing city wide, neighborhood by neighborhood the story is varied. Some of the highest burdened neighborhoods

² City by city energy burden for Climate Challenge cities found at the end of this document. Data from the Greenlink Equity Map (GEM) except where otherwise noted.

³ National data from the US Energy Information Administration (Forms 861 and 176) and the US Census.



are seeing worsening conditions at the same time as the city and country's energy burdens are improving. There are many reasons why energy burdens may fluctuate year-to-year in an area including displacement, resident turnover, changing incomes, or rapid changes in energy usage behavior.



Figure 2. Honolulu's Burden in 2013 and 2019

The data show wide disparities between the top 20% most burdened and 20% least burdened census tracts in the city.⁴ The 20% least energy burdened tracts had a median burden of 2.2% in 2013 and 2.0% in 2019, below the national average in both years. By comparison, the 20% most burdened tracts in the city had an energy burden of 4.0% in 2013 and 5.3% in 2019, indicating continuing levels of severe energy burdens in these neighborhoods across time. To look further at how burden is impacting Honolulu's most heavily burdened communities, Figure 3 illustrates Honolulu's top 20% most burdened tracts in 2013 and in 2019.

⁴ 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.

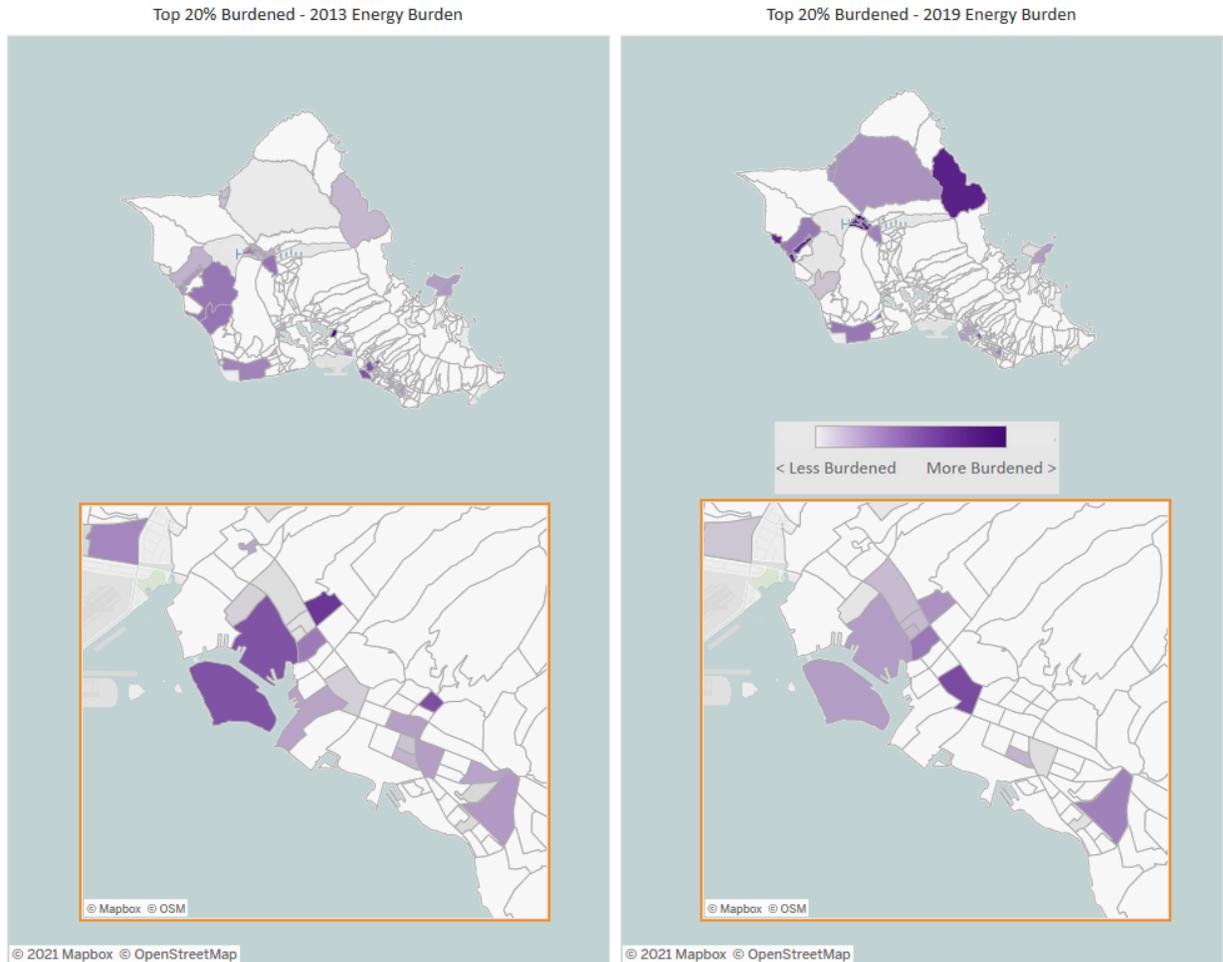


Figure 3. Honolulu’s top 20% Most Burdened Tracts in 2013 and 2019

Figure 4 shows the highest burdened areas in the city, pointing out whether their energy burdens increase or decrease between 2013 and 2019.⁵ This demonstrates that while the average burden has been improving across the city, some of the most burdened areas are not sharing in these benefits.

⁵ Top quintile (20%) is shown, averaged across all years.

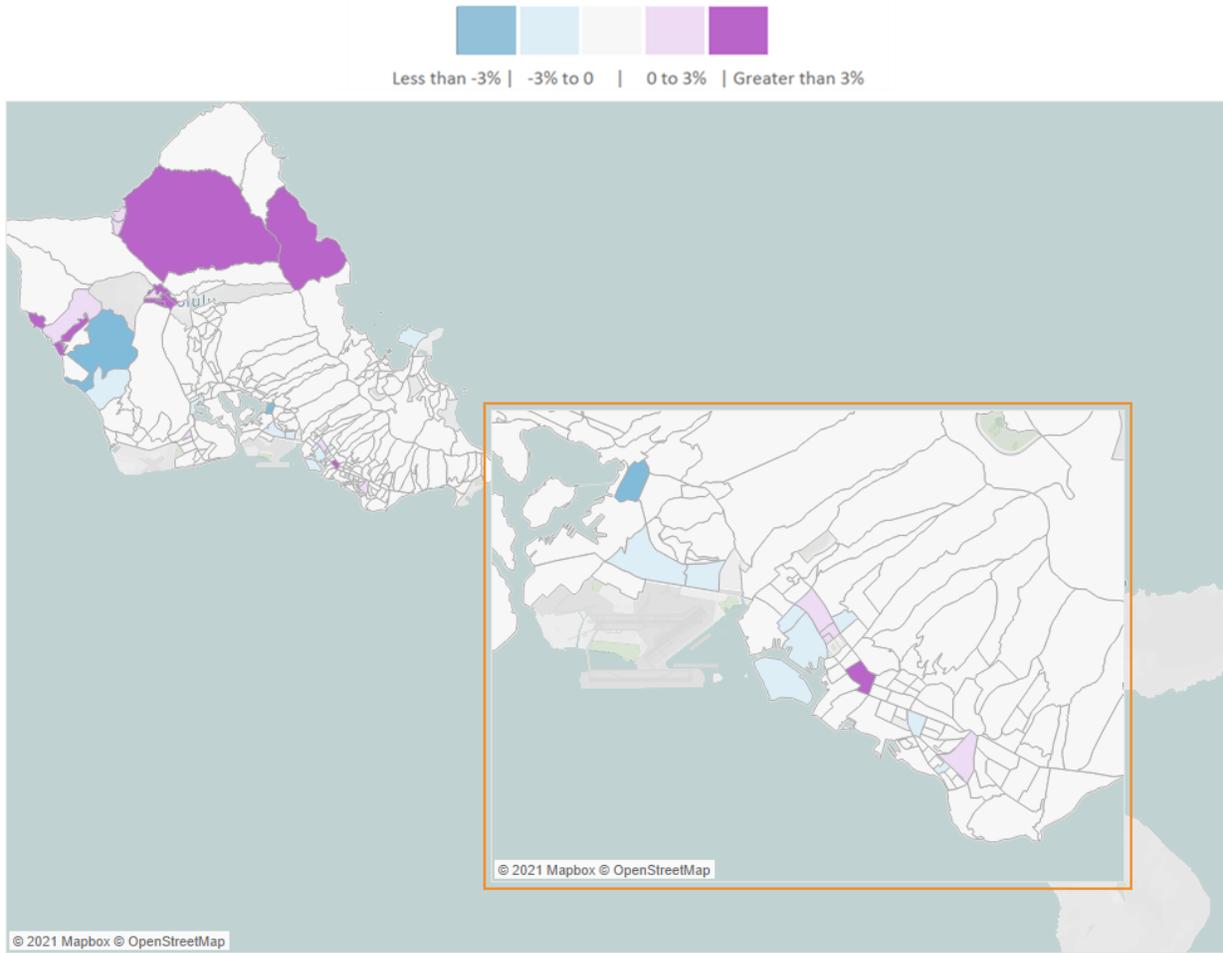


Figure 4. Change in Energy Burden in Highly Burdened Tracts 2013-2019

Table 2, below, shows how the number of households living in the most energy burdened parts of the city have changed between 2013 and 2019. Honolulu saw its total number of households increase from 299,000 in 2013 to 313,000 in 2019.

Table 2. Households in High Energy Burden

	High Energy Burden (> 6%)
2013	5,000
2019	17,000



Connective Issues: Equity Indicators Correlated with Honolulu's Energy Burden

Energy burden is concerning not only because of the strains it produces on its own, but also because it ties into and may deepen other equity issues. Many communities are simultaneously facing multiple equity challenges at once. Across these years of data, Honolulu's energy burdens are moderately correlated with poor health outcomes.⁶ Given this relationship, there may be opportunities to improve outcomes by increasing efforts that emphasize health and sustainability. Identifying similar relationships may open doors for collaboration with other groups inside and outside of City Hall, ultimately advancing strong equity improvements across the city.⁷

Summary

- Honolulu experiences energy burdens 8% under than the national average (3.3% in Honolulu vs. 3.6% nationally).
- Since 2013, energy burden has increased by 0.2% across the city and 1.3% across the most burdened communities. The number of households with high energy costs has increased by 12,000.
- Over this time period, a 3.0x disparity exists in Honolulu's average energy burdens between the 20% least burdened and 20% most burdened communities, which highlights the need for additional resources to address energy burden in top burdened neighborhoods. This is the **sixteenth greatest disparity** among ACCC cities.
- Energy burden in Honolulu is connected to other equity issues like healthcare. Cities, counties, and other organizations may be able to work together across departments and agencies to share resources and come up with solutions that multisolve to address several issues simultaneously.

⁶ Energy burden is moderately correlated ($R^2 > 0.4$) with lack of access to healthcare.

⁷ Honolulu's efforts to improve health equity may also improve energy equity and vice versa. Partnering with community and other stakeholders to "multisolve" on these issues may yield positive synergies when combined with strong processes. See <https://www.equitymap.org/process-guide> for assistance.



Energy Burden Across Climate Challenge Cities

	Median Burden 2019	Highest Quintile 2019	Lowest Quintile 2019	Disparity ⁸
Philadelphia	6.7%	13.1%	3.0%	4.4
St. Louis	6.7%	12.0%	4.0%	3.0
Indianapolis	5.9%	11.5%	3.4%	3.4
Cincinnati	4.9%	9.7%	2.8%	3.5
St. Petersburg	4.7%	7.4%	3.1%	2.4
Pittsburgh	4.6%	9.4%	2.7%	3.5
Atlanta	4.5%	9.7%	2.2%	4.4
San Antonio	4.5%	8.0%	2.6%	3.1
Boston	4.3%	10.6%	2.3%	4.6
Orlando	4.3%	6.7%	3.2%	2.1
Chicago	4.1%	9.5%	1.9%	5.0
Charlotte	3.9%	7.9%	2.1%	3.8
Saint Paul	3.7%	6.8%	2.3%	3.0
Columbus	3.6%	7.1%	2.1%	3.4
Albuquerque	3.5%	6.3%	2.0%	3.2
Los Angeles	3.5%	6.4%	2.0%	3.2
Honolulu	3.3%	6.0%	2.0%	3.0
Austin	3.2%	5.8%	1.9%	3.1
Minneapolis	3.1%	5.6%	1.9%	2.9
Washington DC	3.1%	7.6%	1.5%	5.1
Portland	2.7%	4.6%	1.9%	2.4
San Diego	2.7%	4.0%	1.8%	2.2
Seattle	2.6%	4.4%	1.8%	2.4
Denver	2.4%	3.8%	1.3%	2.9
San Jose	2.1%	3.7%	1.3%	2.8

⁸ The factor difference between the least burdened quintile and the most burdened quintile.