

Actions

About Indicator:
Average Percentage Household Energy Burden

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Data Source(s):

- US Census Bureau - American Community Survey 2019-2023 5-Yr PUMS
- US Census Bureau - American Community Survey 2018-2022 5-Yr PUMS
- <https://www.census.gov/programs-surveys/acs/microdata/access.html>

Graph Description:

This graph displays average household energy-burden percentages for multiple income brackets, with each bar showing the specific percent of income that households in that bracket spend on energy.

Notes:

1. Households reporting zero or negative income were not included.
2. "Energy burden is defined as the average annual housing energy costs (Electricity + Gas + Other Fuels) divided by the average annual household income" (NREL - Low-Income Energy Affordability Data (LEAD) Tool Methodology - 2019).
<https://lead.openei.org/docs/LEAD-Tool-Methodology.pdf>
3. Energy Burden is calculated for each household in the sample using the household's annual energy cost (addition of annual expenses on Gas, Electricity, and Other Fuels) as the numerator.
4. Energy Burden is calculated for each household in the sample using the household's annual income as the denominator.
5. Average Energy Burden is determined by calculating the average of all Energy Burden values for all households in the sample by Community (Geography) and Income Level.
6. Outliers are detected by Community (Geography) and Income Level using as many iterations of the boxplot methodology (Tukey, J. - "Exploratory Data Analysis" - 1977) as necessary until there are no more outliers.

7. We define outliers as "data points that stand out because they are very different from other data points in a ranked series of numbers" (US Census Bureau - "Understanding and Using American Community Survey Data What Journalists Need to Know - 2020).
https://www.census.gov/content/dam/Census/library/publications/2020/a/cs/acs_journalist_handbook_2020.pdf
8. Each household is classified based on its annual income as Extremely Low-Income (0-30% AMI) | Very Low-Income (31-50% AMI) | Low-Income (51-80% AMI) | Moderate-Income (81-120% AMI) | Middle-Income (121-165% AMI) | High-Income (166%-Inf AMI) based on the New York City Department of Housing Preservation and Development (HPD) Income Band table.
<https://www.nyc.gov/site/hpd/services-and-information/area-median-income.page>
9. A Household Median Income is calculated per Community (Geography) based on all annual household incomes previously considered to calculate energy burden levels.
10. A value of 6% is widely used as the benchmark for "high energy burden" while a value of 10% is widely used as the benchmark for "severe energy burden" by organizations like the American Council for an Energy-Efficient Economy (ACEEE) and the US Department of Energy (DOE).
11. US Census Bureau - American Community Survey 2018-2022 & 2019-2023 5-Yr PUMS reports aggregated estimates for the following groups of Communities (Geographies):
 - a. Genesee - Orleans - Wyoming Counties
 - b. Seneca - Wayne - Yates Counties
 - c. Livingston - Ontario Counties
 - d. Greece - Gates TownsIn order to represent each Community (Geography) individually, we have applied the reported grouped results to each individual member of each group.