

## Energy Equity Explorer Definitions & Data Dictionary Terms

### *Energy Equity Explorer Terminology*

**Energy burden:** Energy burden measures a household's ability to pay for their energy costs. Energy burden is calculated by dividing a household's annual energy expenses by their annual income. Households that spend 6% or more of their income on energy are considered to have a high energy burden, while those spending 10% or more are classified as severely energy burdened<sup>1</sup>.

**Average Energy Cost:** The annual average that a household spends on their electricity or fuel costs.

**Energy Affordability Gap<sup>2</sup>:** The difference in dollars between the annual amount that a household spent on energy and the dollar amount that is considered affordable (<6%).

**Energy Insecurity:** People who struggle to pay their monthly energy bills live in a state of [energy insecurity](#). Sociologist Diana Hernández introduced this framework to illustrate how unaffordable energy costs and a household's inability to maintain essential energy services can force individuals to make difficult choices, such as choosing between paying for utilities, food, or medicine.<sup>3</sup>

**Energy Equity:** Energy equity is a holistic framework aimed at eliminating energy burdens for all and leveraging opportunities for communities to own the

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<sup>1</sup> Dreihobl, Ariel, Lauren Ross, and Roxana Ayala. "How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens Across the US Washington, DC: American Council for an Energy-Efficient Economy." 2020

<sup>2</sup> To learn more about the energy affordability gap and how is calculated see: Fisher Sheehan & Colton Public Finances & General Economics. "What Is the Home Energy Affordability Gap?" *Home Energy Affordability Gap*, 2023, [www.homeenergyaffordabilitygap.com/01\\_whatIsHEAG2.html](http://www.homeenergyaffordabilitygap.com/01_whatIsHEAG2.html). Accessed 21 Feb. 2025.

<sup>3</sup> Hernández, Diana. "Understanding 'energy insecurity' and why it matters to health." *Social science & medicine* 167 (2016): 1-10.

generation and distribution of energy. In addition to ensuring economic benefits and jobs from the clean energy economy<sup>4</sup>.

**Housing Burden:** The fraction of household income that is dedicated to housing expenses. According to the Centers for Disease Control (CDC), households are considered housing burdened when they spend more than 30% of their income on housing costs<sup>5</sup>.

**Median Income:** Median income provides the midpoint of incomes across a specific geography and can be used as a proxy to understand the general wealth of an area.

**≤80% Area Median Income (AMI):** The U.S. Department of Housing and Urban Development (HUD) defines low-income households as those earning at or below 80% of the area median income<sup>6</sup>. This ≤80% threshold is used to determine eligibility for HUD's Section 8 program and the Low-Income Housing Tax Credit.

### ***Housing Types***

**-Single-Family Detached:** Single free-standing residential unit with open space on all four sides.

**-Single-family Attached:** The U.S. Census Bureau defines attached single family structures as “if it has unbroken walls extending from ground to roof that divide it from other adjoining structures, as in many row houses or townhouses. if it has unbroken walls extending from ground to roof that divide it from other adjoining structures, as in many row houses or townhouses”<sup>7</sup> (2021 AHS Definitions).

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<sup>4</sup> Energy Equity Project, 2022. “Energy Equity Framework: Combining data and qualitative approaches to ensure equity in the energy transition.” University of Michigan – School for Environment and Sustainability (SEAS).

<sup>5</sup> <https://www.cdc.gov/places/measure-definitions/social-determinants-of-health.html>

<sup>6</sup> For more on HUD's area median income definition see:

<https://www.hud.gov/loans/hud-loans-blog/what-is-area-median-income-ami/>

<sup>7</sup> For more information on the U.S. Census Bureau's Housing types definition see:

<chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www2.census.gov/programs-surveys/ahs/2021/2021%20AHS%20Definitions.pdf>

**-Multifamily housing units:** Structures with two or more units that “[share] a furnace or boiler with adjoining units, then pipes or ducts pierce the walls, and all the units thus joined comprise one multi-unit structure” (2021 AHS Definitions).

**- Mobile and manufactured housing:**

Manufactured homes are prefabricated homes built after 1976 when the first building and safety standard codes went into effect. Mobile homes are movable dwellings that were built before 1976.

**-Other:** RVs and boats.

**-Housing built pre-1980:** Buildings constructed before 1980, predating modern energy codes that set minimum efficiency standards. With ASHRAE 90A-1980 introducing stricter requirements, older buildings often lack adequate insulation, efficient HVAC systems, and other energy-saving measures.<sup>8</sup>

**-% Renters:** Percentage of low-median income households that are renters.

## ***Fuel Types***

**Primary heating fuel type:** The primary heating fuel used by households to meet their energy needs<sup>9</sup>.

**Utility gas:** Natural gas used as the primary heating source in a household.

**Electricity:** Electricity used as the primary heating source in a household.

**Other fuel:** Any fuel type other than utility gas or electricity used as the primary source of space heating. This may include fuel oil, propane, wood, coal, or other alternative fuels<sup>10</sup>.

## ***Census Geographies & Demographic Data***

**-Census Tract:** Census tracts are statistical subdivisions of U.S. counties with an average of 4,000 inhabitants<sup>11</sup>.

**-Rural:** The U.S. Census Bureau defines rural areas as sparsely populated census blocks with fewer than 5,000 residents and less than 2,000 housing units.

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<sup>8</sup> <https://www.aceee.org/sites/default/files/publications/researchreports/e1502.pdf>

<sup>9</sup> <https://www.eia.gov/energyexplained/use-of-energy/homes.php>

<sup>10</sup> <https://www.eia.gov/energyexplained/use-of-energy/homes.php>

<sup>11</sup> For more information of the U.S. Census definition of census tract see:  
<https://www2.census.gov/geo/pdfs/education/CensusTracts.pdf>

**-Urban:** Urban areas are defined as those with 5,000 residents or more, are densely developed, and have 2,000 housing units or more<sup>12</sup>.

**-BIPOC:** Black, Indigenous, and People of Color. Proportion of the population who list their racial status as a race other than White alone and/or list their ethnicity as Hispanic or Latino in the U.S. Census.

### ***Social Vulnerability Metrics***

**-Social Vulnerability:** A measure of a community's susceptibility to harm during disasters, influenced by factors such as poverty, limited transportation access, and crowded housing. This metric ranks counties based on their ability to prevent or recover from human suffering and financial loss during emergencies.<sup>13</sup> The Energy Equity Explorer draws from the CDC's Social Vulnerability Index (SVI) themes and methodology. For more information, [please refer to the CDC's SVI tool](#). Here, we list the column headings of social vulnerability metrics that are shown in the tool, followed by the corresponding element from the CDC Social Vulnerability Index.

#### **-Socioeconomic Vulnerability<sup>14</sup>**

- **Housing Burden:** Housing Cost Burden

- **Housing Vulnerability<sup>15</sup>**

- **Over 65:** Aged 65 & Older

- **Under 17:** Aged 17 & Younger

- **disability:** Civilian with a Disability

- **Limited English:** English Language Proficiency

#### **-Housing Type and Transportation<sup>16</sup>**

- **No vehicle:** No vehicle

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<sup>12</sup> For more information on the U.S. Census definition of urban geographies see:

<https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html>

<sup>13</sup> <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>

<sup>14</sup> [https://svi.cdc.gov/map25/data/docs/SVI2022Documentation\\_ZCTA.pdf](https://svi.cdc.gov/map25/data/docs/SVI2022Documentation_ZCTA.pdf)

<sup>15</sup> [https://svi.cdc.gov/map25/data/docs/SVI2022Documentation\\_ZCTA.pdf](https://svi.cdc.gov/map25/data/docs/SVI2022Documentation_ZCTA.pdf)

<sup>16</sup> [https://svi.cdc.gov/map25/data/docs/SVI2022Documentation\\_ZCTA.pdf](https://svi.cdc.gov/map25/data/docs/SVI2022Documentation_ZCTA.pdf)