

U.S. Environmental Footprint

The U.S. population is expected to grow from 335M in 2023 to 404M by 2060.^{1,2} One way to quantify environmental impacts is by estimating how many Earths would be needed to sustain the global population if everyone lived a particular lifestyle. One study estimates it would take just over 5 Earths to support the human population if everyone's consumption patterns were similar to the average American.³ Pressure on the environment will increase unless consumption patterns are significantly adjusted to account for the finite natural resource base. See other CSS Factsheets that expand on the topic areas below.

Food

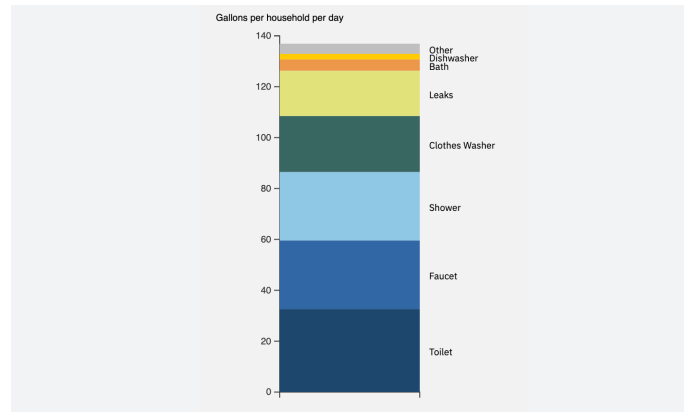
- The average American's daily Calorie consumption increased from 2,054 in 1970 to 2,501 in 2010.⁴
- In 2003, the average American consumed 46 gal of soft drinks, a 330% increase since 1947.⁵ Between 1970 and 2021, per capita milk consumption decreased 51%, to 10.6 gal/yr.⁶
- The average American consumes about 356 Calories of added sugars and sweeteners per day.⁴ The American Heart Association recommends limiting added sugars to between 100 and 150 Calories daily for an average adult.⁷
- U.S. per capita consumption of added fats increased by 66% from 1970 to 2010.⁴
- The top 25% of American diets emit almost 8 times the GHG emissions of the bottom 25%.⁸
- Approximately 41% of U.S. adults and over 20% of adolescents age 12-19 are obese (BMI > 30).⁹
- Food waste is the most commonly landfilled and incinerated material in the U.S.¹⁰ The average American wastes 50% more food than in 1970.¹¹ Between 30-40% of food is wasted in the U.S. and this waste accounts for roughly 22% of the municipal solid waste stream and an annual cost of \$450 per person. See the [U.S. Food Systems factsheet](#).^{11,12}

Water

- In 2015, water withdrawals in the U.S. for all uses were estimated to be 322B gal/day, 9% less than in 2010.¹³ The biggest uses are thermoelectric power (41%), irrigation (37%), and public supply (12%).¹³
- Water use per person was roughly 48% higher in western states than eastern states in 2015, mostly due to crop irrigation in the west.¹³ Over 50% of water withdrawals occur in 12 states, 9% in California.¹³
- The average North American household uses roughly 240 gal of water daily for indoor and outdoor uses.¹⁴

- Households with more efficient fixtures and no leaks can drop their water usage to 40 gal/day per person. For more information, see the [U.S. Food Systems factsheet](#).¹⁴

North American Household Water Use, (Gal/d per Household)¹⁴



Material Use and Waste Management

- In 2000, per capita consumption of all materials in the U.S. was 23.7 t, 52% more than the European average.¹⁵
- In 1900, raw material consumption was less than 2 t per person. At its 2006 peak it had grown to over 13 t per person. See the [U.S. Material Use Factsheet](#).^{16,17}
- In 2018, the average American generated 4.9 lbs of municipal solid waste (MSW) daily, with only 1.6 lbs recycled or composted.¹³ MSW generation rates (in lb/person/day) are 2.4 in Sweden, 3.6 in Germany, and 2.6 in the United Kingdom.³
- In 2018, 32.1% of U.S. MSW was recovered for recycling or composting, diverting 94M tons of material from landfills and incinerators—twice as much as in 1990. For more information, see the [U.S. MSW Factsheet](#).¹²
- Only 53% of Americans are automatically enrolled in curbside recycling programs.¹⁸ In 2016, 82% of cities with curbside recycling collect material single-stream, meaning materials such as glass and paper are separated at the recycling plant.¹⁹

Average American Lifetime Material Consumption²⁰



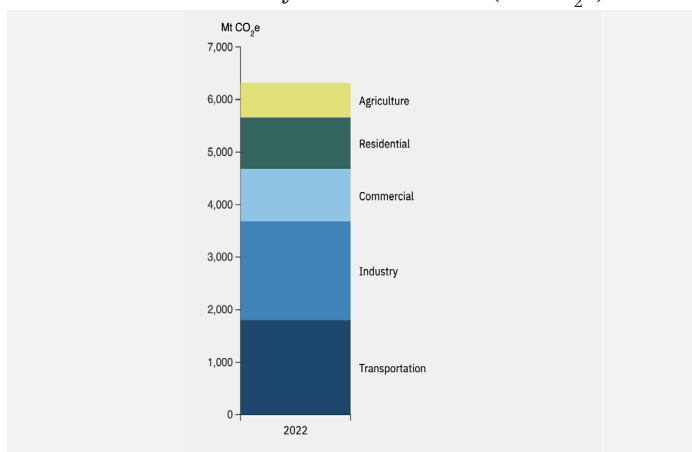
Greenhouse Gases (GHG)

- In 2022, U.S. GHG emissions were 19 t CO₂e per person.^{21,22}
- From 1990-2019, annual U.S. GHG emissions increased by 0.8%. In 2020, due to the COVID-19 pandemic, emissions

fell by 9%.²¹ In 2021, emissions increased by 6%, but still remained below 1990 levels.²¹ Emissions from electricity generation are 25% of the U.S. total.²¹

- In 2023, the Intergovernmental Panel on Climate Change (IPCC) concluded that “human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020.”²³
- By choosing energy efficient products to reduce electricity consumption and by making smart transportation choices, individuals can immediately reduce the GHG emissions they are responsible for.

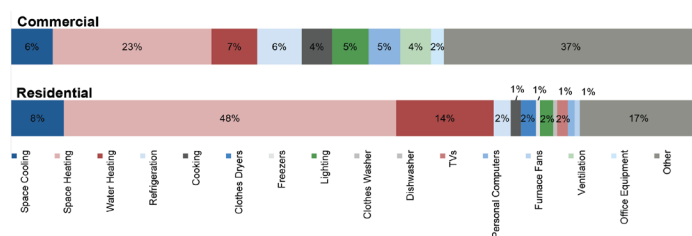
U.S. GHG Emissions by Sector in 2022 (Mt CO₂e)²¹



Residential and Commercial Buildings

- From the 1970s to the 2010s, average residential trends in the U.S. have been towards bigger houses with fewer occupants: U.S. house size increased 21.4%.²⁴ Number of occupants per house decreased 14%.²⁵ Living space per person increased 41%.^{24,25} See the [Residential Buildings Factsheet](#).
- Significant energy savings could be realized by better insulating residential buildings to reduce the space heating and cooling loads, using energy efficient appliances, and using more efficient lighting in commercial buildings.
- Commercial building average site energy intensity per square foot decreased 19% from 115,000 Btu/ft² in 1979 to 96,500 Btu/ft² in 2022.²⁶ See the [Commercial Buildings Factsheet](#).
- Average energy consumption was 96,500 BTU/ft² in 2022.¹ The amount of developed land increased by 61% in the U.S.

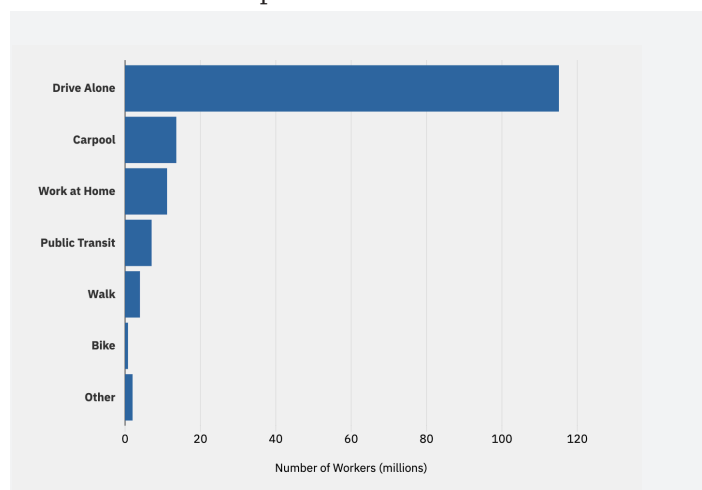
Buildings Primary Energy Distribution, 2022¹



Transportation

- In 2022, there were 283.4M vehicles in the U.S., and 235.1M licensed drivers.²⁸
- Drivers traveled over 3.1T vehicle-miles in the U.S. in 2022, more than double the amount traveled in 1980.²⁸ This is equivalent to more than 6.5M round-trips to the moon.²⁹
- Compared to 1990 models, the average 2022 vehicle’s weight increased by 26%, horsepower increased by 92%, and acceleration increased (0-60 mph times dropped) by 34%.³⁰
- Fuel economy surpassed 1988 levels in 2009 after years of decline.³¹
- The average occupancy for a passenger car is 1.5, compared to 7.5 for a transit bus and 26.1 for a train.³²
- Congestion is a worsening urban problem, causing an additional 8.5B hours of travel time, 3.3B gals of fuel use, and 64.7B lbs of CO₂ emissions in the U.S. in 2022.³³

U.S. Modes of Transportation to Work in 2020³²



Energy

- In 2021, the U.S. spent \$1.3T on energy (\$3,967 per person), equal to 5.7% of GDP.^{22,34}
- More U.S. energy comes from petroleum than any other source, comprising nearly 38% of consumption.³⁵
- Daily U.S. per capita energy consumption includes 2.55 gals of oil, 7 lbs of coal, and 267 ft³ of natural gas.^{22,35}
- Residential daily electricity use is 12 kWh per person.³⁵
- With less than 5% of the world’s population in 2022, the U.S. uses 16% of the world’s energy and accounts for 15% of world GDP.^{22,37,36,38} The European Union has 6% of the world’s population, uses 10% of its energy, and accounts for 15% of its GDP.^{38,39} While China has 18% of the world’s population, uses 29% of its energy, and accounts for 18% of its GDP.^{36,37,38}