U.S. energy consumption by source and sector, 2023
quadrillion British thermal units (Btu)

Sources: U.S. Energy Information Administration (EIA), Monthly Energy Review (April 2024), Tables 1.3, 1.4c, and 2.1a-2.6.

Note: Sum of components may not equal total due to independent rounding. All source and end-use sector consumption data include other energy losses from energy use, transformation, and distribution not separately identified. See "Extended Chart Notes" on next page.

a Primary energy consumption. Each energy source is measured in different physical units and converted to common British thermal units (Btu). See EIA’s Monthly Energy Review (MER), Appendix A. Generation from noncombustible renewable energy sources is converted to Btu using the “Captured Energy Approach.” See MER Appendix E.

b The electric power sector includes electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Energy consumed by these plants reflects the approximate heat rates for electricity in MER Appendix A. The total includes the heat content of electricity net imports, not shown separately. Electrical system energy losses are calculated as primary energy consumed by the electric power sector minus the heat content of electricity sales to ultimate consumers. See Note 1, “Electrical System Energy Losses,” at the end of MER Section 2.

c End-use sector consumption of primary energy and electricity sales to ultimate consumers, excluding electrical system energy losses. Industrial and commercial sectors consumption includes primary energy consumption by CHP and electricity-only plants contained within the sector.
thermodynamically necessary feature of steam-electric plants, which use primary energy to turn electric generators. This conversion loss is a

energy losses include power plant use of electricity, transmission and distribution of electricity from power plants to end-use consumers, heat produced from combined-heat-and-power (CHP) plants, and unaccounted-for electricity. See the endnotes of MER Section 2 for further explanation.

End-use sector:
End-use consumption in this chart exclude electrical system energy losses and differ from total consumption by end-use sectors, which allocates electrical system energy losses proportionally to the amount of electricity sales to ultimate customers in each end-use sector (See MER Section 2).

Transportation: Includes energy used by automobiles; trucks; buses; motorcycles; trains, subways, and other rail vehicles; aircraft; and ships, barges, and other waterborne vehicles whose primary purpose is transporting people and/or goods from one physical location to another. Vehicles whose primary purpose is not transportation (e.g., construction cranes and bulldozers, farming vehicles, and warehouse forklifts) are classified in the sector of their primary use. Also includes natural gas used in the operation of natural gas pipelines.

Industrial: Includes energy consumed for manufacturing (NAICS codes 31-33); agriculture, forestry, fishing, and hunting (NAICS code 11); mining, including oil and gas extraction (NAICS code 21); construction (NAICS code 23); and combined-heat-and-power (CHP) generators that produce electricity and/or useful thermal output primarily to support the above-mentioned industrial activities.

Residential: Includes energy used for space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a variety of other appliances in the living quarters of private households.

Commercial: Includes energy consumed by businesses; federal, state, and local governments; other private and public organizations, such as religious, social, or fraternal groups; institutional living quarters; sewage treatment facilities; and CHP generators that produce electricity and/or useful thermal output primarily to support the activities of the above-mentioned commercial establishments.

Other energy losses:
Similar to electrical system energy losses, there are also other energy losses in energy production, distribution, and consumption. However, these losses are not shown separately in the chart because data are not available for EIA to estimate these losses.

All uses of primary energy have efficiency losses, in the form of heat, when energy is converted to do useful work. Examples include when motor gasoline is burned to move vehicles, when natural gas is burned to heat homes, or in any other use of combusted fuels. There are also losses in the transformation of one form of energy to another form of energy. For example, there are transformation losses in the process of refining crude oil into usable petroleum products, processing natural gas into marketable dry gas, and in the process of transforming energy from the sun into usable energy by solar panels. The Lawrence Livermore National Laboratory publishes estimates of primary energy losses by end-use sector by applying an end use efficiency factor to EIA’s MER consumption data.