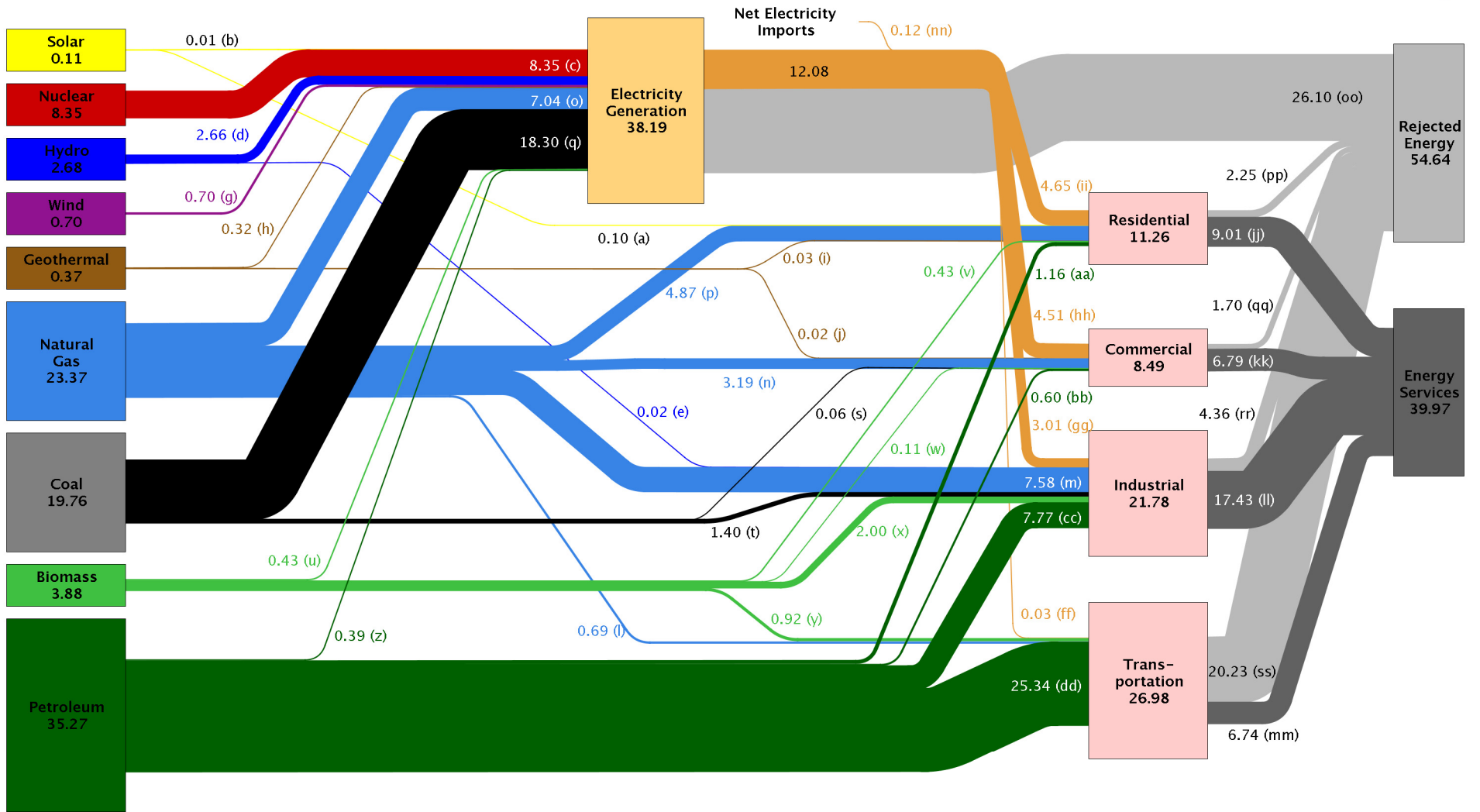


Estimated U.S. Energy Use in 2009: ~94.6 Quads



Source: LLNL 2010. Data is based on DOE/EIA-0384(2009), August 2010. If this information or a reproduction of it is used, credit must be given to the Lawrence Livermore National Laboratory and the Department of Energy, under whose auspices the work was performed. Distributed electricity represents only retail electricity sales and does not include self-generation. EIA reports flows for non-thermal resources (i.e., hydro, wind and solar) in BTU-equivalent values by assuming a typical fossil fuel plant "heat rate." The efficiency of electricity production is calculated as the total retail electricity delivered divided by the primary energy input into electricity generation. End use efficiency is estimated as 80% for the residential, commercial and industrial sectors, and as 25% for the transportation sector. Totals may not equal sum of components due to independent rounding. LLNL-MI-410527

U.S. Energy Flowchart 2009
Lawrence Livermore National Laboratory
Release Notes

All energy flow statistics are quoted from the U.S. Department of Energy's Energy Information Administration. These statistics can be found in the Annual Energy Review 2009, report number DOE/EIA-0384(2009). The original document can be found at <http://www.eia.gov/aer/contents.html>

- (a) Consumption of Solar Energy in the Residential Sector
Table 2.1b, Column 7 (Solar/PV)
- (b) Consumption of Solar Energy in the Production of Electricity
Table 2.1f, Column 9 (Solar/PV)
- (c) Consumption of Nuclear Energy in the Production of Electricity
Table 2.1f, Column 6 (Nuclear Electric Power)
- (d) Consumption of Hydropower in the Production of Electricity
Table 2.1f, Column 7 (Hydroelectric Power)
- (e) Consumption of Hydropower in the Industrial Sector
Table 2.1d, Column 7 (Hydroelectric Power)
- (f) Consumption of Hydropower in the Commercial Sector
(Less than 0.01 Quads, not shown)
Table 2.1c, Column 6 (Hydroelectric Power)
- (g) Consumption of Wind Energy in the Production of Electricity
Table 2.1f, Column 10 (Wind)
- (h) Consumption of Geothermal Energy in the Production of Electricity
Table 2.1f, Column 8 (Geothermal)
- (i) Consumption of Geothermal Energy in the Residential Sector
Table 2.1b, Column 6 (Geothermal)
- (j) Consumption of Geothermal Energy in the Commercial Sector
Table 2.1c, Column 7 (Geothermal)
- (k) Consumption of Geothermal Energy in the Industrial Sector
(Less than 0.01 Quads, not shown)
Table 2.1d, Column 8 (Geothermal)
- (l) Consumption of Natural Gas by the Transportation Sector
Table 2.1e, Column 3 (Natural Gas)
- (m) Consumption of Natural Gas by the Industrial Sector
Table 2.1d, Column 4 (Natural Gas)
- (n) Consumption of Natural Gas by the Commercial Sector
Table 2.1c, Column 3 (Natural Gas)
- (o) Consumption of Natural Gas in the Production of Electricity
Table 2.1f, Column 3 (Natural Gas)
- (p) Consumption of Natural Gas by the Residential Sector
Table 2.1b, Column 3 (Natural Gas)
- (q) Consumption of Coal in the Production of Electricity
Table 2.1f, Column 2 (Coal)
- (r) Consumption of Coal in the Residential Sector
(Less than 0.01 Quads, not shown)
Table 2.1b, Column 2 (Coal)
- (s) Consumption of Coal in the Commercial Sector
Table 2.1c, Column 2 (Coal)
- (t) Consumption of Coal in the Industrial Sector
Table 2.1d, Column 2 (Coal)

- (u) Consumption of Biomass in the Production of Electricity
Table 2.1f, Column 11 (Biomass)
- (v) Consumption of Biomass in the Residential Sector
Table 2.1b, Column 8 (Biomass)
- (w) Consumption of Biomass in the Commercial Sector
Table 2.1c, Column 9 (Biomass)
- (x) Consumption of Biomass in the Industrial Sector
Table 2.1d, Column 9 (Biomass)
- (y) Consumption of Biomass in the Transportation Sector
Table 2.1e, Column 6 (Biomass)
- (z) Consumption of Petroleum in the Production of Electricity
Table 2.1f, Column 4 (Petroleum)
- (aa) Consumption of Petroleum in Residential Sector
Table 2.1b, Column 4 (Petroleum)
- (bb) Consumption of Petroleum in the Commercial Sector
Table 2.1c, Column 4 (Petroleum)
- (cc) Consumption of Petroleum in the Industrial Sector
Table 2.1d, Column 5 (Petroleum)
- (dd) Consumption of Petroleum in the Transportation Sector
Table 2.1e, Column 4 (Petroleum)
- (ee) Domestic Production of Electrical Power
 - + Table 2.1e, Column 8 (Electricity Retail Sales)
 - + Table 2.1d, Column 12 (Electricity Retail Sales)
 - + Table 2.1c, Column 12 (Electricity Retail Sales)
 - + Table 2.1b, Column 11 (Electricity Retail Sales)
 - Table 2.1f, Column 13 (Electricity Net Imports)
- (ff) Consumption of Electricity in the Transportation Sector
Table 2.1e, Column 8 (Electricity Retail Sales)
- (gg) Consumption of Electricity in the Industrial Sector
Table 2.1d, Column 12 (Electricity Retail Sales)
- (hh) Consumption of Electricity in the Commercial Sector
Table 2.1c, Column 12 (Electricity Retail Sales)
- (ii) Consumption of Electricity in the Residential Sector
Table 2.1b, Column 11 (Electricity Retail Sales)
- (jj) Useful Energy Services in the Residential Sector
80% of
 - + Table 2.1b, Column 11 (Electricity Retail Sales)
 - + Table 2.1b, Column 7 (Solar/PV)
 - + Table 2.1b, Column 6 (Geothermal)
 - + Table 2.1b, Column 3 (Natural Gas)
 - + Table 2.1b, Column 2 (Coal)
 - + Table 2.1b, Column 8 (Biomass)
 - + Table 2.1b, Column 4 (Petroleum)
- (kk) Useful Energy Services in the Commercial Sector
80% of
 - + Table 2.1c, Column 12 (Electricity Retail Sales)
 - + Table 2.1c, Column 6 (Hydroelectric Power)
 - + Table 2.1c, Column 7 (Geothermal)
 - + Table 2.1c, Column 3 (Natural Gas)
 - + Table 2.1c, Column 2 (Coal)
 - + Table 2.1c, Column 9 (Biomass)
 - + Table 2.1c, Column 4 (Petroleum)

- (ll) Useful Energy Services in the Industrial Sector
80% of
- + Table 2.1d, Column 12 (Electricity Retail Sales)
 - + Table 2.1d, Column 7 (Hydroelectric Power)
 - + Table 2.1d, Column 8 (Geothermal)
 - + Table 2.1d, Column 4 (Natural Gas)
 - + Table 2.1d, Column 2 (Coal)
 - + Table 2.1d, Column 9 (Biomass)
 - + Table 2.1d, Column 5 (Petroleum)
- (mm) Useful Energy Services in the Transportation Sector
25% of
- + Table 2.1e, Column 8 (Electricity Retail Sales)
 - + Table 2.1e, Column 3 (Natural Gas)
 - + Table 2.1e, Column 6 (Biomass)
 - + Table 2.1e, Column 4 (Petroleum)
- (nn) Net Imports of Electricity
Table 2.1f, Column 13 (Electricity Net Imports)
- (oo) Rejected Energy from Electricity Generation and Transmission
- + Table 2.1f, Column 9 (Solar/PV)
 - + Table 2.1f, Column 6 (Nuclear Electric Power)
 - + Table 2.1f, Column 7 (Hydroelectric Power)
 - + Table 2.1f, Column 10 (Wind)
 - + Table 2.1f, Column 8 (Geothermal)
 - + Table 2.1f, Column 3 (Natural Gas)
 - + Table 2.1f, Column 2 (Coal)
 - + Table 2.1f, Column 11 (Biomass)
 - + Table 2.1f, Column 4 (Petroleum)
 - + Table 2.1f, Column 13 (Electricity Net Imports)
 - Table 2.1e, Column 8 (Electricity Retail Sales)
 - Table 2.1d, Column 12 (Electricity Retail Sales)
 - Table 2.1c, Column 12 (Electricity Retail Sales)
 - Table 2.1b, Column 11 (Electricity Retail Sales)
- (pp) Rejected Energy from the Residential Sector
20% of
- + Table 2.1b, Column 11 (Electricity Retail Sales)
 - + Table 2.1b, Column 7 (Solar/PV)
 - + Table 2.1b, Column 6 (Geothermal)
 - + Table 2.1b, Column 3 (Natural Gas)
 - + Table 2.1b, Column 2 (Coal)
 - + Table 2.1b, Column 8 (Biomass)
 - + Table 2.1b, Column 4 (Petroleum)
- (qq) Rejected Energy from the Commercial Sector
20% of
- + Table 2.1c, Column 12 (Electricity Retail Sales)
 - + Table 2.1c, Column 6 (Hydroelectric Power)
 - + Table 2.1c, Column 7 (Geothermal)
 - + Table 2.1c, Column 3 (Natural Gas)
 - + Table 2.1c, Column 2 (Coal)
 - + Table 2.1c, Column 8 (Biomass)
 - + Table 2.1c, Column 4 (Petroleum)
- (rr) Rejected Energy from the Industrial Sector
20% of
- + Table 2.1d, Column 12 (Electricity Retail Sales)
 - + Table 2.1d, Column 7 (Hydroelectric Power)
 - + Table 2.1d, Column 8 (Geothermal)
 - + Table 2.1d, Column 4 (Natural Gas)
 - + Table 2.1d, Column 2 (Coal)
 - + Table 2.1d, Column 9 (Biomass)
 - + Table 2.1d, Column 5 (Petroleum)
- (ss) Rejected Energy from the Transportation Sector
75% of
- + Table 2.1e, Column 8 (Electricity Retail Sales)
 - + Table 2.1e, Column 3 (Natural Gas)
 - + Table 2.1e, Column 6 (Biomass)
 - + Table 2.1e, Column 4 (Petroleum)