

Appendix D. Data and methodology changes

Tables and data files in the State Energy Data System (SEDS) supply a new year of data each production cycle. The latest data may be preliminary and, therefore, revised the following cycle. Changes made to consumption and price source data for historical years are also regularly incorporated into SEDS.

Listed below are changes in SEDS contents beyond the standard updates.

Petroleum

Aviation gasoline

For 2022 forward, SEDS changes the method for estimating U.S.-level aviation gasoline prices and state-level aviation gasoline consumption. [EIA suspended its survey EIA-782 and Prime Supplier Report](#) after data year 2021 that provided prices to end users and prime supplier sales volumes. To estimate U.S.-level prices, SEDS uses regression models with historical SEDS U.S. aviation gasoline price estimates as the dependent variable and [EIA's U.S. premium gasoline retail prices](#) and [Refinitiv's U.S. crude oil spot prices](#) as the independent variables. SEDS assigns all states the same annual U.S. price. To estimate state-level consumption, SEDS allocates U.S. aviation gasoline product supplied to the states using the 2021 state shares. See the SEDS [technical notes](#) for more information.

Renewable energy

Fuel ethanol

For 2022 forward, SEDS changes the source used to allocate conventional and reformulated motor gasoline by state, which SEDS uses to estimate fuel ethanol consumption. After data year 2021, [EIA suspended its survey EIA-782 and Prime Supplier Report](#) that provided prime supplier sales of conventional and reformulated motor gasoline by state. Instead for 2022 forward, SEDS uses unpublished shipments from refineries and terminals data from surveys EIA-810 and EIA-815 to estimate conventional and reformulated motor gasoline by state. See the SEDS [technical notes](#) for more information.

Geothermal, hydroelectric, solar, and wind

For 1960 forward, SEDS updated the way we calculate primary energy consumption of electricity generation from noncombustible renewable energy sources (geothermal, hydroelectric power, solar, and wind) to use the *captured energy approach* instead of the *fossil fuel equivalency approach*. The *captured energy approach* uses the constant heat conversion factor for electricity, which is 3,412 British thermal units per kilowatthour (Btu/kWh). The *captured energy approach* is more consistent with international energy statistics standards than the *fossil fuel equivalency approach*. For more information about the consumption of noncombustible renewable energy sources, see the SEDS consumption [technical notes](#). For more information on the *captured energy approach* and *fossil fuel equivalency approach*, see EIA's [Monthly Energy Review](#) (MER) Appendix E.

Total energy and energy indicators

Capacity factors and usage factors

State data are available in SEDS for capacity factors (2008 forward) and usage factors (2013 forward). The SEDS capacity factors and usage factors data are a total for all sectors, including the electric power, commercial, and industrial sectors, and include any utility-scale combined-heat-and-power (CHP) units, for the year in thousand kilowatts. The data are from EIA's Form [EIA-860](#) and Form [EIA-923](#). For more information, see energy indicators [technical notes](#).

Electric vehicle charging infrastructure

State data are available in SEDS for electric vehicle (EV) charging infrastructure for 2015 forward. The data are for non-single-family residential EV charging locations and include breakouts of the number of private vs. public and networked vs. non-networked locations, and number of Level 1, Level 2, DC fast, and Legacy charging ports at the end of the calendar year. The data are from the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy Alternative Fuels Data Center (AFDC) and National Renewable Energy Laboratory (NREL). For more information, see energy indicators [technical notes](#).

Electric vehicle electricity consumption

State data are available in SEDS for estimated electric vehicle (EV) electricity consumption for 2018 forward. These estimates are based on experimental models and subject to model error. The estimates are for total electricity consumption, a sub-set of EIA's electricity sales to ultimate customers data, for on-road, light-duty (less than or equal to 8,500 pounds) battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV), and total EVs only. EIA does not separately estimate sector-level EV consumption data. The experimental estimates come from unpublished data in EIA's *Electric Power Monthly* (EPM). For more information, see the EPM [technical documentation](#) and SEDS [technical notes](#).

Electric vehicle stocks

State data are available in SEDS for electric vehicle (EV) stocks for 2016 forward. The SEDS EV stocks data are for the number of registered light-duty vehicles at the end of the calendar year, including breakouts for battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV), total EVs, and total (all fuels) light-duty vehicles. The U.S.-level data are from S&P Global Mobility Vehicles in Operation, except the 2017 data that are estimates interpolated by EIA. The state-level estimates use state shares from the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy Alternative Fuels Data Center (AFDC) to allocate the U.S.-level data to the states. For more information, see energy indicators [technical notes](#).

Gross domestic product

Revised real and current-dollar gross domestic product (GDP) data by state are available in SEDS for 1997 forward. The data are for all industries total from the U.S. Bureau of Economic Analysis (BEA), which released comprehensive revisions for all state GDP data for 1997 forward in May 2024, including a change in real dollar units to 2017 chained dollars. For more information, see the SEDS [technical notes](#).