

Table 7.8c Capacity Factors and Usage Factors at Electric Generators: Commercial Sector
(Percent)

| | Capacity Factors ^a | | | | | | | | | | | | Usage Factors ^b | |
|---------------------------|-------------------------------|-------------------------------|--------------------------|----------------|------------------|------------------------------|--|-----------------------------|-----------------|--------------------------------|---------|-------------------|---|--------------------|
| | Coal ^{c,d} | Petro- leum ^{c,e} | Natural Gas ^f | | | Nuclear Electric Power | Conven- tional Hydro- electric Power | Bio- mass ^{c,g} | Geo- thermal | Solar | | Wind ⁱ | Hydro- electric Pumped Storage | Battery Storage |
| | | | Comb- ined Cycle | Gas Turbine | Steam Turbine | | | | | Photo- voltaic ^h | Thermal | | | |
| 2008 Year | 36.5 | 3.6 | 52.2 | 43.9 | 36.8 | — | 31.6 | 56.2 | — | 9.9 | — | — | — | — |
| 2009 Year | 28.1 | 3.6 | 53.6 | 43.1 | 33.6 | — | 38.0 | 57.3 | — | 4.8 | — | 2.0 | — | — |
| 2010 Year | 34.5 | 3.2 | 54.6 | 53.8 | 32.2 | — | 42.7 | 55.7 | — | 11.1 | — | 17.6 | — | — |
| 2011 Year | 32.1 | 2.3 | 50.9 | 58.8 | 33.4 | — | 17.0 | 60.1 | — | 18.7 | — | 24.2 | — | — |
| 2012 Year | 31.8 | 1.9 | 54.5 | 52.2 | 26.7 | — | 17.0 | 60.0 | — | 19.5 | — | 22.4 | — | — |
| 2013 Year | 31.7 | 1.9 | 52.8 | 51.9 | 33.7 | — | 28.2 | 60.3 | — | 20.6 | — | 22.4 | — | — |
| 2014 Year | 30.2 | 2.4 | 48.6 | 55.1 | 31.5 | — | 20.5 | 57.4 | — | 19.9 | — | 25.5 | — | — |
| 2015 Year | 35.0 | 2.6 | 51.7 | 53.2 | 28.6 | — | 18.6 | 56.0 | — | 18.7 | — | 24.4 | — | — |
| 2016 Year | 29.4 | 1.5 | 53.3 | 49.7 | 32.1 | — | 33.3 | 52.5 | — | 20.5 | — | 26.3 | — | 4.8 |
| 2017 Year | 29.8 | 1.3 | 53.4 | 54.0 | 29.5 | — | 36.5 | 52.2 | — | 19.5 | — | 26.8 | — | 5.4 |
| 2018 Year | 31.4 | .7 | 51.5 | 56.2 | 32.0 | — | 34.7 | 50.1 | — | 18.7 | — | 27.5 | — | 5.2 |
| 2019 Year | 30.2 | .7 | 51.0 | 52.6 | 35.1 | — | 28.7 | 52.3 | 102.1 | 18.2 | — | 27.8 | — | 1.0 |
| 2020 Year | 27.4 | .4 | 43.3 | 50.1 | 32.2 | — | 32.8 | 52.0 | 103.5 | 17.4 | — | 28.3 | — | 4.4 |
| 2021 January | 39.1 | .4 | 38.1 | 60.0 | 26.2 | — | 38.2 | 51.1 | 119.6 | 10.3 | — | 27.3 | — | (s) |
| February | 40.0 | .6 | 38.8 | 57.1 | 28.1 | — | 37.0 | 47.9 | 118.7 | 11.6 | — | 27.6 | — | .5 |
| March | 32.1 | .4 | 35.8 | 49.5 | 24.6 | — | 34.8 | 47.4 | 46.7 | 17.9 | — | 38.2 | — | .5 |
| April | 29.0 | .4 | 32.4 | 43.9 | 21.6 | — | 34.2 | 50.0 | 69.8 | 21.5 | — | 33.4 | — | (s) |
| May | 16.8 | .3 | 32.9 | 42.7 | 21.7 | — | 35.5 | 46.9 | 92.4 | 22.5 | — | 27.7 | — | (s) |
| June | 28.5 | .3 | 42.6 | 59.0 | 23.8 | — | 38.1 | 48.7 | 75.4 | 22.5 | — | 23.5 | — | 1.3 |
| July | 28.7 | .4 | 49.6 | 61.8 | 26.2 | — | 34.9 | 51.4 | 71.3 | 21.5 | — | 16.3 | — | 1.2 |
| August | 32.5 | .4 | 50.3 | 65.6 | 28.4 | — | 33.8 | 51.5 | 75.1 | 20.2 | — | 23.1 | — | 1.4 |
| September | 34.0 | .3 | 47.1 | 56.1 | 27.2 | — | 30.3 | 50.7 | 80.1 | 18.8 | — | 27.3 | — | .8 |
| October | 32.5 | .3 | 39.6 | 51.2 | 26.7 | — | 27.5 | 45.8 | 87.4 | 14.8 | — | 29.0 | — | .6 |
| November | 29.6 | .4 | 41.3 | 51.3 | 24.9 | — | 29.7 | 49.8 | 82.3 | 12.8 | — | 34.0 | — | (s) |
| December | 27.4 | .5 | 40.0 | 52.1 | 27.0 | — | 35.3 | 50.5 | 102.7 | 9.5 | — | 31.6 | — | .4 |
| Average | 30.8 | .4 | 40.7 | 54.2 | 25.5 | — | 34.1 | 49.3 | 84.6 | 17.0 | — | 28.3 | — | .7 |
| 2022 January | 21.3 | 1.1 | 41.8 | 56.8 | 29.7 | — | 38.2 | 59.4 | — | 11.4 | — | 33.8 | — | .7 |
| February | 20.6 | .7 | 42.2 | 51.1 | 25.2 | — | 37.5 | 59.8 | — | 14.8 | — | 36.6 | — | .9 |
| March | 18.9 | .6 | 41.9 | 48.4 | 26.1 | — | 38.4 | 57.3 | — | 17.1 | — | 35.8 | — | 1.0 |
| April | 17.9 | .5 | 40.0 | 44.9 | 22.3 | — | 33.5 | 62.5 | — | 21.0 | — | 38.4 | — | 1.1 |
| May | 17.8 | .5 | 44.5 | 47.6 | 18.9 | — | 40.3 | 62.5 | — | 21.5 | — | 30.2 | — | 1.1 |
| June | 36.7 | .8 | 50.0 | 55.2 | 22.9 | — | 43.2 | 63.2 | — | 23.2 | — | 25.3 | — | 1.3 |
| July | 36.4 | .6 | 53.7 | 68.8 | 23.6 | — | 40.1 | 62.2 | — | 21.9 | — | 17.6 | — | 2.1 |
| August | 32.4 | .5 | 52.7 | 72.6 | 24.6 | — | 34.2 | 62.1 | — | 21.0 | — | 14.1 | — | 1.6 |
| September | 35.6 | .5 | 50.5 | 59.5 | 23.2 | — | 28.7 | 59.5 | — | 19.1 | — | 19.1 | — | 1.1 |
| October | 35.6 | .4 | 40.1 | 45.7 | 21.2 | — | 23.6 | 59.6 | — | 15.7 | — | 24.1 | — | .9 |
| November | 44.1 | .7 | 38.6 | 52.2 | 25.4 | — | 28.3 | 61.5 | — | 12.5 | — | 35.0 | — | .9 |
| December | 40.0 | .9 | 39.3 | 58.0 | 30.7 | — | 30.8 | 59.8 | — | 8.9 | — | 28.4 | — | .7 |
| Average | 29.7 | .6 | 44.6 | 55.1 | 24.5 | — | 34.7 | 60.8 | — | 17.4 | — | 28.1 | — | 1.1 |
| 2023 January | 38.9 | .7 | 41.3 | 57.7 | 24.9 | — | 35.7 | 57.3 | — | 10.6 | — | 31.2 | — | .4 |
| February | 39.7 | .7 | 44.6 | 57.0 | 26.7 | — | 33.1 | 54.0 | — | 12.9 | — | 37.2 | — | .4 |
| March | 29.8 | .8 | 44.0 | 53.9 | 22.3 | — | 30.2 | 51.3 | — | 16.8 | — | 36.2 | — | .3 |
| April | 36.8 | .7 | 40.5 | 48.2 | 24.6 | — | 27.5 | 51.7 | — | 18.5 | — | 33.5 | — | .3 |
| May | 33.9 | .4 | 40.4 | 50.6 | 20.8 | — | 49.2 | 56.5 | — | 21.2 | — | 26.0 | — | .5 |
| June | 17.6 | .7 | 52.5 | 58.7 | 22.5 | — | 33.0 | 60.1 | — | 21.2 | — | 19.7 | — | .9 |
| July | 31.5 | .8 | 55.4 | 61.8 | 26.8 | — | 31.1 | 60.3 | — | 22.3 | — | 13.2 | — | 1.3 |
| August | 30.6 | .7 | 57.1 | 62.4 | 24.8 | — | 31.9 | 58.2 | — | 21.2 | — | 14.7 | — | 1.0 |
| September | 34.2 | .6 | 55.8 | 61.3 | 23.5 | — | 23.6 | 55.7 | — | 18.7 | — | 15.3 | — | .8 |
| October | 35.9 | .5 | 46.8 | 52.7 | 20.2 | — | 22.4 | 57.3 | — | 15.7 | — | 18.9 | — | .2 |
| November | 39.6 | .6 | 44.6 | 59.7 | 23.1 | — | 27.4 | 59.9 | — | 15.0 | — | 23.0 | — | .2 |

^a Capacity factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (net generation) to the maximum possible output over that same time period (using time-adjusted capacity).

^b Usage factors are a measure of how often electric generators operate over a specific period of time, using a ratio of actual output (gross generation) to the maximum possible output over that same time period (using time-adjusted capacity).

^c Steam turbine, gas turbine, internal combustion engine, combined-cycle, and other plants.

^d Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

^e Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

^f Natural gas, plus a small amount of supplemental gaseous fuels. Capacity factors for natural gas internal combustion engine, energy storage, fuel cell, and other plants are not displayed.

^g Wood and wood-derived fuels, municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass. Through 2000, also includes non-renewable waste (municipal solid waste from non-biogenic

sources, and tire-derived fuels).

^h Solar photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generators.

ⁱ Onshore wind plants, and, beginning in 2017, offshore wind plants.

—=No data reported. (s)=Less than 0.5 percent.

Notes: • Data are for utility scale facilities. See Note 1, "Coverage of Electricity Statistics," at end of section. • Monthly factors are based on a time-adjusted total net summer capacity of generators in operation for the entire month. Annual factors are based on a time-weighted average of the monthly time-adjusted capacity. • For plants that use multiple energy sources or technologies, capacity is assigned to the reported combination of predominant energy source and technology. • See EIA's *Electric Power Annual*, "Technical notes," for further information. • See "Capacity factor" in Glossary. • See Note 2, "Classification of Power Plants Into Energy-Use Sectors," at end of section. • Geographic coverage is the 50 states and the District of Columbia.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#electricity> (Excel and CSV files) for all available annual and monthly data beginning in 2008.

Sources: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report"; Form EIA-860M, "Monthly Update to the Annual Electric Generator Report"; and Form EIA-923, "Power Plant Operations Report."