

**Table 7.8b Capacity Factors and Usage Factors at Electric Generators: Electric Power Sector (Percent)**

|                    | Capacity Factors <sup>a</sup> |                               |                          |                |                  |                                           |                                                  |                             |                 |                                |         | Usage Factors <sup>b</sup> |                                         |                    |
|--------------------|-------------------------------|-------------------------------|--------------------------|----------------|------------------|-------------------------------------------|--------------------------------------------------|-----------------------------|-----------------|--------------------------------|---------|----------------------------|-----------------------------------------|--------------------|
|                    | Coal <sup>c,d</sup>           | Petro-<br>leum <sup>c,e</sup> | Natural Gas <sup>f</sup> |                |                  | Nuclear<br>Electric<br>Power <sup>g</sup> | Conven-<br>tional<br>Hydro-<br>electric<br>Power | Bio-<br>mass <sup>c,h</sup> | Geo-<br>thermal | Solar                          |         | Wind <sup>i</sup>          | Hydro-<br>electric<br>Pumped<br>Storage | Battery<br>Storage |
|                    |                               |                               | Combined<br>Cycle        | Gas<br>Turbine | Steam<br>Turbine |                                           |                                                  |                             |                 | Photo-<br>voltaic <sup>j</sup> | Thermal |                            |                                         |                    |
| 2008 Average ..... | 72.6                          | 9.4                           | 39.5                     | 5.2            | 11.6             | 91.1                                      | 37.0                                             | 65.5                        | 74.3            | 19.7                           | 19.5    | 31.7                       | —                                       | —                  |
| 2009 Average ..... | 64.4                          | 9.1                           | 43.5                     | 4.4            | 10.4             | 90.3                                      | 39.5                                             | 64.6                        | 73.0            | 20.3                           | 23.6    | 28.1                       | —                                       | —                  |
| 2010 Average ..... | 67.3                          | 8.1                           | 43.5                     | 5.2            | 10.6             | 91.1                                      | 37.5                                             | 63.4                        | 71.6            | 20.3                           | 24.5    | 29.8                       | —                                       | —                  |
| 2011 Average ..... | 62.9                          | 7.1                           | 43.6                     | 5.1            | 11.2             | 89.1                                      | 45.7                                             | 62.5                        | 71.5            | 19.0                           | 23.9    | 32.1                       | —                                       | —                  |
| 2012 Average ..... | 56.4                          | 7.1                           | 51.7                     | 6.0            | 12.7             | 86.6                                      | 39.5                                             | 63.4                        | 68.3            | 20.4                           | 23.6    | 31.8                       | —                                       | —                  |
| 2013 Average ..... | 59.5                          | 6.3                           | 48.0                     | 5.0            | 10.4             | 90.8                                      | 38.6                                             | 60.0                        | 71.8            | 24.7                           | 17.4    | 32.4                       | 9.8                                     | 7                  |
| 2014 Average ..... | 60.7                          | 6.4                           | 48.0                     | 5.2            | 9.5              | 91.7                                      | 37.1                                             | 61.5                        | 72.0            | 25.8                           | 18.3    | 34.0                       | 10.2                                    | 1.7                |
| 2015 Average ..... | 54.3                          | 6.3                           | 55.5                     | 6.8            | 10.8             | 92.3                                      | 35.6                                             | 59.5                        | 71.9            | 25.7                           | 21.7    | 32.2                       | 10.2                                    | 3.6                |
| 2016 Average ..... | 52.9                          | 5.6                           | 54.9                     | 8.2            | 11.6             | 92.3                                      | 38.1                                             | 59.2                        | 71.6            | 25.1                           | 22.1    | 34.5                       | 11.2                                    | 3.8                |
| 2017 Average ..... | 53.2                          | 6.1                           | 50.6                     | 6.6            | 10.1             | 92.3                                      | 43.0                                             | 60.2                        | 73.2            | 25.7                           | 21.8    | 34.6                       | 11.4                                    | 6.9                |
| 2018 Average ..... | 53.7                          | 6.4                           | 54.6                     | 9.0            | 11.9             | 92.5                                      | 41.8                                             | 60.2                        | 76.0            | 25.2                           | 23.6    | 34.6                       | 10.8                                    | 5.3                |
| 2019 Average ..... | 47.5                          | 5.3                           | 57.0                     | 8.3            | 13.2             | 93.4                                      | 41.1                                             | 59.5                        | 68.9            | 24.4                           | 21.2    | 34.4                       | 10.4                                    | 5.5                |
| 2020 Average ..... | 40.5                          | 5.0                           | 56.8                     | 8.3            | 13.3             | 92.4                                      | 40.7                                             | 58.9                        | 68.4            | 24.3                           | 20.6    | 35.3                       | 10.5                                    | 5.2                |
| 2021 Average ..... | 49.2                          | 5.4                           | 54.8                     | 8.3            | 11.4             | 92.8                                      | 35.9                                             | 61.8                        | 69.5            | 24.4                           | 20.5    | 34.4                       | 10.2                                    | 6.2                |
| 2022 Average ..... | 48.5                          | 5.2                           | 56.3                     | 9.7            | 14.7             | 92.7                                      | 36.3                                             | 58.0                        | 69.0            | 24.4                           | 23.1    | 36.0                       | 11.1                                    | 6.5                |
| 2023 Average ..... | 42.5                          | 4.0                           | 59.5                     | 9.6            | 16.6             | 93.0                                      | 34.9                                             | 55.7                        | 69.4            | 23.3                           | 22.1    | 33.2                       | 10.9                                    | 6.7                |
| 2024 January ..... | 57.0                          | 4.5                           | 64.0                     | 9.6            | 14.7             | 95.6                                      | 36.2                                             | 58.5                        | 69.3            | 13.5                           | 7.5     | 31.6                       | 9.5                                     | 6.2                |
| February .....     | 36.2                          | 3.2                           | 56.3                     | 6.9            | 9.1              | 95.4                                      | 37.3                                             | 55.7                        | 69.0            | 18.7                           | 12.4    | 39.6                       | 9.7                                     | 7.3                |
| March .....        | 29.7                          | 3.2                           | 50.8                     | 7.8            | 11.7             | 87.5                                      | 39.2                                             | 52.2                        | 67.4            | 21.8                           | 21.0    | 40.7                       | 7.4                                     | 7.9                |
| April .....        | 29.9                          | 3.5                           | 46.5                     | 10.3           | 14.9             | 81.8                                      | 36.3                                             | 47.3                        | 65.5            | 26.3                           | 32.2    | 43.7                       | 9.1                                     | 8.4                |
| May .....          | 35.6                          | 3.7                           | 53.7                     | 10.5           | 19.5             | 88.8                                      | 41.1                                             | 52.2                        | 61.9            | 29.0                           | 38.8    | 35.2                       | 12.5                                    | 8.1                |
| June .....         | 49.1                          | 3.9                           | 65.9                     | 12.1           | 25.5             | 96.3                                      | 38.9                                             | 55.8                        | 61.5            | 31.6                           | 40.1    | 35.7                       | 15.6                                    | 8.1                |
| July .....         | 55.1                          | 4.9                           | 76.1                     | 17.9           | 31.5             | 95.4                                      | 36.0                                             | 56.7                        | 60.4            | 30.3                           | 33.7    | 25.2                       | 16.8                                    | 8.8                |
| August .....       | 53.3                          | 4.5                           | 75.4                     | 16.1           | 32.0             | 95.3                                      | 34.5                                             | 58.7                        | 60.8            | 29.7                           | 33.1    | 26.1                       | 16.3                                    | 9.0                |
| September .....    | 43.8                          | 3.4                           | 67.7                     | 11.6           | 20.9             | 88.5                                      | 27.7                                             | 54.5                        | 61.5            | 25.5                           | 32.7    | 26.9                       | 13.0                                    | 8.4                |
| October .....      | 37.1                          | 3.6                           | 55.6                     | 10.3           | 18.9             | 80.3                                      | 25.8                                             | 47.0                        | 62.4            | 23.1                           | 22.8    | 35.3                       | 8.3                                     | 9.0                |
| November .....     | 35.8                          | 3.6                           | 54.7                     | 9.3            | 15.6             | 87.4                                      | 29.1                                             | 52.4                        | 67.3            | 16.3                           | 13.8    | 36.9                       | 8.7                                     | 8.8                |
| December .....     | 48.7                          | 4.1                           | 58.3                     | 7.6            | 13.0             | 97.3                                      | 32.8                                             | 56.3                        | 68.8            | 13.8                           | 11.7    | 35.0                       | 9.4                                     | 8.6                |
| Average .....      | 42.7                          | 3.8                           | 60.4                     | 10.9           | 19.0             | 90.8                                      | 34.6                                             | 54.0                        | 64.6            | 23.3                           | 25.0    | 34.3                       | 11.4                                    | 8.3                |
| 2025 January ..... | 62.8                          | 6.0                           | 61.7                     | 10.1           | 17.8             | 98.0                                      | 36.0                                             | 57.7                        | 68.6            | 16.4                           | 8.6     | 38.4                       | 9.8                                     | 7.7                |
| February .....     | 52.8                          | 4.0                           | 57.8                     | 7.6            | 14.8             | 93.5                                      | 36.4                                             | 58.6                        | 68.5            | 19.0                           | 15.0    | 38.0                       | 10.4                                    | 7.7                |
| March .....        | 37.8                          | 3.4                           | 46.3                     | 6.0            | 10.6             | 85.3                                      | 37.7                                             | 56.2                        | 68.6            | 23.8                           | 16.5    | 44.2                       | 8.8                                     | 8.5                |
| April .....        | 36.5                          | 3.6                           | 43.5                     | 9.2            | 16.0             | 81.7                                      | 39.7                                             | 48.8                        | 66.7            | 27.9                           | 30.0    | 41.4                       | 9.7                                     | 8.6                |
| May .....          | 38.2                          | 3.7                           | 51.6                     | 7.8            | 16.5             | 84.9                                      | 40.9                                             | 53.9                        | 62.0            | 29.7                           | 32.1    | 32.1                       | 11.7                                    | 8.7                |
| June .....         | 52.0                          | 5.2                           | 63.6                     | 13.8           | 23.5             | 93.4                                      | 38.5                                             | 58.0                        | 65.4            | 32.3                           | 39.2    | 32.2                       | 15.9                                    | 8.2                |
| July .....         | 62.9                          | 7.2                           | 71.9                     | 22.4           | 31.9             | 96.6                                      | 33.6                                             | 58.9                        | 63.7            | 32.4                           | 36.1    | 27.6                       | 18.5                                    | 8.6                |
| August .....       | 54.6                          | 4.9                           | 72.4                     | 15.8           | 26.3             | 96.5                                      | 33.8                                             | 58.3                        | 66.9            | 30.2                           | 32.8    | 23.6                       | 15.1                                    | 10.1               |
| September .....    | 47.9                          | 4.3                           | 66.3                     | 11.9           | 20.5             | 92.3                                      | 26.5                                             | 57.1                        | 65.9            | 27.3                           | 25.7    | 22.9                       | 13.3                                    | 8.7                |
| October .....      | 42.9                          | 5.1                           | 53.1                     | 11.5           | 18.6             | 80.9                                      | 27.8                                             | 48.9                        | 62.6            | 22.8                           | 22.7    | 34.1                       | 10.0                                    | 7.9                |
| November .....     | 44.9                          | 3.9                           | 51.6                     | 8.9            | 14.4             | 90.0                                      | 32.0                                             | 55.2                        | 64.5            | 17.5                           | 13.1    | 36.4                       | 8.9                                     | 7.6                |
| December .....     | 52.3                          | 5.2                           | 57.9                     | 8.0            | 15.4             | 99.0                                      | 40.2                                             | 58.9                        | 67.0            | 13.7                           | 11.5    | 40.0                       | 10.3                                    | 7.4                |
| Average .....      | 48.8                          | 4.7                           | 58.2                     | 11.1           | 18.9             | 91.0                                      | 35.3                                             | 55.9                        | 65.9            | 24.4                           | 23.6    | 34.2                       | 11.9                                    | 8.3                |
| 2026 January ..... | 57.8                          | 9.2                           | 58.6                     | 10.5           | 18.3             | 100.0                                     | 46.9                                             | 58.9                        | 69.9            | 15.7                           | 7.6     | 37.5                       | 9.8                                     | 8.1                |
| February .....     | 48.2                          | 6.7                           | 56.7                     | 9.2            | 16.4             | 94.3                                      | 41.8                                             | 63.0                        | 69.3            | 20.3                           | 12.8    | 37.1                       | 10.1                                    | 8.7                |
| March .....        | 34.8                          | 4.2                           | 48.1                     | 8.1            | 15.6             | 84.8                                      | 45.2                                             | 57.1                        | 66.1            | 24.8                           | 21.6    | 44.1                       | 11.2                                    | 9.0                |
| April .....        | 32.6                          | 4.6                           | 46.1                     | 11.5           | 17.6             | 81.0                                      | 39.0                                             | 50.0                        | 62.7            | 26.4                           | 26.4    | 42.3                       | 11.7                                    | 8.7                |
| May .....          | 35.7                          | 4.4                           | 50.9                     | 9.2            | 18.5             | 88.8                                      | 38.2                                             | 58.2                        | 63.6            | 29.5                           | 34.6    | 33.6                       | 13.7                                    | 8.8                |

<sup>a</sup> 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).

<sup>b</sup> 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).

<sup>c</sup> Steam turbine, gas turbine, internal combustion engine, combined-cycle, and other plants.

<sup>d</sup> Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and coal synfuel.

<sup>e</sup> Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, waste oil, and, beginning in 2011, propane.

<sup>f</sup> 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.

<sup>g</sup> See Table 8.1 for nuclear capacity factors for 1957–2007.

<sup>h</sup> 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).

<sup>i</sup> Solar photovoltaic (PV) energy at utility-scale facilities. Does not include small-scale solar photovoltaic generators.

<sup>j</sup> Onshore wind plants, and, beginning in 2017, offshore wind plants.

— = No data reported.

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. • The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public. • 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."