

Table 7.8a Capacity Factors and Usage Factors at Electric Generators: Total (All Sectors)
(Percent)

	Capacity Factors ^a											Usage Factors ^b		
	Coal ^{c,d}	Petro- leum ^{c,e}	Natural Gas ^f			Nuclear Electric Power ^g	Conven- tional Hydro- electric Power	Bio- mass ^{c,h}	Geo- thermal	Solar		Wind ⁱ	Hydro- electric Pumped Storage	Battery Storage
			Com- bined Cycle	Gas Turbine	Steam Turbine					Photo- voltaic ⁱ	Thermal			
2008 Average	72.4	9.7	40.3	7.6	12.1	91.1	37.1	64.0	74.3	19.2	19.5	31.7	—	—
2009 Average	64.2	9.3	43.9	6.8	10.9	90.3	39.6	62.9	73.0	20.0	23.6	28.1	—	—
2010 Average	67.1	8.4	44.3	7.8	11.1	91.1	37.5	62.5	71.6	20.2	24.5	29.7	—	—
2011 Average	62.8	7.4	44.3	7.9	11.7	89.1	45.8	61.4	71.5	19.0	23.9	32.1	—	—
2012 Average	56.2	7.6	52.2	8.9	13.3	86.6	39.6	62.1	68.3	20.4	23.6	31.8	—	—
2013 Average	59.4	6.6	48.8	8.3	11.2	90.8	38.8	60.3	71.8	24.5	17.4	32.4	9.8	7
2014 Average	60.5	6.7	48.6	8.3	10.3	91.7	37.2	61.0	72.0	25.6	18.3	34.0	10.2	1.7
2015 Average	54.3	6.7	55.8	9.8	11.3	92.3	35.7	60.5	71.9	25.5	21.7	32.2	10.2	3.6
2016 Average	52.8	5.9	55.4	11.0	12.3	92.3	38.2	59.9	71.6	25.0	22.1	34.5	11.2	3.8
2017 Average	53.1	6.3	51.2	9.6	10.7	92.3	43.0	60.8	73.2	25.6	21.8	34.6	11.4	6.8
2018 Average	53.6	6.6	55.1	11.9	12.6	92.5	41.9	61.1	76.0	25.1	23.6	34.6	10.8	5.2
2019 Average	47.5	5.5	57.4	11.4	14.1	93.4	41.2	60.3	69.6	24.3	21.2	34.4	10.4	5.4
2020 Average	40.5	5.2	57.1	11.6	14.2	92.4	40.7	59.5	69.1	24.2	20.6	35.3	10.5	5.2
2021 Average	49.1	5.5	55.0	11.7	12.5	92.8	36.0	61.1	69.8	24.4	20.5	34.4	10.2	6.1
2022 Average	48.4	5.4	56.6	12.9	15.6	92.7	36.3	58.7	69.0	24.4	23.1	35.9	11.1	6.4
2023 Average	42.4	4.1	59.7	12.9	17.4	93.0	35.0	55.8	69.4	23.2	22.1	33.2	10.9	6.6
2024 January	56.8	4.5	64.1	12.9	15.9	95.6	36.3	60.4	69.3	13.4	7.5	31.6	9.5	6.2
February	36.2	3.4	56.6	10.0	10.4	95.4	37.4	58.7	69.0	18.6	12.4	39.6	9.7	7.3
March	29.8	3.3	51.1	10.6	13.0	87.5	39.3	55.9	67.4	21.8	21.0	40.7	7.4	7.9
April	29.9	3.6	46.9	13.1	15.9	81.8	36.4	53.6	65.5	26.3	32.2	43.7	9.1	8.4
May	35.6	3.7	53.9	13.4	20.4	88.8	41.2	56.1	61.9	29.0	38.8	35.2	12.5	8.0
June	49.0	3.9	65.7	15.1	26.3	96.3	38.9	57.5	61.5	31.6	40.1	35.7	15.6	8.1
July	55.0	5.0	75.8	20.9	32.0	95.4	36.0	58.6	60.4	30.3	33.7	25.2	16.8	8.8
August	53.2	4.6	75.3	19.2	32.4	95.3	34.5	59.6	60.8	29.7	33.1	26.1	16.3	9.0
September	43.7	3.5	67.6	14.7	21.6	88.5	27.7	56.4	61.5	25.4	32.7	26.9	13.0	8.3
October	37.0	3.7	55.6	13.1	19.5	80.3	25.8	51.7	62.4	23.1	22.8	35.3	8.3	9.0
November	35.9	3.7	54.9	12.3	16.4	87.4	29.1	57.5	67.3	16.2	13.8	36.9	8.7	8.8
December	48.7	4.2	58.5	11.0	14.2	97.3	32.9	59.1	68.8	13.8	11.7	35.0	9.4	8.6
Average	42.6	3.9	60.5	13.9	19.9	90.8	34.6	57.1	64.6	23.2	25.0	34.3	11.4	8.3
2025 January	62.7	6.0	61.9	13.5	18.8	98.0	36.1	59.0	68.6	16.4	8.6	38.4	9.8	7.7
February	52.7	4.0	58.0	11.0	15.8	93.5	36.4	60.3	68.5	19.0	15.0	38.0	10.4	7.7
March	37.8	3.6	46.9	9.3	11.8	85.3	37.8	57.6	68.6	23.8	16.5	44.2	8.8	8.4
April	36.5	3.7	44.1	12.0	17.0	81.7	39.7	53.2	66.7	27.9	30.0	41.3	9.7	8.6
May	38.2	3.8	51.9	10.6	17.3	84.9	41.0	55.4	62.0	29.7	32.1	32.1	11.7	8.7
June	51.9	5.3	63.7	16.6	24.2	93.4	38.5	58.2	65.4	32.3	39.2	32.1	15.9	8.2
July	62.7	7.1	71.8	24.9	32.4	96.6	33.6	59.7	63.7	32.4	36.1	27.6	18.5	8.5
August	54.5	5.0	72.3	18.7	26.9	96.5	33.8	59.2	66.9	30.2	32.8	23.6	15.1	10.0
September	47.8	4.4	66.3	14.9	21.3	92.3	26.6	57.9	65.9	27.2	25.7	22.9	13.3	8.7
October	42.8	5.1	53.4	14.3	19.3	80.9	27.8	53.7	62.6	22.8	22.7	34.1	10.0	7.9
November	44.8	4.0	52.1	11.9	15.4	90.0	32.0	57.5	64.5	17.5	13.1	36.4	8.9	7.6
December	52.1	5.1	58.3	11.2	16.4	99.0	40.2	59.1	67.0	13.7	11.5	40.0	10.3	7.3
Average	48.7	4.8	58.4	14.1	19.8	91.0	35.3	57.6	65.9	24.4	23.6	34.2	11.9	8.3
2026 January	57.6	9.1	58.9	13.5	19.2	100.0	46.9	59.5	69.9	15.7	7.6	37.5	9.8	8.1
February	48.1	6.7	57.0	12.1	17.2	94.3	41.8	59.5	69.3	20.3	12.8	37.0	10.1	8.7
March	34.8	4.2	48.5	10.9	16.4	84.8	45.3	55.9	66.1	24.7	21.6	44.1	11.2	9.0
April	32.5	4.7	46.6	14.1	18.3	81.0	39.1	50.7	62.7	26.3	26.4	42.3	11.7	8.7
May	35.7	4.5	51.3	11.8	19.1	88.8	38.2	55.9	63.6	29.4	34.6	33.6	13.7	8.7

^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 See Table 8.1 for nuclear capacity factors for 1957–2007.

^h 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).

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

^j 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. • 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."