

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
			Com- bined 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	R—	18.2	—	27.8	—	1.0
2020 Year	27.4	.4	43.3	50.1	32.2	—	32.8	52.0	R—	17.4	—	28.3	—	4.4
2021 Year	30.8	.4	40.7	54.2	25.5	—	34.1	49.3	R—	17.0	—	28.3	—	(s)
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	45.0	.3	40.9	52.4	25.5	—	44.0	57.6	—	8.4	—	24.5	—	.6
February	45.0	.6	45.3	53.8	27.6	—	43.6	54.4	—	12.6	—	32.1	—	.6
March	39.0	.4	43.5	47.9	24.0	—	46.4	51.7	—	15.4	—	31.0	—	.5
April	42.5	.2	39.0	47.4	23.1	—	47.0	51.6	—	21.0	—	32.4	—	.6
May	37.1	.2	40.3	50.4	20.2	—	40.1	57.0	—	21.6	—	24.3	—	.8
June	24.4	.2	52.0	54.9	20.1	—	30.5	60.5	—	20.7	—	14.9	—	1.2
July	34.2	.3	55.1	64.7	23.2	—	36.5	60.6	—	21.1	—	8.1	—	1.6
August	33.9	.2	54.7	60.3	22.2	—	36.8	59.2	—	18.8	—	12.5	—	1.2
September	36.8	.2	55.0	58.5	22.5	—	29.0	56.2	—	16.8	—	13.9	—	1.0
October	38.9	.3	43.8	51.6	20.2	—	35.5	57.7	—	13.9	—	18.4	—	.5
November	43.4	.3	41.4	54.5	21.4	—	34.2	60.1	—	11.5	—	21.4	—	.5
December	44.5	.4	42.6	54.5	23.1	—	35.1	60.8	—	7.7	—	23.9	—	.4
Average	38.7	.3	46.1	54.3	22.7	—	38.2	57.3	—	15.8	—	21.4	—	.8
2024 January	42.6	.5	47.7	61.2	27.4	—	42.3	59.4	—	9.9	—	21.2	—	.3
February	39.7	.3	48.1	60.0	26.4	—	40.9	55.5	—	14.6	—	22.3	—	.1
March	40.5	.4	46.6	56.8	25.8	—	42.1	52.0	—	17.1	—	27.3	—	.2
April	33.0	.4	43.1	47.3	21.4	—	36.0	53.6	—	20.3	—	34.2	—	.2
May	19.7	.2	43.2	51.1	20.5	—	42.3	57.6	—	22.2	—	27.7	—	.3
June	28.6	.2	51.5	53.8	23.0	—	46.9	56.6	—	24.0	—	28.1	—	.4
July	31.4	.4	54.9	56.8	27.0	—	42.8	58.7	—	21.9	—	21.4	—	.7
August	38.6	.3	55.4	57.8	25.9	—	40.3	59.9	—	21.8	—	18.6	—	.5
September	36.9	.3	52.6	52.2	24.7	—	29.1	55.9	—	19.0	—	18.1	—	.3
October	31.2	.3	45.3	46.3	20.9	—	28.3	56.5	—	17.7	—	20.0	—	.3

^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 syngas.

^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.

R=Revised. —=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."