

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

	Capacity Factors ^a											Usage Factors ^b		
	Coal ^{c,d}	Petroleum ^{c,e}	Natural Gas ^f			Nuclear Electric Power	Conventional Hydro-electric Power	Bio-mass ^{c,g}	Geo-thermal	Solar			Hydro-electric Pumped Storage	Battery Storage
			Combined Cycle	Gas Turbine	Steam Turbine					Photo-voltaic ^h	Thermal	Wind ⁱ		
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	R 24.6	-	R 35.8	57.3	-	R 10.7	-	31.2	-	.4
February	39.7	.7	R 44.5	57.0	R 26.3	-	R 33.2	54.0	-	R 13.0	-	R 37.3	-	.4
March	R 29.9	.8	44.0	53.9	22.3	-	R 30.1	51.3	-	R 16.9	-	R 36.1	-	.3
April	R 36.9	.7	40.5	48.2	24.6	-	R 27.4	51.7	-	R 18.7	-	R 33.4	-	.3
May	R 34.0	R .5	40.4	50.6	20.8	-	R 48.8	R 56.4	-	R 21.3	-	26.0	-	.5
June	R 17.7	.7	52.5	R 58.8	R 22.4	-	R 32.9	60.1	-	R 21.4	-	19.7	-	.9
July	R 31.6	.8	55.4	R 61.9	R 26.6	-	R 30.8	60.3	-	R 22.4	-	R 13.3	-	1.3
August	R 30.8	.7	57.1	R 62.5	R 24.7	-	R 31.7	58.2	-	R 21.4	-	14.7	-	R .9
September	R 34.4	.6	55.8	R 61.2	R 23.3	-	R 23.4	55.7	-	R 18.8	-	15.3	-	.8
October	35.9	.5	46.8	52.7	R 20.0	-	22.4	R 57.4	-	R 15.8	-	R 19.0	-	.2
November	39.6	.6	44.6	R 59.8	R 22.7	-	27.4	59.9	-	R 15.1	-	R 23.1	-	.2
December	36.5	.6	47.2	61.2	24.6	-	29.1	60.3	-	11.4	-	20.8	-	.2
Average	33.8	.7	47.5	57.1	23.6	-	31.1	56.9	-	17.1	-	24.1	-	.5

^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.

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."