

Table 7.8d Capacity Factors and Usage Factors at Electric Generators: Industrial 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	51.8	32.6	55.2	53.1	45.2	-	54.9	63.1	-	-	-	-	-	-
2009 Year	46.6	33.4	52.9	54.3	46.9	-	61.6	61.7	-	-	-	-	-	-
2010 Year	54.3	33.9	62.4	69.6	54.3	-	55.9	62.2	-	19.3	-	-	-	-
2011 Year	50.6	29.5	61.1	69.7	56.8	-	61.0	60.2	-	30.3	-	11.6	-	-
2012 Year	48.8	38.2	64.5	71.0	57.0	-	43.4	60.9	-	25.2	-	25.6	-	-
2013 Year	49.8	30.0	70.7	75.1	50.2	-	61.1	60.7	-	25.6	-	25.6	-	-
2014 Year	49.9	27.5	67.5	71.0	48.8	-	52.4	60.9	-	24.3	-	26.4	-	-
2015 Year	48.2	28.1	66.1	72.7	41.2	-	57.6	62.2	-	20.6	-	25.1	-	-
2016 Year	46.3	25.2	69.7	73.0	40.3	-	51.4	61.7	-	16.7	-	25.3	-	-
2017 Year	46.7	24.4	68.9	74.9	37.7	-	55.9	62.7	-	14.8	-	27.0	-	.9
2018 Year	45.6	26.2	71.8	75.3	40.8	-	62.8	63.6	-	12.1	-	25.8	-	.8
2019 Year	41.6	26.3	73.4	75.9	44.2	-	55.0	62.2	-	17.2	-	25.3	-	15.3
2020 Year	41.9	23.2	67.0	74.5	44.0	-	53.2	61.2	-	16.3	-	39.7	-	2.4
2021 Year	42.0	19.6	63.8	74.1	45.1	-	49.9	62.1	-	16.3	-	23.2	-	(s)
2022 January	42.5	26.9	72.7	74.0	45.7	-	49.3	63.0	-	12.8	-	29.6	-	2.9
February	42.5	30.4	66.5	74.3	39.2	-	59.0	63.2	-	16.8	-	36.4	-	2.8
March	42.4	21.8	65.2	68.5	41.4	-	71.2	60.0	-	19.7	-	34.7	-	2.5
April	38.6	26.0	61.9	65.4	43.8	-	68.1	58.7	-	22.8	-	33.8	-	3.1
May	44.0	28.3	62.6	70.2	41.3	-	54.4	57.7	-	25.5	-	27.9	-	3.0
June	45.2	26.6	64.2	77.1	43.2	-	42.1	59.6	-	27.1	-	20.3	-	2.5
July	44.8	25.2	68.2	81.8	43.8	-	33.9	60.4	-	26.0	-	17.3	-	2.3
August	44.4	26.4	69.0	82.4	44.2	-	39.1	58.8	-	24.0	-	12.3	-	2.3
September	40.6	25.3	64.3	75.5	39.7	-	40.2	56.2	-	21.4	-	15.3	-	2.4
October	38.4	25.5	67.6	68.0	38.3	-	33.1	52.7	-	19.0	-	26.8	-	2.4
November	38.3	28.7	72.5	70.4	41.9	-	41.1	58.4	-	14.3	-	33.3	-	2.4
December	41.8	24.7	69.1	70.5	37.4	-	58.9	59.0	-	9.9	-	27.9	-	2.4
Average	42.0	26.3	67.0	73.2	41.7	-	49.1	59.0	-	19.9	-	26.2	-	2.6
2023 January	39.3	21.8	66.2	74.2	43.9	-	58.2	61.0	-	13.0	-	26.0	-	-
February	38.6	22.5	68.2	75.6	44.9	-	54.9	60.3	-	16.3	-	34.5	-	-
March	34.6	26.1	63.8	74.1	45.9	-	54.9	56.1	-	19.7	-	31.7	-	-
April	35.4	21.3	52.5	65.5	42.9	-	47.0	53.5	-	23.6	-	31.9	-	-
May	35.7	19.3	57.4	71.0	43.2	-	51.2	57.7	-	26.3	-	23.8	-	-
June	39.6	21.2	66.9	77.6	48.4	-	42.1	56.4	-	27.5	-	19.8	-	-
July	39.8	22.5	68.6	75.8	50.5	-	47.3	54.4	-	28.0	-	16.9	-	-
August	37.7	22.5	69.4	78.3	50.1	-	47.9	57.0	-	26.2	-	19.6	-	-
September	37.2	20.6	68.7	77.8	51.4	-	43.6	53.0	-	23.2	-	19.5	-	-
October	35.5	16.7	64.4	71.4	46.0	-	48.6	51.3	-	20.1	-	24.4	-	-
November	35.3	18.3	67.7	76.5	49.4	-	47.7	59.4	-	15.1	-	28.5	-	-
December	36.9	19.5	70.6	79.8	52.1	-	51.3	60.7	-	12.1	-	27.2	-	-
Average	37.1	21.0	65.4	74.8	47.4	-	49.6	56.7	-	20.9	-	25.2	-	-
2024 January	37.4	24.3	71.3	82.0	52.7	-	58.7	60.3	-	12.6	-	25.8	-	-

^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."