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

(Percent)

	Capacity Factors[a]												Usage Factors[b]	
			Natural Gas[f]							Solar				
	Coal[c,d]	Petroleum[c,e]	Combined Cycle	Gas Turbine	Steam Turbine	Nuclear Electric Power	Conventional Hydroelectric Power	Biomass[c,g]	Geothermal	Photovoltaic[h]	Thermal	Wind[i]	Hydroelectric Pumped Storage	Battery Storage
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**	**–**	**18.2**	**–**	**27.8**	**–**	**1.0**
2020 Year	**27.4**	**.4**	**43.3**	**50.1**	**32.2**	**–**	**32.8**	**52.0**	**–**	**17.4**	**–**	**28.3**	**–**	**4.4**
2021 Year	**30.8**	**.4**	**40.7**	**54.2**	**25.5**	**–**	**34.1**	**49.3**	**–**	**17.0**	**–**	**28.3**	**–**	**(s)**
2022 Year	**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	35.6	.4	40.1	45.7	21.2	–	23.6	59.6	–	15.7	–	24.1	–	.9
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	60.1	27.1	–	42.3	59.4	–	9.8	–	20.8	–	.2
February	39.7	.3	48.1	59.0	26.0	–	40.9	55.5	–	14.6	–	22.3	–	.1
March	40.5	.4	46.6	55.8	25.5	–	42.1	52.0	–	17.3	–	27.3	–	.2
April	33.0	.4	43.1	46.4	21.1	–	36.0	53.6	–	20.5	–	34.2	–	.2
May	19.7	.2	43.2	50.2	20.2	–	42.3	57.6	–	22.2	–	27.7	–	.3
June	28.6	.2	51.5	52.8	22.7	–	46.9	56.6	–	24.1	–	28.1	–	.3
July	31.4	.4	54.9	55.9	26.6	–	42.8	58.7	–	21.9	–	21.4	–	.6
August	38.6	.3	55.3	57.0	25.6	–	40.3	59.9	–	21.9	–	18.6	–	.5
September	36.9	.3	52.6	51.5	24.4	–	29.1	55.9	–	18.9	–	18.1	–	.3
October	32.7	.3	45.3	45.8	20.8	–	28.3	56.3	–	17.8	–	20.0	–	.3
November	39.7	.3	43.8	48.2	24.5	–	41.1	58.1	–	11.9	–	24.9	–	.2
December	37.3	.7	46.0	52.4	28.3	–	48.2	57.6	–	10.5	–	28.7	–	.3
Average	**35.0**	**.4**	**48.2**	**52.9**	**24.4**	**–**	**40.0**	**56.8**	–	**17.6**	**–**	**24.3**	**–**	**.3**
2025 January	39.6	.6	46.3	53.6	31.3	–	48.4	55.6	–	12.3	–	28.8	–	.4

[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."