CO_2 Emission Rates From Modern Power Plants	Lb CO_2/MMBtu	Facility efficiency	MMBtu /MWh	Lb CO_2/MWh	Biomass v. Tech
New gas combined cycle[a]	117	51%	6.7	**786**	385%
New subcritical coal steam turbine[b]	210	39%	8.7	**1,839**	165%
U.S. coal fleet avg, 2013[c]	210	33%	10.5	**2,198**	138%
New biomass steam turbine[d]	213	24%	14.2	**3,028**	

References:

CO_2 per MMBtu

a, b, c : from EIA at http://www.eia.gov/environment/emissions/co2_vol_mass.cfm. Value for coal is for "all types." Different types of coal emit slightly more or less.

d: Assumes HHV of 8,600 MMBtu/lb for bone dry wood (Biomass Energy Data Book v. 4; Oak Ridge National Laboratory, 2011. http://cta.ornl.gov/bedb.) and that wood is 50% carbon.

Efficiency

a: DOE National Energy Technology Laboratory: Natural Gas Combined Cycle Plant F-Class (http://www.netl.doe.gov/KMD/cds/disk50/NGCC%20Plant%20Case_FClass_051607.pdf)

b: International Energy Agency. Power Generation from Coal: Measuring and Reporting Efficiency Performance and CO_2 Emissions. https://www.iea.org/ciab/papers/power_generation_from_coal.pdf

c. EIA data show the averaged efficiency for the U.S. coal fleet in 2013 was 32.6% (http://www.eia.gov/electricity/annual/html/epa_08_01.html)

d: ORNL's Biomass Energy Data Book (http://cta.ornl.gov/bedb; page 83) states that actual efficiencies for biomass steam turbines are "in the low 20's"; PFPI's review of a number of air permits for recently proposed biopower plants reveals a common assumption of 24% efficiency.