Vehicle Emissions Breakdowns - CO_2[1], NO_x[2], SO_x[3], Particulate Matter (PM10 and PM2.5)

Heavy-Duty Vehicles[4]:

- **1,079 g/km of CO_2** [422.8 tgC (teragrams as one million metric tons)]
- **0.21 g/km of NOx** (210 mg/km)
    - NO (nitric oxide) and NO2 (nitrogen dioxide)
- **0.05 g/km of SOx** (50 mg/km)
- **1.31 g/km of PM10 and PM2.5** (1310 mg/km)

Buses (public transit[5], not school buses):

- **822 g/km of CO_2**
- **0.311 g/km of NOx** (311 mg/km)
    - NO and NO2
- SOx (not available)
- **1.8 g/km of PM10 and PM2.5** (1800 mg/km) (in urban areas)

Diesel Light-Duty Trucks:

- 315.8 tgC (**827 g/km CO_2**)
- **0.101 g/km NOx** (101 mg/km)
    - NO and NO2
- **0.03 g/km of SOx** (30 mg/km)
- **0.0080 g/km PM10 and PM2.**5 (8 mg/km)

Passenger Vehicles[6]:

- 617.7 tgC (392.78 g/mi, **244.062 g/km**)
- **2 g/km of NOx** (2000 mg/km)
    - NO and NO2
- **0.015 g/km of SOx** (15 mg/km)
- 0.0135 g/mi of PM10 and PM2.5 (**0.00838 g/km**) (8.38 mg/km)

Motorcycles[7]:

- 3.3 tgC (76 g/mi; **47.224 g/km**)
- **0. 4606 g/mi of NOx** (460 mg/km)
    - NO and NO2
- **0.008 g/km of SOx** (8 mg/km)
- 0.0265 g/mi of PM10 and PM2.5 (**0.0164 g/km**) (16.4 mg/km)

Four-stroke Engine Motorcycles:

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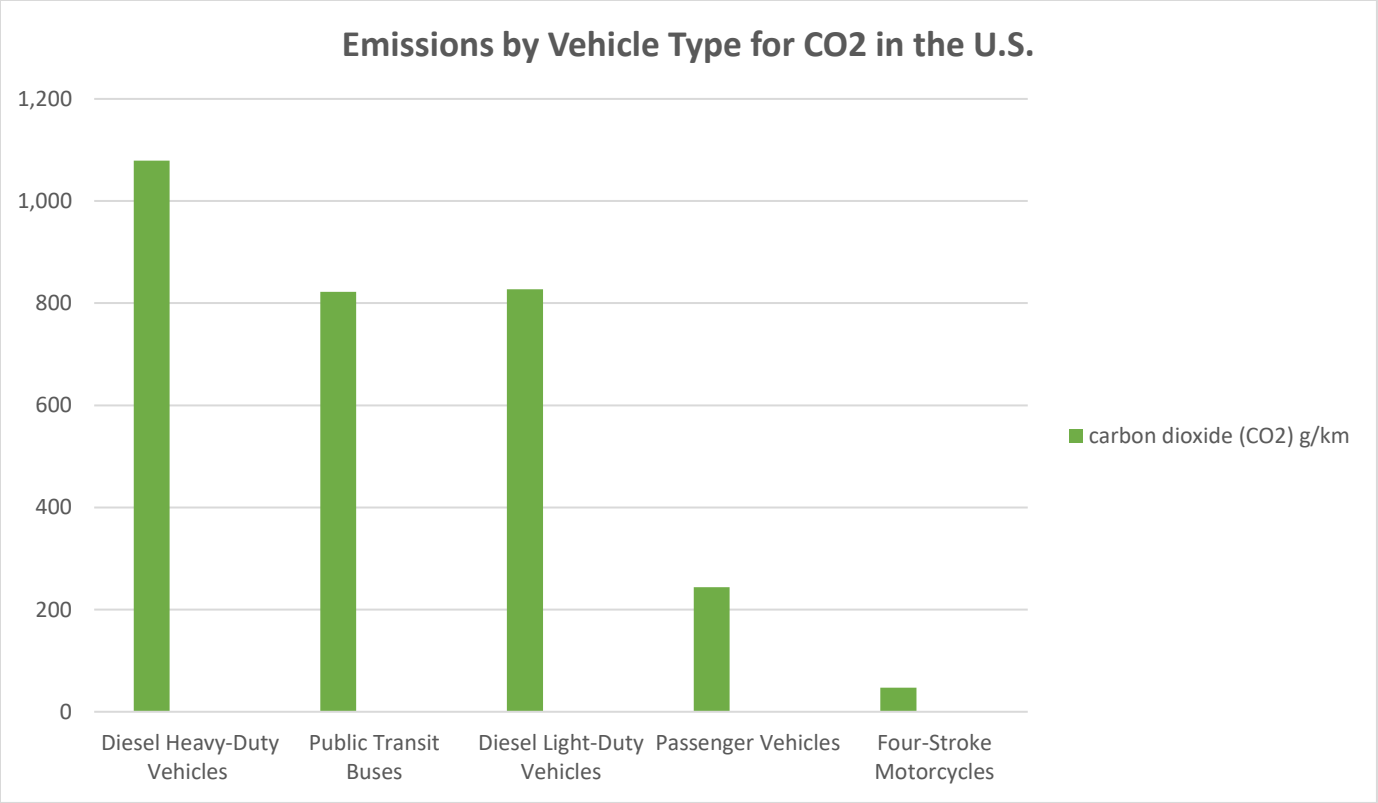
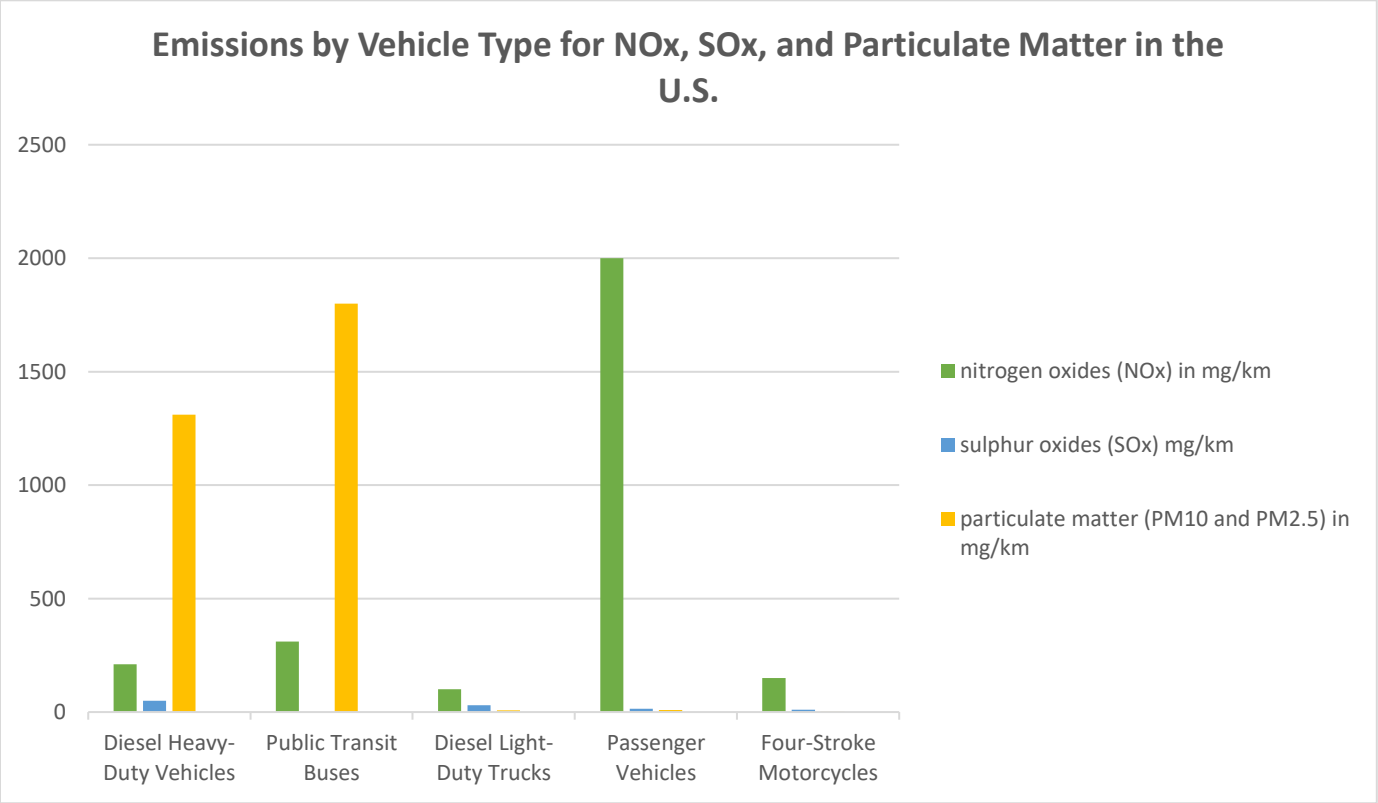
[1] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10153PC.pdf
[2] https://theicct.org/sites/default/files/publications/Euro-VI-versus-6_ICCT_briefing_06012017.pdf
[3]https://www.tandfonline.com/doi/pdf/10.1080/00022470.1978.10470579#:~:text=Average%20sulfate%20emission%20rates%20were,the%20vehicle%20emissions%20was%202%25.
[4] https://www.acea.auto/files/ACEA_preliminary_CO2_baseline_heavy-duty_vehicles.pdf
[5] https://wrirosscities.org/sites/default/files/Exhaust-Emissions-Transit-Buses-EMBARQ.pdf
[6] https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle
[7] https://academic.oup.com/tse/article/1/2/164/5631920

- 55 g/km CO2
- 0.15 g/km NOx (0.002 g/km N2O) (150 mg/km)0
- 0.0106 g/km SOx emissions (10.6 mg/km)
- 1.5 mg/km PM10 PM2.5


Emissions by Vehicle Type for CO2 in the U.S.
1,200
1,000
800
600
400
200
0
Diesel Heavy-Duty Vehicles
Public Transit Buses
Diesel Light-Duty Vehicles
Passenger Vehicles
Four-Stroke Motorcycles
carbon dioxide (CO2) g/km


Emissions by Vehicle Type for NOx, SOx, and Particulate Matter in the U.S.
2500
2000
1500
1000
500
0
Diesel Heavy-Duty Vehicles
Public Transit Buses
Diesel Light-Duty Trucks
Passenger Vehicles
Four-Stroke Motorcycles
nitrogen oxides (NOx) in mg/km
sulphur oxides (SOx) mg/km
particulate matter (PM10 and PM2.5) in mg/km