

An Inconvenient Perspective (For Some) On Coal Fleet Emissions

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The nation's coal fleet supports grid reliability and resilience, provides fuel security and fuel diversity, and produces affordably priced electricity. Nevertheless, detractors want to eliminate the coal fleet because of its carbon dioxide (CO₂) emissions.^[i] We think the goal of eliminating the fleet is unrealistic and wildly out of proportion to its CO₂ emissions ... especially considering the benefits of having a coal fleet. In that spirit, we're offering some numbers that provide a different perspective on coal fleet emissions.

- According to the Energy Information Administration (EIA), the coal fleet is only the number three source (26 percent share) of energy-related CO₂ emissions in the U.S. economy. Transportation is first (45 percent) and natural gas is second (29 percent).^[ii]
- The U.S. coal fleet emitted 1.15 billion metric tons (tonnes) of CO₂ in 2018.^[iii] Global anthropogenic greenhouse gas (GHG) emissions are estimated to be in the range of 49 billion tonnes.^[iv] This means the U.S. coal fleet is responsible for slightly more than 2 percent of worldwide anthropogenic GHG emissions and, therefore, other sources are responsible for 98 percent.
- U.S. GHG emissions totaled almost 6.5 billion tons in 2017.^[v] This means the coal fleet emits roughly 17 percent of U.S. emissions, and other U.S. sources were responsible for 83 percent.
- According to the International Energy Agency (IEA), the U.S. has achieved the largest reduction in energy-related CO₂ emissions of all other countries since 2000.^[vi]
- China and India together emitted 14.36 billion tonnes of energy-related CO₂ last year.^[vii] This amount is three times greater than U.S. energy-related CO₂ emissions (4.89 billion tonnes) and more than 12 times greater than emissions from the U.S. coal fleet (1.15 billion tonnes).
- Last year, energy-related CO₂ emissions increased worldwide by 560 million tonnes.^[viii] Simply offsetting this increase would require the elimination of all CO₂ emissions from New York and California.^[ix]
- China was responsible for exactly half (280 million tonnes) of last year's global emissions increase. China's increase was greater than the total CO₂ emissions from all but two U.S. states (Texas and California).^[x]
- Also, the worldwide increase last year (560 million tonnes) was roughly half the emissions from the entire U.S. coal fleet (1.15 billion tonnes). The U.S. would have to eliminate half of its coal fleet simply to offset emission increases from other countries. Replacing half the U.S. coal fleet with wind, for example, would cost approximately \$169 billion.^[xi]

Our reason in presenting these numbers is not to start another argument but rather to paint a

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broader picture, which is the right way to address GHG emissions, rather than trying to eliminate the coal fleet. Worldwide, coal is the largest source (38 percent) of electricity and the second largest source (26 percent) of primary energy.^[xii] Eliminating coal is simply unrealistic. Better technologies—some available today, some to come—are the best strategy to reduce CO₂ emissions from the coal fleet. After all, better technologies are the main reason each kilowatt-hour of electricity generated today emits 90 percent fewer conventional air pollutants compared to several decades ago.^[xiii] However, these technologies took time and a sustained effort, but the environmental payoff was worth it. Let's try to apply that same lesson to reducing CO₂ emissions.

[i] For example, see Michael Bloomberg's Beyond Carbon campaign which "will accelerate progress in moving the power sector Beyond Coal, aiming to retire all coal by 2030."

[ii] EIA, "Energy-Related Carbon Dioxide Emissions by State, 2005-2016," February 27, 2019.

[iii] EIA, "How much of U.S. carbon dioxide emissions are associated with electricity generation?" May 15, 2019. Typically, CO₂ emissions are reported in metric tons (tonnes). To convert tonnes to short (U.S.) tons, multiply tonnes by 1.1. Thus, 1.15 billion tonnes are equal to 1.265 tons.

[iv] International Energy Agency, "Global Energy & CO₂ Status Report – The latest trends in energy and emissions in 2018," March 2019.

[v] U.S. EPA, "U.S. Greenhouse Gas Emissions and Sinks," April 2019.

[vi] International Energy Agency, "Global Energy & CO₂ Status Report – The latest trends in energy and emissions in 2018," March 2019.

[vii] Ibid. China emitted 9.48 billion tonnes of energy-related CO₂ and India emitted 2.3 billion tonnes. By comparison, the U.S. emitted 4.89 billion tonnes, of which the coal fleet emitted 1.15 billion tonnes.

[viii] Intergovernmental Panel on Climate Change, "Climate Change 2014 Synthesis Report."

[ix] Together, the two states emitted 528 million tonnes of CO₂. New York's emissions totaled 165 million tonnes in 2016 and California's totaled 363 million tonnes.

[x] EIA, "Energy-Related Carbon Dioxide Emissions by State, 2005-2016," February 27, 2019. In 2016, state-level CO₂ emissions ranged from 6 million tonnes (Vermont) to 657 million tonnes (Texas). Only Texas and California have total CO₂ emissions that exceed China's increase.

[xi] We estimated the capital cost of onshore wind to be \$1,350/kW based on "Lazard's Levelized Cost Of Energy Analysis—Version 12.0," November 2018.

[xii] International Energy Agency, "Global Energy & CO₂ Status Report – The latest trends in energy and emissions in 2018," March 2019.

[xiii] America's Power, "Coal Facts," July 2019. www.americaspower.org.