

Introduction

Between 1980 and 2017, China's economy grew at breakneck speed, lifting millions out of poverty. Fossil fuels fueled much of China's economic growth. As a result, China is now one of the world's largest economies and the world's largest emitter of carbon dioxide. Despite efforts to grow the share of its power generated by renewable energy sources, China is moving too slowly to meet global emissions targets aimed at slowing climate change. In the wake of COVID-19, China faces a quandary: how to balance boosting its weakened economy with reductions in carbon emissions.

China's Historical Relationship with Fossil Fuels: An Easy Path to Economic Growth

In the late 1970s, China implemented economic reforms necessary to grow the economy and lift millions of Chinese out of poverty.

- The Chinese Communist Party (CCP) implemented economic reforms that paved the way for its gradual integration in the U.S.-led liberal international order.
- Over the next 40 years, China's economy grew at breakneck speeds.
- China's real gross domestic product (GDP) grew at an average of 10% annually.
- Its explosive growth has lifted roughly 800 million Chinese people out of poverty, a number more than double the total U.S. population.
- China's GDP per capita grew from just \$194.80 in 1980 to \$9,770.85 in 2018, China's real GDP grew from \$340.6 billion in 1980 to \$10.8 trillion in 2018, according to the World Bank.¹

Fossil fuels, which pollute the air and whose emissions contribute to climate change, have fueled China's growth.

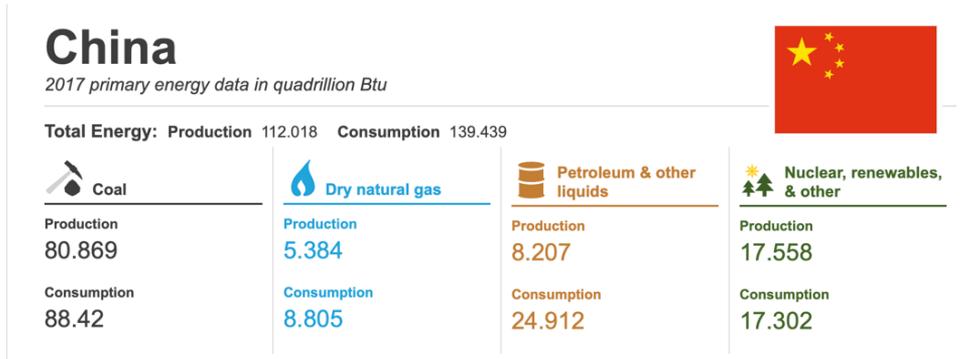
- China's rapid industrialization and urbanization required large amounts of energy.
- To meet that demand, China turned to the cheapest fuel source available: coal.

According to the World Bank, China's coal and oil consumption grew from 1.495 tons per capita in 1985 to 7.544 tons per capita in 2018.² China's rapid growth in fossil fuel consumption has turned it into the world's largest carbon emitter.



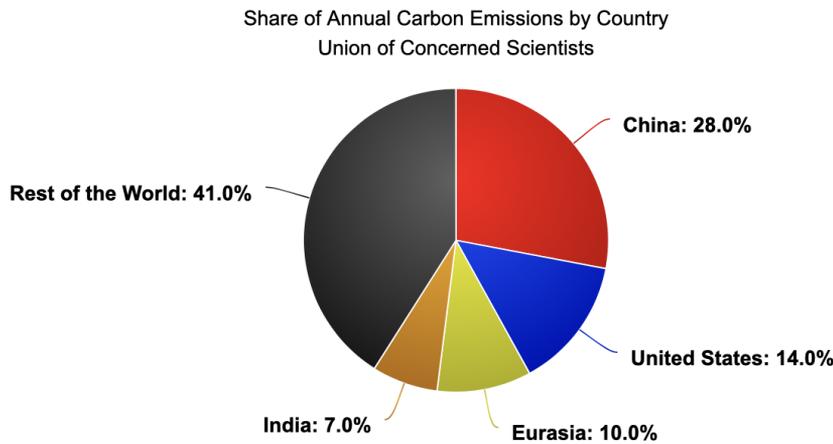
China's fossil fuel consumption (tons per capita), 1985-2014. Data from the World Bank

The Current State of China's Emissions

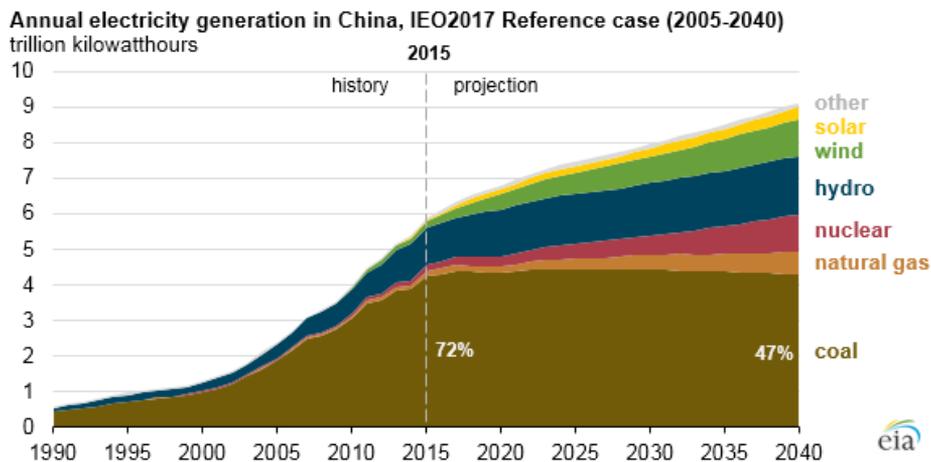


Breakdown of China's energy production and consumption by source. EIA graphic.

China is responsible for 28% of the world's annual carbon emissions, according to calculations by the Union of Concerned Scientists.³ China's emissions are double that of the world's second-largest emitter, the U.S.



The share of China's energy from fossil fuels is declining, even as China's real carbon output has been growing steadily.⁹

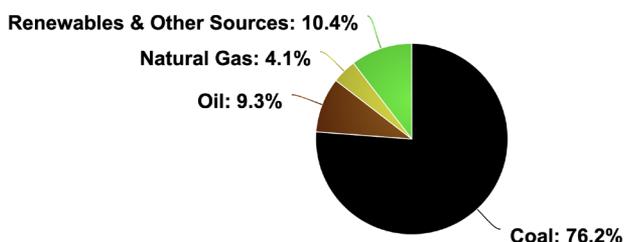


- In 1990, fossil fuels generated 80% of China's 650,202 gigawatt-hours (GWh) of electricity.⁴
- By 2017, fossil fuels generated 69.7% of China's 6,475,529 GWh of electricity.⁵

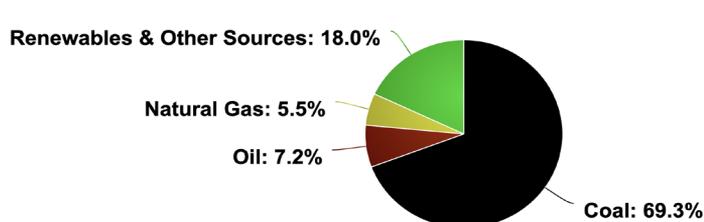
To reduce pollution and carbon emissions, China has included more clean energy sources into its energy mix.

- In 2015, China imposed a cap on domestic coal consumption, which mandated that coal-fired power plants could produce no more than 70% of China's electricity. The cap, or percentage of electricity generated from coal, will decrease each year, which may assist in reducing China's reliance on coal.⁶
- China continues to construct new coal plants, casting doubt on Beijing's commitment to cut carbon emissions enough to avoid the worst effects of climate change.^{7, 8}

China's Total Energy Production by Source (2010)
China Statistical Yearbook 2010 Section 7-1



China's Total Energy Production by Source (2018)
China Statistical Yearbook 2019 Section 9-1



Weaning China Off of Fossil Fuels

China's half-century-long relationship with fossil fuels has left modern China in a difficult position. The country's economic growth was fueled by cheap and carbon-intensive energy sources, like coal. Moving away from fossil fuels may cost more and dampen economic growth. The likely political backlash of such a pivot threatens the CCP, which derives much of its legitimacy from sustain economic growth.

The international community cannot wait while China slowly weans itself from fossil fuels. While China's carbon intensity, a measure of emissions per unit of GDP, has decreased, net emissions have continued to grow. China will need political and economical help to make the shift to renewable energy in the timeframe required to keep global temperatures from rising.

China is not going to make difficult policy decisions needed to reduce emissions, potentially forgoing economic growth, if the U.S. is not also reducing emissions. To that end, the U.S. must resume its position as a climate leader and make reducing carbon emissions a national priority.

There is no alternative; China must move quickly away from fossil fuels, and the rest of the world must help it do so.

Endnotes

1. GDP per capita, China (1960-2019) (current LCU). World Bank. <https://data.worldbank.org/indicator/NY.GDP.PCAP.CN?locations=CN>
2. CO2 emissions, China (1980-2014) (metric tons per capita). World Bank. <https://data.worldbank.org/indicator/EN.ATM.CO2E.PC?end=2014>
3. Each Country's Share of CO2 Emissions. Union of Concerned Scientists. (May 11, 2020). <https://www.ucsusa.org/resources/each-countrys-share-co2-emissions>

4. Jiantang, Ma, et. al. China Statistical Yearbook 2010. National Bureau of Statistics of China. (October 2010). <http://www.stats.gov.cn/tjsj/ndsj/2010/indexeh.htm>
5. Jizhe, Ning, et. al. China Statistical Yearbook 2019. National Bureau of Statistics of China. (October 2019). <http://www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm>
6. Lin, Alvin. Understanding China's New Mandatory 58% Coal Cap Target. National Resources Defense Council. (March 17, 2020). <https://www.nrdc.org/experts/alvin-lin/understanding-chinas-new-mandatory-58-coal-cap-target>
7. How is China's energy footprint changing? Center for Strategic and International Studies. (March 19, 2020). <https://chinapower.csis.org/energy-footprint/>
8. Buckley, Tim & Nicholas, Simon. China's Global Renewable Energy Expansion. Institute for Energy Economics and Financial Analysis. (January 2017). https://ieefa.org/wp-content/uploads/2017/01/Chinas-Global-Renewable-Energy-Expansion_January-2017.pdf
9. Chinese coal-fired electricity generation expected to flatten as mix shifts to renewables. (September 28,2017). <https://www.eia.gov/todayinenergy/detail.php?id=33092>