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Introduction

Human activity has led to an increase in carbon emissions, creating an adverse environmental impact. Such activities like burning of fossil fuels has aroused serious environmental concerns such as pollution, global warming and biodiversity deterioration. Human activity has been tied to many changes in the atmosphere and oceans, changes in the global water cycle, declines in snow and ice, rising waters and changes in some climate extremes. Many scientists and engineers have been working to reduce CO₂ emissions by reducing fossil fuel usage, by using less electricity and improving energy production efficiency. While fossil fuels are currently our primary source of energy, burning them causes a slew of issues, necessitating the development of new, more efficient alternatives such as biofuels, nuclear power, and solar power.

Effects and Analysis of CO₂ Emissions

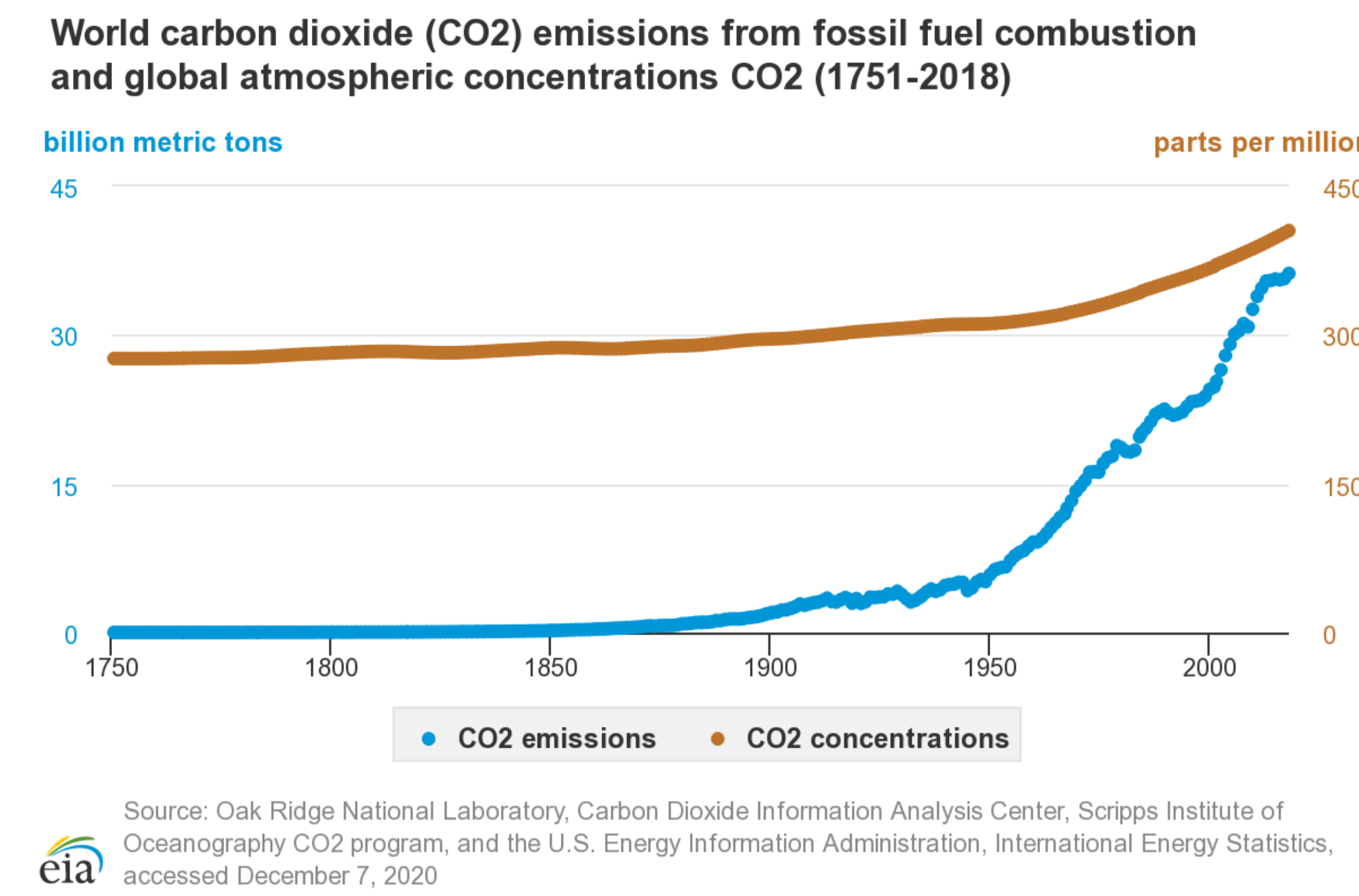
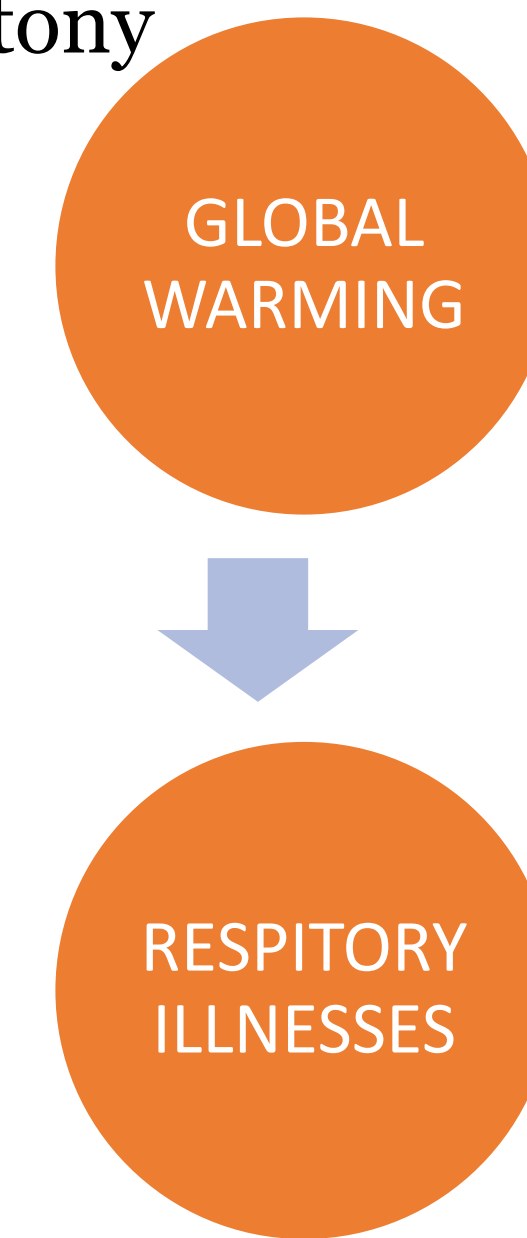


Figure 1. CO₂ emissions over the past 200 years.

Latest/Future Approaches to Minimize Gaseous CO₂

Using better engine oils and replacing old, worn-out engines with newer, more energy-efficient engines. For instance, replacing incandescent light bulbs with LEDs.

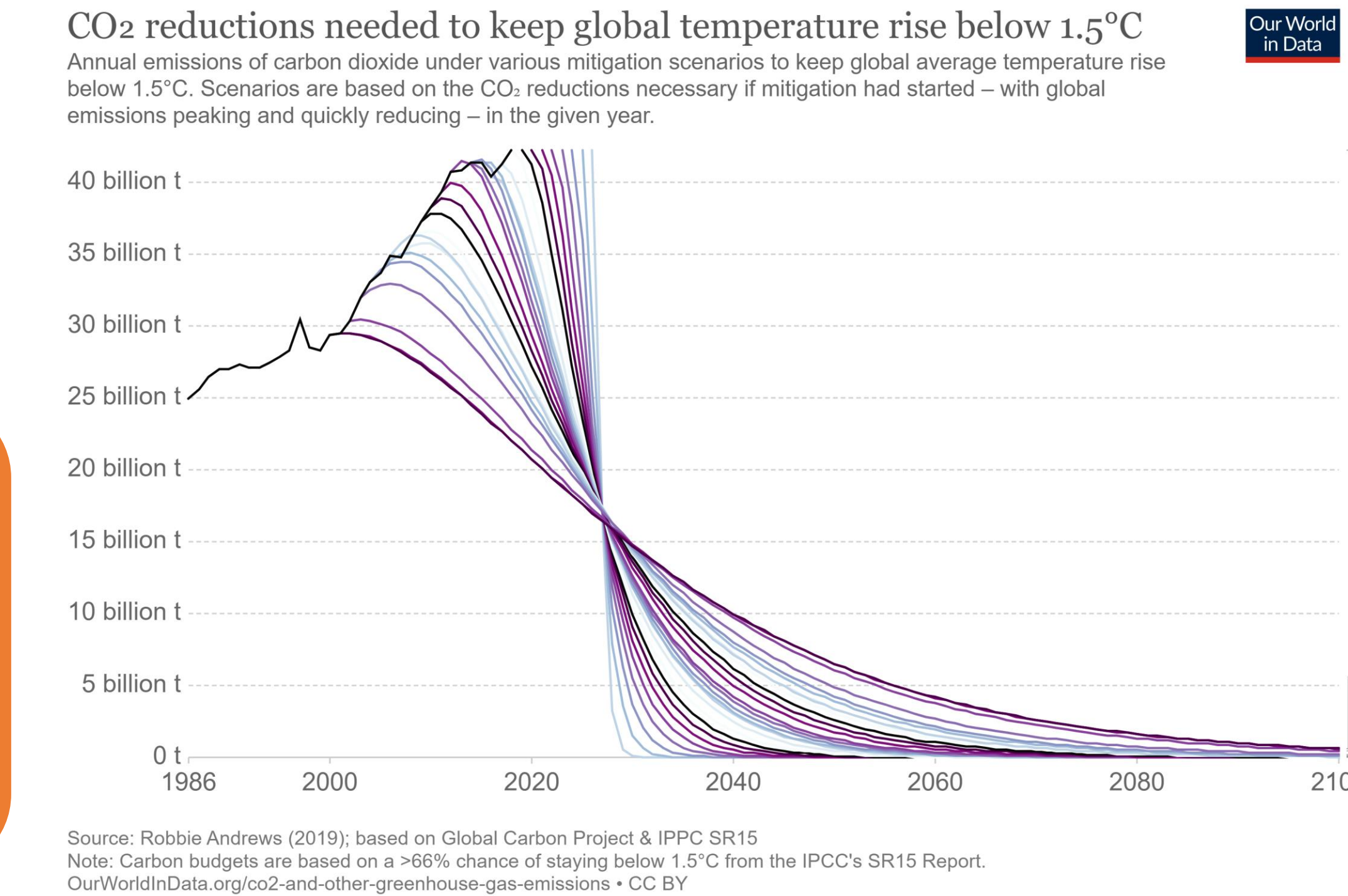


Figure 2. Predictions of carbon emissions through the next few decades.

Data Involving CO₂ Emissions On the Environment

In 2018, fossil fuels were the source of about 80% of U.S. primary energy consumption and about 93% of total U.S. carbon dioxide emissions from human activity.

Today, about 84% of CO₂ gas emissions are attributed to the burning of fossil fuels for transportation and electricity generation.

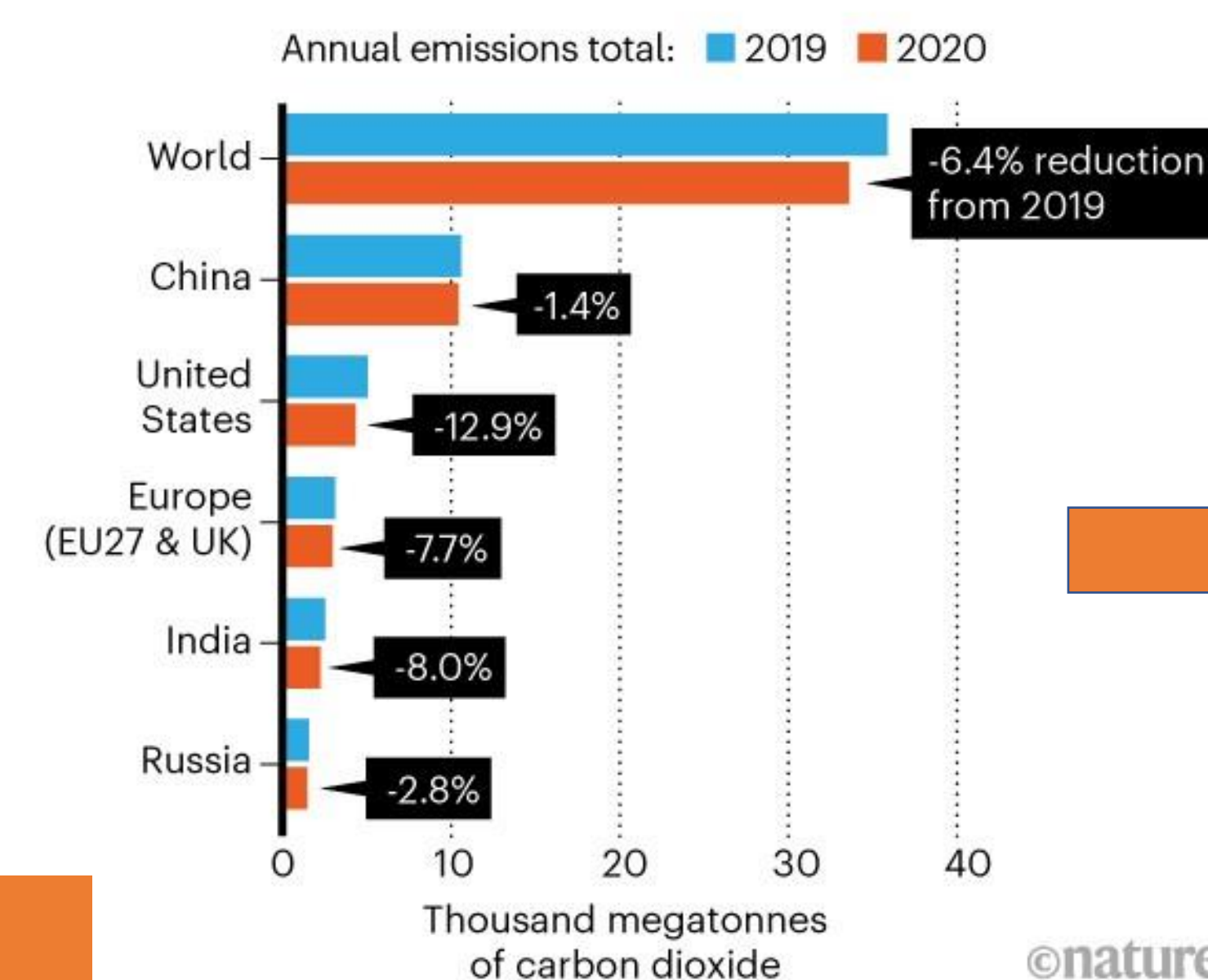
Global carbon dioxide emissions fell by 6.4%, or 2.3 billion tonnes, in 2020, as the COVID-19 pandemic squelched economic and social activities worldwide, according to new data on daily fossil fuel emissions.

Increased CO₂ levels are a driving factor for climate crises and ocean acidification, resulting in oceans being 30% more acidic on average

- Rising concentrations of carbon dioxide are warming the atmosphere. The increased temperature results in higher evaporation rates and a wetter atmosphere, which leads to a vicious cycle of further warming.
- Temperatures rise as carbon dioxide levels rise, expanding the growing season and rising humidity. Both these factors have resulted in increased plant growth. Warmer temperatures, on the other hand, stress plants. Plants need more water to live with a longer, warmer growing season. However, lack of water has led to severe fires in forest.
- Carbon dioxide dissolves in the ocean, forming carbonic acid, which raises the acidity of the water. Or, to put it another way, an alkaline ocean becomes slightly less alkaline. more acidic water will dissolve the carbonate shells of marine organisms, making them pitted, thin and weak.

CARBON CUTS

The COVID-19 pandemic took a bite out of CO₂ emissions in many countries, but trends varied. China saw a minor decrease because its economy recovered after outbreaks in early 2020. The United States tallied the largest reduction, driven by outbreaks lasting throughout the year.



During the COVID-19 pandemic, carbon emissions decreased by -6.4 percent globally starting in 2020. This happened as the globe came to a halt as a result of the pandemic. The United States reduced its CO₂ emissions by about 650 million tonnes, accounting for over a quarter of the global reduction..

References

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