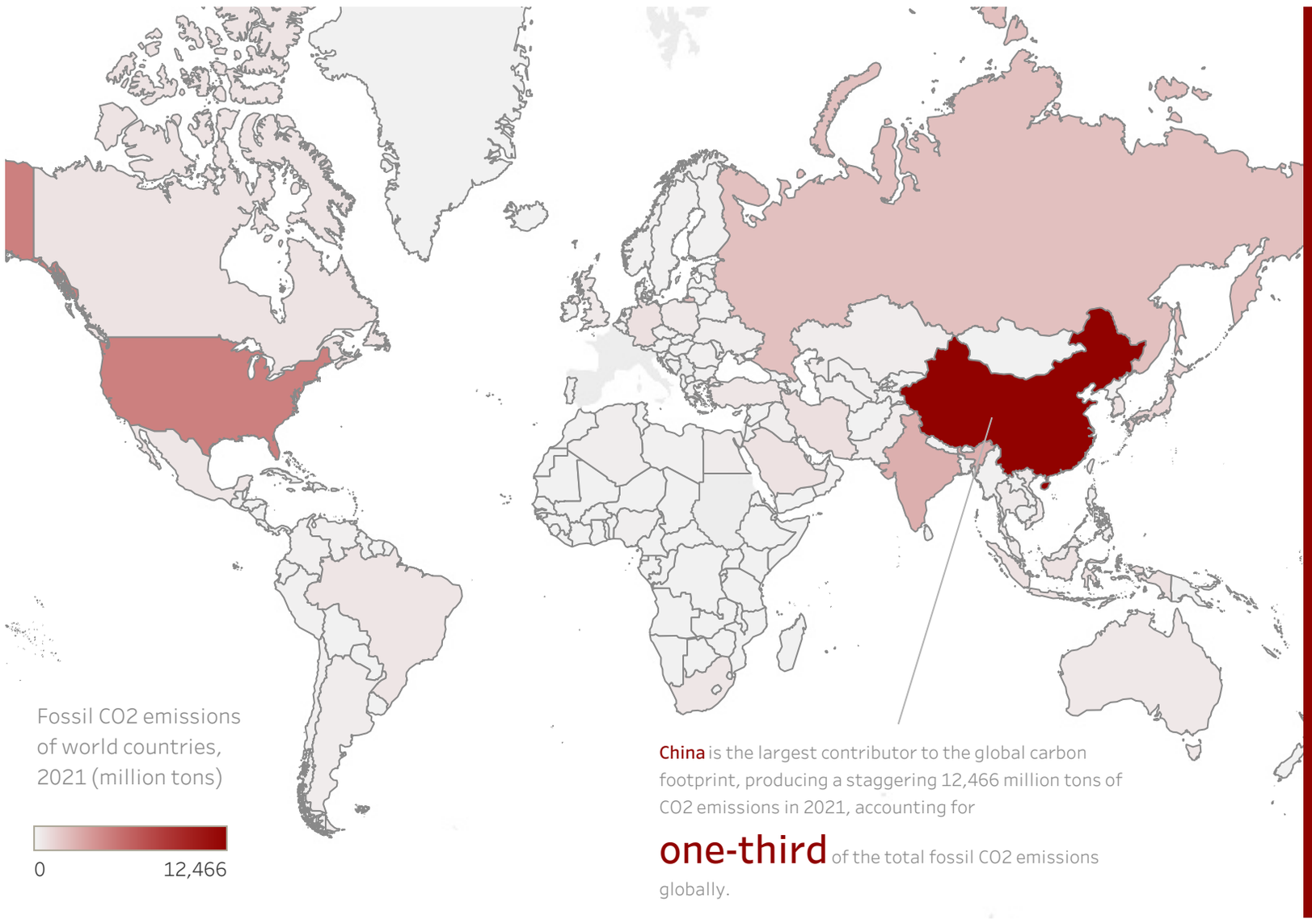
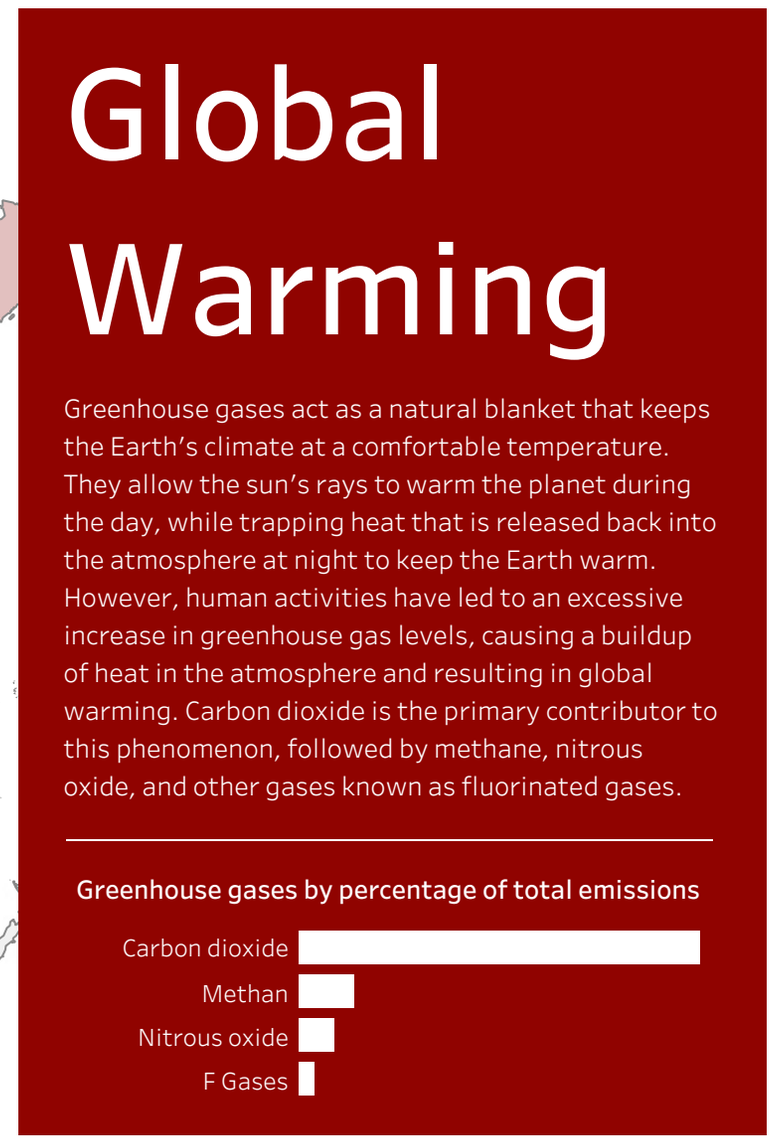
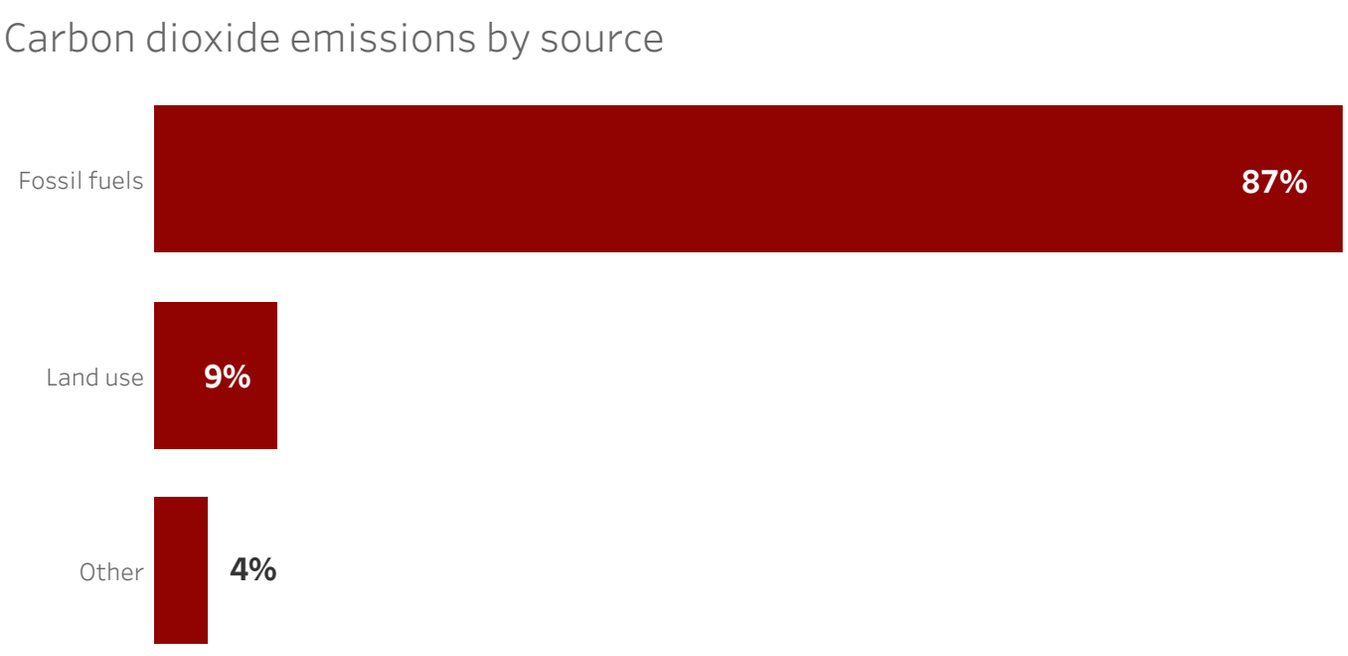
Global Warming

Greenhouse gases act as a natural blanket that keeps the Earth's climate at a comfortable temperature. They allow the sun's rays to warm the planet during the day, while trapping heat that is released back into the atmosphere at night to keep the Earth warm. However, human activities have led to an excessive increase in greenhouse gas levels, causing a buildup of heat in the atmosphere and resulting in global warming. Carbon dioxide is the primary contributor to this phenomenon, followed by methane, nitrous oxide, and other gases known as fluorinated gases.





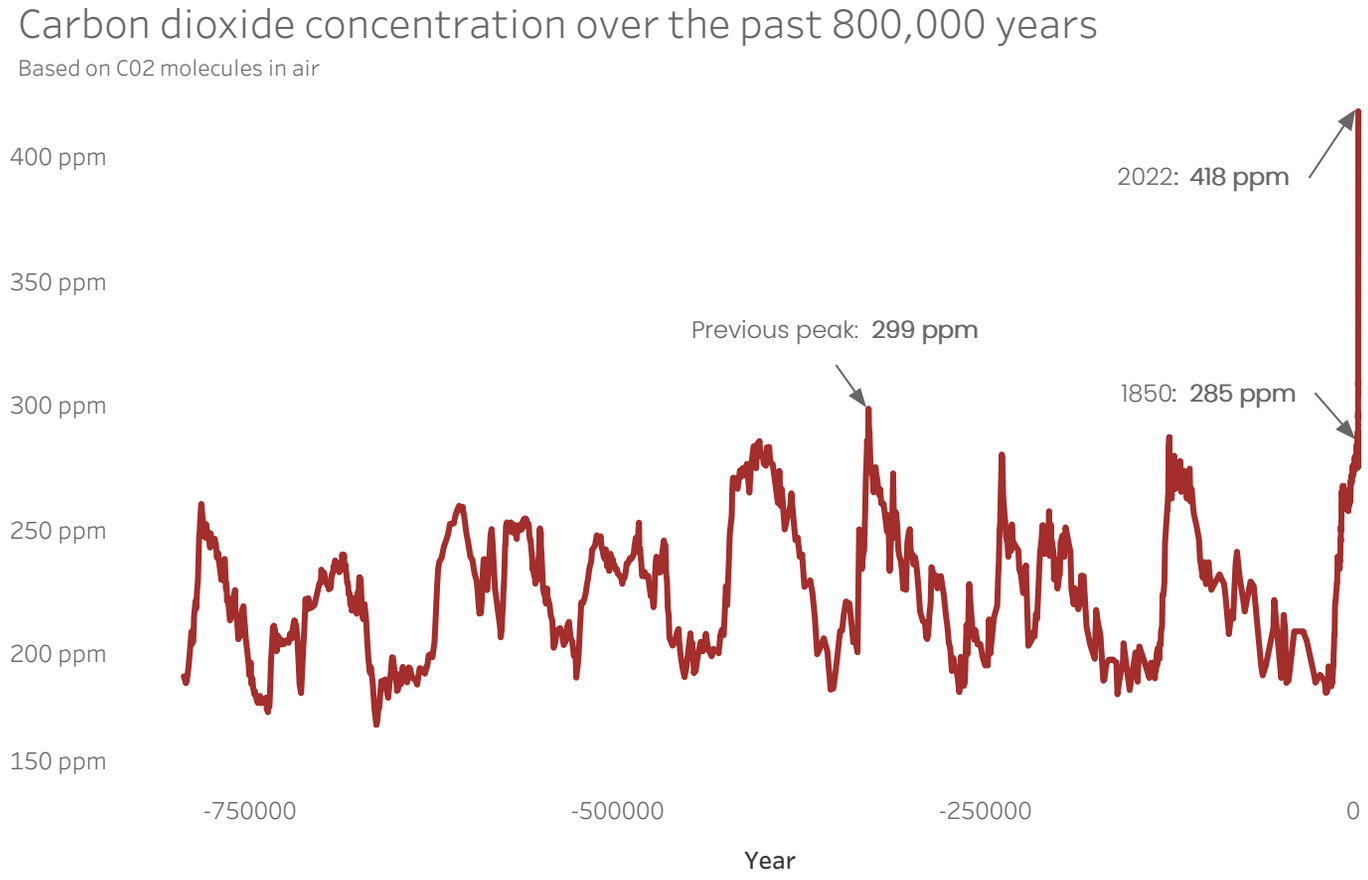


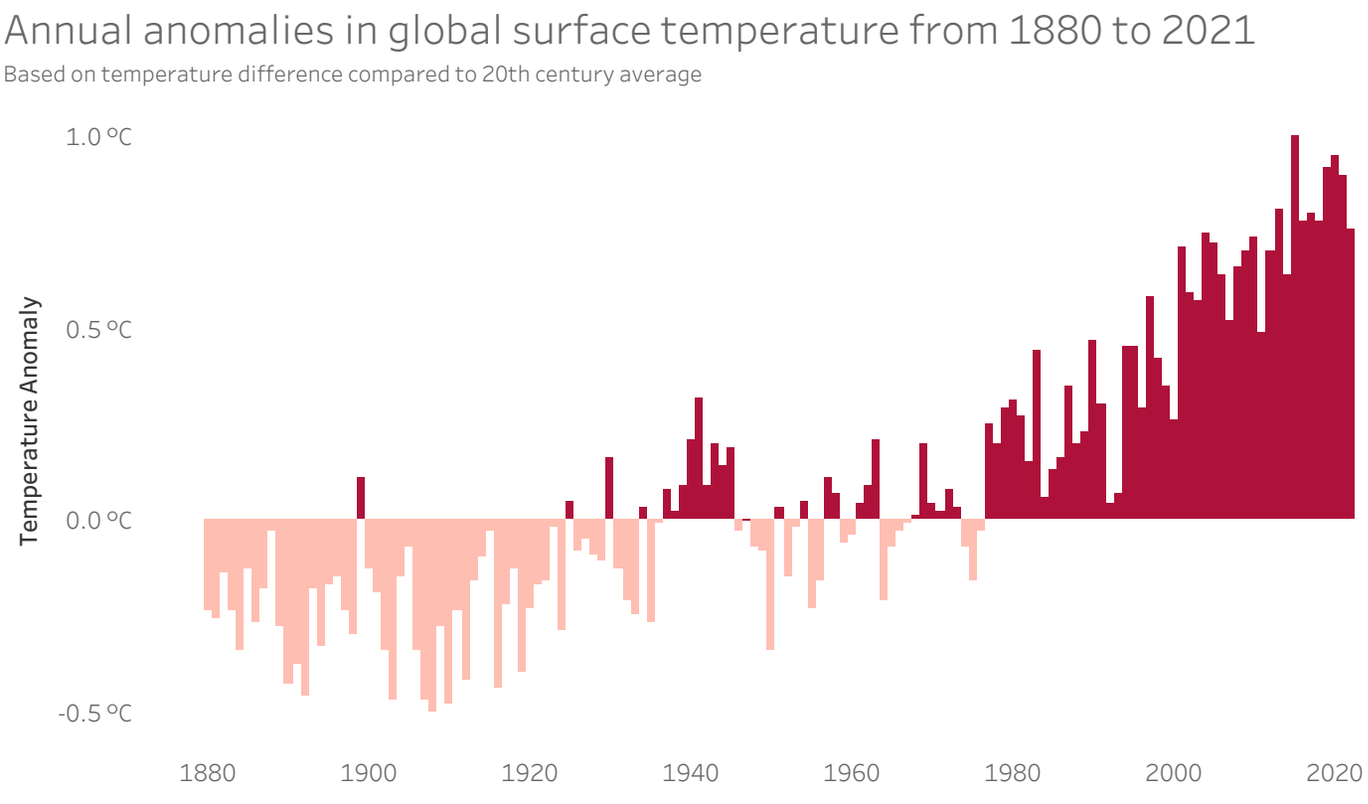
The driving forces behind the rise of CO2 emissions, accounting for over 70% of total emissions, are the electricity, heat and transportation industries fueled by the consumption of non-renewable fossil fuels such as oil, natural gas, and coal.

With the increasing demand for global travel and technology, unless alternative energy sources are embraced, CO2 emissions will continue to rise in correlation to these industries.

Scientific studies of ice cores in Antarctica reveal a shocking trend of CO2 concentration levels over the past 800,000 years. Measured in parts per million (ppm), the number of CO2 molecules per million air particles remained below 300 ppm for nearly a million years.

However, with the advent of the "technological era" in the mid-19th century and increased consumption of fossil fuels, CO2 levels skyrocketed and have been continuously increasing every year, currently standing at over 100 ppm higher than pre-human levels.





The trend of rising surface temperatures, driven by the buildup of greenhouse gases in the atmosphere, is evident in the analysis of the Earth's surface temperatures. With no year since 1980 falling below the average temperature of the 20th century.

Temperatures are now approaching a 1 degree Celsius increase compared to the previous century's average, emphasizing the pressing issue of climate change.

Sources: (1) BP Statistical Review of World Energy 2019, 56, (2) EPA's Climate Change Indicators in the United States: www.epa.gov/climate-indicators,(3) NOAA National Centers for Environmental Information (2023). State of the Climate: Global Climate R..