

Global CO2 Emission Analysis

USING POWER BI

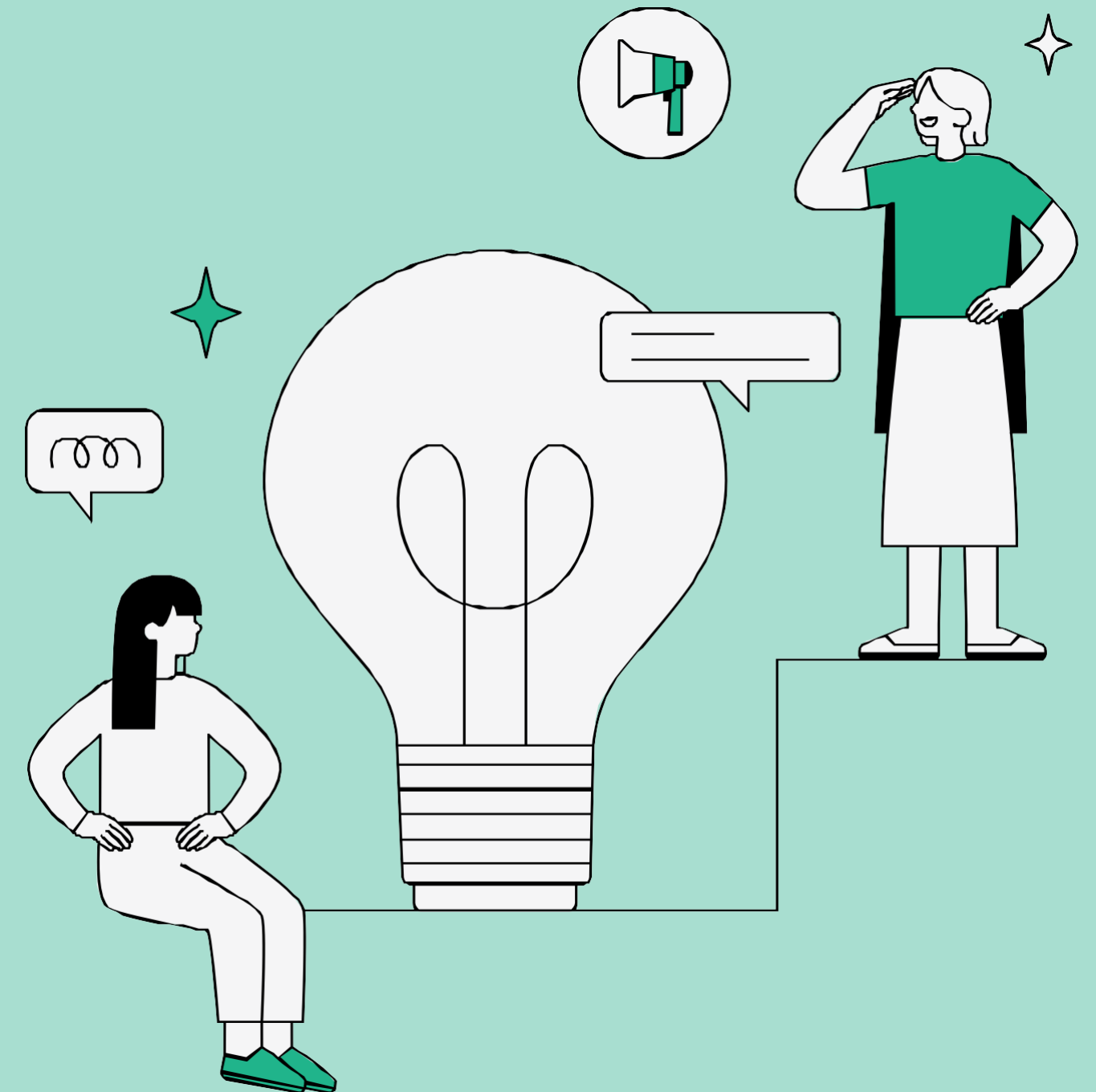
by Priyanshu Prakash



Project Objective

The objective of the project is to create an interactive Power BI dashboard that visualizes global CO2 emissions data to provide insights into trends, key contributors, and sectoral breakdowns.

It aims to help policymakers, researchers, and public understand emissions patterns and support climate mitigation efforts. The dashboard enables comparative analysis across countries and time for informed decision making.





Dataset Description

This dataset captures wide range of CO2 emissions, gases, and climate change related indicators from various countries over different years. The data is useful for analyzing environmental impact of human activities and their correlation with economic growth and population changes.

Here are some key categories covered in dataset :

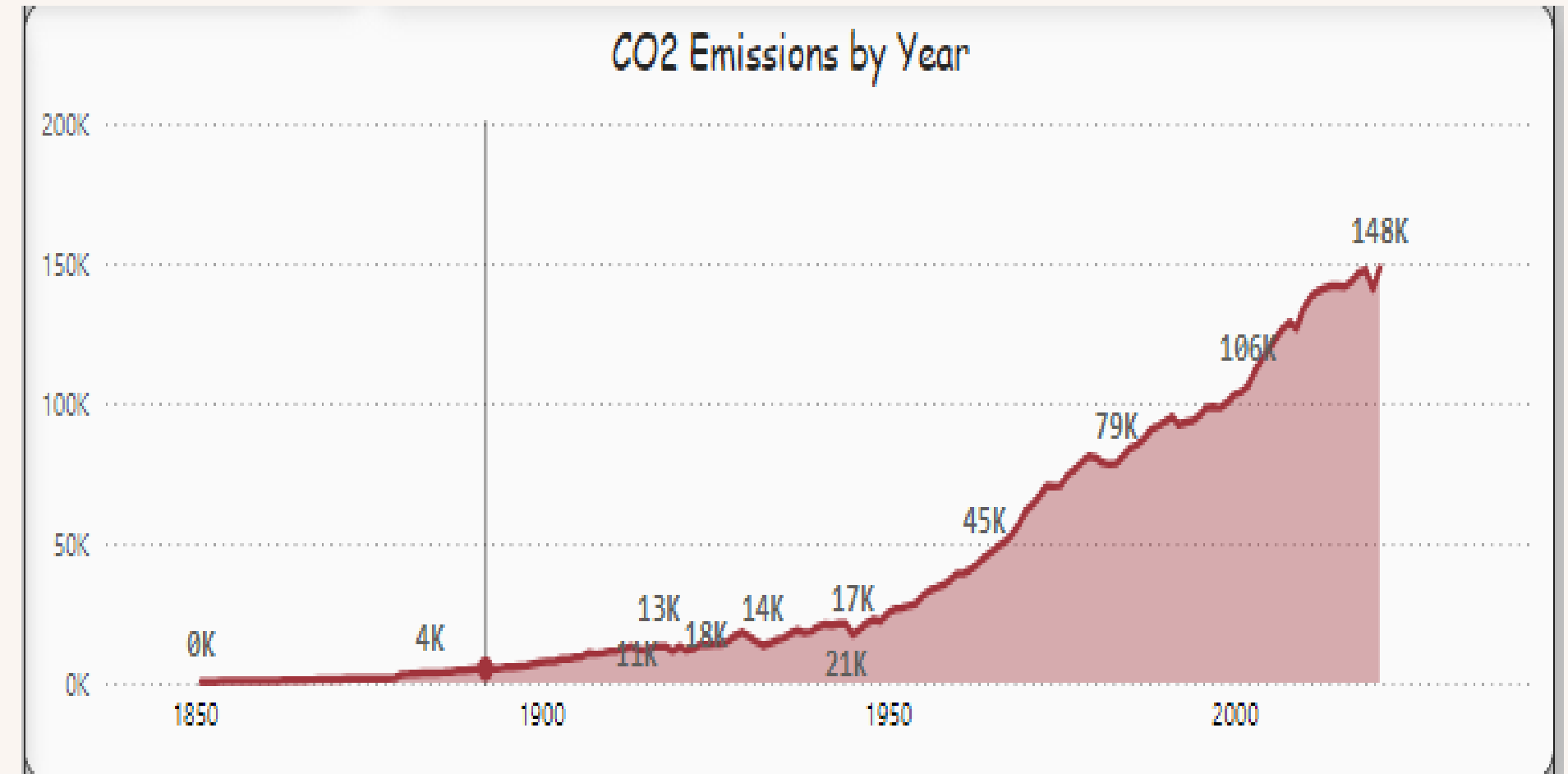
1. Country and Year
2. CO2 Emissions - Data on CO2 emissions from various sources like cement, coal, gas, oil.
3. Per Capita & Per GDP Measures - Emissions and energy usage normalized by population.
4. Cumulative Emissions
5. Global Shares - Each country's contribution to global emissions.

This dataset allows for comprehensive analysis of emissions sources, their growth, and resulting impacts on global temperature and climate change.



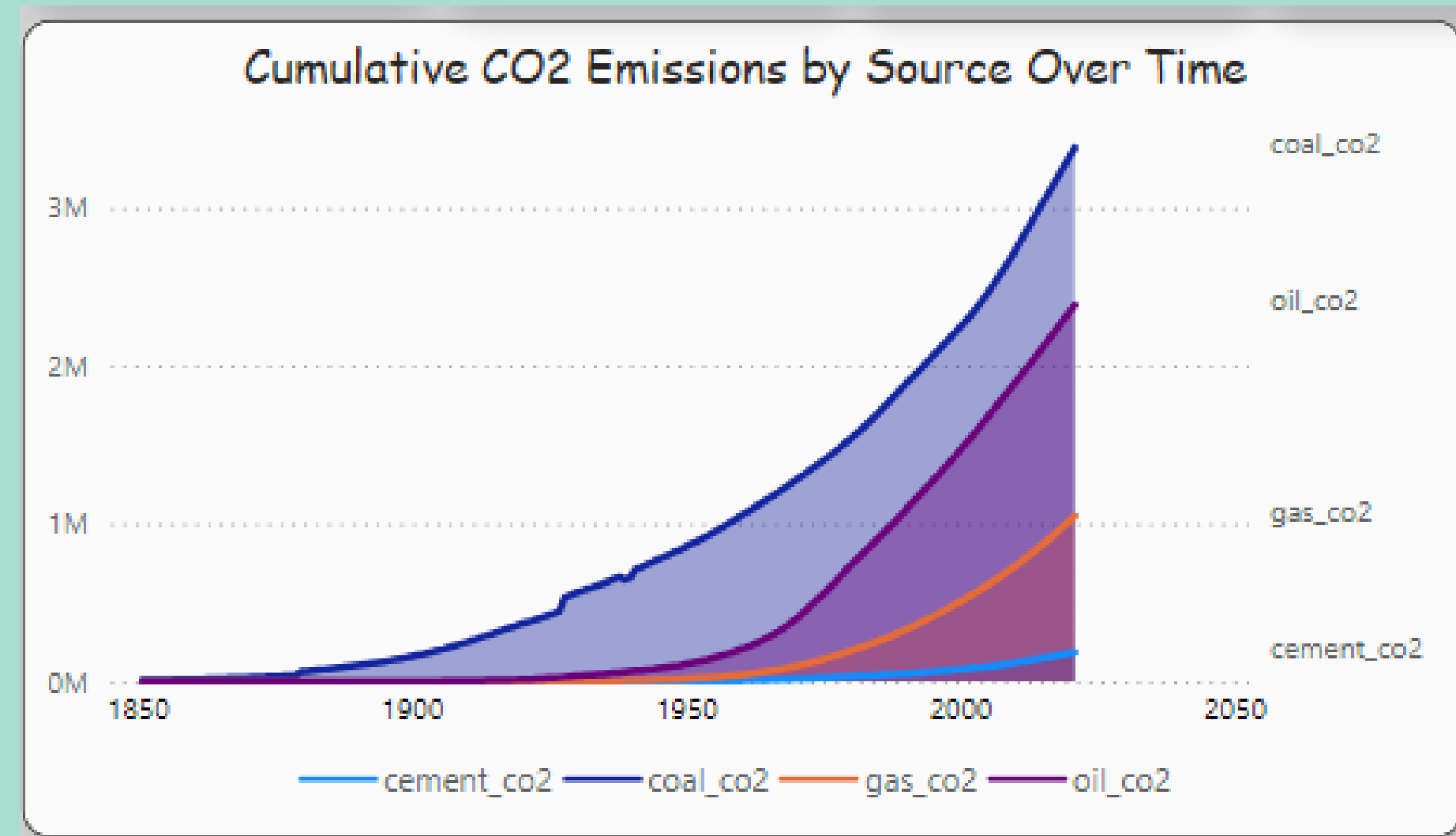
Global CO2 Emissions Growth

- CO2 emissions have grown drastically since 1850, with sharp spike post 1950, coinciding with industrialization and the rise of fossil fuels (especially coal and oil).
- The total emissions have reached 7M metric tons globally.



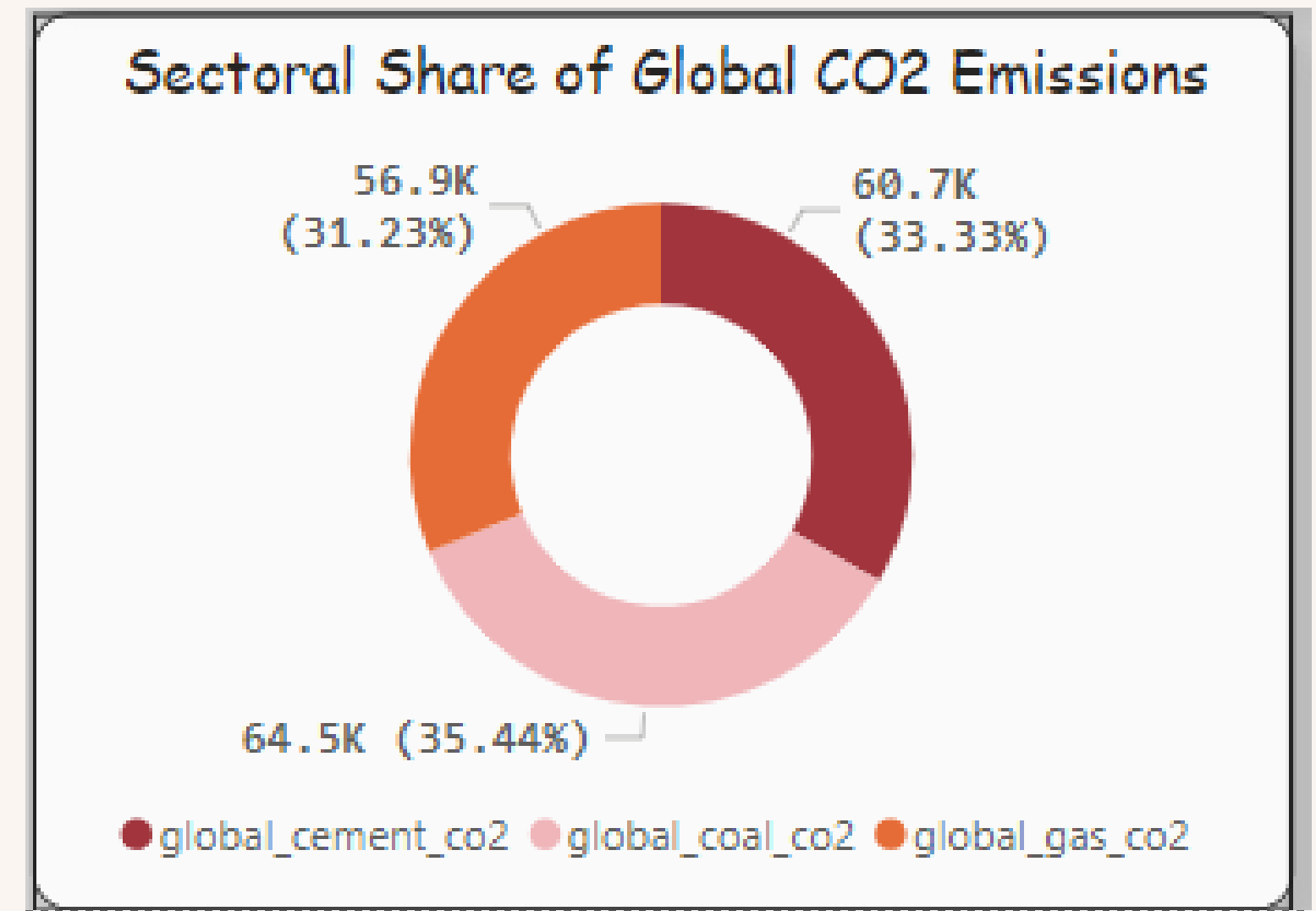
Major Contributors by Source

- Coal is the largest single source of emissions, accounting for 33.34% of global CO2 emissions.
- Gas and Oil also contribute significantly, with gas at 31.23% and oil continuing to grow in recent years.
- Cement production contributes 35.44%, highlighting the impact of construction and infrastructure development.



Sector wise Breakdown

- The industrial and energy sector(coal, oil, gas) are primary drivers of emissions.
- Emissions from cement production and other industrial processes also show rapid growth, particularly in construction heavy economies.

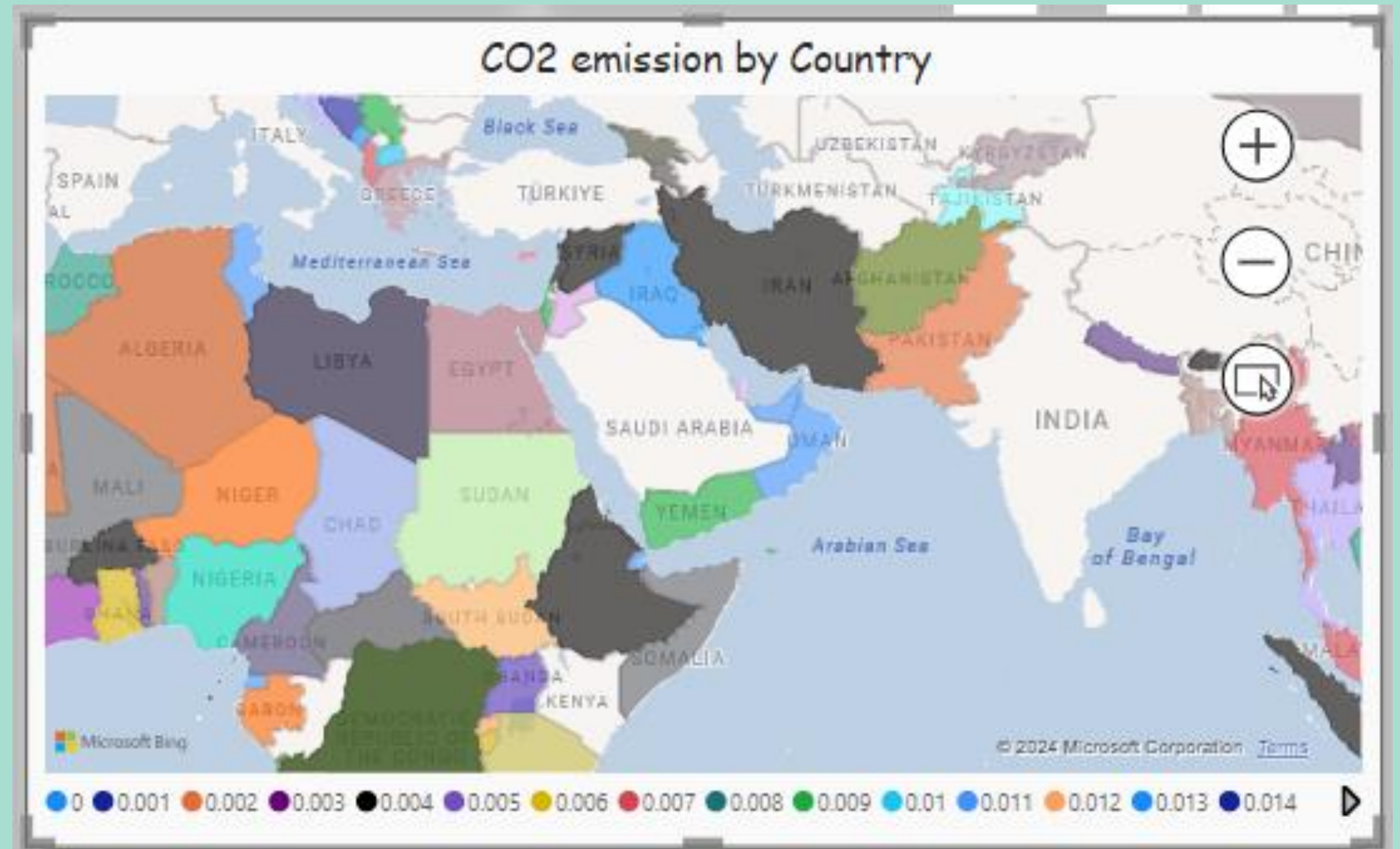


Geographical and regional Emissions

- The geographical representation shows higher emissions from developed regions(North America, Europe) and fast developing regions.

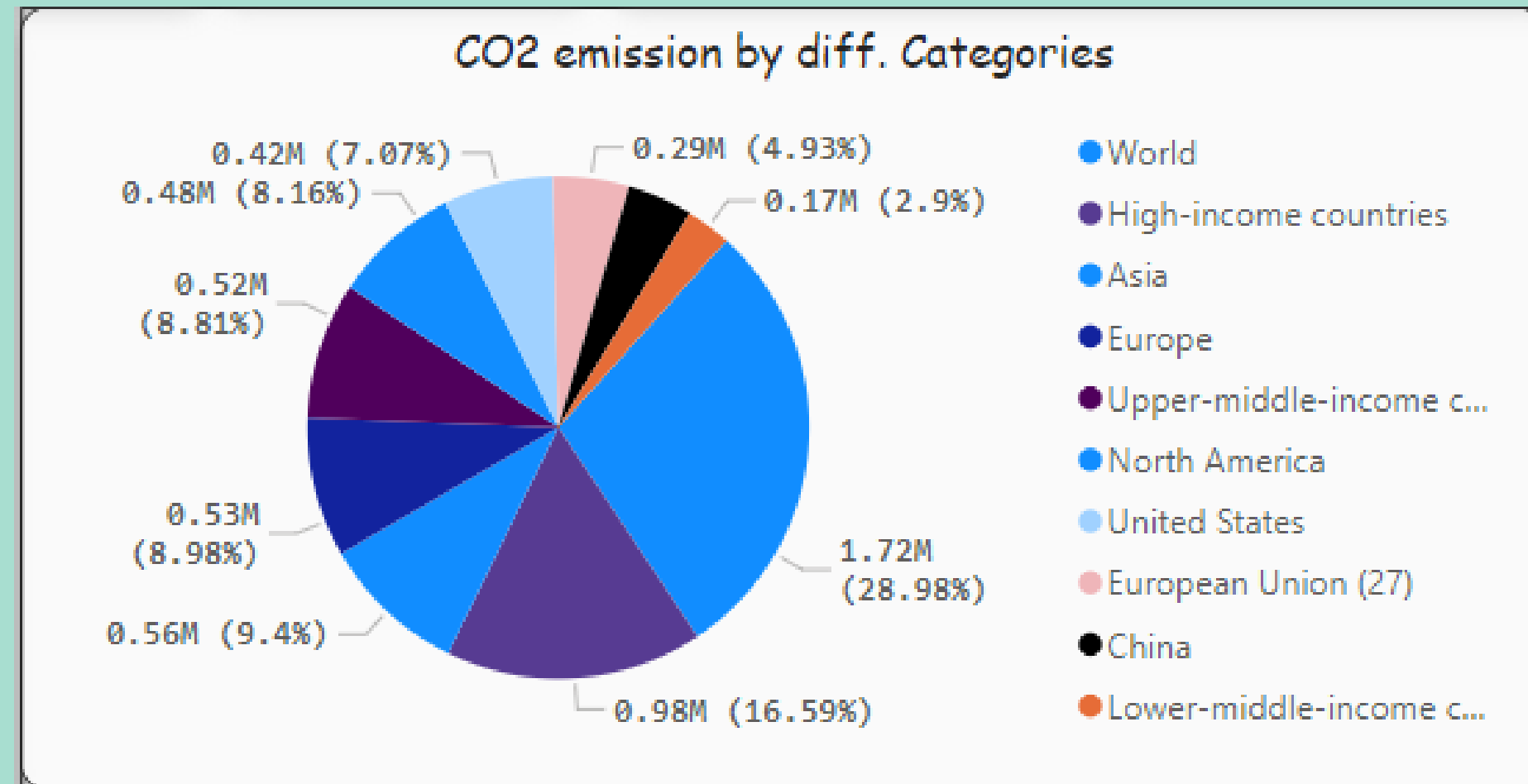
Africa and parts of south America have relatively lower emissions.

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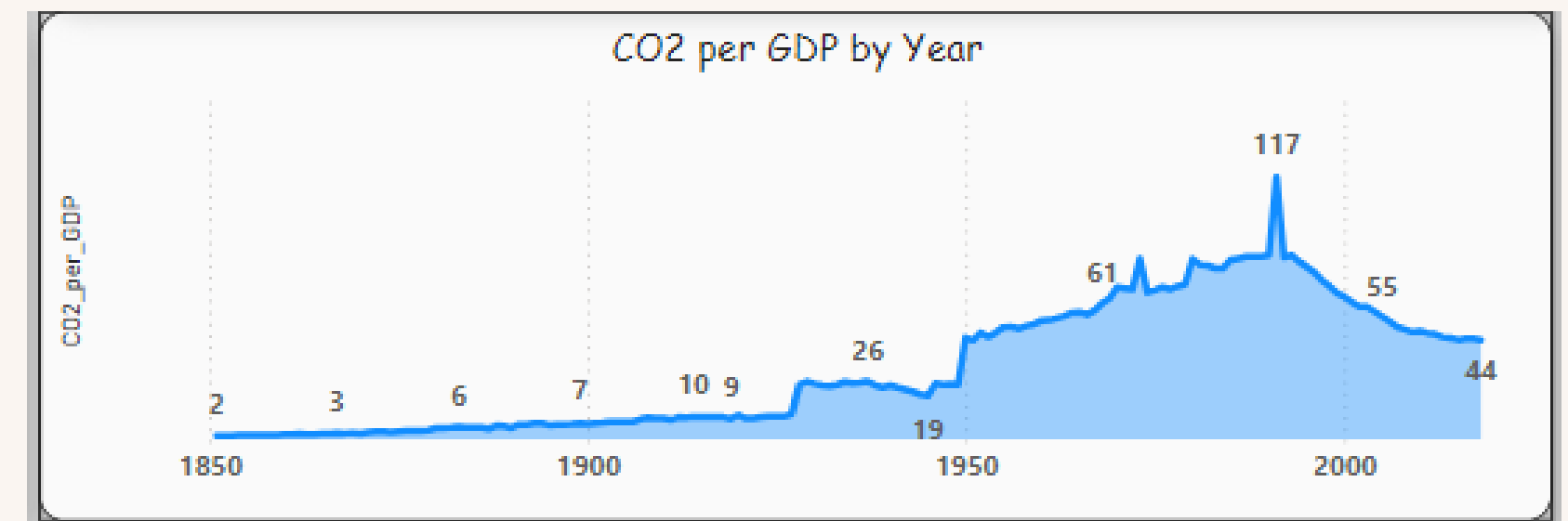
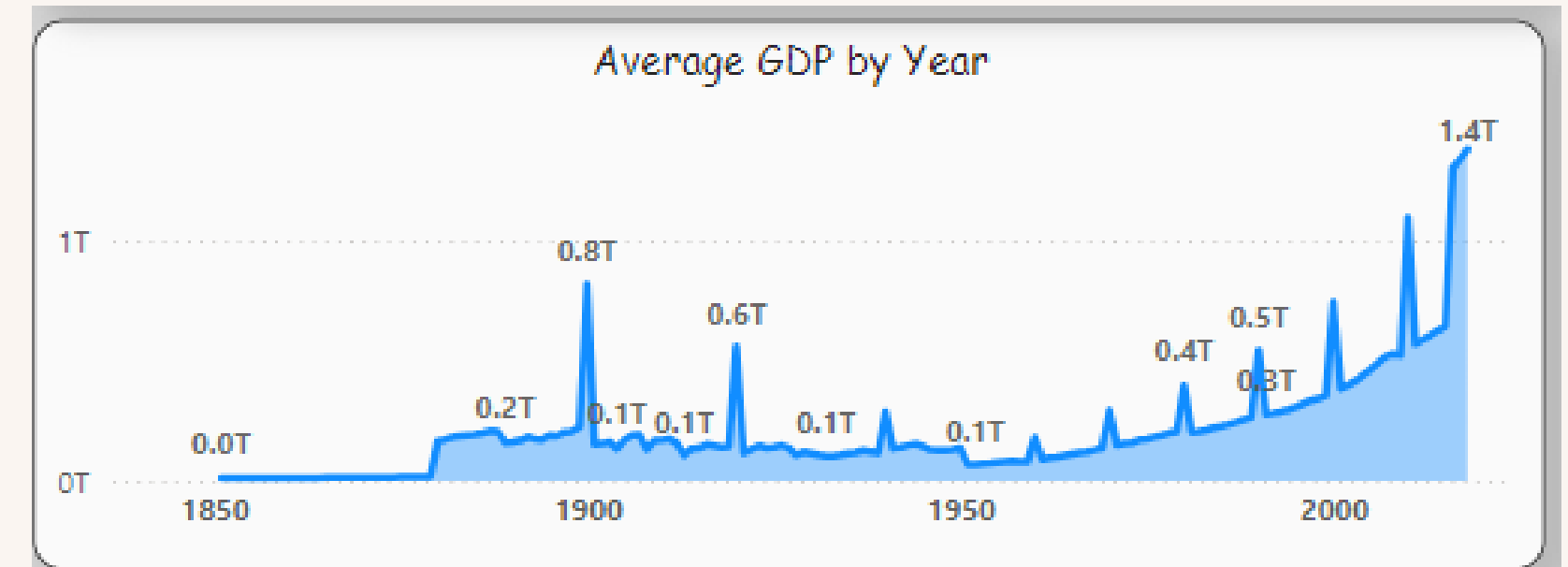
Per Capita Emissions

- China is the leading emitter, accounting for 28.98% of global emissions.
- CO2 emissions per capita have reached 4.84 metric tons per person, with large variations between countries.
- High income countries and China show higher per capita emissions due to industrial activities and energy consumption..

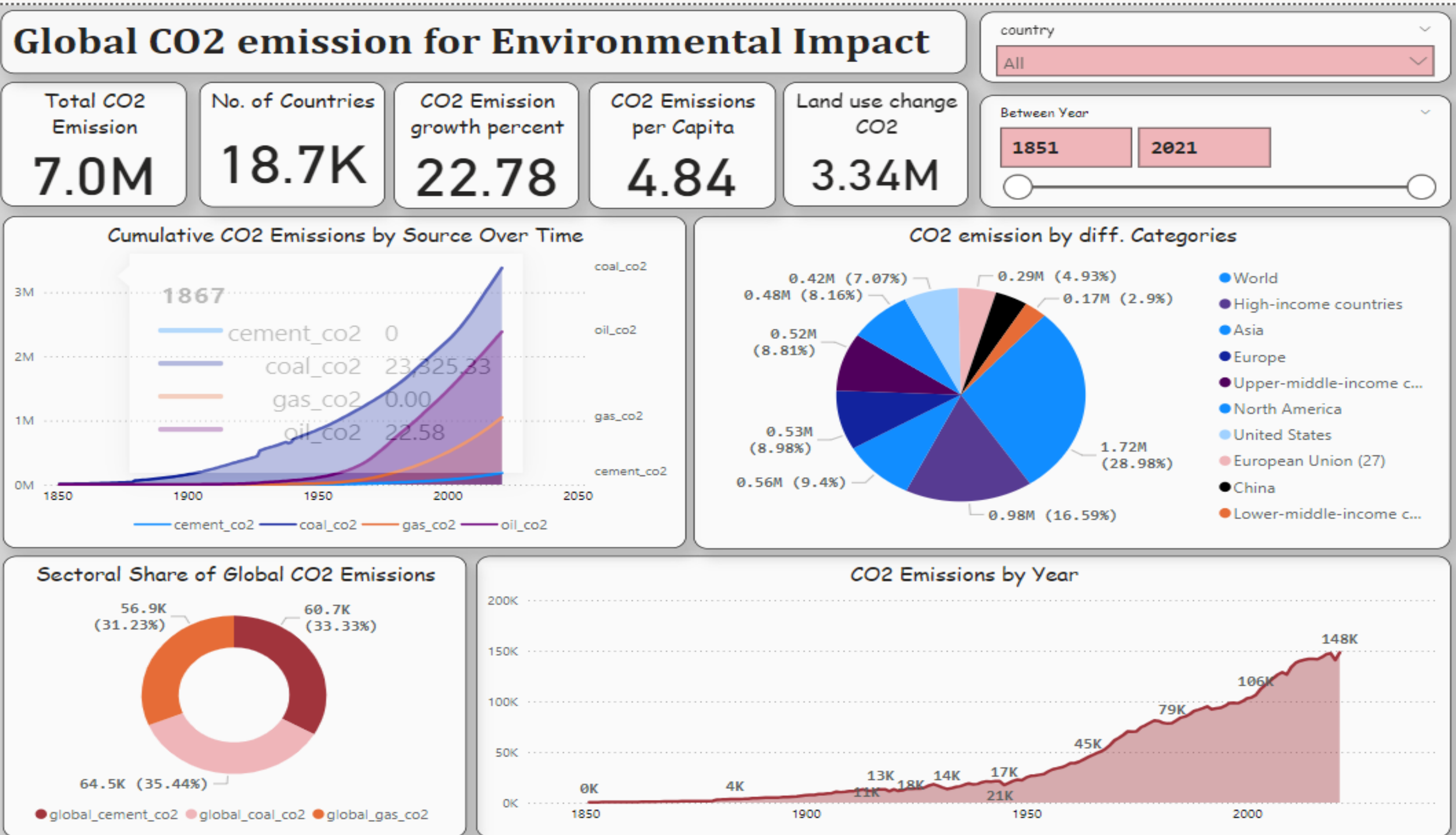


Population and Economic Link

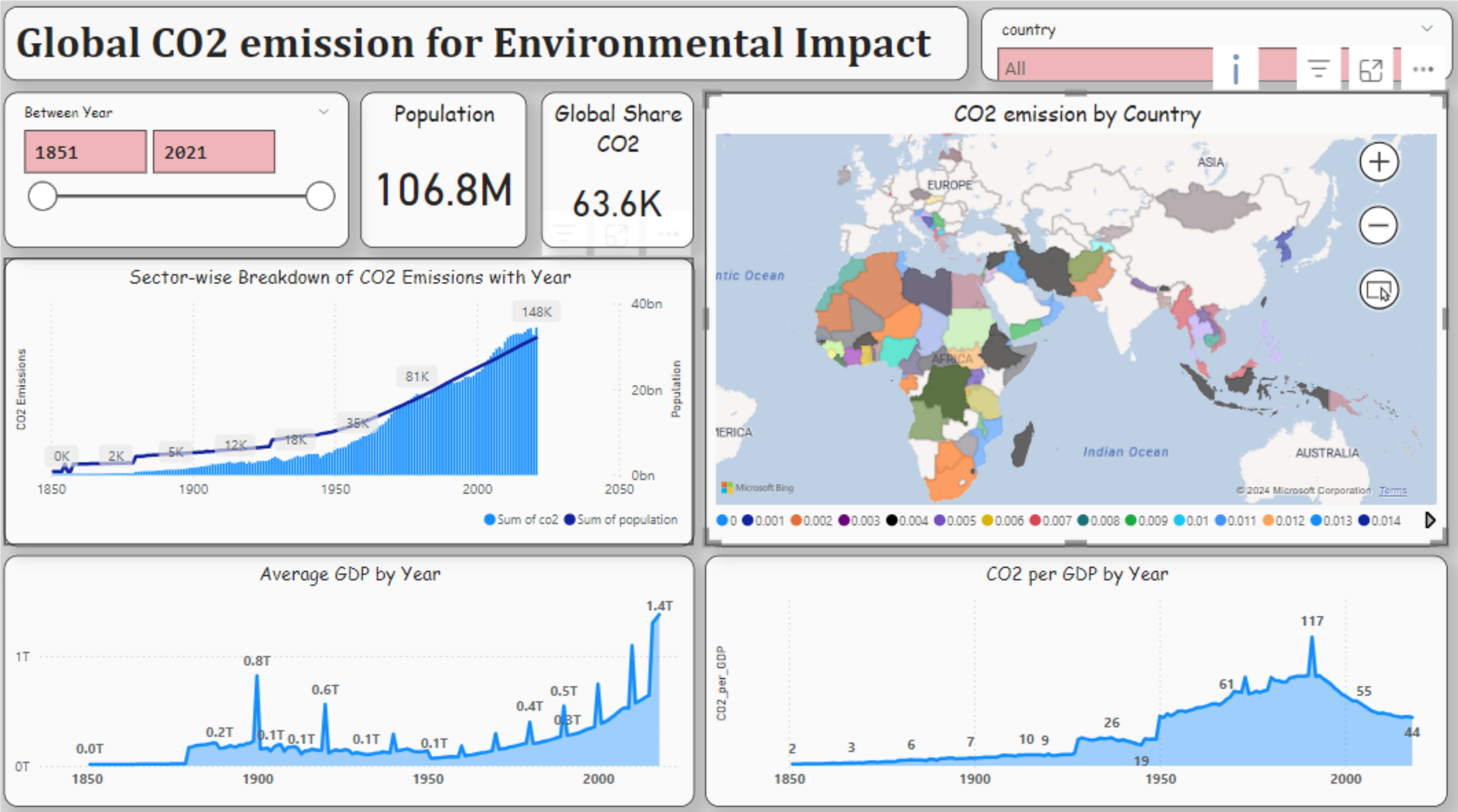
- AS the global population has increased, CO2 emissions have risen accordingly, through not uniformly across regions.
- There is a strong correlation between GDP growth and CO2 emissions, with emissions peaking alongside global economic expansion, especially in the 1950s and post 2000.



DASHBOARD OVERVIEW



DASHBOARD OVERVIEW



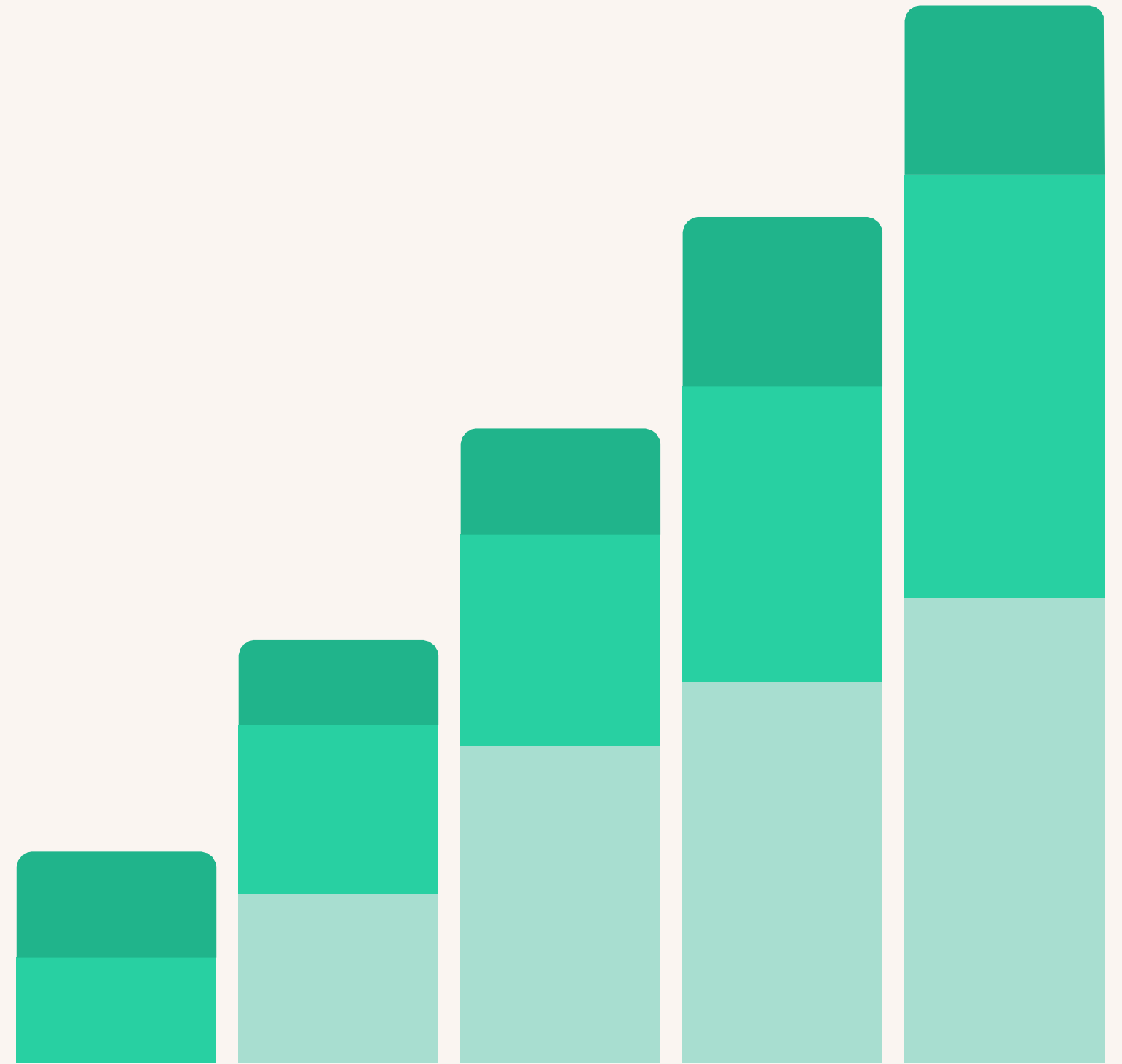
CONCLUSION

This project successfully visualizes global CO2 emissions data, highlighting key trends, major contributors, and sectoral breakdowns. The dashboard provides actionable insights for policymakers and stakeholders, enabling better understanding of emission patterns and supporting efforts to mitigate climate change. By focusing on high-emission sectors and regions, the tool aids in prioritizing areas for targeted climate action.

RECOMMENDATIONS

Transitioning away from fossil fuels (especially coal) to renewable energy sources like solar, wind, and hydropower should be prioritized to reduce the **33.33% of emissions from coal**.

Industries like **cement** need innovations in **carbon capture technologies** and shifts towards more sustainable production practices.

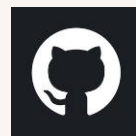


THANKYOU

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<https://github.com/PPD00>