Global CO2 Emissions Tracker by Sector

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Introduction

Climate change is one of the most pressing global issues today. A significant contributor to climate change is the emission of CO_2, primarily from energy use, industry, and transportation. This project aims to build a global tracker that monitors and analyzes CO_2 emissions across countries and sectors using historical data.

Abstract

The Global CO2 Emissions Tracker project leverages multi-sector emissions data across multiple years to identify key emission sources and trends. By transforming and visualizing the data in Tableau, this project offers insights into sector-specific and country-level emission patterns. This aids policymakers, researchers, and environmentalists in making data-driven decisions.

Tools Used

- Microsoft Excel (for initial data exploration)

- Python (for data cleaning and pivoting)

- Tableau (for visualization and dashboard development)

Steps Involved in Building the Project

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1. Data Collection: Used a multi-year CO2 emissions dataset covering various sectors (buildings, transport, industry, etc.) for all countries.

2. Data Cleaning: Handled negative values and ensured year and country consistency.

3. Data Transformation: Pivoted sector columns into a long format to make them Tableau-friendly.

4. Visualization in Tableau:

  - Created a world map showing emissions by country.

  - Developed stacked bar charts comparing sector-wise emissions.

  - Built line charts for emission trends over time.

  - Designed KPI cards showing global stats like top polluting country and year-on-year changes.

5. Dashboard: Combined all visuals into a single interactive dashboard with filters for year, country, and sector.

Conclusion

The project successfully identifies emission-heavy countries and sectors and provides a comprehensive visual analysis of CO_2 emissions globally. It emphasizes the critical need for sustainable practices and policy interventions in energy-intensive industries. This tracker can be extended further with per capita and per GDP emissions if additional data is integrated.