

Project Milestone 3

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Since the 2020, COVID-19 pandemic has had many unforeseen effects. While acknowledging the negative effects of the pandemic, we will illustrate benefits for the environment with two visualized graphs.

Two datasets are used in this report, one dataset describing CO2 emissions by sector in the US from January 2019 to December 2020 from Carbon Monitor (2021), and the other including COVID-19 cases and deaths by state for the United States by The New York Times (2021). Cleaning the dataset involved converting the cumulative values to a rate over time value, formatting date, pivoting the columns and removing unnecessary data.

The report visualizes the change in carbon emission, and the positive cases over time in the United States. In the first graph where red vertical line indicates the cutoff time of the first COVID case, conclusions can be drawn that the carbon emissions from different sectors responded differently to the social economical changes brought by the covid pandemic. The second graph visualizes COVID mortalities and positive cases against time. The encodings used in this visualization include size and texture, in the form of area under the curve and the corresponding color respectively. The left axis shows values for mortality in black, while the right axis shows the number of positive cases in red. The marks used are two lines and areas underneath that show the infection and mortality rates of COVID-19. The cases spike from zero in March of 2020. There appears to be a peak around December, January, and February of 2021 for mortalities and positive cases, with mortalities slightly lagged.

While our visualizations may connect an increase in positive cases to a decrease in carbon emissions, we would like to reiterate that the pandemic has negatively impacted much of the population. For potential improvements, data from other sources could be visualized.

1. Carbon Monitor. (2021). Retrieved from <https://carbonmonitor.org/>.
2. The New York Times. (2021). Retrieved from <https://www.nytimes.com/interactive/2021/us/covid-cases.html>.