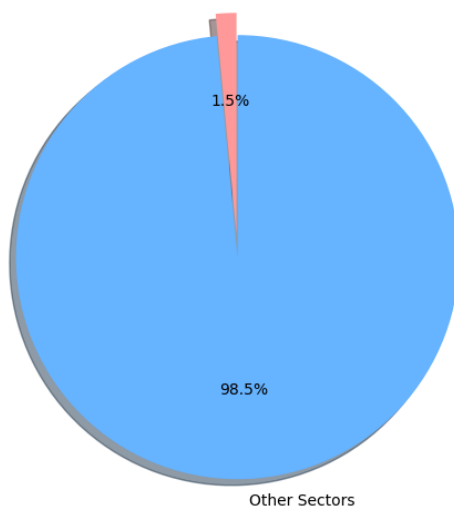


# Universities Viz

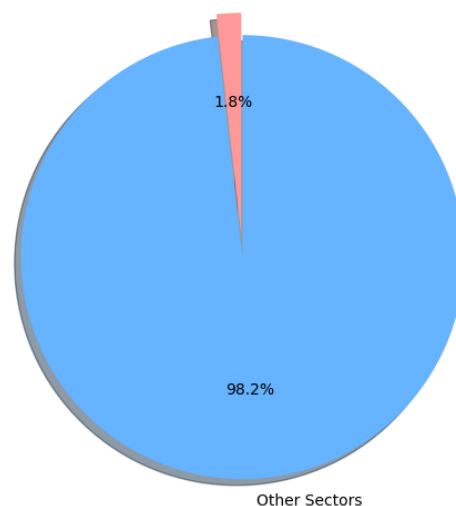
## 1. Emissions Contribution of Universities:

- We analyzed emissions data from university-related facilities and compared it to other sectors/industries.
- A pie chart comparison for the year 2011 showed that universities contribute a smaller fraction of emissions compared to other sectors, highlighting the larger impact potential in broader industrial sectors.

Emissions Comparison: Universities vs. Other Sectors in 2011

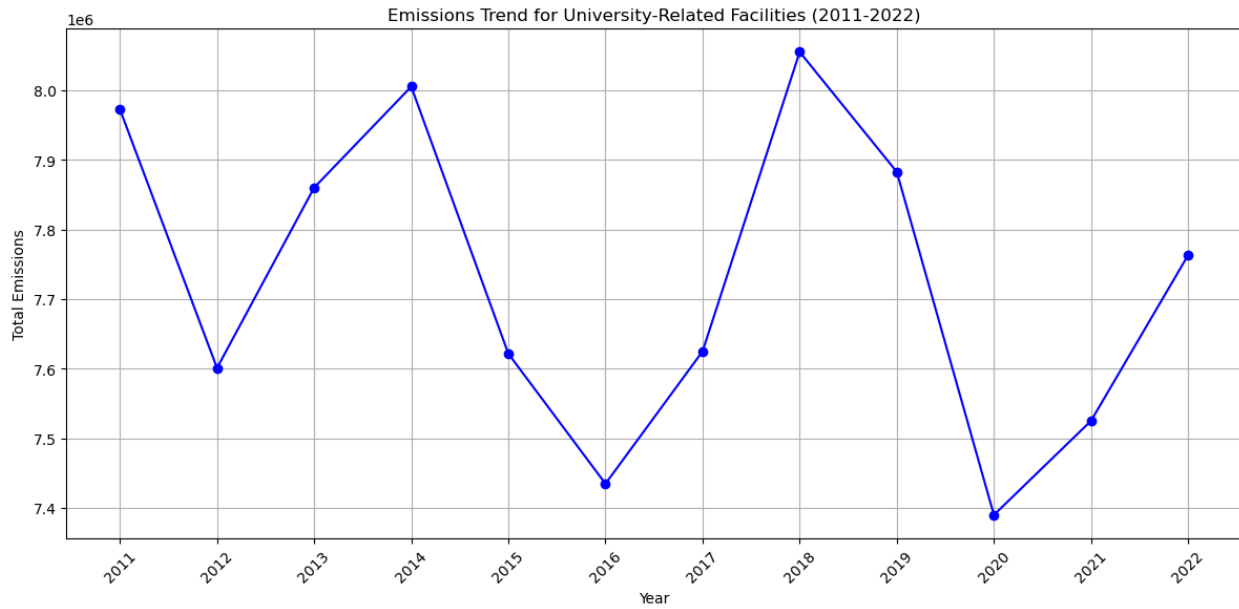


Emissions Comparison: Universities vs. Other Sectors in 2022



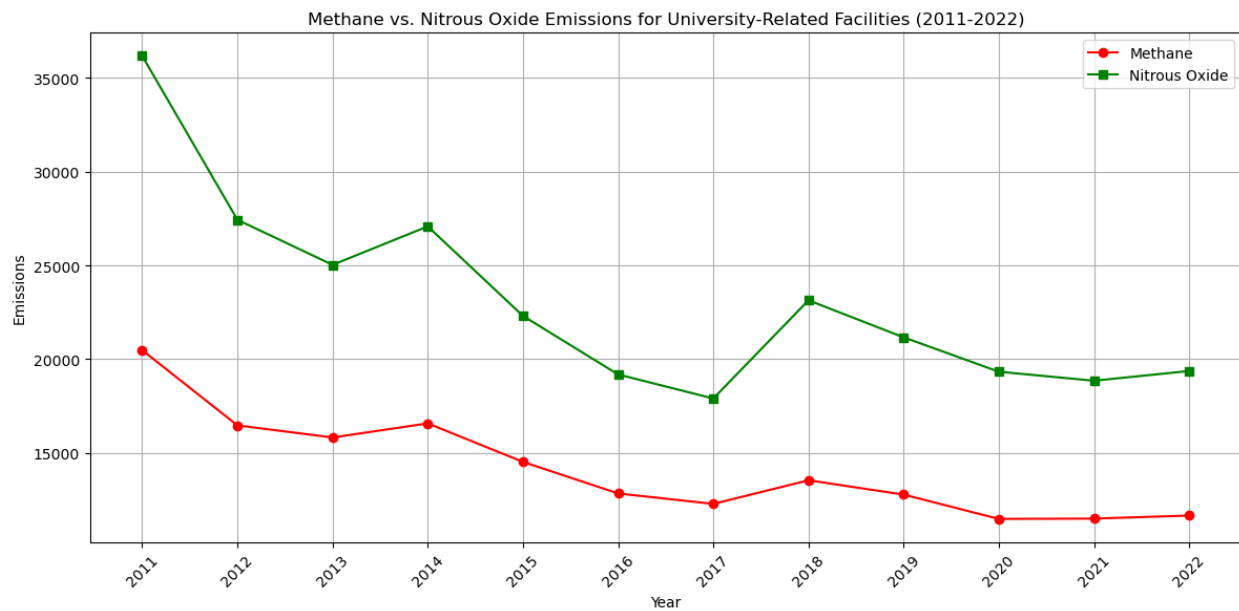
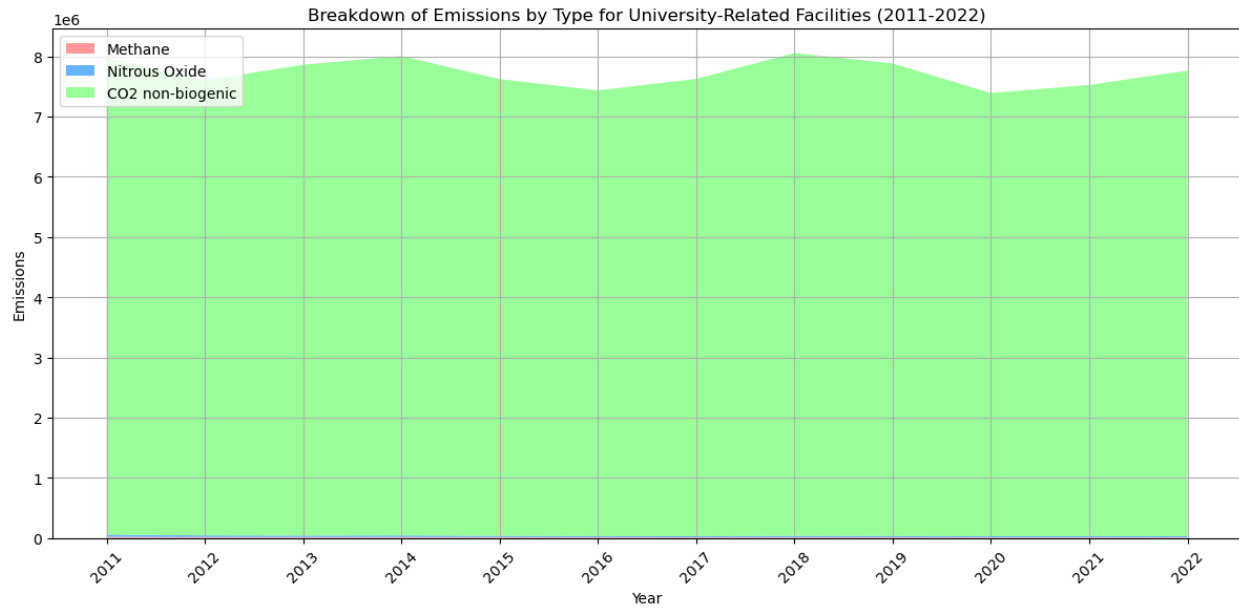
## 2. Emissions Trends for Universities:

- A line graph depicting the trend of total emissions from university-related facilities over the years 2011-2022 was created.
- The graph showed fluctuations in total emissions, indicating periods of increase and decrease, which could be influenced by various factors such as energy efficiency measures or changes in campus activities.



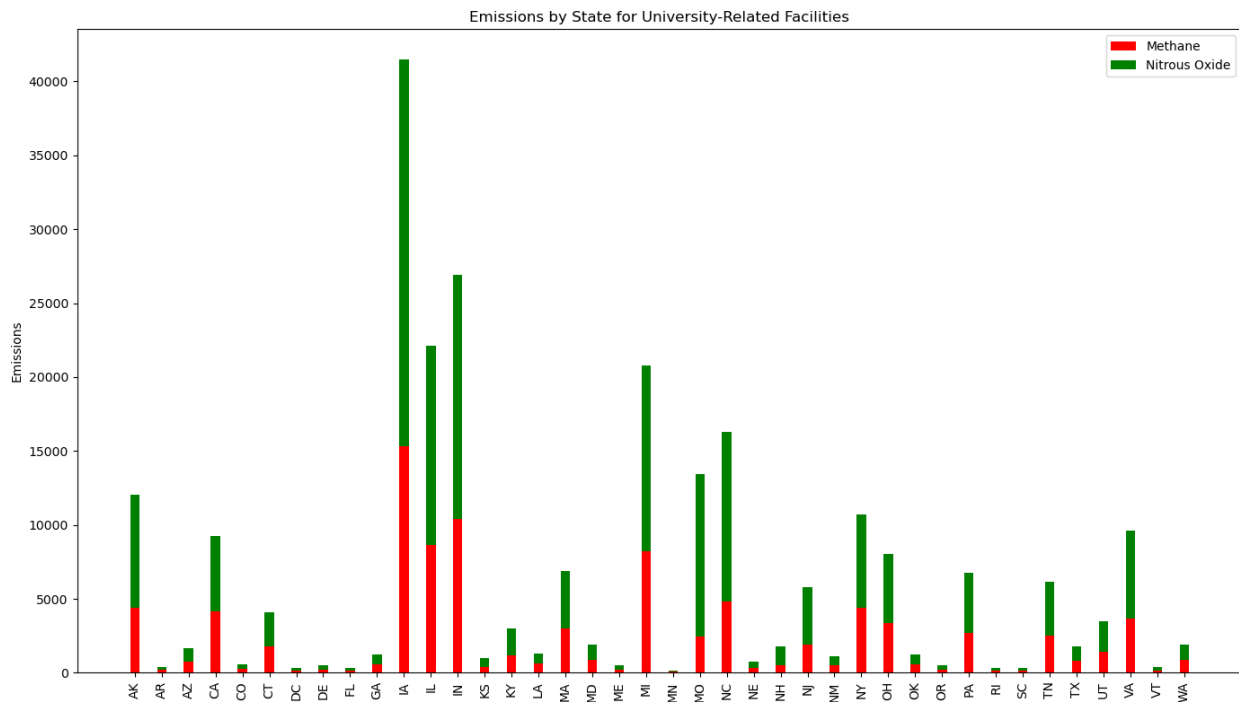
### 3. Breakdown of Emissions Types for Universities:

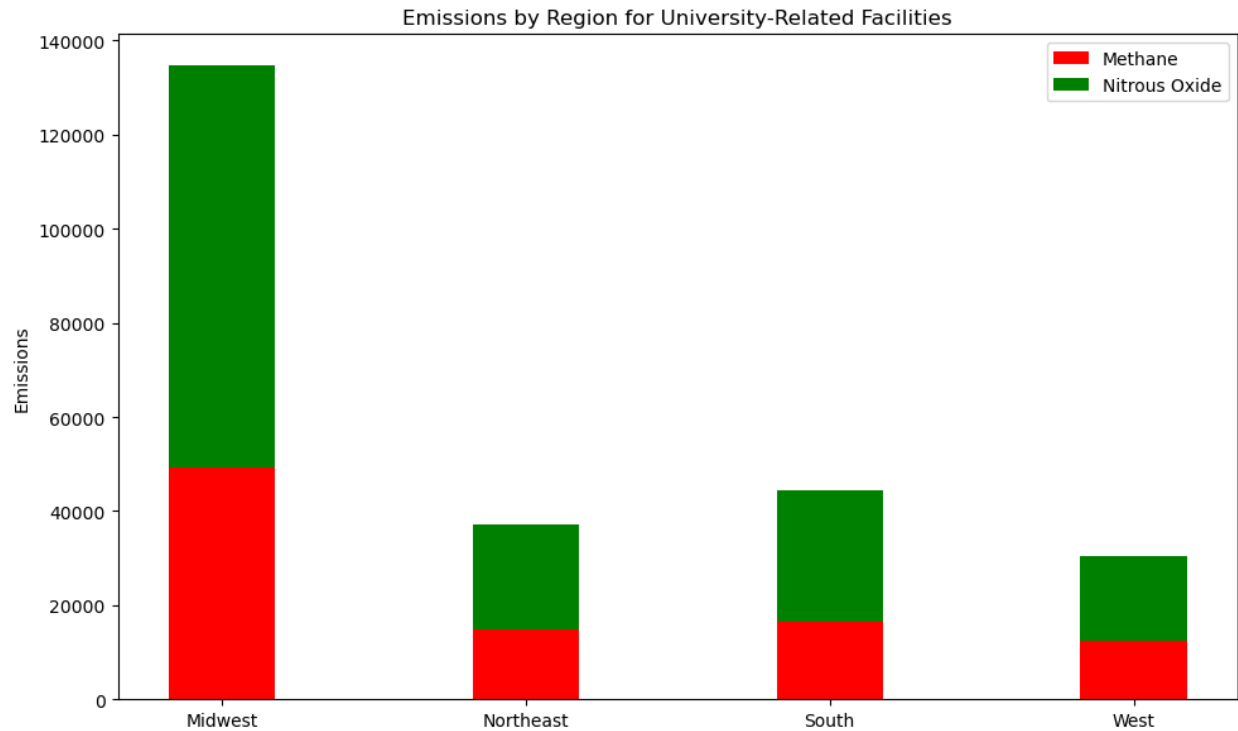
- Initially, a stacked area chart was created to show the breakdown of Methane, Nitrous Oxide, and CO<sub>2</sub> (non-biogenic) emissions over time.
- Given the significant scale of CO<sub>2</sub> emissions, we then focused specifically on Methane and Nitrous Oxide emissions through a line graph, highlighting the differences in trends between these two types of emissions.



#### 4. State and Regional Emissions Analysis:

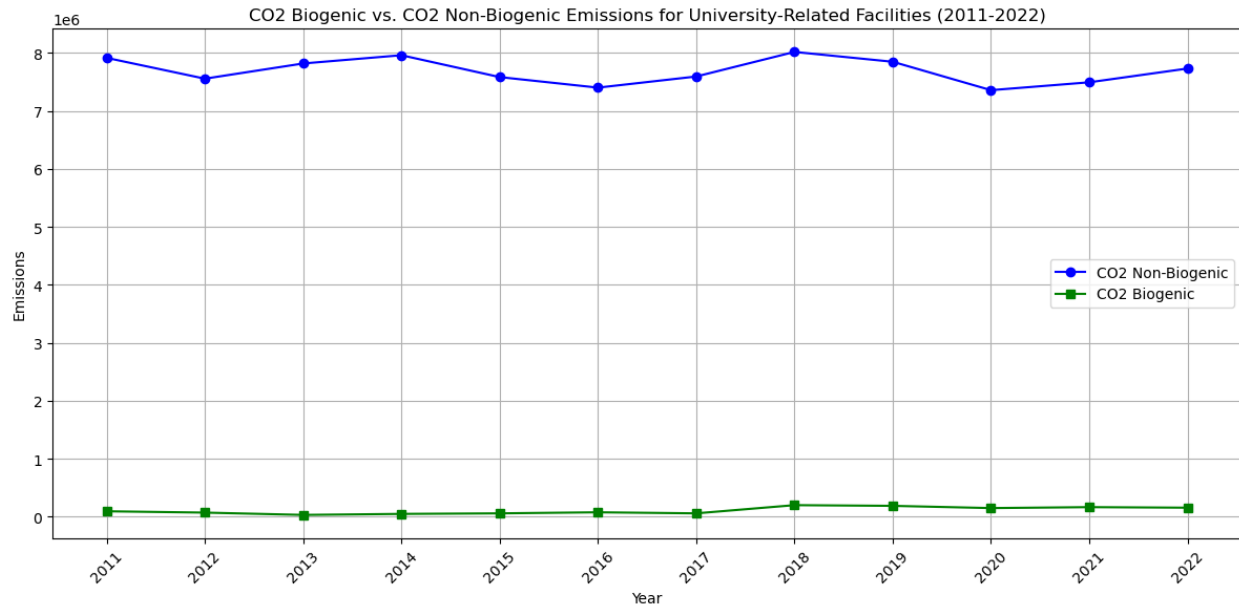
- Emissions from university-related facilities were broken down by state, showing significant variations in Methane and Nitrous Oxide emissions across different states.
- Further aggregation into US regions (Northeast, Midwest, South, West) revealed regional differences in emissions, with some regions showing higher emissions levels than others. This analysis can inform targeted regional strategies for emission reduction.





## 5. CO2 Biogenic vs. Non-Biogenic Emissions:

- A line graph compared CO2 Biogenic and Non-Biogenic emissions from university-related facilities, showing that non-biogenic emissions dominate. This distinction is important for developing mitigation strategies, as biogenic and non-biogenic emissions have different sources and impacts.



## Key Insights:

- **Universities vs. Other Sectors:** Universities contribute a relatively smaller portion of emissions compared to other sectors, but there's still significant potential for emission reduction within the university context.
- **Emissions Trends:** The fluctuating trends in total emissions for universities suggest that there have been periods of both increase and decrease in emissions, possibly influenced by energy efficiency initiatives, changes in energy sources, or campus infrastructure developments.
- **Methane and Nitrous Oxide Focus:** The focus on Methane and Nitrous Oxide emissions highlighted the need for targeted strategies to address these specific pollutants, which may have different sources and mitigation opportunities compared to CO2.
- **State and Regional Differences:** The state and regional breakdown of emissions underscored the geographic variability in university-related emissions, suggesting that local factors and policies can significantly influence emission levels.
- **CO2 Emissions Breakdown:** The comparison between biogenic and non-biogenic CO2 emissions emphasized the predominance of non-biogenic

sources