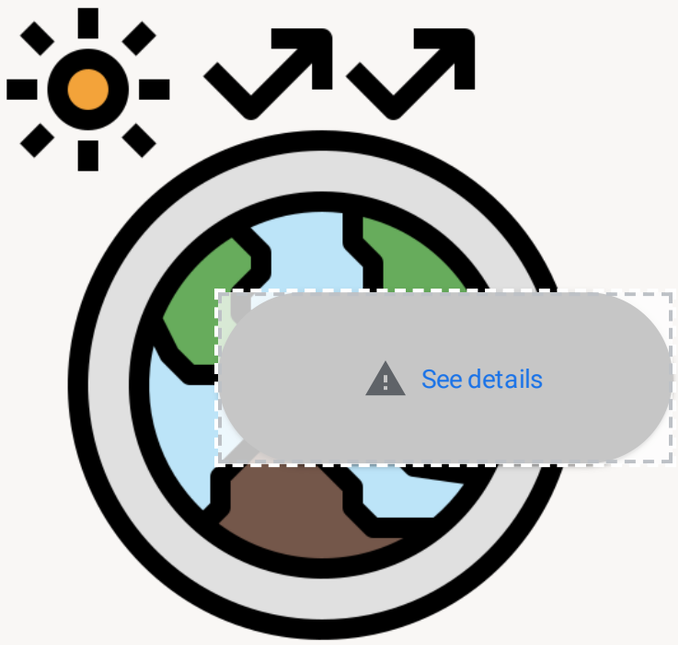
Net greenhouse gas emissions in Europe

1 Jan 2021 - 2 Jan 2021

Country

Overview:
This report, sourced from Eurostat, encompasses data on Net Greenhouse Gas Emissions and Greenhouse Gas Emissions from Production Activities in Europe. The dataset for Net Greenhouse Gas Emissions spans from 1990 to January 1st, 2021, while the data for Greenhouse Gas Emissions from Production Activities covers the period from 2008 to 2022. Both datasets are provided annually. Users have access to controllers for selecting countries and time periods for customization.
Report Structure:
Page 1: Provides an overview of greenhouse gas emissions in Europe for the year 2021, including overall data and regional breakdowns presented in donut charts, all pertaining to the Net Greenhouse Gas Emissions dataset.
Page 2: Features a geo-map chart based on the Net Greenhouse Gas Emissions dataset and a scatter plot illustrating the relationship between the two datasets.
Page 3: Presents a temporal line chart based on the Net Greenhouse Gas Emissions dataset and a bar chart comparing the two datasets.
Page 4: Includes additional notes and observations.



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Greenhouse Gas Amount (tonnes per capita)

Showing total greenhouse gas amount in 2021 compared to 1980.

The greenhouse gas emissions in the Eurostat dataset are measured in tonnes per capita. In this report, we have presented the emissions amount directly using a scorecard format.

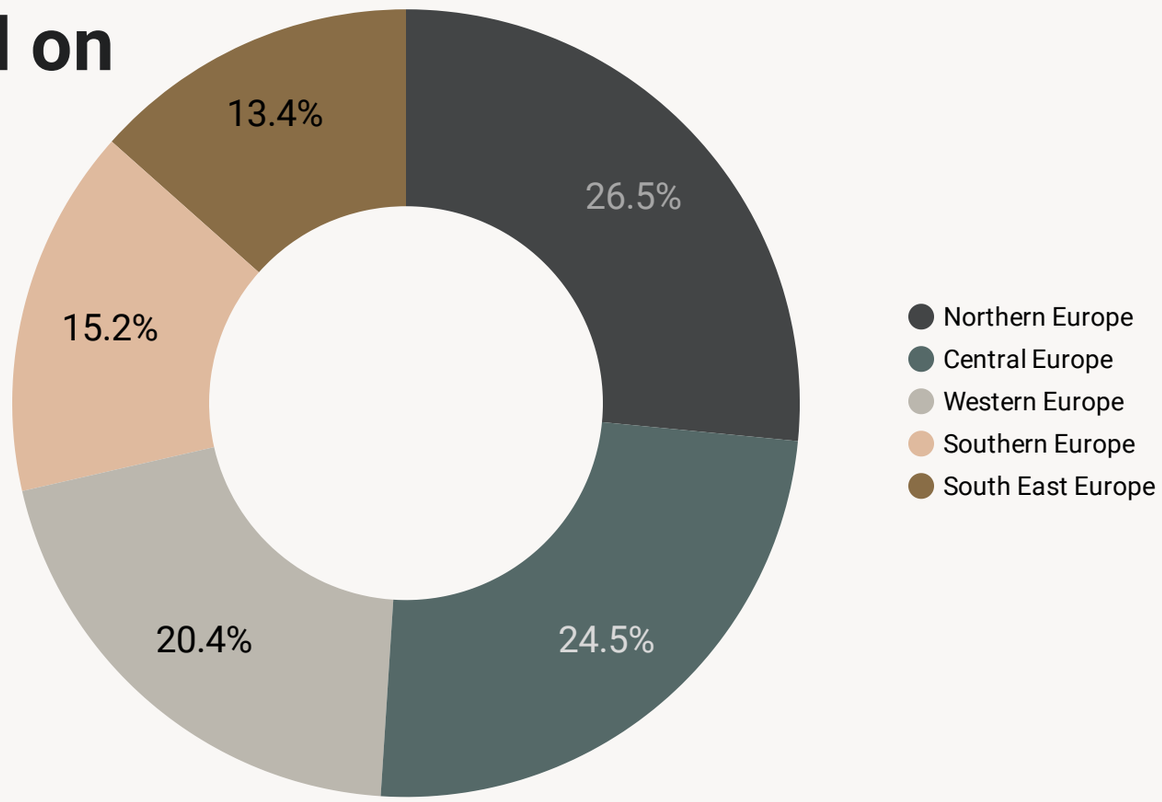
However, since individuals may not have a clear understanding of the significance of these numbers, we have included a comparison with the emissions amount recorded in the previous year. This comparison allows us to observe that Europe has made significant progress in reducing greenhouse gas emissions by 2021.

Greenhouse gas emissions based on different European areas

Comparing areas of emissions by using a donut chart:

In this instance, we've established a classification field to delineate European countries into 5 specific areas. Despite the inherent limitations of donut charts in comparing categories, we've integrated numerical values to mitigate this drawback.

In the chart, each slice is colored uniquely for easy identification, with size proportional to export values. This visual setup helps viewers quickly gauge category proportions.



Dashboard owner - Kangjie Yu

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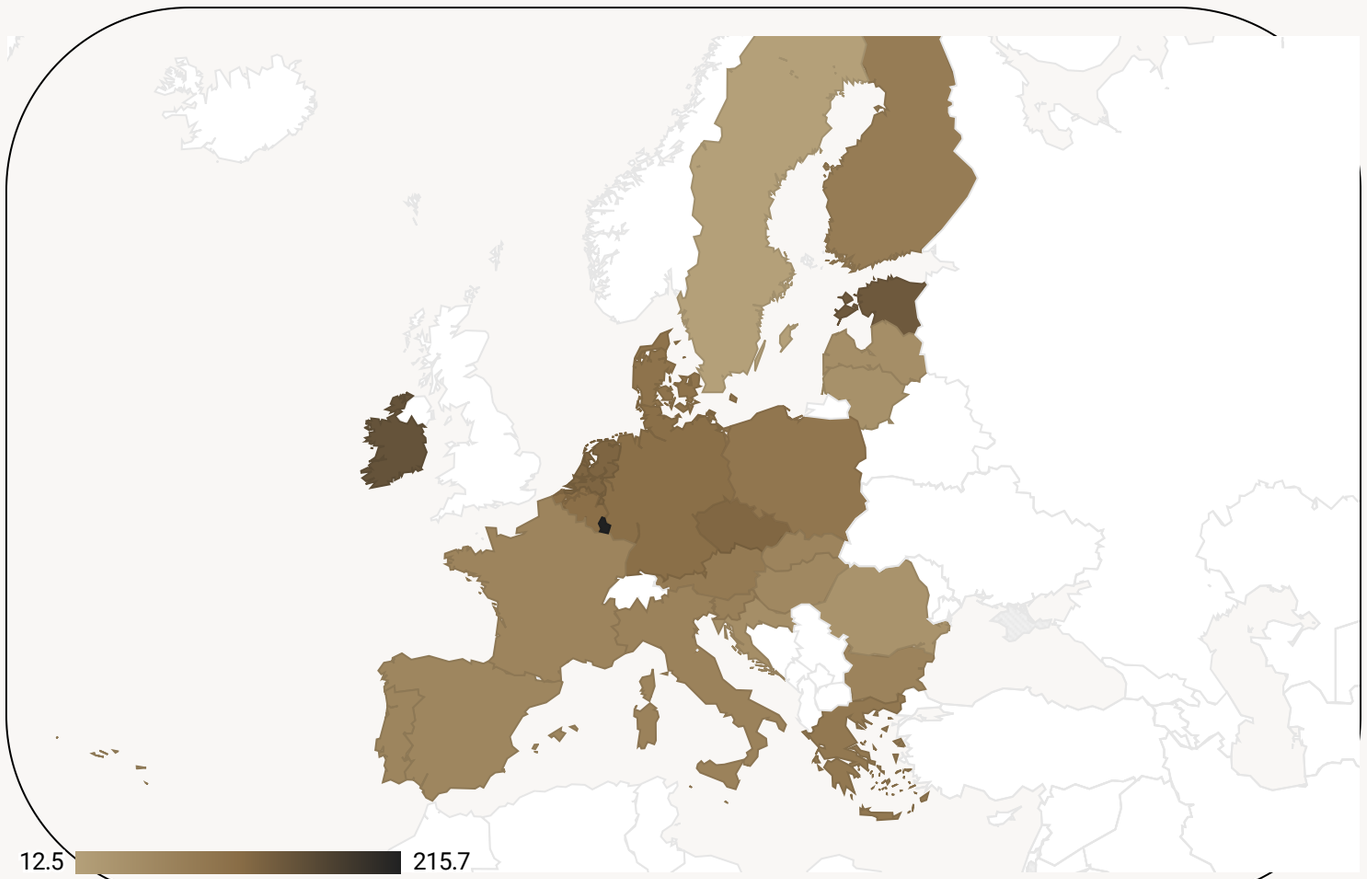


Geo Chart of Countries gas emissions

Mapping Geospatial Data:

Geospatial maps offer a powerful tool for visualizing data associated with country names, postal codes, states, and more. In this instance, we have utilized a map to depict the distribution of greenhouse gas emissions across various countries.

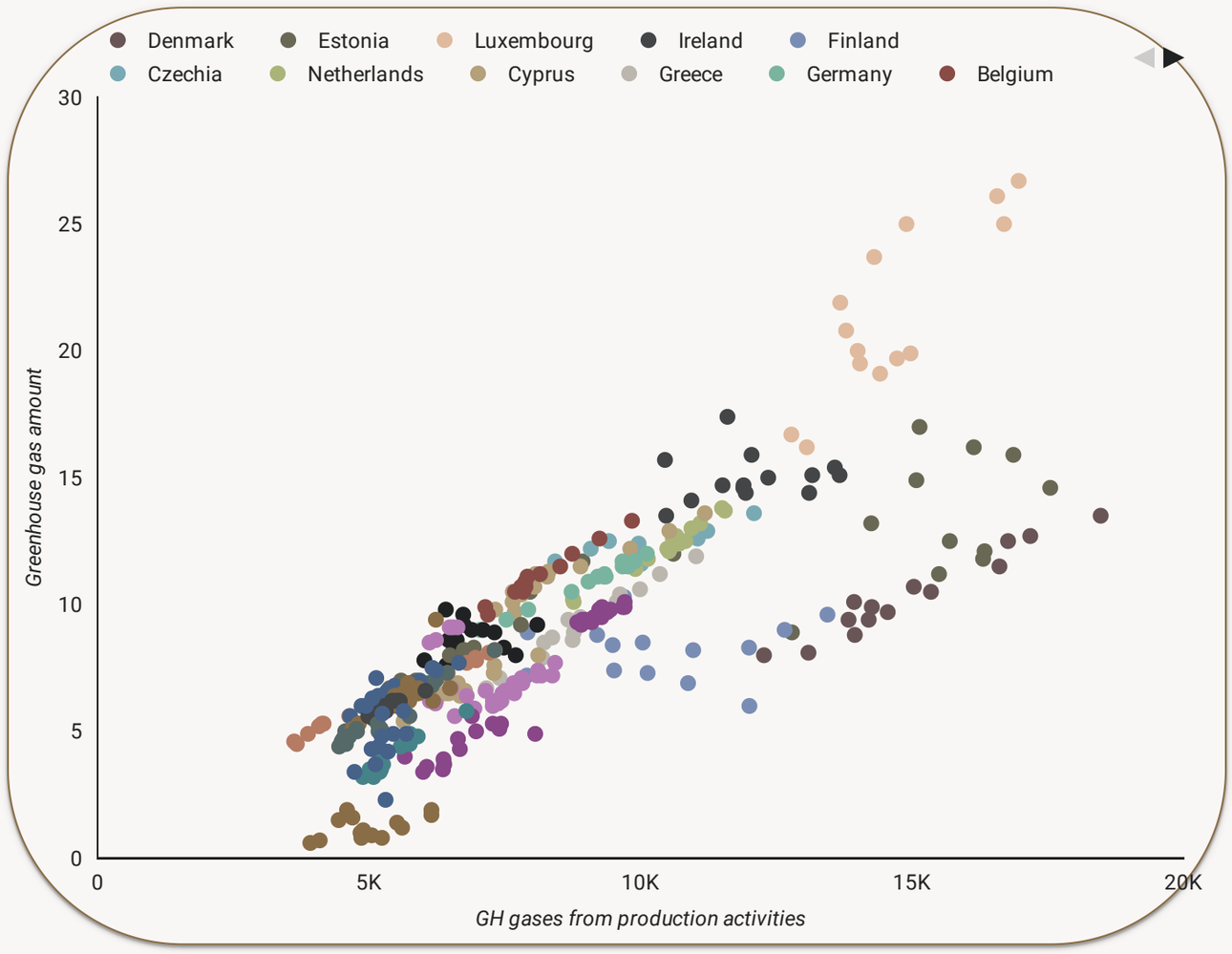
Given that the unit of measurement is tonnes per capita, which inherently considers population, the geospatial map emerges as the ideal choice for showcasing this data.

Greenhouse gases from production activities vs greenhouse gas amount

Making connections and relationships:

Scatter plots are instrumental in exploring the relationship between different variables. In this scenario, we constructed one to examine whether greenhouse gas emissions from production activities significantly influence the total amount.

Furthermore, we enhanced the visualization by color-coding the bubbles according to the countries. This dual approach enables the chart to illustrate both the correlation between the variables and the countries responsible for the largest emissions, providing insightful information accessible through interactive clicking on the bubbles.



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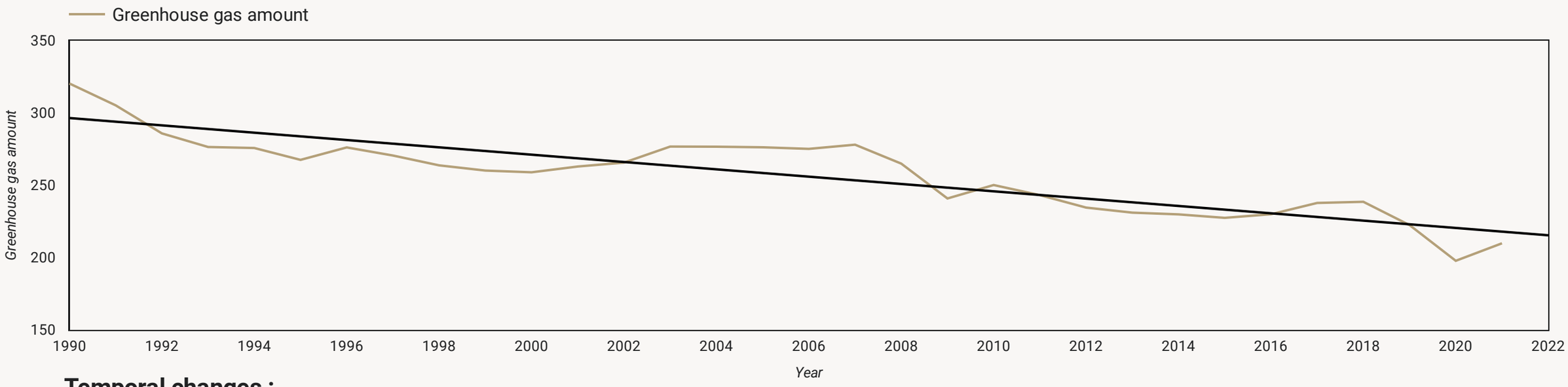
Greenhouse gas amount per year from 1990 to 2021



Temporal changes :

Time series line charts offer a visually engaging way to discern data trends, making it effortless to spot patterns and temporal changes. Their capacity for comparing distinct time periods enhances the analysis of temporal trends and the prediction of future behaviors.

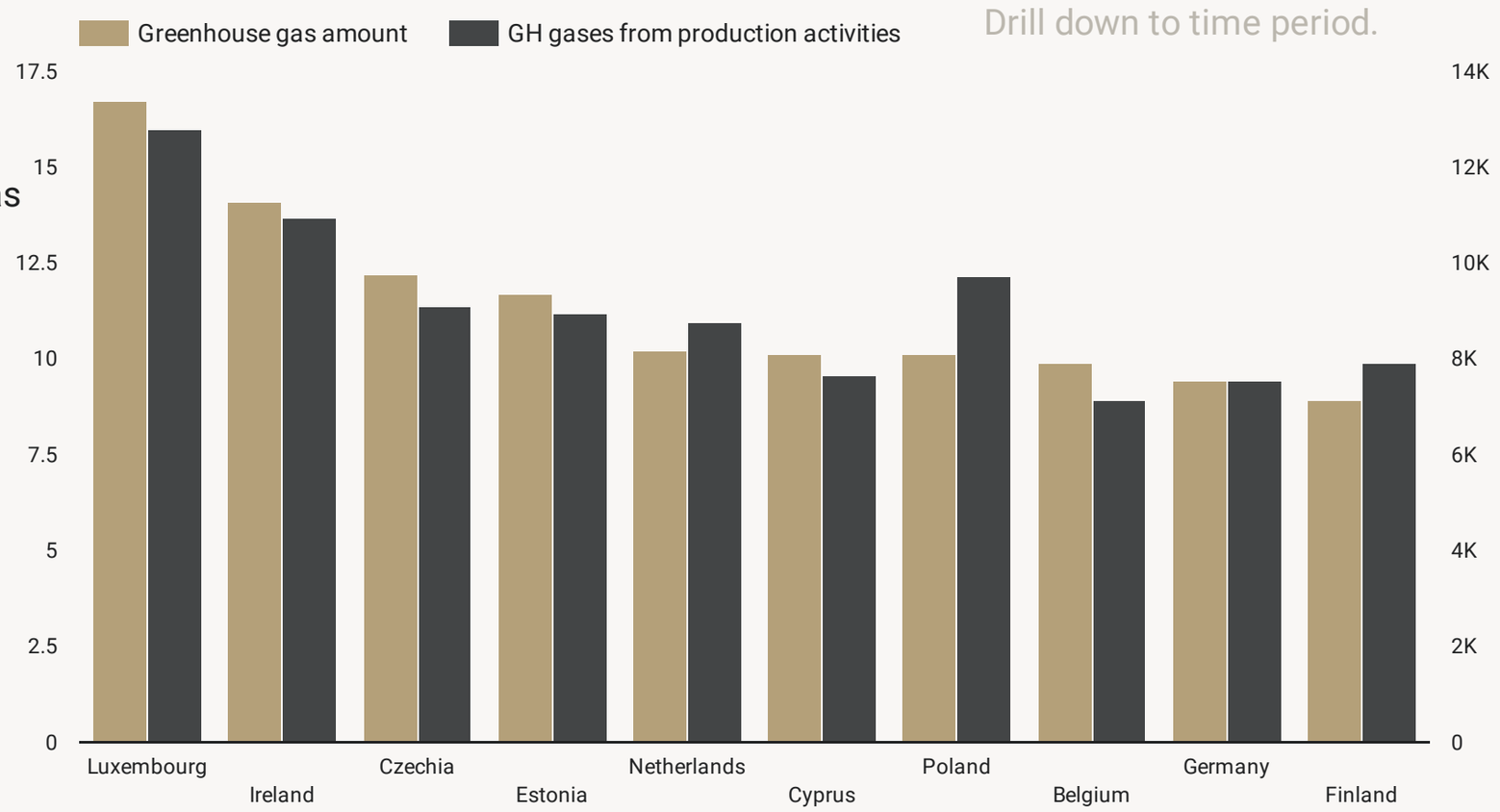
In this report, we utilized a line chart to visualize the decline in greenhouse gas emissions. To maintain clarity and avoid clutter, not all countries' data lines were included, ensuring a concise and focused presentation.

Countries in terms of greenhouse gas amount and greenhouse gases from production activities

Showing hierarchies & Comparing categories:

In the bar chart, countries are sorted in descending order based on their greenhouse gas emissions, offering a valuable reference point for identifying nations requiring assistance in reducing emissions.

Additionally, the inclusion of greenhouse gas emissions from production activities provides insightful comparisons, such as in the case of Denmark, where high production activity does not necessarily correlate with high total emissions. This highlights the nuanced relationship between production and emission reduction efforts across different countries.



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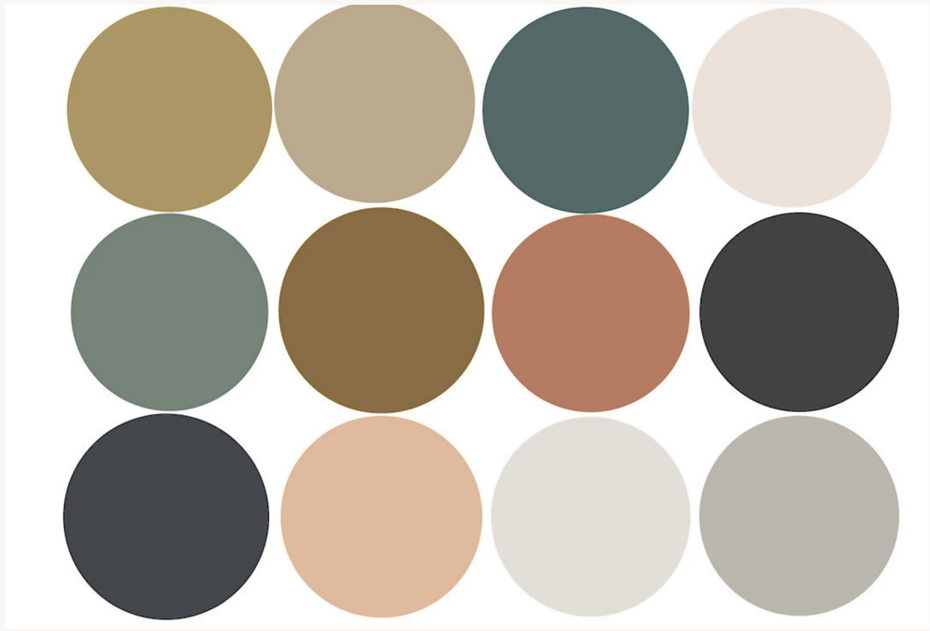
Notes:
In designing this dashboard, my primary consideration was its utility as a reporting tool. Accordingly, each graph is accompanied by a clear title and an explanation of its relevance within the text. I've deliberately limited the number of graphs on each page to two, adhering to the principle of "less is more" and recognizing the importance of avoiding overwhelming the user with excessive visual information. The layout follows the natural flow of pre-attentive attributes, guiding the viewer's attention from the upper-left to the lower-right of the page. Also the grid lines are omitted to make the graphs cleaner.

Moreover, the user has the flexibility to easily convert the text into a detailed analysis, streamlining the report creation process. Given that the data is based on annual observations, as opposed to more frequent intervals like weekly or monthly, this template is well-suited for generating annual reports efficiently.

Regarding the color scheme, I selected hues associated with greenhouse gases to maintain thematic coherence throughout the dashboard. Here is the chosen color palette:



Overall, this approach aims to enhance usability, streamline the reporting process, and maintain thematic consistency, ensuring a more effective and user-friendly experience for the end user.

Hope you enjoy it.

Dashboard owner - Kangjie Yu