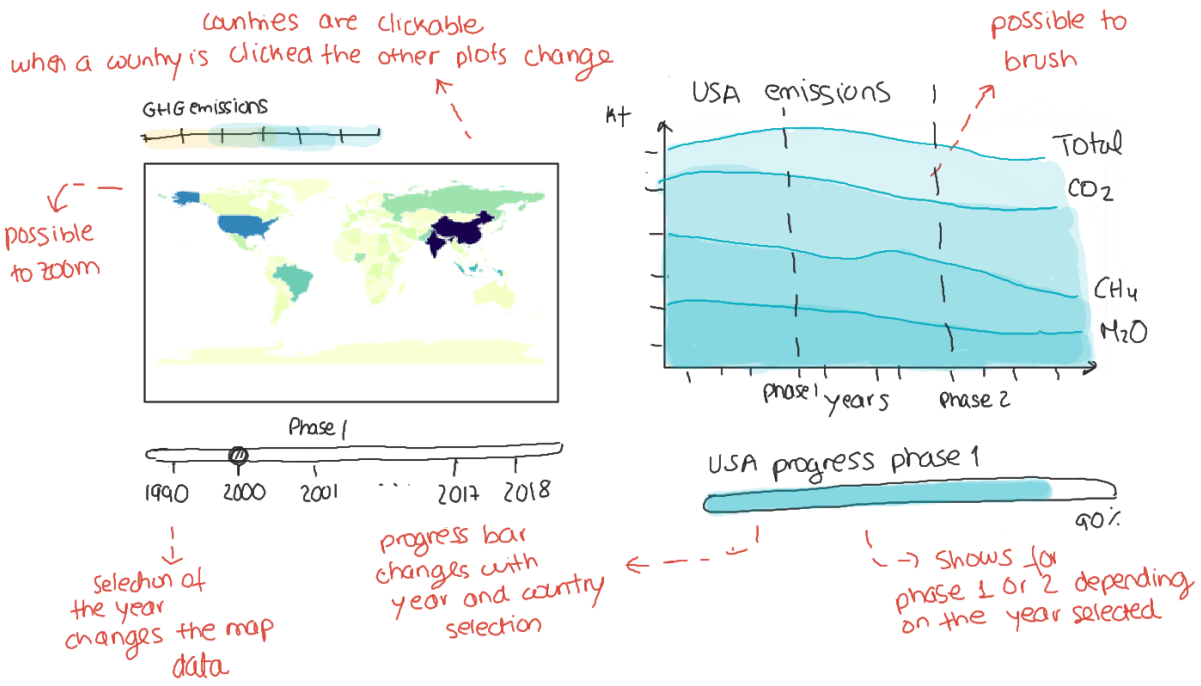
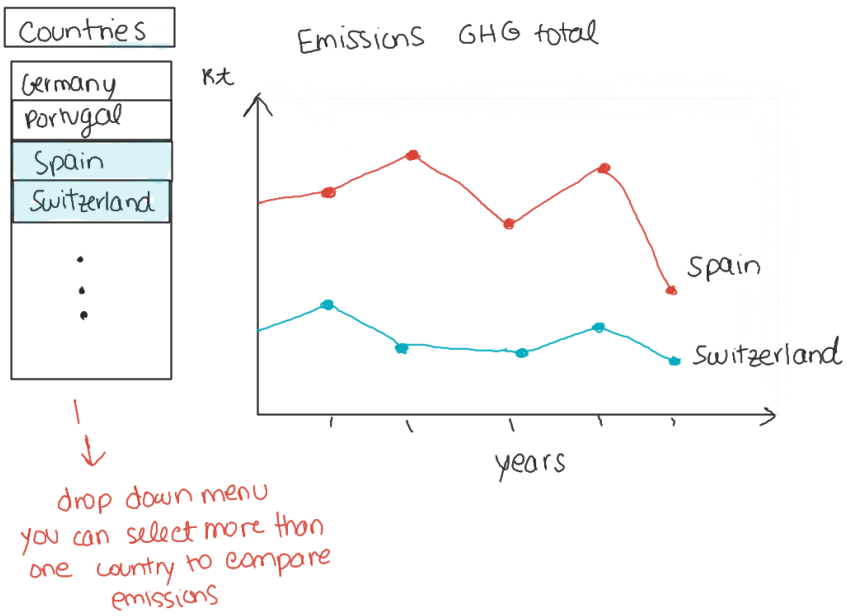
1 General View of the Website

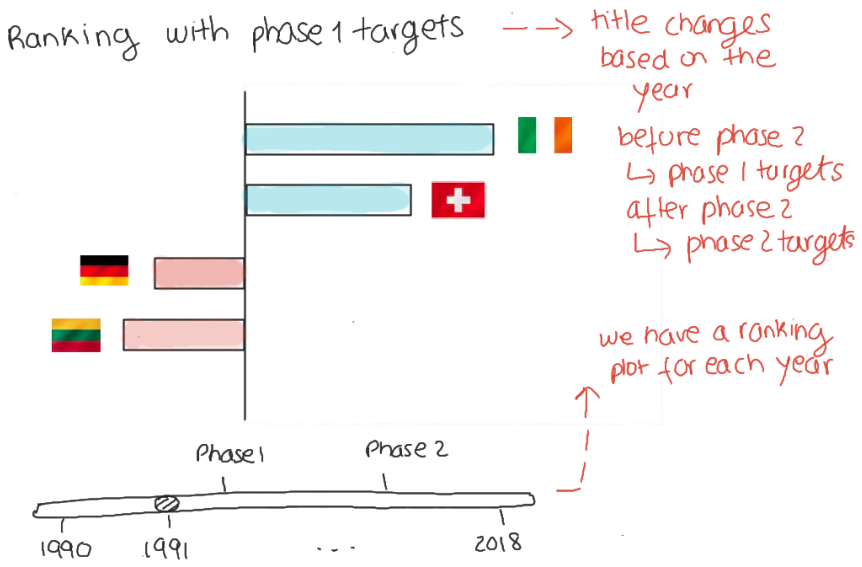
Our website aims at showing the effect of the Kyoto Agreement (which is an extension of the UNFCCC) in reducing GHG emissions.

To do so, we will first use **an interactive world map** that, with a click, provides information about the emissions of the selected countries (plotted on the right). This visualization aims at giving a global overview of the data to a user that first connects to the website, along with a first intuition on how this country manages to reach its Kyoto goal.



Then, we will implement an **interactive plot**, where, thanks to a search bar and a selector, one can add and remove countries to be plotted as well as the type of emission to show over the years. A brush will be used to navigate smoothly throughout the years, and better see the effect of the agreements on emissions. This plot will allow the user to see how countries managed to change their different emissions (CO_2, N_2O, CH_4) after each agreements (vertical lines on the year it has been signed).





Finally, following the same idea, a **bar chart ranking** will rank countries according to how close they are to their emission goals. A slider will be added to navigate throughout the years. This final visualization will help the reader to get a clear and final view on which countries perform well and respect their engagements, and which do not (and by how much).

After this third plot, we will offer a short analysis along with links to other resources to act on GHG emissions.

2 Tools and lectures needed

- **Tools needed:** *D3-brush* and *D3-zoom* for the timeline of our interactive plot, World map from D3 and *Leaflet* to display the map, *Chart.js* along with *d3-simple-slider* for bar plots, *Bootstrap* for the layout of the website along with *jQuery* and *Popper*.

- **Lectures needed:** Lectures about *D3.js*, *Web Development* (HTML,CSS, SVG,...) and *Interactions* for all the visualizations. Lectures about *Perception colors* and *Maps* for the World map. Lectures about *Tabular data* and *Storytelling* for shedding light on the effect of Kyoto and Paris agreements on GHG emissions.

3 Independent pieces to implement

Our goal of showing the impact of the Kyoto and Paris Agreements on reducing emissions can be split into three independent pieces: 1) the World Map for localization and broad overview of the data. 2) Emission plot to visualize the emissions of different gas of different countries in a interactive manner. 3) A bar plot ranking to get a clear and undeniable view on the impact of the Agreements.

These three pieces can be implemented independently, and offer a different experience to the user. He can indeed explore the data by himself (map and plot). This step is important, as intuitions, reasonings and findings that are made alone are more likely to stick than if it were shown directly to you. Finally, the user will get to see the heartbreaking unmet goals of the Agreements with the ranking bar chart.

4 Extra ideas

Here are a few extra ideas we would like to implement for a more user-friendly experience:

- A tutorial (inspired by Sand dance) with pop-up messages to teach the user how to best use the different visualization.

- Include GHG by sector analysis visualizations.