

# **1 INTRODUCTION**

## **1.1 OVERVIEW**

Global warming is one of the biggest challenges currently being faced by the human race, although correlation is not causation, a likely cause of global warming is due to increased atmospheric carbon dioxide from human activities. CO2 Emission refers to the Carbon Dioxide emitted throughout the world. For this analysis we will be focusing on CO2 Emissions and its effect on the world we live in as well as some key factors and stats that may play a role in the emission of CO2 globally. Fossil fuel use is the primary source of CO2. The data throws light onto how much fossil fuels are burnt, per year per nation, which amounts to an increase in CO2 every year. This will help researchers and environment experts to predict global warming. So countries should set a goal to decrease this amount yearly. Analysing Global Co2 Emission across countries from 1975 to 2020. This dataset contains a record of Co2 Emission by each Country and Region of Earth, here we are going to analyse and visualise Country wise, Region wise and Overall Co2 Emission on Earth.

## **1.2 PURPOSE**

The Covid-19 pandemic had far-reaching impacts on energy demand in 2020, reducing global CO<sub>2</sub> emissions by 5.2%. However, the world has experienced an extremely rapid economic recovery since then, driven by unprecedented fiscal and monetary stimulus and a fast – although uneven – roll-out of vaccines. The recovery of energy demand in 2021 was compounded by adverse weather and energy market conditions, which led to more coal being burnt despite renewable power generation registering its largest ever annual growth.

The world must now ensure that the global rebound in emissions in 2021 was a one-off – and that sustainable investments combined with the accelerated deployment of clean

energy technologies will reduce CO<sub>2</sub> emissions in 2022, keeping alive the possibility of reducing global CO<sub>2</sub> emissions to net zero by 2050.

## 2.1 EMPATHY MAP

Template

## Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

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### Build empathy

The information you add here should be representative of the observations and research you've done about your users.

**Says**  
What have we heard them say?  
What can we imagine them saying?

**Thinks**  
What are their wants, needs, hopes, and dreams? What other thoughts might influence their behavior?

**Does**  
What behavior have we observed?  
What can we imagine them doing?

**Feels**  
What are their fears, frustrations, and anxieties? What other feelings might influence their behavior?

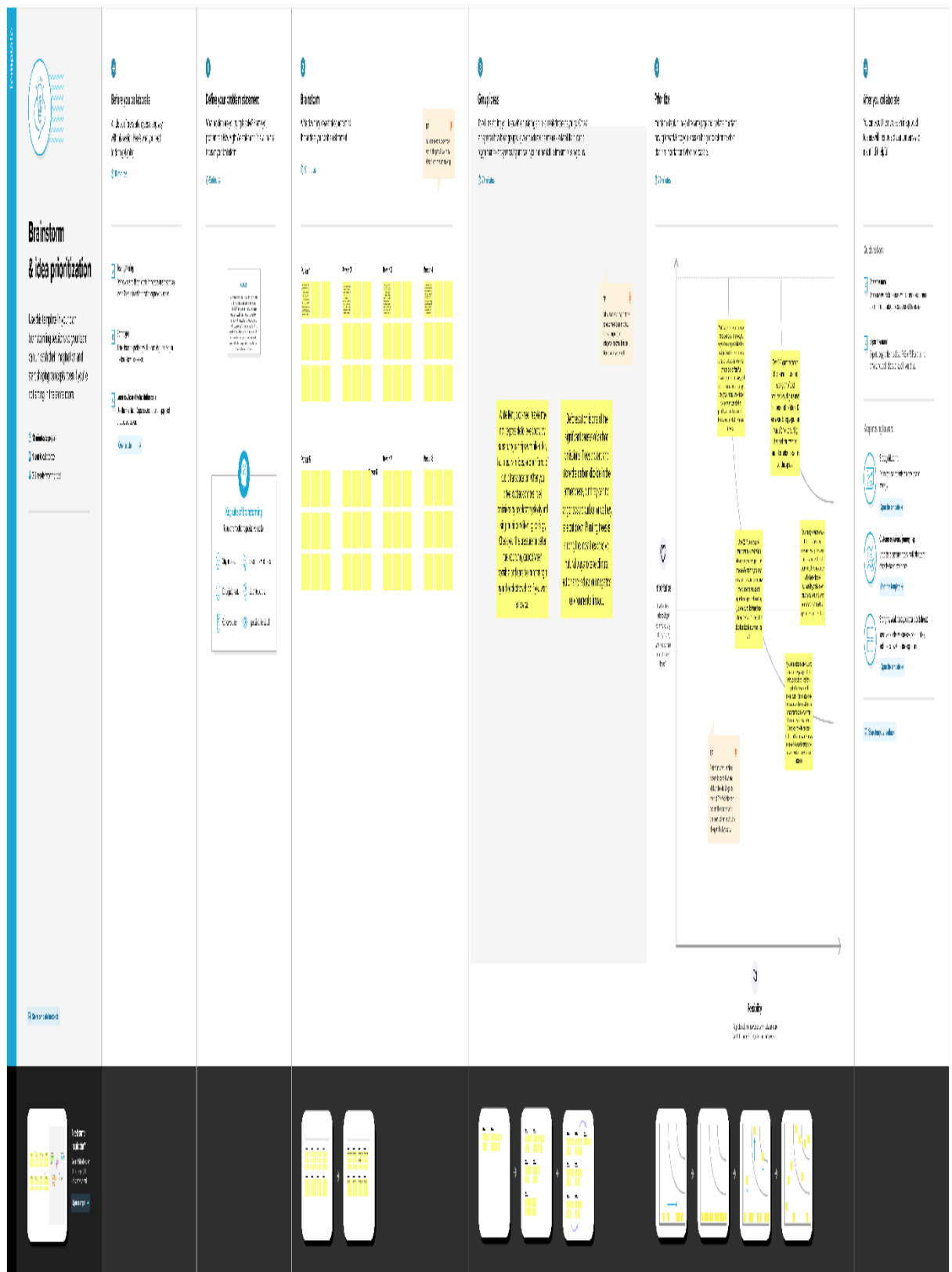
**CO2 EMISSION**

#### Need some inspiration?

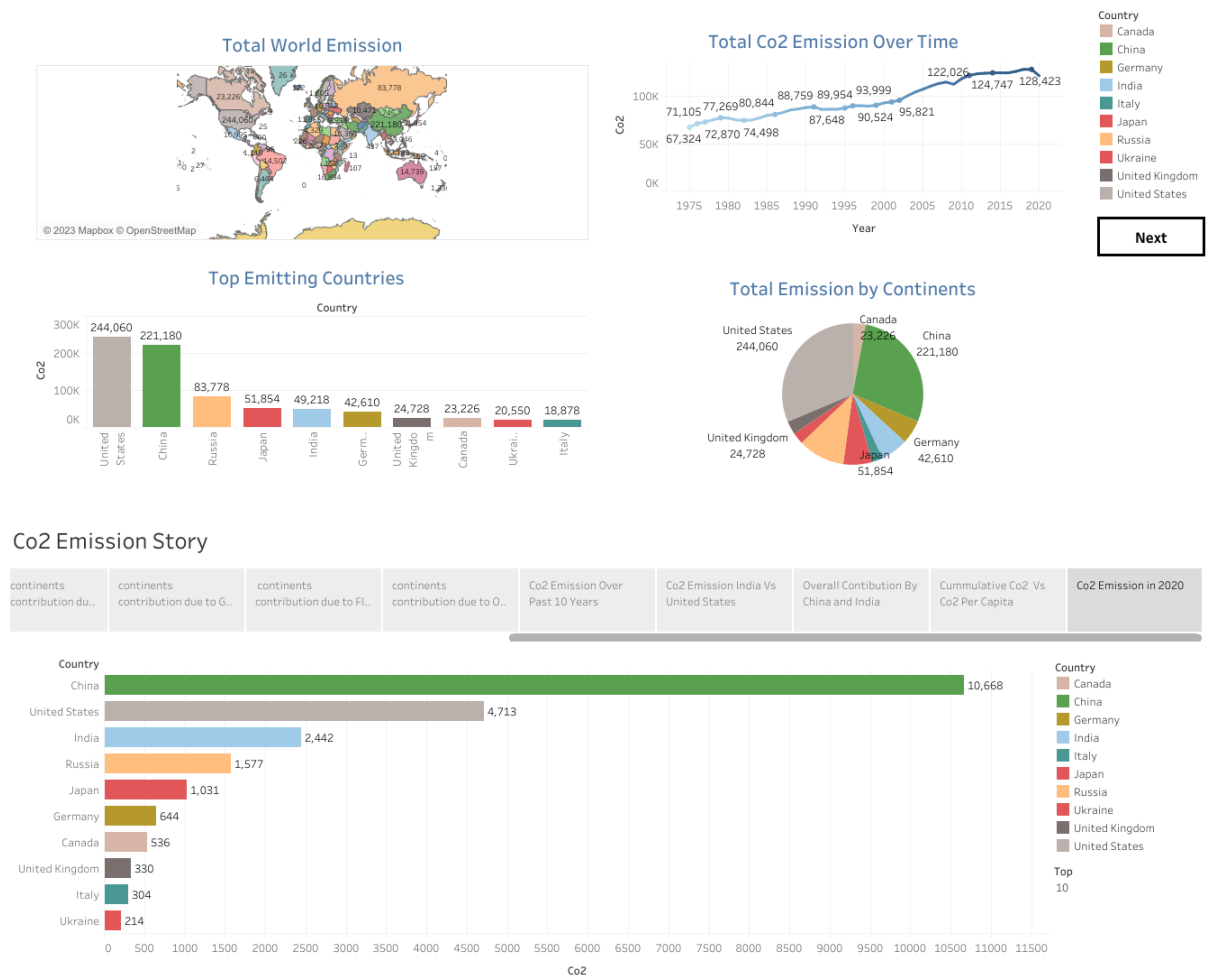
See a finished version of this template to kickstart your work.

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## 2.2 IDEATION & BRAINSTROMING MAP



### 3.RESULT



### 4.ADVANTAGES & DISADVANTAGES

#### 4.1 ADVANTAGES

- All animals, including humans, owe their existence to green plants that use energy from sunlight to convert CO<sub>2</sub> and water molecules into carbohydrates, releasing oxygen into the atmosphere in the process.
- Land plants get the carbon they need from CO<sub>2</sub> in the air, and they obtain other essential nutrients from the soil. Just as plants grow better in fertilized, well-watered soils, they grow better with CO<sub>2</sub> concentrations several times higher

than the Earth's current level. For this reason, additional CO<sub>2</sub> is often pumped into greenhouses to enhance plant growth.

- Respiration is also the same process by which organic organisms decompose. This process results in both the release of water and carbon dioxide in the air. That's because the decomposing bacteria breaks down both plants and other living organisms to release CO<sub>2</sub> in the atmosphere, where it's available to green plants for photosynthesis.

## **4.2 DISADVANTAGES**

- ❖ Since the Industrial Revolution, human sources of carbon dioxide emissions have been growing. Human activities such as the burning of oil, coal and gas, as well as deforestation are the primary cause of the increased carbon dioxide concentrations in the atmosphere.
- ❖ The levels of pollutants in the air can detrimentally affect our health, leading to chronic health conditions and premature death.
- ❖ According to researchers, poor air quality caused by carbon emissions can lead to heart attacks, strokes, lung disease, high blood pressure, and even diabetes.
- ❖ Poor air quality exacerbates health issues for people with pre-existing chronic conditions, increasing the frequency of their healthcare visits, which can overburden the healthcare system.
- ❖ Wildfires and carbon emissions are part of a harmful cycle. Wildfires emit dangerous amounts of carbon emissions, and rising carbon emissions cause extreme weather conditions like heat waves, which often contribute to wildfires.

## **5.APPLICATIONS**

There are both natural and human sources of carbon dioxide emissions. Natural sources include decomposition, ocean release and respiration. Human sources come from activities like cement production, deforestation as well as the burning of fossil fuels like coal, oil and natural gas.

### **5.1 SOIL RESPIRATION AND DECOMPOSITION**

Another important natural source of carbon dioxide is soil respiration and decomposition, which accounts for 28.56% of natural emissions. Many organisms that live in the Earth's soil use respiration to produce energy. Amongst them are decomposers who break down dead organic material. Both of these processes releases carbon dioxide as a byproduct. Annually these soil organisms create about 220 billion tonnes of carbon dioxide emissions.

### **5.2 VOLCANIC ERUPTIONS**

A minor amount carbon dioxide is created by volcanic eruptions, which accounts for 0.03% of natural emissions. Volcanic eruptions release magma, ash, dust and gases from deep below the Earth's surface. One of the gases released is carbon dioxide. Annually this process creates about 0.15 to 0.26 billion tonnes of carbon dioxide emissions.

## **6 CONCLUSION**

- ❖ Reduce your energy consumption. For example, turn down the heat, turn off your lights when you're gone, and turn off your electronics when they're not in use. Drive efficiently, if at all. You can do many things while driving to reduce

emissions. For example, go easy on the gas and the brakes, or consider using cruise control on long drives.

- ❖ Invest in renewable energy sources, such as solar panels.
- ❖ Being mindful of how your actions create greenhouse gas emissions can help you reduce your carbon footprint. The easiest way to do this is by planting new forests (afforestation) or restoring old ones (reforestation). Other enhanced land management practices can help, as can new technologies that suck CO<sub>2</sub> out of the air (“direct air capture”), or prevent it from leaving smokestacks (“carbon capture and storage”).

## **7. FUTURE SCOPE**

- ❖ A target of 40 percent installed electricity generation capacity from non-fossil-based energy resources by 2030. This included an increase in renewable generation capacity to 175 gigawatts (GW) by 2022, driven by solar growing to 100 GW.
- ❖ A target to use 5 percent biodiesel in railways, though without an end date.
- ❖ A commitment to reduce economy-wide emissions intensity with respect to GDP by 33–35 percent below 2005 levels by 2030. This was complemented by another target to save 10 percent of energy consumption by 2018–19, though a baseline for measuring reduction was not specified.
- ❖ A carbon removal target of creating an additional carbon sink of 2.5–3 billion metric tons of CO<sub>2</sub> equivalent through additional forest and tree cover by 2030.