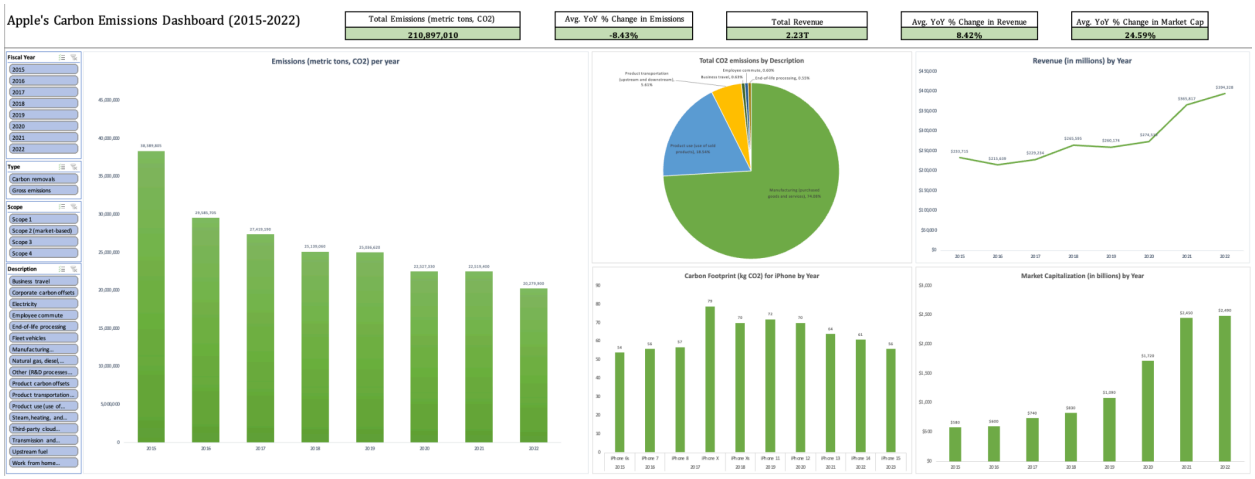

About the Project

A breakdown of Apple's greenhouse gas emissions from 2015 to 2022 as they aim to reach net zero emissions by 2030. In 2020, after announcing their corporate operations were officially carbon neutral, Apple pledged to make their products carbon neutral by 2030. To achieve this goal, they set their emissions for 2015 (38.4 million metric tons CO2e) as the baseline and will aim to reduce them by 75% by 2030. The remaining 25% of gross emissions (9.6 million metric tons CO2e) will be removed using carbon offsets, bringing the net emissions to 0. This dataset includes every source of emissions from both their corporate operations and their product life cycle, the carbon footprint of their baseline iPhone in the same period, and normalizing factors like sales, market cap, and employees.

Questions for the Analysis

1. How has Apple’s greenhouse gas emissions changed in the past 7 years? Have they decreased the carbon footprint of their iPhone products?
2. Are Apple’s green initiatives profitable?
3. Where is the majority of their greenhouse gas emissions coming from by description? What about by scope?
4. Where do they need the most reduction in greenhouse gas emissions?
5. Are they on pace to reach zero emissions by 2030? If not, what changes can they make to reach it by 2030?

Key Insights from the Dataset

1. Between 2015-2022, Apple has had an average decrease in carbon dioxide emissions per year by **8.43%**. From 2015-2019 the newly released iPhone saw their carbon footprint slightly increase. Since 2019, the yearly iPhone upgrades have seen an average yearly decrease of **6.1%** in their carbon footprint.

2. Apple's green initiatives have not only led to a decrease in emissions but have also resulted in an average **8.2%** year over year increase in revenue and an average **24.59%** yearly increase in market capitalization.
3. Manufacturing (~74%), product use (~18%), and product transportation (~6%) makes up **~98%** of Apple's emissions. Scope 3 (emissions from purchased goods and services, transportation and distribution, business travel, employee commute, product use, and end of life) emissions are responsible for almost 100% of all emissions by Apple. Corporate emissions are only responsible for 1.23% of their carbon dioxide emissions from 2015-2022. 98.77% is from the product life cycle emissions.
4. Manufacturing needs to see the largest reduction in greenhouse gas emissions because it is responsible for **74%** of all of Apple's carbon dioxide emissions between 2015-2022. Apple will reach a net zero emissions in manufacturing between 2028-2029 if they continue on pace with the progress made between 2015-2022 in reducing emissions.
5. Forecasting based on Apple's recent reduction in greenhouse gas emissions for the past 7 years, shows that continued progress at the same rate will result in reaching yearly net carbon dioxide emissions of 2-2.5 million metric tons per year by 2030. Due to their recent success in doubling carbon removal from 2020 to 2021 and from 2021 to 2022, they should be able to offset the remaining 2-2.5 million metric tons of carbon dioxide emissions in 2030 and reach their goal of zero net emissions.

Recommendations

1. Apple should keep an eye on areas in their corporate operation that have seen an increase in emissions. These areas are as follows: fleet vehicles, natural gas/diesel/propane, product transportation, steam/heating/cooling, upstream fuel, and work from home.
2. Apple should continue progressing at the same rate of reducing emissions to reach their goal of net zero emissions by 2030 because of its positive impact on the planet as well as its positive impact on their total revenue and market capitalization.

Tools Used

- Data manipulation techniques utilized to replace and fill blanks in the dataset.
- Pivot tables, Pivot charts, Filters, SORT used to organize and create charts that allow for analysis of key performance indicators such as revenue, total emissions, and year over year percent change in emissions, revenue, and market capitalization.

- Advanced charting utilizing interactive and conditionally formatted charts to show emissions by percent of total, scope, type, year, and description.