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MBAI 5400G

12 November 2022

Assignment 2

For Assignment 2, I decided to choose **Climate Change** as my topic of interest. This is not a formal paper but rather acts as a guide that breaks down my approach to this assignment. This write-up will follow the following structure:

1. Explanation of the data set and the metrics and variables that I used.
2. The rough visualizations and calculations that I did in Microsoft Excel to see if my ideas make mathematical sense.
3. Money shot: The infographic that will go out to the public to ‘educate’ them about climate change. The narrative that I have decided to build is that the issue of climate change should not be our government’s top priority as the factors that contribute to the worsening of the climate are actually improving over time or staying constant.
4. An explanation about the infographic including my decision-making process.
5. A fun video clip of Kamala Harris laughing about her favorite type of visualization.

Part I

The data set that I use for my analysis was downloaded from **World Bank Open Data**. This is the exact link: <https://data.worldbank.org/topic/19>

In its original form, the data set is a list of 76 metrics for 266 countries from 1960 to 2021. The focus of my deceptive analysis is Canada. For my infographic, I employ the help of seven metrics that are often relied upon to kick-start any climate change argument. I understand that there are a wide variety of other variables that one might use to lend legitimacy to their climate change arguments. However, it would not be possible to work with more than 4 – 5 visuals for the purposes of one infographic. Adding a plethora of variables would muddle up the aesthetic of my visualization. I use the following variables, either directly or indirectly for my evaluation:

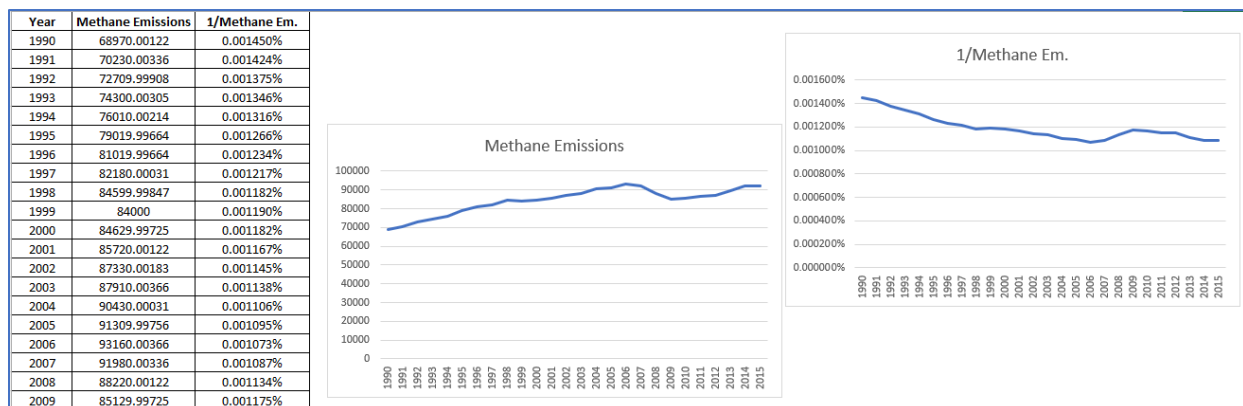
1. Urban Population
2. Total Population
3. Nitrous Oxide emissions (thousand metric tons of CO2 equivalent)
4. Methane emissions (kt of CO2 equivalent)
5. Greenhouse gas emissions (kt of CO2 equivalent)
6. CO2 emissions (kt)
7. Electricity production from renewable sources, excluding hydroelectric (kWh)

Part II

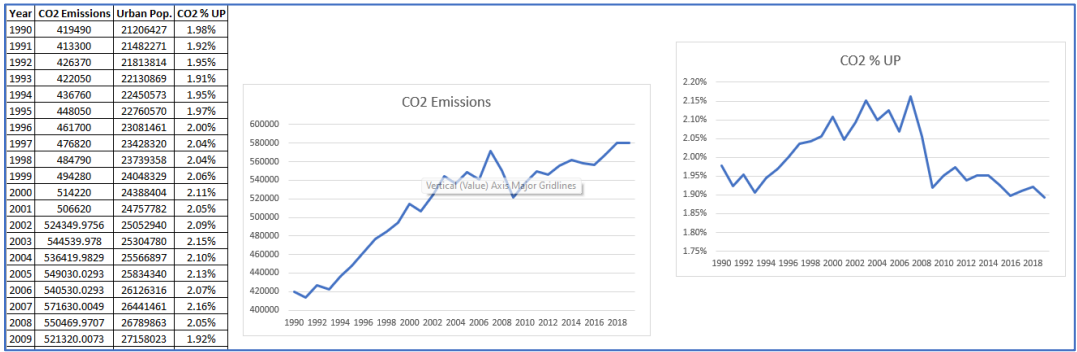
First off, I did some calculations and charted basic graphs in Excel to see how my data behaves in its original form and how it will behave after I run it through some mathematical calculations. My goal was to see what calculations will fit my narrative of displaying misleading climate change graphics. In Part IV, I will talk in detail about the metrics that I have selected and what calculations I ran on them and my rationale for selecting them.

Here are the screenshots from my Excel workbook that I have not cleaned up to look visually pleasing because this is just rough work and would never be published in a real-world setting. I built my actual visuals in Power BI. And my final visuals and the metrics used will slightly differ from these screenshots as I kept getting better ideas once I started working in Power BI and it didn't make sense to update the Excel workbook.

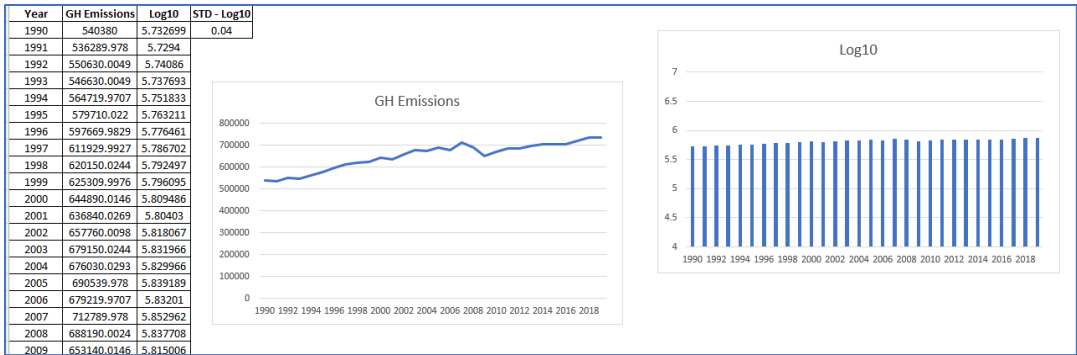
Graphic 1:



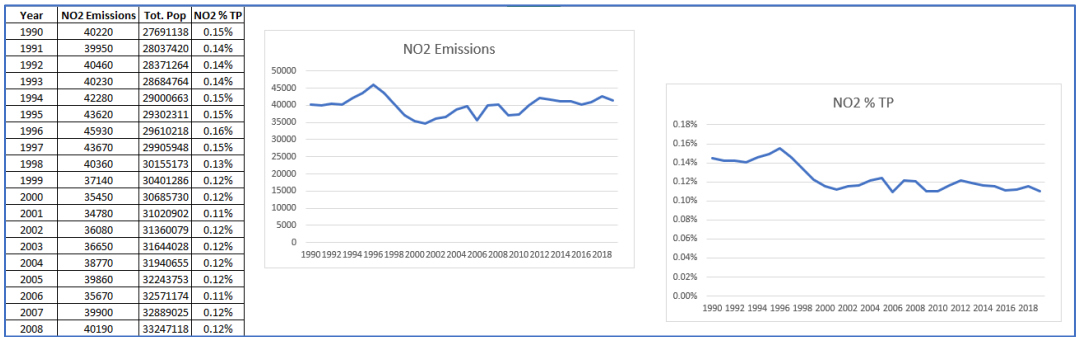
Graphic 2:



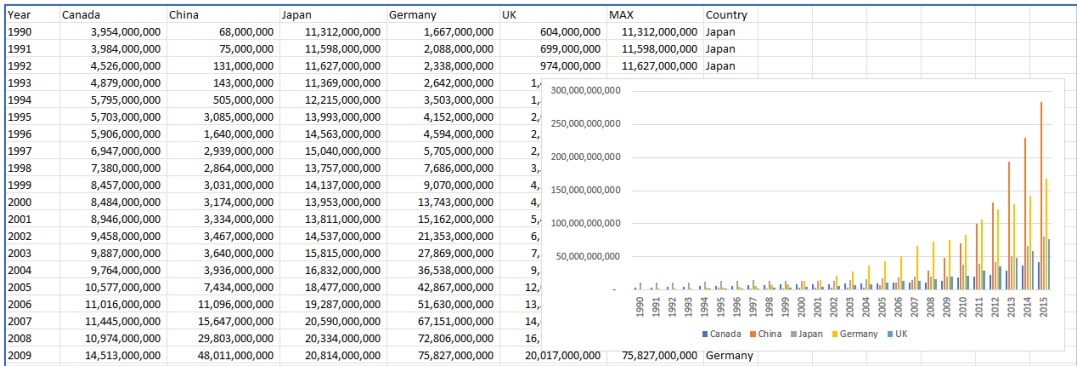
Graphic 3:



Graphic 4:

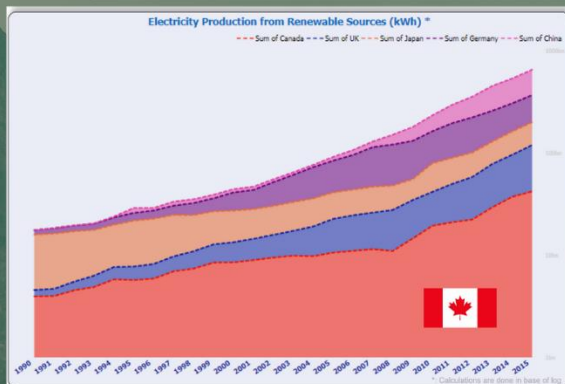


Graphic 5:

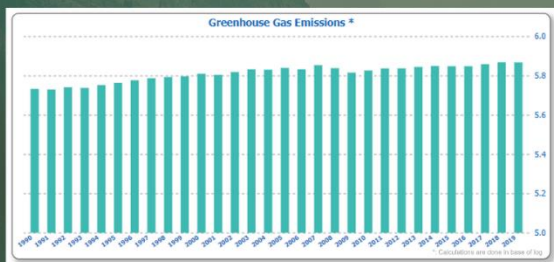


Part III: The Money Shot

CLIMATE CHANGE: NOT A CANADIAN PROBLEM

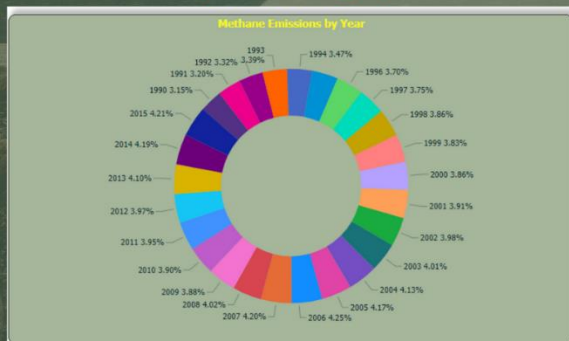


**CANADA
PRODUCES THE
HIGHEST
AMOUNT OF
RENEWABLE
ENERGY**

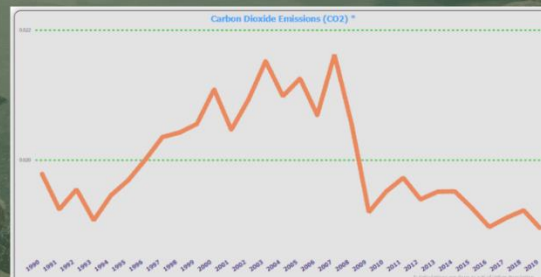
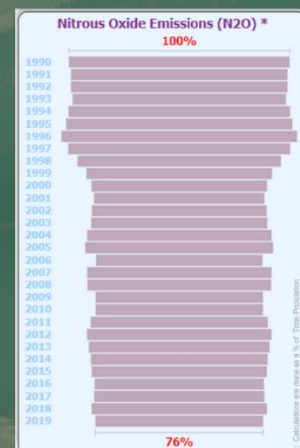


Greenhouse Gas emissions
have remained practically
constant since 1990

Methane Gas emissions has
not increased more than a
few percentage points



Nitrous
Oxide
emissions
have
reduced
by 24%



Carbon Dioxide emissions have
starkly reduced in the last 15 years

For more information, email: climatechangeisnotreal@dexterlabs.com

Part IV

There are 5 graphs that are shown in my infographic.

1. For the first graphic, I decided to show the electricity production from renewable sources for 5 countries (Canada, China, Germany, Japan, United Kingdom). The type of visualization that I used is a Stacked Area Chart. The trick I used to give it a deceptive look was to change the y-axis to a logarithmic scale. By changing it to logarithmic scale, the perception I hope people get is that since Canada occupies the largest share of the graph, they are also producing the highest amount of renewable energy out of the 5 countries.
2. For the second graphic, I decided to show the greenhouse gas emissions in Canada. The type of chart I used is a simple Bar Chart. I took the log of the values to convert the numbers to revolve around 5. My goal was to show that the bars are almost of equal length meaning that the greenhouse gas emissions have remained constant over time.
3. For the third graphic, I decided to show the nitrous oxide emissions in Canada. The type of graphic that I used is a Funnel Chart. I first did a small calculation which was to divide the emissions by the total population of Canada in that year. After plotting my calculated percent column over time, the resulting graph makes it seem that the emissions have steadily decreased over time.
4. For the fourth graphic, I decided to show the methane emissions per year in Canada. The type of graphic that I used is a Donut Chart. My final values show the methane emissions for a particular year as a percentage of the total emissions. The donut chart has approximately equal sized segments giving the impression that the methane emissions have not worsened over time.
5. For the fifth graphic, I decided to show the carbon dioxide emissions over the years in Canada. The type of graphic that I used is a Line Chart because I wanted to emphasize the downward trend. I divided the emissions by the urban population that helped me create the deceptive illusion that carbon dioxide emissions have reduced over the years which is not the case in reality.

From my experience, I know that if you hand a flyer to a random person, they will glance at it for just a few seconds. And they will mostly focus on the visuals. So, I approached the

infographic with the intention of showing as many visuals as possible and to keep the text to a bare minimum.

My goal is making Canadians believe that climate change is not as big of an issue as it has been made out to be. As for the targeted audience, I believe this infographic will work best when it is targeted to groups of people that are climate change deniers and have a very basic educational background. The reason I have not used trendlines or any other statistical metrics is to keep the infographic as simple as possible. If my objective was to convince a group of people to vote for me simply based on climate change, I think my infographic will nudge them in the right direction.

Part V

I came across this video by a complete accident, and I am glad that I did.

<https://youtu.be/r-SUdkc5XI4>