ONTARIO - ENERGY CONSUMPTION ANALYSIS

Dataset:

The dataset contains the following information:

- raw energy consumption and GHG emission data
- data that has been normalized to account for GHG emissions
- The names of those BPS organizations that did not report their 2011-2020 energy* consumption data.

Sectors:

The BPS organizations include:

- municipal service boards,
- school boards,
- universities,
- colleges and
- hospitals

The school board and Hospitals are the 2 sectors that have regularly reported their Energy consumptions.

Energy Emissions:

The dataset has information of Green House Gas Emissions and the Energy Intensities between the years 2011- 2020.

## Reasons for GHG Emissions:

School Board:

The study shows that emission of greenhouse gases from schools stand at 9.4 metric tons yearly. They spread from heating of school buildings, the students and staff wastes, also from the activities of companies providing goods and services to schools.
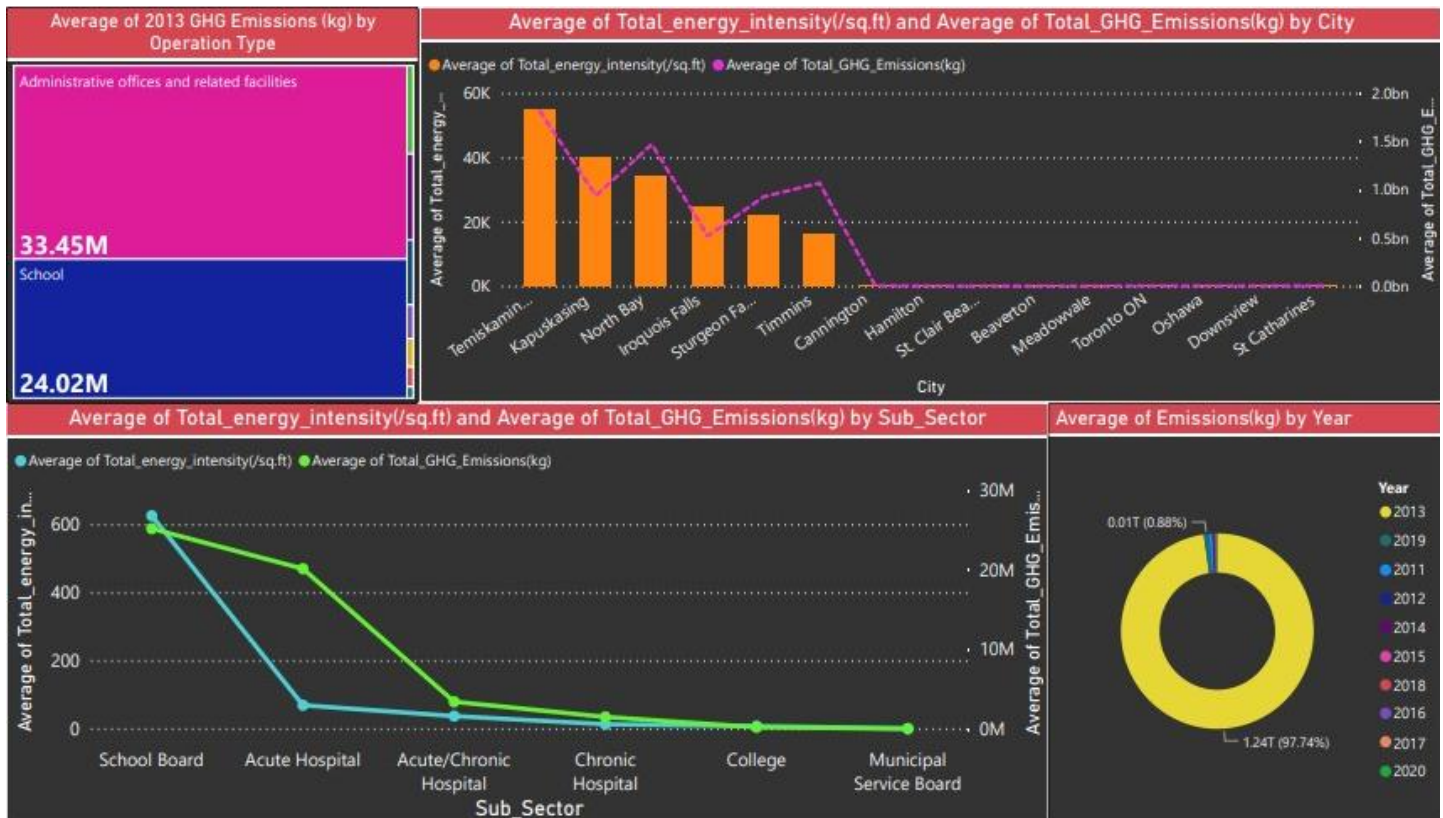
Hospitals:

The supply chain accounts for the majority of health care emissions at 82%, with pharmaceuticals, chemicals, and medical devices as the most emissions-intensive elements, according to the 2020 analysis.

POWER BI REPORT:
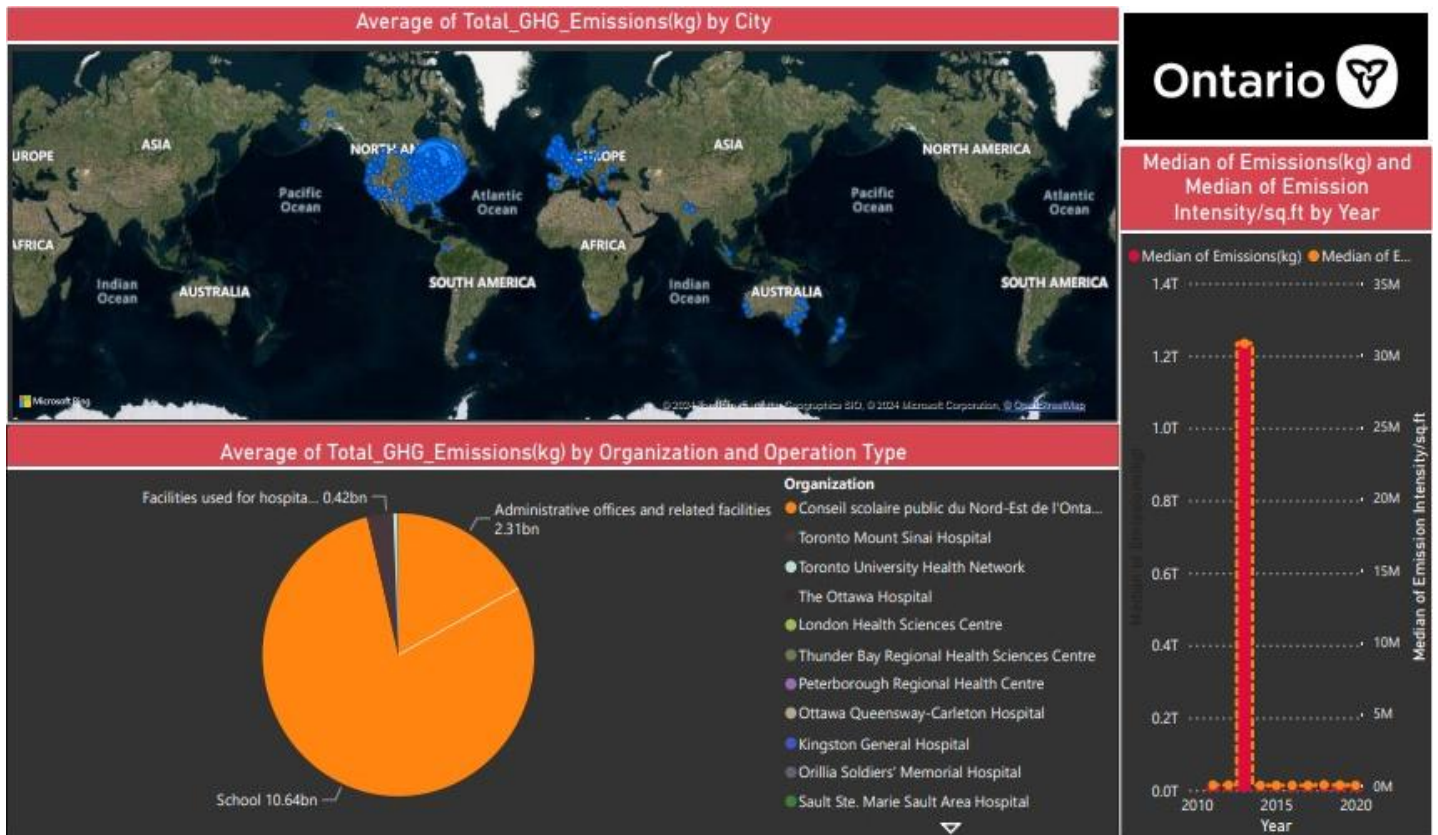
- The total Energy emissions are the most in United States followed by European countries and Australia. But here as the reports are from Ontario, it mainly includes the emissions data from Canada and US. India ranks 8th in GHG emissions.

- Most of the emissions have been reported for the year 2013 and the Emissions intensity reported is more than 30 million for the year 2013.

- The organization that has more GHG emission is a school named Conseil scolaire in Ontario, followed by Toronto Mount Sinai hospital and Toronto Health Care University.

- The operation type that contributes more of the GHG emission is School with 10.64 billion kg, the Administrative offices and related facilities with 2.3 billion kg, and Hospital Facilities with 0.42 billion kg emissions.

- The line plots show that the school board has the more energy emissions and energy intensity. But the reality is, this is only sector that has regularly reported and hence the values are high and other sectors fall to zero.

- The bar plot compares the GHG emissions between the cities. The cities Temiskaming, Kapukasing, North Bay (the cities in Canada) have reported the most GHG emissions. The average emissions of these cities are around 1 billion kg.

Handling GHG Emissions

GHG Emissions traps the heat and thus warms up the planet. Hence it is important to reduce the GHG Emissions.

- From this data it is clear that most of the organizations do not keep a track or do not report on the Energy consumptions and emissions.

Schools:

- Change to energy-saving light bulbs.

- Switch off lights in empty classrooms and school halls.

- Avoid leaving computers, TVs and printers on standby.

- Unplug chargers when not in use.

- Turn your school's heating down a degree or two.

- Run a more eco-friendly school system(Encourage students and Teachers to use walk or ride cycles)

- Go with the greener alternatives

Hospitals:

- Increase the amount of electricity supply derived from renewable sources.

- Set a goal of reducing anesthetic gas emissions and pressurized metered dose inhaler emissions

- Minimize use of desflurane by removing or limiting desflurane vaporizers(anesthetics)

- Substitute nebulizers, dry-powder inhaler (DPI), and soft-mist inhaler (SMI)

- Switch from disposable to reusable products such as reusable isolation gowns, dishware, linens, surgical supplies

- Reduce waste from Operating Rooms and other procedure areas.