ESP 106 Project Proposal

**Jottings**

Keywords: Energy, Carbon Dioxide emissions, Human Population Impacts

*Unit of Analysis*: China, USA, Russia, Germany (Most affected country in EU by

*Geography (Scale, Location): Country*

Guiding Questions:

* What are the trends in energy consumption and production of fossil fuels and renewable energy since the start of the Russian Invasion of Ukraine?
  + Geographies of focus: China, United States, Russia, Germany, etc (Can decide upon more context)
  + Potential Plots:
    - (1) Overall energy production by source (worldwide) (Context) (Energy Balance?)
    - (2) Natural Gas import/exports (between certain countries), considering restrictions on imported fossil fuels from Russia
    - (2) Was there an increase in renewable energy production or other types of energy resources?
  + Data setup and Processing through R/Analysis
    - Filter world dataset by specific countries, years, and types of energy sources,
    - Logistic regression? Between which two variables?

**Draft Proposal (For Canvas submission):**

Veronica Herrera and Yansong Li will work collaboratively on the ESP 106 project to explore the trends in energy production and consumption since the start of the Russian Invasion of Ukraine. The war’s effects have been realized in the Energy sector which supports the existence and maintenance of worldwide economies and day-to-day activities. Our unit of analysis will be a small collection of countries that are the world’s largest energy producers and those most affected by changes in the energy sector due to fossil fuel restrictions on imports from Russia (i.e. oil and natural gas). These countries include China, the USA, Russia, and Germany.

We will use data sets such as the Monthly Electricity Statistics and Reliance on Russian Fossil from the International Energy Agency. These data sets include worldwide observations, therefore, we will use R to limit our scope/data to specific countries, periods, and energy source types. We will also visualize changes in imports/exports and production/consumption of certain fossil fuels and renewable energy sources within the last year through plotting. There is also consideration of running logistic regression between some of these variables.

**Resource Links:**

Monthly Energy Statistics

<https://www.iea.org/data-and-statistics/data-tools/monthly-electricity-statistics>

Energy Imports, net (% of energy use)

<https://datacatalog.worldbank.org/indicator/b2e6a452-bdce-eb11-bacc-000d3a596ff0/Energy-imports--net----of-energy-use->

Reliance on Russian Fossil Fuels in OECD and EU Countries

<https://www.iea.org/data-and-statistics/data-product/reliance-on-russian-fossil-fuels-in-oecd-and-eu-countries>

Total Energy Production 2021 (For background/context prior to)   
<https://www.eia.gov/international/rankings/world?pa=12&u=0&f=A&v=none&y=01%2F01%2F2021>

Energy Data through Statista:

<https://www.statista.com/search/?q=energy&Search=&qKat=search&newSearch=true&p=1>