Potential Research Project: DECENTRALIZING ECO-LABEL REGIMES

- Community-based sustainability can be much more powerful than top-down federal government sustainability
- Most eco-labels are nationalized, meaning they are managed by the federal government
- We should propose local-level ecolabels that can only apply to the confines of a U.S. city
- Why is this important? Our entire idea for this project was about how not considering the specific location of a manufacturing plant reduces the accuracy of a sustainability assessment. This project still argues that. We're arguing that sustainability should be determined from the bottom-up, not the top-down. Local people understand the environmental conditions of their home far better than the federal government does. Thus, ecolabels should be coming from the local government for only the specific confines of a city
- For the technical side of this project, I want us to design an eco-label for the city of Washington DC. It could be a label that DC business owners could put in their storefronts or restaurant windows to indicate that they've applied for the eco-label and passed a sustainability assessment.

Questions:

1. Which environmental indicators are important in this city? Water usage? Clean energy usage? Where products were sourced?

2. How can we demonstrate a data-driven approach to eco-labeling?

3. We don't need to do a project that decides whether every storefront in DC deserves an eco-label or not, but we do need to demonstrate an example of a business that would receive one and a business that would not receive one, at the very least. Where could we find data to do this type of comparative analysis? What type of data are we looking for?

4. What applications should we employ as we create our eco-labeling software/application?

Data Sources

Open Data DC-
https://opendata.dc.gov/

Building Data-
https://opendata.dc.gov/datasets/DCGIS::building-energy-benchmarking/explore?location=38.898060%2C-77.007563%2C11.41

Potential Contest-
https://ospo.gwu.edu/student-awards

Week 2 Goals:

- **Explore the building and energy data**
- **Explore Open data DC for any interesting environmental Data Sets**
- **Form a Research Question and form an idea for what our "showcase" will look like (an app, or a report or something else visual that we can create).**
- **Any ideas you have for a potential research project.**

Week 2 Notes:

Research Topic: Analysis of energy and water usage university buildings in DC. Which universities are up to standards? Which are not? How can we measure standards with the data? What recommendations do we have for each university?

Building Energy and Water Data Set:

Building Energy and Water Performance Benchmarking Meta Data

Benchmarking App

Information About Clean Energy in DC:

Progress | Clean Energy DC Info

Energy Benchmarking | doee

Possibly Useful Data Set to Identify Buildings: Certificate of Occupancy Data

Building Identifiers and Info Columns:

PID
TAXRECORDFLOORAREA
REPORTEDBUILDINGGROSSFLOORAREA
PRIMARYPROPERTYTYPE_SELFSELECT
OWNEROFRECORD
ADDRESSOFRECORD
REPORTSTATUS
REPORTINGYEAR

Variables of Interest:

ENERGYSTARSCORE
SOURCEEUI_KBTU_FT
TOTGHGEMISSIONS_METRICTONSCO2E
TOTGHGEMISSINTENSITY_KGCO2EFT
WATERSCORE_MFPROPERTIES
WATERUSE_ALLWATERSOURCES_KGAL
NATURALGASUSE_THERMS
FUELOILANDDIESELFUELUSEKBTU
ELECTRICITYUSE_RENEWABLE_KWH

ELECTRICITYUSE_GRID_KWH

Week 3 Goals:

- Review Meta Data to get an understanding of columns!
- Subset building data by universities and clean data if needed. Make sure buildings are unique, and we can identify each building in a time series. Group by universities.

PRIMARYPROPERTYTYPE_SELFSELECT - This column is helpful to subset by universities and dorms

OWNEROFRECORD - This column can be used to identify which university owns the building

- Conduct exploratory data analysis on water and energy data by university.
- **Next steps:** Identify university standards and compare with initial results.