

Economics of Energy and the Environment
Econ 3391.01
Prof. Richard Sweeney

Term Paper Assignment

Assignment: Pose an energy or environmental policy question and answer it using real world data. You can choose any topic and the setting can be anywhere (not just in the US).

Due: 11:59 p.m. on May 10th. Late papers will not be accepted.

Length: 6 to 8 pages, single spaced, not including references, tables and figures.

Groups: You must work in groups of 3 or 4. **Groups must be emailed to me by February 21.** Changes to groups will not be allowed after that point.

Summary of key dates:

2/23 – Groups due

3/2 – First group blog post due

Preliminary question due: At a high level, what **question** are you interested in?

What **data** would you ideally use to answer your question?

3/16 – Second group blog post due

What is your refined (ie narrower) research question? What is your **empirical strategy**?

3/23 – Final paper topic due (2 page writeup)

4/8 – Update class on your project

5/4 – Final class presentations

5/10 – Paper due

Essential elements of an A paper:

- A clear research question (with a question mark at the end).
- Sound motivation:
 - Is the question motivated by economic theory, a business problem, proposed or existing policy?
- Existing literature:
 - Every paper is expected to have reviewed the existing academic literature on the subject. This should be concisely summarized in the paper. A good place to start is Google Scholar.
- Data:
 - Describe the data you are using. What's an observation in your data?
 - The available data will be imperfect, compared to the experimental ideal discussed in class. You should discuss the pros and cons of your chosen data.
 - Before jumping into more sophisticated techniques, be sure to summarize the data and relate these summary statistics to the research question.
- Empirical strategy:
 - Does it clearly answer your research question?
 - What variation are you using?
 - Is there a natural experiment or discontinuity?
 - Was a policy or change implemented in some places but not others?
 - **I highly encourage you to use difference-in-differences for this project.**

- It is worth spending a lot of time trying to come up with “good” sources of variation / natural experiments, as this will make the rest of your paper much easier to write.
- Results:
 - What did you find? Relate your conclusions to the research question.
 - What additional data would you like? What would the next steps in this project be if you continued? What additional questions does this pose?

What’s a good question?

Some of the best papers last year asked:

- Did policy to expand the transmission grid promote wind energy in Texas?
- How does US environmental policy affect coal exports?
- In which parts of the US is solar most valuable, taking into consideration the overlap between sunlight and demand timing, as well as the price of substitutes?

Some examples of other questions you might consider if you’re stuck:

- How much do natural gas pipelines benefit consumers? Do they reduce prices or increase exports?
- Which regulated regions are better at keeping costs down?
- Does competition appear to lower prices in deregulated markets? What about renewable energy?
- How would electricity prices change if we reduced nuclear energy? (or the converse)
- Why are some states becoming more energy efficient (using less energy per capita)?

Where to find data?

I have listed several resources on the “resources” section of my website. However, for most groups, I highly recommend you start with data from **SNL Energy**.

SNL has extensive data on electricity, coal and natural gas markets, including, but not limited to:

- Location, type and production of every power plant in the US
- Emissions from these plants
- Rate cases from regulated utilities
- Financials from public companies
- Prices and consumption levels
- GIS data on energy infrastructure locations.

It also has data general economic indicators and demographics, as well as a good archive of industry relevant news articles.

- On that note, the News Home section of the SNL website might be a good source of paper topic ideas (along with the news sources listed in the blog assignment).
- **I can provide additional demographic information by US Census tract if you ask.**

There will be a training session on this data on March 2nd during class.

- Before then, Go to <https://www.snl.com/>. Sign up for a new account.
- If you have issues with SNL or need additional help, please contact the economics librarian Jason Hall (hallaz@bc.edu).