

Assignment #3

Due: **Friday, November 7, in class**

In this assignment, you will write about your own personal carbon footprint and the difficulty of modifying human behavior to stabilize future climate change.

First, compute your carbon footprint, a measure of your personal contribution to the addition of CO₂ to the atmosphere. You will need to know something about your electric/heating bills, miles you drive, flights you've taken, etc... If you are not sure of a specific answer, make your best guess. Here are four sites you should try. You are welcome to try others that you find in addition to these.

<http://www.carbonfootprint.com/calculator.aspx>
<http://www.nature.org/initiatives/climatechange/calculator/>
<http://www.bp.com/iframe.do?categoryId=9023118&contentId=7045317>
http://www.zerofootprint.net/one_minute/earthhour

Also, read these articles, posted on the learnuw website. Supplementary articles are also available on the learnuw website.

Center for American Progress, 2008, Cap and Trade 101.

<http://www.americanprogress.org/issues/2008/01/capandtrade101.htm>
l. Retrieved Oct. 23, 2008.

Higgins, 2007, A Year to Solve the Climate Program, *Bulletin of the American Meteorological Society*, doi:10.1175/BAMS-88-8-1181.

Mankiw, 2007, One Answer to Global Warming: A New Tax, *New York Times*, 9/16/07

Pielke Jr, 2007, Lifting the taboo on adaptation, *Nature*, 445:597-598.

ScienceDebate, 2008, Presidential answers to the top 14 science questions facing America. <http://www.sciencedebate2008.com>
[/www/index.php?id=42](http://www/index.php?id=42). Retrieved Oct. 23, 2008. (Section 2 and 3 only)

Then write a brief analysis of proposed technical, economic, and political solutions to climate change while considering these questions:

- Report your carbon footprint from the above four sites in tons of CO₂ equivalent (note that 1000 kg = 1 metric ton). Also report your average of all the sites. You might want to include a table in your paper. Was your footprint higher than the national average? What is your largest source of emissions? What difficulties did you have in estimating the numbers for the surveys? If your footprint numbers varied greatly among sites, why do you think that is? What does that say about the complexity of measuring individual carbon emissions?
- Consider purchasing carbon offsets, a system where your carbon emissions would be neutralized by sequestration of carbon elsewhere. How much would your total cost be if offsets cost \$40/ton CO₂? Would you be willing to pay that?

- Imagine instead that a federal carbon emissions tax was implemented. Considering your average footprint, if the carbon tax is set at \$100 per ton of CO₂, would such a tax change your carbon emitting behavior (compute the total cost)? How about \$10/ton and \$1000/ton? What ways (if any) would you try to reduce your carbon emissions? Will your carbon emissions increase in the future? Does this seem like a good way to change behavior and would it make a significant difference with respect to global warming?
- In the articles above (or in any supplementary material), what kinds of solutions are proposed for mitigation or adaptation to climate change. Consider actions such as adaptation, emission taxes/trading, geotechnical engineering, reducing poverty, and global carbon stabilization treaties. In your opinion, which solutions are more likely to work and what obstacles are there to their implementation? Which solutions are most likely to directly impact your behavior (e.g., lower your carbon footprint, affect your daily life, change your career track)?
- What proposals do the current major party presidential candidates (who are currently senators) provide on the U.S. response to climate change? If you like, you may also try to dig up policy positions of minor party candidates or previous presidential candidates. In your opinion, which of the candidates would most effectively deal with climate change? Which, if any, of the candidate positions most resonate with your own? Assuming you are eligible to vote in the U.S., will or did the candidates' positions on climate change and regulating carbon emissions affect your vote? If you are not eligible, then speculate on how it might.

Paper guidelines:

- State clearly in the first paragraph what your main theme will be. One good way to do this is to include a "roadmap sentence" at the end of the first paragraph, giving an indication to the reader what the overall progression of ideas will be. Be sure to include several examples from the reading to use in your arguments.
- 4-5 pages means at least 4 full pages (not 2 pages and 1 line). Pages beyond 5 will not be read.
- Double-spaced, 1" margins, number your pages, no title page, your name and title on top of page 1 (single space)
- Citations (required) should be in a standard accepted format
- 12-point font. Following are preferred: Times, Times New Roman, Helvetica, Arial, Palatino, Palatino Linotype, Georgia, Computer Modern