Course Project: Part 1
Due: April 1st 2009 – 10:30am
50% of project grade

The grading scheme will be used as shown below, with the grading rubric posted in the project section of the course webpage.

   a) Requirements (40%) Did you answer all the questions required?
   b) Accuracy (40%): Was your analysis accurate and complete?
   c) Level of presentation (neat, organized and appropriate grammar/spelling) (20%)

Submittal:
Part 1 of the course project will be submitted in two parts, electronically and a hard copy. You will be required to submit a hardcopy of the report in class, and you will also be required to submit the text portion of your report electronically using the website www.turnitin.com by the time of our class (10:30am). Your report will only be accepted when both components are completed. To submit your work, log onto the website and enter the appropriate class ID and password. You will have to register for an account for first time users.

Class ID: 2650243
Password: climate

Note: You don't have to include figures/graphs/photocopies in the turnitin.com version of your report. Text alone is adequate.

Late assignments will be marked down by 50%.

Important: Answers to all questions must be in your own words. If you decide to use the words of others, then you must properly cite the reference. Students who plagiarize will incur a lowering of their course grade and a referral to the University Judicial Board.

Data gathering: You will need to estimate your home energy use for the past year. The best way to do this is to take one of your energy bills (PG&E) for both a summer and winter month, take an average of the two, and then multiply by 12 to get your annual total. A single month of data is typically not a good indicator of your annual average, but will be accepted if you don't have a good sample of your past home energy use. **Note**: If you live in a household of 4, then you should divide your total home energy use by four.

You will also need to estimate the number of gallons of gas you use per year. There are a few ways to go about this. One way is to estimate the number of miles you drive per week and then multiply by 52. Then look up your fuel mileage for your particular car (http://www.fueleconomy.gov/feg/bymake/bymanuNF.shtml) and then you can estimate how many gallons of gas you use per year. You also need to estimate how often you are the sole driver versus carpooling, and factor that into your total # of gallons of gas calculation.

The same is required for the number of miles you fly in an airplane. What I suggest is that you jot down all the flights you have taken in the last three years, estimate how many miles you have flown, and then divide by three to get an annual average.

It is important that you provide documentation for your data. For example, photocopies of your PG&E bills and a worksheet describing how you calculated your gas and airplane miles is required for full credit.

Requirements:

1. Calculate your personal CO_2 inventory using the following 'CO$_2$ Calculator' http://www.b-e-f.org/. Print out your results and include in your report. (20 points) Then explain briefly (~ 150 words) in your own words what a personal CO_2 inventory means. (5 points).

2. San Francisco as a city has a goal of reducing their CO_2 emission 20% below 1990 levels, a much stronger reduction than called for in the Kyoto Protocol. Based on CO_2 levels today, their emission goal requires a 30% reduction. If you were a resident of SF, and pledged to reduce your CO_2 emission by 30%, one way to do this would be to purchase green tags or green certificates. From the above web site, write down how many green tags you would have to buy to offset your CO_2 by 30%. Then, explain what a green tag (also known as renewable energy certificate or green certificate) really is (~ 250 words). Note: To explain what a green tag is, you really have to explain what happens when you buy a green tag. Hint: When you buy a green tag you are not buying energy! (10 points)

3. As discussed in class, the above personal CO_2 inventory is an underestimate of the actual amount of CO_2 emissions resulting from your actions. A true CO_2 inventory would look more deeply at all processes that require energy. Develop a list of items that have been neglected in the above inventory which contribute to **your true** CO_2 inventory. This list may be long, so group them into categories. Then, I'd like you to rank the items in order from the highest to lowest contributor to your personal CO_2 inventory. Finally, write a paragraph (~ 250 words) explaining both your list and the rankings. (15 points)