NPRE HW #1 - due Jan 27 2010

1- The *Worldwatch paper 157* discusses 4 ways to approach the hydrogen economy -- "Brave Clean World; Hydrogen Genie; Hydrogen in a Bottle; New World, Old Weapons" -see page 69.

a) Defend the approach assigned to you in class (or, if uncertain, pick one) vs. the other options as being the best for the US.

b) Discuss steps (policy framework) you would use to the H2 economy using this approach. When would you think this could be accomplished with this approach?

2- Check out the US DOE site = www.doe.gov.

a) in general what is DOE doing to advance the hydrogen economy? Which of the 4 approaches in question 1 does this best match? Discuss the reasons for your identification.

b) What are the DOE goals and time frames for :

i) the hydrogen economy

ii) fuel cells --for stationary applications; for small mobile apps, for transportation including automobiles

3. Look up the DOE FutureGen plant plans for Illinois on the Web (also on the DOE site) . FutureGen 1.0 was to process coal to produce gases rich in hydrogen and sequester the CO2. FutureGen 2.0 backs off on the processing goals but still separates and sequester CO2.

a) Why did DOE go to the 2.0 version? Do you agree with that decision? Defend your answer.

b) How (if at all) does this project fit into the overall DOE plan you reviewed in 2? Does it advance or set back the plan? How does the time scale fit together?