Homework 3

Due Tuesday March 1, 2016

Economics of Sustainability

K Foster, Colin Powell School CCNY, Spring 2016

You are encouraged to form study groups to work on these problems. However each student must hand in a separate assignment: the group can work together to discuss the papers and comment on drafts, but each study group member must write it up herself/himself. Please submit homework assignments on Blackboard.

1. What are the names of people in your study group?
2. Provide some interesting and creative examples of
    a. Negative externalities from consumption and social policies to affect these
    b. Negative externalities from production and social policies to affect these
    c. Positive externalities from consumption and social policies to affect these
    d. Positive externalities from production and social policies to affect these
    Are there property rights to some of these externalities?
3. Consider the market for a product with an output that pollutes drinking water. The industry supply curve (only including private internal costs) can be represented as $Q_S = 4P_S$. The demand can be approximated as $Q_D = 100 - \frac{1}{2} P_D$. The industry's marginal external costs from pollution occur as MEC = Q.
    a. What is the privately chosen equilibrium quantity and price, when neither demanders nor suppliers take account of external costs?
    b. What is the MSC, the marginal social cost (the vertical sum of MC and MEC)?
    c. What is the social optimum level of production of this good? What is the deadweight loss created by a lack of government action?
    d. Suppose the government introduced a tax (per unit of output) to try to move closer to optimum. (Recall that this means that $P_D = P_S + Tax$.) What tax would reduce DWL the most?
    e. Suppose that government decided that, because of external cost, it would prohibit this good entirely. What would be DWL?
    f. If the government instead restricted the level of output through regulation, what regulation should be set? Would a price floor work instead?
    g. Can you suggest any alternate policies (perhaps a tax on production over a particular level)?