

14.44/444

Problem Set

Due Friday, April 27, 2007

1. Explain why the “optimal” level of CO₂ emissions is not zero?

2. The government is trying to choose between an emissions tax system and a cap and trade system. (read the relevant sections of the Stern Review)
 - a. Assume that the government is certain about the shapes and location of the marginal abatement cost and marginal damage cost functions associated with some pollutant. How would you decide whether to use an emissions tax system or a cap and trade system to internalize the pollution externality?

 - b. Assume that the government is uncertain about the shapes and location of the marginal abatement costs and marginal damage cost functions associated with some pollutant. How would you now decide whether to use an emissions tax system or a cap and trade system to internalize the pollution externality.

3. You are doing a cost-benefit analysis to determine whether, how much, and when CO₂ emissions should be reduced from “Business as Usual Levels” over the next 100 years. (read the relevant sections of the Stern Review)
 - a. Explain why the discount rate chosen to calculate the present value of mitigation costs and damages of climate change can have a large effect on the results?

 - b. What factors should go into choosing the correct discount rate.