

Challenges of Climate Change, Seminar Week 6 – reading and questions

Read:

1. Chapter 12 of Dessler, Introduction to Modern Climate Change.
2. Discount Rates: A boring thing you should know about (with otters), by David Roberts, available at <http://grist.org/article/discount-rates-a-boring-thing-you-should-know-about-with-otters/>

Prepare to discuss the following questions (taken from Dessler, Chapter 12)

1. In a New York Times op-ed piece (December 6, 2009), climate scientist Jim Hansen makes the following argument: “Consider the perverse effect cap and trade has on altruistic actions. Say you decide to buy a small, high-efficiency car. That reduces your emissions, but not your country’s. Instead it allows somebody else to buy a bigger S.U.V. - because the total emissions are set by the cap.” He argues that this renders a cap-and-trade system ineffective. Why is this argument wrong?
2. For the following, assume that Plants A and B have the following marginal costs for reducing emissions:

Number of units reduced	Marginal costs for Plant A	Marginal costs for Plant B
1	3	1
2	5	2
3	7	3
4	9	5
5	11	9

- (a) The government tells both plants to reduce three units of output. How much does this “conventional” regulation cost each plant? What’s the total cost?
- (b) The government implements a carbon tax of \$5 per unit. How much does each plant reduce? What is the total cost?
- (c) Which approach is cheaper? Why is the cheaper approach cheaper?

3. The table below shows the marginal costs of the following two plants, each of which emits 10 units each year. They both have six permits, meaning that each would have to reduce 4 units. Number of units reduced Marginal costs for Plant A Marginal costs for Plant B

Number of units reduced	Marginal costs for Plant A	Marginal costs for Plant B
2	2	6
3	3	9
4	4	12
5	5	15
6	6	18
7	7	21

- (a) How many permits will Plant B buy from Plant A?
 (b) In what price range will these permits exchange hands?
4. Why won't voluntary and informational approaches lead to deep reductions in emissions?