

Environmental Economics

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EPFL ENAC LEUrE

ENV-471

Master semester 2 or 4

Exercises

COMPARISON OF INSTRUMENTS

Tax vs prescription under uncertainty

- The environmental authority wants to get an emitter to reduce its emissions to the optimum level, but does not know the emitter's abatement cost function
- The authority, based on available information, assumes a certain abatement cost function
- On the basis of its information, the authority can impose a cap or a tax on emissions
- We shall compare the outcomes depending on the instrument choice
- Suppose that we know the true abatement cost function
- Draw a graph with a standard marginal gain-from-abatement line and two marginal abatement cost (MAC) lines
- Assume that the authority sets the cap and the tax as a function of one of the two MAC lines
- Show the error in terms of lost surplus with each instrument if the true MAC line is the other
- Compare and comment