

ECN 275/375 Environmental and natural resource economics

6: Pollution control – instruments (2) Perman *et al.* Sec 6.5-6.6

Reading guide

Perman *et al.* Section 6.5-6.6 (read for overview)

- Section 6.5 – Pollution control when location of emissions matters
 - Intuition: emission location is distant from location of “victims” \implies a fraction of emissions reaches victims. Especially relevant when emissions are not harmful at emissions location or emission location abatement is “shipping the shit” somewhere else (“downstream”). Examples: (a) Emissions in a river, where damages occur downstream. (b) High smokestacks reduce local emissions, but shifts the externality to other locations – acid rain problems.
 - What happens: (i) the emission location least cost strategy creates an externality elsewhere. (ii) problem particularly big if “elsewhere” is in another jurisdiction (country) \implies victims have no (little) leverage to induce abatement at emissions location.
 - **Solution for same jurisdiction:** emission taxes or tradable permits where emissions of victim sites are adjusted for only a share of emissions arriving at victim sites, and added to produce a marginal damages seen from the emission location. In theory, possible to install optimal taxes or tradable permit regime.
 - **Solution different jurisdiction:** victims with no/limited jurisdiction. What can they do?
 - If tradable permit regime exists at emission location: buy permits for retirement.
 - If no tradable permit regime, “bribe” emitters (subsidize emissions reductions) to achieve victim site optimality
 - Problematic feature: More than one victim site – agreeing on how much each victim site should contribute if benefits are correlated.
- Section 6.6 – Dynamic efficiency
 - Technological change and accumulation of pollutants change optimality points over time. As a complement, read Romstad (2016).

In class

The emergence of emission permit prices (in class exercise – linkable from [schedule.html](#))

Questions Perman *et al.* Section 6.5-6.6

Presentation *Dynamic efficiency* (background note: Romstad (2016) in readings for this session.

Exercises

Go to the exercises section on the course web page.

Discussion topics

The burning of fossil fuels for power generation on the British Isles and in Western Europe generates sulphur oxides that with south-southwestern winds creates acid rain (sulphur oxides mix

with water) in Norway and Sweden. There are no existing permit market for sulphur emissions in the EU.

1. What kind of agreements need to be undertaken to be able to deal with this problem?
2. What kind of policies would you recommend to deal with the problem (provided (1) was solved).