4. Environmental policies

- Regulation
- Taxes – Pigouvian taxation
- Cap-and-trade
- Recycling

4.1 Regulation

- Regulation can deal with outputs, inputs, production processes (End-of-pipe treatment plants), emissions, and even the location of production in an attempt to produce an efficient outcome.

- Zoning laws could establish separate areas for production (steel plants) and residential activities (resorts)
  - Relevant for pollutants that do not evenly spread and cumulate over space

- Government could also
  - Impose the installation of particular pollution control equipment (as when catalytic converters were required on automobiles)
  - deny the use of a particular production input (as when lead was removed from gasoline).

Tietenberg, T. & Lewis, L.(2019). *Environmental economics and policy*. Pearson Education. 6 ed. - Chapter 4

4.2 Regulation - Hidden information

- Moral hazard
  - The actions to protect the environment are hidden or costly to observe
  - Firms shirk on unobservable pollution control measures
  - Insurers withdraw from pollution liability market
  - Risk of accidental spills increases (inefficient allocation of risk)
- Adverse selection
  - Sustainable products are more expensive
  - If buyers cannot be guaranteed that products are truly sustainable, they will not be willing to pay a premium price
  - Producers of truly sustainable products will be forced out of the market
- Solution
  - Certification programmes, monitoring activities

Hanley, N., Shogren, J., White, B. (2013) Introduction to environmental economics, Oxford University Press, UK - Chapter 2

4.3 Any sector, from transport to agriculture…both production and consumption.

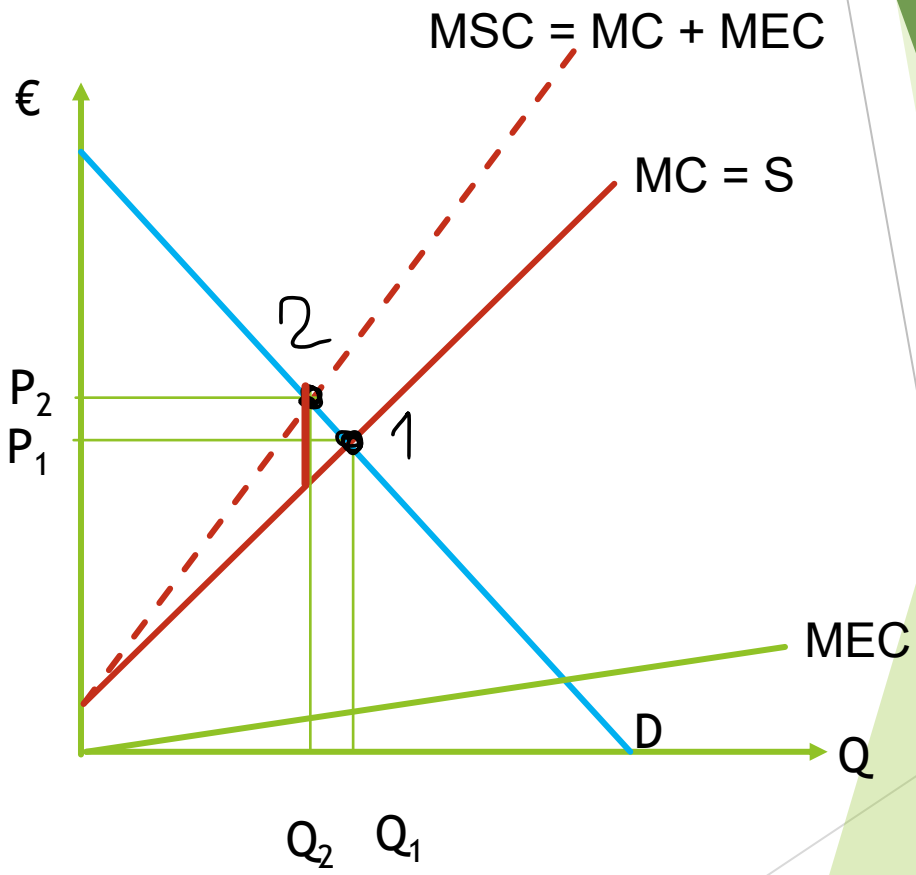
- For a clean and competitive automotive sector
  - https://ec.europa.eu/commission/presscorner/detail/en/ip_25_3051
- Farming rules shake-up to cut pollution and support farmers
  - https://www.gov.uk/government/news/farming-rules-shake-up-to-cut-pollution-and-support-farmers#:~:text=Streamlined%20agriculture%20rules%20to%20cut,understand%20and%20follow%20the%20rules.
- A review on policy instruments for sustainable food consumption
  - A review on policy instruments for sustainable food consumption – ScienceDirect

4.4 Environmental taxes

Set an environmental tax so that the optimal quantity Q2 il produced.

You'll still have some environmental damage, but its cost is compensated by the benefit of having some steel to use.

Assumption: it is possible to trade the benefit of having an unpolluted environment with the benefit of using steel!



Problem

- Pd = 20 – Q
- Private MC = 2 + Q
- MSC = 5 + 2Q
- Find
  - Equilibrium withour the tax
  - Efficent equilibrium
  - Value of the tax