# Environmental Economics
# No.8

**Ashraf Samir Ph.D.**

# Externalities and the Environment

## What is an Externality?

When a person/firm does something that affects the interests of another person or firm without affecting prices.

when an exchange between a buyer and seller has an impact on a third party who is not part of the exchange.

Negative externalities increase Social costs

are costs that include both the private costs incurred by firms and also **additional external costs** incurred by third parties outside the production process.

An externality implies:

Social Cost ≠ Individual Cost

Social Benefit ≠ Individual Benefit

**As a result:**

too much of **socially costly goods** are produced

too little of **socially beneficial goods** are produced.

**Pollution is considered a negative externality**

**e.g., flat-screen TVs causes negative externality**

This means: You cannot use markets to give people incentives to do the right thing.

"Market Failure"

## Some Solutions to the Pollution/Externality Problem

Several regulatory and non-regulatory approaches used in environmental policy making

Four general approaches to environmental policy making:

**(1) Command-and-control regulation**

**(2) Market-Based Policies**

**(3) Hybrid Approaches**

**(4) Voluntary Initiatives**

## (1) Command-and-control regulation

**A prescriptive regulation:** a policy that prescribes how much pollution an individual source or plant is **allowed to emit** and/ or what types of **control equipment** it must use to meet such requirements.

- ✓ Such a standard is often defined in terms of **a source-level emissions rate.**
- ✓ Despite the introduction of potentially **more cost effective methods** for regulating emissions, this type of regulation **is still commonly used** and is sometimes statutorily required.

■ **Note that**

Regulators can at least partially account for **some variability** in costs by allowing **prescriptive standards** to vary according to:

- ✓ Size of the polluting entity,
- ✓ Production processes,
- ✓ Geographic location.

## (2) Market-Based Policies

**By creating an incentive for the private sector** to incorporate pollution abatement into production or consumption decisions and to innovate in such a way as to continually search for the least costly method of abatement.

- ✓ This allows firms **more flexibility** than more traditional regulations.
- ✓ Environmental economists generally **favor market-based policies** because they tend to be **least costly**, they place **lower information burden** on the regulator, and they provide incentives for **technological advances**.

- Four classic market-based approaches:
  - **Marketable permit systems** (cap-and-trade systems, project-based trading systems and emissions rate trading systems);
  - **Emission taxes**;
  - **Environmental subsidies;**
  - **Tax-subsidy combinations.**

- **Notes:**

Taxes and subsidies are **price-based** while marketable permits are **quantity-based**.

- **Cap-and-Trade Systems**

The **cap** on greenhouse gas emissions is a limit. Companies pay penalties if they exceed the cap, which gets stricter over time. The **trade** part is a market for companies to buy and sell **allowances** that permit them to emit only a certain amount. Trading gives companies **a strong incentive to save money by cutting emissions.**

E.g. **The Acid Rain Program** by **EPA** (The program is an implementation of emissions trading that primarily targets **coal-burning power plants**, allowing them to buy and sell emission permits (called "allowances") according to individual needs and costs)

- **Project-Based Trading Systems**

Plant managers can propose their **own emission standards--tightening them** in places where it is least costly, and **relaxing or even eliminating them** where pollution control costs are high.

- **Emissions Rate Trading Systems**

The regulatory authority establishes **a performance standard** or **emissions rate**. Sources with emission rates below the performance standard can **earn credits** and **sell them to sources** with emission rates above the standard.

# (3) Hybrid Approaches

These approaches combine aspects of **command-and-control** and **market-based incentive** policies.

✓ Such approaches are appealing to policy makers because they often combine **the certainty associated with a given emissions standard** with **the flexibility** of allowing firms to pursue the least costly abatement method.

## (4) Voluntary Initiatives (Non-Regulatory Approaches)

Voluntary programs can use the following four general methods to achieve environmental improvements:

(1) Require firms to set **specific environmental goals**;

(2) Promote firm **environmental awareness**;

(3) Publicly recognize **firm participation**;

(4) Support advertising campaigns that support environmental issues.

(5) Use labeling to identify environmentally responsible products.

Thank you