

## CHAPTER 1 KOLSTAD (PART 2)

# ECONOMICS & ENVIRONMENT

### THEME TO BE ADDRESSED

- What are the policy approaches taken globally to provide a higher level of environmental quality?

A. Overview of environmental protection pursued globally -  
REGULATORY APPROACH

B. Extent to which ECONOMIC INCENTIVES are used in environmental  
protection is used - emission charges , marketable permits etc. -

*The question pertaining to theme 1 : environmental economics as a discipline,  
has been covered in ppt 1.*

## EUROPEAN UNION

### REGULATORY APPROACH

- Principles followed:
  - A. "Subsidiarity" - Leaves all power to individual member states unless there is a reason to take action at the union level
  - B. "Polluter Pays" - Polluter is red to pay for environmental damages, controls and administration of environmental agencies
- EU environment policy is implemented through *Directives*
- Due to this structure -> there isn't much co-ordination at the Union level - case by case basis is imp

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- Subsidiarity: Eg: Control of Pollution (one that stays within the member state) will be the responsibility of the particular member state alone.

However, not as straight forward because differences in pollution regulation across members can change comparative advantage and can influence trade.

- A directive is a 'law' that requires each govt to pass their own legislation in order to implement the directive.

Eg: sulfur-emission controls for large electricity generating stations since 1988. The directives may include caps like in this one or it may be left entirely upto the member state.

## CASE OF UNITED KINGDOM

### REGULATORY APPROACH

- Long history - started in 1273 with a measure to control smoke
- Akali Act (1863) - purpose of controlling a scheduled list 'noxious vapours' like Hydrochloric fumes from chemical factories
  - A. Set up Akali inspectorate of experts to mandate emission control
  - B. Later absorbed into the Environmental Agency
  - C. It was amended to include that scheduled sources should use "best practicable means" (BPM) of pollution control - not only technically feasible but also economical and justifiable for pollution control

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This BPM approach has been preferred over specifying particular emission controls due to its flexibility.

Act requires that polluters must be registered; for registration use of BPM (as specified by the govt.) is mandatory. These BPM guidelines are then used for source-by-source negotiation over the registration and re-registration process.

## EUROPEAN UNION

### USE OF ECONOMIC INCENTIVES

- Earlier, emission fees were used but now European Trading system for Carbon is the dominant incentive
- As regards emission fees - it was 'revenue-raising' and not 'incentive oriented' - the charges set were too low to provide an incentive for pollution control. Revenue raised was to operate agencies overseeing pollution regulation.

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### Examples of economic incentives used in EU

Germany - German water pollution charge (1981) - unclear whether the fee led to any reduction. Also exists, Marketable permit system allowing cities to trade pollution permits.

Dutch charge on discharge of Organic material into sewer system - Fee was based on the load sources placed on treatment facility. Empirical analysis showed that this fee did help to significantly reduce organic material discharge from industry.

## RUSSIAN FEDERATION

### REGULATORY APPROACH

- Air and Water pollution controls started in 1970s and can be traced back to Soviet Union Actions.
- The old & current standards are developed at a national level relying on health-based ambient standards for myriad kinds of pollution
- Standards are not standardised but depend on the nature of use of ambient environment - like ambient standard for air depends on whether point of application is residential or industrial area.
- federal standards are used to establish source-specific emission limits - incorporated into making pollution permits.
- New sources of pollution submit an application for technical analysis to determine their permit limit. If a source has difficulty meeting the limit, temporary emission limits are often issued - they are made tighter overtime until one reached the permitted limit.

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State Environmental protection Committee at national level and local committees implement the laws.

Diff from the world, Russia also used 'environmental fund' but it has now been absorbed in the budget. It was major source for funds for cleaning up environment, pollution control measures, public environmental projects like sewage and clean drinking water.

## RUSSIAN FEDERATION

### USE OF ECONOMIC INCENTIVES

- Uses emissions fees extensively.
- There are two levels of fee - base level (emissions undertake limit) and a level five time greater than emission limit.
- Fee were directed towards environmental fund.
- Substantial revenue for generated but individual fee was modest (in some cases, even lower than the MC of controlling pollution in the West)
- Thus, empirical evidence showed that fee was too low to provide an incentive for pollution control (Kozeltsev et al 1997)

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## USA

### REGULATORY APPROACH

- Major environmental protection started in 1960s though there were instances in 19th century too. - National legislation requiring manufacturers to install anti-pollution devices on cars and to meet stringent limits of emissions of particular pollutants.
- Two fold strategy to deal with diverse environmental probs:
  - A. States were allowed to decide how to best clean up already existing pollution.
  - B. The Federal govt passed goals for ambient environmental quality while the States made 'State Implementation plans' to control pollution and meet the federal standards. These plans were to be approved by the federal govt.

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19th century was a period was characterised by rapid economic growth and increasing strain on environment -> increased DD for better quality environment. Thus greater need for environmental protection



## USA CONTD.

- In 1970, Environmental Protection Agency- Set industry-by-industry emission control requirements to eliminate the problem
- Clean Air Act, 1970 also enacted,
- Federal Endangered species Act - now has had impact on local land use (to deal with with probs of soil loss)
- For toxic Waste - CERCLA (1978) enacted
- Under National Environment Policy Act, Environment Impact statements (EIS) are required before giving approval for any project taken up by the federal govt - way to regulate the regulators

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## CERCLA

- Set up liability rules to clearly establish responsibility for waste leaks
- Set up a fund to be used to clean up toxic waste sites first without seeking responsible parties

## USA

### USE OF ECONOMIC INCENTIVES

- 1990 - market in sulphur emissions was set up with the goal to reduce sulphur emissions by half
- Considered a huge success - Price of sulphur (= MC of control) has significantly decreased over the decade
- Volume based pricing for municipal waste (as opposed to worldwide used fixed monthly fee practise)- an imp incentive
- Tradeable permit system - successful
- Offset system - negligible impact ( Hahn, 1989)

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Offset system : New polluters entering heavy polluted area may pay existing ones to reduce emission

## INTERNATIONAL AGREEMENTS

- For problems outside the national scope - ozone depletion and global warming
- Montreal Protocol on Ozone Depleting Substance -to control use of refrigerants and other chemicals - has been successful
- International Panel on Climate Change - for dealing with green house gas emission -many countries are members.
- Kyoto Protocol (1997) - reduce emissions in signatory countries by 2008-12 to 5% lower than 1990. It got ratified in 1990