TRƯỜNG ĐẠI HỌC HÀNG HẢI VIỆT NAM
VIỆN MÔI TRƯỜNG

ENVIRONMENTAL LAW AND POLICY

1

Instructor: Ma. Sc. Dinh Thi Thuy Hang

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MARE

Warm-up questions

- Suggest an environmental policy which is being applied in your country?
- Why is such policy issued?
- Evaluate the extent of success of such policy?
- What should be done more?
- **Recommend some instruments to policy makers?**

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INTRODUCTION OF ENVIRONMENTAL POLICY

3

INSTRUMENTS CHOICE IN ENVIRONMENTAL POLICY

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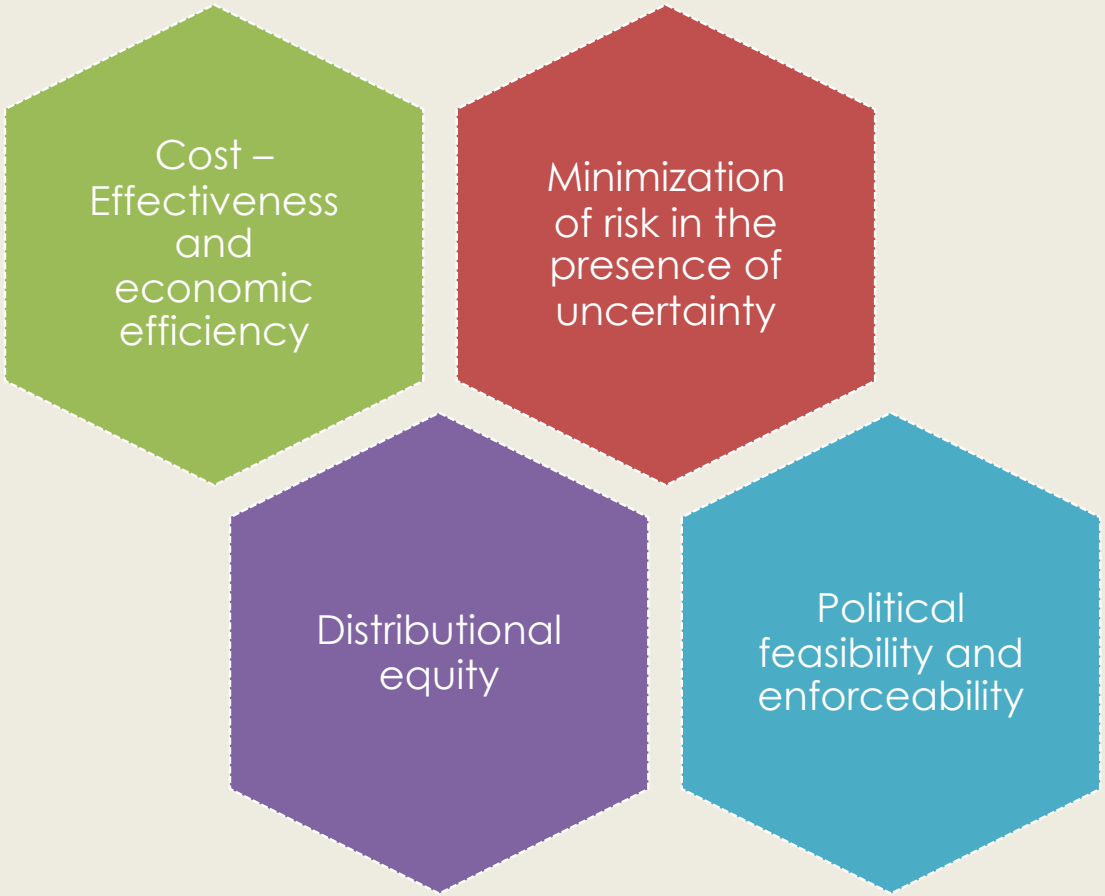
The four principles to select instrument for a policy maker



Based on Goulder and Parry's analysis

1. Cost-Effectiveness of Alternative Emissions Control Instruments

- Minimizing the cost of reducing pollution by a given targeted amount requires equating marginal abatement costs across all potential options and agents for emissions reduction, including:
  - *the various abatement channels* available to an individual firm or facility: namely, switching to cleaner inputs or fuels, installing abatement capital (e.g., post-combustion scrubbers), and reducing the overall scale of production.
  - *firms or facilities within a production sector* – which may face very different costs of abatement and existing emissions intensities.
  - *production sectors*, such as manufacturing and power generation.
  - *households and firms*, where household options might include reducing automobile use or purchasing more energy-efficient appliances or vehicles.

→ In theory, these conditions are satisfied when all economic actors face a common price, at the margin, for their contributions to emissions.

1. Cost-Effectiveness of Alternative Emissions Control Instruments

- Maximizing cost-effectiveness requires that all agents face the same price on emissions.
  - In reality, environmental regulations are rarely comprehensive enough to apply a given emissions price to all economic sectors or agents.
  - Instruments whose main purpose is curbing emissions or effluent:
    - *incentive-based instruments*
    - *direct regulatory instruments*

Incentive-Based Instruments

Emissions taxes and tradable allowance systems

- Imposes a single emissions price on all covered sources.
- An additional unit of emissions implies a cost equal to the allowance price, since it compels the agent either to purchase one extra allowance or to sell one fewer.
- As under the emissions tax, both the costs of abatement and the emissions price are reflected in higher prices of consumer products.

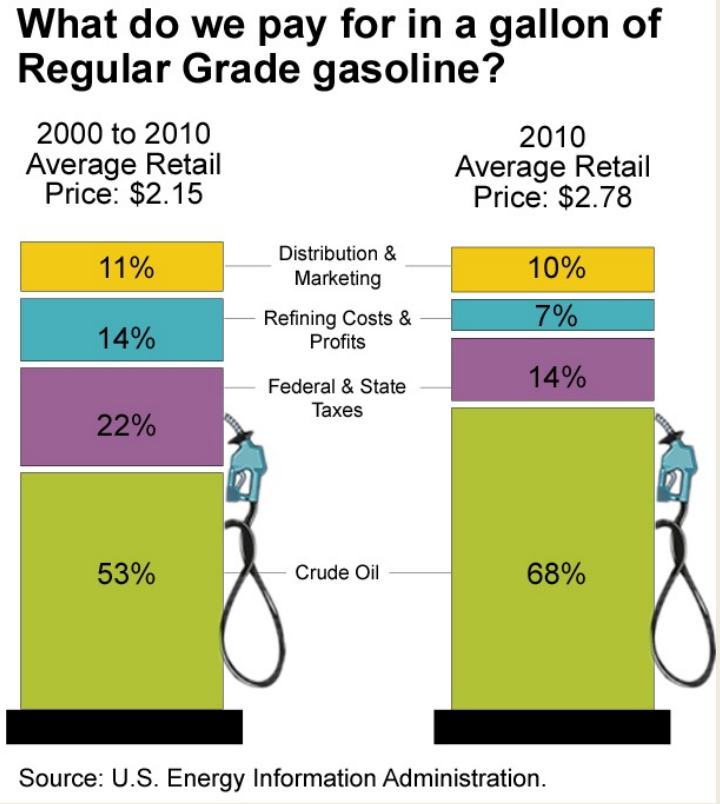
Subsidies to pollution abatement

- Firms are rewarded for every unit of emissions that they reduce below some baseline level.
- Every additional unit of emissions implies a cost to the firm in forgone subsidy receipts.
- Regulators would need to make the marginal price of emissions higher than under the other policies → too much abatement from input substitution or end-of-pipe treatment, and too little from reduced output → higher aggregate costs of achieving a given emissions target.

Incentive-Based Instruments

Taxes on inputs or goods associated with emissions

- Taxes on gasoline, electricity, or air travel are examples.
- These taxes may be an attractive option when it is difficult to monitor emissions directly.
- However, because these taxes do not focus sharply on the externality, they do not engage all of the pollution reduction channels described above, implying a loss of cost-effectiveness.



Direct Regulatory Instruments

Technology mandates

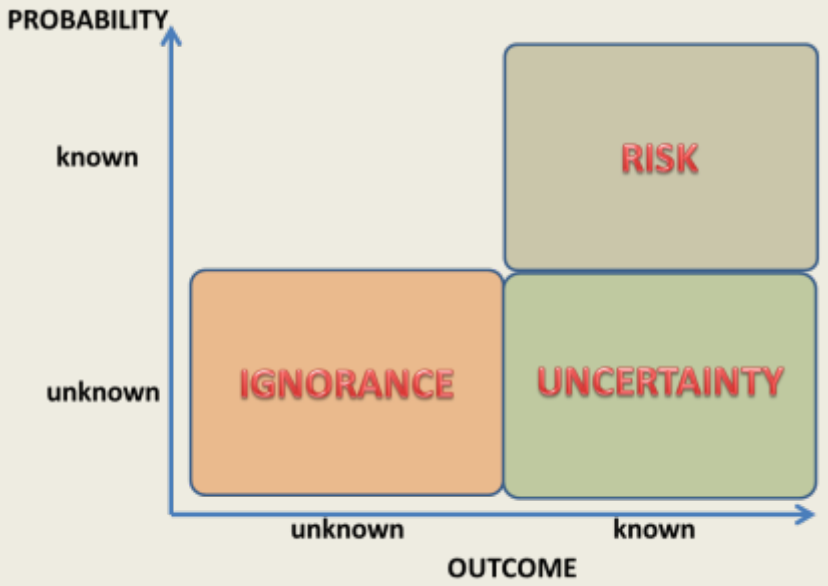
- The mandate may require that firms install equipment that implies a particular production method.
- The technology mandate does not optimally engage all of the major pollution reduction channels.
- Moreover, it will not reflect the cost of the remaining pollution associated with each unit of output → do not cause firms to reduce pollution sufficiently through reductions in the scale of output.

Performance standards

- While technology mandates impose requirements directly on the production process, performance standards require that a firm's *output* meet certain conditions.
- Examples include maximum emission rates per kilowatt-hour of electricity, energy efficiency standards for buildings or household appliances, and fuel-economy requirements for new cars.
- Performance standards grant firms flexibility in choosing how to meet the standard.

2. Minimization of risk in the presence of uncertainty

- Uncertainties are unavoidable: policymakers can never perfectly predict the outcome of environmental policies.
- This is relevant to instrument choice, since the choice of instrument affects both the type of uncertainty that emerges as well as the expected efficiency gains generated.



3. Distributional equity

- Distribution between owners of polluting enterprises and other economic actors.
- Distribution across household income groups

4. Political feasibility and enforceability

- Environmental problems are often addressed by several different jurisdictions and multiple levels of government.
- If political constraints force environmental policies to be made by governments whose jurisdictions are narrower than what is efficient, the situation can be improved through linkages across regional programs.
  - For example, the cost-effectiveness of various governments' cap-and- trade systems to reduce greenhouse gases can be enhanced by linking the systems, as this yields a broader market and an equating of marginal abatement costs across regions.

The toolkit of environmental instruments

- Emissions taxes
- Tradable emissions allowances ("cap-and-trade")
- Subsidies for emissions reductions
- Performance standards
- Mandates for the adoption of specific existing technologies
- Subsidies for research toward new and clean technologies

- Assign co-management team;
- Divide in groups of 4-5 people;
- Each member in a group will issue specific policies aiming at reducing water pollution from industrial sector;
- Work with your partners to vote the most practicable and feasible policy;
- Analyze the selected policy in terms of advantages and challenges when applied.

Group work

Goulder and Parry's conclusions on instrument choice

- No single instrument is clearly superior along all the dimensions relevant to policy choice.
- Significant trade-offs arise in the choice of instrument. In particular, assuring a reasonable degree of fairness in the distribution of impacts, or ensuring political feasibility, often will require a sacrifice of cost-effectiveness.
- It is sometimes desirable to design hybrid instruments that combine features of various instruments in their "pure" form.
- For many pollution problems, more than one market failure may be involved, which may justify (on efficiency grounds, at least) employing more than one instrument.
- Potential interactions among environmental policy instruments are a matter of concern, as are possible adverse interactions between policies simultaneously pursued by separate jurisdictions.

Thanks for your listening

ANY QUESTION?