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## **ENFORCEMENT OF ECONOMIC INSTRUMENTS**

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### **GOALS**

The following were issues for the workshop:

- Economic instruments and how requirements or incentives are defined (e.g., emission taxes, marketable permits).
- Particular challenges or problems posed by designing effective compliance strategies and enforcement responses.
- Institutional requirements and design requirements for the program that would help enforcement.
- Particular training or inspection approaches that are most useful in trying to detect violations and compliance problems.
- How those challenges might be overcome.

### **1 INTRODUCTION**

More than 15 participants from 10 countries met in two separate sessions. The sessions included representatives from countries in all stages of economic development.

The discussion centered around four major topics of interest: the purpose and application of economic instruments; the benefits of using economic instruments as opposed to command and control approaches to compliance and enforcement; particular examples of economic instruments being used in both developing and developed countries and how successful they have been in achieving their stated purpose.

### **2 PAPERS**

One paper, by Dr. Hu Baolin, was prepared for the workshops. The paper deals with enforcement of pollution discharge fees in China. Over the past decade, environmental laws and regulations have developed rapidly in China resulting in examples of the successful use of economic instruments to promote environmental compliance. A system of pollution charges backed by fines for non-compliance is currently in use in the country, and has met with initial success. The purpose of the fee is to encourage enterprises and industries to voluntarily reduce pollutant discharges in order to minimize the discharge fee. The policy is designed to allow the polluter to assume responsibility for controlling pollution in China.

### **3 DISCUSSION SUMMARY**

#### **3.1 The purpose and application of economic instruments**

The participants first addressed the need to have a regulatory structure in place before the use of economic instruments can be considered. The participants agreed that there was a great deal of interest in promoting the use of economic instruments in their respective countries.

In some cases, however, this interest had not developed beyond economic theory, and command and control approaches to environmental compliance and enforcement were still the most widely utilized measures. The discussion centered around the benefits that can be derived from the use of economic instruments and at what level economic instruments may be incorporated.

In a highly competitive global economy there is a compelling need to:

- Reduce waste.
- Increase efficiency.
- Reduce costs.
- Modify supply and change demand.
- Reduce liabilities.

While command and control approaches may achieve the environmental goal of reducing pollution, they may increase the cost of production and often require strict monitoring practices through the use of fines, penalties, and strict liability. Economic incentives can successfully be used to:

- Reduce pollution.
- Internalize externalities.
- Change behavior.

A simple linear production model was used to illustrate how and where externalities can arise during production and at what level economic instruments may be employed.

Discussion included illustrations of where certain economic instruments may be most appropriate. For example, a tax or fee on waste disposal of the final product will be born by the end user. The tax or fee may have no impact on resource extraction or production practices. On the other hand, a tax or fee on raw resources at the point of extraction may alter production practices and reduce the waste generated at every step of the production model.

### 3.2 Benefits of economic instruments

A goal of the majority of participants was to begin to shift away from, or to supplement, command and control type enforcement systems with systems that incorporate market incentives for pollution control. The interest in economic instruments or market incentives stem from the potential economic benefits that can be derived from the use of such policies. While the theory behind the use of economic instruments is sound, many governments and industries are hesitant to abandon traditional command and control policies, where firm behavior is well documented and predictable, to employ untested economic policies. In some cases, the use of economic incentives may not yield clear-cut behavioral changes, and there is some uncertainty as to how firms may react to varying economic policy changes. However, the lure of potential benefits including monetary and efficiency gains that, theoretically, will result from the use of economic instruments is tempting to many governments. A list of potential benefits resulting from economic instruments are listed below.

- Economic instruments can result in cost savings.
- Economic instruments promote efficient use of resources.
- Externalities are internalized.
- Industry may adopt a more cooperative approach to pollution control.
- Economic instruments allow increased productive flexibility in dealing with pollution control.
- The burden of pollution control shifts to the private sector, away from the public sector.
- The use of economic instruments promotes technological developments, while command and control policies do not.
- Used properly, economic instruments can promote environmental compliance as well, or better than command and control approaches.

### 3.3 Examples of economic instruments

It is important to note that in many cases it is difficult to make a clear distinction between economic instruments and command and control approaches. The two approaches are often blended together. For example, fines, quotas, and pollution fees can be viewed as either an economic instrument to encourage pollution control or a command and control regulation. Furthermore, economic instruments have some underlying regulation, that often include fines or penalties. Examples of some economic instruments presented in the discussion are listed below.

- Fees or charges (to discharge, emit, or dispose).
- Taxes (on inputs, outputs, or waste).
- Market approaches (open trading, price clearing).
- Subsidies.
- Royalties.

- Emission reduction credits.
- Banking (mitigation banking, asset (savings account).
- Cross-media trading.
- Trade policy (tariffs, quotas, PPMs).
- Deposit/refund system.
- Recognition and rewards (green labeling).

#### **4 CONCLUSIONS**

Both session precipitated some very constructive and interested discussion and concluded with examples being given of economic instruments used in specific countries. Participants described economic incentives being used in their respective countries and discussed issues surrounding the regulatory framework, the purpose of the instrument, and how effective the instrument was. The discussion was very open and did not focus on “right” or “wrong” approaches to pollution control.

It is important to note that the applicability of economic instruments may vary between countries (for a wide variety of reasons) depending on the type of pollution being controlled (air, water, waste) and on the overall objectives of the policy. While economic instruments can not completely replace command and control regulations, they can offer a cost effective and efficient approach to pollution control.