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Report

Effluent Charges to Control Industrial Water Pollution in Sri Lanka

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Background

The current literature on environmental policy supports incentive-based strategies over traditional 'command-and-control' mechanisms. The fundamental principle is that incentive based strategies provide the regulated firm (i.e., mainly industrial firms) with economic incentives to abide by environmental regulations. The 'command-and-control' approach (i.e., standards) on the other hand, forces firms comply irrespective of their ability to 'economically' perform better or worse than meeting the pre-determined standard. The desired environmental quality standards can be achieved just as effectively with incentive based strategies. However, instead of responding to mandatory and inflexible standards firms adjust their behavior by responding to a price signal, an inherent feature in the operation of firms. This approach provides greater flexibility for individual firms to decide on the appropriate level of mitigation, appropriate according to their respective unique circumstances. Therefore this approach has greater appeal to industrialists.

In general, incentive based strategies are also recommended by international donor organizations, since they promise greater effectiveness and efficiency in controlling pollution. It is prudent for policy makers in Sri Lanka to devise methods to integrate such techniques into the existing regulatory framework of environmental policy of Sri Lanka could result in significant benefits.

Methods to integrate market based incentives schemes for industrial pollution control have been discussed fairly extensively in Sri Lanka during the recent past. Several studies have shown that the introduction of incentive based schemes, particularly effluent charges can result in significant benefits to both industries (i.e., the regulated) as well as to the regulatory authority¹ (see Box 1).

Box 1 Advantages and Disadvantages of Effluent Charges

- Greater flexibility for industrial firms in deciding on the level of compliance,
- An incentive for some firms to go beyond the level of mitigation specified by a standard
- A source of revenue for the regulatory and enforcing authorities
- Ease of monitoring and enforcing responsibility
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¹ For example, see Environmental Resources Management, London 'MEIP/SMI-IV Strategy, Guidelines and Institutional Strengthening for Industrial Pollution Management', Final Report, Volume 2, February 1994, and Stele, Paul and Rushdy Hassen, 'Study on the Introduction of Effluent Charges as a Means of Controlling Industrial Water Pollution' Final Report December 1995

A study conducted by the Institute of Policy Studies (IPS) under commission of the Natural Resources and Environmental Policy Project (NAREPP) states that, a system of effluent charges would be a “feasible and effective” policy instrument to address water pollution from industrial sources in Sri Lanka. The study recommends a fee to be assessed per unit of Chemical Oxygen Demand (COD)²

Initially, the effluent charge scheme should target only “high polluting” industries that fail to meet the national water quality standards as enforced through the Environmental Pollution License (EPL) program

The report suggests that an effluent charge scheme could generate approximately Rs 2.5 million for the CEA each year

The institutional and administrative framework necessary to implement and enforce the effluent charge program and a method to share the revenue that would be generated is explained in the report

Policy Recommendation

The policy recommendations presented here are the outcome of several discussions held in connection with the IPS report. Representatives of the Ministry of Transport, Environment and Womens’ Affairs (M/TEWA), CEA, several industries and members of relevant professional and academic communities participated in these discussions

- A full fledged effluent charge scheme on a nation-wide scale is pre-mature in the context of the existing administrative and technical capacity of regulatory agencies

The primary mechanism for industrial pollution regulation in Sri Lanka at present is the Environmental Protection License (EPL). Since the EPL system was enacted in 1990, the CEA has issued over 2300 licenses³. The CEA was initially assigned the overwhelming responsibility for issuing EPLs to all categories of industries. Since mid - 1996, the responsibility for issuing and renewing licenses of low polluting industries was delegated to local authorities. Furthermore, North Western Province has assumed complete responsibility for issuing EPLs to industries in that province. Due to these developments, the task of the CEA has been eased significantly. At present the CEA maintains EPL responsibility for about 500 high polluting industries⁴

However, actual enforcement of EPLs has been less successful. Very few industries have installed waste treatment facilities that would be consistent with requirements of the EPL. It is estimated that less than 15% of all high polluting industries have proper wastewater treatment facilities⁵, and that the number must be even lower

² The report suggests that COD is more accurate as a measure of pollution load than the commonly used measure Biochemical Oxygen Demand (BOD) see p 38

³ as of June 31 1995

⁴ Personal communication with CEA

⁵ IPS, 1995

for medium polluting industries. Inability to strictly enforce the regulation is considered to be a significant cause for the present situation.

- Short of implementing a full fledged scheme, effluent charges can be introduced on a pilot scale.

There are at least two advantages to following this strategy.

1) The concept of effluent charges is new and untested in Sri Lanka. Firms subject to new policy instruments as well as the regulatory agencies implementing and enforcing them, must adjust to changes in institutional, administrative and technical structure. Firms would be particularly concerned about additional requirements for compliance with the new regulation. Uncertainty associated with changes in the regulatory process can affect production plans and decisions for future investments. Similarly, regulating agencies would be concerned about the additional responsibilities in terms of human resource needs and technology needs. Introducing effluent charges on the scale of a pilot project can ease the pressure and reduce uncertainty associated with the new scheme.

2) In theory an effluent charge can be applied at the scale of a large river basin or watershed. However it is much simpler to apply the concept in the context of a smaller spatial area that has a high concentration point sources (i.e., industries). Two specific situations that lend themselves for an effluent charge scheme are 1) industrial estates with or without centralized treatment facilities, and 2) areas with a high concentration of industrial plants discharging into a common wastewater treatment facility. With regard to the first type, there are several active industrial estates in Sri Lanka, and several others are due to be developed soon. Pertaining to the second type of location, a central treatment plant is due to be constructed in the Moratuwa Ratmalana region. These circumstances are extremely conducive to the implementation of an effluent charge scheme. In fact, it will be necessary to have in place a system similar to an effluent charge scheme, when the centralized treatment plant begins to operate.

- In addition to implementing effluent charges on a pilot scale, several interim measures could be adopted to direct environmental regulations in Sri Lanka to reflect incentive based strategies.

This can be done by revising the existing pollution control regulatory procedure to reflect incentive based features. Two particular revisions to the current EPL system that can be adopted quite easily and effectively. An important feature of these modifications is that they constitute very minor structural adjustments to the prevailing regulatory framework. Uncertainty as well as adjustment difficulties would therefore be minimized.

1) Under the current EPL procedure, industries that apply for a license are levied an 'inspection fee' and an 'issuing fee'. The inspection fee is determined as a proportion of the capital investment of the firm and is a one time fee. The issuing

fee is a flat fee which is levied annually at the time of permit issuance and renewal. All industries pay a fixed amount as the issuing fee. It is possible to modify the basis for calculating both these fees, so that they each reflect the effluent load that will be generated by the specific industry. An industry will then have an incentive to reduce its effluent load since it will be charged a lower fee. By virtue of being proportionate to the capital investment, the inspection fee is somewhat representative of the potential waste load. However the calculation of this fee too can be revised to better reflect pollution load.

2) Under the present regulation, industries that do not comply with the requirements of an EPL are liable to be assessed a penalty. A ceiling for this 'non-compliance' penalty is specified by law, however the actual amount that a particular firm pays is determined by an arbitrary process. As suggested earlier, the basis for calculating this non-compliance fee could also be modified to reflect the actual amount (in terms of waste load) by which the firm exceeded the standard.

Conclusions

This policy brief has raised several important issues that pertain to industrial pollution control regulations in Sri Lanka. Indeed, it is not an exhaustive list, and considerable attention should be given to each of the issues discussed here as well. However, it provides a basis to assign priorities and begin addressing some of the potential limitations of the current regulations.