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The Effluent Charge Approach to Water Quality Control

Gardner M. Brown, Jr.

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THE EFFLUENT CHARGE APPROACH TO WATER QUALITY CONTROL

Gardner M. Brown, Jr.
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Water Quality Control:
Integrating Beneficial Use
and
Environmental Protection

Fleming Law Building
Boulder, Colorado

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I. There are two different philosophies for managing water quality: A command and control approach illustrated by permits and regulations on an economic approach illustrated by an effluent charge system.

A. Most discussion emphasizes a choice between the two options.

B. The best features of each alternative can be combined.

II. Several economic approaches are possible including tradeable permits and effluent charges.

A. Tradeable permits have had limited success in the realm of air quality management despite substantial encouragement from the Reagan Administration.

B. Tradeable permits not used in water quality management.

C. Effluent charges have been used in many countries; for nearly two decades in some cases.

III. An effluent charge system creates a continuous incentive to reduce waste discharge.

A. Each industrial and municipal waste discharger pay a charge per unit of waste discharged. Among the alternative adjustment (substitution) possibilities are:

1. Waste saving technologies
2. Pollution saving inputs
3. Shifts in products and product redesign
4. Sharper, pollution-conscious management
5. In-plant treatment, including recycling.

B. An effluent charge always rewards those who can save on effluent production and discharge. A permit creates no incentive to reduce pollution once the permit conditions are satisfied.

IV. Ideal effluent charge systems set charges equal to the cost of treatment of the damage caused by lower water quality.

A. International organizations, such as the OECD to which the United States is a member, are committed to the polluter-pay principle.

1. Polluters, not taxpayers, pay for the damages caused or expenses incurred by the polluters' actions.

B. The underlying (marginal) principle is that if a polluter (decision-maker) causes others to bear expenses or damage for discharging an extra ton of waste, then these additional costs should be factored into the decision.

C. Whereas permits give dischargers the "right" to pollute freely up to the limits in the permit, the charge system charges for the "right" to pollute.

V. Practical effluent charge systems are comparatively easy to implement.

A. A few key pollutants are identified and their basis for measurement and monitoring are established or drawn from the permit system.

B. In reality, charges for each pollutant are established through a political process. Charges increase during an introductory period of transition, if history is a guide.

C. Charges will vary by region and perhaps by time, as they should, to reflect regional and seasonal receiving water volumes and total waste loadings--industrial and municipal size and concentrations in water basins. That is, when damages or treatment costs vary, charges should vary.

VI. Practical effluent charge systems have many desirable consequences.

A. Water quality is higher and/or total abatement costs are lower when there is an incentive to decrease waste production.

B. Total revenues from the charge system are available regionally and nationally and are used for more abatement measures and to aid municipal and industrial waste problems.

C. Enforcement costs decrease because many of the conditions in the permits are voluntarily met as polluters seek to reduce their charge liabilities.

D. In some cases, administrative costs of water quality management are reduced by effluent charges. They are a more quantitative approach to quality management and encourages more systematic approach.

E. Economic impact of a charge system is small.

1. The cost of the charge is a small fraction of business expense.

2. The possibilities for reducing pollution production are many and varied.

3. The ensuing cleaner environment attracts industry and professional people interested in such an environment.

4. Responses by industry to reduce pollution generates new technologies and new business.

VII. The success of an effluent charge and permit system illustrated by the experience of The Netherlands and the Federal Republic of Germany:

A. Both nations have decentralized water quality management and both nations have quite varied circumstances.

B. Netherlands systems in operation since 1969; West Germany's since 1984.

C. Quantitative data will be presented on success-revenues generated, pollution abated, efficiency and effectiveness and superiority of the charge system.

SELECTED REFERENCES

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