PERMITS AND EFFLUENT CHARGES IN THE WATER POLLUTION CONTROL POLICIES OF FRANCE, WEST GERMANY, AND THE NETHERLANDS

JAN C. BONGAERTS and R. ANDREAS KRAEMER
Forschungsschwerpunkt Umweltpolitik,
Wissenschaftszentrum Berlin für Sozialforschung,
Berlin, Germany

(Received December 1988)

Abstract. In this article the water pollution control policies of these countries and their effects on emitters are analyzed. In the Netherlands, local water control boards levy pollution charges on both direct and indirect emitters. The charges are based upon measured emissions and actual treatment costs and they vary among the boards. Discharges into surface waters are by permission only. West German law sets nationally uniform rates only for direct emitters and some pollutants, irrespective of treatment costs. The States (Länder), however, may make indirect emitters liable to pay as well. In France, river basin agencies charge emitters and grant discounts where abatement facilities have been installed. Further policy instruments are tax cuts, subsidies, and standards set on local and national levels. France, in this complex policy, also uses contrats de branche where government and industries agree by contract on pollution abatement. Evidence shows that all these policies have reduced water pollution. As emissions decrease, problems of overcapacity might occur where collective water treatment plants have been installed already. Moreover, investment in additive abatement technology may inhibit the introduction of low-waste, integrated technologies. Yet the development of the latter, though expensive in the short run, should enable industry to meet more stringent standards in the future.

Introduction

Water pollution control policy is different from air pollution control in that it commonly involves two instruments instead of one. Whereas the latter usually relies on a set of ambient air quality standards, the former regularly involves standards as well as effluent charges. In this article we explore and compare the water pollution control policy concepts adopted in three countries: France, the Netherlands, and West Germany. The purpose is to point out the main principles and measures taken in order to provide incentives for effluent dischargers. This is done in three sections, each of which is devoted to one of these countries. The fourth section addresses various empirical studies looking into the efficiency of the policies as revealed by survey data. The final section presents an evaluation of the results in these studies and of general policy characteristics.

The scope of this article is broad but not exhaustive. More specifically, it does not deal with three aspects of water pollution control policy which should not be omitted from a thorough investigation. First, we do not investigate the incrimination of water polluters and their punishment in the form of fines, for instance. Second, we do not address pollution control policies dealing with specific substances such as used oils and phosphates, where these are covered by special laws. And third, we do not look
into civil liability for water pollution damages. The reason for leaving these topics out is simple: Each deserves a paper of its own.

1. The Netherlands

1.1. Effluent Charges

At the end of the 60s, it became obvious that the Netherlands had a waste water problem. It was discovered that the country was emitting several times the amount of water that could be naturally regenerated and was therefore destroying aquatic ecosystems. As there was a severe shortage of waste water treatment plants and in view of the considerable gap between the amounts of naturally tolerable effluent water and the actual levels, it was decided to quickly step up investment expenditure on water treatment. The deadline for solving the problem was set at 20 years after program initiation. It was necessary to construct large extensions of existing sewerage networks and pumping stations in order to meet this deadline. The basic framework for this clean-up program was laid down in the Surface Water Pollution Control Act of 1970 (*Wet inzake de Verontreiniging van de Oppervlakte-wateren*). An overview of contemporary Dutch water control policy is given by te Veldhuis (1979).

The law entitles the local water control boards in charge of the water quality management to set effluent charges according to the polluter-pays-principle. Sections 17 and 18 of the Act stipulate the basic institutional arrangements implementing this principle in the treatment of waste water. Any water control board may specify that both direct and indirect emitters are subject to a charge. This differs from West Germany, where charges apply only to direct emitters.

The charges levied in the Netherlands are based upon quantity and quality of effluents. Quantities are measured in inhabitant equivalents, which means the average amount of effluent discharged by each inhabitant within a water control board area per year. In practice, most water control boards assume that each family residence discharges between 3 and 3.5 inhabitant equivalents per year. Effluents produced by industrial emitters, however, are often measured and not merely estimated, since they vary considerably in both quantity and quality.

Measuring takes place by repeated registration of the quantity of effluents and their composition over the period of one week. For standardized industrial processes, quantity and quality of effluents may be approximated by constructing a set of coefficients linking inputs (like labor and raw materials) to effluents. This procedure results in equations in which given amounts of inputs within a specific process yield a theoretical amount of pollutants of various kinds. Another approach uses the amount of water taken in by the plant as a basis for estimating the amount of effluent. Transformation of real quantities into inhabitant equivalents is based on an assessment of the quality of the effluent. Each liter is weighed by a factor larger than one depending on the amount of pollutants. This practice is also common in West Germany and in France, where it is explicitly written into the law.