

COMMENTS AND NOTES

THE EFFLUENT FEE APPROACH FOR CONTROLLING AIR POLLUTION

Man's industrial growth in the past century has resulted in extensive environmental modifications, a primary one being the pollution of the atmosphere. Paradoxically, classical economists viewed air as a free economic good;¹ the supply was assumed to outweigh the amount which could be sold at the lowest finite price. The resource of air is exhaustible, however, and the price for its consumption has remained zero only because the cost of internalizing pollution damage within property systems has heretofore been thought greater than the possible gains. Cost-benefit studies now indicate the need for such internalization. The serious nature of the damages wrought by air pollution and its threat to the very existence of man is dramatically and convincingly illustrated by the air pollution disasters.² Over five thousand deaths and tens of thousands of injuries³ have been attributed to these episodes where excessive amounts of pollution combined with unusual meteorological conditions to create a lethal atmosphere. The requisite meteorologic and pollution conditions capable of causing similar disasters exist periodically in many industrial areas of the United States. These situations reflect only a small part of the diversity and extent of air pollution damage; effects on individuals from sustained exposure to present urban pollution levels vary from annoying to fatal. Pollution

1. See Crocker, *Some Economics of Air Pollution Control*, 8 NAT. RES. J. 236 (1968).

2. These disasters include: Meuse Valley, Belgium, 1930; Donora, Pa., 1948; London, England, 1952 and 1962; and Poza Rica, Mexico, 1950. Episodes also occurred in New York in 1953, 1963, and 1968. See Cassell, *Health Effects and Control Implications*, 33 LAW & CONTEMP. PROB. 195, 201-04 (1968) [hereinafter cited as Cassell]; Goldsmith, *Effects of Air Pollution on Human Health*, in 1 AIR POLLUTION 547 (A. Stern ed., 2d ed. 1968).

3. See STAFF OF SUBCOMM. ON AIR AND WATER POLLUTION OF THE SENATE COMM. ON PUBLIC WORKS, 90TH CONG., 2D SESS., AIR QUALITY CRITERIA 34 (Comm. print 1968) [hereinafter cited as STAFF REPORT]. Those having preexisting respiratory ailments are very susceptible to such pollution conditions and account for a large percentage of the disaster deaths.

4. The presence of beryllium in the atmosphere, for example, may cause the often-fatal condition of berylliosis. See *Heck v. Beryllium Corp.*, 424 Pa. 140, 226 A.2d 87 (1966). Cancer of the lung and the esophagus has also been linked to specific pollutants. See generally Cassell; STAFF REPORT 50.

exposure may directly cause death or aggravate pre-existing respiratory ailments which result in death,⁵ and both common headaches and hypertension have been attributed to various atmospheric pollutants.⁶ Carbon dioxide may be responsible for more insidious effects, such as the impairment of human judgment, to which has been partially attributed the increased urban automobile accident rate.⁷ Some evidence exists that even athletic performance may be hindered by certain pollutant levels.⁸ Moreover, air pollution corrodes and soils buildings and clothing and reduces property values.⁹ Other damage is also substantial; for example, agricultural pollution damages have been estimated to exceed 500 million dollars annually in crop damage alone.¹⁰ Additional effects include the visibility loss resulting from photochemical smog which poses a serious threat to air and ground navigation. Also, urban climatic conditions frequently vary from their surrounding environs because of pollution levels. On a transcontinental scale, it has been theorized that increased carbon dioxide levels could effect a change in the temperature of the earth with far reaching, irreversible effects upon the ice caps and our coastal cities.¹¹

The air pollution problem is more complex than the mere identification and correlation of its diverse causes and effects. Individual pollutants may, for example, combine and interact chemically in the atmosphere to form little understood "synergistic" compounds which are often more damaging than the sum of their individual parts.¹² Further, industrial technology is producing new, more complex forms of pollution at a steadily increasing rate

5. Victims of bronchitis, emphysema, pneumonia, tuberculosis, and asthma are especially vulnerable to pollution effects. See Cassell 201; STAFF REPORT 50-54.

6. See STAFF REPORT 55.

7. See Chambers, *Risks Versus Costs in Environmental Health*, in *THE ECONOMICS OF AIR POLLUTION* 51, 56 (H. Wolozin ed. 1966).

8. See Wayne, Wehrle & Carroll, *Oxidant Air Pollution and Athletic Performance*, 199 J.A.M.A. 901 (1967).

9. See, e.g., *Pottock v. Continental Can Co.*, 42 Del. Ch. 360, 211 A.2d 622 (1965); *Waschak v. Moffatt*, 173 Pa. Super. 209, 96 A.2d 163 (1953), *rev'd* 379 Pa. 441, 109 A.2d 310 (1954).

10. See, e.g., *King Farms Co. v. United States Steel Corp.*, 432 Pa. 140, 247 A.2d 563 (1968). See also Brandt & Heck, *Effects of Air Pollutants on Vegetation*, in 1 *AIR POLLUTION* 401 (A. Stern ed., 2d ed. 1968); 1 BNA, *ENVIRONMENT REP.—CURRENT DEVELOPMENTS* 445 (1970) [hereinafter cited as BNA, E.R.].

11. See Ayres, *Air Pollution in Cities*, 9 NAT. RES. J. 1, 12 (1969) [hereinafter cited as Ayres]; *TIME*, Feb. 2, 1970, at 61.

12. See Cassell 199.

exceeding researchers' ability to analyze and predict the effect upon the chemistry of the atmosphere.

POLLUTION CONTROL PROGRAMS

Present Control Efforts

Pollution control programs now in effect have generally taken one of three forms: effluent standards which limit the emittance of specific forms of pollutants;¹³ absolute prohibition of certain polluting activities such as the burning of low-grade coal;¹⁴ and controls on certain pollution-causing activities such as stack height regulations and boiler specifications for power plants.¹⁵ These abatement schemes have been unsuccessful partially because of the type of enforcing agency and the nature of the control program.¹⁶ Experience under these programs has shown that legislatures too often yield to the pressures of local industrial polluters who represent substantial percentages of revenues and employment for their constituents.¹⁷ Moreover, state and local legislatures fear making their areas unattractive to industrial growth because of strict pollution regulations.¹⁸

Although air pollution complexity militates against structuring controls toward individual pollution components and indicates a need for industry-wide coverage,¹⁹ present legislative attempts in the form

13. See, e.g., New Jersey Air Pollution Control Code, ch. 7, § 2 (1964), reprinted in, PUBLIC HEALTH SERVICE, A COMPILATION OF SELECTED AIR POLLUTION EMISSION CONTROL REGULATIONS AND ORDINANCES 57 (1968) [hereinafter cited as COMPILATION].

14. See, e.g., Rules and Regulations of the Pollution District of Orange County, Calif., Rule 26 (1955), reprinted in, COMPILATION 43.

15. See, e.g., Allegheny County, Pa. Smoke Control Ordinance § 1308 (1960), reprinted in, COMPILATION 7.

16. See Esposito, *Air and Water Pollution: What to do While Waiting for Washington*, 5 HARV. CIV. RIGHTS-CIV. LIB. L. REV. 32, 42-43 (1970). The expenditures of state and local agencies in controlling pollution reflect the lack of substantial commitment. See O'Fallon, *Deficiencies in the Air Quality Act of 1967*, 33 LAW & CONTEMP. PROB. 275, 293-96 (1968).

17. See Green, *State Control of Interstate Air Pollution*, 33 LAW & CONTEMP. PROB. 315, 330 (1968). An indication of the economic coercion an industry can have over individual voters is illustrated in note 218 *infra*.

18. See, e.g., The Evening Bulletin (Philadelphia), Feb. 11, 1970, § B, at 20, col. 1. Often, potentially effective legislation is not diligently enforced against local industry by the governmental agency. Without federal control, the effluent fee administration would also be required to control this adverse motivation. The problem is only partially solved by the Air Quality Act. See O'Fallon, *supra* note 16, at 285. See note 121 *infra*.

19. Cassell 197. These factors also impede the utilization of technological advances to keep pace with the evolving pollution problem.

of effluent standards are unrealistically directed at singular pollutants. Also, and perhaps most important, insufficient knowledge concerning pollutants and their synergistic effects makes the ascertainment of the emitter's cost-saving function and the receptor's damage function²⁰ extremely difficult. The lack of an optimum effluent standard causes a waste of economic resources.²¹ Moreover, current static effluent standards fail to provide an economic incentive to the polluter to develop or install more effective abatement equipment beyond that required by the standard. The polluter, restricted to one abatement level is presented with no alternative which may be more appropriate in view of his cost function. This results in economic waste since more abatement resources are expended than justified by the public benefit derived therefrom.²² Despite the apparent drawbacks to the direct regulation of air polluters through fixed standards,²³ the federal government appears to be moving toward the establishment of national effluent standards as indicated by the recent Senate passage of the National Air Quality Standards Act of 1970,²⁴ which provides for establishment of such standards for particularly dangerous pollutants by the Department of Health, Education and Welfare.

20. These two functions will hereinafter be referred to as the cost-benefit relationship.

21. See FIRST REPORT OF THE SECRETARY OF HEW TO THE UNITED STATES CONGRESS, PROGRESS IN THE PREVENTION AND CONTROL OF AIR POLLUTION, S. DOC. NO. 92, 90th Cong., 2d Sess. 65 (1968) [hereinafter cited as FIRST REPORT]; Cassell 198-200.

22. Management's view toward this misallocation was well summarized by an industrial engineer:

It is most disturbing to us in industry who are technically oriented to see overly simplified regulations adopted. This type regulation can fail because the control cost may be very great and not commensurate with the benefit derived In the final analysis, it is the public who pays the cost of pollution control. Address by W. Chalker, "Industrial Problems and Solutions-Chemical," Symposium on Air Pollution, N.C. State Univ., Raleigh, N.C., Sept. 26, 1968.

The above mentioned drawbacks to the effluent standard approach are all removed by combining it with an effluent fee schedule. However, the technical lag problem still remains. See notes 81-87 *infra* and accompanying text.

23. The advantages of the direct regulation approach are summarized in Hagevik, *Legislating for Air Quality Management: Reducing Theory to Practice*, 33 LAW & CONTEMP. PROB. 369, 378 (1968).

24. 116 CONG. REC. 16,260 (daily ed. Sept. 22, 1970). The bill is presently in conference committee. [1969-1970 Transfer Binder] 2 CONG. INDEX, House Status Table, 4932 (1970). See also SENATE COMMITTEE ON PUBLIC WORKS, AIR QUALITY ACT OF 1967, S. REP. NO. 403, 90th Cong., 1st Sess. 5 (1967) [hereinafter referred to as SENATE REPORT].

Alternatives

Tax Credit. Several alternatives to direct regulation of polluters, most offering an economic incentive to abate, have been proposed. One alternative provides tax credit²⁵ for capital investment in air pollution abatement facilities and accelerated depreciation for such equipment. In addition to the problem of ascertaining the portion of a plant's investment which should be allocated to pollution control,²⁶ the credit may encourage capital expenditure for abatement equipment when a lower cost alternative solution is available.²⁷ The basic thrust of this approach is misguided since abatement costs are shifted to the government and ultimately the taxpayer rather than the polluter. Further, the proportion of control cost attributable to such equipment is generally low, reducing the abatement incentive provided by the credit.²⁸ Tax incentives also provide a distinct advantage to firms subject to higher corporate income tax rates. The Tax Reform Act of 1969 has partially implemented this alternative by providing rapid amortization of a portion of the adjusted basis of "pollution control" facilities.²⁹

Subsidization. Another alternative to direct control is to subsidize the polluter for reducing his effluent emissions.³⁰ Initially, such a program may seem inequitable because the public pays for reducing pollution when, in reality, the cost of abatement should very likely be a cost of the polluter's production.³¹ In addition, the

25. See Gerhardt, *Incentives to Air Pollution Control*, 33 LAW & CONTEMP. PROB. 361 (1968). The investment credit provided under section 48 of the INT. REV. CODE of 1954 has been suspended under the Tax Reform Act of 1969, § 401(e), 83 Stat. 487. A comprehensive analysis of the tax incentive approach is found in Roberts, *River Basin Authorities: A National Solution to Water Pollution*, 83 HARV. L. REV. 1527, 1530-37 (1970) [hereinafter cited as Roberts].

26. This problem would arise, for instance, where a more efficient boiler is purchased which emits fewer air contaminants. The entire cost of the boiler should not be accorded special tax treatment. See Gerhardt, *supra* note 25, at 361-62.

27. The polluter may install expensive abatement equipment to gain the tax advantage rather than use less contaminating fuels, a possibly cheaper alternative. Economic waste is thus encouraged. See *id.* at 362-63; Roberts 1533.

28. See Gerhardt, *supra* note 25, at 366; Mills, *Economic Incentives in Air Pollution Control*, in THE ECONOMICS OF AIR POLLUTION 40, 46 (Wolozin ed. 1966) [hereinafter cited as Mills].

29. INT. REV. CODE of 1954, § 169. The Act, by allowing the credit only for a "new, identifiable treatment facility," would also discourage the use of alternative, cheaper abatement techniques such as fuel substitution or installation of more efficient abatement processes.

30. See Mills, 42-46; Mills, *Federal Fiscal Policy in Air Pollution Control*, PROCEEDINGS: THE THIRD NATIONAL CONFERENCE ON AIR POLLUTION 574, 576 (1967) [hereinafter cited as PROCEEDINGS].

31. Requiring the polluter to absorb pollution costs may not be as equitable as it initially

uncertain pollution "origin" for such payments causes difficulties in ascertaining accurate subsidies for the installation of process-modification equipment which reduces pollution yet increases plant efficiency.³²

Private Action. A third alternative is the private civil action to enjoin or to collect damages from offending polluters.³³ This method is more flexible since the pollutant recipient can direct his action against new, complex pollutants. Moreover, the receptor may obtain immediate relief rather than await the promulgation and implementation of effective pollution legislation.³⁴ The class action offers the private plaintiff an even more effective anti-pollution weapon.³⁵ The use of such nuisance actions in the past, however, has been sporadic and ineffective³⁶ because of trial delays, problems of proof,³⁷ excessive costs, and lack of precedent.³⁸ The formation of environmental litigation groups³⁹ and the ineffectiveness of present pollution legislation⁴⁰ are presently placing greater emphasis on private remedies. This trend will likely continue, and although the

appears. Consider the land use conflict that arises when A purchases land adjacent to a pulp mill operated by B. A has deliberately caused the ensuing conflict, and if A forces B to relocate, he is imposing an external diseconomy on A. This situation suggests that costs should be distributed between the receptor and emitter to best approximate an optimum allocation of resources, although this ideal is only approachable in private nuisance litigation. *See Note, An Economic Analysis of Land Use Conflicts*, 21 STAN. L. REV. 293 (1969).

32. An incentive would exist for the industry to build a plant with a higher emission level to utilize fully the subsidy. The industry would thus be setting its own "origin" for the payments. *See Mills* 45.

33. *See, e.g., Arvidson v. Reynolds Metals Co.*, 125 F. Supp. 481 (W.D. Wash. 1954). *See MAINTENANCE OF ALTERNATIVE REMEDIES* section of text *infra* for an analysis of the effect of the effluent fee scheme upon private remedies.

34. *See generally* Esposito, *supra* note 16.

35. *See* note 273 *infra*.

36. *See* Edelman, *Air Pollution Control Legislation*, in 3 AIR POLLUTION 553, 554-55 (A. Stern ed., 2d ed. 1968).

37. The formidable nature of this obstacle is exemplified in *Heck v. Beryllium Corp.*, 424 Pa. 140, 226 A.2d 87 (1966), where the difficulty in proving the causal relationship between the only beryllium plant in the area and berylliosis resulted in the reversals of two jury verdicts.

38. *See* Juergensmeyer, *Control of Air Pollution Through the Assertion of Private Rights*, 1967 DUKE L.J. 1126, 1130-37. The *Restatement* rule requires an element of intent and the presence of an ultra-hazardous activity, further impeding recovery in private nuisance actions. RESTATEMENT OF TORTS §§ 520, 822 (1939).

39. The Environmental Defense Fund, Inc., Wilderness Society, National Environmental Law Societies, Sierra Club, and groups formed to combat specific problems such as the Scenic Hudson Preservation Conference have spearheaded the litigation effort. *Cf.* note 276 *infra*.

40. *See* note 121 *infra*.

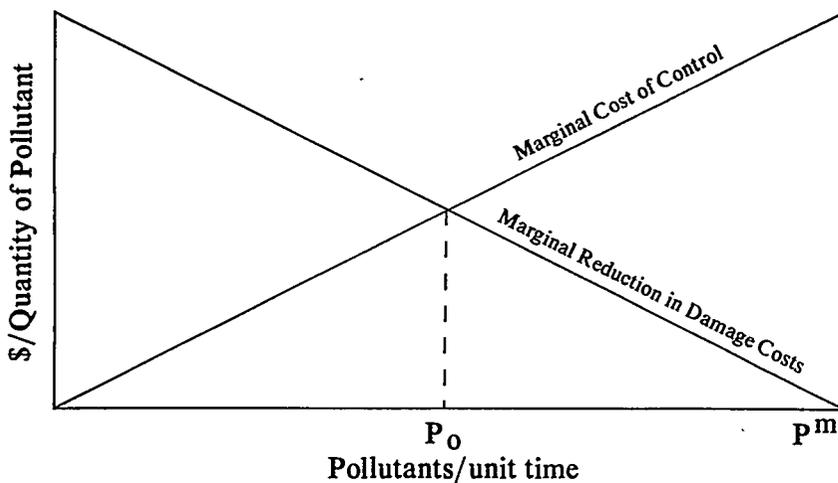
courts are not endowed with the ability to regulate, control, and police air pollution sources, such remedies effectively complement other control measures.

Effluent Fee Proposal

The effluent fee scheme, an effective alternative to direct control, has a solid theoretical basis and answers many of the problems posed by the other control schemes. Basically, without an air quality management program, air is considered an external diseconomy;⁴¹ that is, the costs of the discharge of pollutants into the air are imposed upon receptors rather than being borne by the source of the pollutants. This misallocation results from a failure of the market mechanism to allocate effectively the air resource thus imposing no restraint upon the polluter. The effluent fee scheme seeks to minimize both the costs of pollution damage and abatement expenses by requiring the polluter to pay a fee reflective of abatement costs. The fee increases to the point where additional abatement expenditures would exceed the benefit provided to others by the increased abatement. This optimal point is determined at any given time by first ascertaining the receptor's effluent damage function which represents potential public benefit from abatement. The cost function of the polluter to institute an abatement program is then determined; the optimal pollution level is that point where the marginal effluent damage equals the marginal abatement cost.⁴² It is this level of

41. See A. PIGOU, *THE ECONOMICS OF WELFARE* 160-61 (1932).

42. See Wright, *Some Aspects of the Use of Corrective Taxes for Controlling Air Pollution Emissions*, 9 NAT. RES. J. 63, 64-66 (1969). The optimum pollution emission level is illustrated below.



pollution which the effluent fee scheme is designed to reach, relying on the profit-maximization motive of the polluter to encourage efficient pollution reduction rather than payment of the fee. Although this profit maximization postulate has been questioned, alternative economic rationales could yield even greater benefits.⁴³

Advantages. The principal advantage of the effluent fee scheme is that it approaches the optimum level of pollution abatement by the method least costly to society. Contrary to most forms of direct enforcement, the fee provides a continuing incentive to the polluter to install pollution equipment or to develop more efficient abatement systems.⁴⁴ The polluter who finds such installation costs greater than the fee will pay the fee until such time as less costly abatement means are developed. Other firms will abate rather than pay the fee if that is the least costly alternative or partially abate and pay a lower effluent fee. In any case, pollution costs become a cost of production borne by the firm or the consumer rather than the public generally, thus "internalizing" the previously external costs.⁴⁵

This internalization would greatly encourage the development of a comprehensive and advanced pollution control industry. Polluting organizations would be economically justified, as would their

The abscissa represents the emission rate, and the ordinate represents the marginal reduction in damage costs (increment to total reduction in damages) and the marginal cost of control (increment to total control costs). The optimum emission level, P_0 , is that point where the marginal cost of control equals the marginal reduction in damage costs. An increment of control above P_0 would result in an increase in cost outweighing the increase in the value of damage control, causing total costs, control plus damage, to rise. Likewise at control levels below P_0 , overall costs could be reduced by increasing control efforts to the optimum level, P_0 . The graph assumes that the unrestrained emission rate (P^m) obtains where the marginal reduction in damage costs is zero and that both marginal cost of control and marginal reduction in damage costs functions are positive and linear. See Kneese, *How Much is Air Pollution Costing Us in the United States?*, PROCEEDINGS 529, 530-31.

43. The effluent fee scheme assumes that the entrepreneur will respond in a rational manner as a profit-maximizing individual. It has been suggested that this microeconomic neoclassical theory of distribution should be replaced by a sociological interpretation of the firm as an organization within the general social system. Wolozin, *Discussion*, PROCEEDINGS 580. Given this decision-making model, air pollution abatement may be even greater than that anticipated under the classical model in view of management's social responsibilities. Hagevik, *supra* note 23, at 373.

44. An additional research incentive may be provided by emission standards if the standard imposed is couched in terms so that it must be reached by a predetermined date. But even then, if technology were still lacking by that date, a variance could usually be obtained. See notes 249-253 *infra* and accompanying text.

45. See Crocker, *The Structuring of Atmospheric Control Systems*, in THE ECONOMICS OF AIR POLLUTION 61 (H. Wolozin ed. 1966). Total internalization, however, is not possible. See note 31 *supra*.

competitors, in providing funds for abatement research. Such incentive is of critical importance to the pollution control industry whose limited sales have justified only relatively low research and development expenditures.⁴⁶

A further result of internalization would be an adjustment by the consumer to price differentials created by fee assessments. Depending on the ability of the polluter to reflect the fee in the price of his product, the demand for a good produced with a minimal fee may likely increase at the expense of a substitutable good requiring a high fee. This market reallocation would result in a lower total pollution emittance.

Another advantage involves the determination of the least cost solution for a particular polluter which entails a complex evaluation of possible technological process changes and available effluent treatment alternatives. The effluent fee scheme places this abatement analysis burden on corporate management, where it belongs, rather than on government officials. Corporate personnel, with intimate knowledge of their particular firm's manufacturing processes, are in a superior position to ascertain their most efficient abatement programs. The implementation of their abatement decision may take either of two forms—symptomatic treatment or process change.⁴⁷ The symptomatic treatment—employment of particulate and gas removing devices—is less desirable than process changes, such as fuel substitution, since the former usually results in other waste problems.⁴⁸ Since process changes may require long periods to plan and complete, the effluent fee scheme advantageously allows the polluter to pay the fee during the transition period instead of requiring him to abate immediately, resulting in a waste of economic resources, or seek a variance.⁴⁹

Effluent fees are adjustable to the time of day, season, weather, or economic change to reflect more accurately the pollution damage function. The entire schedule may be modified to meet the constant evolution of complex pollutants and their possible synergistic effects.⁵⁰

46. Esposito, *supra* note 16, at 34-35.

47. See Ayres 21.

48. Electrostatic precipitators, for example, create a solid waste disposal problem while wet scrubbers necessitate polluted water treatment.

49. See notes 249-53 *infra* and accompanying text.

50. See note 19 *supra* and accompanying text. The difficulty in measuring the pollution damage function may greatly impede such adjustments. The effluent standard-fee approach avoids this obstacle. See note 86 *infra* and accompanying text.

Sharing fee revenues with local communities who oppose stringent pollution measures because of fears of industrial unattractiveness may elicit political support for the program. Local governments could disseminate the funds to pollution-related activities such as abatement research, respiratory disease research and treatment, or health effects studies.⁵¹ Alternatively, the revenue could enlarge general funds,⁵² thus relieving the citizen's general tax burden.⁵³ Either proposal should appear attractive to the receptor-taxpayer.

Objections. The difficulty in determining the damage caused by particular pollutants presents the most formidable objection to the effluent fee scheme, an objection with legal implications.⁵⁴ Past attempts at such a calculation have been condemned as inaccurate and raise some questions concerning whether such costs can be measured.⁵⁵ Basically, two types of social damage⁵⁶ must be computed: direct costs such as cleaning and health damage and indirect costs such as employment adjustments. The diverse nature of the components increases the difficulty of placing a dollar figure upon such losses. One possibility is to measure property value variations in exposed areas.⁵⁷ The flaw in this method, however, is purchaser ignorance of the more insidious effects of long range pollution exposure.⁵⁸ Despite its apparent drawbacks, the property value

51. The advisability of earmarking the funds for these purposes, however, has been seriously questioned. See TAX FOUNDATION, *EARMARKED STATE TAXES* 18-21 (1955).

52. A logical alternative would be to allow compensation to those citizens who could prove pollution-related injuries. The obvious impracticality of such a system precludes its consideration.

53. Revenue resulting from an effluent fee scheme employed to control water pollution, however, would be utilized to establish large treatment plants. In this respect, application of the effluent fee scheme to water pollution is more functional than its application to air pollution.

54. See notes 233-37 *infra* and accompanying text.

55. See Kneese, *How Much is Air Pollution Costing Us in the United States?*, PROCEEDINGS 529. The unique difficulties in measuring health effects are discussed in Cassell 198-201. These difficulties, however, may not prove insurmountable. See Lave & Seskin, *Air Pollution and Human Health*, 169 SCIENCE 723 (1970).

56. See Ayres 15-16.

57. See Ridker, *Strategies for Measuring the Costs of Air Pollution*, in THE ECONOMICS OF AIR POLLUTION 87, 97, (H. Wolozin ed., 1966). A recent comprehensive study conducted in St. Louis, Washington, D.C., and Kansas City correlated air quality decrease to property value decrease. The factor developed from this study was then applied to each city in the nation to obtain the national damage figure, which approached 620 million dollars. FORTUNE, Feb., 1970, at 122-23.

58. The method does show promise as an indicator of at least a significant portion of pollution-related damages. Other difficulties include distinguishing non-pollution factors which result in variations in the property value and assuring that the values represent an equilibrium condition. See FORTUNE, Feb., 1970, at 122-23.

parameter may be the only practical damage indicator, but a comprehensive national study would require a concerted, well-financed effort. Another proposal suggests that sophisticated polling techniques be utilized to determine how much compensation a receptor will require to forego asserting his rights to pollution abatement.⁵⁹ Limited data, high costs, and sheer magnitude militate against such a project. Furthermore, the receptor might overstate his need for clean air.⁶⁰ Certain damage components, such as "social-interaction" effects of individual relocation and costs masked by informational deficiencies, cannot be determined by either this or the property value method. Another factor complicating damage determination is the synergistic effect of atmospheric pollutants, which, along with meteorological variables, creates difficulties in determining damages for specific types and amounts of effluent. When such interaction occurs, speculative damage predictions of effluent effects on an airshed⁶¹ produce an optimum abatement level which is less accurate than desirable.⁶² Other impediments to damage determination include the inability to measure undetected, chronic health effects;⁶³ difficulty in isolating air pollution damage from other types of damages;⁶⁴ and difficulty in ascertaining diffusion patterns from point sources.

An alleged weakness of the effluent fee scheme concerns a firm's ability to pass the fee to its consumers, thereby arguably eliminating the incentive to abate. It is not certain, however, that the consumer

59. *See id.* at 92; *cf.* Ayres 17-18. The receptor's response would directly depend upon his income level. The marginal rate of substitution of clean air, that is, the rate at which individuals are willing to trade a good for clean air, would be quite low in a ghetto neighborhood yet likely much higher in middle to upperclass areas. *See* P. SAMUELSON, FOUNDATIONS OF ECONOMIC ANALYSIS 43 (1965). Another possible investigatory technique utilizing court-determined damages in civil actions against polluters to reflect pollution-related damages has recently been considered by the National Air Pollution Control Administration under the Department of Health, Education, and Welfare. The method has some promise, although a study conducted in the Philadelphia area indicated that the dearth of such actions would at this time undermine such an effort. *See* Dillow & Havighurst, A Survey of Air Pollution Litigation in the Philadelphia Area, Final Report by Duke University to NAPCA (mimeographed, 1969).

60. *See Crocker, supra* note 1, at 241 n.5.

61. An airshed is that geographical area which encompasses the pollution effects of sources within it.

62. Consider the curves in note 42 *supra*. Difficulty in predicting synergistic effects may cause the marginal damage function to vary from its true shape, thus placing P_0 , the optimum pollution level, at a point above or below its true value.

63. *See generally* Cassell.

64. In the health effects area, for example, what portion of a cigarette smoker's lungs are damaged by particulates in the air and what portion by cigarette smoke?

would bear the entire burden of the fee cost. Economists disagree on the similar issue of whether the corporate income tax is shifted from the corporation to the consumer or employee.⁶⁵ The disproportionate ratio of fee to sales of various industries because of rural-urban cost-benefit discrepancies⁶⁶ may make exact shifting impossible in the short run. Decreased predictability of competitors' reactions also lessens the likelihood of price increases.⁶⁷ The example cited most often by fee opponents, the public utility, is not necessarily devoid of at least a short range abatement incentive.⁶⁸ In some circumstances regulatory lag, despite the industry's guaranteed rate of return, would permit realization of profits where cost savings not anticipated at the time of rate setting are accomplished.⁶⁹ Even the monopolist who has already maximized profits would be inclined to absorb and minimize the fee rather than risk entry by others into his monopolistic market.⁷⁰

Detection and monitoring problems are said to be implicit in effluent fee schemes in two forms. First, present primitive monitoring technology has not produced efficient, low-cost devices to measure all types of pollutants.⁷¹ The lack of any viable standard or device for objectively measuring all types of odors is an example of this technological lag. Although remote stack, multi-component instrument systems capable of measuring several pollutants concurrently may be ideal, an effective albeit costly monitoring program could be instituted utilizing present technology.⁷² Second, the administrative difficulties of inspecting and measuring many pollution sources are considered insurmountable.⁷³ This argument may be answered by the use of a self-monitoring program⁷⁴ whereby

65. See Ratchford & Han, *The Burden of the Corporate Income Tax*, 10 NAT. TAX J. 310 (1957).

66. An incentive may thus be provided new industry to locate in rural areas where low pollution damage functions exist with concomitant low effluent fees.

67. See J. DUE, GOVERNMENT FINANCE 215-23 (1963).

68. See Mills, *supra* note 30, at 589.

69. See Hagevik, *supra* note 23, at 374.

70. See Ratchford & Han, *supra* note 65, at 313. The extent of fee shifting would be subject to other variables such as the rate of turnover of equity capital with a higher rate conducive to greater shifting, the capital structure of the corporation, the degree of profit maximization, the concentration of the industry, and the rate of interest. *Id.* at 314-18.

71. See FIRST REPORT 60-63. The Air Quality Act of 1967 calls for accelerated research and development in this area. 42 U.S.C. § 1857b-1(b)(2) (Supp. IV, 1969).

72. See FIRST REPORT 60; Current Legislation, *State Air Pollution Control Legislation*, 9 B.C. IND. & COM. L. REV. 712, 734 (1968); FORTUNE, Oct. 1970, at 113.

73. See Wolozin, *The Economics of Air Pollution: Central Problems*, 33 LAW & CONTEMP. PROB. 227, 235 (1968).

74. Reliance on self-reporting is also found in other agencies such as the Federal

each polluter is required to install a monitoring device and submit returns periodically to the administrative agency.⁷⁵ Accuracy could be bolstered by imposing criminal sanctions for intentional discrepancies and by unannounced inspections of monitoring facilities. Major discrepancies could be discovered by utilizing a system of cross-checks with other firms' returns, and accuracy could be assured by requiring the certification of measuring devices by an agency engineer.⁷⁶ Such a system would place the burden of monitoring upon the polluter and relieve the governmental agency of a formidable policing and inspection function. The cost of administering such a system would be dependent upon the likelihood of misreporting by the corporate emitter. As in the administration of the FCC's self-reporting program,⁷⁷ corporate reliability minimizes the necessity for extensive inspection programs.

The effluent fee scheme coupled with this self-monitoring aspect is best suited for stationary pollution sources producing significant amounts of damaging emittants. Automobile emission control would not be feasible through the use of an effluent fee at the owner level since the monitoring of a large number of small mobile sources whose individual contributions are insignificant would render administration prohibitive. A fee administered at the manufacturer level would have difficulty in taking cognizance of potential automobile emittants under various conditions, necessarily preventing reliance on a cost-benefit analysis.⁷⁸ Federal automobile legislation⁷⁹ has opted for the

Communications Commission which requires the maintaining and reporting, upon F.C.C. request, of standard radio station program, operating, and maintenance logs. 47 C.F.R. §§ 73.111-.116 (1970).

75. Provision for such a system has been made by the Philadelphia City Council. PHILADELPHIA, PA., AIR MANAGEMENT CODE ch. 3-300, § 3-301 (13) (1969).

76. See SELF MONITORING section of text *infra*.

77. See note 74 *supra*.

78. The tax exacted at the manufacturer's level would avoid many administrative and monitoring problems. A standard tax related to the model of car and its particular discharge level could be levied on the sale of that car. Several problems inhere in this solution, however. The tax would not restrict the transfer of used cars, thus requiring five to ten years to affect substantially the majority of cars on the highway. Also, the tax is unrelated to the number of miles driven which is the true indicator of the pollution contribution. Mills 48-49. Alternatively, the tax could be levied upon the driver relative to the type of car and miles driven. Administrative problems would again be great, however. *Id.*

79. The Air Quality Act preempts state action in this area with the exception of California which had enacted legislation prior to the Act. This preemption, however, is limited to new car legislation, thus leaving used car controls in the hands of state governments. 42 U.S.C. § 1857f-6a(a) (Supp. IV, 1969). H.R. 17255, 91st Cong., 2d Sess. § 202(b)(1) (1970), as amended by the

direct approach administered at the manufacturer's level, never seriously considering any type of fee scheme.⁸⁰ Small emission sources such as backyard incinerators or industries with a low volume of emission would also be more efficiently controlled through direct regulation than by an effluent fee scheme. In addition, complex and costly continuous monitoring equipment would only be worthwhile for pollution sources of significant proportions.

Some may consider that the flexibility inherent in the fee approach results in unfair treatment of the polluter. Since the fee schedule is subject to continuous agency revision, industry is unable to plan comprehensive abatement programs and may be subjected to a rule of men rather than law. If the program is properly implemented, however, most Fee schedule modifications would be of minor significance if an industry maintained necessary flexibility in its abatement program. Also, administrative controls would help avoid unjustified or extensive modifications.

National Standards

Effluent Standard-Fee Approach. The effluent fee scheme administered locally is well suited to complement a national emission or ambient air quality standards program.⁸¹ Coupled with an emission standards program, the effluent fee scheme could function in two different respects. First, the standard could be considered an upper limit above which the emitter could not pollute, thereby limiting his choice to a lower pollution abatement level. This maximum standard could be set at the highest level of pollution without serious, known health effects⁸² and would lend uniformity to abatement programs.

Senate and sent to conference, 116 CONG. REC. 16,260 (daily ed. Sept. 22, 1970), [1969-1970 Transfer Binder] 2 CONG. INDEX, House Status Table, at 4932 (1970), further exemplifies congressional intent to control automobile emissions at the manufacturer's level, giving them until 1975 to reduce emissions by 90 percent.

80. Automobile emissions are responsible for over one-half of the general pollution problem; thus, a major portion of emission sources are removed from the ambit of the effluent fee scheme. See Bayh, *A Congressional View of the Problem*, PROCEEDINGS 107, 108.

81. See Dales, *Land, Water, and Ownership*, CAN. J. ECON., Nov. 1968, at 791. Senator Muskie opposes the promulgation of national standards and emphasizes the need for strictly local regulation. Muskie, *Environmental Jurisdiction in the Congress and the Executive*, 22 ME. L. REV. 171, 175 (1970).

The Senate recently passed H.R. 17255, 91st Cong., 2nd Sess. (1970), which authorizes the Secretary of HEW to promulgate national emission standards. 116 CONG. REC. 16,260 (daily ed. Sept. 22, 1970). For the progress of the bill see note 79 *supra*.

82. The ascertainment of such a level may prove difficult. Synergistic effects in addition to inversion conditions which accumulate even small emissions to dangerous levels complicate the determination. See Cassell 198-201.

The fee schedule below this maximum standard could provide a continuing incentive to abate to a lower emittance level. A more complete incentive program would be provided by either inflating the fee schedule relevant to levels above the standard or lowering the schedule below it. This solution would create a major incentive to abate to the standard level and a further, less powerful incentive to abate below that level. Such an effluent fee program,⁸³ although attractive in certain of its practical applications, abandons the basic economic cost-benefit relationship since the polluter bears a charge more or less than his appropriate damage. The effluent fee scheme, however, may be required to sacrifice such theoretically sound principles to achieve practical effectiveness.

Ambient Air Quality Standard-Fee Approach. Alternatively, national ambient air quality standards—levels of acceptable pollution applied to an airshed region in contrast to individual emission standards—could provide an abatement goal upon which to base the effluent fee schedule.⁸⁴ Such a scheme would necessitate predicting the response of industry to various fee schedules and would likely require revision when the effects of initial abatement efforts are known.⁸⁵ Both approaches avoid complete reliance on the difficult to ascertain cost-benefit relation⁸⁶ but maintain most of the compelling advantages of the effluent fee scheme: the continuing incentive to abate, flexibility, assumption of the decision-making role by industrial management, susceptibility to self-monitoring, and relatively low administrative costs.⁸⁷ The political acceptability of the basic effluent fee concept may also be enhanced by the fee-standard approach; the definiteness of an air quality goal or the coerciveness of an emission standard should relieve voters' apprehension of the effluent fee's total reliance on the profit-maximization postulate. These standard-fee approaches offer the most practical alternative to the effluent fee scheme.

83. Hereinafter referred to as the effluent standard-fee approach.

84. See Crocker, *supra* note 1, at 257-58. Cf. note 121 *infra*. This scheme will hereinafter be referred to as the ambient air quality standard-fee approach.

85. See text discussion of flexibility following note 80 *supra*.

86. The fee schedule under these proposals would be based upon the standard rather than the cost-benefit relation. However, the determination of the standard itself should be made with this relation in mind.

87. See Mills 47.

CHARACTERIZATION OF THE FEE

The effluent fee scheme, whether it relies upon the cost-benefit relation or national emission or ambient air quality standards, does not fit precisely into the classical definitions of a tax, a fine, a license, or a user charge. The choice of classification is significant since it carries substantial constitutional and administrative ramifications. For example, a fine encounters procedural due process requirements not faced by a tax, while an exercise of the police power encounters different constitutional and statutory limitations than that of the taxing power. Draftsmen of effluent fee legislation should consider these and other legal incidents of classification before specifically designating a particular exaction as a property tax, license or franchise tax, user charge, or fine.⁸⁸ Although the validity of the effluent fee scheme as an exercise of the police power⁸⁹ does not depend on any such characterization, the proclivity of the courts to so designate fees necessitates some legislative label.

Property Tax

A discussion of the fee as a property tax necessarily requires defining the property rights involved. The right to use the air belongs to the public or private receptor.⁹⁰ Lord Coke's view of the fee simple absolute as extending "from Heaven to Hell"⁹¹ has been modified by air flight nuisance actions limiting ownership to actual or potential use of the air space.⁹² A necessary incident of a property tax is

88. Courts generally consider such legislative denominations of great importance to a fee characterization issue. See *County Comm'rs v. English*, 182 Md. 514, 531, 35 A.2d 135, 143 (1943); *Ingels v. Riley*, 5 Cal. 2d 154, 160, 53 P.2d 939, 942 (1936).

89. See *Police Power* subsection of text *infra*.

90. This definition of property rights appears to lend itself to efficient market allocation of the air resource, see Crocker, *supra* note 1, at 245, but for reasons discussed previously, it does not. See notes 1-2 *supra* and accompanying text.

91. 1 E. COKE, *INSTITUTE OF THE LAWS OF ENGLAND* § 4a (16th ed. 1809). See W. PROSSER, *THE LAW OF TORTS* 70 (3d ed. 1964).

92. See W. PROSSER, *supra* note 91, at 70; Klein, *Cujus Est Solum Ejus Est-Quousque Tandem?*, 26 J. AIR LAW & COMM. 237 (1959). Four theories of air ownership have been espoused by various state courts. One view gives the owner the space essential to complete use of his land. See *Smith v. New England Aircraft Co.*, 270 Mass. 511, 170 N.E. 385 (1930). Another approach limits ownership to that actually used. Hunter, *The Conflicting Interests of Airport Owner & Nearby Property Owner*, 11 LAW & CONTEMP. PROB. 539, 547 (1945). The Restatement recognizes unlimited ownership of air subject to the privilege of air flight. *RESTATEMENT (SECOND) OF TORTS* § 159 (1965). A fourth view gives an action in nuisance for interference with actual use of the land. See *Hyde v. Somerset Air Service*, 1 N.J. Super. 346, 61 A.2d 645 (1948). The polluter, regardless of the period of his unprotected invasion of the public

assessment based on value rather than use,⁹³ while the effluent fee taxes the *use* of public and private air space, not the space itself. More specifically, the effluent fee is a function of the type and volume of emittance, not the value of real property. The ad valorem tax designation is best avoided since the effluent fee schedule, with varying cost-benefit relations in different areas, may not attain the degree of uniformity required by state constitutional standards⁹⁵ and would encounter rate ceilings⁹⁶ and public body tax exemption provisions.⁹⁷

License Tax

The license or franchise tax,⁹⁸ often motivated by public health or safety considerations,⁹⁹ generally results in the granting of a privilege by the sovereign to the taxpayer, and the effluent fee scheme satisfies this general definition. The license fee rather than the license tax designation would be more appropriate since the exaction is largely regulatory in nature, seeking to deter pollution rather than to collect revenue.¹⁰⁰ The taxpayer under the license concept is granted the privilege of operating his plant at a certain emittance level. Opponents

air space, cannot gain a prescriptive right against the public to pollute when a public nuisance is involved. *Corsicana v. King*, 3 S.W.2d 857, 861 (Tex. Civ. App. 1928).

As to the receptor's air space, a prescriptive right is doubtful where each pollution episode is deemed a new offense. *Northwestern Fertilizing Co. v. Hyde Park*, 97 U.S. 659, 669 (1878).

93. See *Powell v. Gleason*, 50 Ariz. 542, 74 P.2d 47 (1937); *In re City of Enid*, 195 Okla. 365, 158 P.2d 348 (1945).

94. The polluter is being taxed not as an incident to the use of his own property but relative to the damage his pollution causes to the receptors.

95. See, e.g., ILL. CONST. art. IX, § 1; N.J. CONST. art. VIII, § 1, ¶ 1. The license and franchise designation may also encounter uniformity requirements in some states. See, e.g., MO. CONST. art. X, § 3. Airsheds could likely be subjected to different treatment under these statutes, however, by invoking the legislative power of classification. The reasonableness of such a classification is discussed in notes 264-66 *infra* and accompanying text.

96. See J. HELLERSTEIN, *STATE AND LOCAL TAXATION* 141 (3rd ed. 1969).

97. See, e.g., N.J. STAT. ANN. § 55:14A-20 (1964). Either constitutional amendment or specific statutory provision would have to be applied in these jurisdictions.

98. Such a tax would fall under the general classification of excise taxes. Although several states consider a license as granting an otherwise illegal right and a franchise as sanctioning a preexisting right, this distinction has doubtful validity. See *Madden v. Queens County Jockey Club*, 296 N.Y. 249, 22 N.E.2d 697 (1947).

99. See *Conard v. State*, 41 Del. 107, 16 A.2d 121, 125 (Super. Ct. 1940); *Pennsylvania Liquor Control Bd. v. Publicker Commercial Alcohol Co.*, 347 Pa. 555, 559-60, 32 A.2d 914, 917 (1943).

100. The Revised Model State Administrative Procedure Act makes this distinction clear. "[L]icense' . . . does not include a license required solely for revenue purposes . . ." REVISED MODEL STATE ADMINISTRATIVE PROCEDURE ACT § 1(3) (1961) [hereinafter cited as MODEL ACT].

of the effluent fee scheme label it a "license to pollute."¹⁰¹ This designation suggests the preclusion of all private or public actions against the polluter, considering the fee as the purchase of a privilege to damage the public. Such a reaction is inaccurate since private remedies are not preempted by the fee scheme.¹⁰² Nevertheless, the term "license" does connote preemption of private and public remedies against the polluter. The license concept also conceals the scheme's basic purposes of encouraging abatement and optimally allocating air resources. Since total abatement is often demanded by the public,¹⁰³ the license designation could prove politically fatal to the entire fee scheme.

User Charge

Viewing the fee as an assessment for the injurious use of public air space as a pollutant receptacle invites greater public acceptance. Such a designation avoids the political disadvantages of the license tax, encounters few specific statutory limitations, and does not infringe private remedies.¹⁰⁴ The user charge, analogous to sewer use charges, is generally distinguished from a tax and thus avoids public body exemption statutes.¹⁰⁵ It can also be contrasted with special property assessments for public financed improvements which invoke specific procedural requirements in many jurisdictions.¹⁰⁶ The user charge is based upon the *use* of public property, not the furnishing of a direct improvement to private property. This classification may present the closest approximation to the effluent fee even though viewing the air space as a rentable commodity is somewhat strained.¹⁰⁷

101. Senator Edmund Muskie used this term to describe the effluent fee approach in a speech to the University of North Carolina Environment Symposium, March 17, 1970.

102. See MAINTENANCE OF ALTERNATIVE REMEDIES section of text *infra*.

103. The misallocation of the air resource which would attend total abatement renders such a proposal unfeasible. See Crocker, *supra* note 45, at 65 n.3; Turvey, *On Divergences Between Social and Private Costs*, *ECONOMICA*, Aug. 13, 1963, at 309-13.

104. See MAINTENANCE OF ALTERNATIVE REMEDIES section of text *infra*.

105. See *Jersey City Sewerage Authority v. Housing Authority*, 40 N.J. 145, 190 A.2d 870 (1963).

106. A close parallel can be drawn to sewer service charges which have been contrasted to special assessments. See *Michelson v. Grand Island*, 154 Neb. 654, 48 N.W.2d 769 (1951).

107. The license tax or property tax designations would enable the firm to treat the payment as a business expense deduction. INT. REV. CODE of 1954, §§ 162, 164. This may be counterproductive to the pollution abatement equipment depreciation incentive recently provided by Congress. *Id.* § 48(h)(12).

Fine

Many of the tax limitations¹⁰⁸ are avoided by considering the fee a civil or criminal penalty. The damage aspect of pollution emission suggests a penalty categorization.¹⁰⁹ The enforcement of a criminal penalty, however, necessitates the application of an expanding body of procedures associated with criminal due process. Such procedures are not needed for pollution offenses; therefore, denomination as a criminal penalty should be avoided. The civil penalty, enforceable by administrative agencies¹¹⁰ and involving fewer procedural requirements, is more conducive to the effluent fee approach. Although state civil penalty law is not entirely clear,¹¹¹ a hearing would not be required for each penalty assessed since only the legislative, non-adjudicative facts of the reasonableness of the fee schedule for the entire airshed would be at issue.¹¹² Arguably, the civil penalty payment would not be tax deductible as a business expense since its basic purpose, to provide an incentive to abate, would thereby be weakened.¹¹³ The civil penalty designation, therefore, avoids the necessity of federal income tax revision required by the previous classifications.¹¹⁴ The penalty concept, implying penalization of the polluter for a civil wrong and avoiding a "license to pollute" characterization, is certainly more politically palatable.

PREEMPTION BY THE AIR QUALITY ACT

The Act

Present pollution control programs have emanated from the Clean Air Act of 1963 as amended by the Air Quality Act of 1967.¹¹⁵ This legislation attempts to shape and coordinate federal, state, and local pollution control efforts. To this end, the 1967 act placed primary enforcement responsibility at the state level¹¹⁶ but required state

108. See notes 95-97, 102-03 *infra* and accompanying text.

109. See, e.g., PHILADELPHIA, PA., AIR MANAGEMENT CODE ch. 3-100, § 3-103(5) (1969). See also Kovel, *A Case for Civil Penalties: Air Pollution Control*, 46 J. URBAN LAW 153 (1968).

110. *Id.*

111. See I K. DAVIS, ADMINISTRATIVE LAW TREATISE § 7.20 (1958).

112. See *id.* The adjudicative function and the hearing requirement would be encountered in inspection objections and sanctions and objections to the accuracy of pollution measurements.

113. The expense is not "necessary" if allowance of the deduction would frustrate state policy. *Tank Truck Rentals, Inc. v. Commissioner*, 356 U.S. 30 (1958).

114. See note 107 *supra* and accompanying text.

115. 42 U.S.C. § 1857 (Supp. IV, 1969), amending 42 U.S.C. § 1857 (1964).

116. *Id.* § 1857(a)(3).

cognizance of federal recommendations and research.¹¹⁷ Basically, the statute directs the Department of Health, Education, and Welfare (HEW), after having designated air quality control regions representative of a common air pollution problem,¹¹⁸ to develop air quality criteria correlating concentrations of particular pollutants with their effects on health and welfare.¹¹⁹ In addition, HEW must develop control techniques to abate specific pollutants for state consideration.¹²⁰ Each state, within a definite period, must then adopt ambient air quality standards¹²¹ consistent with HEW's air quality criteria for each control region.¹²²

Once its standards are approved, the state must develop an effective implementation plan.¹²³ The state is free to adopt different plans for each control region or a uniform plan for the entire state, but if a state fails to act, the Secretary is empowered to establish appropriate air quality standards.¹²⁴ Whenever the ambient air quality of any control region is below established standards because of an inadequate or nonexistent enforcement scheme, the Secretary may, should the pollution endanger other states, bring an abatement action in federal district court.¹²⁵ The Secretary may also initiate proceedings at the request of a state governor if the pollution is of an intrastate character.¹²⁶

117. *Id.* § 1857b.

118. *Id.* § 1857c-2.

119. *Id.* § 1857c-2(b).

120. *Id.* § 1857c-2(b). Cost benefit studies, monitoring technology, and enforcement and fee modification techniques should be provided by HEW to the states under this section.

121. These represent air quality goals for the entire airshed as opposed to effluent standards which are directed at the polluter. Ralph Nader, in "Task Force Report on Air Pollution," condemned the federal control efforts:

The Air Quality Act of 1967, central legislation for federal air pollution control, is a hopeless failure. The Act is responsive to the common industry line that the public must prove a health hazard before action against pollution.

The ambient air standards approach permits the states and local industries to hide behind a facade of regulation while no meaningful progress is made. 1 BNA, E.R.-CURRENT DEVELOPMENTS 50 (1970).

122. 42 U.S.C. § 1857d(c)(1) (Supp. IV, 1969). These standards are subject to revocation by the Secretary to the extent that they are inconsistent with the criteria and control data published by HEW. *Id.* § 1857d(c)(2). The states are presently behind the legally required timetable. 1 BNA, E.R.—CURRENT DEVELOPMENTS 272 (1970).

123. 42 U.S.C. § 1857d(c)(4) (Supp. IV, 1969).

124. *Id.* § 1857d(c)(2).

125. *Id.* § 1857d(c)(4). These sections may be modified by the proposed National Air Quality Standards Act of 1970, H.R. 17,255, 91st Cong., 2d Sess. (1970).

126. 42 U.S.C. § 1857d(c)(4)ii (Supp. IV, 1969).

Effluent Fee Scheme Under the Act

The implementation of a state effluent fee abatement scheme under this statutory framework may encounter some difficulty. Initially, it is clear that the federal program was intended not to preempt state and local control of air pollution but to require it.¹²⁷ The federal government maintains some control over local efforts by reviewing state air quality standards and maintaining jurisdiction over interstate pollution conditions, but the thrust of the Act, reflected both in its express provisions and legislative history, indicates a clear reliance on local pollution control efforts.¹²⁸

Although state programs are basic to the federal scheme, a state-instituted effluent fee system might conflict with several specific provisions of the Act. State-approved air quality standards must be implemented within a "reasonable time."¹²⁹ An effluent fee scheme, however, could conceivably require a much longer period to attain its air quality goal than alternative measures, such as an emission standard system. Since the objective of the effluent fee system is an air pollution level which represents the optimum economic solution for the particular emitter and the actual decision to abate is placed upon the corporation itself, the firm may very well choose to pay a higher fee temporarily until sufficient research and evaluation of available techniques assure installation of an efficient control unit.¹³⁰ Such

127. The Air Quality Act places the burden of air pollution abatement at the state level and asserts in section 1857(a)(3) that "the prevention and control of air pollution at its source is the primary responsibility of the state and local governments . . ." This view was restated in the Environmental Quality Improvement Act of 1970, Pub. L. No. 91-190, § 202(b)(2) (Apr. 3, 1970). Such an approach is consistent with the attitude that pollution is essentially a local problem best controlled by the political entity closer both to the polluter and the receptor. See notes 163-64 *infra* and accompanying text.

128. A Texas court has ruled that the Texas Clean Air Act, which imposes direct regulations on polluters, was not preempted by the Federal Clean Air Act, 42 U.S.C. § 1857 (1964). *Houston Compressed Steel v. Texas*, 1 BNA, E.R.—DECISIONS 1416 (Tex. Civ. App., June 25, 1970). This appears to be the only ruling on the preemption issue.

129. Air Quality Act of 1967, 42 U.S.C. § 108(c)(1) (Supp. IV, 1969). The House maintained this requirement in H.R. 17255, a bill to modify the Clean Air Act, but the Senate version specifically limited the period to three years. H.R. 17255, 91st Cong., 2d Sess. § 111(a)(2)(A) (1970), as amended by the Senate and sent to conference, 116 CONG. REC. 16,260 (daily ed. Sept. 22, 1970), [1969-70 Transfer Binder] 2 CONG. INDEX, House Status Table, at 4932 (1970). An effluent fee scheme may encounter difficulty in meeting the three year limitation as well, although a standard-fee approach should not.

130. This delay avoids the economic wastes inherent in an emission standard scheme. There, the polluter without a variance from the prescribed maximum usually must make the abatement effort despite informational and technological deficiencies.

delays could extend the achievement of acceptable pollution levels beyond a reasonable period. There is some indication, however, that a flexible approach to the determination of a "reasonable time" was intended by the Act. The report of the Senate Committee on Public Works recognized that control methods must be implemented only "as soon as economically feasible and technologically available,"¹³¹ indicating that reasonableness is relative to the system under consideration. Where significant public health implications are present, however, HEW requires "attainment of the standard within the shortest possible time with available control techniques."¹³² Direct regulation insures that air quality goals are reached much faster than the effluent fee or ambient air quality standard-fee schemes. Temporary interim control measures may be necessary in addition to these approaches to reduce emissions below a health-damaging level.¹³³ By imposing a coercive maximum emittance level, the effluent standard-fee proposal would obviate the need for such measures.

An effluent fee scheme may not fall within the Air Quality Act's conception of an acceptable state control method. The Committee on Public Works seemed to envision the emission standard as the acceptable control mechanism, and its report defined emission control requirements as "legally enforceable limitations on the amount of pollution that a single source . . . may discharge into the atmosphere."¹³⁴ Since an effluent fee scheme does not directly limit the amount of pollution emitted but provides economic incentives to reduce emission levels, it apparently falls outside the purview of the committee definition. In addition, the committee rejected a national emission standard scheme but recognized its usefulness and directed the Secretary to undertake a two year study of the concept.¹³⁵ The Clean Air Act Amendments of 1970 empower the Secretary to

131. See SENATE REPORT 27.

132. See HEW, GUIDELINES FOR THE DEVELOPMENT OF AIR QUALITY STANDARDS AND IMPLEMENTATION PLANS 13 (1969) [hereinafter cited as GUIDELINES].

133. The ascertainment of a nebulous health-damaging emission level itself would encounter difficulty in light of present health effects studies. See generally Cassell.

134. SENATE REPORT 30. The House more specifically defined the implementation plan to "include emission standards applicable to the sources . . ." AIR QUALITY ACT OF 1967, HOUSE COMM. ON INTERSTATE AND FOREIGN COMMERCE 18, H.R. REP. NO. 728, 90th Cong., 1st Sess. 18 (1967). HEW interprets the Act as ordinarily requiring emission standards as the principal element of control strategy. See GUIDELINES § 2.30. The emission standard-fee approach would appear to satisfy this requirement.

135. 42 U.S.C. § 1857f-6d (Supp. IV, 1969). See SENATE REPORT 36-38.

establish emission standards for new stationary sources.¹³⁶ If the desired movement¹³⁷ toward such a scheme as a total control approach is successful, state-level effluent fee systems would be singularly inappropriate. The committee and the Act, however, indicated that minimum national standards in the form of the effluent standard-fee proposal¹³⁸ are preferable,¹³⁹ such a system being not only compatible with an effluent fee scheme but highly desirable. The committee's consideration of a national fee program does not preclude the emission standard-fee approach. The statutory language of the Act nowhere defines or limits the concept of control methods and nowhere specifically prohibits the use of the effluent fee or alternative control measures. Committee considerations to the contrary would seem to be outweighed by this unlimiting statutory language.¹⁴⁰

Even though statutorily authorized, a state effluent fee scheme would be subject to HEW review and possible rejection and replacement. The Secretary is empowered to promulgate an implementation plan in the event a state either fails to file a plan or submits an unacceptable one.¹⁴¹ The Secretary shall base his evaluation on the following ten criteria: ability to attain the Act's national standards within three years;¹⁴² inclusion of measures to assure the attainment of national standards and goals;¹⁴³ inclusion of appropriate devices to compile and analyze data and provide it to the Secretary on request; appropriate zoning and transportation controls; adequate provision for intergovernmental cooperation;¹⁴⁴ periodic

136. H.R. 17255, 91st Cong., 2d Sess. § 114 (1970).

137. The federal government's response indicates that this is indeed the case. John W. Gardner, then Secretary of HEW, testified to the pressing need for national emission standards. *Hearings on Air Pollution Before the Subcom. on Air and Water Pollution of the Senate Comm. on Public Works*, 90th Cong., 1st Sess., pt. 2, at 762 (1967). Dr. John T. Middleton, then Director of the National Center for Air Pollution Control, reiterated the desirability of such standards. *Id.*, pt. 3, at 1155-56. See O'Fallon, *supra* note 16, at 278-83.

138. See note 83 *supra* and accompanying text.

139. SENATE REPORT 36.

140. The Clean Air Act Amendments of 1970, H.R. 17255, 91st Cong., 2d Sess. § 111(a)(1) (1970), specifically sanction ambient air quality standards more stringent than federal standards. Thus, if national emission standards are promulgated pursuant to section 110(a)(1) of the proposed amendments, a state effluent fee program utilizing such standards as a ceiling is acceptable.

141. *Id.* § 111(a)(3)(C).

142. See notes 129-33 *supra* and accompanying text.

143. The efficacy of the effluent fee approach in this respect has been questioned. See *Questions and Comments*, PROCEEDINGS 586-89. Compare Wolozin, *supra* note 43, with Mills, *supra* note 30.

144. See notes 149, 150 *infra* and accompanying text.

reporting from stationary sources and correlation of such reports with national standards;¹⁴⁵ assurances of adequate state personnel, funding, and authority; periodic testing and inspections of motor vehicles; periodic revision of the plan;¹⁴⁶ and identification of the air quality control region to which the plan applies.¹⁴⁷

Although the prior discussion has centered upon employing the effluent fee scheme within the present federal statutory framework, new federal legislation in the area would be preferable. Federal support of the effluent fee system as an enforcement procedure would encourage state and local legislation by providing national and local cost-benefit analyses and advanced methodology. National effluent standards¹⁴⁸ would guarantee minimum abatement levels and provide for state pollution efforts without removing local flexibility. In addition, federal legislation could effectively provide for interstate¹⁴⁹ and international¹⁵⁰ factors. The federal government should also

145. The self-monitoring proposal would meet this requirement. See SELF-MONITORING section of text *infra*.

146. The effluent fee proposal clearly provides this required flexibility. See note 50 *supra* and accompanying text.

147. National Air Quality Standards Act of 1970 § 111(a)(2)(J). For the current status of the Act, see note 79 *supra*.

148. See note 137 *supra*. A recent survey indicated that industrial executives also favored national standards. See FORTUNE, Feb., 1970, at 119.

149. The current statutory framework allows the Secretary to proceed against interstate polluters and requires the submission of all interstate compacts to him for approval. The promulgation of national standards, either in the form of emission or ambient air quality standards, would virtually obviate the necessity of interstate agreements. The utilization of the effluent fee approach to implement these standards would involve compensation for interstate pollution damage, possibly in the form of payments to the receiving state. Increased federal control of the interstate polluter would be necessitated by the use of the effluent fee scheme without emission standards.

150. The transboundary pollution problem is particularly serious in the industrial belt along the Detroit River on the Canadian border. Detrimental health and economic effects have been found on both sides of the river. INTERNATIONAL JOINT COMMISSION REPORT ON POLLUTION OF THE ATMOSPHERE 3-4 (1960). At present, no specific treaty provision obligates either country to prevent transboundary contaminants, although the fundamental obligation to do so was recognized in the Trail Smelter Arbitration, 3 U.N.R.I.A.A. 1906, 1965 (1938-41). See Jordan, *Recent Developments in International Environmental Pollution Control*, 15 MCGILL L.J. 279, 296 (1969). Contemporaneous to the implementation of a fee scheme, the federal government could provide by treaty for mutual compensation to citizens showing pollution-related injuries from transboundary pollution. The fee schedule would then be modified to reflect this adjusted cost-benefit relationship. International polluters emitting health-endangering contaminants, however, require a more effective control agency than the present International Joint Commission. A treaty recognizing nations' mutual obligations and giving the Commission power to initiate investigations, coordinate research, and supervise enforcement would be advisable. The present weakness of Canadian federal and local pollution control programs presents a substantial barrier to the effectiveness of such a proposal. See *id.* at 300-01.

continue research and development¹⁵¹ in monitoring technology and abatement techniques to facilitate individual polluter response to effluent fee economic incentives provided by the system.

ADMINISTRATION OF THE EFFLUENT FEE SCHEME

State and Local Control

Local Advantages. The effective implementation of an effluent fee scheme would require an extremely competent administrative agency broadly based on both the state and federal levels to calculate and enforce accurate fee assessments. Such an agency must initially determine the cost-benefit relation for all pollutants within its geographical jurisdiction.¹⁵² The state may not be the governmental entity best able to administer such an extensive control program, and past experience with control efforts at various governmental levels substantiates this view.¹⁵³ Local governments more cognizant of the problems of both the urban dweller and polluter are better suited to enforce an effluent fee scheme.¹⁵⁴ The consideration of meteorology, topography, population distribution, industrial type and location, and similar factors necessary to the cost-benefit relation should be done by the entity closest to the problem. Continuous monitoring, inspection, and reporting are also more adaptable to local capabilities.

Conflict of Interest. Both local and state political bodies experience a conflict between their desire to protect public health and economic realities. Stringent pollution laws may force existing

151. See Air Quality Act of 1967, 42 U.S.C. § 1857b, b-1, c-2(b), f-6d, j-1 (Supp. IV, 1969).

152. Diffusion models would be required to simulate the distribution of pollutants in given areas. See FIRST REPORT 65. Extensive cost-benefit studies utilizing land value analyses, personal interviews, or more innovative techniques would be required. See notes 54-64 *supra* and accompanying text. Self-monitoring equipment inspection, certification, and installation would be necessary in addition to periodic data collection and continuous supervision. Once the scheme is operative, the schedules must be revised to accommodate meteorological and seasonal changes.

153. National Center for Air Pollution Control statistics revealed that as of May, 1967, the average expenditure was 4.8 cents per capita for the thirty-three states which had control programs while that of the 107 local agencies amounted to 27.9 cents. *Hearings on Air Pollution—1967 (Air Quality Act) Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 1st Sess., pt. 3, at 1160-1283 (1967)*. See O'Fallon, *supra* note 16, at 287-88. Former HEW Secretary Gardner justifiably concluded that this state response to the Clean Air Act of 1963 was disappointing. Gardner, *Keynote Address: Control Now for Clean Air*, PROCEEDINGS 13-14.

154. See Locher, *The Case for a Local or Regional Air Pollution Control Program*, PROCEEDINGS 400,403; FIRST REPORT 35.

industries to seek more favorable jurisdictions¹⁵⁵ and reduce an area's attractiveness to new industry. State and local legislatures may be so dominated by local industrial groups to make effective pollution enforcement impossible. The resulting inconsistent state pollution laws create problems¹⁵⁶ apparently insolvable by interstate compacts.¹⁵⁷

National-Local Cooperation. These considerations indicate the desirability of national legislation emphasizing local administration.¹⁵⁸ The Air Quality Act,¹⁵⁹ however, delegates air pollution control responsibilities to state agencies. Assuming that an effluent fee scheme can be implemented under this Act,¹⁶⁰ state legislatures must be held responsible for enabling legislation and must closely supervise control efforts.¹⁶¹ This comment assumes the existing enforcement framework available under the Air Quality Act although specific federal legislation encouraging state administrative delegation to the local level would be preferable.¹⁶²

Local Versus Airshed Approach

City or county governments or special pollution districts, possibly conforming to airshed characteristics, may be utilized to administer state control schemes. City or county administrative agencies possess the advantages of present existence, prior experience in solving similar urban problems, potential responsiveness to local voters,¹⁶³ and proximity to the pollution source. Special airshed districts would be

155. See note 18 *supra*.

156. Interstate pollution from a source in a less restrictive jurisdiction imposes damage beyond the local legislature's control. Discrepancies between control programs may encourage less than diligent enforcement of the stricter standard to prevent industry migration. See Green, *supra* note 17, at 315.

157. *Id.* at 320-30. A model interstate pollution control act has been proposed. See Comment, *A Model Interstate Compact for the Control of Air Pollution*, 4 HARV. J. LEGIS. 369 (1967).

158. The effluent standard-fee and ambient air standard-fee approaches necessarily entail such federal legislation. Whatever enforcement structure is utilized, a critical shortage of trained administrators, engineers, inspectors, and abatement machinery operators must be faced. NAPCA is attempting to rectify this problem. 1 BNA, E.R.-CURRENT DEVELOPMENTS 274 (1970).

159. 42 U.S.C. § 1857d(c)(4) (Supp. IV, 1969).

160. See *Effluent Fee Scheme Under the Act* section of text *supra* concerning whether the Act precludes such a scheme.

161. See *Local Advantages* subsection of text *supra*.

162. See notes 148-151 *supra* and accompanying text.

163. The urban entity is, however, also more responsive to industrial pressure.

larger than city or county lines, and would encompass the pollution effects created by pollution sources within them. Such an approach avoids inter-jurisdictional conflicts¹⁶⁴ and defines the area which must be utilized for cost-benefit studies. The independent nature of the special district renders it less susceptible to pressure from local interest groups and large industrial concerns.¹⁶⁵ A state should carefully evaluate its susceptibility to airshed division and the effectiveness of its existing urban governments before adopting an enforcement plan.

Delegation Limitations

Whether the city, county, or special district is the state enforcement unit, enabling legislation is required to delegate to the agency adequate power to administer a fee scheme effectively. The agency must be authorized to promulgate the initial fee schedule and to effectuate revisions when the cost-benefit relation changes. This element of schedule discretion would not be eliminated by employing an effluent standard or an ambient air quality standard in conjunction with the fee. The fee schedule would still be prepared by the agency based upon such standards and, in the case of the ambient air quality standard, revised until the desired air quality is reached.¹⁶⁶ Such a discretionary delegation tends to usurp the legislative function and must satisfy state constitutional limitations. State courts have generally allowed a delegation of power involving the promulgation of rules and extensive agency discretion only when the enabling legislation declares a specific legislative policy and establishes primary standards for enforcing that policy.¹⁶⁷ A greater latitude of

164. The Bay Area Pollution Control District, CAL. HEALTH & SAFETY CODE § 24346.1, .2 (West 1967), exemplifies the airshed approach. The permanent temperature inversion layer in the San Francisco Bay Area, among other factors, called for an inter-jurisdictional control authority with representation from the cities and counties within the airshed region. The airshed boundaries would generally not conform to state boundaries; thus, the dual state district could create jurisdictional problems.

165. Such autonomy, however, may be viewed as a disadvantage since independent agencies become difficult to control.

Multiple responsibility to several state governments often means that no one oversees carefully scrutinizes the actions of the agency. In the past, this has led to agency empire building—the agency becomes more concerned with its own prestige and effectiveness narrowly conceived and with the financial interests of its bondholders than with the purpose for which it was created. Roberts, *River Basin Authorities: A National Solution to Water Pollution*, 83 HARV. L. REV. 1527, 1546 (1970).

166. See note 85 *infra* and accompanying text.

167. See, e.g., *State v. Stoddard*, 126 Conn. 623, 628, 13 A.2d 586, 588 (1940); *Bell Tel. Co.*

discretion, however, has been afforded those powers which entail the regulation of activities closely associated with public health.¹⁶⁸ An air pollution control program, much of which is based upon public health considerations, would merit this broader delegation limitation. Further, the quantum of certainty required of agency enforcement standards is a function of the nature of the subject matter being regulated, and these guidelines must represent the most definitive standards feasible.¹⁶⁹ Inflexible legislative standards are undesirable since effluent fee enforcement involves complex cost-benefit analyses requiring expertise substantially beyond the capabilities of the legislature.¹⁷⁰ The most definitive legislative guidelines possible include, among other desirable statutory provisions, instructions as to techniques to be utilized in the cost-benefit determination; explicit limitations upon the applicability of the fee—automobiles and low-volume emitters might be excluded; jurisdictional limits; and procedural requirements. The nature of the air pollution problem and the effluent fee scheme defy imposition of more definitive standards.

Home Rule Restriction

State constitutional "home rule" provisions impose a possible restriction upon air pollution administration.¹⁷¹ The typical home rule enactment, delegating the power to regulate matters of "purely local concern" to local governmental units,¹⁷² limits state legislative power by prohibiting the state from legislating concerning such matters or

v. Driscoll, 343 Pa. 109, 116, 21 A.2d 912, 915 (1941); *David Jeffrey Co. v. Milwaukee*, 267 Wis. 559, 590, 66 N.W.2d 362, 379 (1954). This "standards" requirement has been seriously questioned by commentators and some courts. *See, e.g., State v. Hotel Bar Foods, Inc.*, 18 N.J. 115, 124, 112 A.2d 726, 731 (1955); F. COOPER, 1 STATE ADMINISTRATIVE LAW 54-70 (1965) [hereinafter cited as COOPER].

168. *See Len-Law Realty Co. v. Falsey*, 141 Conn. 524, 529, 107 A.2d 403, 405 (1954); *Akron & Barberton R.R. v. Pub. Util. Comm.*, 148 Ohio St. 282, 287-88, 74 N.E.2d 256, 259 (1947); 1 COOPER 63.

169. *See City of Lakewood v. Thornmyer*, 171 Ohio St. 135, 143, 168 N.E.2d 289, 296 (1960); 1 COOPER 82. In *City of Utica v. Water Pollution Control Bd.*, 5 N.Y.2d 164, 182 N.Y.S.2d 584, 156 N.E.2d 301 (1959), the court authorized a broad delegation of power to a water pollution control board, indicating that widely varying conditions within the state made strict standards impossible.

170. *See Caritativo v. Teets*, 47 Cal. 2d 304, 303 P.2d 339 (1956); 1 COOPER 83-84.

171. Legislative home rule provisions do not pose such a restriction. *See F. MICHELMAN & T. SANDALOW, GOVERNMENT IN URBAN AREAS 349 (1970)* [hereinafter cited as MICHELMAN & SANDALOW]; *cf. Utica State Savings Bank v. Village of Oak Park*, 279 Mich. 568, 273 N.W. 271 (1937).

172. *See, e.g., CAL. CONST. art. XI, § 6; COLO. CONST. art. XX, § 6; OHIO CONST. art. 18, §§ 3, 7.*

declaring that local statutes prevail over a similar state statute already enacted.¹⁷³ States have considered matters not "local" if the effect of a decision within a jurisdiction effects others outside its control and have exempted them from home rule restrictions.¹⁷⁴ Air pollution respects no political boundaries and clearly satisfies this exception. The responsibility for control placed by the Air Quality Act upon the states rather than local agencies¹⁷⁵ supports the inapplicability of the "merely local" label and the home rule doctrine to air pollution.

Agency Enforcement

The effluent fee administrative agency has three basic functions: fee determination and modification, including cost-benefit analyses; self-monitoring regulation and inspection; and fee collection and dispersion. The fee determination function is the most complex and vital aspect of the fee scheme and would be facilitated by the appointment of an advisory council, consisting of representatives of industry, public utilities, receptors, and others directly affected by the fee determination.¹⁷⁶ The council would have no rule-making power but could provide a useful liaison with the public by cooperating in data collection for cost-benefit studies, providing a sounding board for industrial problems in self-monitoring implementation, and, in the case of the effluent fee-standard approach, indicating probable industrial reaction to different fee schedules.¹⁷⁷

Since fee setting is a rule-making function, section 3(a) of the

173. See MICHELMAN & SANDALOW 353.

174. See *Dairy Belle Farms v. Brock*, 97 Cal. App. 2d 146, 155, 217 P.2d 704, 710 (1950); *Vickers v. Township Comm.*, 37 N.J. 232, 181 A.2d 129 (1962), *cert. denied*, 371 U.S. 233 (1963); *City of Fon du Lac v. Town of Empire*, 273 Wis. 333, 77 N.W.2d 699, 701 (1956).

175. 42 U.S.C. § 1857(a)(3) (Supp. IV, 1969).

176. The effectiveness of the advisory council in the Bay Area Pollution Control District has been encouraging. HEW has utilized a similar concept in several different areas. The National Air Pollution Research and Development Advisory Committee, composed of representatives of the chemical, engineering, biomedical, and socioeconomic disciplines, provides research recommendations. Six other advisory committees—Fuel Additives, Air Quality Criteria, Control Techniques, Control Agency Development, Manpower Development, and Research Grants—bolster the expertise of NAPCA. In addition, meetings with major industrial concerns to facilitate communications and understanding have been successful. See FIRST REPORT 80.

177. Public participation in administrative decision-making has recently received judicial recognition in *Scenic Hudson Preservation Conference v. FPC*, 354 F.2d 608 (2d Cir. 1965), *cert. denied*, 384 U.S. 941 (1966), and should be incorporated into administrative decision-making machinery. See Hanks & Hanks, *An Environmental Bill of Rights: The Citizen Suit and the National Environmental Policy Act of 1969*, 24 RUTGERS L. REV. 230 (1970); Sive, *Some Thoughts of an Environmental Lawyer in the Wilderness of Administrative Law*, 70 COLUM. L. REV. 612 (1970).

Model State Administrative Procedure Act and most states require a public hearing for objection and discussion prior to adoption of a fee schedule.¹⁷⁸ Once such calculations are determined on the basis of HEW or other agency data, valid objections to the rate-setting process are generally futile because of the complex technological basis of cost-benefit studies; the rule-making hearing is thus relegated to a mere formality. The cost-benefit techniques to be utilized and the damages to be included would be more advantageously considered at a hearing, possibly conducted by the advisory council, prior to the investigatory stage. The proposed data-collection methods could be enunciated in laymen's terms, and industry suggestions and objections could be elicited.

The administrative agency must satisfy the notice and hearing requirements imposed by most states in developing procedures for implementing its self-monitoring¹⁷⁹ and fee collection functions. Agency action must fall within the ambit of the enabling statute, indicating the desirability of a comprehensive delegation of power to the agency. The hearing itself must provide all parties with a reasonable opportunity to express objections, but no formal requirements are imposed by the Model Act.¹⁸⁰ The notice and hearing requirements are dispensed with when emergencies such as an atmospheric inversion require immediate operational controls.¹⁸¹

More stringent hearing requirements are encountered in such contested agency rulings as those requiring certain monitoring equipment or imposing sanctions for nonpayment of a fee. Discovery procedures, pre-trial hearings, evidentiary requirements, right to counsel, judicial review, and other incidents of formal litigation are imposed in such situations with varying degrees of consistency by many states and the Model Act.¹⁸² Extreme sanctions such as the enjoining of plant operation for nonpayment of a fee merit strict enforcement of procedural requirements.¹⁸³

Self-Monitoring

The use of a system whereby individual sources are required to monitor continually the volume and nature of their emittants has

178. 1 COOPER 194.

179. See *Self-Monitoring* subsection of text *infra*.

180. MODEL ACT § 3.

181. *Id.* § 3(b).

182. See *id.* §§ 9-12; 1 & 2 COOPER 273-481.

183. Judicial review will be accorded determinations involving a "clear error" in findings of fact, abuse of discretion, or unlawful procedure. See 2 COOPER 535-791.

already been proposed in this comment. Implementation of such a program could take several forms. Generally, the effluent fee agency would require each polluter to install a multicomponent measuring device or several single component devices.¹⁸⁴ Depending upon the availability of financial resources, the agency could provide the emitter the device to insure uniformity and accuracy; certify available instruments meeting required standards; develop specific standards for measuring instruments; or, until automatic monitoring devices are developed, require periodic samples to be taken and analyzed in lieu of continuous monitoring.¹⁸⁵ Once the device is installed, the agency could insure accurate recording of effluent type and volume by several methods. First, its own inspectors could visit each installation periodically to determine the pollution level from the recording instruments for computing the fee for a particular period, a procedure analogous to the monitoring of gas and water consumption. Second, the agency could require the polluter to make periodic pollution reports and could insure accuracy by unannounced inspections of pollution sources in the area.¹⁸⁶ Specific violations could be discovered by cross checking a firm's reports with those of similar firms in the same industry or by regional monitoring as now conducted by NAPCA.¹⁸⁷ Self-reporting accompanied by spot inspections and comprehensive cross checks has long been used successfully by the Internal Revenue Service.¹⁸⁸

Camara and See Limitations

Any conceivable administrative inspection procedure for enforcing such a monitoring system must satisfy fourth amendment protections against unreasonable search and seizure, especially if a criminal sanction is to be available for violations of the reporting requirements. These protections apply not only to the private citizen but the corporate entity as well,¹⁸⁹ although it has been asserted that

184. The development of remote stack monitoring, although of great benefit to the monitoring effort, may well prove costly or impossible. FIRST REPORT 61. Cf. FORTUNE, Oct., 1970, at 113.

185. See, e.g., PHILADELPHIA, PA., AIR MANAGEMENT CODE ch. 3-300, § 3-301(7) (1969).

186. The procedural requirements for such inspections are discussed in *Camara and See Limitations* subsection of text *infra*.

187. See FIRST REPORT 53-58.

188. See B. BITTKER, FEDERAL INCOME ESTATE AND GIFT TAXATION 893-903 (1964).

189. See *Lanza v. New York*, 370 U.S. 139, 143 (1962); *United States v. DiCorvo*, 37 F.2d 124, 132-33 (D. Conn. 1927).

the corporate right of privacy is deserving of a lesser degree of protection.¹⁹⁰ Two 1967 Supreme Court decisions, *Camara v. Municipal Court*¹⁹¹ and *See v. City of Seattle*,¹⁹² consider whether a warrant is required, when it must be sought, and the requisite probable cause that must be shown. In *Camara* the Court held that an administrative search of a private residence requires a search warrant if the occupant refuses entry, and *See* extended this mandate to commercial establishments.¹⁹³ The court in *Camara* also indicated that the fourth amendment required a lesser showing of probable cause for an administrative search warrant than for a criminal search warrant.¹⁹⁴ The reasonableness of a particular search is determined by "balancing the need to search against the invasion which the search entails,"¹⁹⁵ considering whether the administrative program has a long history of judicial and public acceptance, whether inspection is the only acceptable means of abating a dangerous condition of definite public concern, and whether the invasion of privacy is sufficiently tempered by the impersonality of the search and the absence of any intent to find criminal evidence.¹⁹⁶ The Court specifically excluded emergency inspections from the warrant requirement¹⁹⁷ and acknowledged the necessity of issuing warrants without requiring an attempt to inspect when surprise is crucial.¹⁹⁸

A inspection system based upon periodic, unannounced agency inspections of self-monitoring devices would be subject to the *Camara* and *See* limitations. Such inspections will arise where the records given by the polluter create suspicions of illegal activity, where visible effluents or other observable activities are inconsistent with reported

190. See *United States v. Morton Salt Co.*, 338 U.S. 632, 652 (1950).

191. 387 U.S. 523 (1967).

192. 387 U.S. 541 (1967).

193. This approach abandons the traditional requirement that a warrant issue prior to the search. The court equivocates on the issue: ". . . it seems *likely* that warrants should *normally* be sought only after entry is refused . . ." *Id.* at 539 (emphasis added). If warrants were allowed before the refusal of entry, however, the occupant would risk criminal prosecution by refusing entry, a result the court sought to avoid. *Id.* at 532. Thus, despite its indefinite language, the Court's opinion must be interpreted to require an initial attempt to conduct a consent search before a warrant may be sought. See Note, *Search and Seizure—Probable Cause—Housing Inspections Require Warrant or Consent*, 3 HARV. CIV. RIGHTS—CIV. LIB. L. REV. 209, 216 (1967).

194. 387 U.S. at 538-39.

195. *Id.* at 537.

196. *Id.*

197. *Id.* at 539.

198. *Id.* at 539-40; See *v. City of Seattle*, 387 U.S. at 545 n.6.

pollution levels, or where the administrative agency initiates a program of random inspections to insure honest reporting. In all three instances *Camara* requires that the corporation refuse entry to the inspector before a warrant may be issued.¹⁹⁹ Pollution control inspections would not satisfy the surprise²⁰⁰ exception since the two or three hour post-refusal, pre-warrant period affords little opportunity for the polluters to remedy pollution producing practices²⁰¹ or to disguise prior tampering with self-monitoring equipment.

The requirements to satisfy the probable cause test differ for inspections based upon suspicions concerning a particular polluter and purely random inspections. In the former case, the traditional requirement²⁰² of substantial evidence that conditions constitute a specific code violation could usually be met by introducing monitoring records or testimony of observed industrial activity, thus rendering unnecessary further inquiry into the balancing test espoused in *Camara*. Where random area inspections are made or where available evidence fails to satisfy traditional requirements for a specific search, the factors expressed in *Camara* must be met in determining probable cause for a warrant. As to the first *Camara* factor,²⁰³ periodic and area inspections have a "long history of judicial and public acceptance"²⁰⁴ albeit not for pollution violations. Second, the public interest in abating pollution is great, and both random and specific inspections are necessary to the self-monitoring approach.²⁰⁵ Third, the inspections constitute only a restricted invasion of privacy

199. The warrant requirement only arises when entry is refused the inspector. It is doubtful that many corporations would do so at the risk of incurring the suspicion of the agency. Viewed in this light, the warrant requirement under *Camara* would not be particularly burdensome to the administrative agency.

200. See note 198 *supra* and accompanying text.

201. A changeover to a higher grade, low pollution fuel would be virtually impossible during this period.

202. See, e.g., *Carroll v. United States*, 267 U.S. 132 (1925).

203. See note 195 *supra* and accompanying text.

204. One commentator, however, disputes the accuracy of this conclusion and the relevance of the factor itself. LaFave, *Administration Searches and the Fourth Amendment: The Camara and See Cases*, 1967 SUP. CT. REV. 1, 14. Since the court mentioned it as one of three "persuasive factors" in the balance and not an absolute requirement, less weight could be accorded the history-of-public-acceptance factor in the face of strength in the remaining factors. Thus, LaFave's view of the factors would not be fatal to the area search.

205. A possible consideration underlying the court's language here is whether the traditional probable cause test would yield acceptable results. See *Camara v. Municipal Court*, 387 U.S. 523, 537 (1967). Certainly random and specific searches, which the traditional probable cause test would often preclude, are vital to the policing of a self-monitoring scheme.

in view of the limited protection accorded corporations²⁰⁶ and the impersonal nature of the search.²⁰⁷ A probable cause test based on these somewhat nebulous factors apparently utilizes a more liberal evidentiary requirement than traditionally required in criminal searches. Random area inspections which are made only as a deterrent to false reporting and are not based upon any suspected violation could meet this diluted standard based on their periodic necessity since the passage of time was specifically cited in *Camara* as justification for the issuance of a warrant.²⁰⁸ Denial of a warrant for random inspections could substantially hinder the self-monitoring program, but corporate knowledge that entry refusals would alert the administering agency to violations makes extensive refusals unlikely.

Subpoena Requirements

An alternative to inspections would be the issuance of a subpoena *duces tecum* to require the production of monitoring records.²⁰⁹ Although within the purview of the fourth amendment as a "constructive" search,²¹⁰ such an administrative subpoena would encounter little difficulty in meeting the requirements of scope limitation, relevance, and specificity.²¹¹ The specificity and relevance of monitoring records, production of which would impose a slight burden upon the polluters, would easily satisfy these constitutional requirements, especially since great weight is generally accorded the administrative decision.²¹² Beyond this, few limitations are imposed

206. See note 190 *supra* and accompanying text.

207. In this regard the Court also mentioned that the *Camara* search was not "aimed at the discovery of evidence of a crime." 387 U.S. at 537. The basis of the monitoring-records search is not the suspicion of criminal activity, although a prosecution may result as in *Camara*. Presumably the Court was more impressed by the limited intrusion on personal privacy that attends such a search. See LaFave, *supra* note 204, at 17-20. The time period is short, facilities rather than personal belongings are searched, and no social stigma is attached to a monitoring records search.

208. The *Camara* court found that in the case of building inspections, the passage of time, the nature of the building, or the condition of an area would constitute probable cause for a search. 387 U.S. at 538.

209. Most states allow the agency itself to issue the subpoena. See, e.g., IOWA CODE ANN. § 622.81 (1950); PA. STAT. ANN. tit. 71, § 200 (1962). See Benton, *Administrative Subpoena Enforcement*, 41 TEXAS L. REV. 874, 895-902 (1963); 1 COOPER 294-313. The agency generally cannot, however, impose its own sanction upon noncompliance and must seek court enforcement. 1 COOPER 297; cf. 1 K. DAVIS, *supra* note 111, § 3.11. The subpoena *duces tecum* could be issued when no records or only incomplete ones are submitted or, under a meter inspection system with written feed-out, where entry is refused the inspector.

210. See *Oklahoma Press Pub. Co. v. Walling*, 327 U.S. 186, 202 (1946).

211. *Id.* at 208-09.

212. See 1 COOPER 301.

upon the subpoena power,²¹³ reflecting its desirability in a comprehensive monitoring scheme.

The development of remote stack monitoring devices²¹⁴ would avoid many of these inspection requirements. A central computer system with inputs from all monitored sources could also greatly diminish the need for inspections.²¹⁵

CONSTITUTIONAL LIMITATIONS

Police Power

Courts have generally upheld air pollution regulations as a valid exercise of the state's police power, characterizing control efforts as necessary to protect society against a significant danger to public health and welfare.²¹⁶ An air pollution control scheme such as an effluent fee program would probably be considered a public welfare protection measure.²¹⁷ Such a conclusion, however, should not be lightly reached. Situations exist where the aggregate public welfare may be decreased by control efforts. Public welfare in a town economically dependent upon an industry forced to close as the result of an effluent fee scheme is more likely impaired than benefited.²¹⁸ The

213. These limitations preclude the inspector in the field from both issuing and enforcing the subpoena and require that judicial review be accorded the party before sanctions are imposed for failure to comply. *See* *See v. City of Seattle*, 387 U.S. 541, 544-45 (1967). The corporate polluter may not claim the privilege against self-incrimination in this situation. *United States v. Silverstein*, 314 F.2d 789 (2d Cir. 1963).

214. *See* note 184 *supra*.

215. A model for such a plan can be seen in NAPCA's continuous air monitoring program which involves telemetering of data from remote stations. *See* FIRST REPORT 54.

216. *See* *Northwestern Laundry v. Des Moines*, 239 U.S. 486, 491-92 (1916); *Ballentine v. Nester*, 350 Mo. 58, 164 S.W.2d 378 (1942); *Sittner v. City of Seattle*, 62 Wash. 2d 834, 384 P.2d 859 (1963).

217. *See* cases cited in note 216 *supra*.

218. Such situations have developed in the past and may be expected in the future with more stringent control laws. The Elk Paper Manufacturing Company, for example, was forced to close its pulp and paper mill after private litigation resulted in a substantial damage award. *Phillips v. Elk Paper Mfg. Co.*, Equity No. 1577-b (Cecil Cty., Md., County Ct., April 17, 1969). Closure due to pollution abatement costs, however, is not likely. The additional control expenditure for a number of existing industries has been estimated at only 0.5 percent of value added by manufacture, a cost most industries could easily absorb. *See* Gerhardt, *supra* note 25, at 363. The preclusive effect of economic dependency on pollution considerations is clearly reflected by the following letter from a fertilizer plant employee's wife who had previously signed a petition protesting the plant's pollution.

I am sorry about this matter. I was misinformed. My husband has worked for one of the phosphate plants for 21 years. The mine has been our bread and butter. We have not been harmed in any way mentioned above. Thank you. P.S. The dust does get pretty bad.
Florida Air Pollution Control Commission, Minutes, Sept. 16, 1966, 2 Florida State Bd. of

public welfare concept, however, encompasses the removal of damaging nuisances despite public benefit from them. The public is forced to recognize the effect of air pollution on their health when they would not have voluntarily done so.²¹⁹ A further problem arises when a fee is charged for pollution which does not produce adverse health effects or material property damage since the concept of public welfare may not encompass purely aesthetic control measures.²²⁰ An odor-causing pollutant, for example, may cause no adverse health effects but presents an unpleasant and annoying nuisance.²²¹ The answer to this limitation is that aesthetic considerations rarely are the sole ramification of even an odor source. Property values in the affected areas are generally decreased by the aesthetically displeasing conditions,²²² and the enjoyment of such property is reduced by malodorous or unsightly conditions. So little is known of the health effects of many pollution elements that even low level emissions may not be considered free of damaging impact, particularly of a psychosomatic nature. In addition, under certain atmospheric conditions such as an inversion delimiting a dispersion area, emissions

Health, 1966 (mimeographed), reprinted in Crocker, *Some Economics of Air Pollution*, 8 NAT. RES. J. 236, 242 (1968).

219. This argument presupposes that the aggregate welfare of the community is increased since the health and property benefits accruing to the populace outweigh the economic harm done to them. Cf. MICHELMAN & SANDALOW 34. In economic terms, the polluter in this instance has heretofore derived its very existence from its ability to impose the externality of pollution damage on the community. See note 31 *supra*. When that cost is partially "internalized," its profit margin cannot absorb the expense.

220. See MICHELMAN & SANDALOW 22; Michelman, *Toward a Practical Standard for Aesthetic Regulation*, 15 PRACTICAL LAWYER, Feb. 1969, at 36. The Supreme Court has found that aesthetic considerations are definitely related to public welfare. As asserted in *Berman v. Parker*, 348 U.S. 26 (1954): "It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled." *Id.* at 33. This proposition is supported by John Stuart Mill's view of individual liberty that public intervention is legitimate if an agent's behavior results in external impact on others. J.S. MILL, *UTILITARIANISM, LIBERTY, AND REPRESENTATIVE GOVERNMENT* 176-77, 1839-89 (1950 ed.). That aesthetics fall within this permissible legislative ambit is clear. See MICHELMAN & SANDALOW 24-25. However, many state courts have adhered to the contrary position. See, e.g., *People v. Dickenson*, 171 Cal. App. 2d 872, 343 P.2d 809, cert. denied, 361 U.S. 894 (1959); *Town of Vestal v. Bennett*, 199 Misc. 41, 104 N.Y.S.2d 830 (Sup. Ct. 1950); *State v. Brown*, 250 N.C. 54, 108 S.E.2d 74 (1959); *Ghaster Properties, Inc. v. Preston*, 194 N.E.2d 158 (Ohio Ct. App. 1963), *rev'd* 176 Ohio St. 425, 200 N.E.2d 328 (1964).

221. The flexible term "aesthetic" would seem to encompass odor although several commentators have taken a narrow view of the term to include only visual attractiveness. See Dukeminier, *Zoning for Aesthetic Objectives: A Reappraisal*, 20 LAW & CONTEMP. PROB. 218 n.2 (1955); Note, *Constitutional Law: Police Power: Property Restrictions Based on Aesthetic Considerations*, 11 U.C.L.A. L. REV. 859, 861 n.11 (1964).

normally only aesthetically displeasing may accumulate and seriously affect public welfare. These considerations may become academic since the minority rule allowing aesthetic considerations alone to constitute a basis for the exercise of the police power has recently gained additional proponents and may displace the contrary general rule.²²³

Even if a portion of the fee schedule is deemed to be solely aesthetically based, the taxing power may be used where necessary as a justification for the imposition of that portion of the fee. The regulatory nature of the effluent fee would not preclude its consideration as an exercise of the taxing power since similar taxes have been upheld.²²⁴ Further, the concurrent utilization of the police and taxing power has been judicially sanctioned.²²⁵

Limitations on the Police Power

Reasonable Nexus. As an exercise of the police power, the effluent fee scheme encounters the due process requirement that legislation must be reasonably adapted to the ends sought and that a nexus must exist between the regulatory provisions and their avowed purpose.²²⁶ Once this requirement is met, no degree of "taking" will be considered violative of due process, even if the destruction of property is involved.²²⁷ The "taking" in the usual situation would include either the required payment of the fee, the installation of expensive abatement equipment, or the required installation of monitoring equipment. Despite the strong presumption of

222. This factor alone has been sufficient to justify aesthetic regulations in several states. See, e.g., *Best v. Zoning Bd. of Adjustment*, 393 Pa. 106, 141 A.2d 606 (1958); *State ex rel. Saveland Park Holding Corp. v. Wieland*, 269 Wis. 262, 69 N.W.2d 217, cert. denied, 350 U.S. 841 (1955). Their emphasis is misplaced, however. Property values are derived from the aesthetic condition and serve only to provide objective evidence of the public's reaction to the aesthetically displeasing condition. See MICHELMAN & SANDALOW 24.

223. See, e.g., *Sunad Inc. v. City of Sarasota*, 122 So. 2d 611, 615 (Fla. 1960); *Oregon City v. Hartke*, 240 Ore. 126, 400 P.2d 255 (1965); *People v. Stover*, 12 N.Y.2d 462, 191 N.E.2d 272, 240 N.Y.S.2d 734 (1963).

224. See, e.g., *United States v. Kahriger*, 345 U.S. 22 (1953), overruled in another respect, *Marchetti v. United States*, 390 U.S. 39 (1968); *Magnano v. Hamilton*, 292 U.S. 40 (1934). The fee's characterization as a tax is discussed in notes 88-107 *supra* and accompanying text.

225. See *City of Georgetown v. Morrison*, 362 S.W.2d 289, 291 (Ky. Ct. App. 1962).

226. See *Northwestern Laundry v. Des Moines*, 239 U.S. 486 (1916); *Lawton v. Steele*, 152 U.S. 133 (1894); *Union Carbide & Carbon Corp. v. White River Distributors, Inc.*, 224 Ark. 558, 275 S.W.2d 455 (1955); *City of Rochester v. McCauley-Fien Milling Co.*, 199 N.Y. 207, 92 N.E. 641 (1910).

227. *Northwestern Laundry Co. v. Des Moines*, 239 U.S. 486 (1916). See note 218 *supra* and accompanying text.

constitutionality for the legislative pronouncement of a nexus,²²⁸ some difficulty may be encountered in demonstrating the causal relationship between the fee schedule and public health and property damage. First, scientific knowledge is deficient concerning the effects of certain pollutants upon man and property.²²⁹ For example, a fee schedule based upon the emission of sulphur oxides would have little scientific substantiation.²³⁰ Effective air pollution legislation, however, cannot await extensive scientific investigation in view of the immediacy of the pollution problem. The evidence required to validate such a regulation need only raise a reasonable possibility that a scientific basis does exist for the fee schedule. Such an evidentiary showing renders the presumption in favor of the regulatory measure irrebuttable.²³¹ The publication of HEW criteria or other scientific works indicating or at least suggesting the adverse effects of emittants should meet the information requirement.²³²

Computation Uncertainties

The effluent fee scheme is vulnerable to substantive due process objections upon a second ground. The cost-benefit relationship which forms the basis for the fee schedule requires the determination of the emitter's cost saving function and the receptor's damage function. As previously indicated, little-known synergistic mechanisms which amplify effects of component pollutants greatly hinder damage computations.²³³ Also, no adequate means have been derived to ascertain numerically the diverse nature of the damages caused by various pollutants. A prominent economist in the ecology field has labelled past studies attempting such calculation on a "problem shed" level as "crude" and casually administered.²³⁴ Although more

228. See *Bibb v. Navajo Freight Lines, Inc.*, 359 U.S. 520, 524 (1959).

229. See STAFF REPORT 5-9.

230. Pursuant to the Air Quality Act, *Air Quality Criteria for Sulphur Oxides* (1967), was issued by HEW, reflecting the current level of research in this area. The publication fails to provide any viable indication of the effects of sulphur oxides. See Cassell 215.

231. See *People v. Tatje*, 203 Misc. 949, 953, 121 N.Y.S.2d 147, 151 (N.Y. City Magis. Ct. 1953); 9 B.C. IND. & COM. L. REV. *supra* note 72, at 736-37.

232. As the Senate report asserted:

The day of precise quantitative measurement of the health and welfare effects of air pollution has not yet arrived. Until such measurement is possible, action must be based upon limited knowledge, guided by the principle of the enhancement of the quality of human life. STAFF REPORT I.

233. See *Id.* at 8. See notes 61-62 *supra*.

234. See Kneese, *How Much is Air Pollution Costing Us in the United States?*, PROCEEDINGS 529, 531. See also Wolozin, *supra* note 73, at 237.

precise and thorough damage studies are now being conducted by HEW, similar impediments remain.²³⁵ State effluent fee programs must rely either on existing projects, future HEW studies, or local government or private cost-benefit studies. Although weaknesses in investigatory techniques create some doubt concerning their accuracy, a polluter challenging them would have difficulty proving that the studies lack scientific substantiation. The issue of the validity of the cost-benefit analysis would be eliminated in a scheme employing the effluent standard-fee or the ambient air quality standard-fee approaches. Under both methods the fee schedule is prepared in relation to pre-determined national standards, not simply the pollution damage function.²³⁶ Extensive HEW studies prior to promulgation of national standards should effectively preclude a challenge to the standards or the schemes themselves.²³⁷

Less-Restrictive-Alternative Test

The "less-restrictive-alternative" principle has been abandoned by the Supreme Court but has maintained vitality in some state courts.²³⁸ This economic due process principle may be relevant if no federal preemptive legislation is in effect.²³⁹ An economic regulation violates the requirements of due process under this standard if the government can achieve the desired goals through a less restrictive alternative regulation.²⁴⁰ The alternatives to an effluent fee scheme have been discussed previously: direct regulation through effluent standards;²⁴¹ subsidy payments to encourage abatement;²⁴² tax benefits for abatement expenditures;²⁴³ and regulation or prohibition of certain pollution activities.²⁴⁴ Application of the "less-restrictive-alternative" principle to these control options indicates that the effluent fee scheme would be clearly less restrictive than the regulation

235. See note 57 *supra* and accompanying text.

236. See note 86 *supra* and accompanying text.

237. See note 232 *supra* and accompanying text.

238. Struve, *The Less-Restrictive-Alternative Principle and Economic Due Process*, 80 HARV. L. REV. 1463 (1967). See *Olsen v. Nebraska ex rel. Western Reference & Bond Ass'n, Inc.*, 313 U.S. 236, 246-47 (1941); *Trio Distrib. Corp. v. City of Albany*, 2 N.Y.2d 690, 693-96, 143 N.E.2d 329, 330-32, 163 N.Y.S.2d 585, 587-89 (1957).

239. See *Effluent Fee Scheme Under the Act* subsection of text *supra*.

240. See *Jay Burns Baking Co. v. Bryan*, 264 U.S. 504, 513-17 (1924).

241. See notes 19-24 *supra* and accompanying text.

242. See notes 30-32 *supra* and accompanying text.

243. See notes 25-29 *supra* and accompanying text.

244. See notes 14-15 *supra* and accompanying text.

or prohibition of pollution activities and arguably less restrictive than effluent standards. The effluent fee approach gives the polluter a viable alternative to abatement by allowing him to pay a fee; therefore, it is less restrictive than either type of direct regulation, both of which involve a mandate to abate. The effluent fee scheme is *more* restrictive than direct regulation, however, when it is applied to pollution levels below that of the normal effluent standard to provide an incentive for increased abatement efforts. Since the courts do not consider an alternative which is less restrictive in one facet but more restrictive in another to be preclusive,²⁴⁵ the effluent fee scheme satisfies this due process test *vis a vis* direct regulation.

The subsidy payment and tax benefit approaches should not be considered equally effective alternatives to an effluent fee scheme. The tax benefit provides less compulsion than a required fee payment and results in a misallocation of resources when a polluter decides to abate rather than employ less costly alternatives.²⁴⁶ The subsidy program also fails to coerce abatement effectively and places the cost of pollution upon the general public rather than the polluter or the consumer of the polluter's goods.²⁴⁷ The "less-restrictive-alternative" principle is thus no impediment since the two approaches do not qualify as viable alternatives to the effluent fee scheme.²⁴⁸

Taking

Courts have recognized the defense of "unavoidable necessity" in those situations where a polluter cannot technologically or otherwise meet direct regulatory requirements.²⁴⁹ Sanctions under these circumstances are deemed to constitute an unconstitutional "taking" of the polluter's property.²⁵⁰ The statutory enactments, including the

245. Struve, *supra* note 238, at 1463.

246. See notes 25-28 *supra* and accompanying text.

247. See notes 30-32 *supra* and accompanying text.

248. A further application of this economic due process principle may arise in questioning the excessiveness of a fee schedule. The modicum of proof required would seem to be insurmountable, however. See 9 B.C. IND. & COM. L. REV., *supra* note 72, at 737.

249. See *People v. Cunard White Star, Ltd.*, 280 N.Y. 413, 21 N.E.2d 489 (1939); *People v. Savage*, 1 Misc. 2d 337, 148 N.Y.S.2d 191 (Erie County Sup. Ct.), *aff'd mem.*, 309 N.Y. 941, 132 N.E.2d 313 (1955); Polloack, *infra* note 256, at 345-48. An example of such a technological void exists in the control of sulphur oxides. A panel of the National Academy of Engineering and the National Research Council concluded that low sulphur-oxide standards would not be met by current available low-sulphur fuels or control processing methods. 1 BNA, E.R.—CURRENT DEVELOPMENTS 78 (1970).

250. *People v. Savage*, 1 Misc. 337, 148 N.Y.S.2d 191 (Erie County Sup. Ct. 1955).

Air Quality Act,²⁵¹ have generally recognized this defense by allowing the issuance of "variances" for unavoidable emissions.²⁵² This exception to regulatory programs has caused extensive administrative problems, the defense often being claimed by the polluter as a matter of course regardless of the actual necessity involved. The effluent fee scheme wisely avoids the requirement of such variances since the polluter is provided with the alternative of paying the fee rather than being directed to abate in situations where technology is inadequate.²⁵³ The polluter is then paying for the cost of his pollution upon the public, and no unconstitutional taking is involved.

For similar reasons such a "taking" would not be present where an established fee is increased by the arrival of a new pollution source which multiplies the polluter's damage contribution through synergistic effects. The polluter is merely compensating the public for damages caused by his pollution, even though external effects may increase the amount of that damage.²⁵⁴

A polluter arguably has a vested right in a fee schedule which could be the subject of a "taking" in that he has relied upon the existing standard in planning his abatement program.²⁵⁵ Standards,

251. 42 U.S.C. § 1857d (Supp. IV, 1969). *See, e.g.*, MO. ANN. STAT. § 203.110(3) (Supp. 1969).

252. An example of the variance procedures is found in *Ingraham v. Peter Cooper Corp.*, 1 BNA, E.R.—DECISIONS 1409 (N.Y. Sup. Ct., Cattaraugus Cty., June 12, 1970), where a variance was granted despite the New York Attorney General's contention that this represents the first step in an endless progression of extensions. Regardless of necessity, an effluent fee scheme would impose a fee during the non-abatement period.

253. The situation has often arisen whereby stringent effluent standards are enacted in response to public pressure, as in Pennsylvania. Mr. Allen Brandt, chairman of the state air pollution control commission, stated that the standards could not be "reached in that area with current technology." *The Wall St. Journal*, Oct. 21, 1969, at 29, col. 3. An anomalous result ensues since variances will likely insulate industry from the stricter emission standards, while under the fee scheme, the polluter would pay for his unabatable emissions.

254. The court in *Maine v. Johnson*, 1 BNA, E.R.—DECISIONS 1353 (Me. Sup. Jud. Ct., May 21, 1970), found a "taking" to occur when a party was required to pay more than its just share of a state-wide conservation program, a consideration wholly apart from the program's commendable purpose. *Id.* at 1356. Thus, where marshland owners were enjoined by the state from filling their property, the marshland conservation program placed too great a burden on the individual landowners. Charging air polluters with the extent of their damage, whether enhanced by synergistic effects or not, would seem "just" within the Maine court's substantive due process test.

255. *See Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 413-16 (1922). Some courts have placed emphasis on this factor in the balancing process to determine the reasonableness of the regulation. *See Scott County v. Paaske*, 250 Iowa 1293, 1299, 98 N.W.2d 827, 831 (1959); *Hines, Nor Any Drop to Drink: Public Regulation of Water Quality, Part I, State Pollution Control Programs*, 52 IOWA L. REV. 186, 213-14 (1966). If viewed as a property right, the

however, are inherently changeable, and detrimental reliance would be difficult to show where changes caused by the implementation of a revised effluent fee scheme were not substantial. Effluent fee schedules would, of course, be subject to adjustment for climatic and seasonal changes as they are for synergistic effects.²⁵⁶

Equal Protection

Low Versus High Volume Polluters. Although an effluent fee scheme necessarily entails unequal treatment of various types of polluters, it should encounter little difficulty in meeting the constitutional requirements of reasonableness, non-arbitrariness, and reasonable relation to the objects dealt with and the public purpose involved.²⁵⁷ One form of necessary discrimination involves the implementation of a direct regulatory program for low-volume emitters.²⁵⁸ Such a classification on the basis of pollution type and volume could conceivably grant to a larger polluter an advantage over the smaller polluter in the same industry. The effluent fee arrangement permits the larger polluter to choose his optimum cost pollution abatement level while the smaller polluter, possibly a competitor, is subjected to a required abatement schedule.²⁵⁹ The smaller firm, however, may consequently be relieved of the substantial expense of a self-monitoring scheme.²⁶⁰ The basis of the discrimination, which could conceivably favor the large or small polluter depending upon the circumstances, derives from the impractical requirement of self-

schedule reliance should not be considered of any greater worth than other property rights subject to the taking.

256. Further due process objections would be assuaged by couching the purpose clause of effluent fee enabling legislation in terms of "prevention and control" rather than "efficient management and allocation of air resources." Compare N.Y. CITY ADMIN. CODE § 892-1.0 (1963), employing the control concept, with CHICAGO MUNICIPAL CODE ch. 17 (1967). See also Pollack, *Legal Boundaries of Air Pollution—State and Local Legislative Purpose and Techniques*, 33 LAW & CONTEMP. PROB. 331, 339 (1968). The latter term implies public sharing of private property, requiring compensation. See *Goldblatt v. Hempstead*, 369 U.S. 590 (1962); *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393 (1922); Sax, *Takings and the Police Power*, 75 YALE L.J. 364 (1964). A further ramification of the air resource management statute is that zoning legislation may be deemed analogous, thus subjecting the scheme to the pre-existing non-conformity use defense. See generally Heath, *Some Legal Questions Relating to Air Quality Management A-1* (Paper presented at Canadian Conference, Toronto 1969).

257. See *Williamson v. Lee Optical*, 348 U.S. 483, 489 (1955); *Lindsley v. Natural Carbonic Gas Co.*, 220 U.S. 61 (1911).

258. See notes 78-80 *supra* and accompanying text.

259. *Id.*

260. The direct regulation may, however, require sampling or periodic monitoring systems. See, e.g., PHILADELPHIA, PA., AIR MANAGEMENT CODE ch. 3-300, § 3-301(7).

monitoring systems for all polluters and the administrative difficulties²⁶¹ that inhere in an all-inclusive program which seeks to encompass low-volume polluters. The distinctions being reasonable and necessary to the successful implementation of an effluent fee control scheme, the equal protection standard is met.

Large Versus Small Firms. A further distinction attributable to the effluent fee or the effluent-fee standard scheme lies in the limited alternative provided the smaller firm to respond to the fee schedule. Most firms will determine the least cost level of abatement for their facilities and pay the appropriate fee; the polluter is thus provided a continuing incentive to develop less costly, more efficient abatement techniques. The smaller firm, however, is often unable to respond to this research incentive since it lacks the financial capabilities necessary for a pervasive research effort. Subjected to this limitation, the firm's abatement choice is circumscribed by what is economically and technologically feasible until the pollution control industry develops more efficient devices enabling the firm to reduce its costs through abatement. Research efforts by larger firms, pollution equipment manufacturers, and governmental agencies, possibly funded by effluent fees,²⁶² could provide the small firm with innovative technology, mitigating its research disadvantage.²⁶³

Rural Versus Urban Polluters. An additional classification resulting from an effluent fee system is that involving the fee schedules for rural and urban polluters. A substantial schedule discrepancy could arise between these polluters since the nature and amount of urban pollution damage usually predominates over rural damages due to low population densities and reduced property values. Also, synergistic mechanisms which multiply the effects of the urban polluter's emissions and result in a larger fee have less impact in rural areas. The fact that both polluters' fees theoretically²⁶⁴ reflect the damage each emitter causes seems to justify the distinction. The respective fees should approximate the amounts a court would assess²⁶⁵ either polluter in a class action by pollution victims,

261. See note 80 *supra* and accompanying text.

262. See note 51 *supra* and accompanying text.

263. The class defined by the statute, that of all polluters above a minimum effluent level, clearly involves a reasonable basis despite the possible incidental size discrimination.

264. The difficulties inherent in such a determination are discussed in *Objections* subsection of text *supra*.

265. Presumably, the fee would reflect elements of damage not deemed awardable by a court

vindicating the geographic distinction as a reasonable and necessary one.²⁶⁶

Information Advantage. The firms relegated to extensive research efforts and large fees because of deficient knowledge concerning their particular emissions are economically disadvantaged vis à vis emitters of controllable, well-researched pollutants.²⁶⁷ Equal protection requirements are met since the class defined by the statute, those emitters of similar pollutants, has a clearly reasonable foundation and is necessary to correlate the cost-benefit function. The emitter subjected to a direct regulatory scheme could usually obtain a variance under these circumstances,²⁶⁸ but the effluent fee more effectively allocates the pollution cost while providing a research incentive to reduce that cost.

MAINTENANCE OF ALTERNATIVE REMEDIES

Private

Many commentators consider private remedies the most effective alternative to direct governmental pollution control.²⁶⁹ In the past, private actions under theories such as private and public nuisance,²⁷⁰ trespass,²⁷¹ negligence, or strict liability²⁷² have not been extensively

of law either because of the difficulty in showing causation or the receptor's remoteness from the pollution source. *See, e.g., Phillips v. Elk Paper Mfg. Co.*, Equity No. 1577-B (Cecil Cty., Md., County Ct., April 17, 1969).

266. The Senate Committee on Public Works recognized the necessity of regional variations of emission control requirements. SENATE REPORT 30.

267. The technological lag in many instances may be due to the lack of industry-supported research efforts. The incentive provided by the effluent fee approach should spur such research programs.

268. *See* note 252 *supra* and accompanying text.

269. *See* Cassell; Esposito, *supra* note 16; Juergensmeyer, *supra* note 38. *But see* Edelman, *supra* note 36.

270. Various obstacles such as "balancing of equities," *Madison v. Ducktown Sulphur, Copper & Iron Co.*, 113 Tenn. 331, 83 S.W. 658 (1904), the requirement of "special injury" in the case of public nuisance, *Holman v. Athens Empire Laundry Co.*, 149 Ga. 345, 100 S.E. 207 (1919), and "coming to the nuisance," *Waschak v. Moffatt*, 379 Pa. 441, 109 A.2d 310 (1954), have impeded the success of nuisance actions. *See generally* Juergensmeyer, *supra* note 38. These obstacles, however, are becoming less significant. The standing requirements have been recently lowered. *Road Review League v. Boyd*, 270 F. Supp. 650 (S.D.N.Y. 1967). Modification of the burden of proof rule also seems to be developing. *See Texas Eastern Transmission Corp. v. Wildlife Preserves, Inc.*, 48 N.J. 261, 225 A.2d 130 (1966). *See generally* The Conservation Foundation Letter, Sept. 30, 1969.

271. The "balancing of equities" approach has also mitigated the effectiveness of the trespass action. *See Arvidson v. Reynolds Metals Co.*, 125 F. Supp. 481, 482-83 (W.D. Wash. 1954), *aff'd*, 236 F.2d 224 (9th Cir. 1956), *cert. denied*, 352 U.S. 968 (1957).

utilized; however, the increased awareness regarding the pollution problem and the development of more effective legal theories²⁷³ indicate a possible reversal of this trend.²⁷⁴ Due to this renaissance, consideration must be given to whether an effluent fee scheme should preclude private actions.²⁷⁵ Policy considerations dictate that it should not. The political acceptability of the fee approach could possibly depend on the availability to the private citizen of his personal right to be free from pollution. Voters may be justifiably hesitant to release their legal rights in favor of an untested state control scheme.²⁷⁶ A

272. Proof of causation becomes insurmountable in many such cases. *See, e.g.*, *Heck v. Beryllium Corp.*, 424 Pa. 140, 226 A.2d 87 (1966).

273. The potential of the public trust doctrine as an effective remedy has recently been emphasized. *Sax, The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention*, 68 MICH. L. REV. 473 (1970). The use of the class action could effectively implement private remedies by concentrating individual litigation efforts and lowering litigation costs. The citizens of El Paso, Texas, for example, have filed an action seeking one billion dollars in damages and a permanent injunction against a major polluter. *The Wall St. Journal*, Jan. 28, 1970, at 4, col. 4.

274. Further evidence of this trend is found in the promulgation of the National Environmental Policy Act of 1969, 83 Stat. 852 (1970), which may be interpreted as enumerating the basic rights of the receptor-public and placing an affirmative duty upon all governmental agencies to consider the environmental consequences of their acts, thus giving legislative approval to *Scenic Hudson Preservation Conference v. FPC*, 354 F.2d 608 (2d Cir. 1965), and *Office of Communications of the United Church of Christ v. FCC*, 359 F.2d 994 (D.C. Cir. 1966). *See Hanks & Hanks, supra* note 177. Judicial review of administrative action limited to determining questions of law and scrutinizing whether factual findings are supported by substantial evidence is thus accorded the environmental plaintiff. Differing judicial approaches to this law-fact distinction are discussed in *Sive, supra* note 177, at 612-31. As of August 1, 1970, seventeen legal actions and five administrative proceedings involving rights asserted pursuant to the National Environmental Policy Act of 1969 had been instituted. A listing of these actions is found in "Progress Report on Implementation of Section 102(2)(c) of National Environmental Policy Act," Council on Environmental Quality, Sept. 16, 1970. For an example of agency action, see *Implementation of the National Environmental Policy Act*, FPC Order No. 415 (Dec. 4, 1970). Judicial interpretations of the Act similar to that evinced in *Pennsylvania Environmental Council v. Bartlett*, 315 F. Supp. 238 (M.D. Pa. 1970), however, could delimit the potential effectiveness of the act. The court relieved the Secretary of Transportation of the responsibility of making an affirmative and independent determination of the environmental effects of a highway project. The delegation of this responsibility could often foreclose actions directed against federal officials.

275. The constitutionality of legislative abolishment of a private tort action when that right has not yet vested has been generally upheld. *See Magierowski v. Buckley*, 39 N.J. Super. 534, 121 A.2d 749 (1956); *Anderson v. Corporation Comm.*, 327 P.2d 699 (Okla. 1957); *cf. CONN. CONST. art. 1, § 10*. The courts have divided, however, as to when that right accrues. *Compare Massa v. Natri*, 125 Conn. 144, 3 A.2d 839 (1939), with *Carson v. Gare-Meenan Co.*, 229 F. 765 (1916). One view requires judgment to be rendered while the other apparently recognizes the right when the injury occurs.

276. The effluent fee approach has apparently never been applied to air pollution, although the scheme has been utilized in the Ruhr River Valley to control water quality. The basic distinction between the air and water problems, however, preclude consideration of the Ruhr

homeowner subjected to pollution resulting in substantial damages to his person or residence would find little solace in the increased fee the emitter would pay to the state.²⁷⁷ Consider the public utility which, because of its quasi-monopoly character, arguably may be able to pass much of the fee to the consumer²⁷⁸ who may also be the pollution receptor. The citizen would be paying for the emission fee and yet suffering the pollution damage. There is thus a strong argument for maintaining private legal remedies against the polluter to make it possible to avoid any double "payment" by the injured party. In addition to equitable considerations, the retention of private remedies provides additional pressure for the polluter to abate. In choosing a high level of emittance for the concomitant high effluent fee, the polluter would be incurring the risk of substantial private liability to individual receptors.²⁷⁹

experience as a vindication of the effluent fee air pollution control scheme. *See Hearings Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, Water Pollution Control, 89th Cong., 2d Sess. 388, 397 (1966).*

The Senate version of H.R. 17255, 91st Cong., 2d Sess. § 304 (1970), as amended by the Senate and sent to conference, 116 CONG. REC. 16,260 (daily ed. Sept. 22, 1970), 2 [1969-70 Transfer Binder] CONG. INDEX, House Status Table, at 4932 (1970), statutorily recognizes the use of the civil action to enforce its provisions. The current administration's support for private actions, however, is questionable in view of the Internal Revenue Service's recent ambivalence toward the tax exempt status of environmental litigation groups. *Compare* Internal Revenue Service News Release, IR 1069 (October 9, 1970), *with* The Wall St. Journal, Oct. 15, 1970, at 5, col. 1.

277. *See, e.g., Heck v. Beryllium Corp.*, 424 Pa. 140, 226 A.2d 87 (1966), where the plaintiff contracted berylliosis from extended exposure to defendant's pollution and claimed over \$100,000 in damages. The increasing incidence of similar actions attest to their importance to individual litigants and the general public. As Russell Train, Chairman of the Council on Environmental Quality, indicated in response to the temporary suspension of the tax-exempt status of environmental litigation groups by the IRS: "Litigation brought by private groups which must rely on contributions for their support . . . [has] strengthened and accelerated the process of enforcement of antipollution laws." N.Y. Times, Oct. 10, 1970 at 1, col. 1. *See also* Citizen's Committee for the Hudson Valley v. Volpe, 452 F.2d 97 (2d Cir. 1970), *cert. denied*, 39 U.S.L.W. 3242 (U.S. Dec. 8, 1970); National Environmental Policy Act, § 102(2)(c), 42 U.S.C. § 4332(c) (Supp. IV, 1969); Washington Post, Oct. 14, 1970 at A-18, cols. 1-2.

278. This conclusion does not necessarily follow. *See* notes 65-70 *supra* and accompanying text.

279. The assertion of private rights would not appear to interfere with the implementation of a fee scheme; thus, the state enactment should specifically state that none of its provisions are intended to diminish or preclude private remedies against the polluter. *See, e.g., ORE. REV. STAT. § 449.820 (1) (1965)*. Contrary to the Oregon statute, however, the provision should not be limited to nuisance actions. *See Renken v. Harvey Aluminum, Inc.*, 226 F. Supp. 169 (D. Ore. 1963), where strained judicial reasoning was necessary to avoid the nuisance limitation.

Public

Alternative public remedies should also not be rejected by the effluent fee scheme. Atmospheric conditions may temporarily require strict limitations on industrial activity. Periodic pollution incidents such as boiler malfunctions may also occur, resulting in extraordinary damage but not significantly affecting the fee which is based on an average emission level. This situation would warrant injunctive relief or other public sanctions. If both the public and private sectors may still act against polluters, industry will likely respond that they are in no better position after the fee than before. The polluter, however, is paying only for the right to use the public air space; he has not purchased a license to pollute. He thus cannot damage private citizens and remain immune from liability, nor can he abuse his use of the air.²⁸⁰

CONCLUSION

Recent emphasis on direct regulation control programs merits serious reconsideration by legislative bodies. The Air Quality Act of 1967 may very well be "a hopeless failure."²⁸¹ The effluent fee approach presents a viable, practical alternative with distinct abatement and political advantages. The promulgation of national standards which has been given much attention by HEW and Congress is particularly well suited to effluent fee implementation. Such a combination avoids many of the current objections to the pure economic effluent fee scheme administered without such standards. The fee program is further enhanced by a program of self-monitoring which would substantially reduce administrative costs while providing an effective enforcement tool. The enactment of such a scheme cannot and need not await extensive technological advancement or

280. Many states, although providing statutory remedies against polluters, preserve public rights in addition to private rights. *See, e.g.*, Air Pollution Control Act of June 12, 1968, 35 PA. STAT. § 4012.1: "Nothing in this act shall be construed as impairing any right or remedy, now or hereafter existing in equity, or under common or statutory law, to abate private or public nuisances." *See also* Borough of Brookhaven v. American Rendering, Inc., 434 Pa. 290, 256 A.2d 626 (1969).

281. *See* note 121 *supra*. Lewis C. Green labelled the Act "misguided" and "immoral." Address by Lewis C. Green Before the Air Pollution Control Association, St. Louis, Mo., June 1, 1970, reported in 1 BNA, E.R.—CURRENT DEVELOPMENTS 178 (1970). This conclusion was reached in the Council on Environmental Quality's first report to Congress on August 10, 1970. The Council asserted that the Air Quality Act "is no longer an adequate tool to cope with current pollution problems." *Id.* at 413.

completely accurate cost-benefit research in view of the pressing pollution problem; present developments in the monitoring and abatement fields are sufficient to effectuate a comprehensive fee scheme. The state role is the main uncertainty in implementing a national standard-fee program. The ideal of federal-state "cooperative federalism," however, has found practical significance in such areas as unemployment compensation,²⁸² oil industry regulation,²⁸³ and, more recently, food inspection.²⁸⁴ These indicate the effectiveness of state programs administering federal standards. Whether this or a more federally dominated program is employed, the effluent fee scheme merits serious consideration as the basic approach in state and federal pollution control programs.

232. Unemployment Compensation Act, 42 U.S.C. § 502 (1964).

283. Oil and Gas Lands Leasing Act, 30 U.S.C. § 184(a) *et seq.* (1964).

284. Meat Inspection Act, 21 U.S.C. § 661 (Supp. IV, 1969).