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WASTE TO ENERGY: ENVIRONMENTAL AND LOCAL GOVERNMENT CONCERNS

“The problem we are confronting here is immense—literally mountains of trash and garbage.”¹ With these words, Representative William S. Moorhead accurately described a current American dilemma—what to do with the four billion tons² of solid waste³ annually produced by Americans. Concurrent with the problem of increasing quantities of waste are the problems of decreasing availability of land fill space⁴ and an ever-rising demand for energy. The existence of these problems is leading federal, state, and local governments to take a second look at their municipal solid waste and to realize that “waste is something more than an undesirable by-product of urban life which is to be dumped as quickly as possible.”⁵ One solution to their problems could be a program of “resource recovery,”⁶ accomplished by a facility which converts waste to energy.

The “waste to energy” facilities of today have evolved from the long established use of incineration to dispose of solid waste.⁷ The first munic-

1. HOUSE COMM. ON GOV'T OPERATIONS, SOLID WASTE—MATERIALS AND ENERGY RECOVERY, H.R. REP. No. 1319, 94th Cong., 2d Sess. 6 (1976) [hereinafter cited as GOV'T OPERATIONS, H.R. REP. No. 1319].

2. H.R. REP. No. 1491, 94th Cong., 2d Sess. 3, *reprinted in* 1976 U.S. CODE CONG. & AD. NEWS 6238, 6240. An annual increase of eight percent is anticipated in light of current growth patterns in America. *Id.*

3. The Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901-6987 (1982), defines solid waste as:

any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage.

Id. § 6903(27). This comment will focus on municipal solid waste, which is described in the above definition as “discarded material . . . from community activities” not including “solid [waste] or dissolved material in domestic sewage.” *Id.*

4. H.R. REP. No. 1491, 94th Cong., 2d Sess. 9, *reprinted in* 1976 U.S. CODE CONG. & AD. NEWS 6238, 6247 (stating that within five years the fifty largest cities in America were expected to reach their land fill capacity).

5. Ferrante, *Nonhazardous Municipal Solid Waste: Another Problem—Another Solution*, 9 CAP. U.L. REV. 567, 567 (1980).

6. “Resource recovery refers to the emerging industry of municipal solid waste (MSW) incineration and/or processing for recovery of valuable components, most notably energy.” H. TAYLOR, *ENERGY RECOVERY FROM MUNICIPAL SOLID WASTE 1* (1984) (available from Energy Division, Office of Emergency and Energy Services, Commonwealth of Virginia).

7. *Id.* at 2. One commentator traces the use of incineration as a public health measure back to biblical times. Jordan, *Recent Developments in Waste Management*, 22 URB. L. ANN. 317, 317 (1981).

ipal incinerator in the United States was built in 1885.⁸ Thirteen years later, in New York City, the first energy recovery plant was built, using the "refuse to steam" system.⁹ By 1983, there were fifty-five energy recovery plants operating in the United States and thirty more in the construction or planning phases.¹⁰ Although it would appear at first glance that resource recovery has been a success, it also has a history of many failures.¹¹ Despite the setbacks that have been suffered, it is clear that through careful planning and attention to potential problem areas, resource recovery can be a successful answer to the municipal solid waste dilemma.

It is the purpose of this comment to highlight some of the issues which a local government must confront in implementing a decision to develop a waste to energy facility. The comment will begin by examining some of the environmental issues raised by the conversion of waste to energy. Next, the comment will address several state and federal regulations affecting waste to energy conversion; in particular, the Resource Conservation and Recovery Act,¹² the Clean Air Act,¹³ and Virginia's air pollution¹⁴ and solid waste¹⁵ laws. Finally, the comment will examine local government concerns regarding the establishment of waste to energy facilities,

8. H. TAYLOR, *supra* note 6, at 2.

9. *Id.* at 3. Between 1922 and 1969, 364 incinerator plants were built, 43 with energy recovery systems for recovering usable energy. *Id.* By 1979, this number had dropped to 67 incinerators and 31 energy recovery plants, possibly because of the increased use of land filling during those years and the failure of a number of waste to energy facilities. *See infra* note 11 and accompanying text. However, the number of these facilities is again on the rise. *See* H. TAYLOR, *supra* note 6, at 3.

10. H. TAYLOR, *supra* note 6, at 3. For a complete list and description of these facilities, *see id.* at 72-89.

11. *See, e.g.,* White, *The Fascinating World of Trash*, 163 NAT'L GEOGRAPHIC 424, 435 (1983) ("Big resource recovery plants suffered delays, breakdowns, and continuing financial loss."); Donlan, *Garbage Into Energy—It's Proving Long on Promise, Short on Profits*, *Baron's*, July 21, 1980, at 4 (partial list of failures, including five million dollar forfeiture on Baltimore plant, plant closed in San Diego when no customers wanted the low-grade fuel it produced; Milwaukee plant loses three million dollars a year, Hempstead, N.Y. unit closed for months because of odor dispute). *But see* Fletcher, *City of Osceola Burns Garbage to Produce Energy*, 7 CURRENT MUN. PROBS. 278 (1981); *Denver Studies Burning Trash for Steam Heat*, 3 SOLAR L. REP. 209 (1981); *Energy From a Wasted Resource*, 6 CURRENT MUN. PROBS. 465 (1980); *Sanitation Authority To Generate Electricity*, 2 SOLAR L. REP. 252 (1980).

12. 42 U.S.C. §§ 6901-6987 (1982).

13. *Id.* §§ 7401-7641.

14. VA. CODE ANN. §§ 10-17.9:1-.30:1 (Repl. Vol. 1978 & Cum. Supp. 1984); STATE AIR POLLUTION CONTROL BOARD, COMMONWEALTH OF VA., REGULATIONS FOR THE CONTROL & ABATEMENT OF AIR POLLUTION (1985) [hereinafter cited as SAPCB REGS] (available from the SAPCB).

15. VA. CODE ANN. §§ 32.1-177 to -186 (Repl. Vol. 1979 & Cum. Supp. 1984); REGULATIONS OF THE VA. DEPT. OF HEALTH GOVERNING DISPOSAL OF SOLID WASTE (effective Apr. 1, 1971) [hereinafter cited as VDH REGS] (available from the VDH).

including waste supply and energy markets, site selection and public acceptance.

I. ENVIRONMENTAL CONCERNS

A. *More Pluses than Minuses*

Many Americans today are concerned about the effects that modern technology may have on the environment. Ironically, the Clean Air Act,¹⁶ a result of national concern for the quality of our air, provided part of the incentive to recover heat from the incineration of waste.¹⁷ It was found that the air pollution control devices necessary to clean up exhaust gas emissions could not be used on waste incinerators without heat recovery because the gases were too hot.¹⁸ Thus, a process was developed to remove heat from the devices through the generation of steam¹⁹ which could then be used as an energy source. The further development of waste to energy facilities, however, has brought to light other environmental advantages and disadvantages.

Two positive environmental effects of a waste to energy facility are a decreased need for land fills and the creation of a new source of energy. Land which is both convenient to urban centers and environmentally suited for land filling is becoming increasingly difficult to find.²⁰ In addition, federal regulations are making land fill operations more costly.²¹ The problem is heightened by the American "throwaway ethic"²²—our demand for consumer convenience has led to decreased post-consumption recycling and increased use of packaging material.²³ Waste to energy facilities, however, not only reduce the environmental problems inherent in land filling,²⁴ but may reduce the volume of waste which needs to be disposed of in land fills by up to eighty-five percent.²⁵

As important as these considerations are, perhaps the biggest appeal of

16. 42 U.S.C. §§ 7401-7641 (1982).

17. H. TAYLOR, *supra* note 6, at 2.

18. *Id.* at 2, 4.

19. *Id.* at 4.

20. *See* Ferrante, *supra* note 5, at 567.

21. *See* EPA Guidelines for Development and Implementation of State Solid Waste Management Plans, 40 C.F.R. §§ 256.23-27 (1984).

22. Seldman & Huls, *Beyond the Throwaway Ethic*, 23 ENV'T, Nov. 1981, at 25.

23. *Id.* at 26.

24. *See, e.g.,* Note, *Problems Associated With The Management of Solid Wastes: Is There a Solution in The Offing?*, 83 W. VA. L. REV. 131, 133-34 (1980) (listing seven significant dangers of improper dumping: fire hazard, air pollution, explosive gas migration, surface and ground water contamination, disease carried by rats and flies, personal injury, and aesthetic blight).

25. Virginia Fuel Conversion Auth., *Bristol Waste-to-Energy—Lessons Learned and Generalizations* 4 (available from Va. Fuel Conversion Auth.).

a waste to energy facility is its ability to produce energy.²⁶ Unprocessed garbage contains 4600 British thermal units (b.t.u.'s)²⁷ of heat per pound compared to 12,000 b.t.u.'s of heat per pound for coal and 18,300 b.t.u.'s per pound for oil.²⁸ It is estimated that by converting to energy the municipal solid waste generated in the United States in 1985, we could meet seven percent of our projected imported oil demand.²⁹

Some environmentalists, however, criticize the burning of waste. Critics contend that unbridled incineration of garbage sacrifices the potentially higher use value of that waste.³⁰ For example, compost derived from municipal organic matter could be applied to agricultural land to reduce soil erosion and help the land retain water.³¹ Bottles, paper and metal could be separated from other types of waste and recycled rather than burned.³² According to one commentator, "municipal officials tend to regard source separation as a waste management practice to be used only until mechanical solutions are found. . . . Yet recycling is the one waste system which has a potential for transforming a costly service sector into a productive sector of the economy."³³ On this basis, environmentalists suggest that local governments include recycling, or source separation, in their waste to energy process.

B. *Air Pollution*

Probably the most serious environmental concern associated with converting waste to energy is air pollution. According to the Environmental Protection Agency (EPA), there are over 700 compounds in the gases emitted from burning garbage.³⁴ More lead, cadmium, and arsenic is emitted in this process than from coal combustion plants. Waste to energy plants also emit dioxins³⁵ and increase the levels of airborne bacteria.³⁶ While studies indicate that these emissions are not at "unacceptable

26. See Ferrante, *supra* note 5, at 569. *But see* White, *supra* note 11, at 435 ("Whatever the treasure in trash, it isn't the materials or the energy one might get out of it . . .").

27. British thermal unit is defined as "the quantity of heat required to raise the temperature of one avoirdupois pound of water one degree Fahrenheit at or near 39.2°F." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 279 (1981).

28. Donlan, *supra* note 11, at 4.

29. Ferrante, *supra* note 5, at 569.

30. Seldman & Huls, *supra* note 22, at 32.

31. *Id.* at 35 n.28.

32. Annually, Americans throw away 71 billion cans, 38 billion bottles and jars, 4 million tons of plastic, 7.6 million television sets, 7 million cars and trucks, and 35 million tons of paper. GOV'T OPERATIONS, H.R. REP. NO. 1319, *supra* note 1, at 6-7.

33. Seldman & Huls, *supra* note 22, at 26.

34. 17th Annual TAC Meeting Review, 14 VIRGINIAIR, Dec. 1984, at 7 (quoting David Sussman, manager at the waste combustion program at EPA) (available from the SAPCB) [hereinafter cited as TAC Review].

35. *Id.*

36. "Airborne bacteria levels, both inside and outside the [waste to energy] plant, are

levels of risk,³⁷ the presence of these pollutants does provide a basis for challenging a proposed waste to energy facility.

At present, there are no regulations specifically governing waste to energy facilities. However, the facilities are required to obtain permits under the Clean Air Act (CAA),³⁸ EPA implementing regulations³⁹ and Virginia's State Air Pollution Control Board (SAPCB) regulations.⁴⁰ As required by the CAA,⁴¹ Virginia has an EPA approved state implementation plan (SIP) for achieving and maintaining national ambient air quality standards (NAAQS)⁴² in Virginia. Because Virginia's plan is EPA approved, the plan and the state regulations upon which it is based are enforceable by both the EPA and the SAPCB. The EPA has also delegated to the SAPCB the authority and responsibility for implementing and enforcing the New Source Performance Standards (NSPS)⁴³ in Virginia.

A waste to energy facility is regulated as either a stationary source⁴⁴ or a major stationary source⁴⁵ of air pollution, depending on the amount of solid waste it will process per day. If the facility falls within the major

generally higher for refuse . . . fuel plants than for other types of waste facilities However, . . . the high levels of bacteria can be easily controlled by fabric filters" *Refuse Plant High Bacteria Levels Can Be Controlled, EPA Study Finds*, 10 ENV'T REP. (BNA) 1824 (Jan. 11, 1980) (quoting Assessment of Bacteria and Virus Emissions at a Refuse Derived Fuel Plant and Other Waste Handling Facilities, Executive Summary, Report No. EPA-600/8-79-010 (available from the EPA)).

37. TAC Review, *supra* note 34, at 7. See also EPA Says Regulation of Dioxin Emissions From Resource Recovery Plants Unnecessary, 12 ENV'T REP. (BNA) 926 (Nov. 27, 1981); Resource Recovery Dioxin Emissions Less Tricky Than Others, Study Says, 12 ENV'T REP. (BNA) 105 (May 15, 1981).

38. 42 U.S.C. §§ 7401-7642 (1982).

39. 40 C.F.R. §§ 50-87 (1984).

40. SAPCB REGS, *supra* note 14.

41. 40 C.F.R. § 52.2420 (1984).

42. The CAA requires the EPA to establish national ambient air quality standards (NAAQS) for air pollution that it determines may affect the public health or welfare. 42 U.S.C. § 7409 (1982). NAAQSs have been established for several kinds of pollutants. 40 C.F.R. §§ 50.1-.12 (1984).

43. New source performance standards (NSPS) are federal standards for new sources of air pollution. 42 U.S.C. § 7411 (1982). "New" sources are those sources the construction, modification or reconstruction of which is begun after the applicable performance standards are published. *Id.* § 7411(a)(2). For the performance standards applicable to incinerators, see 40 C.F.R. §§ 60.50-.54 (1984).

44. A stationary source is defined as "[a]ny building, structure, facility, or installation which emits or may emit any air pollutant." SAPCB REGS, *supra* note 14, § 120-01-02. A permit for a stationary source must contain (as applicable) new source standards of pollutants and emission standards for hazardous air pollutants. *Id.* § 120-08-01(D)-(E).

45. A major stationary source is any stationary source which emits or has the potential to emit 100 tons per year or more of any air pollutant, SAPCB REGS, *supra* note 14, § 120-08-03(B)(3), or a waste incinerator capable of processing 250 tons of waste per day. *Id.* § 120-08-03(0).

stationary source category, it will be subject to more stringent requirements than those imposed on simple stationary sources. A further delineation is made within the "major" category depending upon whether the facility is located in an attainment area (i.e., prevention of significant deterioration (PSD) area)⁴⁶ or a nonattainment area.⁴⁷ It is important to determine into which category the facility falls because the regulations vary accordingly. Where a facility falls into more than one category, the more restrictive requirements will apply.⁴⁸

If a waste to energy facility is located in a highly industrialized area,⁴⁹ the "offset" rules⁵⁰ for non-attainment areas may be very important. In a non-attainment area, the emissions from other existing sources are taken into account in determining whether a permit will be issued. The new facility will receive a permit only if total emissions in the area, at the time operations begin, will be less than total emissions allowed before the new facility started operating.⁵¹ This ceiling on emissions requires the use of offsets.⁵² Under the offset rules, the waste to energy facility may trade off with existing sources by paying or persuading them to reduce their emissions. By allowing offsets between sources, growth can continue in industrial areas without significant increases in air pollution. Educating the public to policies such as the offset rules can help allay fears regarding the possible pollution from the incineration of waste.⁵³

The SAPCB can also issue variances if the new facility will be unable to meet the air pollution standards.⁵⁴ However, a variance is only temporary relief and can be granted only after a public hearing is held.⁵⁵

46. An attainment area (or prevention of significant deterioration area (PSD)) is an area where ambient air quality standards are currently being achieved. See 42 U.S.C. § 7470 (1982). A permit is required in order to prevent significant deterioration. The EPA has promulgated PSD regulations, 40 C.F.R. § 52.21 (1984), which have been incorporated into Virginia's SIP. *Id.* § 52.2451(b).

47. A nonattainment area is an area where ambient concentrations of pollutants exceed NAAQSs. Virginia's regulations have been approved as an amendment to the Virginia SIP. See SAPCB REGS, *supra* note 14, § 120-08-03. A list of the PSD areas and nonattainment areas in Virginia can be obtained from the SAPCB.

48. *Id.* § 120-08-02.

49. Because of siting and zoning considerations, this is very likely. See *infra* notes 121-35 and accompanying text.

50. See SAPCB REGS, *supra* note 14, § 120-08-03(N).

51. *Id.* § 120-08-03(F)(3).

52. See *id.* § 120-08-03(N).

53. On the importance of public acceptance of waste to energy facilities, see *infra* notes 116-21 and accompanying text.

54. See SAPCB REGS, *supra* note 14, § 120-02-05.

55. *Id.* § 120-02-05(A)(1). Notice of the public hearing must be published in an area newspaper at least thirty days in advance in order to give the public an opportunity to object. *Id.* § 120-02-05(A)(2).

The SAPCB also regulates odors.⁵⁶ The SAPCB regulations apply to any facility that emits odor⁵⁷ unless the emission is accidental or infrequent.⁵⁸ A waste to energy facility may create odor problems. For example, in Hempstead, New York, a facility was "shut down for months in a dispute with the town over production of noxious odors and dangerous chemicals" by the plant.⁵⁹ The problem of odors can hamper public acceptance and may provide ammunition for those interested in defeating a waste to energy proposal.

C. *The Resource Conservation and Recovery Act*⁶⁰

The federal government has indicated its support for resource recovery through the Resource Conservation and Recovery Act of 1976 (RCRA),⁶¹ which has among its objectives, "promoting . . . resource recovery, and resource conservation systems which preserve and enhance the quality of air, water, and land resources; and . . . establishing a cooperative effort among the Federal, State, and local governments and private enterprise in order to recover valuable materials and energy from solid waste."⁶² RCRA applies to a waste to energy facilities through the Act's solid waste regulations.⁶³ It should be noted that the likelihood of federal intervention in the solid waste area is not nearly as great as in the area of hazardous waste. Hazardous waste requires a "cradle to grave" permit system.⁶⁴ For solid waste, however, "[t]he vehicles for achieving the objectives of environmentally sound disposal, maximized resource use, and resource conservation are state and regional [solid waste] plans."⁶⁵

Although a comprehensive look at RCRA is beyond the scope of this comment, several points applicable to local governments and waste to energy facilities should be mentioned. The EPA currently views nonhazardous solid waste as a lower priority item in its regulatory scheme.⁶⁶ Thus, RCRA recognizes the historical role of local governments in regulating solid waste disposal.⁶⁷ Through guidelines established by the EPA,⁶⁸

56. *See id.* § 120-05-0201.

57. *Id.* § 120-05-0201(A).

58. *Id.* § 120-05-0201(C).

59. Donlan, *supra* note 11, at 4.

60. Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901-6987 (1982).

61. *Id.* *See generally* Andersen, *The Resource Conservation and Recovery Act of 1976: Closing the Gap*, 1978 Wis. L. Rev. 633.

62. 42 U.S.C. § 6902(7)-(8) (1982).

63. *See id.* §§ 6941-6949.

64. Andersen, *supra* note 61, at 650; *see also* 42 U.S.C. §§ 6921-6934 (1982).

65. Andersen, *supra* note 61, at 664.

66. Ferrante & Capello, *A Look at the Regulation of Two Urban Environmental Problems: Solid Waste Management and Air Pollution Control*, 11 URB. L. REV. 515, 517 (1979).

67. *Id.* at 519.

states are encouraged to adopt statewide solid waste management plans.⁶⁹ Federal financial assistance is available for implementing the plan, but it is tied to compliance with any guidelines established by the EPA, and compliance with the provisions phasing out (i.e., closing or upgrading) open dumps.⁷⁰

D. Virginia's Solid Waste Laws and Regulations

Virginia's solid waste management laws⁷¹ establish general provisions for waste to energy facilities and set out the requirements for obtaining a permit. The Virginia State Department of Health (VDH) has been appointed to administer these laws and promulgate regulations.⁷² The VDH also administers the solid waste permit program. As with RCRA, the VDH has adopted extensive regulations governing hazardous waste and more general procedures for solid waste disposal facilities.⁷³

As noted previously, a permit from the VDH is required for a waste to energy facility. Although waste to energy facilities are not expressly mentioned in the VDH regulations, incineration is an approved method of solid waste disposal,⁷⁴ subject to certain general requirements.⁷⁵ The regulations require that the plans for the incinerator be prepared by a registered engineer, that the incinerator meet all applicable rules and regulations of the SAPCB and the State Water Control Board, that provisions be made for disposal of the residue, that the incinerator be supervised by trained personnel and that hazardous waste not be disposed of in the incinerator.⁷⁶

68. See 40 C.F.R. §§ 256.01-.65 (1984).

69. See 42 U.S.C. § 6941 (1982).

70. 42 U.S.C. § 6948(a)(2)(B); see also 40 C.F.R. §§ 256.23-.27 (1984). Virginia's Solid Waste Management Plan was designed to fulfill the requirements of RCRA. DIVISION OF SOLID & HAZARDOUS WASTE MANAGEMENT, VA. DEPT. OF HEALTH, SOLID WASTE MANAGEMENT PLAN (effective Oct. 15, 1979) (available from the VDH, Division of Solid & Hazardous Waste Management). However, when the current plan became effective, the EPA had not yet promulgated the final guidelines for the preparation of statewide solid waste management plans. *Id.* at 1. Therefore, the current plan may be modified to "permit planning and implementation programs to become eligible for federal financial assistance." *Id.*

71. VA. CODE ANN. §§ 32.1-177 to -186 (Repl. Vol. 1979 & Cum. Supp. 1984).

72. VDH REGS, *supra* note 15.

73. However, the VDH is currently drafting new regulations which will cover waste to energy facilities in much more detail.

74. VDH REGS, *supra* note 15, pt. III, art. 1, § B. The regulations also approve "[n]ew and unique methods that may be developed subsequent to the adoption of these rules and regulations and that, in the opinion of the Health Commissioner, can be constructed and operated without environmental degradation and creating hazards to public health and safety." *Id.* § C. Thus, the VDH has a catchall provision into which a waste to energy facility could also fall.

75. *Id.* pt. V, art. 1, §§ A-E.

76. *Id.*

The VDH also publishes a "Documentation Checklist"⁷⁷ for a solid waste disposal permit. Although this checklist is not a part of the VDH regulations, it does expressly include resource recovery.⁷⁸ It therefore provides important guidance as to what will be required of a waste to energy facility before a permit can be issued. These requirements include the following. First, the application for a permit must include a "statement that no hazardous waste will be accepted"⁷⁹ and a description of those active measures that will be used to identify and prevent the disposal of hazardous waste.⁸⁰ Second, there must be an alternate plan for detecting hazardous wastes in case of breakdown.⁸¹ Connected with this is a requirement prohibiting the storage of waste, hazardous or otherwise, at the facility for more than twenty-four hours.⁸² These requirements should help alleviate concerns of local residents that the facility could become a junkyard or a hazardous waste dump,⁸³ but may provide a potential area of vulnerability for those attacking the proposal.

II. LOCAL GOVERNMENT CONCERNS

A. *Guaranteeing a Waste Supply*

For a waste to energy facility to be successful, there must be a guaranteed supply of waste⁸⁴ to assure continuous energy production.⁸⁵ It would be very difficult to obtain financing or to find a ready market for the energy produced if there was no continuity of production.⁸⁶ The duty of guaranteeing the waste supply will usually fall upon the local government.⁸⁷ The amount of waste supply which can be guaranteed by the local government will depend upon whether the waste is collected by the municipality or by private haulers, and in turn, upon who decides where the waste will be disposed.⁸⁸

77. Va. Dept. of Health, Solid Waste Management Documentation Checklist [hereinafter cited as VDH Checklist] (available from the VDH). This checklist states that its provisions are required as the minimum documentation for a permit. *Id.* at 3.

78. For a definition of resource recovery, see *supra* note 6.

79. VDH Checklist, *supra* note 77, at 2, pt. X.

80. *Id.* pt. X(b).

81. *Id.* pt. IV(j).

82. *Id.* pt. 5.

83. See *infra* notes 116-21 and accompanying text.

84. H. TAYLOR, *supra* note 6, at 20.

85. *Id.*

86. On the importance of securing a market for the energy produced, see *infra* notes 108-15 and accompanying text.

87. H. TAYLOR, *supra* note 6, at 44-47. This is true whether the facility is owned by the municipality, a private company, or the two together. *Id.* For an article suggesting that waste to energy facilities should always be privately owned and operated, see Ferrante, *supra* note 5.

88. H. TAYLOR, *supra* note 6, at 20.

If a municipality's waste is collected by the local government, there should be no problem in guaranteeing a waste supply because the municipality will have control over that portion of the waste system.⁸⁹ A problem arises, however, when a large portion of the waste within an area is collected by private haulers. Financial backers of any waste to energy facility will probably want a guarantee that the waste collected by private haulers will be brought to the facility.⁹⁰ This raises the controversial issue of flow control legislation: whether the local government can require private haulers to bring the waste to the facility, and if they do not, whether the local government can still require the haulers to pay "tipping fees"⁹¹ to the waste to energy facility regardless of where the haulers dispose of the waste.

Flow control legislation has already led to allegations that such arrangements are anticompetitive and violate the antitrust laws.⁹² In *Community Communications Co. v. City of Boulder*,⁹³ the Supreme Court considered the issue of whether and to what extent the state action antitrust exemption⁹⁴ applies to municipalities, thereby validating anticompetitive ordinances. Without such an exemption a municipality enacting a flow control ordinance for private haulers of waste could be subjected to antitrust liability. In *City of Boulder* the Court held⁹⁵ that anticompetitive restraints engaged in by state municipalities must be part of a

89. *Id.*

90. *Id.* at 21.

91. A tipping fee is the money paid to the facility (or a land fill) for the privilege of dumping waste there. *Id.* at 30.

92. *See, e.g.*, *Virginian-Pilot*, Aug. 3, 1984, at D5, col. 3 (individual trash collectors alleged that flow control violated antitrust laws).

93. 455 U.S. 40 (1982). This case involved an emergency ordinance enacted by the City of Boulder which prohibited petitioner, owner of a cable television business, from expanding his business. The city argued that, as a home rule municipality with extensive powers of self-government, its ordinance fell within the state action antitrust exemption. *Id.* at 43-47.

94. The Supreme Court first recognized a state action exemption in *Parker v. Brown*, 317 U.S. 341 (1943). In *Parker*, the Court held that a California law designed to reduce competition among raisin growers and to provide price support for raisins did not violate the Sherman Act because the antitrust laws were not meant to cover the actions of a state itself. The Court noted that "[t]he Sherman Act makes no mention of the state as such, and gives no hint that it was intended to restrain state action or official action directed by a state." *Id.* at 351. For other cases examining the state action exemption, see *California Retail Liquor Dealers Ass'n v. Midcal Aluminum, Inc.*, 445 U.S. 97 (1980); *New Motor Vehicle Bd. v. Orrin W. Fox Co.*, 439 U.S. 96 (1978); *City of Lafayette v. Louisiana Power & Light Co.*, 435 U.S. 389 (1978) (plurality opinion); *Bates v. State Bar*, 433 U.S. 350 (1977); *Cantor v. Detroit Edison Co.*, 428 U.S. 579 (1976); *Goldfarb v. Virginia State Bar*, 421 U.S. 773 (1975). *See generally* Cirace, *An Economic Analysis of the "State-Municipal Action" Antitrust Cases*, 61 *Tex. L. Rev.* 481 (1982); Lester, *Municipal Antitrust Liability After Boulder*, 36 *OKLA. L. Rev.* 827 (1983); Slater, *Local Governments and State Action Immunity After City of Lafayette and City of Boulder*, 51 *ANTITRUST L.J.* 349 (1982).

95. In *Boulder*, 455 U.S. at 51, the majority of the Court adopts the plurality opinion of the Court in *City of Lafayette v. Louisiana Power & Light Co.*, 435 U.S. 389 (1978).

“clearly articulated and affirmatively expressed state policy”⁹⁶ in order to gain antitrust exemption. The Court stated: “plainly the requirement of ‘clear articulation and affirmative expression’ is not satisfied when the State’s position is one of mere *neutrality* respecting the municipal actions challenged.”⁹⁷ In explaining the standard of “clear articulation and affirmative expression,” the Court stated that “[i]t is not necessary to point to an express statutory mandate for each act which is alleged to violate the antitrust laws. It will suffice if the challenged activity was *clearly within the legislative intent*.”⁹⁸

Responding to the *City of Boulder* decision, in 1984 the Virginia General Assembly passed new legislation⁹⁹ enabling certain narrowly-defined cities and counties¹⁰⁰ to adopt flow control ordinances. If enacted by a particular locality, these ordinances would require all waste collected, including waste collected by private haulers, to be brought to a designated facility. If the waste is not brought to the facility, the statute allows the city or county to still require payment of tipping fees to the facility.¹⁰¹ The final paragraph of the statute states:

It has been and is continuing to be the policy of the Commonwealth of Virginia to authorize *each* county, city or town to displace or limit competition in the area of garbage, trash or refuse collection [and disposal] services . . . to provide for the health and safety of its citizens . . . [and] to promote the generation of energy and the recovery of useful resources from garbage, trash and refuse . . . Accordingly, the governing bodies of the counties, cities and towns of this Commonwealth are directed and authorized to exer-

96. *City of Boulder*, 455 U.S. at 52.

97. *Id.* at 55 (emphasis in original).

98. *Id.* at 49-50 n.12 (quoting *City of Lafayette v. Louisiana Power & Light Co.*, 532 F.2d 431, 434-35 (5th Cir. 1975) (emphasis added)). For the application of this standard in the area of waste disposal at the lower court level, see *Central Iowa Refuse Sys., Inc. v. Des Moines Metropolitan Area Solid Waste Agency*, 1983-2 Trade Cas. (CCH) ¶ 65,575 (8th Cir. 1983) (requirement by a county and city owned waste disposal facility that all solid waste produced within the county had to be deposited at the facility was immune from antitrust attack under the state-action doctrine); *Hybud Equip. Corp. v. City of Akron*, 1983-1 Trade Cas. (CCH) ¶ 65,356 (N.D. Ohio 1983) (city’s flow control ordinance constituted antitrust-exempt state action).

99. VA. CODE ANN. § 15.1-28.01 (Cum. Supp. 1984).

100. The governing bodies of counties that have adopted the county manager plan of government and a city contiguous thereto having a 1980 population of more than 100,000 singularly or jointly, 2 or all of such counties and cities, may adopt ordinances requiring the delivery of all or any portion of the garbage, trash and refuse generated or disposed of within such counties and cities to waste disposal facilities located therein or to waste disposal facilities located outside of such counties and cities if the counties and cities have contracted for capacity at or service from such facilities.

Id.

101. *Id.* Note, however, that the ordinance does not apply to “recyclable materials, which are those materials that have been source-separated by any person or materials that have been separated from garbage, trash and refuse by any person for utilization in both cases as a raw material to be manufactured into a new product other than fuel or energy.” *Id.*

cise all powers regarding [collection and disposal of] garbage, trash and refuse . . . *notwithstanding any anti-competitive effect.*¹⁰²

It is clear that this legislation should fall well within the state action anti-trust exemption described in *City of Boulder*.¹⁰³ Here, the legislature has "clearly articulated and affirmatively expressed"¹⁰⁴ the anticompetitive restraints as a part of state policy.

However, those cities, counties and towns not falling within the statute's narrow enabling language will probably not be able to enact flow control ordinances qualifying for the state action exemption. There are several reasons for this conclusion. First, although the "notwithstanding any anti-competitive effect" language appears to be directed at *all* cities, counties and towns, that part of the statute granting express authority to enact flow control ordinances is directed *only* at those cities and counties falling within the state's narrow definition.¹⁰⁵ It appears that the General Assembly intentionally refrained from granting the authority to enact flow control legislation to all cities, counties and towns within the state. According to *City of Boulder*, "the challenged activity [must be] clearly within the legislative intent"¹⁰⁶ and it appears that the Virginia legislature intended that only certain cities and counties would have the power to enact flow control ordinances. Furthermore, Virginia follows the Dillon Rule¹⁰⁷ of strict construction of the legislative powers of local governing bodies. These factors indicate that the power to enact flow control ordinances has not been granted to all cities, counties and towns in Virginia.

B. *Finding a Long-Term Energy Market*

Along with guaranteeing a steady supply of waste, the local government must also ensure that there is a long-term market for the energy produced by the facility. A long-term market is essential as a source of revenue to offset the high capital costs associated with building such a waste to energy plant.¹⁰⁸ Without such a market for the energy produced, the facility will not be economically feasible. It is important to keep in mind

102. *Id.* (emphasis added).

103. *City of Boulder*, 455 U.S. 40.

104. *Id.* at 52.

105. See *supra* note 100.

106. *Id.* at 49-50 n.12. However, as to powers already conferred on cities, counties or towns (for example, through their charters or by other statutes) in the area of waste disposal, this statute would seem to expressly affirm any anticompetitive restraint already in effect.

107. *Tabler v. Board of Supervisors*, 221 Va. 200, 202, 269 S.E.2d 358, 359 (1980). "The Dillon Rule provides that local governing bodies have only those powers that are expressly granted, those that are necessarily or fairly implied from expressly granted powers, and those that are essential and indispensable." *Id.*

108. H. TAYLOR, *supra* note 6, at 22.

the dual purpose of the facility—to dispose of waste *and* to produce energy.

The most likely long-term energy receiver will be the local electric utility.¹⁰⁹ The Public Utilities Regulatory Policies Act of 1978 (PURPA)¹¹⁰ requires a utility to purchase electricity¹¹¹ generated by a small power production facility,¹¹² the definition of which includes a waste to energy facility. Of course, other long-term markets are also available. For example, the steam generated by the facility in Salem, Virginia is sold to Mohawk Rubber Company.¹¹³ In Hampton, Virginia, the steam is sold to the National Aeronautics and Space Administration Research Center,¹¹⁴ while in Harrisonburg, Virginia, the steam is sold to James Madison University.¹¹⁵

C. Zoning, Siting, and Public Acceptance

The zoning, siting, and public acceptance of the waste to energy facility are also of great concern to local governments. Clearly, these concerns are inherently intertwined. For example, if the public accepts the waste to energy facility, zoning and siting problems become much easier to resolve. Public acceptance will usually be easier to obtain when a waste to energy facility is viewed as providing a solution to waste disposal problems.

Resistance is usually aroused when siting inquiries begin.¹¹⁶ The “NIMBY” (not in my backyard) syndrome¹¹⁷ is difficult to overcome. The public often equates waste to energy facilities with junkyards or dumps¹¹⁸ and opposes their establishment out of fear that the value of surrounding property will decrease.¹¹⁹ By educating the public¹²⁰ about the extensive

109. *Id.* at 29.

110. 16 U.S.C. §§ 796(17)-(22), 824a-3. See generally Lornell, *A PURPA Primer*, 3 SOLAR L. REP. 31 (1981).

111. 16 U.S.C. § 824a-3(a) (1982).

112. A small power production facility is defined as a facility which (i) produces electric energy solely by the use, as a primary energy source, of biomass, waste, renewable resources, geothermal resources, or any combination thereof, and (ii) has a power production capacity which, together with any other facilities located at the same site . . . , is not greater than 80 megawatts. *Id.* § 796(17)(A) (emphasis added).

113. H. TAYLOR, *supra* note 6, at 69.

114. *Id.* at 55.

115. *Id.* at 61.

116. *Id.* at 23.

117. *Id.*

118. Halgren, *Recycling and Resource Recovery: State and Municipal Legal Impediments*, 7 COLUM. J. ENVTL. L. 1, 20 (1980).

119. Note, *Problems Associated With the Management of Solid Wastes: Is There a Solution in the Offing?*, 83 W. VA. L. REV. 131, 138 (1980). Other concerns include odor, pollution, and aesthetic considerations.

120. Educating the public can be accomplished through the media and in mailings to local residents. Programs can be introduced in the public schools. Public hearings, which are re-

precautions and permits required before the facility can be constructed, much of the public anxiety about the project can be alleviated.

Decreasing public resistance will also help avoid the economic problems created when a facility is forced to locate far from its waste supply and energy market.¹²¹ The distance factor is important when considering potential site locations. The facility should be near the area it will be servicing and the market it will be supplying.¹²² Siting also requires consideration of land fill needs, because no waste to energy facility can totally eliminate the need for a land fill.¹²³

Finally, there is the issue of zoning. In many jurisdictions, a municipal corporation engaging in the exercise of a governmental function is not subject to zoning ordinances.¹²⁴ In Virginia, however, this rule may not apply. In *City of Richmond v. Board of Supervisors*,¹²⁵ the Supreme Court of Virginia stated that "the legislature intended that a city should be subject to its own zoning regulations."¹²⁶ The court noted that decisions in other jurisdictions granting zoning immunity to local governments "depend[ed] upon the peculiar laws of the [s]tate involved and the facts to which they [were] applicable."¹²⁷ The court stated that "before the City of Richmond [can] make use of its land within its boundaries and construct . . . there . . . , it must apply for and obtain a permit from its board of zoning appeals."¹²⁸ Thus, in Virginia it appears that a local government must conform with local zoning ordinances.

The local government can, of course, seek to rezone land through a zoning amendment.¹²⁹ The Virginia Code provides that "[w]henever the public necessity, convenience, general welfare or good zoning practice require, the governing body may by ordinance amend . . . the regulations, district boundaries, or classifications of property."¹³⁰ On the other hand, because rezoning an area to increase the number of allowable uses may create

quired for some permits, can be utilized to persuade and inform the public about waste to energy conversion.

121. H. TAYLOR, *supra* note 6, at 23. See also Halgren, *supra* note 118, at 20.

122. H. TAYLOR, *supra* note 6, at 24.

123. *Id.*

124. 8 E. MCQUILLEN, MUNICIPAL CORPORATIONS § 25.15, at 40 (3d ed. 1983). See also Annot., 61 A.L.R.2d 970 (1958). In the jurisdictions following this rule, a waste disposal facility may or may not be considered a governmental function. See Annot., 59 A.L.R.3d 1241 (1974). See generally Note, *Governmental Immunity From Local Zoning Ordinances*, 84 HARV. L. REV. 869 (1971).

125. 199 Va. 679, 101 S.E.2d 641 (1958).

126. *Id.* at 687, 101 S.E.2d at 646.

127. *Id.* at 687, 101 S.E.2d at 647.

128. *Id.* at 686, 101 S.E.2d at 646.

129. VA. CODE ANN. § 15.1-491 (Repl. Vol. 1981 & Cum. Supp. 1984).

130. *Id.* § 15.1-491(g). The amendment can be initiated by the government body, but must be referred to the local planning commission for recommendations. *Id.* § 15.1-493(B). Public hearings on the amendment are also required. *Id.* §§ 15.1-431, -493.

public opposition, the local government may want to consider another alternative, that of conditional zoning.¹³¹

Conditional zoning provides for "reasonable conditions governing the use of . . . property, such conditions being in addition to the regulations provided for a particular zoning district or zone by the overall zoning ordinance."¹³² In Virginia, these conditions must be voluntarily proffered by the landowner and the rezoning itself must give rise to the need for the conditions.¹³³ By placing special restrictions on the operation of a waste to energy plant, conditional zoning can be used to resolve conflicts with neighboring property owners and to increase public acceptance of the facility.¹³⁴

III. CONCLUSION

Local governments can successfully implement a decision to build a waste to energy facility. Through careful planning and attention to potential problems areas, such a facility can provide an effective, long-range solid waste disposal process. Environmentally, there seem to be more benefits to be gained than problems created. Land can be used for more productive purposes than land filling and more energy can be generated to meet increasing needs. Moreover, many safeguards are in place to prevent possible environmental problems. In short, a waste to energy facility is a potential solution to the solid waste problem.

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131. *Id.* §§ 15.1-491.1 to .6.

132. *Id.* § 15.1-430(q).

133. *Id.* § 15.1-491.2.

134. See Brown & Shilling, *Conditional Zoning in Virginia*, 16 U. RICH. L. REV. 117, 136 (1981).

