

# Financing Alternatives for Municipal Solid Waste Management Facilities

ROBERT H. ALDRICH and NEIL A. EISNER

## ABSTRACT

The ultimate responsibility for the collection and disposal of municipal solid waste rests with local government. As regional planning developed, more counties and states assumed some or all of this responsibility. The Federal Government has not, to date, provided the broad financial support for solid waste systems now available for municipal waste water systems. Their participation has been limited to grants for planning and for demonstrating new disposal technology.

As new technology has evolved, the private sector has begun to play a more important role in solid waste disposal.

The interactions between the government and private sector add interesting new dimensions to solid waste planning.

This article discusses various methods and mechanisms for financing municipal solid waste management facilities. Particular attention is given to the developing roles of various governmental entities and private sector participants.

## PRIMARY OBJECTIVES OF SOLID WASTE MANAGEMENT PLANS AND FACILITIES

A solid waste management plan, at any level of responsibility, should meet these primary objectives. It should:

- 1) Provide a collection and disposal service at the lowest possible net cost to the participating communities.
- 2) Provide a reliable and continuing service.
- 3) Optimize the recovery and recycling of valuable resources.
- 4) And be accomplished in a manner that is environmentally sound and acceptable to the participating communities.

## ROLES OF PARTICIPATING ENTITIES IN SOLID WASTE MANAGEMENT

To assist in developing solid waste management and financing plans, there must be a clear understanding of the existing and potential roles of the participating public and private entities.

### THE FEDERAL GOVERNMENT

The primary responsibility for solid waste management at the Federal level rests with the Environmental Protection Agency, The Office of Solid Waste Management.

The EPA's primary responsibilities have been in the areas of development of regulations and guidelines, R & D, planning assistance and in providing grant assistance for demonstration projects. The basic Federal legislation supporting Federal activity is the Solid Waste Disposal Act, as amended by the Resource Recovery Act of 1970.

The demonstration grant program, under Section 208 of this act, has been limited to funding of several major solid waste projects throughout the United States: e.g., Wilmington, Delaware; San Diego, California; Lowell, Massachusetts; and Baltimore, Maryland. Further funding of demonstration projects would appear unlikely at this time.

Of more immediate promise in terms of financing assistance, are the funds being set aside by EPA under Section 204 for assistance to governmental agencies in preparing plans for Energy Recovery Implementation Programs. Total funds available in this program are currently \$300,000 to be spread over six different projects. This fund will probably be increased to encourage state-wide and local planning for energy recovery.

There have been proposed several legislative packages for Federal support of state-wide and local solid waste facilities. Generally, this has been in the form of a Federal guarantee on local debt required to purchase capital facilities, or a program by the Federal Government to purchase local debt instruments for the construction of facilities. Grant programs, similar to that provided under the Clean Water Act, are considered unlikely at this time.

It would appear that the Federal Government will not be providing direct financial support for the construction of solid waste facilities, but will be providing technical planning support to communities who are preparing plans and implementation programs.

## STATE GOVERNMENTS

In a large number of instances, state governments are assuming major roles in the planning, development and implementation of solid waste management programs. The scope and type of participation differs significantly from state to state and requires constant up-dating to keep track of changing legislation and implementation programs. For example state programs call for: State Ownership, State Grants; State Loans or Loan Guarantees; and State Planning Assistance.

### State Ownership

An example of state-wide planning and ownership is in Connecticut. Connecticut has established the Connecticut Resource Recovery Authority (CRRA) which has been given the authority to plan and implement a state-wide solid waste management program. The CRRA plans to construct and finance a series of state-owned regional facilities for the disposal and recycling of solid waste. The CRRA would

issue bonds, guaranteed by the State, and enter into firm contracts with municipalities for the services provided. Revenue generated from these contracts, and the sale of recycled material would be sufficient to repay the bonds, and pay for operating and maintenance costs.

The facilities would be constructed and operated under contract, by private sector corporations, with ownership, however, remaining with the CRRA. The chief advantages to State-wide planning and financing are:

- 1) The credit of the State behind the financing assures the saleability of the bonds at a favorable interest rate.
- 2) Regional planning and funding for regional planning is easily facilitated.
- 3) Municipalities are given the right to reject participation in the state plan and can develop and implement their own program.

### State Grants Program

New York is an example of a state with a grant program geared to provide an incentive to communities for construction of solid waste recycling facilities. New York has authorized the sale of \$175 million of general obligation bonds, the proceeds of which are to be utilized throughout the state in the form of grants to communities or regions. Communities or public agencies constructing recycling facilities are eligible to receive grants up to 50 percent of the costs for planning and construction of recycling facilities.

The state grant program has the advantage of reducing the cost of financing to the local communities, plus providing the state a mechanism encouraging and reviewing regional planning for solid waste.

### State Loan Program

Some states, in particular Pennsylvania, are considering providing loans to communities and authorities constructing waste facilities. The loans would be limited to a percentage of the construction costs and the rate would be established by the State, presumably reflecting the cost of state bonds. This type of program provides for state involvement in planning and implementation, and reduces the cost of financing to local communities.

### State Guarantees or Purchase of Municipal Obligations

To strengthen the credit of local communities, some states are considering guaranteeing the repayment of bonds for solid waste facilities — or, to purchase the obligations of the municipalities at some agreed upon interest payment. These programs again

involve the state in solid waste planning, and serve a valuable function of lowering interest costs to participating communities.

### **REGIONAL AND LOCAL GOVERNMENTS**

As indicated, responsibility for solid waste disposal has largely remained with local or regional governmental units — counties, cities, towns, townships, etc.

Financing at the regional or local level has been done using conventional municipal debt instruments — tax-exempt municipal bonds. These bonds can be general obligation of the community, or revenue bonds based upon anticipated revenues from operation of the facility.

### **THE ROLE OF PRIVATE INDUSTRY IN SOLID WASTE**

The private sector has become increasingly more active in the construction, operation and ownership of solid waste facilities.

The primary motivating factor in this development has been the requirement for more complex recycling technology, and the need to bring in private sector marketing skills for disposal of recycled products and recovered energy. A large number of private corporations now offer a total systems approach to solid waste disposal. The advantages of private ownership and operation of solid waste facilities are multiple:

- 1) Private industry is the primary source of new recycling technology and is in a better position to assess the risks inherent with the new emerging processes.
- 2) Private industry should be able to operate and maintain a facility in a more efficient and economic manner.
- 3) The marketing skills required to profitably dispose of recycled materials and energy generally exist in a private sector.

However, there are several factors which have limited participation by the private sector. These include:

- 1) The historic role of the community in solving its own solid waste disposal problems.
- 2) The past reluctance of municipalities to accept the increasing disposal costs as landfill becomes impractical or obsolete.
- 3) The lack of legislative authority (or existence of constraints) on the part of some communities to enter into long term contracts or agreements with private sector corporations.

- 4) The unwillingness on the part of communities to rely on the private sector for providing such a fundamental service, and

- 5) The widely held belief that public sector financing of solid waste facilities is inherently less expensive than private sector financing.

### **FINANCING ALTERNATIVES FOR PRIVATE SECTOR SOLID WASTE FACILITIES**

While the financing alternatives for the private sector are numerous, the fundamental tool for financing solid waste facilities will be the Pollution Control Revenue Bonds.

Under the 1968 Internal Revenue Service Code, privately-owned solid waste facilities can be financed using tax-exempt revenue bonds — pollution control revenue bonds. Under IRS regulations, such a financing vehicle is available for a facility provided that at least 65% of the raw material processed by the facility is solid waste by definition—i.e., that it has no market value at the source. This certainly describes municipal garbage today.

The financing could include all equipment and land used for collection, storage, disposal, and recycling of solid waste, as well as the cost of financing, R & D, legal fees, engineering, etc.

This type of tax-exempt financing can be accomplished through public authorities within the state, at the state, county, or municipal level, specifically set up for the purpose of issuing Industrial Revenue or Pollution Control Bonds. This type of financing vehicle is available in 48 of our 50 states.

The bonds issued are not secured by the credit of the issuing authority, nor are they obligations of any governmental agency. Rather, they are secured by the credit of the participating corporation, or done as a project financing and secured by contractual agreements between the private and public sectors. This will be discussed below.

It is important to recognize that by using the Pollution Control Revenue Bond financing route, not only does the solid waste plant benefit by obtaining tax-exempt financing rates, but in addition, the ownership, for tax purposes, remains with the Corporation. This means that the private industry can take full advantage of allowable depreciation and investment tax credit not available to the public sector. This significantly reduces the true cost of financing, and in many cases, leads to a reduction in that portion of the tipping fee required for amortization of debt.

## STRUCTURE OF THE PRIVATE FINANCING ALTERNATIVE

Figure 1 shows a schematic sketch of an idealized structure for private financing of a solid waste facility.

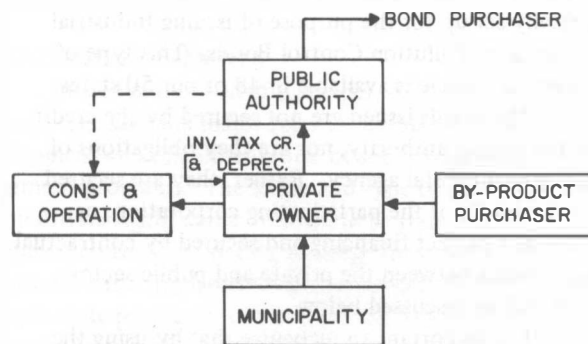
The Authority sells bonds, through an Investment Banker, the purchaser of the bonds generally being major financial institutions.

The interest income on the bonds is exempt from Federal Income Tax, and in some instances, state income tax.

The bond proceeds are then placed in a trust account, and used to pay for the engineering, construction and testing of the solid waste facility. The bond proceeds can also be used for: legal and financing fees associated with marketing the bonds, R & D associated with the facility, interest during construction and start-up costs.

The title in the facility and the land, generally is in the name of the authority, and a lease agreement exists between the authority and the private sector participant. In most Pollution Control Revenue Bonds, the repayment of principal and interest on the bonds is guaranteed by the private corporation. In no case is it an obligation of the authority or any governmental agency.

### FINANCING SOLID WASTE FACILITIES POLLUTION CONTROL REVENUE BONDS



#### ASSUMPTIONS

- (1) TOTAL COST OF FACILITY = \$ 20 MM
- (2) CAPACITY = 1000 T/D = 300,000 T/yr
- (3) BOND = 20 yrs @ 7%
- (4) OPERATING COST & PROFIT = \$ 7.00/T

#### KEY

- CASH FLOW  
 - - - CAPITAL FLOW

FIG. 1

In the case of solid waste facilities, repayment of the principal and interest may be secured by a number of separate agreements:

- a. The agreement between the authority and the contractor to complete construction of the facility and to pass certain preliminary start-up tests.
- b. An operating agreement between the private sector participant and the authority to operate the facility for the term of the bonds at some guaranteed throughput and at an agreed upon service charge.
- c. A contract between the participating municipalities and the operator requiring the municipality to guarantee a continuous flow of solid waste accompanied with some guaranteed tipping fee.
- d. A contract between the operator and by-product purchasers specifying the quantity and quality of by-products they will purchase at some price.

Obviously, the income from the guaranteed tipping fees and guaranteed by-product sales must equal or exceed the cost of amortization and operation. The strength of the financing—affecting the saleability of the bonds and the interest cost—in this case is dependent upon the strength of the contracts and the financial responsibility of the contractual parties.

In this case, the private sector operator is considered the owner for tax purposes, and can have the full Federal and State tax benefits of ownership including depreciation and investment tax credit.

### LEVERAGE LEASE ALTERNATIVE

Another mechanism of private financing is the leverage lease. In this case, a lessor is positioned between the Authority and the operator, and leases the facility to the operator. In this type of financing, the lessor is required to put up some equity (generally 20-30 percent of the cost of the facility), and in return obtains the tax benefits. The advantage of this type of financing is that the operator pays significantly less in lease rental payments than he would in the direct bond case because he has given up the rights to the tax benefits to the lessor.

Private Sector financing of solid waste facilities has many advantages — the main one being the availability of the lowest net cost of financing. This is offset to some degree by the requirement of the private sector participant to show a profit. However, private sector participation and financing of solid waste facilities seem to be an appropriate vehicle for sharing the risks and rewards associated with the development and implementation of a new recycling facility.