FINANCIAL CONSIDERATIONS IN THE DEVELOPMENT OF SOLID WASTE/RESOURCE RECOVERY FACILITIES

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ABSTRACT
Recent developments in the energy and capital markets may make the arrangement of project financings for capital assets, particularly energy-related assets, more difficult. These developments may lead to an increased competition for funds among projects, which will result in only the strongest projects being able to secure financing.

The paper discusses the primary issues which influence the availability of limited recourse and non-recourse financing for solid waste/resource recovery facilities and the criteria which investment bankers use to evaluate the financeability of proposed projects.

INTRODUCTION
Engineering firms will have the opportunity to participate in the solid waste industry in roles such as supplying equipment, serving as a general contractor or being a sponsor of a project. As a sponsor, an engineering firm will, in all likelihood, be involved in designing, constructing, owning and operating the project. Prior to committing scarce organizational resources, proposed projects must be analyzed to determine which projects are the most financeable, thereby decreasing the likelihood that such resources will be committed to projects which ultimately fail to be financed. The objective of this paper is to discuss how an investment banker would analyze the financeability of a proposed solid waste/resource recovery project in the hope that this guidance will assist project participants in the analysis of prospective business opportunities.

In this analysis, it is assumed that one of the primary objectives of the project sponsor is to finance the project with minimum recourse to the sponsor's cash flow and net worth. Also, many project sponsors are developmental stage enterprises which, even if they were willing, lack the financial resources to finance a project based upon their cash flow and net worth. Therefore, this paper is approached from the perspective of analyzing issues related primarily to the availability of limited recourse and non-recourse financing opportunities for these types of facilities, which is sometimes referred to herein as “project financing.” This paper discusses the following topics:

(a) an investment banker's definition of project financing;
(b) the role of an investment banker in arranging project financings;
(c) the financing of the expenses related to the development of the project;
(d) the risks involved in project financings from the perspective of potential lenders and third-party equity participants;
(e) the primary sources of funds for project financings;
(f) a discussion of the contractual arrangements necessary to support project financings for solid waste/resource recovery facilities;
(g) the potential role of commercial insurance in enhancing the creditworthiness of such projects;
(h) the tax-exempt financing alternatives available for such projects.

Several recent developments have made the financing of solid waste/resource recovery facilities on a project financing basis more difficult. Included among these developments are:

(a) declines in the prices of natural gas and oil during 1982 and 1983 and the uncertainty regarding the direction of energy prices;
(b) the financial condition of the international banking system;
(c) recent legal developments impacting the validity of “take or pay” contracts;
(d) proposed legislation (H.R. 4170/S.2062) which could eliminate or materially reduce both the tax credits and deductions available to equity investors in certain types of facilities and the availability of tax-exempt financing for such facilities.

Obviously, a complete discussion of these topics is beyond the scope of this paper; however, these developments, combined with an increase in competition for scarce funds among all types of energy-related projects, will result in the financing of only the most well-conceived projects, utilizing proven technology, with forecasted levels of net revenues sufficient both to comfortably amortize financing costs and to provide attractive rates of return to equity participants. Therefore, it is important to evaluate the financial feasibility of a proposed projects prior to involvement because, in the current environment, many projects will not be successfully financed.

PROJECT FINANCING

Project financing is the arrangement of funding for capital assets without recourse, or with limited recourse, to the cash flow and net worth of the sponsor of the project. The project financing techniques discussed herein have been used in a wide variety of domestic and international financings for the public and private sectors. Types of assets for which project financings have been arranged include fuel inventories, mining equipment and facilities, railroad facilities, natural gas pipelines, coal slurry pipelines, natural resource development, cogeneration facilities, electric generating stations, including hydroelectric and other alternative fuel facilities, deep water ports and solid waste/resource recovery facilities.

In the case of nonrecourse financing, the obligations incurred to finance the asset are repaid solely from the revenues produced from the use of the asset. For limited recourse financing, the sponsor of the project provides credit support only on a limited basis. Both of these techniques differ from “conventional financing” where a creditworthy project sponsor is unconditionally obligated to meet the full financing costs. Therefore, the major credit issues in a project financing are related primarily to the revenue potential and collateral value of the assets being financed, rather than to the assets and net worth of the sponsor of the project.

The first step in the arrangement of a project financing for any capital asset, including a solid waste/resource recovery facility, is a thorough analysis of the proposed project’s economic feasibility. The project sponsor should be satisfied that forecasted net revenues will comfortably amortize financing costs and that the combination of such net revenues and tax benefits will provide a sufficient rate of return to equity participants.

The revenue potential of a solid waste resource recovery facility and its economic feasibility will be determined by the following:

(a) The tipping fee payable for the disposal of solid waste, including escalation provisions. In the case of a privately sponsored project, the solid waste should be secured through “put or pay” contracts which require the provider of solid waste to make payments to the project sponsor in an amount equal to the tipping fee then in effect multiplied by the minimum contracted quantity of waste to be delivered, regardless of whether any waste is actually delivered to the project. The solid waste contracts for some of the recent privately sponsored projects have provided for adjustments to the tipping fee due to (1) governmental actions, including changes in law and loss of permits, which result in increased construction or operating costs; (2) changes in the BTU content of the solid waste resulting from governmental actions which result in increased construction or operating costs or a failure of the project to be able to operate at its normal operating capacity; and (3) differences between actual energy prices and certain specified levels of energy prices necessary to maintain minimum project economics. Also, the put or pay obligation has recently been expanded to provide for payments to compensate the project sponsor for the energy and materials recovery revenues “lost” as a result of a failure to deliver the minimum contracted quantities of solid waste. In the case of a municipally sponsored project, the tipping fee is generally set at a level which, when combined with all other revenues of the project, will provide sufficient funds for the payment of operating expenses and debt service, possibly including a coverage factor.

(b) The energy sales contracts. The energy to be sold could be steam or electricity or, in a cogeneration plant, steam, hot water or other forms of thermal energy may be produced and sold along with electricity. These contracts are generally “take and pay” contracts which obligate the energy purchaser to purchase all of the energy received from the project. However, payments are required only to the extent that energy is actually delivered. Therefore, take and pay contracts do not provide protection against either failure to complete the project or reduced levels of operating efficiency. Electricity is ordinarily purchased by a public utility at a price related to the avoided cost of other energy sources, generally oil or natural gas. In the present energy environment, it may be necessary to negotiate a floor or minimum price for electricity sales to provide protection against declines in avoided cost below.
specified levels necessary to maintain minimum project economics.

ROLE OF INVESTMENT BANKER

The role of an investment banker is to arrange permanent financing and, in some cases, construction financing for the project. As a general rule, this role does not encompass the arrangement of financing for the expenses incurred from the inception of the project prior to the completion of arrangements for construction and permanent financing, which are referred to herein as "Developmental Expenses." Developmental Expenses are generally the responsibility of the project sponsor and may be reimbursed to the sponsor from the proceeds of the permanent financing. This topic is more fully discussed in the next section.

The investment banker will work with the project sponsor to:

(a) develop a detailed analysis of the financing alternatives for the project and the most appropriate financing structures;

(b) evaluate the construction financing alternatives which may be available and assess their feasibility in view of the sponsor's commitment to the project;

(c) assist the sponsor in determining the optimal manner of utilization of income tax benefits associated with the project, including calculations of the relative benefits of lease financing versus ownership;

(d) determine the credit support mechanisms necessary to assure the availability of permanent financing for the project;

(e) assist the sponsor in designing and implementing the contractual arrangements necessary to support the permanent financing and, as necessary, negotiate on behalf of the sponsor with other participants in the project;

(f) as required, prepare materials regarding the project for presentations to bond rating agencies, lenders and commercial insurance underwriters;

(g) if appropriate, provide analyses of potential sources of equity for lease financing, including assessments of the respective advantages of "true lease" and "finance lease" structures;

(h) if appropriate, provide analyses of the availability of equity investments from potential corporate partners;

(i) if appropriate, provide analyses of the tax-exempt financing alternatives available to the project sponsor;

(j) at the appropriate time, implement the most suitable permanent financing, including serving as agent and/or underwriter, as appropriate, in the placement of the financing.

Most investment bankers prefer to become involved with a project early in the project's inception. Such early involvement will provide the investment banker with the opportunity to assist the project sponsor in the development of the project credit structure and, most importantly, in the negotiation of project contracts. This permits the project sponsor to receive the input of the investment banker during the negotiation of the critical contracts for the project regarding those vital contractual issues which could ultimately influence the availability of financing.

As a general rule, it is very difficult to modify contractual provisions once they have been negotiated; therefore, it is far better for the project sponsor and its investment banker to develop the contractual provisions necessary to secure financing and to negotiate these provisions with the operations department of the project sponsor, rather than reopen previously negotiated contracts in order to secure modifications. In this capacity, the investment banker will often assist the project sponsor in making presentations to municipalities regarding solid waste contracts, to the general contractor regarding the construction contract and to energy purchasers regarding energy sales agreements.

DEVELOPMENTAL EXPENSES

Broadly defined, Developmental Expenses include all monies spent by the project sponsor from the inception of its participation in the project through the arrangement of permanent financing for the project. These expenses include, but are not limited to, the on-going expenses of the project sponsor (including personnel and administrative costs, out-of-pocket expenses and overhead), engineering fees, permitting fees, legal fees, accounting fees and investment banking fees. The magnitude of the Developmental Expenses will be determined primarily by the following factors: (a) whether the project is municipally or privately sponsored; (b) the complexity of the proposed project credit structure; (c) the time required to implement the project; (d) the number of participants in the project; and (e) the size of the financing.

For a private venture, Developmental Expenses are risk capital and should ideally be provided by the project sponsor or the other participants in the project (a) who stand to benefit from the implementation of the project and (b) who are in the best position to evaluate the risks of such an investment. The issue of developmental financing is most often encountered when the project sponsor is a developmental stage enterprise which may lack the financial wherewithal to meet on-going expenses over an extended period time. In the case of a privately sponsored project with a capital cost in excess of $100 million which takes at least two years to implement once the investment banker becomes involved, the total Developmental Expenses relating to the arrangement of permanent financing (excluding the expenses of the sponsor and engineering
and permitting costs) could range from $1 to $4 million, and perhaps higher. The major portion of these expenses will be the fees of bond and underwriters' counsel for their efforts on the long-term tax-exempt financing. A significant portion of the Developmental Expenses, however, should be reimbursable to the project sponsor from the proceeds of the permanent financing.

Generally speaking, investment bankers do not ordinarily participate in the arrangement of financing for Developmental Expenses. Therefore, one of the most important considerations which investment bankers examine prior to committing to provide investment banking services for a project sponsor is the ability of the sponsor to pay Developmental Expenses, particularly where the sponsor is a developmental stage enterprise.

On those projects in which the project sponsor is a governmental subdivision or state agency, tax-exempt financing may be available for Developmental Expenses. General obligation debt may be used for such expenses where the full faith and credit of a governmental entity is available. If the governmental entity is a revenue producing activity, revenue bonds may be available for such financing if the entity has an adequate revenue history. If the governmental entity has little or no revenue history, a guarantee based on the full faith and credit of a taxing entity may be required.

**PROJECT FINANCING RISKS**

Once the project sponsor has decided to proceed with the development of the project, several credit issues must be addressed in order to arrange financing. These issues include:

(a) The economic feasibility of the project. Equity participants, lenders and other participants in financing these facilities will require a thorough review of the project's forecasted operating projections by an independent consulting engineer prior to committing equity or debt capital.

(b) "Completion risk," or the risk of failure to complete the project on time and within budget, including delays and cost increases due to force majeure events. The contractor and major subcontractors will be required to guarantee timely completion and to support debt service with liquidated damage payments if timely completion is not achieved. The operating experience of the proposed technology in similar applications, the experience of the general contractor in the construction of similar projects and the quality and substance of the contractor will influence the form and scope of the completion guarantee required by equity participants and lenders.

(c) The form of the energy sales contracts and the creditworthiness of the energy purchasers.

(d) The assumed availability over the project's estimated useful life of the site and any raw materials, facilities, licenses or permits required to operate the project. Contracts relating to these are often referred to as "project support agreements." In the case of solid waste/resource recovery facilities these would include environmental permits, landfill sites and committed quantities of solid waste.

(e) Protection against inefficient project operation once construction has been completed. Obviously, if a project operates at less than the expected level of efficiency, the revenue potential of the project could be altered substantially, and the ability of the project to meet financing costs could be in jeopardy. Also, to the extent that operating expenses greatly exceed those assumed in the financial projections, project feasibility could be diminished. Therefore, the operating experience of the project sponsor and the terms of the operating agreement, if any, are important determinants in equity participants' and lenders' credit evaluations of the project.

(f) Protection against force majeure events which would excuse performance under contractual arrangements. For example, events which would excuse performance by the energy purchasers under steam or electric sales contracts would severely jeopardize the revenue flow of the project and its ability to meet financing costs.

(g) The amount of equity funds contributed by the equity participants, which may or may not include the project sponsor.

Once economic feasibility has been established, completion risk is of the greatest concern to equity participants and lenders. Therefore, in any project financing, some type of completion guarantee would most likely be a prerequisite for arranging financing. The form and scope of the completion guarantee required by the equity participants and lender would depend upon:

(a) The operating experience of the technology proposed for the project in similar applications.

(b) The certainty with which the cost of constructing the project can be estimated. Obviously, this is related to technology and the construction period. The more conventional the technology and the shorter the construction period, the more certainty with which the cost can be estimated.

(c) The experience of the general contractor in the construction of similar projects. The greater the experience, the more confidence the financial community has that the project will be built on time and within budget.

**SOURCES OF FUNDS**

Historically, the primary sources of funds for project financings have been equity contributions by the project
sponsors, possibly in conjunction with equity contributions from other corporate investors, and commercial bank debt, as supplemented by export credits or other types of governmentally subsidized or guaranteed financing. The high capital cost of many projects, the inability of many project sponsors to effectively utilize the Federal income tax benefits associated with a project and the increasing frequency with which developmental stage enterprises are serving as project sponsors, have led to the supplementing of traditional sources of funding with leveraged leasing and, in the case of solid waste/resource recovery facilities, public offerings of tax-exempt debt.

The long-term debt portion of a project financing for a solid waste/resource recovery facility will, in all likelihood, be provided through a public offering of tax-exempt bonds. Third party credit support will probably be required in order to access the public bond market. Following is a summary of the primary sources of third party credit support and equity funding available for project financings of solid waste/resource recovery facilities. Tax-exempt financing alternatives are discussed in a subsequent section.

THIRD PARTY CREDIT SUPPORT

In the case of solid waste/resource recovery facilities financed on a limited-recourse or non-recourse basis, third party credit support would most likely be a prerequisite for obtaining the investment grade rating required to access the public tax-exempt bond market. The primary sources of third party credit support are commercial bank letters of credit and municipal bond insurance policies.

The availability of letters of credit to secure tax-exempt bond issues has been negatively impacted by the strains on the financial condition of the international banking system resulting from: (a) the difficulties encountered by certain sovereign governments in the timely repayment of outstanding indebtedness; and (b) the decline in creditworthiness among domestic corporate borrowers in certain major industries. In addition, many banks have decided to substantially reduce their exposure to letter of credit liabilities to preserve their own credit ratings and to engage in other more profitable banking activities. Obviously, a discussion of the impact of these developments on the availability of letter of credit financing is beyond the scope of this paper; however, there has already been a substantial decrease in the issuance of letters of credit to secure tax-exempt bond issues by many major United States money center banks.

Along with a decreased willingness to issue letters of credit is a desire to shorten the maturity of the letters of credit which are issued. It was once common practice to secure long-term tax-exempt bonds (i.e., maturities in excess of 20 years) with intermediate term letters of credit (i.e., terms of 10 years or less) by including a provision which permitted the letter of credit to be drawn down and utilized to repay the outstanding principal amount of the bonds in the event that the letter of credit was not renewed prior to its expiration. This provision permitted the issuance of the long-term tax-exempt debt needed to establish the project's economic feasibility by transferring the risk of nonrenewal of the letter of credit from the bondholders to the banks. Many money center banks have indicated that such a provision is no longer acceptable. The result of this change may be a reduction in the maturity of tax-exempt debt secured by letters of credit, which could have a negative impact on the economic feasibility of most solid waste/resource recovery facilities.

The other main source of third party credit support is municipal bond insurance. The major municipal bond insurers, American Municipal Bond Assurance Corporation, Municipal Bond Insurance Association and Financial Guarantee Insurance Corporation, will provide insurance policies guaranteeing the timely payment of the principal of and interest on tax-exempt bond issues. The main advantage of municipal bond insurance is that the insurance policies often will cover the full maturity of the insured bonds, which enhances the economic feasibility of most projects.

Third party credit support does not provide "riskless" financings; rather the risks associated with the financing are transferred from the bondholders to the party providing credit enhancement. Therefore, in order to obtain credit enhancement, it is necessary to have a well designed and creditworthy project which meets the demanding credit criteria of the commercial banks or the municipal bond insurers.

CORPORATE SPONSORS

For projects which are privately developed, it may be possible to attract equity investment by corporate investors other than the project sponsor. The primary candidates for such an investment are equipment vendors, the general contractor (in the case where the general contractor is not already a sponsor) and other participants in the project, such as the energy purchasers. In this method of financing, a partnership or other suitable entity would be formed to pass through to the equity investors the tax benefits and the net operating cash flows associated with the project. In this case, the corporate sponsors are looking to the tax benefits and the net operating cash flow to provide them with a rate of return on their equity investment. It is important to emphasize that equity contributed
by a corporate sponsor is dependent upon a successfully operating project in order to earn its anticipated rate of return.

LEVERAGED LEASING

Recently, leasing has become an increasingly accepted method of financing facilities such as electric generating stations, including conventionally-fired, hydroelectric and alternative fuel facilities, cogeneration facilities and solid waste/resource recovery plants. Leasing represents 100% external financing and is an attractive method of financing for privately developed projects with a sponsor which is taxable, but does not have substantial tax liabilities. In broad terms leasing accomplishes the transfer of the tax benefits associated with an asset which are not usable by the project sponsor, and thus reduces the cost of financing. However, the availability of lease financing in the case where the lessee or project sponsor is a tax-exempt entity is severely restricted.

Leases which qualify as "true" lease under the Federal tax law transfer ownership of the asset to an equity investor both for tax and economic purposes. In a leveraged lease financing, the leased assets would be owned by a partnership (the "Owner") which would be capitalized by the Owner on a non-recourse basis to the Owner Participants. The Owner Participants entered into the transaction for a fixed rate of return on their equity and the residual upside from ownership of the leased assets at the expiration of the original lease term. The return comes primarily from tax benefits and lease rental payments. Unlike a corporate sponsor, Owner Participants are looking for a fixed return and analyze a project from a credit perspective similar to that of a lender. In fact, Owner Participants are often considered "subordinated lenders."

There are certain specific guidelines, developed by the Internal Revenue Service, to determine whether a lease qualifies as a true lease, i.e., whether the lease effectively transfers economic ownership, and thus ownership for tax purposes, to the Owner Participants. In brief, the guidelines are as follows:

(a) The Owner Participants must make an equity investment in the cost of the asset equal to at least 20 percent of such cost, which must remain "at risk" throughout the Lease term, and the Owner Participants' commitment to the transaction must be unconditional at the time the lease commences.

(b) The lessee (project sponsor) must have no "investment" in the asset.

(c) The asset must have a specified substantial anticipated residual value, i.e., the asset must be expected to have, as of the end of the original Lease term, a value equal to at least 20 percent of its original cost (without taking into account inflation) and a remaining useful life at the expiration of the original lease term plus any fixed-rent renewal periods equal to at least 20 percent of its estimated useful life.

(d) The lessee (project sponsor) may not have a right to purchase the asset at the end of the original lease term (or during the lease term) plus any fixed-rent renewal periods for an amount less than the fair market value of the asset determined at the time such right is exercised.

(e) It must be shown that the Owner Participants will derive a profit from the transaction without regard to tax consequences.

(f) The assets must not be "limited use" property, i.e., at the end of the original lease term the assets must be useful not only to the lessee (project sponsor) but to someone else as well.

From the point of view of project financings, three particular issues arise from the guidelines.

(a) The lessee (project sponsor) will be able to continue using the asset after the end of the original lease term only by renewing the lease or purchasing the asset at fair market value.

(b) The second issue raised by the guidelines relates to the source of the leverage, or debt, in a leveraged lease financing. In such a Lease, a portion of the funds is provided by the Owner Participants and a portion is borrowed by the Owner without recourse to the Owner Participants. The lessee (project sponsor) is prohibited from "investing" in the asset and may not supply the funds or provide direct guarantees for the debt portion of the financing.

(c) The third issue is the so-called "limited use property" issue, which is related to the residual value of the leased asset. Certain types of assets are useful, or will be useful at the end of the original lease term, only to the original user, the lessee (project sponsor). However, for a leveraged lease financing of a solid waste/resource recovery facility, the problem may be avoided, since the Owner may be able to take the position that the entire package (the facility) is able to stand alone and thus will have substantial economic value (again, at least 20 percent of original cost) at the end of the original lease term. In
demonstrating that the facility is not limited use property, the Owner will have to show that there is a market for the facility, and/or its output, other than just the original lessee (project sponsor). That is, and in very general terms, the Owner will have to be able to operate the facility itself — or sell it or lease it to a party other than the lessee — at the end of the lease term so as to realize at least 20 percent of original value.

In August 1982, Congress passed certain legislation (the "Tax Equity and Fiscal Responsibility Act of 1982" or "TEFRA") which affects financing of projects. TEFRA provides that, as of January 1, 1984, true leases may include a fixed price purchase option exercisable at the end of the original lease term equal to at least 10 percent of original cost and that limited use property may be leased. The lease financing could be closed up to 90 days after the in-service date of the asset.* Such leases are called "finance" leases. The attractiveness of finance leases is offset somewhat by present limitations on the amount of such leases which both lessees and Owners may enter into during any year. In addition, in finance leases the investment tax credit and any energy tax credit are currently required to be spread over the first five years of the lease (20 percent of the applicable credit per year), and public utility property may not be leased under the finance lease rules. Most of the above restrictions will be eliminated for assets placed in service after calendar year 1985. Finance leases will provide an important new financing tool for project financing in the future. However, it should be noted that proposed legislation (H.R.4170/S.2062) may affect certain aspects of finance leases.

**PROJECT CREDIT STRUCTURES**

The credit structure for a project financing of a solid waste/resource recovery facility will depend upon whether the project is municipally sponsored or privately sponsored. In the case of a municipally sponsored project, the revenues from the operation of the project, including tipping fees, will be used to pay operating expenses and debt service on the bonds issued to finance the project. As discussed previously, the bonds generally will be secured by a rate covenant which requires the municipal sponsor to set a tipping fee which, when combined with all other revenues, will provide sufficient funds for the payment of operating expenses and debt service (including the replenishment of any reserve funds established for the project), possibly including a debt service coverage factor (say, 10 percent to 25 percent of annual debt service). In most municipally sponsored financings, the general contractor will take the responsibility for completing the project on time and within budget, subject to force majeure. If the project has not passed certain performance criteria by the originally scheduled completion date, as extended due to force majeure, the contractor will be obligated (a) to continue to work at its own expense for an additional period to meet such criteria, (b) to pay debt service during such additional period and (c) under circumstances to be negotiated, to redeem all or a portion of the outstanding bonds if the performance criteria are not met by the conclusion of such additional period.

For privately sponsored projects, the revenues of the project will be used to pay operating expenses and financing costs (which would be principal and interest on the bonds or, in the case of a lease financing, lease rental payments). To the extent that such revenues are inadequate to meet operating expenses and financing costs, the project sponsor may, under certain circumstances and to a specified limited degree, be required to make up the deficiency. As is the case with municipally sponsored financings, the completion risk will be the responsibility of the general contractor. Some project risks, such as certain force majeure events, may be protected against in the solid waste disposal agreement.

Generally speaking, the provisions of the contracts which form the basic credit support for a project financing for any capital asset are subject to negotiation among the participants in the project. The precise requirements of lenders and equity participants will depend upon the characteristics of the particular project. However, in the case of a major project financing (in excess of $75,000,000) for a solid waste/resource recovery facility, there are certain contract provisions which will likely be required or requested by lenders and equity participants. Following is a brief discussion of such provisions; again, it should be emphasized that the contractual provisions ultimately negotiated will depend upon the characteristics of the project being financed.

**CONSTRUCTION CONTRACT**

(a) Fixed price or guaranteed maximum price, subject to escalation only due to change orders, errors or omissions of the project sponsor and force majeure. Adjustments in price due to inflation should be limited to a specified amount.

(b) Commercial insurance protection should be arranged to provide protection against physical perils and delays due to force majeure. Force majeure, as defined in the construction contract, should be limited as much as possible to events which are commercially insurable. Potential equity participants and lenders may attempt to

*This 90-day "window" will be available for all leases, including traditional true leases, after December 31, 1983.
negotiate the elimination of force majeure from the construction contract, in which case the commercial insurance will be arranged by the contractor for its own protection. Under these circumstances, the contractor would be taking the “risk” of timely payment by the commercial insurers. Also, delays due to force majeure should be of a specified aggregate duration prior to the contractor’s receiving schedule relief or price relief.

(c) An adequate construction contingency reserve should be included to protect against adjustments in the contract price.

(d) The construction contract should contain performance criteria which the project must achieve before the contractor is relieved of its obligations.

(e) In the event that the contractor does not meet such criteria by a date certain, as extended due to force majeure, the contractor should be obligated: (1) to work, at its own expense, toward meeting the performance criteria for a specified additional period of time; (2) during such additional period, to the extent that operating revenues, if any, are insufficient to meet operating expenses and financing costs, to make up the deficiency; and (3) at the end of the additional period, to redeem all or a portion of the bonds in the event that the project has not met the performance criteria.

OPERATING AGREEMENT

(a) For a municipally sponsored project, the operator would often be the general contractor. The operator would operate the project pursuant to long-term agreement and would receive compensation based upon (1) a fixed disposal fee and (2) a share of energy revenues and materials recovery revenues. The operator would guarantee the operating costs of the project, subject to adjustments for inflation, as well as ongoing performance criteria. To the extent that the actual operating results were less than those guaranteed, the operator would be required to make payments to the municipality to compensate for reduced revenues. It should be noted that the operator’s fixed price operating cost would also include the cost of maintaining and repairing the facility. Adjustment to the fixed operating fee would often be provided for in the event of force majeure.

(b) For a privately sponsored financing, the operator would be, in all likelihood, either the project sponsor or the general contractor and contract provisions would probably be similar to those discussed previously.

(c) It should be noted that the capitalization of the operator is an important point to potential lenders and equity participants. Certain minimum capital requirements may be necessary to establish the financeability of the operator’s obligations under the agreement.

SOLID WASTE DISPOSAL AGREEMENTS

(a) For municipally sponsored projects, solid waste will generally be secured by a technique known as “flow control,” which provides the municipal sponsor with the legal authority to mandate delivery of solid waste to a specified location, i.e., the project. The security for the project will be provided by the rate covenant which requires the municipal sponsor to set a tipping fee which, when combined with revenues from the sale of energy and recovered materials, will provide sufficient funds for the payment of operating expenses and debt service (including the replenishment of any reserve funds established for the project), possibly including a debt service coverage factor. In this case, all of the risks of the project, except those relating to completion and operation negotiated in the construction and operating agreement, respectively, are the responsibility of the municipal sponsor.

(b) For privately sponsored projects, the solid waste disposal agreement is a critical element in the project credit structure. This agreement will generally require the delivery of a minimum quantity of solid waste to the project and the payment of a negotiated tipping fee, which is subject to escalation and certain defined additional adjustments. The circumstances which could provide for adjustments to the tipping fee over and above inflation include (1) governmental actions (including changes in law or revocation of permits) which result in increases in construction costs or operating expenses; (2) to compensate the project for energy revenues and materials recovery revenues lost as a result of the failure of the municipality to deliver the minimum contracted quantity of solid waste; (3) governmental actions which cause a material decrease in the BTU content of the solid waste and which result in increased construction or operating costs or a failure of the project to be able to operate at the normal operating capacity; and (4) actual energy prices which are less than the specified levels of energy prices necessary to maintain minimum project economics.

(c) Generally speaking, the “financeability” of solid waste disposal agreements with private haulers, except for major solid waste management companies, is difficult to establish.

ENERGY SALES AGREEMENTS

(a) Energy sales agreements will generally be “take and pay” agreements, which require the purchase of all energy delivered.

(b) Force majeure events should be limited to those which result in a complete shutdown of the energy purchaser’s system. In the case of an electricity sales agreement with a public utility, force majeure should not include
actions by the state regulatory commission which preclude the utility from passing through the payments under the agreement to its consumers.

(c) Under current energy conditions a price floor or a minimum price for energy may be necessary to provide protection against decreases in energy prices below the level necessary to maintain minimum project economics. To the extent that protection against declines in energy prices is provided for in the solid waste agreements, additional protection in the energy sales agreements may not be required.

ROLE OF COMMERCIAL INSURANCE

Commercial insurance, in the form of delay and builder’s risk insurance and “efficacy” or “systems performance” insurance, may be of assistance in providing protection to project participants in a non-recourse or limited recourse financing of a solid waste/resource recovery facility. In particular, such insurance may be arranged by the general contractor to provide protection for its obligations under the construction contract. However, it should be emphasized that such insurance coverage will not, in and of itself, make a satisfactory credit.

Delay and builder’s risk insurance provide (a) protection against physical perils during construction and (b) for the payment of financing costs in the event that the completion of the project is delayed due to force majeure (to the extent possible, the definition of force majeure in the delay insurance policy should correspond to force majeure as defined in the construction contract). Equity participants and lenders would prefer that the contractor bear the risk of force majeure, and that the contractor arrange insurance coverage to protect itself, not the project, from force majeure events.

Efficacy or systems performance insurance provides (a) for the repair of the project or additional construction costs and (b) for the payment of financing costs, less any net revenues from the operation of the project, in the event that the project falls to meet specified performance criteria by the originally scheduled completion date, as extended due to force majeure. Payment under efficacy insurance policies is generally subject to a deductible and co-insurance provisions. Efficacy insurance coverage can also generally be arranged to provide protection for a period after the project meets the performance criteria established in the construction contract. In some cases, it may be possible to arrange efficacy coverage which provides for a lump sum payment in the event of the permanent failure of the project to operate as designed. Again, efficacy insurance will not provide a substitute for appropriate completion undertakings from the contractor; however, such insurance may provide comfort to the contractor regarding its completion undertakings.

An important consideration in evaluating the usefulness of commercial insurance in providing credit support for the project financing of a solid waste/resource recovery facility is that rating agencies and lenders base credit decisions on the likelihood of timely payment, not on the likelihood of eventual payment. Unfortunately, from the perspective of the financial community, the commercial insurance industry has the reputation of periodically not responding in a timely fashion to, or disputing the validity of, policy claims. As a result, with respect to the rating agencies and lenders, commercial insurance will not, in and of itself, make a satisfactory credit. For a project financing of a solid waste/resource recovery facility to pass the scrutiny of the rating agencies and lenders, the project must make sense financially, and the risks must be borne by the project participants in an acceptable fashion. The project participants may, in turn, rely upon commercial insurance to provide them with comfort. However, equity participants and commercial bank lenders are more likely than rating agencies and municipal bond insurers to base credit decisions on the availability (and the likelihood of ultimate payment) of commercial insurance, particularly efficacy insurance.

TAX-EXEMPT FINANCING ALTERNATIVES

Tax-exempt financing is generally available for a substantial portion of the cost of solid waste/resource recovery projects. For municipally sponsored projects, financing can be accomplished using various tax-exempt options depending upon the character of the municipal sponsor. For example, if the municipal sponsor is an electric system, all of the costs of the facility may be financed as electric revenue bonds. For private project sponsors, Section 103(b)(4)(E) of the Internal Revenue Code provides, among other exemptions, that solid waste disposal facilities are eligible for tax-exempt financing as tax-exempt industrial development bonds (“IDB’s”). However it should be noted that proposed legislation (H.R.4170/S.2062) would affect the availability of IDB financing for solid waste/resource recovery facilities. The advantages of tax-exempt financing are the relatively lower interest rate and, in most cases, longer debt maturities. As a consequence, the financing costs of the project can be lowered, thereby improving project economics.

Different forms of tax-exempt financings may be structured, depending upon the credit and revenue history of the project sponsor. As discussed previously, in the case of facilities financed on a project financing basis, third party credit support will probably be required.
ELIGIBILITY

The availability of tax-exempt financing is limited to equipment used for the disposal of solid waste. The Internal Revenue Service has held that in order for the solid waste exemption to the industrial development bond law to apply, the solid waste must be "valueless." Once solid waste is changed into something of value, then further use of tax-exempt financing is prohibited. In the context of solid waste/resource recovery facilities, this point is reached once the solid waste has been burned to produce steam. Therefore, while a significant portion of the incinerator/boiler is financeable by tax-exempt funds, the steam distribution and electric generating equipment are not.

Consequently, the typical solid waste/resource recovery facility is financed with both tax-exempt and taxable funds. The exception to this rule is where the "back half" of the project, i.e., the energy user, is a tax-exempt entity. For example, if all the electricity is generated as part of a municipal electric system, then all of the financing may be raised by tax-exempt means, since such usage is an allowable tax-exempt financing.

DIFFERENT TYPES OF TAX-EXEMPT ISSUES

Solid waste/resource recovery facilities may be built by private or municipal sponsors.

For privately sponsored projects, the proceeds of IDB's will be used to finance the debt portion of the project costs. The municipal issuer may be merely a financing vehicle with no direct financing obligation with respect to the IDB's.

In regard to project financings of solid waste/resource recovery facilities, the tax-exempt financing options may be limited, depending upon the revenue history of the sponsor, in the case of municipal sponsorship, or the commitment of the sponsor, in the case of private sponsorship.

The following is a discussion of tax-exempt financing alternatives.

LONG-TERM BONDS

Long-term bonds generally mature in 20 to 30 years, approximating the life of a project. A long-term municipal bond offers the project sponsor a fixed interest rate over the life of the project. These aspects of long-term bonds encourage project sponsors of solid waste/resource recovery facilities to use such financing. In addition, for limited and non-recourse financings of privately sponsored projects, outside equity participants and lenders may require the issuance of long-term debt in order to lock in financing costs.

Generally, a public offering of long-term tax-exempt bonds is comprised of serial bonds and term bonds. Serial bonds are shorter-term obligations (3 to 10 years) which mature in specified amounts each year. Term bonds are longer-term obligations (10 years or more) which are generally retired by sinking fund payments prior to the final maturity of the bonds. Generally, tax-exempt bonds are repaid with level annual debt service (i.e., the principal of an interest on the bonds are repaid in equal annual installments in a similar fashion to home mortgage payments).

OTHER TYPES OF TAX-EXEMPT DEBT

Recent volatility and relatively high levels of interest rates on long-term tax-exempt obligations has led to the development of short-term tax-exempt alternatives. Short-term tax-exempt alternatives present opportunities for taking advantage of substantially lower interest rates, particularly during the construction period. Generally speaking, however, short-term tax-exempt alternatives are only available if long-term bonds are intended to be the ultimate debt.

If short-term alternatives are available, a project sponsor may be able effectively to lower its interest cost during construction and provide additional flexibility with respect to the issuance of long-term bonds, thereby providing the possible opportunity to finance long-term at a reduced interest rate. In the event that long-term interest rates do not decline in the future, the project sponsor will still have benefitted from reduced interest costs during construction which would, in fact, justify the issuance of long-term bonds in the future at a higher "breakeven" rate.

For the purposes of this paper, short-term debt is considered to be any debt having a maturity of less than one year. In addition to short-term debt programs such as tax-exempt commercial paper ("TECP"), project sponsors may want to examine slightly longer maturity financing structures such as bond anticipation notes ("BAN's").

TECP

TECP is typically sold in maturities ranging from 1 day to 270 days. The average maturity is 30 days. TECP always requires liquidity support to protect against the possibility that maturing TECP could not be refinanced due to temporary market dislocations. In addition, third party credit support may be required. However, TECP is not long-term financing, and sponsors of projects financed on
a project financing basis may not choose to avail themselves of this alternative due to the following risk: (a) the risk that interest rates may rise in the future to a level which jeopardizes economic feasibility and (b) the risk that future legislation would be enacted which would prohibit the use of tax-exempt financing for solid waste disposal facilities prior to issuance of long-term bonds. However, where the project sponsor believes these risks to be manageable, TECP offers a viable means of lowering project cost, particularly during the construction period. In addition, TECP affords an opportunity to keep interest costs low for the initial startup period of the project until a history of project revenues has evolved. Therefore, a project sponsor may wish to extend a TECP program beyond the construction period before committing to long-term financing.

BAN'S

Traditionally, BAN's are notes issued by a tax-exempt issuer in anticipation of the issuance of long-term bonds. Because BAN's are a short maturity obligation, the interest rate is typically lower than that for a long-term issue. The availability of this form of financing may be restricted by the considerations discussed immediately above.

When TECP and BAN's are available, project sponsors may substantially reduce interest costs during construction. In situations which do not involve project financings, such alternatives to long-term debt may be useful. An example of such situations may be found in ongoing solid waste/resource recovery enterprises constructing additional facilities or in those cases where appropriate sponsor commitments are available.

F/FRB'S

In certain cases, financings combining both long and short-term characteristics may be applicable to project financings of solid waste/resource recovery facilities. These alternatives include floating/fixed rate bonds ("F/FRB's"), an instrument which "floats" for a specified period and then at the initiation of the project sponsor "fixes" for the remaining life of the bonds. During the floating period, the project sponsor would benefit from short-term interest rates (about 1/4 percent to 1 percent above TECP rates). Generally, the mechanism for "fixing" the rate is pegged to an index chosen by the project sponsor, which reflects the "optimum" level of fixed rates expected by the sponsor. F/FRB's, like TECP, always require some form of third party liquidity support, i.e., commercial bank facilities, during the floating rate period. Certain projects may also require third party credit support. The advantage of F/FRB's over other instruments is that F/FRB's are long-term bonds, which reduce the risk that the obligations cannot be refinanced at maturity. However, the legislative risk that changes in Federal law prior to the point long-term rates are fixed may void such financings is still a possibility that must be addressed.

A/FRB'S

Another combined long-term, short-term financing technique is the adjustable/fixed rate bond ("A/FRB's"). A/FRB's are long-term bonds which bear a fixed rate of interest for a defined period (usually 1, 3 or 5 years) with a new interest rate to be established at the conclusion of each period based upon the interest rates prevailing in the market for securities with comparable ratings and maturities. In effect, 30-year A/FRB's could be structured as a series of shorter term maturities, for example 10 periods of 3 years each. The project sponsor using this form of financing takes the risk that the short-term interest rate (for example, the interest rate on 3-year BAN's) would not exceed the long-term rate prevailing at the time the A/FRB's are initially issued. A/FRB's, like F/FRB's, have mechanisms for "fixing" the rate if long-term rates become favorable. However, like F/FRB's, A/FRB's also suffer from legislative risk at the point the long-term rate is fixed.

CONCLUSIONS

Substantial opportunities exist for the arrangement of project financings for solid waste/resource recovery facilities developed by either municipal or corporate sponsors. However, only those projects which meet the stringent credit criteria of rating agencies, lenders and equity participants, will ultimately be financed. Contrary to popular belief, project financing is not financing without risk; rather it is financing which allocates risks among the participants in the financing, including the project sponsor. Therefore, the "best" projects are those which allocate risk among participants in relation to the rewards expected by the participants.

Key Words: Economics • Financial • Incineration • Planning • Procurement • Refuse-Derived-Fuel Standard