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VOLUME THREE OF SIX VOLUMES

PHASE I REPORT

INNOVATIVE FINANCING FOR ENERGY EFFICIENCY IMPROVEMENTS

January, 1982

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For: United States Department of Energy,
Office of Conservation

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CHAPTER VI

UTILITY ASSISTED FINANCING

The federal government and many states have concluded that utilities can play an important role in the national energy conservation effort by providing financing for energy conservation loans along with the energy audits mandated by the RCS program. For that reason, in June 1980, Congress amended the National Energy Conservation Policy Act to permit utilities to finance energy conservation programs and to pass certain program costs on to rate payers.1/ More than 30 investor owned utilities have already implemented loan programs for residential energy efficiency.2/

Utilities are uniquely suited to overcome many of the barriers to energy efficiency investment in multifamily, commercial and industrial buildings. Utilities can provide the "one stop" no hassle energy conservation service and financing that repeated studies and experience have shown is likely to lead to significant energy efficiency expenditures. Utilities have credibility within the community and financial and technical resources that can be applied to market energy conservation investments.

1/ Energy Security Act, Pub. L. 96-294(1980).

2/ See "Utility Sponsored Home Insulation Programs", DOE Report June, 1978.

A. Overall Approach

Conversations with officials of fourteen utilities and three trade associations representing various segments of the utility industry were used as the basis for the analysis and evaluation of utility financing.3/ Utilities interviewed included the Bonneville Power Authority ("BPA"), which serves a five state region in the Pacific Northwest, the Tennessee Valley Authority ("TVA"), which serves a region involving several states in the southeastern United States, and Portland General Electric and the Pacific Gas and Electric Company, two of the nation's most innovative investor owned utilities.

Only one utility interviewed provides any direct financing for energy efficiency measures in multifamily, industrial or commercial buildings. TVA has a commercial and industrial energy conservation loan program for for its customers. The TVA loan program is described in Exhibit B4. None of the utilities or utility trade associations interviewed knew of any existing financing program other than the one operated by TVA.

We also identified lighting rebate programs available to commercial building owners operated by Texas Power and Light, Pacific Gas and Electric and BPA.4/

3/ See Appendix B.

4/ See Appendix B.

At least three of the utilities (Portland, General Electric, BPA, TVA) provide free energy audits for commercial and industrial customers. The State of Oregon now requires utilities to provide these audits.

B. Barriers to Utility Financing Programs

Utilities have been reluctant to become active in sponsoring energy conservation loan programs. The reasons for their reluctance are numerous. They include the following:

1. Traditional Role of Utilities

Many utilities executives believe that utilities should not become involved with financing, but should leave financing to banks and other financial institutions, which have more expertise in the area. They see energy conservation as an unwarranted shift in the utility's overall objectives.

2. Uncertainty Regarding the Value of Conservation to the Utility's Customers

In many communities, utility participation in energy conservation financing is justified on the basis of the value of energy saved, because the cost of saving energy (reducing demand) is lower than the marginal cost of constructing new generating facilities. Public utility commissions in Oregon and California have used such an analysis to encourage

utilities in those states to develop a range of innovative conservation programs.5/ A number of other utilities are undertaking similar analyses. Utilities that presently have excess capacity, even though they may project the need for new capacity in the future, may often not be able to justify engaging in conservation financing activities today.

3. Antitrust Concerns

Utilities usually have a monopoly within their service area. Since utilities are state-regulated monopolies, they currently are insulated from violations of federal antitrust laws. However, utility officals are concerned that any entry into financing might be lead to charges of unfair competition with traditional activities of banks, savings and loan institutions and other members of the financial community.

4. Lack of Capital.

Despite the public perception of utilities as being large and financial strong organizations, many utilities presently face capital shortages. High debt costs and escalating costs of operating, maintaining and constructing plants have apparently outrun rate increases. Some utilities are more severely affected by these circumstances than others.

5/ See, e.g., California Energy Commission 1981 Biennial Report

5. Need for Load Management Techniques

Many utilities will benefit more from load management strategies than from energy efficiency investments. While load management does not necessary benefit a particular customer (it does not reduce the customer's utility bill) it may be the most cost-effective investment for a utility seeking to control its demand.

6. Market Penetration: Potential Energy Savings

The degree market penetration that would be achieved by a particular energy conservation financing program is difficult to estimate. Sufficient data are not available from other conservation programs on which to base reliable forecasts. It is not clear, for example, how much energy savings would be achieved at different levels of utility investment (or subsidy) in conservation programs.

C. Utility Assisted Financing Program

We discussed with each of the utility executives and their trade association representatives a variety of roles the utility might play in financing energy efficiency for multifamily, industrial or commercial buildings, including:

- Direct loan programs
- Loan Guarantee Programs

- Rebates
- Use of Tax Exempt Bonds
- Creating An Energy Service Company (leasing and shared savings).

Following is a detailed discussion and evaluation of each of these options.

1. Direct Loan Programs

As noted earlier, there are numerous utility financing programs that provide direct loans to homeowners who install residential energy efficiency measures. In most cases the utilities simply include the cost of administering the loan programs, including marketing and administrative costs as an operating expense that can be recovered from rate payers. To the extent the utility needs additional capital to finance these programs, it raises that capital from its normal sources, (issuance of utility debt, bank loans and stockholders equity) at its normal cost of capital, which varies from utility to utility. In many cases the utilities are subsidizing the loans to homeowners. The finance terms vary from zero interest loan programs offered by utilities in Portland and California (with no principal or interest payment required until the home is sold), to eighteen percent conventional consumer interest rates.6/

6/ See "Utility Sponsored Home Insulation Programs," June 1978, prepared for U.S. Department of Energy Contract No. EY-76-C-D3-1227

a. Advantages and Disadvantages of Direct Loan Programs A direct loan program is the simpliest and easiest program for a utility to administer. However, it requires the utility to be engaged in all aspects of the financing. The utility must originate the loan, make a credit decision, advance the loan proceeds and provide adequate assurance that the recommended measures have been adequately installed. In some circumstances the utility must approve the contractors used to installed the measures. Some utilities also conduct followup audits to be certain that the measures are properly installed.

A direct loan program is also expensive. It requires the utility to use its existing capital and credit to finance homeowner loans. In effect, the utility is guaranteeing repayment of these loans, and all the other rate payers share the cost if any homeowner defaults under the loan program. Finally, a direct loan program does not produce any profit or an independent source of revenue for the utility. Therefore, it is unlikely to be treated as anything more than an ancillary and an unimportant company function, not one directly related to the business objectives and goals of the utility. The marketing and performance of the program may suffer from that perception.

The principal advantage of a direct loan program is that it is relatively easy to establish. It does not require cooperation with any third parties. It may require approval of the state regulatory commission, although utilities have undertaken pilot loan programs to finance conservation in residential buildings without first obtaining affirmative regulatory approval.

2. Loan Guarantees

Instead of making direct loans to property owners, a utility could guarantee a portion (or all) of loans made by independent financial institutions. New York State requires utilities to provide such guarantees to homeowners who borrow money from banks for residential energy efficiency purposes. The interest rate charged homeowners is tied to the utility's rate of return.7/

The principal advantage of a loan guarantee is that it does not require an immediate cash payment by the utility. It does not reduce the liquid assets of the utility. A guarantee program also removes the utility from active participation in the credit decision. The bank making each loan applies its own underwriting criteria to each loan application. Different banks apply different standards.

7/ See Exhibit C8.

The risk to the utility of a loan guarantee will depend on the other security provided for the loan. Although the utility may be ultimately responsible for a default, there are many ways to reduce the risk of suffering monetary losses from defaults, including obtaining a lien on property.

The overall cost, to a utility of a loan guarantee program would probably be substantially less than the cost of a direct loan program. The utility effectively "leverages" its credit rating to back-up the bank loans. There is obviously a limit to the amount of "loan guarantee authority" that any utility will be willing to commit. That will not be a limiting factor, however, in initial development of initial pilot guarantee programs.

One disadvantage of a guarantee is that the utility becomes obligated for loans over which it exerts little control. To reduce this risk, guidelines could be developed which would establish criteria for loans to qualify for the utility guarantee. For example, the utility might provide that loans would only be guaranteed if the borrower met certain financial criteria or if the improvements were recommended as a result of an "approved energy audit," or where there was some procedure to ensure that the recommended measures were properly installed. The utility might also only agree to guarantee a portion of each loan, thereby providing the bank with an incentive to apply due care in approving loans.

Another disadvantage of a loan guarantee program is that it does not make independent economic sense to the utility if the utility is not paid a fee for providing its guarantee. The utility would expect to incur some costs due to defaults under the program. The defaults would be included as an operating expense and recovered from ratepayers. Utility regulatory approval might be required before starting such a program.

3. Rebates

Utilities in Texas and California, TVA and BPA have offered rebates or utility credits to property owners who invest in specific energy efficiency measures. Rebates are easy to administer, compared to a loan program. They do not require collecting and keeping track of monthly loan payments. The cost of the rebate program can be easily calculated and controlled in advance. Moreover, there is a growing body of evidence that an immediate rebate provides a more effective stimulus than a low interest loan program. Property owners respond to the immediate availability of the rebate. They can also easily understand the value of the rebate.

Rebates have only been used in limited circumstances for low cost items generally. These items generally do not require independent financing. Capital needed for lighting improvements usually would not require independent financing. We

did not identify any utilities offering substantial rebates to encourage large scale investments in energy efficiency in commercial, industrial or multifamily buildings.

Rebates could be used to write down the principal or interest rate on loans to property owners who do not have the difference between the rebate and the full cost of the item. Such a program might work like the solar energy and energy conservation bank rebate program.8/

Like the loan guarantee and direct loan program, rebates do not provide any independent source of revenue for a utility. They can be justified only on the basis of the value of energy conservation to all the rate payers. That value can be significant, particularly in publicly owned systems like TVA, BPA and the Power Authority of the State of New York ("PASNY"), where the utility can use its resources to achieve the greatest public good.

4. Tax Exempt Bond Financing

A city, state or political subdivision could issue tax exempt revenue bonds and use the proceeds to make loans to property owners to pay for recommended energy efficiency measures. The utility could assist in this program by:

8/ See Klepper, "Federal Financial Assistance for Energy Conservation and Solar Energy Improvements: How The Solar Energy and Energy Conservation Bank Will Work," 15 Real Property, Probate and Trust Journal at 777 (1980).

- Performing energy audits;
- Originating loans;
- Servicing loans;
- Assist in marketing the program; and
- Conducting follow up audits.

The utility needs to consider the cost and benefits of providing one or more of these services.

a. Advantages and Disadvantages of Bond Program

Tax exempt bond financing offers a property owner long term, low interest financing. The principal security for the tax exempt bond is the promise of the borrower (property owner) to repay the loan. The utility could provide the above services without charge, thereby helping to subsidize (and encourage) energy efficiency investments.

The utility could do much more. It could provide a partial or full guarantee of the revenue bonds or make an interest or principal reduction payment to lower the overall interest rate to the borrowers even further.

The willingness of a utility to undertake any of these subsidy techniques will depend on the value of the energy savings to that utility. The utility benefits from the bond program

by obtaining the value of conservation energy (i) without spending its own funds and (ii) at a lower cost of money than would otherwise be available to the utility.

A utility might be able to earn a separate fee from commercial and industrial owners for performing the energy audit and arranging the financing through tax exempt bonds. This fee would compensate the utility for the cost of its services. The utility would obtain the benefits of increased conservation without using its own credit or its own funds. These activities might also generate independent revenue for the utility.

b. Examples of Utility Assisted Bond Programs

Minneapolis and St. Paul, Minnesota each have issued tax exempt debt to finance energy conservation loans to single family homes owners within the past six months. Although these programs presently apply to single family homeowners, they provide valuable insight into the way similar programs could operate in multifamily, commercial and industrial buildings.

In St. Paul the local utility, Northern States Power Company ("NSP"), has provided a guarantee of a portion of the bonds. NSP is also providing energy audits for homeowners under the RCS program and is originating and servicing the loans.

In Minneapolis, Minnegasco, a local utility, originates loans with its own funds and sells the loans to the Minneapolis Community Development Agency ("CDA"). The loans originated by Minnegasco must comply with detailed and precise criteria for determining what constitutes a qualified loan. If the CDA determines, after a loan is purchased, that the loan fails to satisfy its criteria because of errors made by Minnegasco during origination process, the utility is obligated to buy the loan back from CDA. Minnegasco also provided fifty thousand dollars to help fund a security reserve for the bonds. Exhibits A3 and A6 contain a more detailed description of these programs.

5. Energy Service Company

A utility could offer the full range of services provided by an energy service company. It could agree to provide heat, light, cool air and hot water rather than simply selling electricity or natural gas. Utilities possess many unique attributes and resources that make it likely they could be successful in selling energy services to their customers. Many of the barriers to leasing and shared savings mentioned elsewhere in this report are eliminated if the energy service company is owned by a utility. The utility offers:

- Credibility in the marketplace;

- A readily available source of capital;
- Access to skilled engineering, energy auditing and other technical personnel;
- The ability to evaluate the potential effectiveness of energy efficiency measures and to monitor energy savings obtained from those measures; and
- The ability to create a network for repairing and maintaining energy efficiency equipment.

There are two alternatives that can be followed by a utility that seeks to pursue these options: (1) create an energy service corporations; and (2) provide contract services to energy service companies in the community.

a. Creation of an Energy Service Corporation ("ESCo")

A utility could set up a separate division or subsidiary to operate an energy service company. The division might offer lease financing for measures recommended by energy audits as well as shared savings programs. The utility could create its own in-house staff of auditors, engineers and installers. Alternatively, the utility could subcontract one or more of these services to other firms in the community.

Capital to finance the ESCo could be obtained from the parent corporation either as an equity investment or as a loan. If

providing the needed capital is a problem, the utility could consider a joint venture arrangement with a financial institution, such as a leasing company, which might agree to lease the recommended equipment to customers within the utility's service area. The utility may be asked to guarantee part or all of this lease. That might be an attractive means of reducing the capital that the utility would otherwise have to provide for this program.

The ESCo would provide the following services:

(i) Perform energy audits of commercial and industrial buildings

(ii) Recommend designs for cost effective conservation measures and install such measures

(iii) Measure savings and collect monthly payments

(iv) Maintain and repair the equipment[9/]

b. Provide Contract Services to Facilitate Shared-Savings Programs

Instead of setting up a separate energy services company, a utility can provide, for a fee, contract services to

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9/ See Chapter V for a more detailed discussion of energy service companies.

facilitate leasing and shared-savings plans within its service area. For example, the utility or a separate subsidiary thereof, could provide all or some of the services set forth above for a fixed fee under contract to a third party investor. The third party investor might be a leasing corporation, some other financing institution, a group of individual investors or an energy equipment manufacturer or energy service company. By undertaking these activities jointly with another entity, the utility could share the operating risks and financial requirements.

c. New England Electric Company's ESCo

New England Electric Corporation has recently established a separate division, on a pilot basis, to engage in the energy services business. The company began operations in late 1981; it has just installed its first piece of equipment. The division is funded completely by the parent utility. To date, the state utility regulatory commission has not been asked to review or approve this venture.

d. Advantages and Disadvantages of a Utility Sponsored ESCo

If successful, an ESCo would provide the utility with a completely independent source of revenue. It would operate on a sound financial, "pay as you go" basis without any subsidy

from the utility rate payers. It could also achieve significant energy savings which might have an independent value to the utility.

An ESCo offers the potential of achieving three principal objectives of the electric utility industry:

(i) Off balance sheet financing;

(ii) Diversification;

(iii) Business activity in a nonregulated area.

Utilities that do not want to use their own capital (debt or equity) can enter into joint ventures to get an ESCo started. In preliminary discussions, private leasing companies and banks expressed strong interest in pursuing these options with a utility. A utility might be able to start an ESCo without burdening its financial structure.

D. Development of Model Documents for a Utility Sponsored ESCo

A utility sponsored ESCo satisfies all ten criteria for selecting and developing model financing transactions. Once its feasibility is demonstrated, there are hundreds of utilities (public and private) with the skills, resources and capital to duplicate the arrangements in their service area.

There are, however, a range of legal, financial and regulatory issues that must be addressed and resolved before a utility will establish an ESCo. We have had preliminary discussions with one publicly owned utility and two investor owned utilities about working with them to pursue the feasibility of their setting up an energy service company.10/ The company would focus its initial activities on commercial buildings, with the ability to include multifamily and industrial customers at a later date.

We propose in Phase II and III to work with one or more of these utilities in developing model documents to create an ESCo on a pilot basis with the utility's support. These documents will include a shared-savings agreement, a leasing agreement, and all other documents necessary to finance the venture. In addition, we will develop an overall business plan that would explain how the energy service company would operate, how it would generate revenue, and how it would structure its fees. The plan would estimate the cost of doing business, and would identify and evaluate relevant legal and regulatory issues.

10/ See Exhibits B-1, B-3, B-13, B-15, B-16, B-20.

CHAPTER VII

TAX-EXEMPT FINANCING

Tax-exempt financing provides an attractive alternative to bank financing and leasing of energy efficiency equipment. Tax-exempt financing ("TEF") normally involves two steps:

- the issuance by a state or local government of tax-exempt bonds, and
- a loan of the bond proceeds to property owners who agree to install recommended energy improvements.

Tax-exempt financing would provide loans for a longer term than traditional bank financing -- probably in the range of 10 to 15 years -- at a lower interest rate than is available from a bank loan. The current market interest rate for a tax-exempt industrial development bond would be in the range of 12-14%, as opposed to 17-20% for a bank loan. The differential between the tax-exempt rate and the taxable rate has been reduced during the last few months. Traditionally, the rate differential has made tax-exempt financing considerably more attractive than taxable financing.

Like leasing and bank loans, tax-exempt financing may be available without any additional federal legislation. However, or local government action, and, in some cases, additional state

legislation will be needed. A state or locality with appropriate powers can implement a TEF program for energy projects with little or not cost once the program is designed and established, other than funds that would be available from the TEF.

A. Overview of Tax-exempt Bond Financing

There are two principal types of tax-exempt bonds that can be issued by a local government entity.

1. general obligation bonds, and

2. revenue bonds.

Within the category of revenue bonds there are two subcategories:

(i) industrial development bonds used to finance "exempt facilities";

(ii) industrial development bonds that qualify under the "small issue" exemption.

Bonds issued to finance energy conservation improvements in multi-family buildings would have to qualify as bonds used to finance an "exempt facility." 11/

11/ See Internal Revenue Code Section 103 (hereafter "IRC") and regulations adopted thereunder.

B. Advantages and Disadvantages of TEF

We talked with five major underwriters about using tax-exempt bonds for energy efficiency improvements and cogeneration facilities.12/ None of the firms had developed any programs for financial energy improvements. One firm had participated in developing a residential energy bond program for the Maryland HFA.13/ All the firms expressed interest in financing a cogeneration facility, but none knew of any such projects that had been financed with tax-exempt bonds.

1. Advantages of Using Tax-exempt Bonds

Tax-exempt bonds offer many attractive features that cannot be duplicated by other financing mechanisms:

a. Rate. The interest rate will be lower than that available from a bank loan, a lease or any other investor oriented program.

b. Term. The term of the loan will usually be longer than the term available under most other programs. The longer term lowers the monthly service costs to the

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12/ Merrill Lynch, Pierce Fenner and Smith, Incorporated; Shearson American Express, Matthews and Wright, Inc. L.F. Rothschild-Unterberg Towbin, and Kidder Peabody & Co.,Incorporated. See also Klepper, How To Make Energy Conservation Pay For Itself, Chapter VI.

13/ Matthews and Wright

borrower, thereby enabling the borrower to install equipment with a longer payback and still obtain a positive cash flow from energy savings.

c. 100% Financing. Industrial development bond financing often provides 100% of the costs of a project. This eliminates the need for a significant equity contribution by the borrower.

d. Use of Funds. TEF could be used to pay for a wide range of energy efficiency improvements. The bond proceeds do not have to be used to purchase "tangible personal property" (as would bank loans) or "leasable equipment" (as would funds generated in a leasing arrangement). Bond proceeds could be used for structural improvements (including caulking, weather-stripping, etc.) as well as construction of buildings and other major improvements.

e. Availability of Tax Benefits. The borrower (property owner) will be entitled to claim any state tax credits available for investing in the energy equipment and the federal investment tax credit, if it is applicable to the items acquired. The owner would, however, be barred however, from obtaining the "dual benefit" derived from both the energy tax credit and the benefit of tax-exempt financing. This "double dip" prohibition

would make it unattractive to finance solar energy improvements, which qualify for a 25% federal tax credit, with the use of tax-exempt bonds.

2. Disadvantages of Tax-Exempt Financing

a. Need For Political Support. A bond issue must be approved by a local jurisdiction or political subdivision thereof. That requires the borrower to ask a local jurisdiction to adopt a resolution approving issuance of the bonds. Obtaining political approval can result in significant delays. Approval by the local government may be based on a range of factors other than the credit worthiness of the applicant or the value of the particular project.

b. Complexity of Documentation. In order to comply with a variety of federal and state securities and tax laws, a detailed series of documents, including an official statement, a trust indenture, a loan origination and servicing agreement, and an investment agreement, must be prepared and agreed to by various parties. The time and effort required to accomplish these tasks adds to the cost of the bond issue.

c. Time Constraints. A longer lead time is needed to undertake a bond issue than to arrange a lease transaction or a bank loan. Approval of various parties and negotiation of the numerous documents, as well as ultimate sale of the bonds to investors, will usually take anywhere from ninety days to six months or more, depending on the complexity of the transaction.

d. Cost of Issuance. Fees incurred for legal and accounting services, printing and underwriter's fees related to the bond issue must be absorbed by the project. These fees will reduce the relative advantage provided by the tax-exempt interest rate. These fees, other than underwriting fees, decrease as a percentage of the financing in larger bond issues. For small financing (less than $5 million) these fees become extremely burdensome. This makes it very difficult to involve underwriters in issues of that size.

e. Compliance With Legal Requirements. The bond issue must meet a host of legal requirements to qualify as tax-exempt under federal law. Some of these requirements add administrative costs and burdens to a bond program. Others simply add time and detail to the preparation of documents regarding the program.

f. Uncertainty of Legal Issues. Certain legal matters, such as the authority of the state and/or local jurisdiction to issue the bonds, may not be clear cut. Five of the eleven states we surveyed had established clear legislative authority to issue tax-exempt bonds for some conservation energy projects, but in none of the states had bonds been issued under such authority. See Appendix C. In most jurisdictions, authority to issue the bonds will based on an analysis of the authority granted to communities to issue bonds for industrial development purposes. In some states a broad interpretation of existing legislation may suffice to permit bond counsel to issue an opinion that energy conservation investments are within the scope of the existing legislative mandate. In other communities, however, a court ruling, an opinion of the attorney general of the state or new legislation may be needed before bond counsel will be willing to proceed with a tax-exempt financing.

C. Legal Authority to Issue Bonds for Energy Projects

State and local law must permit industrial development bonds (IDBs) to be used to finance the energy project under consideration. In some states a constitutional prohibition against using public credit for a private purpose is interpreted to preclude the

issuance of IDBs. Such a constitutional prohibition was recently eliminated in the State of Washington. Most states now have legislation permitting issuance of industrial development bonds.

The proceeds of IDBs must be used for a recognized "public purpose." Most states recognize economic development as a valid public purpose. Analysis of state and local law in each jurisdiction is necessary, however, to determine whether making loans to industrial or commercial property owners to finance energy efficiency equipment is within the state's definition of "public purpose."

Of the 11 states surveyed, five have specific legislation permitting energy efficiency IDBs. These states also have legislation permitting IDBs to be used for various alternative energy projects. Other states not covered by our survey, including Texas, North Carolina and Massachusetts have legislation enacted or pending that would permit use of IDBs of energy projects.

D. Limited Size of Energy Efficiency Loans

One of the significant limiting factors in using IDBs to finance energy efficiency equipment is the small size of each issue. In the past issuers have aggregated a series of small bonds into one issue. This permitted cost reductions. The entire series of bonds were generally covered by one official statement, one trust indenture, one underwriter, one set of legal opinions, etc.

Revenue Ruling 81-216, effective August 24, 1981, treats multiple lots of $1,000,000 each of industrial development bonds as a single large issue if the following factors are present: (1) the obligations will be sold at substantially the same time, (2) the obligations will be sold pursuant to a common plan of marketing, (3) the obligations will be sold at substantially the same rate of interest, and (4) a common or pooled security will either be used or available to pay debt service on the obligations. Many states that have programs that combined small issues in order to market bonds more efficiently were forced to halt future bond sales pending resolution of the issue. This Revenue Ruling was revoked and replaced by Proposed Regulations issued on October 8, 1981 but having an effective date of August 24, 1981. Proposed Regulations Section 1.103-7(b)(6) and (c), Examples (16), (17) and (18) and Section 1.103-10(a) contain requirements nearly identical to Revenue Ruling 81-216. The Internal Revenue Service is currently accepting comments on the aforementioned proposed regulations and oral hearings are being scheduled. Congress held hearings in the fall of 1981 on legislation designed to reverse the impact of Revenue Ruling 81-216. The future of any such legislation is uncertain, at best.

The outcome of this issue must await Congressional consideration during 1982. Due to the uncertanties surrounding the ability of a state or local industrial development authority to aggregate a series of small energy conservation loans, we do not recommend

developing model documents to consummate such transactions at this time for commercial or industrial buildings.

E. Important Legal Aspects of TEF

1. General Obligation Bonds

General obligation bonds ("G.O. Bonds") are bonds backed by the full faith and credit of a community. The security for the bond issuance is the municipality's assets and its authority to tax, raise and collect sufficient funds to meet its bond obligations.

Most communities have limits on the amount of G.O. Bonds they can issue. If a community were to use G.O. Bonds to finance energy projects, there is very little that would be unique or special about such a program. The bonds would be issued in the same manner as other G.O. Bonds issued previously by the community. The method of issuing the bonds, use of underwriters, security for the bonds, structure of the bond issue, etc. would be no different than that of other bonds issued by the community for funds to build roads, schools, government buildings, etc.

In view of the constraints under which most local governments are operating, we believe it is unlikely that many will use their general obligation bonding authority to raise funds to make loans to commercial, residential or multi-family property owners to pay for energy efficiency improvements.

We are not inferring that such action is improper or unwarranted; quite the contrary. A community can provide a significant stimulus to energy efficiency investments, and development of alternative energy sources, by using general obligation bond funds to subsidize these efforts. Some communities have already done so.

(a) Baltimore, Maryland The City of Baltimore is using $2 million from a general obligation bond issue to finance energy efficiency improvements in single family buildings. The City purchases loans originated by approved lending institutions. 14/

(b) Oregon The State of Oregon has created a separate corporation which is authorized to use proceeds from general obligation bonds to make loans to finance the development of alternative energy projects. 15/

2. Industrial Development Bonds

Section 103(a)(1) of the Internal Revenue provides that a taxpayer who receives interest on obligation of state or any political subdivision thereof may exclude that interest from his gross income. Section 103(b)(1) of the IRC takes away

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14/ See Exhibit A13, See also Conem Reader

15/ See Exhibit A 9.

that exclusion for any obligation that is an industrial development bond ("IDB") unless the IDB is one which meets the requirements of:

° An "exempt activity"; or

° A "small issue" exemption.

(a) How Does IDB Financing Work Unlike a general obligation bond, an IDB is not backed by the full faith and credit of the municipality. It is also not subject to state or local debt ceilings or (generally) to voter referendums. An IDB is secured solely by the promise of the borrower of the bond proceeds to repay the loan with interest. For example, IDB's are often used to raise funds to make low interest loans to firms building new manufacturing facilities in a community. The company (borrower) promises to repay the loan to the municipality. The municipality promises to pay the bond holders out of revenue derived solely from the loan to the borrower. If the company (borrower) fails to repay its loan from the municipality, the municipality will not be obligated to use other revenue to repay the bondholders. In effect, the bondholders are making a loan, through a local governmental entity, to the industrial borrower. The only security for the bondholders if the company fails to repay its loan is to proceed against the assets of the company.

IDB financing permits an entity to borrow money at tax exempt rates and, at the same time, retain the income tax benefits of owning the facility being financed. These income tax benefits include the right to claim (i) capital cost recovery for the value of the building and equipment and (ii) available federal and state tax credits.

The borrower usually must provide the same type of collateral for the loan that would be required if the loan were obtained from a bank or other financial institution. The credit worthiness of the borrower, and the specific collateral that might be pledged to secure the loan, will determine whether an investor will purchase the bond and will establish the interest rates for the bonds.

There is nothing inherent in the structure of tax exempt financing that would permit a corporation unable to qualify for a bank loan to obtain financing through a tax exempt issue. However, the lower interest rate of tax-exempt financing will reduce the borrower's debt service requirement. This means that more borrowers can potentially qualify for TEF financing.

(b) Types of Projects For Which IDB Financing May be Appropriate Proceeds of an IDB can be used by a borrower for any purpose permitted by local law, if the issue is exempt under the "small issue exemption". If the issue does not

satisfy the "small issue" exemption, the bond proceeds can only be used to finance specific projects, as described below.

IDB's can be issued to make loans to industrial and commercial property owners who want to install energy efficiency equipment in their buildings. Similarly, ISB's can finance solar energy, cogeneration and other alternative energy projects that fall within the "small issue" rules.

(c) Definition of an IDB An issue that meets the definition of an IDB will be taxable (not tax exempt) unless the issue also falls within the small issue exemption or the exempt facilities exemption.

An industrial development bond is defined as one that meets two tests: the trade or business test and the securities interest test:

(i) Trade or business test:16/

If more than twenty-five percent of the proceeds of a bond issue are used directly or indirectly in any trade or business carried on by a private person, the trade or business test will be satisfied. Bond proceeds loaned to

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16/ For more detailed discussion of IDB financing see "Industrial Development Bonds" by the Bureau of National Affairs, Tax Management Portfolio 216-4th (1980).

corporations that will use the proceeds to acquire energy equipment or make loans to finance energy conservation investment will be using those proceeds in their trade or business.

(ii) Security Interest Test:

If the property being financed by the bond issue, or any other property used in the trade or business of the user of the facility financed by the bond issue, provides security for the bond, or if the private user promises to repay the principal of or interest on the bond, directly or indirectly, the security interest test will be satisfied.

If over twenty-five percent of the bond proceeds are secured by privately used business property or will be paid in respect of privately used business property, both the "trade or business" and the "security interest" tests will be satisfied.

The form of IBD financing will be closely scrutinized. The substance of the transaction will control over form.

(d) Output Contracts If the facility being financed involves a contract to sell electric, gas, water or other product to a utility or other third parties (an "output contract"), the bond obligation will be an IDB if the output contract involves a private entity agreeing to purchase more than

twenty-five percent of the facility's output over the life of the bond obligation, in return for payments aggregating more than twenty-five percent of the debt service on those obligations. Guaranteed payments from different parties in excess of three percent of the debt service on the obligations will be aggregated for purposes of the output contract test. Thus, example, where a cogeneration facility is constructed by a muncipality, and all of the electrical output of the facility will be sold to a private corporation (such as a utility), the obligations will be IDBs.

(e) Exempt Facilities Exception

There are four possible "exempt activities" which could be the basis for issuing bonds to finance energy efficiency or alternative energy improvements:

(i) Projects for residential rental property;

(ii) Solid waste disposal facilities, including cogeneration equipment, provided that at least fifty percent of the steam generating fuel is derived from solid waste or fuel derived from solid waste at an adjacent location;

(iii) Local furnishing of electrical energy or gas. The definition of local furnishing of electrical energy or gas does not appear to include "conservation" of

electrical energy or gas, even if the argument is made that conservation is a means of "storing" or "collecting" energy;

(iv) Qualified hydroelectric generating facilities.

A more detailed discussion of these exemptions is beyond the scope of this Report.

There are four general rules applicable to "exempt activity" IDB financing. They are:

(v) 90% or more of the proceeds must be used to provide the exempt facility;

(vi) The IDBs cannot be held by a substantial user of the facility;

(vii) The facility must serve or be available on a regular basis for general public use or be part of a facility so used; and

(viii) A bond resolution must be adopted providing for issuance of the bond before commencement of construction or acquisition of the facility to be financed.

(f) Small Issue Exemption

Section 103 of the Code also provides an exclusion that permits interest on small issue IDBs to be exempt from tax.

There is a $1 million and a $10 million small issue exemption. The $10 million exemption may be increased to as much as $20 million if an Urban Development Action Grant applies to the project. Both the $1 million and $10 million small issue exemption require compliance with the following rules:

° At least 90% of the proceeds of the exempt small issue must be used to acquire land or depreciable property.

° A bond resolution must be adopted before the commencement of construction of the facility being financed.

° The amount of the exempt small issue will be reduced by the outstanding principal amount of all prior exempt small issues used to finance a facility located in the same jurisdiction by the "borrower" of the IDB proceeds.

° The interest on exempt small issue IDBs held by a substantial user of the facility or a related person is not tax-exempt.

i. $1 Million Small Issue Exemption If the above rules are followed an exclusion exists for the interest on an IDB issued as part of an issue, the aggregate face amount of which is not more than $1 million.

ii. $10 Million Small Issue Exemption When the $10 million limit is used, a series of other rules must be considered. Capital expenditures by the borrower that were paid or incurred during the six year period that begins three years before the date the IDBs are issued and ends 3 years after that date must be included in tallying the $10 million limit. Similarly, capital expenditures by a principal user of the facility will be included in the $10 million limit.

Use of the $10 million small issue exemption can be quite complex. If the $10 million limit is exceeded by excessive capital expenditures, the interest on the IDBs becomes taxable immediately.

If the exempt facility's exception exists, there is no need to qualify under the small issue exemption. Thus, the exempt facility's exemption is preferred, if available, because it does not require calculation of capital expenditures by the user and principal user of the facilities.

(g) Use of Insurance There is no prohibition against using private insurance for IDBs. The insurance can increase the rating of the IDBs and therefore, permit the bonds to be issued at a lower interest rate than would otherwise be available.

F. Recommended Use of IDBs to Finance Cogeneration Facilities

One of the more feasible investments for industrial property owners is the installation of cogeneration equipment. Many industrial facilities produce steam which can be used to cogenerate with electricity to produce extremely attractive energy cost savings. However, due to the high risks involved in developing these projects, financing is difficult to arrange. Tax exempt bonds offer an attractive financing option.

California, Maryland, Oregon, Connecticut and New York have established state entities with authority to issue tax-exempt bonds to finance energy conservation and alternative energy projects, including cogeneration projects. Appendix A contains a brief summary of those state programs.

We have examined in detail the financial and legal feasibility of issuing tax-exempt bonds in these jurisdictions to finance construction of a cogeneration facility. See e.g. Exhibit K-6. We conclude that TEF for industrial cogeneration fully satisfies our ten criteria for developing model documents. Industrial cogeneration transactions are large enough to warrant a bond issue, but not so large as to entice many underwriters to undertake the projects on their own. Cogeneration is attractive in buildings throughout the county. Almost every state has IDB legislation that could be used to duplicate the model transaction. The credit of the industrial users should be adequate security

without the necessity of obtaining a public sector subsidy for the bonds. A local community can help local industry stay competitive and retain jobs by authorizing the IDB issue. Finally, there are many unique issues related to such a bond issue which, once resolved satisfactorily, will make future issues more viable.

1. IDB's in California

There is already enacted legislation in California that creates and permits the California Alternative Energy Source Authority to issue bonds to finance relatively high risk industrial cogeneration facilities. Public utility regulations in California encourage utilities to enter into "output contracts" to purchase energy generated by a cogeneration facility. That output contract with a utility is an essential lynchpin to the financial credibility of a project. Without a secure utility output agreement, bond financing becomes difficult.

Our review of this matter uncovered a possible problem: Would an agreement entered into by the owner of the cogeneration facility to sell the output to a public utility, either as a principal source of income for the cogeneration project or as back-up income in the event the industrial user did not take all of the power, violate the small issue limitation? We assumed that the utility would have capital expenditures in excess of $10 million. We concluded that the capital expenditures of the utility would

most likely be included in the $10 million calculation because the contract would make the utility a "principal user" of the facility.

Based on these results, we considered alternative arrangements with the utility which might permit issuance of the bonds. We reached a preliminary conclusion that a standby contract with a utility that did not become effective for the first three years of the project would not violate the small issue prohibition. Based on that conclusion, we believe it is possible to arrange a marketable bond transaction for an industrial cogeneration facility.

2. Combining IDB's With Lease Financing

Industrial cogeneration projects could be financed with a combination of bonds and a leasing arrangement. The cogeneration equipment could be owned by a separate partnership that raised equity capital from investors. The partnership would borrow the proceeds of the tax-exempt bond issue. That partnership would be entitled to the regular investment tax credit for those portions of the building (cogeneration facility) that qualified for such a credit as well as applicable depreciation deductions for the equipment. Interest paid on the bond issue would be an ordinary and necessary business expense of the partnership. Cogeneration facilities in California would also qualify for state tax credits.

The energy savings potential for cogeneration is enormous. If one or more transactions utilizing tax-exempt bonds, there will have been demonstrated a mechanism that could be applied to other energy equipment, including industrial process solar heat, district heating projects and energy efficiency equipment.

3. Security for Cogeneration IDBs

Security for industrial cogeneration bonds would be based primarily on the credit worthiness of the industrial firm that was to construct, operate and use the cogenerated power. The value of the back-up contract with the utility would be important if a significant amount of power might be sold to the utility. If a third party becomes the lessor and recipient of the tax-exempt bond funds, the credit worthiness of that entity would become important. Equity contributed by that firm might be retained, at least in part, as a reserve to provide security for the bonds. The third party might be asked to provide other collateral as security for the bonds. A guarantee of construction and operation of the equipment would be obtained from the engineering firm designing the installation. Warranties of various major parts of the facility would be provided by the equipment manufacturers. Compliance with environmental and federal regulatory requirements would also be secured. These issues will be identified and described in a commentary that will accompany the model documents.

4. Specific Security Will Include:

a. A note from the industrial user who borrows the bond proceeds. The security value of this note will depend on the credit worthiness of the borrower. Strict or lenient underwriting criteria will affect the bond market's evaluation of the principal source of payment.

b. A mortgage on the building and a lien against any equipment purchased with the loan proceeds.

c. Other covenants from the industrial user, including, perhaps, personal guarantees.

d. If necessary, the local utility's back-up purchase contract might be included as additional security for the bonds, if that is necessary. In the BPA and TVA regions, additional financial security might be available fom the utilities.

5. Summary of Proposed Industrial Cogeneration Bond Issue

Possible Issuer: California Alternative Energy Source Authority (or similar state entity)

Project to be financed: Industrial cogeneration facility

Primary user of bond proceeds will be an industrial facility; secondary user will be a back-up contract with a local utility

Size of issue: Expected to range between $3 and $10 million.

Owner of cogeneration facility: the industrial firm that will use the majority of the steam and electricity produced by the facility, or a separate third party that will contribute equity capital to help finance the project.

Pursuit of this project will enable us to resolve the various legal questions surrounding using tax-exempt bonds for alternative energy projects. We will, in the course of the project, prepare the following documents:

(a) Official Statement

(b) Trust Indenture

(c) Loan, Servicing and Escrow Agreements

(d) Back-up Power Agreement with the Local Utility

(e) Form Legal Opinion

(f) Economic and Financial Feasibility Analysis (to be prepared with the assistance of accountants).

It might also be necessary to produce additional documents for the a leasing transaction. These documents might consist of:

(a) a partnership agreement for ownership of the cogeneration facility;

(b) a lease agreement between the owner and the industrial user;

(c) a loan agreement between the third party lessor and the issuer of the bonds; and

(d) various security and collateral documents.

G. Municipally Owned Utilities Serving as Bond Issuers

Instead of issuing IDBs, municipally owned utilities may be able to issue bonds and use the proceeds to finance energy efficiency improvements in commercial, industrial and multifamily buildings within the utility service area. Under provisions of the Internal Revenue Code, bonds issued by municipally owned utility qualify as tax-exempt to the extent the proceeds are used by the utility for a public purpose and are not used in the trade or business of a private entity. Under these provisions, municipally owned utilities regularly issue bonds to finance the construction of new generating facilities and other improvements.

We have considered whether municipally owned utilities could issue tax-exempt bonds to finance the installation of energy conservation measures. With certain limitations, we believe that bonds can be issued for these purposes. Two issues that would need to be considered further are:

1. Does the utility have authority to issue bonds to finance conservation projects?

2. Are the bonds IDB's if the proceeds are used to purchase energy improvements and sell those improvements, on an installment basis, to property owners?

It is necessary to closely examine the authority of the municipally owned utility or the public power authority to determine whether the public utility is authorized to issue bonds to finance energy efficiency projects. We examined the laws of three states on this issue. In one state, specific legislation authorizes utilities to issue bonds for energy efficiency projects. In another state, that authority can be inferred from existing legislation, although such authority is not clear cut. In the third, there is precedent that would make it impossible for municipally owned utilities to issue tax-exempt bonds for these purposes without some clarifying decision by a court or an amendment to the statute.

The benefits of municipally owned utilities issuing bonds to finance energy projects should not be overlooked. The bond issue would be secured by the overall revenues earned by the utility. The utility would then have the flexibility of developing a program to utilize these bond proceeds in the most cost effective manner. For example, the bond proceeds could be used to develop a rebate program, create an energy service corporation, create a leasing corporation or fund a range of other energy efficiency

projects. Some of these projects are outlined in more detail in Chapter VI.

H. Tax-Exempt Financing for Multifamily Projects

On its face, tax-exempt financing would be an attractive way to raise capital for energy efficiency improvements in multifamily buildings. State housing finance agencies exist in 42 states with authority to issue bonds to finance multifamily housing. Many of these states also have authority to issue bonds to finance energy efficiency improvements. Legislation amending statutes in other states to give the HFA's authority to make these loans would not appear difficult to obtain. At least five state housing agencies have already issued tax-exempt bonds to finance home improvement loan programs. These tax-exempt bond programs have raised well over $200 million. Although the funds have been loaned to single family homeowners, similar programs could be developed for multifamily housing.

The appeal of tax-exempt bonds for the multifamily sector is that low interest, low cost loans could be made available to property owners to finance a wide range of energy efficiency measures. The principal barriers faced by such a bond issue are:

- the Mortgage Revenue Bond Act of 1980, and
- the lack of adequate security for the loans.

1. Mortgage Revenue Bond Act of 1980.

In December, 1980, Congress enacted the Mortgage Subsidy Bond Act of 1980. This legislation was intended primarily to restrict the use of tax-exempt revenue bonds to finance single family mortgages. Over $10 billion worth of such bonds had been issued in the previous year. Very severe restrictions were placed on issuance of single family mortgage revenue bonds by the new Act. A detailed discussion of those limitations is beyond the scope of this report. The legislation also restricted the use of IDB's to finance improvements to or construction of multifamily buildings. Specifically, bonds cannot be issued to finance energy efficiency improvements in multifamily buiildings under the "exempt facility" exemption unless at least 20% of the tenants in the multifamily building are low income tenants. Low income is defined under the statute as meaning tenants who would qualify for Section 8 rental assistance. The 20% low income requirement severely limits the use of tax-exempt bonds to finance energy efficiency in multifamily buildings. It limits the use of this device to buildings where owners have little incentive to install conservation measures. As described in Chapter III, the federal government is often the party obligated to pay the increased utility costs in low income housing, but the owner must initiate and undertake installation of energy efficiency measures.

2. Lack of Adequate Security for Loans.

A crucial requirement of any bond issue is the availability of a creditworthy entity to sign or guarantee the note promising to repay the bond proceeds which are loaned by the issuer to the property owner. In the industrial and commercial setting there are likely to be industrial and commercial borrowers with adequate credit to create a marketable security. The same is not true in the multifamily area. Multifamily owners of low income housing projects are unlikely to have any resources available to secure a tax-exempt bond issue.

If the owners do have other resources, they will usually be unwilling to make them available for the bond issue. Most low income housing is financed under "nonrecourse" loans, whereby the lender's only recourse, in the event of a default, is to acquire (take title to) to the multifamily building. Non-recourse financing is prevalent throughout the government insured and government subsidized housing market. If owners are unwilling to personally guarantee the loans to construct multifamily buildings, it is likely that they will be unwilling to personally guarantee loans to make the buildings more energy efficient.

There are a number of techniques that could theoretically be utilitzed to provide additional security for multifamily energy bonds:

a. Letters of credit from a large bank

b. A state loan insurance program

The State of Maryland has a separate mortgage insurance program that could be used to provide further security for multifamily energy bonds.

3. FHA Insurance

Some state HFA's have used the FHA Title I home improvement loan insurance program to insure loans from tax-exempt bond proceeds to single family homeowners. Loan insurance for multi-family energy improvements was authorized by provisions of the National Energy Act. HUD adopted final regulations to implement an expanded Section 241 loan insurance program, in August, 1980.17/ Unfortunately, however, HUD has not adopted guidelines which would permit the Section 241 program to become active. As a result, there is no federal loan insurance program that can be used to support a multifamily energy efficiency bond loan program.

4. Guarantee of a Major Corporation

It is conceivable that an engineering firm or equipment

17/ 24 C.F.R. Section 241; 45 Fed. Reg. 57982 (August 29, 1980). These regulations were adopted to implement Section 247 of the National Energy Conservation Policy Act of 1978.

manufacturer that designs and installs energy efficiency measures, such as Honeywell, Inc., might provide a "guaranteed cash flow" financing program that could be used to provide security to bondholders. The arrangement would be difficult, at best, because the bondholders would not be able to prevent a property owner from using the guaranteed cash flow for purposes other than repayment of the bonds. An escrow of the guaranteed cash flow payments would not protect the bondholders if the savings were achieved and the funds were used by the owner to pay other expenses. The arrangement would also have to include purchase of significant services or equipment from the corporation to entice it to provide such a guarantee.

5. Utility Subsidy

If energy savings from multifamily buildings are of value to the local utility, and the utility concludes that it is in the ratepayers' interest to subsidize energy efficiency measures in those buildings, the utility could help provide security for the bonds. The utility could:

- fund a debt service reserve;
- subsidize the loan interest rates;
- provide funds to collateralize the bond issue; or

- offer rebates to tenants or property owners to encourage them to borrow bond proceeds.

6. Community Development Block Grant Funds

A municipality could use its Community Development Block Grant ("CDBG") funds to subsidize or provide additional security for a local or state bond issue for multifamily buildings. There are many reasons a community should use CDBG funds for this purpose, although some communities prefer to start with the more consevative approach of using CDBG funds to make direct loans to property owners.

The security devices described above have been used, or considered, in connection with similar bond issues. Letters of credit have been used to support issuance of single family mortgage revenue bonds. The State of Maryland has considered asking utilities in the state to fund a security reserve for an energy conservation bond program. St. Paul, Minnesota issued energy conservation bonds with a partial guarantee from the local utility. The Minnesota HFA used a state subsidy to supplement the collateral provided by a loan portfolio.

7. Multifamily Recommendation:

It could be extremely difficult to structure a viable TEF program for multifamily energy conservation loans without

some form of public or private subsidy. The possible sources of such a subsidy -- federal, state or local governments -- are hard pressed, with many demands upon them to use their available resources elsewhere. Moreover, any TEF program developed for multifamily building could only be used for one segment of the market. Finally, a different form of subsidy would need to be arranged in each jurisdiction addressing the issues surrounding low income buildings. For these reasons, we do not propose to develop model documents for a multifamily TEF program under Phases II and III. We do, however, think HFA's and local governments should be encouraged to leverage their resources with a TEF program for low income multifamily buildings.

CHAPTER VIII

BANK FINANCING

Bank loans are the most widely understood financing tool available to property owners. Bank loans are available from commercial banks, savings and loans, credit unions and mutual savings associations. Most of these institutions have funds that could be made available to support energy conservation projects. However, relatively high interest rates required by most banks, the short term available for such loans (2-5 years) and the unwillingness of banks to make loans based solely on energy equipment as collateral, make it extremely difficult to structure financing for energy projects with conventional bank financing, unless that bank financing is leveraged with some form of public sector capital. This situation could change if interest rates dropped dramatically.

Following are barriers and issues that must be addressed in developing a bank financing program. After identifying these barriers we have summarized various innovative programs that combine bank financing with public sector capital for each type of building covered by the Project.

Barriers

A. Cost of Bank Loans

The high interest rates prevailing in the marketplace for bank loans are the principal constraint that limits wider use of bank financing. With the prime interest rate ranging between 17% and 21% during 1981, it was extremely difficult, if not impossible, to arrange bank financing for an energy project that would produce positive cash flow on a monthly basis for the property owner. A $100,000 loan at 18% interest rate for three years would cost the borrower $3615 a month. In order to repay that loan from energy savings, the property owner needs to save $43,200 a year. That would require an average payback for the energy improvements of approximately 2 years. We have not added to the cost of financing the points and other expenses normally incurred by the borrower in a bank loan transaction.

B. Short Term of Bank Loans

Most commercial banks are only interested in loans with a term of five years or less. A loan with a short term has greatly increased monthly debt service costs. If an 18% $100,000 loan is amortized over 10 years instead of three years, the monthly payments (on an equal installment basis) are reduced from $3615 to $1801 a month. The effect of this longer term is that energy conservation items with a simple payback of almost five years can be

financed with a 10 year loan and still produce a positive cash flow for the owner during each month he has use of the equipment.

C. Credit Worthiness of the Borrower

The banks interviewed all stressed the credit worthiness of the borrower as the underlying basis for the loan. 18/ Being a prior customer of the bank was not listed as a requirement for receiving such a loan. However, a prior track record with the bank would be a more reliable basis to make a credit decision than information provided by other sources.

A bank will examine the profit and loss statement, balance sheet and cash flow statement of the business or individual entity seeking the loan. They will apply previously established criteria in deciding whether the applicant is a good credit risk. We were advised that the credit standards for a company seeking energy efficiency equipment would be no different than if the company was seeking a loan for other business purposes.

The credit worthiness of potential borrowers is important to all types of financing. Leasing companies considering leasing equipment to a property owner, utilities considering providing subsidized financing to a property owner, a city considering

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18/ Conversation with Tom Hermann, Crocker Bank, San Francisco, California and Luco Fierro, Banker's Trust Company, New York City. See also study of bank loans prepared by the University of Massachusetts (MA File).

making a tax-exempt loan to a property owner and even an energy service company entering into a long term contract with a property owner, are concerned with the credit worthiness of the borrower. However, in some of the above situations the credit worthiness standards will be less stringent than in others. Banks appear to apply the most rigid standards. They are the entities that define "marginal" risks. Many firms that cannot qualify for straight bank financing can obtain different types of financing from other sources.

D. Different Types of Collateral

Banks are not willing to accept energy equipment as the only collateral for a loan. Mr. Fierro of Banker's Trust Company said that energy equipment loans would be treated the same as any other leasehold improvement. He noted that it is difficult to remove energy equipment, removal is expensive and there is no readily indentifiable market for used energy efficiency equipment. Even though equipment manufacturers may claim that the equipment has a useful life of 10 years, it is not possible for a bank to identify the price at which it would be able to sell energy efficiency equipment removed from a building if a building owner defaulted on a bank loan. Technological obsolescence and the cost of new equipment might destroy any after market for today's energy efficiency measures.

E. Inability to Use Energy Savings As a Loan Repayment Source

We asked banks whether it would be possible to use the savings that would be obtained from the energy efficiency equipment to repay the loan. If the equipment is projected to save an amount greater than that needed to repay the bank loan, it seemed logical to try to use that savings as a means of securing the bank from the risk of default.

The banks mentioned two reasons they could not rely on projected savings:

1. The Savings Cannot Be Captured.

Energy savings are not normally measured on a monthly basis. Even if they were measured, they simply represent a lower utility bill than the owner might otherwise have incurred. To convert "savings" into "cash" the property owner might have to agree to pay to the bank, as an escrow agent, monthly amounts equal to the utility bill incurred by the owner during a base year. The bank could use the funds to (i) pay the actual utility bills incurred, (ii) pay debt service on the loan and (iii) and remit any excess to the owner. This excess would constitute the owner's share of the "savings". Banks are reluctant to undertake these activities because they are time consuming, labor intensive and expensive. The escrow arrangement also does not protect the bank in the

event that the owner fails to pay the bank the monthly amount and instead pays the utility bill directly.

2. Unreliability of Savings

The bank is also likely to be concerned about the achievability of the projected savings. While some banks understand the potential for energy savings, they also hear of many types of equipment with promised savings that are not realized. They are therefore skeptical that promised savings will be realized.

F. Lack of Knowledge Regarding Energy Equipment

Most banks have had very limited experience making loans for energy equipment. They have not developed a detailed understanding of how energy efficiency equipment works or how it relates to the overall operations of a building. Bank officers probably share many of the same opinions about energy conservation attributed earlier to various types of property owners. The lack of understanding of the savings potential achieved by this equipment probably contributes to most banks' lack of enthusiam for energy financing. If banks were confident that significant savings could be obtained by increasing the efficiency of buildings on which it holds mortgages, they would probably make a concerted effort to encourage owners of those buildings to install these recommended measures.

G. Large Number of Small Transactions.

The large number of small transactions involved in undertaking an energy efficiency loan program is another reason banks are not actively seeking soliciting these loans. With average loans ranging from $10,000 to $250,000, the high transaction costs do not make energy loans as attractive to a bank as large scale project financing.

Nevertheless, we believe there are many banks that would be interested in these loans, if there was certainty that the bank would find demand for a large number of loans. The lack of a readily identifiable market for such loans is probably more of a barrier to active of bank participation than any other single factor. We do not foresee this situation changing until interest rates are reduced significantly, energy costs are significantly increased, or governmental financial incentives are developed to make energy investments more attractive. Until at least one of those events occurs, bank loans will continue to represent the financing selected by a number of property owners, but it will not be the basis for widespread investment in conservation.

Bank loans can be made attractive to property owners when combined with a subsidy from a utility, local government, or state.

Bank Loans For Multifamily Buildings

Owners of multifamily buildings would find it extremely difficult to qualify for a bank loan to finance an energy efficiency project. Most building owners do not have sufficient personal resources available to qualify for a bank loan. If they have such resources they are often unwilling to make them available to guarantee a loan on a multifamily project. The only exception might be high income buildings where the owner may be willing to invest his own resources to improve the energy efficiency of the project.

Most multifamily buildings are burdened with a first mortgage lien. Often a second mortgage exists as well. While it would be possible to offer a bank a second or third mortgage lien on the property, as collateral for a loan, a secondary lien may not be sufficient collateral for the bank.

The principal tests used by a bank in determining whether a borrower can qualify for a mortgage loan are (i) the loan to value test and (ii) the debt service coverage test.

A. Loan to Value Test

The loan to value test is a calculation of the amount of loans outstanding with regard to a property compared to the total appraised value of the property. A standard rule for multifamily buildings is that the total debt on the property should not exceed more than 75% of the appraised value of the property. The

appraised value is usually based on an analysis of comparable sales of similar buildings and an analysis of the value of the income stream produced by the building.

The installation of energy efficiency improvements could be expected to improve the overall income of the building, if the appraiser is willing to accept the forecasted reduction in utility costs resulting from the energy improvements. This would likely be reflected by a higher appraised value. Factors that affect the loan to value test will depend on the building, but generally they will include the age of the building, the appreciation in real estate values that has occurred within the community, and the other owner financing secured by the building.

B. Debt Service Coverage Test

The net income from the building, after payment of all other expenses, is compared to the debt service required on the loan in question. For multifamily buildings banks will probably want debt service coverage in the range of 130%.19/ In other words, if the available net income from a building is $130,000 they would be willing to make a loan that required debt service of $100,000. The increased energy efficiency of the building would increase the projected net income available to satisfy the debt service requirements.

19/ Conem Reader, supra n. _____ at page 58.

As noted in Chapter III, multifamily owners will have many reasons for not securing additional bank debt with an existing property. In effect, the owner is using up a resource he might need for some other purpose. If there is a major structural problem or repair needed in the building, the owner could obtain a loan in return for a second mortgage on the building. If the owner has already obtained a second mortgage to finance energy efficiency equipment, he would not be able to obtain additional financing for the major repair. Alternatively, the owner might want to obtain a second mortgage on a building to finance an investment in another building. Again, that option would be foreclosed if the owner borrows to acquire energy efficiency equipment.

In view of the extremely limited availability of capital in today's economy, it is unlikely that many multifamily owners will voluntarily obtain a bank loan for the purpose of installing energy efficiency equipment.

C. Recent Innovative Combinations of Bank Loans and Government Subsidies

A few communities have initiated energy efficiency loan programs for multifamily buildings that combine private bank loans with government subsidies or subsidies from nonprofit foundations. These programs are summarized below:

1. Springfield, Massachusetts: $100,000 UDAG grant combined with a bank loan commitment of $500,000 to create a fund used to make loans up to $37,500 for ten years. Loans are secured by a second mortgage. The UDAG funds are loaned at zero interest and represent 16.67% of each loan.

2. Baltimore, Maryland: The City of Baltimore, Maryland has recently established a Renter's Energy Conservation Program to help landlords and tenants reduce energy costs. A HUD sponsored Community Development Block Grant funds:

a. Energy efficiency improvement grants up to $5,000 to landlords, provided they agree to keep the property on the rental market for five years and correct all code violations;

b. Furnace cleaning and adjustments (limited to one and two unit houses); and

c. Tenant education on low-cost and no-cost energy conservation measures.

The Renter's Energy Conservation Program has only been in operation since the beginning of 1982. Therefore, no track record has yet been established.

3. New Jersey Housing Finance Agency.

The New Jersey HFA conducted audits of three Section 8 projects financed by the HFA. The audits recommended installation of over $1 million worth of energy equipment. The HFA has agreed to pay for installation of the improvements by making a loan to the owner of each building. The loan will come from reserve funds that have been built up in the account of each building. As a result, the funds will be loaned to the owner at a relatively low interest rate. Similar reserve funds are available for may other HFA projects throughout the nation,

4. Sunnymac

The State of California recently enacted legislation that authorizes creation of a separate nonprofit corporation that will assist in financing solar energy and energy conservation loans in the state. The corporation, called Sunnymac, has not yet started operations. Sunnymac expects to sell stock to private financial institutions in the state. With this capital base Sunnymac would package loans which it would purchase from banks and sell pools of those loans on the secondary market. Its efforts would be similar to those of Freddy Mac at the federal level for single family mortgage loans. The extra security provided by Sunnymac's equity would increase the marketability of the solar loans. In addition, by

pooling a series of loans into one issue, it becomes cost effective to sell securities in a a secondary market.

A secondary market permits banks to recycle their loan funds. A bank that makes $1 million worth of energy efficiency loans can sell those loans at a slight discount Sunnymac and thereby receive additional funds to make another round of loans, rather than waiting the 3 or 5 years needed to have the loans repaid.

5. Portland, Oregon UDAG t+1 As part of a UDAG grant obtained from HUD, Portland has allocated $500,000 to finance multifamily energy conservation investments. As of November, 1981 Portland had only made $20,000 of multifamily loans under this program.

Bank Loans For Commercial and Industrial Property Owners

Commercial and industrial building owners are more likely to be able to qualify for a bank loan than multifamily owners. However, they face the same barriers to obtaining these loans as many multifamily property owners. A mortgage lien placed on an office building or retail space reduces the amount of funds that might otherwise be borrowed by using that property as a form of collateral. Owners treat appreciation in the value of their properties as extremely prized possessions. They are unlikely to be willing to permit a mortgage lien on these properties simply to provide collateral for energy efficiency improvements.

Bank loans also create a balance sheet liability for the property owner. That liability is not immediately offset by an increase in the value of the building. It is only offset by the increased cash flow generated from energy savings received over time as a result of installation of the energy efficiency equipment. Consequently, the owner does not obtain an increase in his assets when he borrows money from the bank. The immediate effect of the bank loan is to increase his liabilities and reduce his overall net worth. The negative financial impact of a bank loan limits the owner's ability to borrow other funds from banks to finance new projects.

Recent Innovative Combinations of Bank Loans and Government Subsidies for Commercial Buildings

A. Lane County, Oregon

A Community Development Block Grant award in the amount of $498,000 will be used to make 10% four-year loans to commercial property owners for energy conservation retrofit measures. The maximum loan per building owner is $15,000. The municipally owned utility, Eugene Power & Water, will provide free audits for commercial property owners. Owners who do not undertake more than $2,000 worth of recommended retrofit measures must reimburse the city for the cost of the audit. The CDGB funds are not being leveraged with bank loans. Leasing is not an eligible use of the CDGB funds. A mortgage will secure these loans. The program is expected to begin operation in January, 1982.

B. Holyoke, Massachusetts

The Holyoke Office of Industrial Affairs has received a $750,000 grant from HUD to provide low interest loans and free energy audits to commercial property owners. The Holyoke Industrial Affairs Corporation has received a financial commitment from nine local banks to contribute $1,272,000, which funds will be leveraged with $508,000 of the HUD grant. Loans will only be made for projects with a payback of five years or less. One engineering firm has been selcted as consultants to make recommendation regarding payback of the measures to be installed. Criteria being considered in making loans include financial leverage, collateral, documented energy savings, payback capability and general credit worthinees of the borrower. Funds will be drawn down in the ratio of $2 1/2 of private funds for each $1 of HUD funds. The maximum loan amount is $75,000. The maximum loan term is five years. A separate loan document will be required from the public and private lender. The private portion of the financing will be at the prime interest rate. The public (HUD) portion of the financing (approximately 28% of each loan) will be interest free so that the overall loan rate is approximately 10%. The recovery of public loan funds is subordinated to recovery of private loan funds. Consequently, the private loan funds are secure if less than 28% of the total loan portfolio is in default. This program was just getting started in December, 1981.

Conclusion

Market conditions are the most important factor influencing the availability of bank financing. The technique does not require preparation of model documents. As "energy savings" become more widely accepted as being more than pie in the sky projections, banks will be more willing to make loans based on the collateral of the energy efficiency equipment. This will increase the number and type of borrowers who can qualify for such loans.

CHAPTER IX

LEASING

Section I

I. Introduction

Leasing provides 100% financing to a property owner interested in acquiring energy equipment. The owner of leaseable energy equipment obtains tax benefits that may include, depending on the owner and the type of equipment (i) a 10% regular investment tax credit, (ii) accelerated depreciation of the equipment and (iii) a 10% - 15% energy tax credit. The lessor can pass the value of these tax benefits on to the lessee (property owner) in the form of reduced lease payments. As a result, monthly lease payments may be lower than the monthly payments on the funds borrowed from a bank to acquire the same equipment.

Lease financing may be attractive to both corporate and individual investors (lessors). Leasing is a well known financing technique. Banks, leasing companies and other financial institutions are engaged in the business of leasing cars, computers, xerox machines, typewriters and other equipment.

Summary of Investigation

We discussed lease financing with more than thirty different firms, including energy equipment manufacturers, engineering firms, banks, life insurance companies and independent leasing companies. From these conversations we were able to identify six firms that have engaged in leasing energy efficiency equipment to building owners. Only one of those firms specifically focuses on leasing energy equipment. Table 9A contains a summary of the leasing activities of these firms. Section II of this Chapter contains a more detailed description of the information obtained from these firms.

We also conducted an extensive analysis of legal, financial and other barriers to lease financing. Section III of this Chapter outlines the advantages of leasing to the lessor and lessee, describes the structure of a typical leveraged lease transaction, and discusses various tax and other legal issues related to an energy efficiency leasing transaction.

There are hundreds of leasing companies operating in the United States. Some of these firms are affiliates of large insurance companies and national and international banks. Others are small companies that specialize in leasing one type of equipment. Most leasing firms use equipment vendors and distributors as a principal marketing source. Often the leasing company never even meets the lessee. The equipment vendor makes the "sale" and then

TABLE 9A

LEASE FINANCING

Name of Company	Currently Leasing Energy Equipment	Owner of Equip.at End of Lease Term	Credit Criteria	Specific Building Sector
..ergy Leasing Services, Inc.	Yes	Negotiable	Credit Worthiness of customer;soundness of Company; value of energy efficiency equip.	Industrial and Commercial
ohnson Controls, Inc.	Yes	Johnson Controls	Credit Worthiness of customer	Primarily Comm (few multi-fml few industrial
Equico Leasing Company	Yes	Equico Leasing (Lessee may purchase at 10% of cost or continue to lease at reduced rate)	Standard Credit Criteria	None Targeted
Barclays American Leasing	Yes			Hotels/motels
Pacific Lighting & Leasing	Yes	Pacific Lighting & Leasing	Financial strength of customers & offers of guarantees	None Targeted
Lloyds Bank, Equip. Leasing Division	No	Lloyds	Standard Bank Credit Criteria	None Targeted
Performance Mgmt.Corp.	Yes			
TXL Corporation	No	TXL unless purchase option negotiated	Facility or lessee must have net worth 1X or 2X cost of equipment	None Targeted
Greyhound Leasing Corporation	No		Standard Credit Criteris	None Targeted
Republic Financial Corporation	No		Standard Credit Criteria	None Targeted

assigns the lease to the leasing company. Sometimes the lessee does not even know who the real lessor will be until after the lease is signed.

We were only able to find one company that specializes in leasing energy equipment. That company, Energy Leasing Services, Inc., operating out of Boston, Massachusetts, was formed in the latter part of 1981.

We identified a few firms that engage in setting up separate limited partnerships which purchase various types of energy equipment and lease that equipment to an end user (building owner) or to an intermediary corporation (the lessee) as part of a shared savings plan. The lessee in these situations usually agrees to make lease payments consisting of(i) a very small fixed monthly fee and (ii) a percentage of the energy savings. If the lessee is an intermediary, the lessee will retain an engineering firm to install the equipment in the building. The leasing partnership, serves as nominal owner of the equipment. Exhibit D18 summarizes an offering memoranda seeking to raise equity capital from investors for such a lease transaction. Chapter V contains a full discussion of these transactions.

II. Types of Leases

There are two types of leases:

1. Operating Leases

2. Financing Leases

A. Operating Lease

An operating lease is usually a short term lease, often month to month. Lease payments do not amortize the full cost of the equipment. The lease term is shorter than the equipment's expected useful life. A lessee does not own the equipment at the end of the lease. The lessee can either (ii) renew the lease for an agreed upon lease term, (ii) buy the equipment for its value at the end of the lease, or (iii) acquire other equipment. The tax benefits in an operating lease accrue to the lessor except that in some circumstances the lessor can pass tax credits on to the lessee.

B. Financing Lease

A financing lease is really an installment purchase. The lease payments amortize the full price of the equipment, plus an interest factor. At the end of the lease term the "lessee" purchases the equipment for a nominal amount. For tax purposes the lessee is the owner of the equipment and is entitled to the applicable tax credits and other benefits.

III. Advantages and Disadvantages of Lease Financing

A. Advantages of Leasing to the Property Owner

1. There is no capital requirement.

2. Lower Cost of Energy Efficiency:

The owner can obtain the benefits of acquiring equipment at a lower cost than with a bank loan, particularly if he does not want or need the tax benefits.

3. Pass Through of Operating Costs:

A lease may permit commercial property owners whose tenants are obligated to pay any escalation in operating costs to include the costs of energy efficiency equipment as an "operating cost" and pass it through to the tenants. If the building's lease provisions only permit the owner to pass through energy cost increases then energy leasing expenses could not be passed on to tenants.

4. Off Balance Sheet Financing:

Lease financing is deemed to be "off balance sheet financing." In other words, it does not directly reduce the net worth of the lessee. It is not a liability which will impinge on the lessee's credit worthiness.

5. Flexibile Payments:

Unlike a bank loan, which usually requires equal monthly amortization payments of principal and interest, lease payments may start low and escalate over the term of the lease. That permits the lease payments to be structured to match energy savings, which are expected to increase annually as utility rates increase.

6. Flexible Length of Lease:

Lease transactions generally range from three to five years. Energy efficiency equipment, however, could be leased for terms up to seven years. The longer the term, the lower the monthly payment.

7. Risk of Obsolescence Limited:

By obtaining a short term lease, a building owner can "hedge his bets" in the event the equipment becomes obsolete. Faster and more efficient equipment may become available at an attractive rate within a few years. An equipment purchase will usually require a longer holding period to justify the investment before acquiring more modern items. Under a lease, the owner can terminate the lease and lease new equipment. The lessor in this case would bear the risks of obsolesence.

A. Disadvantages to Lessee

1. Cost:

The cost of leasing equipment will usually be higher than a loan if the lessee keeps the tax credits, however, that is not always true. Rates quoted for financing leases, which are leases where the building owner has the right to purchase the equipment for a nominal sum at the end of the lease term, ranged between one and three points above the prime interest rate. See Table 9B. It is unlikely that a bank loan for the same customer would be at a higher rate.

2. No Ownership of Equipment:

If the building owner enters into an operating lease he will not own the equipment at the end of the lease term. He will probably have an option to buy the equipment for its market value when the lease expires. The market value may be as low as 10% of its original cost, but may also be much higher. If the equipment has a high value at the end of the lease term, this would be a significant disadvantage.

IV. Tax Issues Involved in Leasing

Exhibits D19 and D22 describe various tax issues related to leasing. The principal issues are:

Lease Financing

Name of Company	Type of Lease	Finance Rate	Disposition of Tax Credits and Depreciation	Length of Lease
Energy Leasing Services, Inc.	a) Operating Lease	1) Prime interest rate 2) Six or seven points below prime	Customer receives Tax Benefits ELSI (or investors) receive Tax Benefits	5-7 yrs (Min.3 years Max.10yrs.)
	b) Shared savings lease	Lease payment based on share of savings	Third party Investors	5-7 yrs.
	c) Positive guaranteed cash-flow lease	Lease payment guaranteed from energy savings	Third party Investors	5-7 yrs.
Johnson Controls, Inc.	a) Financing Lease	Interest rate varies as a function of credit worth-of customer, and prime rate	Customer receives Tax Benefits	3,5 or 7 yrs.
	b) Operating Lease	Interest rate varies as a function of credit worthi-ness of customer and prime rate.	Customer receives Tax Benefits	3,5 or 7 yrs.
Equico Leasing, Company (Boston Office)	a) Financing Lease	Transactions less than $25,000: one to three points above prime	Customer Receives Tax Benefits.	1-5 yrs. (avg. 3)
		Transactions greater than $25,000: one point under prime	Customer Receives Tax Benefits	1-5 yrs. (avg.3)
	b) Operating Lease	Four to seven points under prime	Equico Retains Tax Benefits	
Barclay's American Leasing	a) Financing Lease	One to three points above prime	Customer Receives Tax Benefits	5 yrs.

TABLE 9B

Name of Company	Type of Lease	Finance Rate	Disposition of Tax Credits and Depreciation	Length of Lease
Barclay's American Leasing	b) Operating Lease	1) Prime or one point above.	Barclay's Receives Depreciation, Customer Receives ETC & ITC	5 yrs.
		2) Prime to four points less than prime.	Barclay's Receives All Tax Benefits	5 yrs.
Pacific Lighting and Leasing	Operating Lease	Depends on who receives tax credits and depreciation	Negotiable	3-7 yrs. prefer 5 yrs.
Lloyd's Bank, Equipment Leasing Dept.	Operating Lease	1) One to two points above prime	Customer Receives Tax Benefits	5 yrs.
		2) Five to seven points below prime	Lloyds retains Tax Benefits	5 yrs.
Performance Management Co.	Shared Savings Lease	Depends on income stream produced by shared savings installation		7 yrs.
TXL Corporation	a) Finance Lease	1) Approximately seven points below prime	TXL or Investors Receive Tax Benefits	5-7 yrs.
	b) Operating Lease	2) Not applicable to energy equipment due to marginally fungible nature of equip.	Not Applicable	
Greyhound Leasing Corp.	Operating Lease	Depends on disposition of tax credits, ACRS, dollar amount of transaction and credit worthiness of customer	Negotiable	7 yrs. (2yr min. 15 yr max.)
Republic Financial Corp.	a) Finance Lease b) Single Investor Tax Leases c) Multiple Investor Tax Leases	Depends on: 1)The credit and financial strength of the customer; (2) "tax appetite" of the customer; and (3) tax requirements of the equity raiser.	Negotiable	Negotiable

1. Is the energy equipment leaseable equipment?

2. What is the appropriate depreciation (capital cost recovery period) for the equipment? Is the item a structural component of the building or "tangible personal property"?

3. Does the equipment qualify for the investment tax credit? Is the equipment used in commercial or industrial buildings and does it constitute tangible personal property?

4. Does the equipment qualify for the energy tax credit?

5. Will the "at risk" rules limit the availability of the deductions to investors who participate in the entity which owns the equipment and serves as the lessor?

6. Do the "safe harbor" leasing provisions of the 1981 Economic Recovery Tax Act permit the corporation to serve as lessor of the equipment under the terms of a particular transaction?

7. Can the owner of the building pass through to tenants the operating costs incurred in leasing energy equipment?

8. Can the owner of a multifamily apartment building that is subject to a Section 8 housing assistance payment

contract with the U.S. Department of Housing and Urban Development include the lease expense of acquiring energy equipment as an operating expense for which he is entitled to reimbursement?

9. Is the equipment a fixture or personal property under state law?

10. Does the equipment installed as part of the substantial rehabilitation of a nonresidential building qualify for a substantial rehabilitation tax credit?

V. Financial Issues

We identified and examined a range of financial issues related to leasing energy equipment. These issues are discussed in more detail in Sections 2 and 3 below. They include:

1. Lack of Adequate Collateral:

The lessor will obtain a lien on the leased equipment. However, energy equipment is not viewed as valuable collateral. It has no established resale value. Its true value depends on its ability to save energy in a particular structure. The cost and difficulty of removing the equipment, if it were repossessed, is unknown.

2. Small Transactions:

Leasing companies like banks, are most interested in either large transactions or a very large number of small transactions. While one or two of the leasing companies we talked with said they lease equipment that costs as little as $10,000, most companies said that the relatively small size of energy efficiency equipment leases gave it a low priority in their overall marketing strategy.

3. Not All Energy Improvements Require Installing Leaseable Equipment:

Often an energy audit recommends a series of measures that are cost effective. Many of the conservation measures suggested will be low cost/no cost items which do not involve leaseable equipment (e.g. caulking, weatherstripping, storm windows, etc.) Only a portion of the total projected cost savings will result from the installation of leaseable equipment.

4. Uncertainty Surrounding Existing Tax Benefits:

Uncertainty regarding the availability of existing tax benefits makes it difficult for leasing companies and property owners to accurately evaluate the relative attractiveness of leasing energy equipment.

5. Uncertainty Caused by Proposed Changes in Tax Benefits:

Uncertainty caused by the Administration's proposal to eliminate the energy tax credit acts as a depressant to the energy equipment market, preventing leasing companies and other financial institutions from moving into this area.

6. Availability of State Tax Credits:

Some states have enacted very attractive tax credits for energy conservation and solar energy equipment. Of the eleven states we surveyed, five offered energy tax credits to commercial, industrial or multifamily building owners. Table 9C summarizes the tax credits available in these five states:

California
Colorado
Massachusetts
North Carolina
Oregon

For example, Oregon has a 35% credit for energy conservation improvements in commercial and industrial buildings. The credit must be taken over a five year period. The Oregon credits can be used by investors in limited partnerships who purchase and lease energy equipment to industrial and commercial property owners in Oregon.

TABLE OF INCOME TAX INCENTIVES FOR CONSERVATION AND ALTERNATIVE ENERGY EQUIPMENT*

TABLE 9C

	CALIFORNIA			COLORADO	MASSACHUSETTS	
	Solar Credit	Conservation Credit	Write-Off for Alternative Energy System	Credit for Energy Property	Solar Credit	Solar Deduction
TYPE OF SYSTEM						
Solar	X		X		X	X
Cogeneration			X			
Conservation		X		X		
Other	X		X		X	X
BLDG. TYPES						
Residential	X	X				X
Commercial	X	X	X	X	X	X
Industrial	X	X	X	X	X	X
AMOUNT OF CREDIT						
	For all bldg. types: credit for 55% of costs up to $3,000	For systems costing less than $6,000: credit for 40% of costs, up to $1500	Deduction or 5-yr. write-off of system costs	Credit for 10% of costs for expenditures up to $1.75 million in 1982; $2.25 million in 1983-6	Credit for 30% of costs for expenditures up to $1.75 million in 1982; $2.25 million in 1983-6	Deduction for system costs
	For systems costing more than $12,000 in nonresidential buildings: the greater of 25% or $3000	For systems costing more than $6,000 in nonresidential buildings: 25% of costs				
AVAILABLE TO LESSORS OF ELIGIBLE SYSTEMS?	NO	NO	?	NO	NO	NO
TERMINATION DATE	12/1/84	12/1/84 for some equipment; 12/1/86 for other equipment	12/1/86	12/1/87	12/1/87	None
OTHER REQUIREMENTS			Cannot be used with state tax credits			Taxpayer must use property in business for 10 years after deduction is claimed; systems must be certified
OTHER RELEVANT PROGRAM(S)	Can be combined with 3-year write-off of solar energy equipment costs	Can be combined with 3-year write-off of conservation equipment costs				

*This represents a survey of eleven states. Credits that can only be claimed by taxpayers on their principal residences are not included. The other states surveyed are: Florida, Georgia, Maryland, Minnesota, New York, and Texas.

	NORTH CAROLINA				OREGON
	Solar Credit	Cogeneration Credit	Credit for Boiler Conversion	Industrial Credit	Conservation Credit
TYPE OF SYSTEM					
Solar	X			X	
Cogeneration		X			
Conservation			X		X
Other					
BLDG. TYPES					
Residential	X				
Commercial					X
Industrial		X	X	X	X
AMOUNT OF CREDIT	Credit for 25% of system costs (can't exceed $1000 per unit)	Credit for 10% of system costs	Credit for 10% of costs (limit of 15% of costs paid in any 1 year)	Credit for 20% of costs up to $8000 for "single installation"	Credit for 35% of costs over 5 years
AVAILABLE TO LESSORS OF ELIGIBLE SYSTEMS?	NO	NO	NO	NO	YES
TERMINATION DATE	None	None	None	None	12/1/85
OTHER REQUIREMENTS					Facility must be certified; only $40 million of facilities can be certified per year
OTHER RELEVANT PROGRAM(S)					

State tax credits can be combined with federal tax benefits, to provide an attractive investment return for investors who purchase and lease energy equipment. If the partnership can obtain debt financing equal to 75% of the cost of the equipment, the tax credits will almost offset the equity investment and the investors will be able to charge a lease rate that is competitive with rates charged by leasing companies. However, if existing financial institutions decide to actively pursue the energy leasing market, they can provide quicker, easier and faster lease arrangements than private investors. They have both the available capital and marketing outlets (sales representatives) who have established relationships with manufacturers and vendors. The leasing companies do not need to form specific partnerships, prepare private placement memoranda and related financial projections, and sell a deal to investors to consummate each transaction. They can identify and close a deal within a few days.

We believe that large financial institutions will make capital available to lease energy equipment when the demand for such leasing transactions becomes more evident. As the economics of acquiring energy equipment become more attractive, it is likely that more firms will begin to specialize in leasing energy equipment. The first entities that will move into this market will be manufacturers and vendors of energy equipment, followed by leasing

affiliates of life insurance companies and independent leasing companies.

VI. Lease Financing For Each Sector

A. Industrial Buildings

Lease financing is utilized by small and large industrial corporations. It is attractive and it makes economic sense. In some situations industrial property owners can obtain an insurance policy or other guarantees from the installer or manufacturer of the equipment that the energy savings will equal the lease payments. Industrial firms usually have adequate credit to qualify for a lease. Equipment installed in their buildings usually qualifies for tax credits and accelerated depreciation. Consequently, those private sector firms engaged in leasing energy equipment are doing so primarily for the industrial sector. There is no need to develop model documents for these transactions.

B. Commercial Buildings

Lease financing for commercial buildings is not as attractive as industrial buildings because the available tax benefits are more limited. See Chapter V. Commercial building owners are also less willing to provide credit or separate collateral for the loan. Nevertheless, we believe there appears to be a large potential market within the commercial building sector to lease energy equipment, particularly:

1. In buildings where the equipment lease payment becomes an operating cost that can be passed through to the tenants;

2. Where the building owner has good credit; and

3. To finance computer controlled energy management systems, which usually qualify for the 10% regular investment tax credit and accelerated capital cost recovery.

Individual owners of commercial buildings may personally benefit by using tax credits from leasing transactions. The individual can borrow 80% of the money to acquire the equipment and lease the equipment to the entity (partnership or corporations) that owns the building. This transaction must satisfy other specific IRS guidelines. We believe development of model documents to demonstrate the economic feasibility of leasing computer controlled energy management systems - for the lessor and lessee - would significantly increase the number and availability of such leasing transactions. Banks, insurance companies, utilities and real property managers would probably participate in these transactions as sources of debt financing and as general partners. For that reason we propose to develop a utility supported ESCo for commercial buildings that would engage in leasing. See Chapter VI.

C. Multifamily Buildings

Energy items recommended for multifamily buildings do not often lend themselves to leasing. In multifamily buildings there

is usually no collateral available to secure the lease. The credit of the property owner will probably not be satisfactory. Those factors will make it difficult for an investor to provide or obtain financing for the equipment which might be leased to a multifamily owner.

Despite the above cautionary comments, we believe that leasing can play an important role in multifamily buildings as the energy savings available from different types of equipment increases. The willingness of more engineering firms and equipment manufacturers to guarantee energy savings will encourage financial institutions to accept the true economic value of the equipment. The lessor, as owner of the equipment, would be the beneficiary of the savings guarantee if the equipment were repossessed and installed elsewhere.

Large financial institutions, including banks and life insurance companies, could play a vital role in developing and encouraging lease financing for energy equipment in commercial and multifamily buildings. These institutions, as mortgagors, hold a long term financial interest in large numbers of buildings. Improved energy efficiency of these buildings increases the owner's cash flow. Increased cash flow will benefit the lender if the lender's interest payments vary depending on the owner's cash flow. Mortgagors could encourage and provide financing for energy efficiency equipment lease transactions. With prior approval of

certain transactions from large lenders, property owners who might otherwise be reluctant to install certain types of equipment will be more willing to "follow the leader". They would know the lender could not disapprove of the improvements under the terms of the mortgage. The large body of existing experience in leasing transactions indicates that we should use our limited resources to develop model documents for other transactions. However, leasing is an important option which, when combined with the new safe harbor leasing rules, can be expanded and utilized to provide significant financing for energy equipment.

D. Leasing Solar Equipment

During the course of our Project we examined the feasibility of leasing solar energy equipment to multifamily property owners in California. In northern California the utilities provide a rebate of $8 per unit per month for 36 months to building owners who install solar domestic hot water heaters. There is also a 25% California state tax credit for solar systems owned by a business. The combination of those state subsidies with available federal tax benefits could be expected to create solar leasing transactions that would be attractive to tax shelter investors. However, we were not able to structure a transaction that would meet those objectives for three reasons:

1. Returns available to investors in private partnerships in real estate, oil and gas and other activities have become

more attractive as a result of the 1981 Economic Recovery Tax Act. When compared to the risks of a solar energy investment, the potential return from the solar energy equipment was offset by greater risks that the equipment might not operate as promised and a lack of certainty regarding the value of the solar system in the future (its residual value).

2. The economics of the solar equipment, the long payback required because of the rather limited real dollar savings resulting from solar domestic hot water systems prevented transactions from having real economic viability, beyond the tax subsidies.

3. Debt financing was difficult to arrange and expensive. For equipment with a payback of 15 years, a seven or even 10-year loan was not sufficient to provide a monthly positive cash flow from energy savings.

Our experience examining the feasibility of leasing solar domestic hot water systems to multifamily owners in California underscores the importance of the economic viability of the investment. Even with very large tax credits, if the equipment does not have a payback of a few years, it is unlikely that viable financing transactions can be arranged without public sector support.

Solar Leasing In Oceanside California

The City of Oceanside, California, is providing the necessary public sector support to develop a solar leasing program through funds from the California Energy Commission. The city has established the Oceanside Municipal Solar and Conservation Utility ("MSU") which arranges for private firms to lease domestic solar hot water systems to building owners within the city. Under special provisions of state law, the lessors of the solar equipment are entitled to take the state solar energy tax credit, even though they do not own the structures upon which the solar equipment is installed. We have been advised that a few buildings have recently signed leases for this program. We have not reviewed the private placement memoranda used to raise equity from the investors in these transactions. We therefore do not know how they resolved the tax issues mentioned above.

The role of the MSU includes establishing standards for equipment and installations, establishing an arbitration board to settle disputes, and disseminating energy information and lists of qualified installers. The MSU also collects all lease payments, and is a party to all leases of energy equipment between private leasing companies and property owners.

Section II

Lease Financing By Energy Service Companies and Other Energy Efficiency Professionals

I. Introduction

Leasing energy efficiency equipment deserves special treatment in the context of energy service company and energy management company financing. In our initial survey of twenty-four companies[20/] offering energy management equipment and/or services, we inquired whether lease financing was offered to customers as an alternative to shared savings or direct purchasing. Sixty-five percent of the companies contacted offered to arrange third party leasing or as an alternative, directly lease finance equipment, systems and/or services themselves.

II. Finance Leases

Two of the six manufacturers we contacted permit customers to finance energy efficiency equipment by lease purchasing, known as a "finance lease."[21/] A finance lease plan is similar to an operating lease, except that after the last payment in the lease term, the lessee may purchase the equipment for a nominal sum, usually

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20/ See Exhibit I 1.

21/ Johnson Controls, Inc. and Honeywell, Inc.

one dollar. No large initial capital outlay is usually required from the user, but because the user may purchase the energy equipment at the end of the lease term for a nominal sum, the lease payments may be higher than a traditional lease. A five to ten percent commitment fee is usually required at the beginning of the lease term. Lease purchasing also permits the lessee, unlike a conventional lease, to be treated as the property owner for tax purposes. The lessee can take depreciation deductions and the available investment and/or energy tax credits.

An Example of A Finance Lease Program:

International Energy Conservation Services (IECS) offers three-year and five-year lease-purchase plans for its Energy Master room motion sensors. At the end of the lease term the owner buys the equipment for $1.00; the owner/lessee also takes the depreciation and tax credits. IECS connects the sensors, which are used in hotels, office buildings and shopping centers to a Hewlett Packard 1000 computer at IECS' main office. IECS additionally charges a monthly fee for the hook up to the central computer equipment. The monthly service charge is a fixed fee, determined by the kind of system installed for the client and the rate of return on the investment.

III. Leasing Through Energy Management and Energy Service Companies.

Energy service companies generally do very little or no lease financing. The independent shared savings financiers also do not assemble lease financing packages, with one or two exceptions.[22] Although six energy service companies[23] offered to arrange lease financing, only one offered to participate in the lease transaction.[24] The energy service companies indicated that leasing was generally a small part of the energy service business because the energy service concept does not lend itself to lease financing.

Leasing is more prevalent among vendors and distributors of energy efficiency equipment. All the vendors we contacted utilized independent leasing companies, rather than participate directly in the lease transactions. The problem for vendors and distributors wishing to assemble their own leasing packages, we assume, is the requirement for a large front end capital expenditure to purchase the equipment. This is essentially the same problem encountered by energy service companies seeking to install shared savings programs with internally generated funds. Vendors

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22/ Confidential Source; Performance Management, Inc.

23/ World Wide Energy Systems, Inc.; Diversified Energy Systems, Inc.; Energy Management, Inc.; International Energy Conservation Services; Northern Energy Corp.; and Technology Concepts, Inc.

24/ Diversified Energy Systems.

and distributors have turned to third party financiers to assemble lease financing packages for their customers.

IV. Independent Leasing Companies

We spoke with nine independent leasing companies regarding lease financing terms and transactions for energy efficiency equipment.25/ We were able to identify only one company specifically focusing on leasing energy efficiency equipment,26/ other independent leasing companies suggested they anticipate an increase in the number of energy equipment lease transactions they will assemble this year.27/

There was a great deal of similarity in the terms of the lease transactions arranged to finance energy efficiency equipment. Lease companies utilizing finance leases,28/

25/ See Table 9D.

26/ Energy Leasing services, Inc.

27/ Equico Leasing Company and Barclays American Leasing Company.

28/ Criteria for finance lease:

A. Eventual transfer of ownership of property from lessor to lessee by end of lease term.

B. Lease contains bargain purchase option, and thus allows lessee eventually to acquire ownership at a bargain price.

C. Lease term spans 75% or more of economic life of property. (Except criterion not applicable if start of lease term is in last 25% of life).

where the tax benefits (ETC, ITC and depreciation) are passed through to the customer/lessee, usually charge one to three points above the prime interest rate.29/ Companies offering operating leases vary the finance rate according to the prime interest rate, the credit worthiness of the customer, and the allocation of tax benefits. Where the customer receives the tax benefits of the transaction, the lease rate will vary from one point under prime to one or two points above prime.30/ If the tax benefits are retained by the lessor, the finance rate will be reduced significantly, often six to seven points below the prime interest rate.31/ Nearly all of the independent leasing companies contacted preferred a lease term of five years, however, most would consider a seven year maximum lease term.

Although the credit criteria varied among lease companies, none of the companies indicated that the energy efficiency equipment itself was sufficient collateral for the lease. Most leasing

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D. Present value of minimum lease payments, excluding lessor's executory costs, is 90% or more of excess of property's fair value over lessor's investment tax credit. (Except criterion not applicable if start of lease term is in last 25% of life).

Leveraged and Single Investor Leasing 1981 Bruce Fritch, 338 (1981).

29/ See Table 9B.

30/ See Table 9B.

31/ See Table 9B.

companies evaluated the lease transaction according to a standard credit criteria, which considered the value of the equipment, the soundness of the customer's company, profit and losses and debt and equity ratios.

Many of the companies we talked to are not currently leasing energy efficiency equipment, but indicated they would if the proper opportunity arose.32/ Companies not yet involved in leasing energy equipment as well as several banks33/ mentioned specific problems with energy efficiency equipment leasing which had in some way influenced their decision not to enter the market. A difficulty nearly all leasing companies and banks noted was the lack of a predictable resale value for energy efficiency equipment. Another problem recognized in our discussions was that the equipment itself rarely represents adequate collateral for a lease transaction. Several companies remarked that the cost of installation and/or removal of the energy efficiency equipment is almost as great as the cost of the equipment itself. Robert Bishop, President of TXL Corporation, noted that TXL does not lease energy equipment because the total dollar value of the individual transactions is too small.34/ The fact that energy efficiency

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32/ See Table 9A.

33/ We spoke with the following banks: Crocker Bank of San Francisco; Lloyds Bank, Leasing Division, Los Angeles; and Chemical Bank, New York.

34/ The smallest transaction TXL would consider, he said, was $4 million.

equipment is relatively inexpensive compared to cogeneration facilities, windmills or coal plants, however, does not lessen the need for innovative financing alternatives. Another difficulty with lease financing mentioned by energy service companies is that not all energy efficiency equipment is leasable; many basic retrofit improvements cannot be leased under current IRS regulations.

Additionally, not all leaseable energy efficiency equipment qualifies for the energy tax credit. Where lease financing programs are assembled for investors, the lack of an energy tax credit may impact the attractiveness of the package. Nearly all parties we spoke with, including leasing companies, energy service companies, syndicators and banks, considered the energy tax credit an important factor in assembling viable financial packages for energy efficiency equipment.

TABLE 9D

INDEPENDENT LEASING COMPANIES

Energy Leasing Services, Inc.
(617) 266-4700

Equico Leasing Company, Co.
(617) 237-3660

Barclays American Leasing
(404) 458-9773

Pacific Lighting and Leasing
(213) 645-4784

Lloyds Bank, Leasing Division
(213) 613-2942

TXL Corporation
(415) 434-0850

Greyhound Leasing Corp.
(602) 248-4900

Republic Financial Corp.
(303) 751-3501

Section III.

Legal and Financial Analysis of Energy Equipment Leasing

This section identifies the most important considerations which must be taken into account in connection with structuring an equipment leasing transaction for the financing of energy efficiency equipment in industrial, multifamily, and commercial buildings, and in connection with considering that mechanism in relation to other financing alternatives. This section briefly describes the principal advantages of leasing to the lessor and lessee and the structure of the typical leveraged leasing transaction. This section also considers the consequences which may turn on whether, under applicable state law, a lease is a "true" lease, or a lease in the nature of a security interest, with particular attention to the matter of creditor's rights. The principal tax advantages are considered in greater detail, and the standards which govern whether a transaction is considered a leasing transaction for federal income tax purposes are described. Further, this section considers what kinds of equipment may be leased, and the most appropriate form of lessor to use, for purposes of obtaining the available federal income benefits. Finally, attention is given to the distinction between a capital lease and an operating lease for accounting purposes, the manner in which the securities laws apply, and techniques for protecting the lessor's tax benefits.

ADVANTAGES TO THE PARTIES

Advantages to Lessee

Instead of borrowing money to finance the construction or acquisition of facilities or equipment, a user may be able to lease the facilities or equipment without making any equity investment, but with a right to use the property substantially equivalent to ownership. Leasing provides 100% financing to the user and the tax benefit of a deduction for all of the lease payments. Leasing also permits the lessee to avoid the risk of invest-

ing in a technology that may change rapidly, leaving him with obsolete equipment. The lessee may have the right to cancel the lease or trade in the equipment for new equipment without payment of its full cost. Also, a lease shifts to the lessor part of the risk that the equipment will not operate properly. If the system does not provide the expected results, the lessee may have the right to cancel or renegotiate the lease. If the owner had purchased the system and its performance fell below his expectations, his only recourse would be the manufacturer's warranty. Finally, the owner's lease payments may be lower than his comparable monthly cost for financing the property with a bank loan. This is because of the tax benefits the lessor receives (from depreciation of the property and applicable tax credits), and because the lessor has the residual value of the property after the lease terminates. It would have neither of these benefits if it were making a loan, and as a consequence, it may agree to lease payments lower than equivalent loan payments.

Advantages to Lessor

Leasing also offers significant advantages to the owner/lessor. These include the right to use accelerated depreciation to amortize the property's cost, the applicable investment tax credit, tax deductions for interest paid on any loans that the lessor obtains to purchase the equipment, and the equipment's residual value. Leveraged leasing can provide attractive yields to investors. For example, if a lessor purchases property for 20% equity and a 80% loan, it might be entitled to a 10% tax credit that would return one half of the investment in the first year. Lease rental could pay the debt service on the lessor's loan and also provide the lessor with an annual cash return. This cash return would probably be partially sheltered from taxation during the early years of the lease because of deductions for accelerated depreciation and interest on the borrowed funds. While the lessor has invested only 20% of the cost, he can depreciate the entire cost basis of the equipment.

LEVERAGED LEASING STRUCTURE

In a typical leveraged lease transaction, owner participants invest perhaps 20-25% of the cost of the equipment in a trust. The owner participants are typically commercial banks or their affiliates, an independent leasing company, or individual investors who have bought trust certificates. Partnerships are sometimes used as an alternative to the trust form. The other participants are a trustee for the owner participants to act on their behalf, a lender or lender participants, an indenture trustee to act on behalf of the lender participants, the lessee, and a manufacturer. The owner trustee issues non-recourse debt, usually bonds, to the indenture trustee, acquires title with the proceeds of the non-recourse debt and the owners' equity contributions, and leases the equipment to the lessee. The lender or indenture trustee receives, as security for the lender or lenders, a security interest in the equipment and an assignment of the lease. The lease is typically a net lease for the majority of the useful life of the equipment. The indenture trustee receives all rent payments and applies them first to the debt obligation owed by the owner to the lender. The remaining funds, which are relatively small in amount, are paid over to the owner trustee who distributes same to the owner participants. While the structure is simplier if there is only a single lender or a single owner participant (in which case there would be no owner trustee), or both, the basic principle is the same -- the owner puts up a relatively small portion of the purchase price, gives a security interest in the equipment and an assignment of the lease to a lender as security for a non-recourse loan for the additional funds needed to acquire the equipment, and uses the rental income to service its debt.

WHAT PROPERTY IS SUITABLE FOR LEASING UNDER STATE LAW: REALTY, FIXTURE, OR PERSONALTY

Generally, tangible property is either realty or personalty, and both can be leased or offered to a creditor as security. There

is also, however, a class of property in the grey area between known as fixtures. Generally, a fixture is personal property which has been so affixed to real property that it can become subject to a lien on the realty and title to it passes with a conveyance of the realty, but which has not been so integrated with the real estate that it has lost separate identity (in contrast to bricks or concrete, for example). It has been said that a fixture is tangible personal property which retains separate physical identity but which "is so connected with the realty that a disinterested observer would consider it a part thereof." 5 American Law of Property Section 19.1 at 3-4 (1954). Generally, if removal of the property is impractical or so difficult that the cost of removal and restoration of the real estate exceeds the value of the property once removed, the property is on the realty side of the line dividing realty from fixtures.

The essential point is that unless energy efficiency equipment becomes a fixture when attached to the real estate instead of an integral part of the real estate, it cannot be leased because it will be impractical for the lessor to reclaim possession at expiration of the lease, and it will not be valuable as security to a lender (or to a lessor under a financing lease, as will be described below) because the lender cannot repossess and resell the property in event of default.

The judicial cases which apply these principles to distinguish personalty from fixtures and fixtures from realty with respect to specific types of equipment and in specific factual circumstances have resulted in a chaotic body of law. Similar questions have been resolved inconsistently in different states and there is also often inconsistency in the case law of a single jurisdiction. However, the point with respect to a particular piece of energy efficiency equipment is not so much whether it would be held to be a fixture by the courts of the particular state in question, but whether as a general matter it is more like a fixture than an item which has become an integral part of the

realty. If so, the equipment may be leased under a true lease or offered as security.

CHARACTERIZATION OF LEASE UNDER STATE LAW

State law distinquishes between a true lease and a financing lease or lease in the nature of a security interest. The latter is used to finance acquisition of the property by the lessee. For example, UCC Section 1-201(37) provides,

> Whether a lease is intended as security is to be determined by the facts of each case; however, (a) the inclusion of an option to purchase does not of itself make the lease one intended for security, and (b) an agreement that upon compliance with the terms of the lease the lessee shall become or has the option to become the owner of the property for no additional consideration or for a nominal consideration does make the lease one intended for security.

If the lessee's option to purchase the property is for fair market value at the time of the purchase, the lease is likely to be a true lease; but if the terms of the purchase option are such that it is certain or virtually certain that the lessee will exercise the option, or if there is a put for a price which makes it certain or virtually certain that the lessor will require the lessee to purchase the property, then the interest of the lessor is merely a lien and the lease payments are in nature of purchase price installments.

As suggested by UCC Section 1-201(37), the courts of the various states have considered the true lease versus financing lease question as turning on all the facts of each particular case, and the results are sometimes inconsistent and confusing. Most courts recognize that, for there to be a security interest,

it is necessary but not sufficient that the lessee be obligated to pay a sum substantially equivalent to the purchase price. This is termed a "full payout" lease. Thus, if the lessee may terminate the lease prior to expiration of its term without payment of a sum which is equivalent to the remainder of the obligation, there will be a true lease and not a financing lease. Any puts or options are closely scrutinized, as noted above. The courts also consider the intent of the parties and whether or not there is a meaningful residual for the lessor, which is indicative of a true lease. If the contractual remedies are based on UCC Article 9, this may tip the scales toward the conclusion that there is a financing lease.

A number of questions may turn on whether the instrument is a true lease or a financing lease under state law. First, the question governs the application of state tax laws (whereas whether or not there is a lease for federal income tax purposes is not governed by state law). If there is a financing lease, the security interest must be perfected in accordance with Article 9, and Article 9 remedies apply, whereas this is not the case in connection with a true lease. A financing lease also may be subject to UCC Article 2, and the warranty provisions thereof in particular. In event of bankruptcy of either party, the rights of the parties in the Bankruptcy Court will differ materially depending on whether there is a true lease or a financing lease. True leases normally will not be subject to usury or similar doctrines, but this may not be the case with a financing lease, depending on the laws of the particular state. On the other hand, a lessor may have some exposure to doctrines of strict liability in tort, whereas secured parties do not.

Since the characterization of the lease under state law may have an impact on a wide variety of circumstances, state law must be carefully examined to prevent expensive litigation and unintended outcomes. Prototypical documents must be carefully drafted

to avoid ambiguity in any jurisdiction, and cannot rely on specific judicial doctrine of any particular jurisdiction.

CREDITORS' RIGHTS

As noted above, creditors' rights is one of the areas most effected by whether there is a true lease or a financing lease under state law. The principal questions are the extent to which the UCC applies, and the differences in treatment under the Bankruptcy Act.

A financing lease creates a security interest under the terms of the Uniform Commercial Code (UCC), with the lessor as the secured party or creditor and the lessee as the debtor, which is enforceable between the parties. In such cases, the "lessor" is really a seller who has retained an interest in the property to secure the buyer's promise to pay the required purchase price installments. However, the lessor's security interest must be "perfected" for his rights with respect to the equipment to have priority over any conflicting claims of subsequent creditors (and prior, un-perfected creditors). Article 9 of the UCC specifies the steps required for perfection. In that the lessee will have possession of the equipment, perfection must be effected by a public filing in the place or places required by the UCC of the state whose law governs. The filing statement must be signed by both parties and is normally filed by the lender.

In contrast, the enforceability of a true lease is not governed by Article 9. The lessor under a true lease does not make himself more secure by taking the steps prescribed by Article 9 to perfect a security interest. However, prudent lessors will take the steps of perfection nonetheless because it may be impossible to predict how a court will classify a particular equipment lease. Section 9-408 of the UCC permits the parties to be designate themselves as "lessor" and "lessee" in their filing statement, but it provides that whether or not a filing has been made is immaterial to determining whether the lease is given as a true lease or is given to create a security interest.

These matters become more complicated when it is recognized that if either a true lease or a financing lease is assigned to secure a debt, an Article 9 security interest is created with the lessor/assignor as debtor and the lender as secured party. In a leveraged lease transaction, for example, the lease will be assigned to the lessor's lender as security for the loan by which the lessor financed its acquisition of the property. The lender will, of course, perfect his security interest in the lease assignment.

The rights with respect to the property of a financing lessor (as opposed to a true lessor) whose security interest is perfected are superior to those of all other creditors of the lessee, except (possibly) other secured creditors with perfected security interests. However, a financing lessor who perfects his security interest before or within ten days after the lessee receives possession of the equipment will obtain the special priority of a perfected "purchase money" security interest over other conflicting perfected security interests in the same property. Also, UCC Section 9-308 provides that a party with a security interest in chattel paper (i.e., an assignee of a lease) has priority over all other security interests in the chattel paper, perfected or unperfected, if he perfects by possession in the ordinary course of his business without knowledge of other security interests in the same collateral, provided he has extended credit or otherwise gives "new value." Hence, the assignee of a lease will generally want possession of the lease itself. If the energy efficiency equipment has become a fixture under local law, the secured financing lessor can obtain priority over claims of persons who have or acquire liens on the real estate if his security interest both "attaches" to the equipment (as defined by Article 9) and is perfected before the equipment becomes a fixture. The specific requirements vary somewhat from state to state because approximately twenty of the states have adopted the 1972 revision to UCC Section 9-313, and the other states still have the 1962 version of this provision.

Classifying the collateral can be difficult but is important because it determines the place of filing. Consequently, caution often requires multiple filings to be made, as though the property both is and is not a fixture.

If there is a default by a lessee under a true lease, the lessor's rights are defined by the lease itself and other applicable local law. A true lessor will generally prevail in bankruptcy proceedings against any creditor of the lessee who claims the equipment. However, if what was thought to be a true lease is held to be only a security interest instead, it will be subject to the UCC default provisions even if it contains none of those remedies. They permit a secured creditor to repossess the property and keep the property in full satisfaction of the debt or to resell the property and to apply the proceeds to the debt. The secured creditor may or may not have the right to proceed against the debtor personally for any deficiency. The UCC specifies the manner in which these steps may be taken.

If the energy efficiency equipment has become a fixture, the secured party's remedies described above are limited (under both the 1962 and 1972 versions of Section 9-313) by the proviso that he must reimburse the persons who have interests in the real estate (other than the debtor) for the cost of repair to the real estate occasioned by removal. The reimbursement obligation does not cover any reduction in the value of the real estate caused by the absence of the equipment or the necessity of replacing it. The persons entitled to be reimbursed may refuse permission to remove the equipment until the secured party provides adequate security for performance of his reimbursement obligation. In that ordinary building materials incorporated into improvements on land, such as lumber, bricks, tile, cement, glass, or metal work, may be impractical to remove or have no value after the cost of removal and repair, Section 9-313 specifies that no security interest can be created in these items. As a rule, they are too integrated with the realty to be fixtures under state law.

If the user of the property becomes bankrupt, the Bankruptcy Court will determine whether under state law the party to whom the rent was owed is a lessor, a UCC Article 9 secured creditor, or an unsecured creditor. A true lessor is in a more secure position than a secured party under the Bankruptcy Code (and both are more secure than an unsecured creditor). For example, Section 362(d)(2) of the Bankruptcy Code provides that a lessor or secured party shall be granted relief from the automatic stay provisions if the debtor has no equity in the property and the property is not necessary for an effective reorganization. A lessor has little difficulty establishing lack of equity once it establishes a true lease. If the Bankruptcy Court determines that the lease was given as a security device, however, then the lessee's rent paid to date will be in the nature of purchase price principal (i.e., equity) and financing charges. Therefore, relief from the automatic stay is precluded unless the Court also finds that the value of the collateral is less than the amount of the balance of the secured debt (i.e., purchase price). This is unlikely.

PRINCIPAL FEDERAL INCOME TAX ADVANTAGES

Rental Deductions

The lessee can deduct all its payments as rent if the lease qualifies as a lease, rather than a conditional sales contract, for federal income tax purposes. If it were to acquire the same property by purchase, only the interest component of each payment would be deductible.

Depreciation Deductions

Generally, under the 1981 Tax Act ("ERTA"), energy efficiency equipment may be depreciated over a period of three or five years (assuming that it is not deemed to be a component of real estate), in accordance with the following class lives:

3 years.....Personal property with a useful life of 4 years or less under pre-1981 regulations;

5 years.....Most other equipment except long-lived public utility property;

10 years.....Real property with a useful life of 12.5 years or less under pre-1981 regulations; and

15 years.....All other real estate.

In each case, taxpayers may elect to use certain longer recovery periods if they so elect.

Owners have the option of depreciating the personal property described above using the straight-line method or an applicable accelerated method. The accelerated methods are 150% declining balance, changing to straight-line, for property placed in service prior to 1985; 175% declining balance, changing to sum-of-the-digits, for propety placed in service in 1985; 200% declining balance, changing to sum-of-the-digits, for property placed in service after 1985. The deduction for the first year is half what it would be under the prescribed method if the property were placed in service on the first day of such year. The effect is as though all property placed in service during any calendar year were placed in service on July 1. However, if the equipment is deemed a component of real estate, it must be depreciated using the same life and depreciation method as the building itself. An item which is a component of real estate for federal income tax purposes may or may not be a fixture under applicable state law. Real property eligible for 15-year depreciation (other than low-income housing) may use either the straight-line method or the 175% declining balance method changing to straight-line. In the latter case, the first year's depreciation is based on the number of months in such year after the date on which the realty is placed in service. Depreciation in all cases is calculated without deduction from the depreciable amount for the salvage value the property may have after it is fully depreciated.

Gain on the disposition of personal property is treated as ordinary income rather than as capital gain to the extent of prior depreciation taken. The same is true of real property other than residential real property, if accelerated depreciation is used. However, with respect to residential real property, the provisions of prior law were not changed -- gain on the disposition of residential real property is treated as ordinary income rather than capital gain only to the extent that prior depreciation taken exceeded what would have been allowed if straight-line depreciation had been used. Thus, when energy efficiency equipment used in connection with industrial or commercial structures is sold by the lessor, all or a substantial portion of any taxable gain will not have the benefit of the lower capital gain rates, assuming that accelerated depreciation was used, whether or not the equipment is deemed a component of the real estate. On the other hand, if the equipment is a component of residential real property, all or most if any gain will have the benefit of the lower capital gain rates.

Regular Investment Tax Credit

The regular investment tax credit is available for investment in new Section 38 property, which includes most depreciable tangible personal property. The regulations define "tangible personal property" as "any tangible property except land and improvements thereto such as buildings or other inherently permanent structures (including items which are structural components of such buildings or structures). ... Tangible personal property includes all property (other than structural components) which is contained in or attached to a building." Reg. Section 1.48-1(c). [Emphasis added.] Generally, personalty which is attached to a building but not a structural component is likely to be a fixture under state law, although the outcome for federal income tax purposes does not depend on the classification of the property under state law.

Tangible personal property which is not contained in or attached to a building may still be Section 38 property if it is used "as an integral part of ... furnishing ... electrical energy, gas, water, or sewage disposal services by a person engaged in a trade or business of furnishing any such service ...." Reg. Section 1.48-1(d)(1). The equipment is an "integral part" if it is "used directly in the activity and is essential to the completeness of the activity." [Emphasis added.] Reg. Section 1.48-1(d)(4). It may be difficult for an energy efficiency equipment lessor to come within this definition unless the lessor is in the trade or business of furnishing the energy which is to be conserved. Even if the lessor is the provider of the energy, a question could be raised as to whether the energy efficiency equipment is essential to that activity of providing the energy. Clearly, this provision was intended only for property owned or provided by a public utility. Property owned or provided by any other party (an energy efficiency company, for example) would be directly used in and essential to a trade or business of energy conservation, but it is not clear whether that would be a trade or business consisting of furnishing an energy source named in Reg. Section 1.48-1(d)(i). However, the foregoing questions are not of concern if the equipment is contained in, attached to, or a structural component of a building, which is likely to be the case with energy efficiency equipment.

The regulations provide some guidance as to what is a structural component. Importantly, structural components include "all components (whether in, on, or adjacent to the building) of a central air conditioning or heating system ...." Reg. Section 1.48-1(e)(2). Whether energy efficiency equipment becomes part of the pre-existing heating or air conditioning system for purposes of this regulation, or remains a separate item of equipment, is among the most important of the uncertain questions.

An important exception to the general definition of Section 38 property is that it does not include property predominately

used in connection with the furnishing of lodging (other than hotels and motels). A lodging facility includes apartment buildings and other multifamily structures we are considering. Reg. Section 1.48-1(h)(1)(i). The regulations except from this residential exclusion property which is used to furnish, either to the management of a residential facility or its tenants, "electrical energy, water, sewage disposal services, gas, telephone service, or similar services." Reg. Section 1.48-1(h)(1)(ii). However, if such equipment is a component of a central air conditioning or heating system, it is not Section 38 property, even though it is exempt from the exclusion for property used in connection with residential facilities, because it is a structural component per Reg. Section 1.48-1(e)(2). Certain types of equipment may not be components of a central air conditioning or heating system and may be nonetheless within the "electrical energy, water, sewage disposal services, gas, telephone or similar services" exception to the residential exclusion. An example of equipment which would be Section 38 property for this reason would be equipment which heats water for residential use more efficiently -- insofar as the hot water is not also used in the heating system.

The foregoing analysis does not take account of the fact that immediately following the sentence in Reg. Section 1.48-1(h)-(1)(ii) which sets forth the "electrical energy, water, sewage disposal services, gas, telephone or similar services" except to the residential exclusion is the following sentence: "Thus, such items as gas and electric meters . . . and water and gas mains furnished by a public utility would not be considered as property used in connection with the furnishing of lodging." [Emphasis added.] The emphasized words raise a question as to whether being furnished by a public utility is incidental to the example or essential to the rule it illustrates. The former seems more logical in view of the structure of the sentence and the policy of the statute which is evident in the fact that the statutory definition of Section 38 property includes any tangible property if used as an integral part of the furnishing of electrical energy, gas,

water, or sewage disposal services -- without regard to by whom furnished. IRC Section 48(a)(1)(B)(i). Hence, there is some basis to read the exception from the residential exclusion for energy equipment as though the sentence quoted above illustrates but does not narrow the rule.

Another exclusion from the general definition of Section 38 property, set forth at IRC Section 48(a)(10), means that no energy tax credit is available for boilers fueled by oil or gas unless, (a) use of coal is prohibited by certain air pollution regulations, (b) the boiler will be used in connection with a residential facility or most types of commercial facilities but not as an integral part of a manufacturing or processing facility, or (c) the boiler has a heat rate of less than 9,500 BTU's per kilowatt hour and is capable of conversion to synthetic fuels. In that the statute clearly means that boilers which satisfy these conditions are Section 38 property, the regulation which specifies that heating systems are structural components, and the regulation which sets out the residential exclusion, must not be valid as applied to such boilers.

A 6% investment tax credit may be claimed with respect to eligible property depreciable over 3 years, and a 10% credit is available for eligible property depreciable over 5, 10 or 15 years. If the tax credit cannot be used in the current year, it can be carried back for up to three years or forward for up to fifteen years. There will be no recapture of the investment tax credit for property eligible for the 10% credit which is actually held for at least 5 years and no recapture for property eligible for the 6% credit if it is held for at least 3 years.

Business Energy Tax Credit

The lessor may be eligible for an energy tax credit if the property is new property described by IRC Section 48(l). Such property includes cogeneration equipment and "specifically defined

energy property." The latter is a broad category of items (identified at IRC Section 48(1)(5)) installed in connection with an existing industrial or commercial facility for the purpose of reducing the amount of energy consumed in any existing industrial or commercial process. The credit for these types of equipment is 10%, but the investment must be made before January 1, 1983, unless the provision is extended. The portion of the energy property financed by tax-exempt financing is excluded form the amount of the qualified investment. Unlike the regular investment tax credit, the equipment may be a structural component of a building and may be used in connection with lodging facilities. Both credits may be claimed if the property is eligible for both. Many types of energy efficiency equipment might qualify for both types of credits.

Limitations on Tax Credits

Under a complex set of rules, the 1981 Tax Act extends the "at risk" rules to the allowance of investment tax credits. In the case of individuals, Subchapter S corporations, and corporation which meet the stock ownership criterion of a personal holding company, the investment tax credit will not be allowed with respect to amounts invested in Section 38 property insofar as the invested amounts are not "at risk" within the meaning of Section 465(b) of the Internal Revenue Code if the property is used in connection with an activity which is subject to the "at risk" rules set forth at IRC Section 465.

Arguably, the at risk limitation does not apply to the availability of tax credits for new energy efficiency equipment in industrial, commercial, or multifamily structures because the equipment will be used in connection with real property and the holding of real property (other than mineral property) is not an activity which is subject to IRC Section 465. IRC Section 465(c)(3)(D). However, the statute also provides that in the case of residential real property, activities pertaining to personal

property which is incidental to making living accommodations available will be considered part of the activity of holding the related real property. This makes relatively clear that investment tax credits may be claimed without regard to the at risk limitation if the property leased is used in connection with residential real property. However, there is no analogous provision speaking to personal property which is incidental to any other type of real property, raising the inference that activities pertaining to equipment used in connection with non-residential real estate are subject to Section 465.

If this is the case, the lessor's losses derived from leasing such property, due to depreciation deductions and all other losses, are deductible only to the extent of the amount at risk -- generally, the cash invested plus the amount of any borrowings for which the taxpayer has personal liability or has pledged property other than the leased property. Non-recourse indebtedness is not an amount at risk. However, the rule that the at risk limitation therefore also applies to the availability of the investment tax credit is subject to an exception which permits a taxpayer to claim the regular investment tax credit with respect to amounts not "at risk" if the taxpayer is at all times at risk in an amount equal to at least 20% of its basis in the property, the taxpayer acquired the property from an unrelated person, and the not at risk amounts are borrowed from "qualified lenders" (an unrelated bank, savings and loan, credit union, insurance company, or certain other lenders) or are borrowed from or guaranteed by a federal, state or local government. The similar exception for the business energy tax credit exempts it from the at risk limitation altogether if the amount at risk is always 25% and any non-recourse borrowings (other than those from "qualified lenders" or borrowed from or guaranteed by a federal, state, or local government) have level debt service. However, this exception only applies to certain types of energy property, including cogeneration property but excluding "specifically defined energy property" (described at IRC Section 48(l)(5)).

Another important limitation is contained in IRC Section 46(e)(3), which provides that unless a lessor is a corporation (other than a Subchapter S corporation), the lessor may claim a tax credit (either the regular investment tax credit or the business energy tax credit) only if either, (i) the lessor manufactured or produced the equipment, or (ii) the lease is not a net lease and its term (with all options to renew) is not greater than 50% of the useful life of the property. A net lease for this purpose exists if, for the first twelve months after the lessee's use begins, the lessor's deductions on account of the property and allowable solely due to Section 162 (i.e., exclusive of interest, taxes, depreciation, etc.) do not exceed 15% of the lessor's rental income from the property. Section 46(e)(3) is a substantial burden on non-corporate lessors, as the 50% rule is short and most equipment leasing utilizes a net lease.

Allocation of Credit to Lessee

The stricture of IRC Section 46(e)(3) discussed in the prior section can be circumvented by allocating the available investment tax credit(s) to the lessee pursuant to IRC Section 48(d), with adjustment of the rental accordingly to preserve the economic result insofar as possible. Of course, the economic adjustment would be imperfect because the investment tax credit(s) are available in a single year, whereas rental income is received annually for the term of the lease. Nonetheless, the technique could be important.

The circumvention is possible because Section 48(d) and applicable regulations (Reg. Section 1.48-4) provide that the lessee may be treated as having purchased the property (or a portion of the property in certain cases) if the property is new Section 38 property in the hands of the lessor and would be new Section 38 property if it had been acquired by the lessee. The fact that Section 46(e)(3) limits the right of a non-corporate lessor to claim an investment tax credit does not affect the fact

that its property is new Section 38 property. Hence, the tax credits can be allocated by one who cannot claim them to one who can.

Further, it may be advantageous to allocate the tax credit to the lessee even if it can be claimed by the lessor. The amount of the lessee's credit is the fair market value of the property. If the lessor is also the manufacturer, its credit is based on its production cost. Accordingly, the pass through increases the amount of the credit in such cases, and the value of the additional credit can be shared by lessor and lessee.

Ordinarily, the available investment tax credit(s) must be allocated entirely to the lessee or not at all. However, if the property has a relatively long useful life, and the useful life remaining after expiration of the lease is material, then only a portion can be allocated to the lessee. Specifically, if the lessor is not guaranteed a specified return or not guaranteed in whole or in part against loss of income, if the property has a IRC Section 167(m) class life of more than fourteen years, and if the lease (exclusive of any lessee's renewal options) is for less than 80% of the class life, the portion allocable to the lessee is equal to the portion of the property's class life which the lease term represents. Presumably, most of the energy efficiency equipment we are considering would have a class life of less than fourteen years.

CLASSIFICATION AS A LEASE FOR FEDERAL INCOME TAX PURPOSES

Except as otherwise permitted by ERTA, to obtain the tax benefits intended, the lessor must bear the risks and assume the obligations of ownership of the property to such an extent that he is deemed to be the owner for tax purposes. The lease cannot require the lessee to bear all of the risks and pay all of the costs associated with using the property. The factors which contribute to the conclusion that there is a true lease under state law also

contribute to the conclusion that there is a true lease for federal income tax purposes, but state law does not govern and the results can be inconsistent.

Prior to enactment of the ERTA, the Internal Revenue Service would not give a ruling that an equipment "lease" would be treated as a lease for tax purposes unless the following conditions set forth in Rev. Proc. 75-21 and Rev. Proc. 76-30 were satisfied:

1. The lessor at all times during the lease and at the time the equipment is first placed in service must have a minimum "at risk" investment in the equipment of at least 20% of the adjusted basis of the property. Otherwise stated, the sum of the consideration unconditionally paid by the lessor plus the personal liability unconditionally incurred by the lessor must equal 20% of the property's purchase price.

2. The remaining useful life of the equipment at the end of the lease term must be the greater of one year or 20% of its originally estimated useful life, and the fair market value of the property at the end of the lease term must be 20% of its original cost, after subtracting any lessor's cost of removal and with disregard of general inflation.

3. The lessor must be able to show that the transaction was entered into for profit apart from the tax benefits (i.e., without consideration of the tax deductions, allowances, credits, and other tax attributes arising from the transaction). This involves both a "balance sheet" and a "cash flow" test. First, the sum of the amounts payable by the lessee to or for the lessor and the anticipated value of the property after expiration of the lease must exceed the sum of the financing costs and other disbursements to be made by the lessor in connection with ownership and the amount of the lessor's equity. Second, the payments owed the lessor over the lease term must be expected to exceed by a reasonable amount the disbursements expected to be payable by the lessor on account of ownership.

4. The lessee must not have a contractual right to purchase the property at less than its fair market value at the time the right is exercised, nor may the lessor have a contractual right when the property is placed in service to cause any party to purchase the property.

5. The lessee may not have furnished any part of the purchase price of the asset nor have loaned or guaranteed any indebtedness created in connection with the lessor's acquisition of the property. Nor may the lessee furnish any part of the cost of additions or improvements to the property, unless they may be readily removed without material damage to the property. The lessee may be responsible for ordinary maintenance and repair, however.

6. Limited use property may not be leased. Limited use property is defined as property which is valuable only to the lessee at expiration of the lease term. Generally, this will be property which is too integrated with the realty to be a fixture under state law, but whether property is limited use property under federal tax law does not depend on its classification under state law.

The foregoing were announced as advance ruling policies and were stated not to be dispositive of whether or not a lease exists as a matter of federal law and not to be the standards applicable on audit. Nonetheless, they have been generally adhered to by parties who wish to plan transactions, because -- until the ERTA -- there have been no other standards parties could rely on in order to remove uncertainty as to the tax effects of proposed transactions.

Section 201 of the ERTA liberalized the foregoing rules in certain cases, by addition of IRC Section 168(f)(8), so that parties which are not owners in the usual sense may be lessors for the purposes of claiming depreciation and investment tax credits. The ERTA safe harbor rules apply only with respect to new Section 38 property, only if such treatment is elected by both parties, and only if the lessor is a corporation (other than a Subchapter S corporation), a partnership in which all partners are such corporations, or a trust in which the grantor and all beneficiaries are such corporations. Notably, the ERTA safe harbor rules were not intended to be available to individuals who are partners of a partnership lessor or beneficiaries of a lessor trust. If a transaction cannot or does not comply with the ERTA safe harbor rules, whether or not it is a leasing transaction for

federal income tax purposes is judged by the standards of law which applied prior to the 1981 Tax Act, and the advance ruling standards set forth in Rev. Proc. 75-21 and 76-30 provide the applicable safe harbor. Further, ERTA safe harbor leases are generally not true leases under state law.

The following are the characteristics of a "safe harbor" lease, with respect to the same characteristics as are described above:

1. The lessor may have an "at risk" investment (exclusive of any financing from the lessee or a party related to the lessee) of as little as 10% (instead of 20%) of the adjusted basis of the property.

2. The term of the lease may be as long as the greater of 90% of the useful life of the equipment or 150% of the IRC Section 167(m) class life, whichever the longer.

3. The fact that deriving a profit or cash flow from the transaction depends upon tax benefits of ownership is no longer relevant.

4. The lessee may have a purchase option at a fixed price, the lessor may have a right to require the lessee to purchase at a fixed price, and such purchase option or "put" may be at more or less than the fair market value.

5. The lessee or a related party may provide financing or guarantee financing for the transaction.

6. Limited use property may be leased for tax purposes.

Property may qualify for leasing treatment under the ERTA safe harbor rules even if it is not leased for up to three months after it is placed in service by either the lessor or the lessee. Further, any property which qualifies for leasing treatment under the ERTA safe harbor rules is deemed for all purposes under the Internal Revenue Code to have been originally placed in service no earlier than the date the property was first placed in service under the lease. This rule permits investment tax credits to be taken as intended under the lease, even if the property would not

otherwise be considered new Section 38 property because it may have been placed in service prior to (up to three months before) the lessor first becomes the owner.

WHAT EQUIPMENT IS SUITABLE FOR LEASING UNDER FEDERAL INCOME TAX LAW

As noted above, "limited use" equipment may not be leased except under an ERTA safe harbor lease. Equipment is not limited use property if, at the end of the lease term, the equipment has an economic value to another party that exceeds the cost of removing the equipment from the initial lessee's property. For example, a smokestack on a building would probably cost more to remove than it would be worth, once removed. On the other hand, the ERTA safe harbor rules only apply to property which is Section 38 property, and Section 38 property cannot be a structural component of a building. Much limited use property is probably limited in use precisely because it is structural in nature. Such property is not leaseable (for tax purposes) under the ERTA safe harbor rules because it is not Section 38 property, and is not leaseable (for tax purposes) under the safe harbor rules of Rev. Proc. 75-21 and 76-30 because it is limited use property. Further, I assume that structural property will be deemed to be a component of real estate for depreciation purposes. Thus, the universe of equipment can be divided up as follows:

	Character of Property	Treatment under Rev. Proc. 75-21 & 76-30 Safe Harbor	Treatment under ERTA Safe Harbor
1.	structural, but not limited use	leaseable, no tax credits available, 15 year depreciation	not leaseable, no tax credits available
2.	structural, and limited use	not leaseable, no tax credits available, 15 year depreciation	not leaseable, no tax credits available.

3.	not structural, but limited use	not leaseable, tax credits available, 3 or 5 year depreciation	leaseable, tax credits available, 3 or 5 year depreciation
4.	other Section 38 property (not structural, not limited use)	leaseable, tax credits available, 3 or 5 year depreciation	leaseable, tax credits available, 3 or 5 year depreciation

Little or no Type 1 property exists, and it would be relatively unattractive to lease (or acquire) because the tax credits would be unavailable and the investment would be depreciable only over 15 years. As Type 2 property is not leaseable, we need only consider Type 3 and Type 4 property. However, Type 3 property is also probably relatively rare, since most limited use property is probably Type 2 property instead. Further, all limited use property may be unsuitable for leveraged leasing because the lessor's lenders would have something of limited value if they foreclosed upon the equipment. Thus, they are secured by little except the assignment of the lease. Obviously, Type 4 property is the most advantageous to lease. It is also probably the most easily financed by any other method as well, however. Under state law, Type 4 property may be a fixture rather than personalty, but it will not be an integral part of the realty.

FORM OF LESSOR

The lessor in equipment leasing transactions is most frequently either a corporation or a grantor trust which issues trust certificates to beneficiaries. The trusts are considered general partnerships for income tax purposes. Limited partnerships are also sometimes used.

The shareholders of a corporation have limited liability, of course. Typically, the lessor trust only incurs non-recourse debt, secured by a mortgage of the property and assignment of the lease. There remains some possibility, however, that the trust certificate holders may have liability to third parties, particularly if

the equipment is inherently dangerous. The pattern has been to spread this risk among all the investors, rather than to have limited partner investors and a single generally liable general partner. With respect to tort actions where fault must be shown, generally the operator but not the owner will be liable. Also, both the lessor and the lender usually insist that the lessee maintain adequate insurance with named insured clauses satisfactory to the lessor and lender. Lessors also look for indemnification clauses and may have a right to divest themselves of all interest in the property if insurance becomes unavailable, the net worth of the lessee drops below a certain level, or in event of changes of law.

At least the following considerations should be taken into account when selecting the form of the lessor:

	Corporate Lessor	Partnership or Trust Lessor
1.	Limited liability of investors	Except in cases of limited partnerships, investors have general liability; but debt will be nonrecourse and insurance and indemnification may be provided
2.	Free transferability of interests	Restricted transaferability of interests
3.	Corporation and shareholders both taxable; shareholders get dividends only	Partners, not partnership, subject to tax; all items passed through to investors
4.	Not subject to at risk limitation	Subject to at risk limitation, with certain exceptions
5.	Not subject to IRC 46(e)(3) limitation	Investment tax credits not available if a net lease or if leased for more than 50% of useful life, per IRC 46(e)(3)

6.	Not subject to investment interest limitation	Interest deduction subject to IRC 163(d) investment interest limitation if property is leased under a net lease as defined at IRC 163(d)(4)
7.	Not subject to minimum tax on preference income	In the case of leased personal property, the amount of depreciation taken in excess of that allowable by the straight-line method over 5 years (in the case of 3-year property) and over 8 years (in the case of 5-year property), with a half year convention and no salvage value, is a tax preference subject to the minimum tax
8.	ERTA safe harbor leases may be used	ERTA safe harbor leases may not be used; should comply with Rev. Rul. 75-21 and 76-30

The foregoing strongly suggest that the corporate form may be more advantageous. However, this is only so if the corporation can use all the losses the transaction generates. The manufacturer of the energy efficiency equipment might be a particularly suitable lessor. If the owner participants are individuals acting through either a trust or partnership, it will be important to design the transaction so that the at risk limitation does not apply (by reason of the type of lender and loan used) and so that the economic value of the investment tax credit(s) is passed through to the lessee and not lost. Alternatively, the advantages of a net lease could be given up, in which event, the investment tax credit could be retained by the lessor and the investment interest limitation could also be escaped. If the lease is not a net lease, however, the maintenance and operating responsibilities would be substantial. An owner trustee could not be expected to assume such responsibilities. This fact makes a limited partnership format appear more appropriate because a managing general partner has full responsibility for conduct of the business and is expected to exercise discretion. With such responsibility and discretion goes exclusive general liability, but also appropriate compensation, presumably. Such a lease would be deemed an operat-

ing lease for accounting purposes (see below), with the advantage of off-balance sheet financing for the lessee.

The foregoing may suggest either a corporate lessor such as a manufacturer, or a limited partnership with an other than net lease.

ACCOUNTING FOR LEASES

Accounting questions arising in equipment leasing transactions are governed by Financial Accounting Standards Board ("FASB") Statement No. 13. It divides the universe into operating leases, which are not recognized on the balance sheet, and capital leases which are accounted for by the lessee as the acquisition of an asset and the incurrence of an obligation. On the accounts of the lessor, the same lease is termed either a "sales-type lease," if the lease gives rise to manufacturer or dealer profit, or a "direct financing lease," if the lessor is primarily engaged in financing activities. The lessor accounts for the lease as either a sale or a financing, as the case may be. Capital leases are those which provide for eventual transfer of ownership of the property from lessor to lessee by the end of the lease term, contain a bargain purchase option, have a term of 75% or more of the economic life of the property, or have lease payments with a present value (excluding the lessor's executory costs) which is 90% or more of the property's fair market value less the lessor's investment tax credit. The lessee will have an operating lease, and the advantages of off-balance sheet financing, only if none of the foregoing characteristics are present.

A "leveraged lease" is defined by FASB No. 13 as a lease which is a direct financing lease (as defined above) in which the lessor has obtained substantial leverage by means of long-term, non-recourse debt financing of the leased property.

Under FASB No. 13, most leases that comply with the standards of Rev. Proc. 75-21 and Rev. Proc. 76-30 are operating leases. Some, however, are capital leases. For example, a lease for 80% of the property's useful life can comply with Rev. Proc. 75-21 and Rev. Proc. 76-30, but will be a capital lease under FASB No. 13. A lease which is considered to be a lease for federal income tax purposes solely by reason of the ERTA safe harbor rules will never be an operating lease under FASB No. 13. However, the FASB has recognized that some ERTA safe harbor leasing transactions are strictly sales of tax benefits and should not be governed by FASB No. 13 at all. It has proposed rules for this purpose, but if there is any element of financing provided by the buyer of the tax benefits, FASB No. 13 will still govern.

APPLICABILITY OF THE SECURITIES LAWS

In most case, the securities issued by the lessor to the owner participants and the lender participants will be deemed securities issued by the lessee for purposes of the securities laws. For example, Section 2(4) of the 1933 Act provides that "with respect to equipment-trust certificates or like securities, the term 'issuer' means the person by whom the equipment or property is to be used ...." In the case of industrial revenue bonds, 17 C.F.R. 230.131 provides that the industrial or commercial enterprise which is the lessee or obligor under the lease is deemed to be the issuer. Hence, the lessee has the principal rule 10b-5 liability. However, an owner trustee may be deemed to be an underwriter or co-issuer. The owner trustee is sometimes asked to warrant that it has not sold the securities in violation of the 1933 Act, and its counsel sometimes gives a securities opinion. Rule 146 is adhered to.

PROTECTION OF TAX BENEFITS

Normally, the lessor will want the right to cure any defaults by the lessee, in order to protect its position with respect to the lender. Lenders generally want exclusive rights in this area.

Lessors usually bargain with lessees for the lessees to indemnify the lessors against any loss of tax benefits. Lessors want indemnification against any changes in the tax laws and the invalidity of any revenue ruling which was requested in connection with the transaction. They may even ask for indemnification against any change in their own financial position which results in their inability to use the tax benefits. The lessee will wish to narrow the indemnification to refer to only its own acts. Further, in exchange for the indemnification, the lessee may wish to have exclusive control over any contest with the Internal Revenue Service. The lessor may wish to have the right to decide whether to contest or not but in that event, it should be required to waive the indemnity if it elects to avoid a contest.

CHAPTER X

JOINT VENTURE FINANCING

Section I

Types of Joint Ventures

Introduction

Joint venture financing comprises any combination of entities working together to develop an energy efficiency project. For example, a leasing company, lighting equipment manufacturer and an energy audit firm recently joined forces in California to audit, install and finance energy management systems in a chain of restaurants. Combinations of equipment manufacturers, energy auditors and financing companies could be arranged to provide similar services for different types of buildings with regard to different types of energy measures. Financing companies could create joint ventures with equipment manufacturers and/or equipment installers.

Joint venture financing also includes public/private partnerships. Various federal loan guarantee programs could be combined with private bank financing. Community Development Block Grant and/or UDAG grant funds could be linked with commitments from private sector resources. Local government and/or nonprofit organizations could team up with banking sector firms to undertake energy financing projects. All of these arrangements satisfy our definition of joint venture financing.

During the course of our interviews, we explored the willingness of energy equipment manufacturers, engineering firms, energy auditing firms, leasing companies, equity syndicators, banks and utilities to work together to enhance the capabilities and marketability of their respective skills. A joint venture will be attractive if the union creates a whole that is greater than the sum of its parts.

By combining different skills residing in two or more different organizations, it is possible to simplify the delivery of energy efficiency services and provide the property owner with a single comprehensive service that is easy to understand. There are many different types of joint venture partners who could combine to create an energy efficiency delivery and financing program that could be offered to multifamily, commercial and/or industrial property owners.

A. Types of Joint Venture Partners

The different entities that might join together to finance energy projects include:

1. a municipally owned utility or investor owned utility;

2. a leasing corporation;

3. a bank;

4. an equity syndication firm;

5. an engineering firm (including a firm that performs energy audits);

6. an energy service company;

7. an equipment manufacturer;

8. a local government entity;

9. a nonprofit organization; and

10. a private nonprofit foundation.

Following is a description of possible joint venture arrangements between the parties listed above. Section II of this chapter contains a more detailed description of various joint ventures, focusing principally on participation by equipment manufacturers to financy energy equipment.

B. Utilities Combining With Other Entities

1. Utility and Leasing Company. A utility could perform energy audits, identify energy efficiency equipment which is cost effective for property owners, and agree to arrange financing for the equipment through a joint venture with one or more separate leasing companies. The leasing companies would be responsible for approving the credit of the borrower and lessee and would provide the capital (debt and equity) needed to purchase the

equipment. The leasing company would enter into a contractual arrangement with the utility to provide a variety of services with regard to this venture. See Chapters VI and IX.

2. Utility and Energy Service Company. A utility could enter into an agreement with an energy service company to assist in the marketing of an energy service (shared savings) program. The utility could also assist in identifying possible property owners who might be interested in the shared savings approach. Finally, the utility could assist in monitoring performance of the equipment and measuring the savings. See Chapter V and VI.

3. Utility and Local Government Entity. There are a variety of ways in which a utility could participate with a local government entity. The local government entity, through issuance of tax-exempt bonds, for example, could provide capital needed to finance energy efficiency investments in certain types of buildings within the community. The utility could undertake to perform the audits and supervise installation and prepare the measures. The utility could also collect the monthly loan repayments.

A similar arrangement could be structured with a non-profit organization or foundation that was willing to participate in developing an energy efficiency financing program for certain types of buildings within the community. A program being operated in Boston by Citizens Conservation Corporation is one example of such a program.

C. Energy Service Companies Combining With Other Entities.

1. Energy Service Company and Bank. Energy service companies have a very large capital requirement. They must purchase all of the equipment installed in each building which they have under contract. In effect, they replace the owner of the building in terms of obtaining the funds needed to buy the equipment. While the contract with the building owner will be some security for the energy service company (presumably the contract can be pledged to a bank to secure a loan from the bank along with a lien on the collateral installed in the building), it is unlikely that banks will give sufficient credit to the value of this contract to permit the energy service company to obtain adequate leverage on its equity investment. In fact, almost all of the energy service company arrangements we examined were 100% equity financed. They did not include any independent bank financing. If an energy service company was affiliated with an established corporation, it might be able to arrange bank financing by providing the parent corporation's credit. Alternatively, an outside investor could provide a letter of credit that would serve as security for the energy service company's bank loans. The energy service company would be generating substantial business for the bank, business that could be relatively profitable if many similar transactions were arranged with a particular energy service company. While the letter of credit increases the cost of financing, it eliminates the need for significant equity investment.

2. Energy Service Company and Equity Syndicator. Our investigation of the energy service company industry identified many engineering and energy audit firms that had established relationships with equity syndicators. Equity syndicators are firms that have expertise in raising capital from a group of private investors. Generally, these investors are seeking tax shelter benefits in addition to the economic potential of an investment. These arrangements are discussed in detail in Chapter V.

D. Energineering Firms Combining With Other Entities.

Engineering firms are often involved in performing energy audits and in designing and supervising the installation of energy efficiency measures. Most of these firms have not set up separate energy service companies to provide "shared savings plans." Clearly, an engineering firm is a likely candidate to offer an energy financing program. Alternatively, they can enter into joint ventures with other parties to provide financing for those measures recommended as a result of their activities.

1. Engineering Firm and Leasing Company. The national engineering firm of Ebasco marketed a 5-year guaranteed cash flow program for installation of energy services. Ebasco promised to pay the property owner the cost of the equipment that was not recovered from energy savings over a 5-year period. For customers who did not have their own financing for such investment, Ebasco was willing to arrange an equipment lease through an independent

leasing company for the for the property owner. The leasing company would independently review the credit of the borrower. It would also need to be satisfied with the competency and quality of work performed by the engineering firm. The equipment purchased and installed in the building would be owned by the leasing company. The leasing company could probably obtain guarantees of equipment perfromance from the engineering firm.

2. Engineering Firm and Bank. Similar to the arrangement with a leasing company, an engineering firm could enter into an arrangement with a bank to provide loan financing for customers wishing to install conservation measures. The engineering firm again might guarantee the energy savings and provide other assurances to the bank that the equipment will operate properly. This would permit the bank and engineering firm to develop and market a program of energy efficiency loans.

3. Equity Syndicator and Engineering Firm. An engineering firm could enter into a relationship with an equity syndicator whereby the equity syndicator would raise capital from investors to purchase and install equipment recommended by the engineering firm. This method is used by CSL, Corporate Energy Management, Joccelyn Management and other firms engaged in the energy service company business.

E. Energy Equipment Manufacturers Combining with Other Entities.

1. Manufacturers and Equity Syndicators. Certain energy equipment manufacturers have aligned themselves with equity syndicators to raise capital to finance the sale of their equipment to a property owner. The clearest example of this arrangement involves Luz Engineering Corporation. Luz sold industrial solar process equipment to a group of investors. Those investors then agreed to lease the equipment to an industrial property owner. The investors provided the debt and equity needed to permit the industrial firm to obtain the benefits of the equipment without providing any capital up-front. See Exhibit E2.

2. Manufacturer and Other Financial Institutions. A manufacturer could arrange with a leasing company and/or a bank to finance the acquisition of equipment by property owners on a lease or installment sale basis. The manufacturer might guarantee certain energy savings resulting from the installation of its equipment. The financing institution would rely on the credit of the manufacturer and the credit of the property owner. The manufacturer might put up a letter of credit or other security to give the financial institution additional collateral to utilize in providing financing to the property owner.

3. Manufacturer and Local Government. A manufacturer could enter into an agreement with a local government entity to install equipment in buildings within a predesignated area with payment for the equipment on an installment basis. The

installment payment would be designed to permit the savings from the equipment to pay for the equipment over time. In essence, the manufacturer becomes the lender. However, because the manufacturer has a built-in profit from selling the equipment, he might be willing to finance it at a much lower rate than would be available from a bank. In addition, the owner could determine whether the savings realized equal the savings promised before the owner paid the full price of the equipment.

F. Combining With Private Nonprofit Foundations

Another source of capital to help subsidize any of the joint ventures set forth above would be funding from a nonprofit foundation. Within every community there are usually one or more local foundations or groups of businessman who make charitable contributions to worthwhile community projects. Establishing an energy financing program for commercial, industrial and multifamily buildings would appear to fall within the category of projects that might qualify for such funding.

G. Use of Private Insurance With Any of the Ventures Mentioned Above.

The lack of credibility of energy savings is one of the most important barriers to marketing energy efficiency improvements. An insurance policy could help overcome this barrier. An insurance policy that guarantees a level of savings would permit

different type of entities to offer "guaranteed savings" without taking the risks that any one company might incur greater losses than it can handle. The insurance would provide a pooling of risks among all the various manufacturers of assorted equipment installed in different types of buildings. We have not explored the feasibility of obtaining such insurance, but think it is likely that that the insurance industry could develop a program that would meet these objectives, provided it was evident that there was a demand for the insurance among equipment manufacturers, energy engineering firms, energy service companies, lenders or others.

Conclusion

Many of the joint venture approaches set forth above deserve further development and consideration. Some of these approaches are already being considered by firms that have voluntarily joined together. In other cases local governments are considering one or more linkages similar to those set forth above. A local nonprofit organization or a public entity, such as publicly owned power authority or federal, state or local government, could try to establish the viability of one or more of these joint venture approaches.

In earlier Chapters of this Report we have recommended two such joint ventures for which we propose to develop model documents: two such joint ventures:

1. A joint venture wherein a utility would provide both leasing and shared savings programs, perhaps in combination with a bank, a leasing company, an energy service company, an engineering firm, or all of the above.

2. A joint venture that will form and finance an energy service company to install energy efficiency measures in multifamily buildings. The energy service company might join forces with a public housing authority, a separate corporation, a bank, a life insurance company, or a leasing company.

Section II

Energy Conservation Financing By Equipment Manufacturers

We contacted six energy efficiency equipment manufacturers[35/] and three equipment vendors[36/] to discuss innovative techniques for financing energy efficiency equipment. An effort was made to identify finance mechanisms needed to promote growth in the energy conservation equipment industry. All of the equipment manufacturers surveyed sell their products through organized networks of vendors and distributors. The manufacturers tend to offer only two types of financing to the energy customer or dealer: direct purchasing and/or lease financing. Several of the manufacturers indicated that there was no need for them to provide alternative financing options because customers or dealers have already arranged financing before they approach the manufacturer.[37/] According to Albert Rittman, President of Functional Devices, the equipment manufacturer "is the wrong link in the chain to provide financing for energy equipment."

35/ Johnson Controls, Inc.; Honeywell, Inc.; Functional Devices; Andover Controls Inc., Energy Master, Inc.; and Aegis Energy Systems.

36/ World Wide Energy Systems, Inc.; New England Energy Management Systems; and C&D Control Technology.

37/ See Memoranda Re: Conversation with Andover Controls and Functional Devices.

A. Direct Purchase

The manufacturers we spoke to indicated that the majority of their equipment was sold by direct purchasing to customers and vendors. Direct purchasing, from the manufacturers' perspective, is probably the most convenient and expedient finance mechanism.

For customers unable to finance a direct purchase, however, manufacturers may offer options other than leasing or shared savings. Stan Spiegal, former President of Energy Master, said that in order to assist customers seeking bank financing for Energy Master equipment, he would guarantee the energy savings of the equipment.38/ No other manufacturer we contacted offered to arrange bank financing or provide credit for customers. Tom Herman, Assistant Vice President and Product Manager for the Crocker Bank of San Francisco said that a guarantee of energy savings by a manufacturer would not make the difference between granting and not granting a loan to a customer, but would add to the credibility of the borrower. Another financial institution indicated that a guarantee of energy savings alone from the manufacturer without a recourse guarantee was insufficient.39/

38/ Spiegal declined to discuss the mechanics of the guarantee.

39/ Republic Financial Corporation.

B. Lease Financing

Although few manufacturers were interested in becoming financing agents themselves,40/ four of the six manufacturers we contacted offer some form of lease financing to their customers.41/ Honeywell and Johnson Controls both offer first and third party lease financing. Rick Walker of Johnson Controls said that their lease financing may be structured as a finance lease or as an operating lease.42/ Under an operating least from Johnson Controls, the user must pay a commitment fee of 5-10% of the equipment cost and, according to Walker, at the expiration of the lease term, Johnson Controls owns the equipment. The vesting of the ownership in Johnson prevents the lessee from taking depreciation or the investment and energy conservation tax credits.

Both Energy Master, Inc. and Andover Controls arrange lease financing for customers through their dealer network, by utilizing the services of Equico Leasing Corporation, a subsidiary of the Equitible Life Insurance Company.43/ Equico will lease finance

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40/ See Memoranda Re: Conservation and Andover Controls and Functional Devices.

41/ Johnson Control, Inc.; Energy Master, Inc.; Aegis Energy Systems; and Andover Controls.

42/ See Memoranda Re: Conversation with Rick Walker, Johnson Controls.

43/ See Memorandum Re: Conversation with Don Watson, Equico Leasing Corp. and Meeting with Rod Eaton, Equico Leasing Corp.

the manufacturers' equipment to an energy end user on a non-recourse lease basis.44/ Aegis Energy Systems assembles lease financing for its dealers and customers through an independent Philadelphia-based leasing company. Like other manufacturers who utilize third party lease financing, Aegis is not the lessor of the equipment or a participant in the lease transaction.

In addition to lease financing, Honeywell offers a Building Operation Support Service System (BOSS) which is a time-shared energy management support system. Smaller energy management systems installed in a facility are tied into a central Honeywell computer. Honeywell charges a fixed fee for its service but does guarantee energy savings to its "BOSS" customers.

C. Shared Savings

A significant problem for manufacturers wishing to participate in shared savings financing is the large front end capital expenditure. Only companies in a strong financial position with abundant cash resources may finance more than a handful of shared savings programs. Manufacturers, as well as vendors, must seek third party financing to assemble viable shared savings packages.

Only one of the energy equipment manufacturers surveyed had arranged any shared savings programs.45/ Stan Spiegal of Energy

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44/ See TABLE 9B for terms of Equico Lease.

45/ See Memorandum Re: Energy Master, Inc.

Master noted that he had arranged over 100 shared savings programs, financed with third party investor capital. Spiegal indicated that Energy Master had encouraged its dealers to participate in shared savings transactions.

Allen Shallek of Aegis Energy Systems said Aegis does not directly finance the capital expense of shared savings installations, however, Aegis dealers utilized syndicators to raise capital for shared savings programs. Shallek was enthusiastic about the prospects for shared savings financing in the future, but cautioned that abusive tax shelters currently being structured by a few unscrupulous financiers could have a deleterious effect on all shared savings programs.

The two largest manufacturers we spoke with, Honeywell and Johnson Controls, both expressed cautious attitudes toward shared savings financing. Walker of Johnson Controls mentioned that monitoring a shared savings program was too time consuming for Johnson Controls, therefore, shared savings was of no real interest. In addition, he noted, there was potential for problems and disagreements with the client over measurement of savings, maintenance of equipment, etc. Honeywell, however, has a pilot project testing a concept similar to shared savings called "guaranteed cash flow", discussed below.

Another manufacturer had a less sanguine attitude toward shared savings. Andover Controls believed that shared savings programs appeal primarily to "uncreditworthy" customers.

D. Guaranteed Savings

Honeywell, Inc. is currently testing a "guaranteed cash flow" program in five different buildings, located in Washington, D.C., Philadelphia, and New York. Under the "guaranteed cash flow" program, Honeywell will conduct a free energy audit of the customer's building, determine the current energy costs and estimate the savings potential from installation of their own energy efficiency equipment. An energy user may participate in the program (once the pilot program is established on a permanent basis) without any capital expenditures. The length of the finance period will be determined by the energy savings. The user's monthly payments are guaranteed not to exceed the energy savings in the same period. Carpenter said that if Honeywell saves less than what the energy costs are to the customer, the plan would be considered a failure. Honeywell will maintain the system and equipment as well as perform monthly audits to determine whether the system is delivering the projected savings. Monthly savings will be measured by comparing units of current energy consumption against a base line figure agreed upon by Honeywell and the customer. The base line calculation will be a function of comfort conditions, weather, degree days, changes in production capacity or lines, and

occupancy (in commercial and multifamily buildings). The base line figure will also be periodically reviewed by Honeywell and the customer. If at the end of the first twelve months the savings have not exceeded the 12 monthly payments, Honeywell will refund the user the difference between his total payments and the actual payments - and remove the equipment. Because the plan is essentially an installment sale, the user-purchaser is entitled to depreciation deductions and the regular investment and energy tax credits.

The buildings retrofitted under the Honeywell plan have only recently come "on-line". Therefore, the program has yet to establish a track record. Honeywell will continue evaluating the pilot project before offering the "guaranteed cash flow" program to the public. Honeywell is "cautiously optimistic" about the chances for success of the program.

E. Vendor Financing Mechanisms

Natkin Energy Management Company (a division of the Natkin Service Company) is a full service mechanical engineering company that has recently proposed a guaranteed energy savings program. The Natkin plan requires the customer to pay for an energy audit of his building from which Natkin can assess the buildings savings potential. A feasibility study, which will produce a generic shopping list of equipment necessary for the retrofit, will follow the audit. Natkin said an audit costs about $1,000 on a standard

project and the feasibility study is usually 3-15% of the customer's annual utility bill (anywhere from $5,000 to $50,000).

Natkin will fund all retrofits that are determined to have a payback of two years or less. If the client wants to fund equipment with a payback greater than two years, he may also include it in the contract. As soon as 50% or more of the projected savings are realized, the client is required to begin paying Natkin on a one year buy-out plan. Each month thereafter, the client will pay Natkin 1/12th of the system's total cost, so that Natkin has fully recovered its capital expenditure one year after 50% or more of the projected saving are reached. The theory is that the customer will pay Natkin out of funds saved on utility bills, since no initial capital outlay is required. The client receives the depreciation deductions, regular investment tax credit, energy tax credit and all energy savings (no shared savings).

Natkin, like Honeywell, has yet to establish a track record for the program. Two proposals have been submitted to institutional clients; one has been rejected, no decision has been made on the other. Natkin does not offer any financing terms other than the one year payback plan.

World Wide Energy Systems, Inc. offers a variation of guaranteed savings which they call "insured savings". World Wide, through its dealer network, will conduct a walk-through audit (the charge is discretionary with each dealer) to determine what

equipment is necessary for a building retrofit. World Wide, for example, may install a line carrier remote control energy management system, or programable timers for an HVAC system. If the equipment is either purchased from or leased through World Wide or one of its vendors, the system is guaranteed to produce energy savings of 15-20% of current energy consumption. World Wide insures the energy savings by purchasing a guaranteed savings insurance policy for each system from National Union Life Insurance Company. The insurer has its own engineering staff which approves the installation and qualifies it for the quarantee of savings. World Wide pays National Union Life Insurance 1.5% of the total cost of each system for the insurance policy. According to Steve Atkinson, President of World Wide's Funding Division, the cost is passed through to the customer. After the end of the first year of the energy efficiency system's operation, the end user has the option of renewing the insured savings guarantee in subsequent years for 1.5% of the total cost of the system. Atkinson noted, however, that the system has proven itself by the end of the first year and therefore, it is rare that a customer would renew the insured savings guarantee. If the savings are not achieved, the insurer will buy back the system from the customer. Atkinson stated that the insurer has never had to buy a system back from a customer. According to Atkinson, World Wide has utilized the insured savings guarantee on approximately 1,500 systems.

Energy Master, Inc., also offers the insured savings program. According to Stan Spiegel of Energy Master, only customers financing their transactions through Equico Leasing Company qualify for the insured savings guarantee. Energy Master, Inc. will arrange insurance which guarantees achieving a percentage of the energy savings in the first year. Beyond the first year, a customer may purchase the insured savings plan himself each year, up to 7 years, for 1.5% per year of the total lease price. In a scheduled facility (e.g. a factory with regular hours) a 20% energy savings on heating and cooling will be guaranteed. In a non-scheduled facility (e.g. hotels and motels with irregular hours) a 15% energy savings is guaranteed. According to Spiegal, the World Wide guarantee is really an insured energy savings policy from Energy Master. Spiegal said World Wide is the world distributor of Energy Master equipment, and the guarantee applies only to Energy Master equipment.46/

Conclusion

Conversations with the manufacturers indicate that innovative finance mechanisms are more likely to be developed and utilized by vendors, third party financiers and energy service companies than by manufacturers. Yet, manufacturers may play a crucial role in arranging financing for their product vendors and distributors.

46/ We received conflicting versions of the insured savings guarantee program from Spiegal of Energy Master and Atkinson of World Wide.

In addition to referring customers and vendors to lease finance companies or shared savings syndicators, manufacturers may offer energy guarantees (recourse or non-recourse) for their equipment. Manufacturers could also lend their credit to vendors or customers seeking bank financing. Although some manufacturers consider themselves "the wrong link in the chain" to provide financing, several innovative techniques, particularly shared savings, offer the manufacturer an opportunity to increase product sales while simultaneously obtaining an income stream and tax benefits.