Fundamentals of Financing Energy Conservation Projects

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CHANGES IN CUSTOMER REBATES AND THE UTILITY INDUSTRY

Approximately three years ago, the utilities started preparing for deregulation. Energy savings concerns and rebate programs were suspended by the fear of retail wheeling. Utilities were becoming more interested in increasing load and their customer base because, under deregulation, competitors would be stealing their customer base with cheaper prices and incentive packages. Thus, the commitment of utilities shifted from supplying power under their obligation to serve the customer, and to obtain a reasonable return for the stockholder to increasing their market share.

It should be pointed out, however, that rebates by the utilities will persist, but only to the extent mandated by political pressure and as a part of a compromise for the utility to achieve stranded asset cost recovery. Stranded assets, or inefficient generating assets, are incurred under regulation that cannot be recovered through lower competitive prices under deregulation. Such assets include investments in expensive generating plants and high-cost contracts for fuel and wholesale electric power. An Energy Information Administration news release indicates that in the absence of mandated asset cost recovery, "Electricity prices are expected to fall over the short term relative to where they would have been under traditional cost of service regulation (by 8 to 15 percent, assuming stranded cost recovery, or 24 percent without stranded cost recovery)...In the long term, prices will be reduced (by 16 percent in 2015 relative to traditional regulated prices) if there are efficiency improvements or other cost reductions that result from competitive pressures."

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Financing Energy Conservation Projects

Components & Responsibilities in Performance Contracts

COMPONENT	DEFINITION	CUSTOMER'S RESPONSIBILITY	PROJ. DEVELOPER'S RESPONSIBILITY	FINANCIER'S RESPONSIBILITY
1. Customer Usage Guarantee	Use of equipment for the time guaranteed to produce energy savings.	For every kWh the customer is short, he has to make a compensation payment of "make whole" payment		
2. Early Termination Values	In case the customer wants to terminatethe contract before time, a specific schedule must be set up. In determining termination schedules, the financier's interest rates, prepayment penalties, and any peneal-ties charged by the utility must be considered	Must pay termination value		Must set values for each year of the life of the contract. Values must guarantee a sufficient revenue to liquidate the contract.
3. Customer Credit	In order to finance projects, the customer must have enough financial strength to make termination payments, should termination be required.			The lender must determine the credit-worthiness of the customer.
4. Performance Requirements	Consists of several compononts such as: • maintenance of equipment and insurance	Both are customer's responsibility.		

	• warrantee on the equipment & performance savings	The customer must comply with promised usage of the equipment.	The developer must insure that the equipment performs to manufacture's specifications and produces th watt savings	
5. Regulatory Risk	In every contract with a utility, there is a chance that the utility may be ordered to cease payment. The utility is not responsible if it is given a legal order to stop payment.	There is no recourse.	If there is recourse, developer is responsible for payment deficiency	It non-recourse, the financier must get this wavier.
6. Landlord or Mortgages Waivers	In case of default, equipment may be considered real property. The mortgage or landlord must sign a wavier that he/she does not own the equipment.			The financier must get this waiver.
7. Consent to Assignment	An agreement by the utility and/or the customer to pay the financier.			Required to finance the deal
8. Due Diligence	The responsibility consists of serveal components, shared by the parties of the contract as follows:			
	• Credit Review			Financier's due diligence responsibility.
	• Visibility of project		Developer must make the determination.	Financier's due diligence responsibility.

FINANCING ENERGY SAVINGS PROJECTS

As a consequence of the evaporation of utility incentive payments, financing has taken on a larger role in developing viable projects. The developer has to present projects to his customers as they stand on economic benefits, and without the help of rebate incentives.

Consider a typical energy conservation project. A salesman, let us call him Jim, walks into a plant and sells Linda, the plant owner, on the idea of saving money on the electric bill through the installation of energy efficient lighting equipment. Linda listens to Jim's ideas of improving the lighting in the engineering department where each engineer has his own lighting set-up, at huge energy cost. New lighting would be terrific in the employee cafeteria where garish lights make lunch stressful and unappetizing. The entrance to the plant could be made inviting with the substitution of efficient spot lighting on the company displays, and the building would be more secure with better security lighting.

Linda likes Jim's ideas, but points out that there isn't the cash for such projects. Jim then makes an offer that Linda can't refuse: "I can finance all the equipment that your plant needs, and your energy savings will more than pay for the equipment." Linda wants a guarantee that the savings will cover her payments.

"You pay me for the next five years a percentage of what you save, and I'll install the equipment for free," promises Jim. Linda agrees to the conditions, and a shared savings contract is initiated.

Jim begins the process by getting his new customer to promise that the new and retrofit equipment will be in use at least 10 hours a day, five days a week, for the next five years. Then he checks the plant's electric bill and finds that Linda pays $.10 per kilowatt hour. Jim gets a ladder and puts a meter on one of the lights. The meter registers 100 watts. He then substitutes an energy efficient bulb and an electronic ballast which registers 32 watts. The luminescence is the same. Linda quickly multiplies the 68 watt saving by 10 hours of usage, times the utility rate of $.10 per kWh. She then translates the savings for one day for one fixture to the whole plant for the year. Linda is now convinced that she will actually see the savings that Jim has promised, plus she would have more functional and attractive electrical equipment. The savings could be considerable, and she would have to pay Jim 60% of her savings for the next five years, and then the equipment and the savings would be entirely hers; not a bad deal.

But what would happen, asks Linda, if she decided to move or sell the plant before the five years are over? Jim explains that she would then have to pay a termination value so that he may recover the cost of the equipment which he installed. Linda agrees to the termination value.

Jim then goes to Ed, a financier who specializes in energy projects. Ed asks Jim for a credit application from Linda. Ed reviews Linda's financial information and finds that she is good for the termination amounts. Jim assigns the right to receive shared savings to Ed, as well as any termination amounts, and Ed gives Jim enough money to install lights, plus any profit that Jim has written into the deal for himself. Linda will make payments to Ed for the next five years.

If a deal involved a payment stream from the utility for energy savings, these payments could also be assigned to Ed as part of the repayment of the loan. Jim's customer, Linda, could be concerned that as a result of deregulation, utility rates may drop while she is locked into an energy saving contract where current cost is a factor. For example, if the utility rate is fixed at $.10 per kWh, and that drops to $.08 per kWh, her savings would only be $.03, not $.05 as originally planned. Her payment to the financier would be the same, but the percent of savings she retained would be less. This and other issues that energy conservation projects involve should be considered carefully by all parties before entering into a contract.

1. COST SAVINGS
- Energy savings
- Hours of operation of the facility
- At current utility rate
- At projected utility rate under deregulation

2. CAPITAL COST of PROJECT
- Technology selected
- Efficiency of labor vendor
- Efficiency of purchasing from the material vendor

3. OPERATION CONSIDERATION DURING INSTALLATION
- Developers need to work around critical operations, with installation on evening and weekend hours, as required

THE CONTRACT

The developer and the customer will sign one of two basic types of contracts.

1. DESIGN AND BUILD: the customer pays for material and labor when the project is completed.

2. PERFORMANCE: the customer and the developer may elect one of three types:
   - Shared Savings: in this type of contract the payment is a percentage of whatever the customer saves. The savings may be calculated by dollars, kilowatts, or kilowatt hours.

Dollar amount savings are almost impossible to determine because the customer may change his/her energy usage pattern or may add extra energy using equipment such as air-conditioners, computers, manufacturing equipment, surveillance equipment, etc. Therefore a customer may not perceive any discernible dollar savings. The contractor in turn may have to spend much time proving dollar savings to a customer.

Kilowatt hour savings methods factor the cost and the hours of use with the wattage saved, and give a clear idea of the total amount of savings. Kilowatt savings method is preferable to the other methods because equipment may be monitored prior to and after installation to prove savings. A 100 watt bulb may be replaced by a 32 watt fluorescent and give the same luminescence. Kilowatt savings can also be substantiated through a voltmeter at anytime in the future.

Deemed Savings: in this type of performance contract an amount is agreed to at the inception of the contract and fixed for the term of the contract. The problem is the need to decide at the inception of the contract as to who should bear the risk of the change in utility rates in determining savings. At the time the contract is signed, is the current utility rate assumed for the term of the contract or is the rate adjusted for changes in future utility rates? Generally, neither customers nor financiers want to bear the brunt of utility rate decreases where savings would decrease commensurably. If the customer is not willing to fix at current rate, the project developer or contractor most likely needs to absorb that risk in order to seal the contract.

Guaranteed Savings: in this type of contract the developer will guarantee a minimum amount of energy savings over the term of the

contract. The contract is easier to administer because the developer has only to determine that the minimum guaranteed savings is met. However, some of the same issues as the shared savings such as utility fluctuations will occur. In certain cases it is possible to buy insurance to guarantee energy savings. The purchase of such insurance can resolve some of the sales and financing issues.

FINANCING SOURCES

Financing energy conservation deals is the province of a small community of financiers who have expertise to present and explain these deals to lenders. They are the best financing sources for energy conservation deals for the following reasons:

- They cultivate long-established business relationships because of their ability to perform the due diligence process to the lender's specifications.
- They know the unusual structure of energy conservation deals which tend to make most conventional lending sources quite uncomfortable.
- The can accumulate or warehouse projects so that the lender gets an efficient-size funding package. Many lenders are not interested in projects under $100,000; therefore, warehousing these projects is often necessary.
- They screen and present funders with opportunities particular to their specific investment parameters.

WHAT FOLLOWS IS AN APPRAISAL OF OTHER AVAILABLE FUNDING SOURCES.

1. **Banks.** Banks are the cheapest source of financing but they tend to be uncomfortable with performance contracts. They should definitely be considered in Design and Build contracts, but they tend to resist the "soft security" of lighting fixtures.
2. **Insurance Companies.** These companies tend to be more sophisticated than banks, but are still uncomfortable with performance con-

tracts. Insurance companies only look at deals in excess of one million dollars.

3. **Utility Subsidiaries**. These are utility owned ESCO's. They are a good source of financing for performance contracts because they understand the industry. Their rates range from fair to "rape and pillage." The developer has to be aware that these utility subsidiaries are his direct competition for projects and customers.

4. **Energy Funds and Green Funds.** Such funding shies away from weaker credits and favors the more conservative projects. These funds are generally uncomfortable with performance contracts and deal in one million plus accounts.

5. **Private Investors.** Such investors generally look for above average rates. This is a quicker form of financing but the investor will ask fundamentals that are familiar to most industry professionals. Private investors will deal in smaller amounts, and can be approached on a deal-by-deal basis.

6. **Leasing Companies.** Most Design and Build contracts may be financed through leasing companies. They tend to be uncomfortable with "soft security" and their rates are higher than bank rates.

FINANCIAL STRUCTURES FOR ENERGY PROJECTS

The following components of some deals may enter into the picture and need to be understood by the project developer.

1. **Receivable Securitization** is when a long-term receivable is used security for a loan. For example, a developer who has a long-term monthly payment due from a utility may use the payments as security for a loan.

2. **Recourse versus non-recourse loans.** In case of default, the developer is not liable in a non-recourse loan. Most developers desire non-recourse financing, while most funders prefer recourse financing. This is frequently an important point in negotiating the deal.

3. **Lease versus loan.** In a loan situation, the customer holds title to the equipment and the developer or financier receives monthly payments. In a lease arrangement, the customer leases the equipment, keeps the savings, and after a time is able to buy the equipment for residual amount, typically 10% or $1.

Energy conservation projects cannot be sold if they do not provide the customer with a day one net cash benefit. When all is said and done, the developer has to consider him/herself as a service provider, whose livelihood depends on saving the customer some money. He/she must develop trust with the customer, the distributor of the lighting equipment, and the financier who understands energy conservation contracts. The developer is a member of a team of people who will do the extra work to show the customer all options possible on both the equipment and the financing aspects of the project.

Utility audits may take time to complete, in which case the savings stream may not reach the customer in time to make payments. A member of the team, such as the financier or developer, may have to make good on the payments until the utility catches up. A team approach to projects makes sense in the energy conservation project business because there is so much competition out there. But there certainly is money to be made in an industry where there have been tremendous technological advances in the equipment. In an environment of aging plants and energy inefficient commercial infrastructures, retrofitting and new installations will provide above average profits for the enterprising project developer.

ABOUT THE AUTHOR

Ed Falkowitz is a financial executive with 30 years' experience. He holds an undergraduate degree from California State University, a graduate degree from Fordham University, and a CPA certification. His corporate background includes CFO for a business unit of PSE&G, and vice-president and treasurer to $6 billion Thorn EMI. He is president of TFG in Montville, NJ, an independent financing company specializing in industrial and technical projects, with a specialty in energy project financing.