

INNOVATIVE APPROACHES TO FACILITATE ENERGY EFFICIENCY IMPROVEMENTS
IN NEW YORK STATE'S PUBLIC SECTOR

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ABSTRACT

A fundamental problem facing the public sector today is that both traditional and non-traditional methods of reducing energy consumption in public buildings have made little progress. Because of a lack of financing, poor managerial expertise, and an aversion to risk, public institutions must examine alternatives to the traditional capital budgeting process and bond financing. In New York State, three different options are currently under active consideration in this regard:

1. Energy Performance Contracting: providing ad-hoc technical assistance to encourage private investment in public buildings through normal marketplace activity of energy service companies;
2. State Facilities Conservation Fund: establishing a special revolving investment program that supplies public resources for improvements in public buildings, thus keeping all the savings in the public sector; and
3. Corporation for Energy Financing: establishing a public institution to steer private financing and managerial resources to public buildings by assisting in making deals happen that might not occur otherwise.

This paper traces the advantages and disadvantages of each of these three options and concludes with some rules-of-thumb that might guide a rational approach to mixing and matching the different approaches.

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Despite the current global oil glut and the artificial moderation of prices for petroleum products, energy costs are still a big issue for state and local governments, schools, and other public/non-profit institutions. The evidence is clear that governmental efforts to conserve energy have made only modest inroads. For example, the cost of fuel and energy services in New York State's facilities has more than tripled in the last eight years and has remained roughly constant at \$320 million for the last two fiscal years. It has been estimated that as much as \$60 million of this could be saved if all of the cost-effective efficiency options were pursued.

THE PROBLEM

The underlying problem facing the public today is that both traditional and non-traditional methods of reducing energy consumption in public buildings have made little progress. It's been over twelve years since the first energy crisis and at least six years since all the federal and state energy programs have been in full implementation. Evaluation results are now becoming available that question the effectiveness of these programs.

Public buildings had it against them from the start. The New York State Energy Office recently completed an analysis of 8400 buildings that were audited through its "On-site Energy Audit Service." The buildings were split roughly 50/50 in terms of public and private ownership and the public buildings showed a 6 percent greater energy use to begin with. This fact, presumably, indicates less efficient energy use rather than fundamentally different patterns of energy use.

Traditional methods of financing capital improvements in public building stock usually include appropriations and the proceeds of bond issues. However, the last six years have caught most state and local governments in an austere fiscal environment. Additionally, many jurisdictions have reached a statutory limit to incur debt, leaving further moral obligation bond issues out of the question. Even revenue bond issues have become difficult because of increasing strictures on their use by the U.S. Internal Revenue Service.

As an example, most analysts agree that New York could cut its energy bill by approximately 20 percent (saving roughly \$60 million) with capital investments in cost-effective projects. New York is unusual in the decentralized capability that each state agency has to make capital improvements. Nonetheless, the purse strings are ultimately held by the New York State Budget Division and it has implemented a program to appropriate funds, which, for the most part, only cover operations and maintenance improvements (less than one year paybacks). These measures have reduced energy use by a

modest four percent. No general bond issue for energy efficiency improvements in public buildings has ever been undertaken in New York.

The "white knights" expected to take up the slack were the less traditional energy programs designed and promulgated during the Carter Administration to channel federal funds to the states and to achieve efficiency improvements throughout the public sector. It now appears that the tragedy of such programs was the naivete that such limited resources could possibly have a meaningful impact on the huge volume of buildings under public ownership and operation.

Even though the funds were disbursed through relatively innovative programs such as technical assistance grants and revolving loan funds, a fundamental problem remained. For example, the New York State Energy Office estimates that of all the good energy conservation opportunities identified through the Technical Assistance Studies (energy audits) sponsored by the federal Institutional Conservation Program, only 5 percent of the projects received grant money to actually carry out the conservation measures. Ninety-five percent of the good opportunities remain largely untouched.

To add insult to injury, it has now become apparent that even when an energy conservation measure is procured through a grant or loan, there is no guarantee that the equipment will operate efficiently (thus achieving maximum energy savings) for much more than a year after installation. Grants and loans do not provide incentives for efficient equipment performance over the years.

This last point highlights the fact that "the problem" is not all financial. In fact, there are many cases where lack of financing is not the problem, while the lack of managerial expertise is the problem. Hand in hand with the lack of managerial expertise is an aversion by public agencies to all the technical and financial risks attendant to the use of relatively new technologies in the energy efficiency field.

Pierced on this three-pronged dilemma (lack of financing, poor managerial expertise, and an aversion to risk) public institutions must examine alternatives to the traditional capital budgeting process and bond financing. In New York State, three different options are currently under active consideration in this regard:

1. Energy Performance Contracting: providing ad-hoc technical assistance to encourage private investment in public buildings through normal marketplace activity of energy service companies;
2. State Facilities Conservation Fund: establishing a special revolving investment program that supplies public resources for improvements in public buildings, thus keeping all the savings in the public sector; and
3. Corporation for Energy Financing: establishing a public institution to steer private financial and managerial resources to public

buildings by assisting in making deals happen that might not occur otherwise.

The remainder of this paper will trace the advantages and disadvantages of each of these three options. The paper concludes with some rules-of-thumb that might guide a rational approach to mixing and matching the three options, with varying degrees of emphasis determined by the technical needs, financial and managerial resources, and political environment unique to each public jurisdiction.

ENERGY PERFORMANCE CONTRACTING

Many public jurisdictions have noted the development of the energy performance contracting industry. Through the use of shared savings contracts, energy service agreements, and tax-exempt municipal leases, private firms are providing equipment and services at no up-front capital cost to public customers. This form of "off-budget" financing in which fees are paid out of energy savings or revenues achieved is of particular interest to cash-strapped governmental and institutional energy users which end up seeing a positive cashflow from the first day of the transaction. Performance contractors also provide a source of "one-stop" shopping through the packaging of a number of services, including an energy audit, engineering analysis, and the specification, installation, operation and maintenance of energy-efficiency equipment. Thus, through acceptance of both the financial and managerial responsibilities of an energy project, much of the risk normally associated with the energy user shifts to the performance contractor. Best of all, because the performance contractor owns and operates its own equipment, it has tremendous motivation to capture all of the energy savings at a particular installation, even to the point of replacing obsolescent equipment with newer state-of-the-art equipment during the contract term.

Many states and other public entities have experimented with and promoted energy performance contracts. In New York State, these activities have included demonstrations which involved the provision of technical assistance in the form of legal, engineering, and financial advice to participating parties. Upon completion of demonstrations, we undertook information transfer efforts such as holding conferences and the publication and dissemination of case studies and business guides. Our latest effort is the development of model procurement tools such as requests for qualifications and proposals, proposal evaluation guidelines, contract negotiation and implementation guidelines, and standard contract terms and conditions known to be acceptable to relevant regulatory authorities of all public entities. Note that in all cases these activities are meant to facilitate (or accelerate) the rate of market development of performance contractors doing business with the public sector.

Regrettably, performance contracts represent a strange new breed of procurement for many governmental jurisdictions. Whether the issue is "bucking the tide" of the way things have always been done or a concern about the "privatization" of energy management, performance contractors are facing

an uphill battle in obtaining public contracts. Experiences thus far have revealed a panoply of legal, regulatory, and administrative impediments.

For example, some governmental agencies face legal constraints on the use of performance contracts through the existence of conflicting statutes, competitive bidding requirements, and a prohibition on the use of multiyear contracts. In some states, little incentive exists for agencies to consider such contracts because all savings potentially generated accrue to the state general operating fund or because reimbursement policies (e.g., for nursing homes through Medicaid) pay all utility bills as an automatic pass-through expense. In other cases, state accounting procedures fail to recognize that performance contracts are "non-revenue" service contracts, resulting in inappropriate classification as capital improvement contracts, with all the accompanying reviews and approvals.

Many states have explicitly addressed these "institutional barriers" by enacting laws and promulgating regulations to allow, clarify, and encourage public entities to enter into energy performance contracts. In 1985 alone, twelve states, including New York, passed one form or another of such legislation. Nonetheless, a new statute is but the first step in fully validating a new procurement method which must withstand court challenges in order to build a history of case law that supports the intent of the original law. Performance contractors and their clients may face such challenges because of the fundamentally controversial nature of the transaction. Controversial because of the threat to the trades (e.g., electrical, plumbing, mechanical contractors) who perceive performance contractors as competitors. Controversial because of the threat to public employees unions which perceive that performance contractors will displace jobs. And finally, controversial to public policy makers who don't buy the party line that the government can't do its job properly, and anyway, why share public savings with the private sector?

THE STATE FACILITIES CONSERVATION FUND

There are those in government who view unexploited conservation opportunities in public buildings as public assets. They reason that these existing inefficiencies are really opportunities to make lucrative investments and savings, and that it is a virtual misappropriation of public resources to "hand over" these assets to private energy service companies. In fact, this stance is as appropriate for a public organization as it is for a private firm which decides to sink its own resources into conservation investments in its plant rather than share the savings with an energy service firm. That is, these can be very attractive investment opportunities and the public sector should exploit them to the extent that: 1) it has the ability to do so; and 2) these investments offer higher returns than other opportunities.

Virtually all public building owners have invested funds from current and capital budgets in conservation opportunities. Normally these funds should be invested in the highest payoff measures, but a number of "realities" may dictate otherwise. Having exhausted such funds, the question becomes what else the public organization can do before sharing its "assets" with private

firms. Approaches such as a State Facilities Conservation Fund (SFCF) should be explored as an alternative to contracting with energy service companies or doing nothing.

The major advantage of the SFCF is that it allows the public sector to maintain a larger share of the total return on investment. In general, the disadvantage is that it is fairly complicated and quite novel, and will therefore face considerable problems in being implemented.

The first premise of the State Facilities Conservation Fund is that there exist pockets of public capital--such as reserve funds, pension funds, and petroleum overcharge restitutions--which can be secured to finance a revolving fund which invests in energy efficiency opportunities in the public sector. The fund is replenished by a share of the savings from the investment much as is a private energy service company.

The second premise of the SFCF is that the probability of an energy conservation investment really working is enormously enhanced if the organization managing the facility has a direct stake in the success of the project. Therefore, the SFCF provides for a share of the savings to be retained by the facility managers or those having effective influence over them.

The third premise is that the public fiscal authority must be totally supportive of the SFCF or it will never work because the budget authority has the ability to halt the flow of savings to the SFCF and to the facility management. Toward this end, it is intended that the Budget Division will play a central role and be "rewarded" too in the form of reduced outlays for energy for the participating facility management.

The SFCF was, in a sense, conceived as an act of frustration. It was clear that there were a number of one and two year payback conservation opportunities in public buildings that were not being acted upon. The options involving less than one year payback were especially dismaying since it should be possible to finance them out of the operating energy budget (derating fans and, especially, more efficient lighting were conspicuous in this category). But these options were not being pursued.

It seemed clear that although managers of state facilities are generally motivated to be efficient and cut costs, extra incentives were needed to induce them to take the extra steps needed to exploit conservation options. In this regard managers of public buildings share much with their private sector counterparts. It also seemed that these quick payback measures might provide a fairly safe investment opportunity for public funds which could be newly secured (e.g. petroleum overcharge restitution funds or new bond issues) or which were invested less productively (e.g. certain reserve funds or, perhaps, public pension funds).

In 1985 the New York State Energy Research and Development Authority decided that this general approach was sufficiently meritorious that it would be willing to use up to \$1 million of its research and development funds to

finance a pilot demonstration of the SFCF to determine whether this concept could work in state-owned and state-assisted buildings. The main concern was whether the "integrity" of the flow of funds from one agency to another could be maintained. Having the Energy Authority's pilot SFCF make the initial investment would not be a problem; what was at issue was whether the Budget Division could effectively guarantee that the SFCF would receive its share of the savings in order to regenerate and expand its capitalization, and whether the state agency whose building was participating in the program would really receive a share of the savings or whether the Budget Division would simply trim some other item in their budget by an equal amount.

At the present, discussions are in progress to deal with these issues as well as other administrative matters. One of the questions which has arisen is whether the flow of savings to the participating agency and to the SFCF must be appropriated each year by the New York State Legislature. Our current understanding is that this will not be required and that the Budget Division has the authority to do this accounting on its own. One of the more intriguing (and frustrating) matters which must be dealt with is that at least four different units of the Budget Division must be involved in establishing the SFCF--and these units do not customarily work with one another.

It appears that the SFCF is an attractive and plausible concept. Its chief weakness is that its success will require an unusual degree of interagency and intraagency coordination. It is expected that the SFCF approach will succeed only if it is firmly promoted by very senior Budget Division staff.

THE CORPORATION FOR ENERGY FINANCING

A primary attribute of the SFCF is that it is a public institution, with operations and oversight that will be performed by public agencies. As previously discussed, the need for extensive interagency coordination will be the main challenge facing the creation of SFCF, even in its initial operation as a pilot demonstration. Nonetheless, the principal goal of exploiting the good energy efficiency opportunities in public facilities, without handing over those assets to the private sector, will, by definition, be achieved.

The idea for a Corporation for Energy Financing (CEF) represents a mid-point on the spectrum bounded by total reliance on activities of the private marketplace (e.g., energy performance contracting) on one end to total reliance on public institutions and processes on the other end (e.g., SFCF). In other words, CEF is an institution in which we envision a public/private partnership that draws on the strengths of both sectors to achieve a higher volume of energy efficiency improvements in public facilities than either sector could achieve alone.

Over the last year, the Energy Authority has supported a research contract to investigate the feasibility of establishing a CEF in New York State. The project has resulted in recommendations to create such an organization in order to achieve the public/private partnership that is desired.

The first step in establishing CEF would be to organize a formal coalition of what are now disparate programs operating out of the Energy Authority, the State Energy Office, the Public Service Commission, the Budget Division, and the Office of General Services. This coalition would be responsible for institutionalizing those services that have previously been carried out on an ad-hoc or demonstration basis e.g. identifying good energy projects, brokering transactions with energy service companies, and providing technical assistance and management services when necessary.

The Corporation for Energy Financing will be formed if a need is demonstrated for project financing that is not being substantially met by the private sector. This lack of attractiveness by private companies might not be because a good energy efficiency opportunity doesn't exist, but simply because the client institution is too small or in a geographically dispersed area. Here is where the Corporation for Energy Financing could "pool and package" transactions to make them attractive to the marketplace and perhaps directly participate in the financing, not by providing a subsidy, but by providing an inducement to get jobs done that the marketplace would otherwise ignore. CEF would locate sources of financing for different projects and then enter into an agreement with energy service companies, engineering firms, equipment manufacturers and vendors, project developers and/or building owners to provide financing for projects.

CEF's first responsibility will be to initiate contacts with potential sources of financing for attractive projects. Although financing will occur on a project-by-project basis, and different sources of financing may be required for different projects, CEF will obtain preliminary commitments from a variety of potential financing sources in order to accumulate a minimum level of initial capital that is determined to be necessary before proceeding.

CEF may accept applications for financing from energy service companies, project developers, or building owners and may enter into joint ventures with such entities. CEF will establish specific financial criteria for project acceptability by project type (e.g., energy conservation, cogeneration, etc.). Using these criteria, applications for financing will be reviewed by CEF in order to recommend approval or rejection.

As soon as a project is approved, CEF will develop a financing package by completing the following series of steps:

1. Identify sources of financing for the project;
2. Identify the financing vehicle (private debt or equity investment, limited partnership, general partnership, leveraged lease, etc.) that appears appropriate;
3. Identify a likely source of security for the financing; and
4. Allocate project risks to appropriate parties (i.e., construction risk, financing risk, operation risk, credit risk, risk of changes in fuel cost).

Once financing packages have been structured and financing commitments have been obtained, CEF will prepare and negotiate agreements involving a public entity that has applied for financing and assist and/or participate in negotiations between other parties to the transaction (e.g., between an energy service company and the building owner). With agreements in place, CEF will be responsible for transferring capital from the appropriate sources to the ultimate recipients and for monitoring payments to investors and creditors.

The services described above for CEF are only a preliminary list of potential activities for this organization. During its initial years of operation, it will be important to continue to define the needs of the public constituency, and to identify ways in which those needs can be met and whether the establishment of CEF indeed provides benefits that would not otherwise occur.

If CEF assumes the role of project developer and provides financing, then it will essentially be providing the services of an energy performance contractor. It is important to emphasize that this role will be assumed by CEF only after projects have been offered to, and refused by private companies. If private companies are willing and able to take responsibility for each of the viable projects offered to them, there will be no need for CEF's project development or project financing role. In this context, as the energy service industry matures and the public sector market opens up, there will no longer be a need for CEF and so it should be created with appropriate "sunset" provisions.

CONCLUSION

It is clear that there are a large number of unmet opportunities for energy efficiency improvements in public buildings. It seems likely that the inefficiency in this sector even exceeds the inefficiency of the private sector. Given the necessary politics of the public budgeting process, it is taken as a given that sufficient resources will not be provided from the general fund or from special bond issues to cover all of the efficiency opportunities which offer a three year payback or less. This has led to a search for alternative and innovative methods for financing energy efficiency in the public sector.

New York, like other states, is currently exploring alternative methods for financing energy investments. New York began six years ago with an effort (presently continuing) to encourage the use of energy performance contracts by the public sector. The goal, in a sense, has been to "open the market" to this new method. As anticipated, there have been a number of problems, some of which have been ameliorated while others remain. What has become clear is that simply introducing private performance contractors into the public domain will not achieve the majority of the outstanding opportunities. The State Facilities Conservation Fund and the Corporation for Energy Financing were formulated as alternative, but not mutually exclusive, approaches. As previously discussed, each approach has strengths and each has shortcomings. New York State is currently deliberating on how to explore all these options further.

At this juncture we perceive some rules-of-thumb that might be used to determine which of the three options should be applied in different circumstances. Clearly, if the state or local governments can marshal their own resources for conservation investments in their buildings, they should do so. This could be done through general appropriations, public bonds, or the SFCF. Failing that, the energy service companies should be encouraged to enter into agreements with public clients. If the public clients are sophisticated negotiators and knowledgeable about performance contracting, then the central government should stay out of the way. However, we have found that, in most instances, public clients do need brokering and technical assistance services in order to be "good consumers." Energy service companies generally applaud this approach as it helps reduce their transaction costs. Therefore, some governmental facilitating, whether ad-hoc or institutionalized is appropriate.

Finally, we may face a situation in which a public jurisdiction lacks both financial and managerial resources and is unattractive to private energy service companies. This is a situation where the CEF could play a role.

It might be possible to develop a rank ordering of the relative attractiveness of these different ways of making energy efficiency happen in the public sector. It might be possible to analyze the relative costs to the public of these different methods and compare them to the benefits. The truth, however, is that for the foreseeable future none of them will be able to meet the enormous and highly variable energy investment needs of the public sector. We are in a situation where all viable options should be explored and all workable methods employed with no concern that attractive payback opportunities are scarce. The political context, as represented by the procurement philosophies of state agencies and their regulators, will be the arbiter of the ultimate combination of methods and institutions that will eventually prevail.