chapter seven

Energy Performance Contracting for Buildings

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Introduction

A key economic and environmental issue confronting owners of commercial real estate and facility managers today is how to use less energy in existing buildings.[1] The concept of facility energy management has been attracting more widespread attention in the past few years in both the public and private sectors. For instance, in 2007 New York City published PlaNYC, a report about New York City's carbon footprint stating that the greatest source of greenhouse gas emissions in the city is its buildings.[2] The same could probably be said of any major city in the United States. The publication of the PlaNYC report was shortly followed by a major conference hosted in New York on cities and climate change. At this conference, former President Clinton described how the Clinton Climate Initiative had recruited several major financial institutions to arrange financing of $1 billion each to cities and building owners for the purpose of conducting energy audits and undertaking retrofits.[3] The Clinton Climate Initiative estimates that only 1 percent of the potential market for retrofits is being tapped at this time.

Day in and day out, buildings, industrial sites, offices, campuses, government facilities, and residences in the United States use and waste a colossal amount of energy.[4] First, energy is wasted in the way structures are constructed. Without simple but efficient insulation techniques, far too much hot air enters structures in the summer and cool air in the winter. Air-conditioning and heating systems must run longer and consume much more energy than necessary to maintain comfortable temperatures. Many existing structures have old, inefficient boilers and heating and cooling equipment. Lighting is largely through the use of incandescent bulbs, which consume large amounts

of electricity and throw off heat, warming up buildings in the summer and increasing cooling loads during peak electric demand times. Even the way structures are oriented is generally with complete indifference to natural factors, such as the arc of the sun. With proper orientation and building techniques such as passive solar design, overhangs, and natural light harvesting, many structures can have some free lighting and heat and reduce the amount of heat gain in the summer, further reducing heating and cooling loads.

From the point of view of infrastructure, the central generation model results in tremendous waste of energy because no use is made of the heat created in the power generation process. As a result, the average efficiency of power generation in the United States is about 33 percent,[5] meaning that two-thirds of all energy used to make electricity is wasted. Further, much energy is lost in transmission, which is not the case when the sources of power generation are close to the point of use.

In sum, there is a lot of energy to be saved—but all of the techniques that can be deployed cost money to implement. Facility owners are confronted with potentially significant capital costs to make the most efficient use of energy. Once they decide that they need to evaluate the energy usage of a facility, they must also consider how to go about the process. Certainly, some large companies with sophisticated facility management engineers are capable of dealing directly with equipment manufacturers and suppliers to install energy-saving equipment and measures. However, most facility managers are not well trained in the practice of energy conservation and the latest techniques and technologies. Further, as noted below, energy conservation measures work best when a number of them are installed at the same time and are calibrated to work together through sophisticated energy management control systems. For this reason, many facility owners choose to engage energy services companies (ESCOs) that specialize in the analysis of energy usage and the implementation of conservation measures. Hiring an ECSO adds a layer of cost to the project, because an ESCO will add a profit margin on top of the equipment procurement and labor cost associated with a project. While some facility managers argue that the ESCO's cost is not worth the expertise they bring to bear, in practice most energy efficiency projects are carried out through ESCOs, particularly when the facility manager does not have the in-house expertise or the customer is a government agency, which procures projects through a public solicitation process.

When facility owners look to ESCOs to advise them on how to carry out energy conservation measures and to provide or channel financing to a project, the vehicle that is used is an energy performance contract. As a result, this chapter will focus on the practice of energy performance contracting, outline what goes into an energy performance contract, and provide insights into industry practices.

Energy Performance Contracting

In general, an energy performance contract is one between a facility owner and an ESCO to reduce energy usage in buildings and facilities. The ESCO guarantees to the owner that energy savings achieved will be greater than the capital cost of the equip-

ment being installed.[6] From the deceptively simple statement that the amount of energy saved from improvements will cover their capital cost arises a complicated contract that encompasses many elements, such as designing the improvements and systems, installing these improvements and systems on schedule and on budget, making sure they work as specified, measuring the savings, and ultimately proving or disproving the ESCO's calculations of how much energy is being saved. An energy performance contract is in fact a complex hybrid of engineering services, equipment supply, construction, measuring, maintenance, and monitoring contracts. It is performed over a period of years (a typical length is 10–15 years), so it is a long-term contract with all the associated risks of performance over time. The key element is the ESCO's guarantee to the owner that the improvements will result in savings. What goes in this contract, and how it addresses the elements described, will determine whether a facility owner's expectations are met or, from the point of view of the ESCO, whether the ESCO will be protected from, or exposed to, significant liability.

Energy Performance Contract Customers

Probably the most important energy performance-contracting customer today is the federal government. It has had various types of energy efficiency programs in place for more than two decades. One somewhat recent pronouncement of federal policy regarding the energy usage of federal buildings is a January 26, 2007, executive order in which President George Bush ordered that the heads of federal agencies step up energy efficiency over and above the Energy Policy Act of 2005's goals and reduce the energy intensity of their buildings by 3 percent annually through 2015, or a 30 percent cumulative reduction in the same time period relative to a 2003 baseline.[7] Another recent pronouncement is the Energy Independence and Security Act of 2007, which proposed a number of energy efficiency measures for government buildings.[8]

However, the most important recent federal policy regarding energy efficiency is the recently enacted American Recovery and Reinvestment Act of 2009 (ARRA).[9] It contains unprecedented support for energy efficiency initiatives. First, the law requires that $5.5 billion be deposited in the Federal Buildings Fund (FBF), which is dedicated to the upkeep of federal buildings.[10] Of this money, $4.5 billion is available for the purpose of converting General Services Administration (GSA) facilities to high-performance green buildings.[11] The ARRA also contains $3.84 billion in supplemental appropriations spread among the various service branches for Department of Defense operations and maintenance, which is meant to both improve and modernize facilities and barracks and "invest in the energy efficiency of Department of Defense facilities."[12]

The ARRA makes $3.2 billion available to a program known as the Energy Efficiency and Conservation Block Grant (EECBG) program, which provides federal grants to units of local government, Indian tribes, and states to reduce energy use and fossil fuel emissions and for improvements in energy efficiency.[13] Further, $3.1 billion is for the State Energy Program.[14] Also included under the heading of energy efficiency is $5 billion for the Weatherization Assistance Program. Created by the Energy Conservation

and Production Act, the Weather Assistance Program enables low-income families to permanently reduce their energy bills by making their homes more energy-efficient.[15]

Many states are also pursuing aggressive energy reduction targets and efficiency portfolio standards. In New York, former Governor Eliot Spitzer announced a wide-ranging energy program in April 2007 which included a goal of reducing electricity consumption in New York by 15 percent of its projected levels to 2015, a target he described as being the "most aggressive in the nation."[16] As a means of achieving this goal, then-Governor Spitzer stated that the energy bill of New York state government agencies was $700 million per year and set a goal of reducing this amount by 15 percent as well. Governor Paterson, who, prior to becoming governor, was chairman of a renewable energy task force that produced a road map to increase renewable energy generation in New York and encourage energy efficiency,[17] is continuing these policies. A June 2008 order of the New York Public Service Commission furthers the goal of energy efficiency by instituting an energy efficiency portfolio standard, which, among other things, authorizes $79.8 million in annual funding to the New York State Energy Research and Development Authority (NYSERDA) to implement fast-track efficiency programs through 2011 and requires utility companies to collect an additional system charge to fund additional efficiency and rebate programs.[18]

Similarly, in August 2007 Illinois enacted a law that created an energy efficiency portfolio standard and requires Illinois utilities to reduce overall electric usage by 2 percent of demand by 2015.[19] In Massachusetts, Governor Deval Patrick, via an executive order in 2007, directed state agencies to reduce overall energy consumption at state-owned and -leased buildings by 20 percent by 2012 and 35 percent by 2020,[20] and in 2008 the state enacted a law that creates the Green Communities program, which offers benefits to municipalities that make a commitment to efficiency.[21] That same year, Texas enacted a law that establishes a goal of reducing annual electricity consumption at executive branch state agencies, school districts, and certain institutions of higher education by 5 percent for six years beginning September 2007.[22]

Many local government entities also are pursuing energy performance contracting. All over the country, municipalities, school districts, and universities are evaluating the energy usage of their facilities and asking for proposals from ESCOs to make them more efficient. Further, the owner of any private building or facility can consider having its energy use evaluated and then decide whether efficiency measures and capital improvements make sense. Industrial processes lend themselves in particular to the potential for significant savings, as many processes were developed without regard to energy intensity or before more modern control and other technologies were developed.

Components of an Energy Performance Contract

There are five basic phases in the performance of an energy performance contract: (1) the initial energy assessment (IEA), (2) the investment-grade audit (IGA), (3) the procurement/installation phase, (4) commissioning, and (5) the performance period—M&V and O&M. With regard to each of the phases, this chapter will point out the particularities of

either federal or state practice, to the extent one is able to generalize about state practices, with the understanding that in private facility contracting, the owner and the ESCO are free to follow one of the established practices or to strike whatever bargain they choose.

Initial Energy Assessment

The first step of any energy performance contract is a simple assessment of how a facility is using energy and what steps could be taken to realize efficiencies. The ESCO's engineers will typically make a visual observation of the facility. They will also make a rough calculation of the amount of energy—in the form of electricity, natural gas, fuel products, and water—the facility is using; in other words, they will establish a baseline. To do this, the ESCO looks at the facilities' utility bills. With a visual inspection and a review of the facility's utility bills, the steps to be taken to reduce consumption are often quite obvious to engineers trained in energy conservation. A good list of typical measures, based on suggestions made in a manual developed by the Department of Energy's Federal Energy Management Program, is as follows:

- boiler and chiller plant improvements
- building automation and energy management control systems
- HVAC upgrades
- lighting improvements
- building envelope modifications
- chilled/hot water and steam distribution systems
- new or upgraded electric motors and drives
- more efficient refrigeration
- distributed generation
- renewable energy systems
- energy/utility distribution systems
- water and sewer conservation systems
- electric peak shaving/load-shifting
- energy cost reduction through rate adjustments
- energy-related process improvements

In the energy efficiency industry, the most commonly used term to describe each of these is an energy conservation measure (ECM). From the contractual standpoint, the IEA could be done according to a simple stand-alone contract akin to a consulting agreement, or the IEA could be the first phase in an umbrella energy performance contract that provides that the ESCO will proceed to the next phase (the IGA) if the customer accepts the ESCO's preliminary recommendations.

In state and local government performance contracting, the IEA often is not done as a formal step. Because most energy performance contracts are procured following responses to a request for proposals (RFP), state and local government agencies usually allow ESCOs to inspect the facilities and ask questions as part of the RFP process. The ESCO's response to the RFP is really the IEA. In that document, the ESCO describes to the government entity what it can propose as ECMs.

Investment Grade Audit

The next step after the IEA is the investment grade audit, an in-depth study of the ECMs that could be implemented, how much they would cost, how much energy the customer stands to save, and how the project would be carried out. The IGA report produced by the ESCO is a very detailed document that includes the establishment of the facility's baseline energy usage based on more detailed observations than those carried out during the IGA stage, specifications of the ECMs proposed and the equipment to be installed, the cost, the amount of energy in units of energy that should be saved, and the ESCO's estimate of the monetary savings that should be realized. The IGA report also includes the detailed methodologies and breakdowns used to arrive at the estimate of energy savings. Typically, the ESCO preparing the IGA report will state in it the percentage of the estimated energy savings it is prepared to guarantee and how those savings will be measured. The IGA report should also include a detailed financial pro forma that takes into account the financing costs in projecting out the energy savings.

As with the IEA, the IGA report can be done under a separate agreement by which the ESCO is paid a fee for its services (usually tied in significant part to the delivery of the report) or it can be included in an umbrella energy performance contract that provides for the cost of the IGA and the report produced to be rolled into the overall project cost if the customer decides to go ahead with all or part of the ECMs recommended.

Procurement/Installation Phase

As mentioned above, one of the peculiarities of an energy performance contract is that it is, in important part, a construction contract. Certain of the form energy performance contracts available give short shrift to the construction provisions. While this is understandable in fairly simple performance contracts where the ESCO is replacing lighting, upgrading insulation, or otherwise installing off-the-shelf products like windows, having poorly formed construction clauses is risky when the ECMs are more complicated or involve equipment that will have to meet performance parameters, such as biomass boilers or combined heat and power (CHP) plants. This is true whether one is approaching the question from the point of view of the ESCO or the owner. Indeed, on-site generation with the use of waste heat for thermal applications creates the potential for significant energy savings, but it also means that a complex piece of equipment has to be designed, procured, installed, and connected to the host facility so that it works as specified and does not run the risk of damaging the host facility. An attorney experienced in construction contracting definitely should review energy performance contracts involving more complex ECMs. If on-site generation is involved, an attorney familiar with state and federal energy regulatory law should also provide input due to the complex issues surrounding interconnection of the on-site generation to the local electric distribution system and how the on-site system and the electric grid work in parallel.[23]

Thus, the key risk allocations typically addressed in construction contracts should be spelled out in an energy performance contract. Construction contracting is in and of

itself complex, and a lot could be written about these risk allocations. A detailed discussion of construction contracting is beyond the scope of this chapter; as owner's counsel may not be an expert in construction matters, below are some of the main issues and what to be aware of.[24]

- *Scope and Testing*: An owner needs to make sure that the ESCO actually is installing what it has promised to install and that the ECMs actually work as they should before the work is deemed substantially complete and accepted. In this regard, there often are testing and commissioning protocols in the IGA report or the contract annexes, which an owner should have reviewed by a consultant or engineer familiar with how ECMs work in the context of an efficiency program.
- *Warranty*: The industry norm is one year after substantial completion, although in some circumstances and with respect to some equipment (most notably boilers and solar photovoltaic panels) it may be longer. From an owner's point of view, it should ensure that there are no unusual provisions for the ESCO to avoid its warranty obligations, which typically are to repair or replace defective equipment during the warranty period. From an ESCO's point of view, it normally will seek to limit the owner's remedies for defective or non-performing equipment to those specified in the contract for breach of warranty, which is the norm in construction contracting. Attention should also be paid to warranties given by the various underlying equipment manufacturers and suppliers, the benefit of which should be assigned to the owner in case the ESCO is unable to perform itself—a concern in an industry where there are a lot of new entrants who may not be well financed and able to stand behind their projects.
- *Payment*: The method of payment chosen in a contract can make a big difference in how smoothly a project proceeds. The two basic methods in construction contracting are progress payments (i.e., monthly invoicing for the cost of work actually performed) based on a schedule of values and milestone payments, which require the principal to make payment upon the builder achieving the stage or milestone specified in the contract. Both are widely used, although milestone payments are preferable when representing owners or even ESCOs with respect to their equipment suppliers and subcontractors because it gives the contractor more of an incentive to move toward completion, provided the milestone payment schedule is not too front-end loaded.
- *Schedule*: How the risk of delay is allocated is a key part of a construction contract. Normally, a contractor should be entitled to both extra time and costs when it cannot complete on time due to the owner's act or omission or events beyond the control of the parties. Usually, extra time is not a big issue in a contract negotiation, although late commissioning of the ECMs means the owner has to wait longer for savings, but the costs aspect often is negotiated heavily because owners fear that if a cost-adder clause is too broadly drafted, the price will increase in ways they can't control. Construction contracts typically have liquidated damages for late delivery, which in energy performance contracts can

be calibrated to unrealized savings. Liquidated damages clauses can be controversial because contractors generally dislike them and try to avoid them, although some recognize that there can be a benefit to fixing damages in advance so the uncertainty of potential damages is not an issue.

- *Changes*: One key thing that causes change orders in construction contracts is subsurface conditions that are different than expected and hazardous conditions on-site. Because most ECMs don't require much excavation, the subsurface risk is not as big of an issue as it is in typical process plant construction. While working inside of existing structures, hazardous materials on-site (asbestos, lead, etc.) are a much more frequent problem in energy performance contracts. The consequences of disturbing hazardous materials need to be spelled out, as well as which party is responsible for remediation and the associated cost and delay. With respect to change orders due to unforeseen conditions, an owner will usually want to retain as much control over the process of issuing change orders as possible, while a contractor will usually want to have a contractual right to obtain change orders if certain events happen or situations arise.
- *Security*: Both owners and ESCOs can have performance and payment concerns regarding the other. If an ESCO is concerned about the ability of the owner to make payments when due, some underlying payment support, such as a letter of credit or an escrow fund, can be put into place. This is rare in energy performance contracts, but if the owner does not raise the financing before implementation starts, ESCOs should check to make sure that the owner is a substantial entity with the financial resources to ensure it can pay for all ECMs. From the owner side, if the owner is concerned that the ESCO may not be able to carry out the project, it can seek to obtain performance and payment bonds or parent guarantees. Performance bonds carry an extra cost, and the parties will negotiate over who bears it. In most energy performance contracts, ESCOs do provide construction-style performance and payment bonds.
- *Limitation of Liability*: It is not unusual for construction contractors to limit their liability to some part of the contract price or seek to put some other cap into place, but careful attention should be paid to these and other clauses purporting to limit the liability of a party and to how these work together with the insurance policies ESCOs should be required to maintain. For instance, overly broad limitations of liability could pose a contractual obstacle to recovering under certain policies, such as errors and omissions and professional liability.
- *Insurance*: Few things are more tedious than reviewing the insurance provisions of a contract, but an owner is well advised to have an insurance expert examine an ESCO's policies to make sure that they really do provide the coverage promised and that they don't have overly broad exclusions. It is important to note whether the ESCO's policies allow naming the owner as additional insured and to follow the process that the policy lays out.
- *Dispute Resolution*: As in any contract, an efficient dispute resolution mechanism should be provided. Some sort of alternative dispute resolution, such as an

initial mediation and then arbitration, generally is preferable over simple submission to court jurisdiction, but many factors can influence this choice.[25]

Regarding construction contracting, it should be noted as well that when dealing with any agency of the federal government as customer, certain standard clauses from the Federal Acquisition Regulation (FAR) will be included in the contract, and that they contain standard risk allocations on the points highlighted previously, which can be somewhat different from what is typically the case in private construction contracting.

Commissioning

Once all of the ECMs are installed, they will go through a series of tests to make sure they are functioning as planned. This is similar to testing for substantial completion in a construction contract. What is unique about this phase with respect to energy performance contracts, however, is that often ECMs are designed so that a number of them work in conjunction with one another. The energy savings are not realized, or only partially realized, if an element is missing. The process of testing all ECMs to establish that they work in conjunction with one another is known as commissioning. Because different ECMs have different lead times, sometimes the testing can be held up for quite a while until everything is in place and measurements can be taken of savings with all ECMs functional. In this regard, it may be useful to define some threshold measures of substantial completion so that ECMs that are installed and functioning can begin producing savings for purposes of the contract.

Performance Period—M&V and O&M

The most complex aspect of an energy performance contract is the key one—how to measure the savings that the ESCO promises will be produced as a result of the capital improvements and to verify them over the term of the contract. This is known as the measurement and verification phase of the project, or M&V in industry parlance. Most customers tend to approach the proposed guaranteed savings in dollar terms: if they enter into an energy performance contract with an ESCO, they will save X dollars in energy costs every year. Although it is intuitive, this is unfortunately not the correct way to look at it. The reason is that the amount of the various types of energy used by the facility—electricity, natural gas, water, heating oil, etc.—and their cost are influenced by many factors unrelated to the ECMs installed by the ESCO, or otherwise beyond the control of both the customer and the ESCO.

Energy prices in today's deregulated markets vary constantly. If, for example, having more efficient HVAC equipment and motors results in electricity savings, the facility will use fewer kilowatt hours over time. However, there is no way for the ESCO to predict how much a kilowatt hour of electricity will cost five years after the improvements are made. So, the relevant factor for the owner to be able to be assured that it has made a good investment in entering into the energy performance contract is a comparison of the number of kilowatt hours used before the ECMs were installed and

after. In fact, its electricity bill may be higher after installation of ECMs if the price of electricity has gone up enough. Nonetheless, the improvements made should be considered a success, given that the owner's electricity bill would have been a lot higher five years later had the improvements not been made. Similar considerations apply to natural gas, petroleum products, and water and their units of measurement and costs. Conversely, from the point of view of the owner, the ESCO should not get credit for producing energy savings merely because the base unit prices of energy go down fortuitously after the improvements are made.

Another element to be taken into account is facility usage. If the facility is an industrial site, its output may vary over time. Likewise, a commercial building may be occupied fully or it may lose tenants. School districts may add students and expand, or they may shut down programs and buildings. The list of potential variations for all the different types of facilities is long. Variations in facility usage are also things that the ESCO cannot control, but that could have a significant impact on the amount of energy used by the facility and thus how much it spends on energy over time. As a result, it is not fair to try to hold the ESCO responsible for variations in usage, as compared to the baseline, in its guarantee of energy savings.

Finally, in evaluating the energy savings projected by the ECMs, the customer needs to take into account that certain aspects of its own behavior will affect the amount of money it ultimately saves. This is particularly the case with air-conditioning, heating, and ventilation systems. The IGA report will indicate what assumptions the ESCO is making about the temperature settings at which the air-conditioning and heating systems will run. If the customer insists on having cooler air in summer or warmer air in winter, it will use much more energy than the ESCO has projected, and the savings in units of energy will be less.

There are two basic philosophies for how to deal with the inevitable long-term fluctuations in energy costs and facility usage over the length of the performance period. One is called the adjustment to baseline approach and the other the stipulated savings approach. In the first, all of the elements of baselines established in the IGA report that could affect energy usage (facility capacity, temperature, humidity, set points for air conditioning and heating, and energy prices) are measured frequently by the ESCO after installation of the ECMs. The data are entered into mathematical formulae that adjust the new conditions to simulate those in the baseline case.

In the second philosophy, the elements that can vary are assumed for the length of the contract, stipulated in industry parlance, so that apples-to-apples comparisons can be made later. For example, when the ESCO measures electricity savings five years after installation, it will use the same kilowatt hour price used in the baseline case, no matter what a kilowatt hour of electricity costs five years into the contract. In that way, the real differences in electricity usage can be measured without regard to how the cost of electricity has fluctuated over the period of measurement specified in the contract.

Expanding on these two basic themes, most energy performance contracts make reference to M&V protocols established by the Department of Energy's Federal En-

ergy Management Program (FEMP) as a type of industry standard.[26] Most consultants are familiar with these and are comfortable in recommending to owners that they be accepted. Another choice is a set of international protocols.[27]

The four basic M&V protocols established in the FEMP guidelines for energy performance contracts are the most widely used. They are summarized in the chart below, taken from the FEMP guidelines. The option used will be specified in the contract.

M&V Option	Performance and Operation Factors	Savings Calculation	M&V Cost
Option A: Stipulated and measured factors	Based on a combination of measured and stipulated factors. Measurements are spot or short term taken at the component or system level. The stipulated factor is supported by historical or manufacturer's data.	Engineering calculations, components, or system models.	Estimated range is 1 to3 percent. Depends on number of points measured.
Option B: Measured factors	Based on spot or short-term measurements taken at the component or system level when variations in factors are not expected. Based on continuous measurements taken at the component or system level when variations are expected.	Engineering calculations, components, or system models.	Estimated range is 3 to15 percent. Depends on number of points and term of metering.
Option C: Utility billing data analysis	Based on long-term, whole-building utility meter, facility level, or submeter data.	Based on regression analysis of utility billing meter data.	Estimated range is 1 to10 percent. Depends on complexity of billing analysis.
Option D: Calibrated computer simulation	Computer simulation inputs may be based on several of the following: engineering estimates; spot, short-, or long-term measurements of system components; and long term, whole-building utility meter data.	Based on computer simulation model calibrated with whole-building and end-use data.	Estimated range is 3 to 10 percent. Depends on number and complexity of systems modeled.

While the concepts contain a lot of jargon, essentially A and C are the stipulated savings measures and B and D are the adjustment-to-the-baseline measures. In sophisticated energy performance contracts, it is not entirely all adjustment-to-the-baseline or stipulated savings. The ESCO may well specify that different FEMP protocols apply to different ECMs, so that the M&V philosophies that apply to a particular energy performance contract can be a mixed bag.

From a contractual standpoint, a facility owner or operator should work with a consultant experienced in the field to make sure that its expectations regarding energy savings will be met in light of the way an ESCO is proposing to apply the standard M&V protocols. Again, owners should temper their expectation that hiring an ESCO and entering into an energy performance contract will necessarily mean that they will be saving a certain number of dollars every year. They should be oriented toward thinking of an energy performance contract as a vehicle for saving units of energy over time, with the understanding that because, generally speaking, energy prices tend to rise over time, they will necessarily realize enough dollar savings to cover the cost of whatever financing they have taken out. Thus, an ESCO should not get credit for a savings if energy prices decrease, nor should it be blamed for a loss if energy prices increase. The relevant question is whether the facility owner or operator is using less energy overall as a result of the energy performance contract.

Another nitty-gritty aspect of energy performance contracting is how the operation and maintenance of the ECMs installed will affect the savings achieved. With regard to most ECMs, facility owners or managers will want to use their own personnel to operate and maintain them so as to not incur an ongoing cost to the ESCO to do so. If that is the case, it is important for the contract to be fairly specific on the O&M protocols for the various ECMs so that the customer will have clear guidance on the maintenance requirements. In all fairness to the ESCO, if the owner or facility manager does not hold up its end on the O&M, the promised levels of savings will not be achieved. It is good practice, therefore, for the ESCO to conduct periodic site visits to make sure that the agreed O&M practices are being carried out and otherwise to exert agreed-upon O&M oversight. The ESCO should be paid a fee for this service.

It is worth noting, however, that if on-site generation of some sort is part of the ECM package, a detailed O&M agreement will have to be entered into either with ESCO or a third-party O&M contractor. On-site generation equipment only fulfills its promise of efficiencies and savings if it is well maintained.

Government Contracting Aspects

While an energy performance contract between an ESCO and a private facility owner follows entirely the general principles of private commercial contracting, an important part of the energy performance contracting market is with government entities as the customer, so that a legal discussion of the various aspects of an energy performance contract necessarily involves many government contracting issues. The considerations are not uniform from one level of government to the other. While federal government

practices have become something of a reference point for the industry, state and local government procurement and contracting practices are by no means identical to federal practices. State and local practices not only vary from one state to another, they also vary between different counties and municipalities within a state.

This section will emphasize the common threads of state and local practice, but in the end the particular rules and regulations need to be examined in every case. Indeed, when dealing with a local government entity, such as a school district, a customer should start from the bottom up and check the procurement rules at the most local level at which they exist so that unpleasant surprises about the authority of the local government to procure and execute the contract are avoided after much effort has been invested by the parties. For municipalities, this means checking the town charter or other organic documents of the government entity. They will normally have some provisions regarding the authority of the local government or school district to expend funds for capital projects or to borrow money. Different municipalities or school districts may view the cost of procuring ECMs as either an up-front capital expense or a recurring operating expense when a lease is entered into and the lease payments are made over time, in theory from the amount of money saved from the ECMs.

In the end, the local procedures must be followed. In many places in New England, the quaint tradition of the town meeting actually means that the expenditure of funds for the capital cost of an energy performance contract cannot occur until a majority of the voters approve it at a town meeting. Most municipalities also have local procurement and government contracting regulations. It was once rather difficult to find these, but fortunately today most municipalities have Web sites where they are posted.

One also has to consider the interplay between state law and local regulations. For instance, New York has a short chapter on energy performance contracts in its energy law (Article IX), but its provisions have important practical consequences on the way in which energy performance contracts are procured and carried out. The following is the law's main statement of policy:

> Notwithstanding any other provision of law, any agency, municipality or public authority, in addition to existing powers, is authorized to enter into energy performance contracts of up to thirty-five years duration, provide that the duration shall not exceed the reasonably expected useful life of the energy facilities or equipment subject to such contract.[28]

The key phrase in this provision is the lead-in, "notwithstanding any other provision of law," which means that all other competing or inconsistent provisions of local law are overridden by the policy statement in favor of energy performance contracting. This is significant in New York, which has elaborate municipal finance and public procurement laws.

Another key point in New York is that local government entities do not need to follow the strict competitive bidding requirements that are otherwise required in public

procurements. The usual rule is that local governments have to solicit bids for service and equipment purchases and award the contract to the lowest competitive bidder. Under Article 9, an energy performance contract can be procured by a request for proposals:

> In lieu of any other competitive procurement or acquisition process that may apply pursuant to any other provision of law, an agency, municipality, or public authority may procure an energy performance contractor by issuing and advertising a written request for proposals . . . .[29]

The words of the lead-in, "in lieu of any other competitive procurement or acquisition process that may apply," are a strong statement of policy and mean that the lowest bidder need not be chosen,[30] which is an important consideration when many proposals with different energy conservation options are being evaluated by a local government entity. Another important consequence of these Article 9 provisions is that they can be read to exempt energy performance contracts from the most troublesome aspects of a particular New York law known as the Wicks Law, which in public contracting requires separate specifications for plumbing, mechanical, and electric work and separate bidding for each of these trades. This means that an ESCO can, in effect, serve as a general contractor and subcontract out the various elements of the work under an energy performance contract instead of having to comply with the cumbersome process of obtaining separate bids by trade. This represents a significant streamlining of the process in a public entity's implementation of an energy efficiency program.

While the foregoing represents a relatively clear path toward the award of an energy performance contract in New York, Article 9 still does not allow local governments and ESCOs to ignore the local procurement requirements completely, as the same section that permits a local government to procure an energy performance contract by a request for proposals also requires that the request for proposals be issued and advertised in accordance with the procurement and internal control policies that the applicable agency, municipality, or public authority has established under the various New York state laws that apply to government subdivisions.[31]

The interplay between state law and local regulations is also important in other states. In California, the process for procuring an energy performance contract is exempt from the competitive bidding process, and state agencies do not need to advertise or award the contract to the lowest bidder if it is determined that the terms of the contract are in the best interests of the agency at a public hearing.[32] Similarly, a Pennsylvania law pertaining to energy performance contracting explicitly authorizes the use of the more flexible competitive sealed proposals process instead of the competitive sealed bidding process required for most public contracts, which enables an agency to evaluate each proposal and choose the one that is most advantageous rather than the lowest bidder.[33] In addition, the Pennsylvania statute can be read to exempt energy performance contracts from Pennsylvania's Separation Act, which, like New York's

Wicks Law, requires separate specifications and bidding for certain trades.[34] Lastly, in Texas, energy performance contracting is explicitly exempt from the burdensome requirement that agencies send a proposal for all public projects to the Texas Facilities Commission for approval, analysis, and budgeallocation.[35]

If all this sounds confusing, that's because it is. Most local government officials in New York have no idea how to put together and issue an RFP for an energy performance contract, and the same can be said for practically everywhere else in the country. As a result, local government officials hire advisers and consultants to help. New York State also has the New York State Energy Research and Development Authority (NYSERDA), which offers advice to local government officials in procuring energy performance contracts. NYSERDA has published a guide to energy performance contracting in New York, which sets out guidelines that can help public officials.[36] It provides a good framework for local public officials to follow in launching the process. If the local authority is asking for NYSERDA funding, NYSERDA's procedures must be followed. Another state that has a very thorough guide to the energy performance contracting process is Oregon. The *Guide to Energy Savings Performance Contracting* contains a detailed, step-by-step analysis of the entire process, with instructions to local officials as to how to procure the contracts.[37] As in New York, the process of procuring an energy performance contract can be exempted from normal competitive bidding procedures for public improvement contracts if the relevant agency follows certain statutory procedures.[38] If an agency chooses not to comply with these procedures, it must obtain an exemption from competitive bidding.

Financing Energy Improvements

Once a facility owner or user decides it wants to save energy, an early question becomes how to finance the cost of the capital improvements that will have to be made. Methods used by the federal government and state and local governments provide an interesting contrast, and thus two basic models that can be considered and followed entirely or partially by private facility owners.

The basic federal model is that no payments at all are made to the ESCO until all energy efficiency measures are installed and tested to show that they are starting to produce the energy savings promised. Then, payments to the ESCO are made only over the term of the contract (15 years, typically) from energy savings actually realized, as determined by the measurement techniques methods specified in the contract. This means that the ESCO must find a way to finance all of the construction and capital costs itself, and is not assured of any payments at all if the improvements do not work as specified. While this sounds scary, the practice is accepted by ESCOs who do business with the federal government. This is because they realize that most energy efficiency measures, if installed correctly, will necessarily result in savings. In addition, ESCOs also realize that if the efficiency measures are indeed installed correctly, and savings measured in the accepted ways, the federal government is good for the money over time. As a result, there are financial intermediaries who will finance the up-front costs of a federal energy effi-

ciency project for ESCOs who have a good track record. Of course, some ESCOs have significant financial resources of their own and are able to finance the capital costs of the efficiency measures from their own resources, or the financial resources of other companies within their corporate families. They may prefer to do this if they have working capital or other lines of credit at interest rates lower than those offered by the houses that specialize in federal government performance contracting.

On the state and local government level, the norm is that the government entities provide their own financing. The reason for this is that many state and local government entities have access to some form of tax-advantaged municipal finance that results in lower interest rates than those in the private market. If a local government does not wish to use its own credit to raise financing, many states have programs whereby a state agency will make funding available to local governments. In any case, the practice is that the customer has the funds available up-front to pay the ESCO to install the ECMs. Although this sounds less advantageous from the point of view of the customer than requiring the ESCO to finance its own up-front costs so that the state or local government entity does not have to borrow and is not out-of-pocket, it is not necessarily the case, because the cost of capital is factored into the prices charged by the ESCOs—the lower the cost of capital for the owner, the greater the potential savings. The most typical forms of state and local government financing are municipal bonds and tax-advantaged equipment leases.

Typically, the disbursement of the proceeds of the municipal bond issuance or the lease financing is made into an escrow account at the outset of an energy performance project. Funds are then disbursed from the escrow account to the ESCO, much as progress payments are made in a private construction contract—as different phases of a project are completed, payments are made. Because the installation period for the efficiency measures can be spread out over several months—up to one year is not uncommon for larger projects requiring the installation of more sophisticated equipment—the escrow account is interest-bearing, and the interest proceeds on the escrowed funds are taken into account in the overall economics of the project, i.e., the decision about what the principal amount of the initial loan should be. With respect to the decision to disburse the funds to the ESCO, often the lender insists that an engineer evaluate whether the ESCO's requests for payment are justified by the state of progress of installation.

Finally, it should be noted that there are many government and utility incentives being put into place to help energy efficiency measures. The details of each program need to be studied and an inventory of them is beyond the scope of this chapter, but there are many potential sources of funding, particularly through local utility rebate programs. Many electric utilities, prodded by public service commissions with jurisdiction over them, are adopting aggressive demand-side management programs, with rebates to customers to cover the installation of various types of ECMs—especially lighting, motor controls, and other ECMs that have a direct impact on the amount of electricity facilities use.

There are also federal tax incentives. Pursuant to the Energy Policy Act of 2005, Section 179D of the Internal Revenue Code allows building owners to deduct the entire cost of a lighting or building upgrade in the year the equipment is placed in service, subject to a cap of $1.80 per square foot.[39] The provision was originally effective for property placed in service from January 1, 2006, through December 31, 2008. This provision was extended until the end of 2013 by the Energy Improvement and Extension Act (EIEA), which passed as part of the Emergency Economic Stabilization Act of 2008.[40]

States and municipalities are beginning to offer similar incentives to encourage the use of renewable energy. For example, in September 2008, Berkeley, California, approved a financing initiative for loans to homeowners who install rooftop solar panels, referred to as the Berkeley Financing Initiative for Renewable and Solar Technology (FIRST). The initiative finances city-backed solar loans through a small addition to the property taxes of each participating home. Financing of up to $37,500 per installation for either residential or commercial properties citywide is available for these projects. The special tax obligation will remain as an obligation of the property when the property is sold. If the owner sells the property before the end of the 20-year tax period, the new owner takes over the special tax obligation as part of the annual tax obligation on the property. The energy systems are part of the property, and ownership of the energy system will transfer to the new owner at the close of the real estate sale. Currently, only residential or commercial properties located in the Berkeley are eligible for funding. A pilot version of the program initially funded 40 solar panel installations distributed throughout Berkeley.[41]

In 2009, New York state enacted legislation that authorizes municipalities, by drawing on federal grant assistance and credit support, to create finance programs for building owners for the installation of renewable energy systems and energy efficiency improvements, related energy audits and feasibility studies, and verification for the installation of such systems.[42] This legislation allows municipalities and building owners to make use of property assessed clean energy (PACE) finance programs, which eliminate the cost of energy-efficient retrofits by allowing owners to pay for improvements over 15 to 20 years through an increase in their annual property taxes. Under the law, loans will only be made for energy-efficient improvements that are deemed appropriate by an energy audit and for renewable energy systems that are determined to be feasible through a feasibility study.[43] The loan made under the PACE programs will become a lien on the property benefited by the loan.[44] Other states have passed similar PACE legislation.[45]

In sum, a private facility owner has the choice then of either using the federal model (no payments to the ESCO at all until all efficiency measures are installed) or the state/local model (progress payments like in private construction contract)—or a private owner can simply choose to bear the up-front costs. No matter the structure, all possible incentives, rebates, and tax breaks should be added to the mix.

Non-appropriation Risk

One thing that tends to make ESCOs nervous in dealing with state and local governments, particularly when the capital costs of an efficiency project are financed through some sort of municipal finance, is the practice in municipal finance of making loan servicing subject to appropriation of the relevant state or local government entity. In other words, when state or local governments borrow money, their agreements with their lenders provide that debt service need not be made if the relevant government entity does not appropriate sufficient funds to pay principal and interest. In New York, Article 9 of the Energy Law also requires that a so-called non-appropriation clause be inserted in every energy performance contract entered into by a state government agency or a municipality.[46] In other words, in a long-term energy performance contract, the implication is that the customer need not make payments to the ESCO if sufficient funds are not appropriated.

While this also sounds scary, in practice the non-appropriation risk is one that the ESCO is generally willing to bear when entering into a relationship. If the proceeds of a municipal financing are disbursed into escrow and then paid to the ESCO as the installation of the efficiency measures progresses, the ESCO is more or less fully paid by the time installation is complete from funds that are already available to the customer—and presumably approved by whatever processes are necessary. This does not take into account long-term M&V and O&M payments, but this does mitigate the lion's share of the ESCO's financial exposure. In addition, even without disbursement into escrow, if energy efficiency measures work as they should, and underlying energy prices do not spike, the state or local government entity should be realizing fairly significant savings over time in the form of lower energy bills. Therefore, even if its appropriations are not increased from year to year, it should still have some extra cash to make payments to the ESCO. Further, defaults on municipal finance instruments are quite rare in the United States, precisely because state governments and local entities realize that not appropriating sufficient funds to make debt payments or to fund long-term contractual obligations will be very badly perceived in the municipal finance markets—and that any such incident will result in higher borrowing costs or lack of access to fresh capital.

Finally, case law establishes that state or local government entities cannot use non-appropriation of funds as an excuse to void otherwise legitimately incurred contractual obligations. The New York State Constitution restricts expenditures of state and local government entities to money from current revenues. Expenditures must be appropriated though legislative action or public referendum.[47] However, courts in New York have found that a non-appropriation clause cannot be used as a "sword to divorce the state, for purposes of its own convenience, from a contract fairly entered into and honestly performed."[48]

The leading case in New York involved a lease between a private landlord and a division of the State University of New York (SUNY) for a commercial property in Manhattan.[49] The lease contained a non-appropriation (or executory) clause. Before the end of the lease, the SUNY division wanted to relocate, but the landlord would not let

it out of the lease. The New York State legislature went so far as to pass a law eliminating all appropriations for rental payments under the unexpired lease. The court did not allow this, finding that the primary objective of the law was for the government to impair its own contract for convenience, which was not an important public purpose, and that the impairment of contracts clause of the State Constitution "bars such expedient *post hoc* changes in contract obligations."[50]

The laws regarding non-appropriation of funds for public contracts differ in every state and merit attention from counsel during the contracting stage to make sure they do not have any particular quirks that could upset the economic expectations of the parties over the performance of what is a long-term contract.

Contract Models

As a facility owner and an ESCO contemplate entering into an energy performance contract, they must consider what form of contract document to use. As mentioned above, energy performance contracts are complex documents, incorporating many specialized legal and technical terms from a variety of different contract types. On the federal level, a clear model has been developed over the years. On the state and local government levels, as well as in private contracting, there is no dominant model, and the parties are left to consider several different alternatives.

On the federal level, the most comprehensive model is the indefinite delivery/indefinite quantity contract (IDIQ) that is used in the FEMP.[51] It is a very comprehensive document that covers all of the phases of an energy performance contract discussed below. It also includes a number of Federal Acquisition Regulation (FAR) clauses that cannot be varied or negotiated. The main interplay between the ESCO and the relevant federal agency is in the attachments related to the specific measures that need to be filled out and agreed to.

Another helpful federal model was developed starting in 1995 by the Air Force, the Army, the Navy, the Department of Defense, a number of electric utilities, and the Edison Electric Institute for use in implementing energy efficiency measures on military installations as part of the Areawide program, a program authorized by law to allow federal government agencies to enter into sole source contracts with the local franchised utility for efficiency measures.[52] This model is known as the DOD/EEI Model Agreement for Energy Conservation and Demand Side Management Services.[53] It was published along with a commentary that explains the drafting of certain provisions. Given the input of the electric utilities, which worked with government attorneys, contracting officers, engineers, and other personnel from the agencies mentioned, this model is rather less bureaucratic than the IDIQ contract and somewhat more commercial in the way it allocates risks. However, by its own terms it applies only to contracts under the utility areawide programs, and other federal government agencies are not required to follow its terms. Similarly, the Building Owners and Managers Association (BOMA) has teamed up with the Clinton Climate Initiative to create a model energy performance contract.[54]

On the state and local level, there is no single model that has developed as the norm. The main fully formed model that can be located was one developed a few years ago by a nonprofit organization based in Colorado called the Energy Services Coalition, and updated in 2005.[55] This model covers many subjects, but it leaves most of the key terms to be filled in by the parties. It needs to be considered carefully by ESCOs and owners alike and should be used with caution. Because there are not many readily available models, the Energy Services Coalition form has gained some currency in the industry among consultants, and some state governments have adapted it for use in their programs. New York also has different model contracts put together by NYSERDA, including a fixed-price energy performance contract with guaranteed savings.[56] It is straightforward, but does contain some significant inconsistencies. The provisions on the construction/installation aspects are somewhat truncated and in some instances quite (and unnecessarily) unfavorable to the ESCO.

None of these forms is really the norm and, since the contracts cover so many types of legal disciplines, none of them is succinct in laying out the parties' obligations and risk allocations. This is unfortunate because a well-drafted model would no doubt speed up the process of entering into an energy performance contract and keep transaction costs down. However, as energy performance contracting is becoming more widespread, more and more states are developing forms of agreements.[57] Invariably, they are detailed and complex documents. Both customers and ESCOs, as well as their legal counsel are well advised to consider carefully the terms of the contracts they will be using because much could be at stake, particularly in a large project, and a poorly drafted provision can result in unintended consequences.

Performance Contracting for New Buildings

Most of the discussion of energy performance contracts has to do with existing buildings. It is possible, however, to enter into a type of performance contract for new buildings. If a building is still in the design phase, or even if construction is starting, an ESCO can examine a conventional design or construction and incorporate ECMs into it. Normally, this would be perceived as a change under the existing design-build or construction contract and require payment by the owner of the additional capital costs. However, this can be done in a performance contract way—namely, where the ESCO makes an assessment of the conventional technique energy baseline and calculates the energy savings that will occur with the incorporation of certain ECMs. The greater capital cost is then justified by lower operating costs afterward. If the ESCO is willing to finance or arrange financing of the up-front costs, this provides an even greater benefit to the owner.[58]

From a contractual point of view, the arrangement between the ESCO and the owner is not a simple one. It starts out as a type of owner's engineer arrangement, where the ESCO is advising the owner regarding the implementation of the ECMs. In one project I worked on, the ESCO was not itself installing the ECMs; rather, it was specifying them and having the original construction contractor do the installation, but

nonetheless guaranteeing savings after the installation. The contract was a complex tripartite agreement. Further, whether the ESCO or the original contractor is doing the installation of the ECMs, it is important to review the savings calculations carefully, because there is no real measured baseline to start from, unlike in a project for an existing building. Both the baseline and the projected savings are thus, in a sense, imaginary. However, it can definitely be worthwhile for an owner in the process of designing or constructing a building to subject the design to an energy efficiency review and make changes to incorporate ECMs, which can bear fruit for many years to come in the form of reduced energy usage.

Notes

1. Chapter 6 is devoted to discussing alternative energy options for buildings.
2. A copy of this report is available at http://www.nyc.gov/html/planyc2030/downloads/pdf/full_report.pdf.
3. The four participating energy service companies (ESCOs) are Honeywell, Johnson Controls, Siemens, and Trane. The five banks are ABN AMRO, Citi, Deutsche Bank, JP Morgan Chase, and UBS. *See* William J. Clinton Found., Press Release, President Clinton Announces Landmark Program to Reduce Energy Use in Buildings Worldwide (May 16, 2007).
4. For example, America uses twice as much energy per unit of economic output as Germany, and nearly three times as much as Japan. *See* U.S. DEPT. OF ENERGY, ENERGY INFORMATION ADMIN., ANNUAL ENERGY REVIEW 2005 (June 2006).
5. *See Electrical Generation Efficiency*, Working Document of the NPC Global Oil & Gas Study (July 18, 2007).
6. New York has a statute devoted specifically to energy performance contracts, Article 9 of the New York State Energy Law. Energy performance contracts are defined in N.Y. ENERGY L. § 9-102(4). The federal government, which has been a leader in promoting energy performance contracting for over two decades, has contracts known as energy savings and performance contracts, or ESPCs. In addition, many states other than New York have statutes devoted to ESPCs. Some examples include Illinois (50 ILL. COMP. STAT. ANN. 515/5-45); California (CAL. GOV'T CODE § 4217.10-13); New Jersey (N.J. STAT. ANN. § 52:34-25); Massachusetts (MASS. GEN. LAWS ANN. ch. 25A, § 11I); Oregon (OR. REV. STAT. ANN. § 279A.065); and Texas (TEX. GOV'T CODE ANN. § 2166.406).
7. Exec. Order No. 13423—Strengthening Federal Environmental, Energy and Transportation Management (Jan. 26, 2007), *available at* http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_BASIC&contentId=22395.
8. Pub L. No. 110-140, 121 Stat. 1492 (2007).
9. Pub. L. No. 111-5 (2009).
10. ARRA, Title III, Dept. of Energy Programs (Energy Efficiency and Renewable Energy).
11. For a complete definition of high-performance green buildings, see § 401 of the Energy Independence and Security Act of 2007 (42 U.S.C. § 6307).
12. ARRA, Title III.
13. Title V of the EISA (42 U.S.C. § 17151 *et seq.*).
14. ARRA § 410 (Additional State Energy Grants).
15. 42 U.S.C. § 6872.
16. Tom Fredrickson, *Spitzer Outlines Aggressive Energy Plan*, CRAIN'S NEW YORK BUSINESS.COM (Apr. 19, 2007), *available at* http://www.crainsnewyork.com/article/20070419/FREE/70419007.

17. New York State Governor's Office Press Release, Lieutenant Governor Paterson Announces Roadmap to Significantly Increase Renewable Energy Generation in New York (Feb. 25, 2008), *available at* www.ny.gov/governor/press/lt_0225081.html.

18. Order Establishing Energy Efficiency Portfolio Standard and Approving Programs, State of New York, Public Service Comm'n, Case 07-M-0548 (June 23, 2008).

19. Ill. Pub. Act 095-0481 (2007).

20. Exec. Order No. 484 (Apr. 4, 2007), *available at* http://www.mass.gov/Agov3/docs/Executive%20Orders/Leading%20by%20Example%20EO.pdf.

21. MASS. GEN. LAWS ch. 169 (2008).

22. TEX. GEN. LAWS ch. 939 (2007).

23. Chapter 6 contains an extended discussion of construction and regulatory issues associated with distributed power generation.

24. Chapter 9 contains an extended discussion of the legal issues involved in green construction contracts.

25. For a more complete discussion of the factors that go into choosing different methods of dispute resolution, see Frederick R. Fucci, *Getting Transactional Lawyers Thinking About Dispute Resolution* (Nov. 6, 2007), *available at* http://www.arnoldporter.com/resources/documents/GettingTransactionalLawyersThinkingaboutDisputeResolution110507.pdf.

26. *M&V Guidelines: Measurement & Verification for Federal Energy Projects*, *available at* http://www1.eere.energy.gov/femp/pdfs/mv_guidelines.pdf.

27. *International Performance Measurement & Verification Protocol (IPMVP)*, *available at* http://www.ipmvp.org.

28. N.Y. ENERGY LAW § 9-103(1).

29. *Id*. § 9-103(6).

30. *Id*. § 9-103(7): "Sections one hundred three and one hundred nine-b of the general municipal law shall not apply to an energy performance contract for which a written request for proposal is issued pursuant to subdivision six of this section."

31. *E.g.,* the state Finance Law, the Executive Law, the General Municipal Law or the Public Authorities Law as the case may be. *See* N.Y. ENERGY LAW § 9-103(6).

32. CAL. GOV'T CODE § 4217.12-13.

33. PA. CONS. STAT. ANN. § 3753(c).

34. PA. CONS. STAT. ANN. § 3753 (g). For the Pennsylvania Separation Act, *see* PA. CONS. STAT. ANN. § 1003.

35. TEX. GOV'T CODE ANN. § 2166.406(b).

36. This guide is available at http://www.nyserda.org/sbcappa.pdf.

37. This guide is available at http://www.oregon.gov/ENERGY/CONS/school/docs/ESPCGuide.pdf.

38. OR. ADMIN. R. 137-040-0500 to 137-040-0590 relating to the solicitation, negotiation, and contracting for ESPC services.

39. Pub. L. No. 109-58, 119 Stat. 594 (2005).

40. Pub. L. No. 110-343 (2008).

41. Additional information about Berkeley's program is available at http://www.cityofberkeley.info/ContentDisplay.aspx?id=26580. This program is discussed at length in Chapter 5.

42. N.Y. LAWS 2009, ch. 497 (2009); N.Y. GEN. MUN. LAW art. 5-L.

43. N.Y. GEN. MUN. LAW art. 5-L, § 119-gg(7).

44. *Id*. § 119-gg(8). Additional information about the PACE finance program is available at http://www.pacenow.org.

45. Colorado, Illinois, Maryland, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Texas, Virginia, and Wisconsin have all passed similar PACE legislation. Information about these state programs is available at http://www.pacenow.org.

46. "Any energy performance contract entered into by any agency or municipality shall contain the following clause: 'This contract shall be deemed executory only to the extent of monies appropriated and available for the purpose of the contract, and no liability on account therefore shall be incurred beyond the amount of such monies. It is understood that neither this contract nor any representation by any public employee or officer creates any legal or moral obligation to request, appropriate or make available monies for the purpose of the contract.'" N.Y. ENERGY LAW § 9-103(2).

47. N.Y. CONST., art. 7.

48. Green Island Contracting v. State of New York, 117 Misc. 2d 435, 458 N.Y.S.2d 828 (N.Y. Ct. Cl. 1983).

49. TM Park Avenue Assoc. v. Pataki, 986 F. Supp. 96 (N.D.N.Y. 1997), *vacated in part*, 214 F.3d 344 (2d Cir. 2000).

50. In this case, the Court set out a three-part test for determining when a failure to appropriate is sufficient to allow a state or local government entity to avoid a contractual obligation: (1) the decision to withhold monies must have its sources in a legislative or budgetary determination; (2) a determination must be made to withdraw all funding from a particular activity, branch, agency, office, or operation; and (3) even when a budgetary determination has been made that funds are not available, an executory clause will not excuse non-performance of the state's contractual obligations when funds continue to be received for substantially the same substantive purpose.

51. The most recent version of the IDIQ is dated Nov. 1, 2006. This contract is available at http://www1.eere.energy.gov/femp.

52. 10 U.S.C. § 2865.

53. This model agreement is available at http://www.eei.org/whatwedo/Partnerships/NationalKeyAccounts/Documents/GovContractAgree.pdf.

54. This model contract is available at http://www.boma.org/Resources/BEPC/Pages/default.aspx.

55. More information about the Energy Services Coalition is available at http://www.energyservicescoalition.org.

56. This contract is available at http://www.nyserda.org.

57. *E.g.*, Commonwealth of Massachusetts—Standard Energy Services Agreement (for projects subject to MASS. GEN. LAWS ch. 25A, § 11C) (revised Feb. 2008); Energy Savings Performance Contract, Oregon Department of Energy, *Guide to Energy Savings Performance Contracting* (revised Mar. 2006).

58. For a theoretical discussion of how performance contract techniques can be applied to new buildings, see *Energy Performance Contracting for New Buildings*, a report prepared by the Energy Foundation (Eley Associates). It is available at http://www.eley.com/perf_cont/prf_guide.htm.