

# THE PERFORMANCE GUARANTEE

EPC TOOLKIT FOR HIGHER EDUCATION | APRIL 2009



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*With permission from the author, this section was adapted from a memo prepared by Jonathan Furr of law firm, Holland and Knight LLP.*

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An energy performance contract (EPC)'s performance guarantee is a contractual commitment by the Energy Services Company (ESCO) to the client that project implementation will result in a specified reduction in energy and water use over a set period of years. In many EPCs the energy use savings, when translated into dollars based on existing and projected utility rates, will be sufficient to offset annual debt service on the project financing. If in a given year the guaranteed reduction in energy use is not achieved due to an ESCO-attributable performance failure, the ESCO will reimburse the owner the resulting dollar savings shortfall.

While the concept may appear straightforward, guarantees include a number of moving parts, all of which must be synchronized and clearly defined in the contract language.

### **WHAT IS THE SAVINGS AMOUNT?**

The starting point in establishing any guaranteed savings amount is establishing the baseline of resource use in the project's targeted facilities. This baseline is the measure against which post-project implementation resource use will be evaluated. To establish a baseline, ESCOs require at least twelve consecutive months of resources use data, and preferably 24 or 36 consecutive months. (The additional years of data allow for greater predictability of future resource use, with additional data helpful in smoothing dramatic fluctuations in resource use that result from extreme weather and aberrations in facility use.) The baseline makes note not only of energy and water use data, but also of the operating conditions under which the resource use took place. The conditions during the months from which the baseline data is taken include:

- Type of use for each building in the project (e.g., office, residential/dormitory, laboratory, athletic/gymnasium, cafeteria/cooking, health care, etc.);
- Weather conditions during the baseline data period, with a particular observance of "weather days," or days when the locale experienced extremely hot and/or humid or extremely cold days relative to local norms;
- Number of occupants;
- Typical hours of operation; and
- Utility rates and any existing energy and water procurement contracts.

Note that these types of factors are not within the control of the ESCO, and thus are identified so that the ESCO can call out in the performance guarantee, situations where it will not be held accountable (or take credit) for resource consumption rates that are different from those the ESCO projects in the guarantee.

ESCOs establish the baseline when conducting the Investment Grade Audit (IGA). The performance guarantee then defines the quantified reduction in energy and water use (in kilowatt/hours (kWhs), BTUs, gallons, etc.) from this baseline. The dollar value of the energy cost savings attributable to the Facility Improvement Measures (FIMs) will then be calculated. Normally, this will be expressed as an annual amount, guaranteed for each year of the performance guarantee term. For example, an ESCO may guarantee that the reduced resource use will reach a level that would be equivalent to \$1,000,000 in annual utility bill savings for each year within a 15-year performance guarantee term, equating to a total absolute savings of \$15,000,000.

Utility bill savings are totaled from all pertinent utility bills. Using our example, the \$1,000,000 in savings may be obtained through a combination of savings in categories such as electricity, gas, and water consumption in a specified set of buildings and other facilities. For each category of resource use, the EPC will specify pricing rates that will be used for the calculations throughout the entire guarantee term. These rates are multiplied by the actual units of energy or water savings for each category of resource use to project total and annual cost savings that will result from the project.

All the members of the client project team need to understand clearly several basic business issues related to the savings calculation. First, because utility rates used in the guarantee calculations are specified in the contract, performance guarantees do not protect the owner against utility rate increases or decreases (increases can be seen as good for the client because each unit of resources saved results in more dollar savings; decreases can harm the ability to payback project financing, unless the client's budget managers have the discipline to set aside such savings enjoyed from the utility rate decreases as a source of debt service payments). Throughout the guarantee term, the owner will continue, of course, to pay for its energy use at rates charged by the utility companies. However, if the guaranteed savings do not fully materialize, the ESCO's performance guarantee payment will be calculated using the rates specified in the EPC. Also, given the time value of money, a \$1,000,000 guaranteed amount in Year 1 of the guarantee term will mean more to the owner than a \$1,000,000 guaranteed amount in Year 15. The owner should therefore consider whether the guarantee amount (as well as energy rates) should be adjusted by a price escalation specified in the contract over the term of the guarantee to account for rate increases and the time value of money.

## **HOW ARE ENERGY SAVINGS CALCULATED?**

As mentioned above, resource savings during a performance contract term are measured against the resource use baseline and the ESCO-created projections of energy use (defined in the contract) for each year the guarantee is in effect. These projections are based on the ESCO's expert estimations of the changes in resource use resulting from project implementation. The contract also calls out the types of operating conditions over which it has no control and thus for which it will not be held accountable. For each year during the performance guarantee period, the ESCO calculates adjustments to an individual year's baseline resource use by using various formulae to account for changes in weather and facility use. These "adjusted baseline conditions" are then used to estimate what the level of energy consumption would have been within an individual guarantee year, had no FIMs been implemented. This process allows the ESCO to pinpoint with great precision what change in energy consumption at the facility can be attributable to its work, and what changes are due to other factors.

In other words, Year 10's "adjusted baseline" consumption is an estimate of what the building's energy use would have been that year if weather and building occupancy were equal to the baseline projection for Year 10, and if no FIMs had been implemented. This "baseline adjustment" process is important as it determines how owners and ESCOs will decide whether an ESCO owes a guarantee payment if resource savings are below the guaranteed level.

After the "adjusted baseline consumption" for Year 10 is determined, the "actual energy consumption" is calculated. The energy units saved are equivalent to the adjusted baseline consumption minus the actual consumption during the guarantee year (Year 10 in this case), as the equation below illustrates:

$$\begin{aligned} \text{Adjusted Baseline Consumption}_{(\text{Year } X)} - \text{Actual Energy Consumption}_{(\text{Year } X)} \\ = \text{Energy Use Savings}_{(\text{Year } X)} \end{aligned}$$

If resource savings prove to be below promised levels, then the ESCO calculates the monetary savings shortfall. The energy units saved are then multiplied by the rates set forth in the contract to determine the annual utility cost savings amount. The equation below illustrates this process:

$$\text{Energy Cost Savings}_{(\text{Year } X)} = \text{Energy Use Savings}_{(\text{Year } X)} \times \text{Projected Utility Rates}$$

#### *An Illustrative Hypothetical Scenario*

It is helpful to illustrate this entire process through a hypothetical example. The following case will help illuminate the concepts behind each step in the process above.

Say that today, a building's energy consumption is 100 kWhs. After performing the IGA, the ESCO calculates "baseline" energy consumption to be 200 kWhs 10 years from now ("Year 10" of the analysis.) The ESCO guarantees that it can reduce energy use by 150 kWhs in Year 10 under an EPC, making for a new consumption projection of 50 kWhs for that year. The ESCO then multiplies this projected reduction of 150 kWhs by the projected utility rates specified in the EPC for that period to make a projection (and potentially a guarantee) of cost savings in that year.

When year 10 arrives, however, the utility bill is higher than the guaranteed level, and the client wants to know if the ESCO owes them a guarantee payment. Upon close inspection, it is determined that the increased cost is not due to unforeseen rate increases, but results from an increase in the building's energy use. Year 10's actual energy use is 75 kWhs. The ESCO analyzes the year's weather conditions, building occupancy and use data, and other information about the facility and discovers that a severe heat wave caused demand for air conditioning in the building to increase above what the ESCO had predicted in the baseline calculations. The HVAC system is now more efficient than it used to be, but absolute usage of the system went beyond expected levels because of the heat wave. The ESCO then enters the actual weather data into the model used to develop the original baseline energy use projection for Year 10, and develops an "adjusted baseline consumption" for the year, finding it to be 225 kWhs, or 25 kWhs above the original baseline calculation. This figure represents what the energy use in the building would have been without any EPC, after factoring the building's abnormally high use of air conditioning in Year 10 due to the heat wave.

The "savings" below this adjusted baseline calculation is 225 kWh – 75 kWh = 150 kWhs. Because the original guarantee was based on a projected reduction of 150 kWhs in Year 10 (200 kWh – 50 kWh), the ESCO does not owe a guarantee payment to the building owner. The increase in energy consumption above the guaranteed level, and the resulting increase in utility costs, was due to a factor beyond the ESCO's control. Although Year 10's energy costs are not what the building owner and ESCO anticipated, they are certainly lower than what the building owner would have paid had it not been for the EPC project from ten years earlier.

The procedures and formulae for all of the steps in the energy savings calculation process must be clearly defined in the EPC. The owner is also strongly advised to include within the EPC some examples of the calculations using hypothetical data, so there is no ambiguity surrounding how the formulae apply to actual numbers.

## **HOW ARE MODIFICATIONS TO THE BUILDING AND ITS USE ADDRESSED?**

Over the life of the performance guarantee term, the owner may take any number of actions that impact the building's resource use. A new wing may be added, plug loads may increase because of the installation of additional office equipment, the owner may seek to occupy the building for longer hours, or the owner may initiate its own FIMs post-EPC implementation, independent of those provided by the ESCO. The formulae included in the EPC will include a provision to account for these "causes for adjustment" in the resource savings calculations. The owner should ensure specific – as opposed to overly broad – language in the "causes for adjustment" clauses in the contract. The more specific the language, the less likely that there will be disputes between the client and the ESCO in regards to the calculations used to determine the impacts of such factors on resource savings.

## **WHO PERFORMS THE RESOURCE AND COST SAVINGS CALCULATIONS?**

The simple answer to who performs the savings calculations is the ESCO. The owner must make pertinent utility bills readily available to the ESCO for these purposes. The EPC should include a process for client review and concurrence with the calculations, and a clear process for dispute resolution if the parties disagree. In some cases, the client may hire an expert third party reviewer to perform this review function. The EPC should include a provision for prompt payment by the ESCO following any calculation that demonstrates an ESCO-attributable failure to achieve the guaranteed savings amount, with penalties for late payments.

## **RECONCILING SHORTFALLS – FLEXIBILITY IN GUARANTEE PAYMENTS**

The EPC should address the treatment of savings in excess of the annual guaranteed amount. In some EPCs, a client's "excess" savings from one year can be used to offset ESCO-attributable shortfalls in subsequent years. Similarly, when a shortfall occurs, an ESCO may request that the shortfall be redressed by using excess savings from future years. Such "carry-over" provisions offer ESCOs some flexibility in managing their cash flows, yet in doing so, these carry-over provisions negatively impact the client's debt service cash flows. Thus, building owners should take care that such provisions, if incorporated into the EPC, will not endanger the institution financially.

To illustrate: if we take our earlier example, and assume that savings one year amounts to only \$500,000 instead of the guaranteed \$1,000,000, and that the institution received 100% up-front financing with debt service amounting to \$1,000,000 per year, allowing the ESCO to make-up their shortfall in subsequent years' excess savings will mean that the institution has to find \$500,000 from another source to meet its immediate-term financial obligations. Conversely, if the ESCO offers to use previous savings surpluses to pay down a current shortfall, the building owner must ensure that the excess savings have not been appropriated to another part of the school's budget, or a similar dilemma will arise.

## **WHAT IS THE GUARANTEE TERM?**

The number of years in the guarantee will typically be identical to the term of the debt taken on to finance the project. In some states, the guarantee term for public sector projects is limited to a specified maximum number of years for certain classes of clients – such as cities, school districts, and public colleges and universities.

Beyond determining the number of years, the EPC also needs to specify when the guarantee term begins and how each year within the guarantee term is defined. Normally, the guarantee term will commence on the first day of the first utility billing period following the commissioning of all installed FIMs. The owner may want to consider specifying a date by which the performance guarantee term will commence, even if the FIMs have not been completed and accepted, to ensure that the ESCO has a contractual motivation to complete the FIMs on schedule.<sup>1</sup>

Alternatively, the owner may wish to align the annual guarantee term with its fiscal year. In such a case, the EPC will need to address the treatment of the months between the final completion of the FIMs and the start of the owner's fiscal year and adjust the calculations in the EPC accordingly.

### **DO I REALLY NEED A GUARANTEE?**

To determine whether a performance guarantee is necessary, public entity clients must determine whether a performance guarantee is required by law and if not, whether the performance guarantee helps the client achieve its business objectives.

When legally permissible, clients may forgo the protections provided in a performance guarantee, presumably to save the additional costs to an EPC project that come with the guarantee, and thus reduce the project's payback period.

The benefits of eliminating performance guarantee costs must be compared to the exposure to the financial risk of experiencing insufficient utility bill savings to meet project finance debt service obligations. Insufficient savings result in a cash-negative project (i.e., a project that actually increases resource use-related operating expenses) for those years when there is a savings shortfall. Indeed, such "savings degradation" can impose greater costs to the institution over time than any cost that would have been associated with a performance guarantee – costs that would have been fully covered by energy savings anyway.

Before deciding to proceed without a performance guarantee, therefore, a college must be very confident that it can provide effective ongoing maintenance of installed equipment on its own, and must also be willing to fully assume the financial and operational risks of a shortfall in projected savings. The institution should have a very capable facilities staff with extensive experience in engineering, and up-to-date training in maintaining and optimizing the performance of complex buildings systems. It is also advisable that one consider forgoing a guarantee only for relatively proven, simple, low-capital cost, short payback FIMs for which the fixed costs of a guarantee – namely the M&V costs – would be a small percentage of overall project costs. Lighting equipment FIMs could fit this description.

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<sup>1</sup> If the completion of the FIMs by a specified date is critical to the owner's operations (for example, all FIMs for a university building must be completed by the start of the fall semester), the owner may also want to include a liquidated damages provision protecting against late completion. Project completion delay may also impact the ability to make project financing debt service payments because savings are not being realized. Therefore, the owner should include in the EPC measures to protect itself from this possible cash flow shortage scenario.