

Energy Education and Training

Behavioral Modification Programs

This article provides information to school business officials on what to consider before signing a contract with a firm that offers behavioral modification services (energy education and training) to reduce energy costs. If you don't understand some of the concepts or issues below, make sure you get a competent industry professional (energy management, industrial, mechanical, or electrical engineer that is familiar with school facilities) to assist you. Make sure you get a legal review as well.

Contracting Process

If you are considering contracting for energy management and training services that will involve paying hundreds of thousands of dollars over the period of the contract, it is highly recommended that you use the Request for Proposal (RFP) process. Check with your purchasing office. You may find that procurements over a certain dollar amount actually require the RFP process. Even if the company claims that the program will not cost your school system any money and that it will be paid for by the savings, and even if they guarantee this in writing, you will be paying them tens of thousands or hundreds of thousands of dollars from school district funds. Make sure you can find at least three companies to send proposals. They are out there. Ask around to find out who they are.

Proposal Review

When you review the proposals there are several things to look for.

a. Savings Guarantee

Is there a guarantee of savings? Some company proposals will guarantee a certain amount of savings over those funds that the school may have to pay for the program. Some company proposals will only guarantee that there will be no cost to the district to use their program, but there is no guarantee of savings beyond that. Be careful to notice the difference between "proposed" or "expected" savings and "guaranteed" savings. Don't be misled by the marketing material. For example, showing chart upon chart of expected savings versus actual savings does not tell you much unless they also show the baseline from which the savings are measured.

b. Fees

How is the company's fee determined? Is it a set fee or is it a percent of savings? If it is a percent, what is the percent applied to - net savings (after program costs) or gross savings? If a percentage fee is based on gross savings, then you can expect that the actual percent you get to keep will be significantly less than what is stated once you pay their fees and other operational expenses.

c. Savings Calculations.

What method will be used to calculate savings? Will there be an independent means of verifying actual savings? This should be clearly spelled out in the contract, including the variables and formulas that will be used. Make sure an industry professional gets to review this and determine its reasonableness.

d. Client References.

Are there client references provided by the company? Make sure you contact the clients that are listed in the proposal to find out their experience with the company. Here are some specific questions to ask:
- What were your baseline actual costs (the actual costs for the base year)?

- What were your actual costs for each of the two, three, or four years following the baseline year?
- What was your facilities square footage for the baseline year and for the two, three, or four years following?
- What savings did they achieve for the three or four years following the baseline year?
- Would they be willing to send you a copy of their contract?
- Would they be willing to send you copies of any savings reports that they generate?

This information will allow you to graph their program's performance and savings. A picture is worth a thousand words. Make sure you understand how savings are characterized and allocated.

Contract Review

When you review the contract there are several very important things to consider.

a. Verification of Savings

How will savings be verified? Is there a specific computer software program that will be used? Who will input the data? Is training required, included? How will the software calculate the savings? Can savings be independently verified by another means (third party)?

b. Baseline Adjustments

There will undoubtedly be a lot of adjustments made to the baseline numbers over the term of the contract to account for various changes, such as, rate increases, square-foot changes, weather, occupancy, operations, large scale renovation projects (HVAC and lighting), and more. These adjustments will significantly affect the amount of savings reported (which may affect the contract fee payments if based on a percentage of savings). How will adjustments be made? What criteria will adjustments be based on? Who will have the final say on what gets adjusted? Some contractors use special energy utility management software to calculate savings such as Metrix, FASER, or Utility Manager Pro. These programs are very complex and contain special statistical regression algorithms to determine the effect of outside temperature on savings results. For example, hotter than normal weather during the cooling season would tend to increase energy use and possibly skew the results of energy conservation measures (ECM's). To handle this problem the software tries to account for the increase in cooling degree days (CDD's) as it is compared to the baseline CDD's. CDD's are calculated by subtracting the average daily temperature (average of the daily high and low) from a "balance point" temperature (usually between 58 and 68 degrees). However, each facility has a slightly different balance point. You can think of the term "balance point" for cooling as the temperature just before the air-conditioning comes on. For heating it is the temperature just before the heater comes on. Some facilities may have a balance point as low as 60 degrees, others as high as 68 or even 70 degrees. In very rare situations you may find a balance point as low as 55 or 56 degrees. This means that there is such a heat load internal to the building (computing center, ovens, or other heat producing appliances) that causes the air-conditioning to come on when it is 57 degrees outside. The setting of this balance point could make a big difference in how savings are reported.

c. Escalation factors

Some contracts contain escalation factors that automatically adjust the baseline by a set percentage each year. Look carefully at any proposed escalation factors to determine their reasonableness and how and why they are applied. Escalation factors stated in the contract may appear small and insignificant. However, if the escalation factor is applied to the total energy bill, then a 4% factor could add as much as 25 to 40% on to the amount of savings reported (assuming actual savings are between 10 to 16%). Check to see if they are applied as a compounding factor or as a straight percentage across each year. The factor being applied should be applied in the appropriate way based on the specific factor used. For example, if a load creep (also called "energy creep") factor is applied as a baseline adjustment you would expect it to

be applied as a compounding factor. Escalation factors, if not applied properly, are items that can make a lot of money for a contractor at your expense. See the section below for a detailed overview of the use of load creep as an adjustment factor.

d. Calculation of Savings

How are savings calculated? You need to understand how savings are calculated. For example, if savings are calculated simply by multiplying an average unit cost to the amount of energy unit saved, then you run the risk of overstating savings. This could happen when you realize off-peak savings (only the cost of KWH) and try to apply the average unit cost of the whole bill (demand costs included, which may not have changed). This could overstate savings by as much as 50% for that utility account. Unless the ECM affects the entire range of the electric bill, including peak usage, it is not advisable to use an average unit cost, effective rate, or blended rate. See the section below for a detailed overview of the effect of using the average unit cost method.

e. Contract Period

How long is the contract duration? This type of contract should be expected to be two years in duration (possibly as long as three years). Most of the significant energy conservation measures (ECM's) will be put in place during the first year. You can verify savings during the second year (and third if necessary). Beyond this, you run the risk of overpaying for services received. If you are going to pay the contractor on a percentage of savings basis, then each year you continue to pay for what has already been accomplished the first two or three years. You may want to structure the contract period to have two base years with an option to add a third or fourth as you deem necessary.

f. Termination Provision

Make sure that you have a reasonable means to terminate the contract if it turns out not to be what was expected. Check for reasonableness of termination notice (30 to 90 days is reasonable). Check for termination costs. Look at all the clauses in the contract to see if they address termination issues. Not all termination issues may be covered in the contract clause entitled "Termination." There may be hidden costs to termination listed in other clauses.

g. State Law

There may be several statutes on the books in your state that apply to this procurement and should probably be addressed in the contract. Below are some examples from the State of Florida.

- FS 1013.23 Energy Efficiency Contracting. This statute addresses contracting for energy conservation measures. This term includes training programs as well as facility alterations to attain savings. There are requirements for public disclosures and an annual reconciliation of the guaranteed energy cost savings.

- Florida Public Records Law. This law will affect various aspects of confidentiality and disclosure issues with contract documents. For example, "Section 287.058(1)(c), F.S., requires, with limited exceptions, that every procurement for contracted services by a state agency be evidenced by a written agreement containing a provision allowing unilateral cancellation by the agency for the contractor's refusal to allow public access to "all documents, papers, letters, or other material made or received by the contractor in conjunction with the contract, unless the records are exempt" from disclosure." (Government-in-the-Sunshine Manual 2004 Edition, Volume 26, page 65)