PAYING FOR ENERGY CONSERVATION

HOW AN ESCO ENERGY PROGRAM IS FUNDED

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How the Program is Funded

Deferred maintenance in schools is common due to the difficulty in finding funding to meet all their needs. The unfortunate consequence is that this will begin to challenge the quality of the learning environment for students and staff. One way to improve school buildings without putting additional demands on capital budgets is through a guaranteed energy savings performance contract (ESPC), also called a guaranteed energy cost savings contract. Even if you do not have significant deferred maintenance this type of program may be an additional tool to benefit your district.

A guaranteed energy savings performance contract provides a method to finance and implement capital improvements and services that save energy and operational dollars. The energy and operational cost savings produced by the project are typically sufficient to cover all project costs (including financing and any ongoing services) over the contract term.

The guaranteed energy savings performance contract is a simple concept (**see Figure 1**). An energy service company conducts a comprehensive audit of selected facilities to determine the potential for saving energy and operational costs through high-efficiency equipment replacement or upgrades. Based on the results, the energy service company makes recommendations that, when implemented, will generate enough energy and cost savings to pay for the cost of the project over the term of the contract—providing budget neutral facility upgrades. This is accomplished by redirecting existing utility and operational expenditures toward the funding of new systems and equipment.

Financially there are many things to consider. When funding a project there are three major issues that should be considered. They are:

1. What sources of revenue will you utilize to pay for the program,

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Figure 1

Before Program

After Program
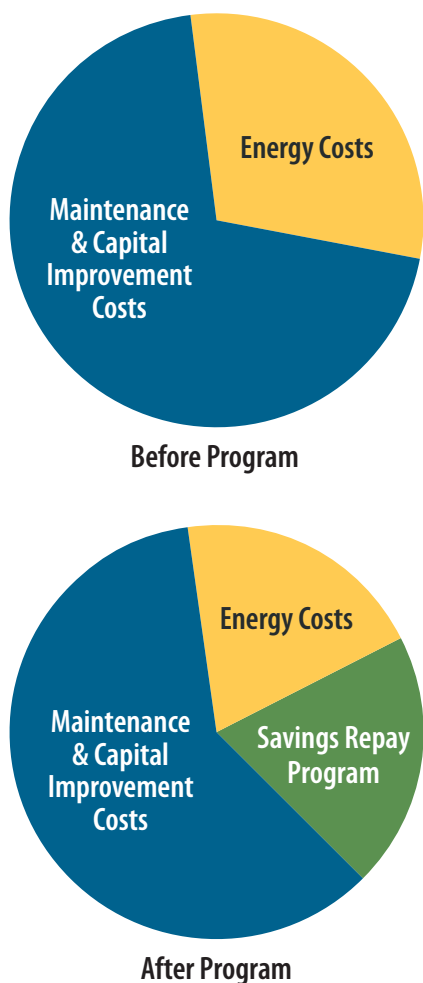
2. What type of financing will be utilized, and

3. What sources of qualified savings will be used to meet legislative requirements?

Potential Revenue Sources for Funding the Program

The various options that a school district can utilize to fund this type of program are listed below. These options can be used to pay up front or annually for loan repayment. They are categorized by fund.

- **Cash Balance in Capital Projects.** Consider funds available in the Capital Projects Fund that are not already dedicated to other projects. A balance can be utilized to fund a one-time buy down of the project or be used to help fund finance payments annually for up to fifteen years. Exhausting these funds is not recommended. Some funds should be carried as a balance to cover emergencies and other small projects.

- **Energy Savings and Operational Savings to Support Project Costs.** The energy and operational savings will provide cash flow in the district's General Fund. Many states have legislation that permit funds to be transferred to the Capital Projects Fund to make lease payments. For example, Missouri has legislation RSMO 8.231 and permits fund transfer under the exemptions in 165.011. This allows Missouri school district to transfer the savings to the Capital Projects Fund to make lease payments for up to fifteen years.

- **Annual General Fund Surplus Transfer.** If a district has an annual surplus or significant balance in its General Fund, and the guaranteed energy cost savings contract provides an adequate amount of guaranteed savings, districts can enabling state legislation (such as Missouri the RSMO 8.231) and fund transfer exemptions as permitted. The savings can be transferred to the Capital Projects Fund to fund a one-time buy down of the project or be used to help fund finance payments annually for up to fifteen years.

- **Building Lease Purchase.** By utilizing the lease purchase (RSMO 177.088) legislation, a guaranteed energy cost savings contract can be funded over twenty years but must be justified by savings in fifteen. If you choose to do this, utilizing the transfer exemptions allowed for a guaranteed energy cost savings contract over twenty years is not allowed. If funding is not already in the capital projects fund to support payments, the district will have to vote in a new levy and place it in the capital projects fund, put part of the general fund levy in the capital projects fund (only levy amount above $2.75) or utilize other transfer options. An example of other transfer options might be to utilize the Classroom Trust Fund Revenues, the 7% transfer. This option can also be utilized to help support new construction projects be more energy and operationally efficient.

- **Bond Issue**. This is the traditional method of funding facility upgrades and can be utilized also to fund guaranteed energy savings contracts.

NOTE: Any financial strategy should be verified for feasibility with the district's financial advisor.

Financing Sources

Financing is often an integral part of a guaranteed energy cost savings contract. Most energy service companies do not use it as a profit center but beware of those who do. The energy service company should be more than willing to evaluate all avenues of potential financing, including cash balances, grants, and utility incentives.

Some may have experience in arranging financing and will lend their expertise to help find the best possible solutions. Your objective should be to find the most effective way for the district to fund the project, so that you may maximize the value obtained from the savings generated through the energy-efficient measures.

Typical financing options may include the following:
- Bond issue
- Qualified Zone Academy Bonds funding
- Department of Natural Resources Low Interest Loan
- Tax Exempt Lease Purchase

Qualified Savings to Meet Legislative Requirements

State legislation, such as Missouri RSMO 8.231, defines an energy cost savings measure as a training program or facility alteration designed to reduce energy consumption or operating costs. It goes on to define operational savings as expenses eliminated and future replacement expenditures avoided as a result of new equipment installed or services performed. There are three major categories of cost savings allowed in the description. They are further described below:

Utility or Energy Savings

These savings are created by eliminating utility expenditures and provide a true positive cash flow to the district. It includes funds that will be re-directed from existing utility bills back to the district. This is accomplished by the higher efficiencies of the systems and equipment that are installed, utility rate modifications, and identified billing errors. These savings are real savings that will provide funding to help pay off loans

Maintenance Savings or Operational Expenses Eliminated

This type of savings has been further broken down into the following descriptions to help make sure districts consider the potential impact the soft savings will have on your budget if you are not aware.

- **Hard maintenance savings** provide a true cash flow to the district. This will include funds that will be re-directed from outside maintenance contracts, outside contractor fees, vendors, and suppliers.

- **Soft maintenance savings** do not provide a true cash flow to the district. These savings include reduced labor time from district staff. This includes reduced work-order complaints, reduced repairs, and increased staff time to apply toward preventative maintenance. Since employees will still be on the payroll, there is no true savings cash flow, but there is real value in having them work on other more beneficial or proactive tasks. Consider the beneficial effects of these savings to your district, but do not plan on cash flow from them to help you meet debt requirements.

Capital Cost Avoidance Savings or Future Replacement Expenditures

These savings are created by the replacement of old or failing equipment that is past its useful life. These are expenses that the district will incur within the term of the program if the equipment is not replaced now.

- **Hard capital cost avoidance savings** provide a true cash flow to the district. This includes funds that have been budgeted for the replacement, repair, or implementation of new equipment and systems.

- **Soft capital cost avoidance savings** do not provide a true cash flow to the district. This will include replacement, repair, or implementation of equipment and systems that have not been budgeted. There is real value in getting these projects completed, but there is no identified funding source. Consider the beneficial effects of these savings to your district, but do not plan on cash flow from them to help you meet debt requirements.

Any of the soft cost savings identified above will need an alternative funding source other than budget savings to help fund them.

The Flow of Money for a Guaranteed Energy Cost Savings Contract

The financing plan typically follows a three-step process. Negotiations with finance companies occur during the detailed audit, right before financing is secured. The money flow takes place very similar to a bond issue project or even construction of a new home.

The project cost or principle lease amount is placed into an escrow account by the finance company (controlled by the district) for construction, and the energy service company submits applications for payment based on the percent of construction that is completed. This escrow account is the amount of the project cost, or project cost plus cost of interim construction interest. Escrow interest may not be required if escrow earnings and interim savings more than offset this cost. The district has the authority to approve or deny the payment from the escrow account based on the energy service company's actual performance and that of their subcontractors.

Once construction is complete, the district releases the retainage from the escrow to fully pay for the project. After construction, savings begin to accrue for the district. During the performance phase, the district will make payments to the lessor, using the savings generated by the program. The district utilizes the redirected utility and operating dollars to pay for the improvements implemented by the program. The energy service company continues to monitor savings in accordance with the measurement and verification plan and will reimburse savings shortfalls that may occur on an annual basis.

Sample Pro Forma Cash Flow

Figure 2 represents a sample projected cash flow for the construction costs that would be justified by the savings on an example project.

This pro forma cash flow statement shows the annual effect of an example guaranteed energy cost savings contract. The top portion shares the assumptions such as project implementation costs, utility and operational savings, finance term and finance rate. These assumptions have been used to create the table below. Each program will have its own data for these assumptions. The table has each column labeled at the top as A through N for the purposes of this discussion. The description of each column is shown below.

Column A: The number of payments the district will make the financing institution.

Column B: The number of years after completion of construction. Year 0 is designated as the construction year.

Column C: The debt balance at the beginning of the year.

Column D: The amount of interest paid during the year based on the assumed principle, term, and interest rate.

Column E: The amount of principle paid during the year based on the assumed principle, term, and interest rate.

Column F: The total payment made toward the debt.

Column G: The debt balance at the end of the year.

Figure 2

Assumptions:

PROJECT DATA

Total Project Funded (actual construction):	$1,550,000
Amount of Capital Paid:	$0
Amount Financed:	$1,550,000
Total Savings/yr:	$154,000
Payback Criteria (years):	15

LOAN DATA

Loan amount:	$1,550,000
**Annual interest rate:	5.00%
Term in years:	15
Payments per year:	1

UTILITY SAVINGS DATA

Annual Utility Savings:	$137,500
Annual Electric Savings:	$75,000
Annual Gas Savings:	$50,000
Annual Water Savings:	$12,500
Utility Savings Over Term	$2,062,500

OPERATIONAL SAVINGS

Annual Operational Savings:	$16,500
Operational Savings Over Term	$247,500
Capital Costs Avoided Over Term	$1,085,000

Cashflow Analysis:

A	B	C	D	E	F	G	H	I	J	K	L	M	N
			Payment						**Savings**				
Pmt No.	Program Year	Beginning Balance	Interest	Principal	Total Payment	Ending Balance	Utiltiy Savings	Operational Savings	Capital Cost Avoidance Savings	Total Savings	Legislatively Qualified Cash Flow	District Actual Yearly Cash Flow	Actual Cumulative Cash Flow
0	Year 0	Construction Period	$0	$0	$0	$1,550,000	$68,750	$8,250	$325,500	$402,500	$402,500	$77,000	$77,000
1	Year 1	$1,550,000	$77,500	$71,831	$149,331	$1,478,169	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$81,669
2	Year 2	$1,478,169	$73,908	$75,422	$149,331	$1,402,747	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$86,339
3	Year 3	$1,402,747	$70,137	$79,193	$149,331	$1,323,554	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$91,008
4	Year 4	$1,323,554	$66,178	$83,153	$149,331	$1,240,401	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$95,678
5	Year 5	$1,240,401	$62,020	$87,310	$149,331	$1,153,091	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$100,347
6	Year 6	$1,153,091	$57,655	$91,676	$149,331	$1,061,415	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$105,017
7	Year 7	$1,061,415	$53,071	$96,260	$149,331	$965,155	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$109,686
8	Year 8	$965,155	$48,258	$101,073	$149,331	$864,082	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$114,356
9	Year 9	$864,082	$43,204	$106,126	$149,331	$757,956	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$119,025
10	Year 10	$757,956	$37,898	$111,433	$149,331	$646,523	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$123,695
11	Year 11	$646,523	$32,326	$117,004	$149,331	$529,519	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$128,364
12	Year 12	$529,519	$26,476	$122,855	$149,331	$406,664	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$133,033
13	Year 13	$406,664	$20,333	$128,997	$149,331	$277,667	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$137,703
14	Year 14	$277,667	$13,883	$135,447	$149,331	$142,220	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$142,372
15	Year 15	$142,220	$7,111	$142,220	$149,331	$0	$137,500	$16,500	$50,633	$204,633	$55,303	$4,669	$147,042
							$137,500	$16,500			$154,000	$154,000	$301,042
							$137,500	$16,500			$154,000	$154,000	$455,042
		Program is complete and debt is retired while savings continues					$137,500	$16,500			$154,000	$154,000	$609,042
							$137,500	$16,500			$154,000	$154,000	$763,042
							$137,500	$16,500			$154,000	$154,000	$917,042
		TOTALS	$689,958	$1,550,000	$2,239,958		$2,818,750	$338,250	$1,085,000	$4,242,000	$2,002,042	$917,042	

Column H: The utility savings achieved each year. The construction period (Year 0) has half of the savings assumed because much or all the construction is completed in less than six months.

Column I: The operational savings achieved each year. The construction period (Year 0) has half of the savings assumed because much or all the construction is completed in less than six months.

Column J: The capital cost avoidance savings achieved each year. Some consider this savings to be fully achieved once the equipment is installed; others consider the savings to be achieved at the point in time when the equipment would have been replaced over time. In this example, it is assumed that a large portion of the equipment would have been replaced during the same year as construction, while smaller amounts would have been replaced over the next fifteen years.

Column K: The total savings achieved from utility, operational and capital costs avoided.

$$H+I+J = K$$

Column L: Includes the total savings achieved minus the total debt payment.

$$H+I+J-F = L$$

Column M: The district's actual yearly cash flow. Some savings are not real savings in the district's budget, per previously discussed examples. In this example it has been assumed that the capital costs avoided were not actually items that were budgeted for in the district's current budget. Because of this, the capital cost avoidance has been excluded from the actual yearly cash flow. This is the column the district should analyze when determining whether or not the on-going payments can be afforded.

$$H+I-F = M$$

Column N: The cumulative amount of actual cash flow for the district over the total term.

$$M \ [Year \ 0] + M \ [Year \ 1] = Actual \ Cumulative$$
$$Cash \ Flow \ for \ Year \ 1$$

About the author – Paul Harrell is a business development manager with Navitas. His background as a Certified Public Accountant and 33 years of experience in the education sector help him bring a practical approach to developing strategies for school districts wanting guidance in how to manage their overall budget and utility costs. He can be reached at pharrell@navitas.us.com or 913-344-0049

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