



THOMAS P. DiNAPOLI
COMPTROLLER

STATE OF NEW YORK
OFFICE OF THE STATE COMPTROLLER
110 STATE STREET
ALBANY, NEW YORK 12236

GABRIEL F. DEYO
DEPUTY COMPTROLLER
DIVISION OF LOCAL GOVERNMENT
AND SCHOOL ACCOUNTABILITY
Tel: (518) 474-4037 Fax: (518) 486-6479

August 2015

James Nolan, Superintendent of Schools
Members of the Board of Education
Sachem Central School District
51 School Street
Lake Ronkonkoma, NY 11779

Report Number: P7-15-43

Dear Superintendent Nolan and Members of the Board of Education:

The Office of the State Comptroller works to help school district officials manage their resources efficiently and effectively and, by so doing, provides accountability for tax dollars spent to support district operations. The Comptroller oversees the fiscal affairs of districts statewide, as well as compliance with relevant statutes and observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations and Board of Education governance. Audits also can identify strategies to reduce costs and to strengthen controls intended to safeguard district assets.

In accordance with these goals, we conducted an audit of five school districts in Nassau and Suffolk Counties. The objective of our audit was to determine whether energy performance contracts (EPCs) entered into by school districts achieved the cost and/or energy savings projected by the vendor who executed the contract. We included the Sachem Central School District (District) in this audit. Within the scope of this audit, we examined the District's EPC and reviewed energy consumption and costs for the period July 1, 2006 through June 30, 2014. This audit was conducted pursuant to Article V, Section 1 of the State Constitution and the State Comptroller's authority as set forth in Article 3 of the New York State General Municipal Law.

This report of examination letter contains our findings and recommendation specific to the District. We discussed the results of our audit and recommendation with District officials and considered their comments, which appear in Appendix A, in preparing this report. District officials generally agreed with our findings and recommendation and indicated they have implemented corrective action. At the completion of our audit of the five school districts, we prepared a global report that summarizes the significant issues we identified at all of the districts audited.

Summary of Findings

The District will likely achieve the energy cost savings projected and guaranteed by the energy service company (ESCO) that executed the EPC. The energy cost savings are projected to total approximately \$20.7 million over the life of the EPC, while total project expenditures are approximately \$20.6 million, resulting in a net savings of approximately \$100,000. When grants and rebates are included, the District is projected to save a total of over \$500,000. As a result of the 27 energy improvement measures installed in 21 buildings, the District's consumption of electricity has decreased, while its natural gas consumption has increased. For example, an analysis of just four of the District's 21 buildings shows that the use of electricity decreased by 15 percent, even though temperatures experienced that year required more energy to cool the buildings. Natural gas use, however, increased by 5 percent due in part to temperatures requiring a greater need for energy to heat the buildings than in the base year. Nearly half of the District's cost savings are a direct result of improvements to its light fixtures.

Background and Methodology

New York State Energy Law establishes procedures to be used by school districts in initiating and administering EPCs. An EPC is an agreement by an ESCO for the provision of energy services in which energy systems are installed, maintained or managed to improve the energy efficiency of, or produce energy for, a facility in exchange for a portion of the energy savings or revenues. EPCs are not subject to voter approval or competitive bidding requirements, and the length of the contract must not exceed the useful life of the equipment (which the New York State Education Department has established at 18 years). New York State Education Law (Education Law) requires that the ESCO agree to guarantee that the improvements will generate cost savings sufficient to pay for the project over the term of the EPC. This payback period is calculated using the simple payback method, which divides the total project cost by the projected first year energy cost savings.¹ The simple payback method does not take into account the time value of money, which discounts the value of future dollars relative to today's dollars in order to properly compare the economic benefits of competing long-range upgrade projects. Furthermore, the simple payback method does not take into account additional cost savings that, after the EPC ends, a school district may continue to realize as a result of the energy improvements. For this reason, school districts should establish procedures to monitor the cost savings achieved by EPCs.

The District is located in Suffolk County and operates 21 buildings. It has approximately 13,800 students and general fund expenditures for the 2013-14 fiscal year totaled approximately \$286.9 million. The District is governed by a nine-member Board of Education (Board). The Board is responsible for conducting the business of the District within the State's laws and the New York State Commissioner of Education's regulations.

In December 2008, the Board entered into an EPC with an 18-year contract term from June 2012 through May 2030. The State Education Department approved the project in March 2010 and the related project work, completed in June 2012, involved 27 facility improvement measures in 21 District buildings, including several upgrades to the District's boilers, lighting, heating, ventilation

¹ Education Law specifies that any State building aid attributable to the project cannot be included in the determination of cost savings.

and air controls. The ESCO guaranteed an energy cost savings of over \$20.7 million over the life of the EPC. The capital cost of this EPC, excluding financing and ongoing maintenance and verification costs,² totaled approximately \$16 million.

To accomplish our objective, we interviewed District officials. We also reviewed the EPC to obtain the work scope, project cost, contract length, the contracted ongoing maintenance and verification costs and the guaranteed energy cost savings over the life of the project. We obtained utility data, including consumption, costs and rates for the EPC's base year, which was July 2006 through June 2007. We also obtained utility data for the first year after substantial completion of the EPC and compared the consumption and costs for this year to that of the base year to determine the first-year consumption and cost savings for the EPC. We compared our calculations to the ESCO's first-year measuring and verification report to determine whether ESCO-reported savings were reasonable. Using the U.S. Department of Commerce's prescribed formula for projecting present value cost savings, we applied the U.S. Department of Energy's utility price indices to the base year and first-year actual energy costs to project the District's potential cost savings over the life of the EPC. We compared our projection to that which the ESCO had made using engineering industry standards to determine if the ESCO's projections appeared reasonable. We used our professional judgment to determine the reasonableness of the difference between our projection and the ESCO's, considering the differing calculation methods used. We also documented the lease payments to be made over the life of the contract. We determined the expenditures related to the EPC and subtracted them from the total cost savings calculated to identify any potential savings.

We conducted our audit in accordance with generally accepted government auditing standards (GAGAS). Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Audit Results

The District's EPC is projected to achieve the guaranteed energy cost³ savings of over \$20.7 million⁴ over the life of the EPC, as shown in Figure 1. The ESCO did not guarantee the associated energy consumption savings.⁵

² Total maintenance and verification costs for the contract amounted to \$89,320, allocated over the first three years of the contract term.

³ Energy cost is the amount the District pays for energy (i.e., electricity and natural gas).

⁴ The ESCO also guaranteed an additional \$155,000 of savings from a rebate.

⁵ Energy consumption savings would be a reduction in the quantity of energy (i.e., kilowatts of electricity or therms of natural gas) that the District uses. While the goal of the EPC is to reduce consumption, the ESCO did not guarantee that consumption would decrease by a specific number of kilowatts or therms.

Projected Energy Cost Savings	\$20,731,188
Less: Capital Costs Including Lease Interest	(\$20,553,021)
Less: Ongoing Maintenance and Verification Costs	(\$89,320)
Net Savings Before Grants and Rebates	\$88,847
Add: Grants Received	\$0
Add: Rebates Received	\$425,545
Net Savings With Grants and Rebates	\$514,392

District expenditures to implement the EPC’s terms totaled approximately \$20.6 million for a net gain to the District of approximately \$89,000 before any grants or rebates. With the receipt of grants and rebates,⁶ the total savings will amount to approximately \$500,000. To further illustrate the energy cost savings achieved through the EPC, Figure 2 compares a projection of what utility costs would be over the 18-year contract period had the EPC not been undertaken to a projection of post-EPC utility costs for the 18-year term of the EPC.

	Electricity	Natural Gas	Total
Costs – No EPC (2012-2030)	\$51,357,960	\$21,898,914	\$73,256,874
Costs – Post-EPC (2012-2030)	\$38,289,522	\$12,970,526	\$51,260,048
Cost Savings From EPC	\$13,068,438	\$8,928,388	\$21,996,826

^a Projections made using U.S. Department of Commerce formula for projecting present value of future cost savings using U.S. Department of Energy utility price indices. This yielded a projection reasonably close to the energy cost savings projected by the ESCO using engineering industry standards.

Related to the projected energy cost savings, the District will also realize electricity consumption savings, despite an 11 percent increase in cooling days.⁷ However, due in part to an 8 percent increase in heating days, natural gas consumption increased. For example, by looking at just four⁸ of the District’s 21 buildings, the EPC resulted in a 15 percent decrease in electricity consumption, while the District’s natural gas consumption increased by 5 percent.⁹ The EPC improved the District’s energy efficiency so that the decrease in both cost and electricity consumption was achieved even though the number of heating and cooling days were 8 percent and 11 percent higher, respectively, in the first year after substantial completion of the EPC, as compared to the base year. The improvements to just the District’s light fixtures accounted for approximately 43 percent of the District’s first-year energy cost savings.

⁶ This amount does not include approximately \$12.7 million of State aid that the District received because Education Law specifically excludes State building aid attributable to the project from the calculation of cost savings under the EPC.

⁷ Heating and cooling days are a way to relate each day’s temperatures to the demand for energy to heat or cool buildings. To calculate the heating degree days for a particular day, find the day’s average temperature by adding the day’s high and low temperatures and dividing by two. If the number is above 65, there are no heating degree days that day. If the number is less than 65, subtract it from 65 to find the number of heating degree days. Cooling degree days are also based on the day’s average minus 65.

⁸ Two high schools, one middle school and an elementary school

⁹ We excluded oil from our calculations as it accounted for less than 5 percent of total energy costs and consumption.

Although the District is guaranteed to realize a certain amount of energy cost savings, and it is projected to achieve energy consumption savings, the District has no effective monitoring procedures in place to ensure that those cost savings are achieved beyond the three-year maintenance and verification period. A District account clerk monitors the District's energy consumption through the monthly utility bills; however, she does not monitor the energy costs. The District has an agreement in place with its engineering firm to verify the accuracy of the ESCO's annual verification reports that the ESCO must provide for the first three years of the EPC. However, if District officials do not implement procedures to monitor the District's cost savings after that three-year maintenance and verification period, they will have limited assurance that the guaranteed savings have truly been achieved and that they do not, therefore, need to seek recourse for any difference.

Recommendation

1. District officials should implement monitoring procedures to ensure the cost savings guaranteed by the ESCO are achieved over the life of the EPC. If the guaranteed cost savings are not achieved, District officials should seek recourse, in accordance with the terms of their EPC.

The Board has the responsibility to initiate corrective action. Pursuant to Section 35 of General Municipal Law, Section 2116-a (3)(c) of Education Law and Section 170.12 of the Regulations of the Commissioner of Education, a written corrective action plan (CAP) that addresses the findings and recommendations in this report must be prepared and forwarded to our office within 90 days. To the extent practicable, implementation of the CAP must begin by the end of the next fiscal year. For more information on preparing and filing your CAP, please refer to our brochure, *Responding to an OSC Audit Report*, which you received with the draft audit report. The Board should make the CAP available for public review in the District Clerk's office.

We thank the officials and staff of the Sachem Central School District for the courtesies and cooperation extended to our auditors during this audit.

Sincerely,

Gabriel F. Deyo
Deputy Comptroller

APPENDIX A

RESPONSE FROM DISTRICT OFFICIALS

The District officials' response to this audit can be found on the following pages.

***Sachem Central School District
Administrative Office***

**James J. Nolan
Superintendent of Schools**

**Bruce H. Singer
Associate Superintendent
51 School Street
Lake Ronkonkoma, NY 11779**

**Phone (631) 471-1321
FAX (631) 471-1318**

May 27, 2015

Ira McCracken
Chief Examiner
NYS Office Building
Room 3A10
250 Veterans Memorial Highway
Hauppauge, New York 11788-5533

Re: Energy Performance Contract
Draft EPC Audit Report
Report #P7-15-43

Dear Mr. McCracken:

We have reviewed the "Draft EPC Audit Report" prepared by the Office of the State Comptroller (OSC), regarding the OSC's recent audit of the Phase II Energy Performance Contract (EPC) with Johnson Controls, Inc. (JCI) (see attached). The OSC's auditing focused primarily on confirming whether the EPC had achieved the guaranteed cost and/or energy savings projected by the executed EPC contract.

The OSC's analysis was based upon comparing the district's total expenditures to implement the EPC project (including all capital cost, lease interest and measurement and verification annual fees), with the total energy cost savings shown from the district's utility bills that will be achieved when projected over the entire term of the contract. The OSC utilized the U.S. Department of Energy price indices to estimate cost escalations over the term. Using this analysis method, the OSC has confirmed that the total projected energy savings, including rebates of \$21,996,826, will exceed the entire implementation costs of \$20,731,188, for a total surplus savings of \$1,265,638, as noted in footnote 6.

Sachem School District concurs that the District is guaranteed to realize a certain amount of energy cost savings, and it is projected to achieve energy consumption savings. A District Business Office Senior Account Clerk monitors the District's energy consumption through the monthly utility bills; however, she does not monitor the energy costs. The energy costs are monitored by the District School Business Administrator. The District has an agreement in place with ECG to verify the accuracy of the EXCO's annual verification reports that the ESCO must provide for the first three

years of the EPC. The District shall engage ECG to continue to monitor the energy cost savings over the savings over the life of the EPC.

ECG Engineering, P.C. was engaged by the Sachem CSD at the inception of this project to provide independent, 3rd party "Energy Performance Engineering" (EPE) services to the District throughout the entire process of executing the EPC. These services included, but were not limited to, RFP development, evaluation of ESCO proposals and selections, technical oversight through development of the comprehensive audit and contracts, plan and specification design and management of the NYSED review, construction management and oversight, as well as ongoing, independent review and verification of ESCO yearly savings claims.

Given the complex engineering nature of EPC's and associated savings calculations, we firmly believe the extremely positive results achieved on this project are a direct result of JCI's extensive EPC development expertise, coupled with ECG's technical oversight, to ensure the project remained in the best interests of the District and was executed successfully.

Sachem CSD agrees with the OSC that ongoing monitoring procedures should be implemented to ensure the actual cost savings presented by the ESCO are independently verified and supporting calculations are reviewed, given the highly technical nature of these reports. As mentioned previously, as part of the overall services provided to Sachem CSD, ECG has been providing the independent 3rd party verification of JCI's M&V reports on behalf of the District. ECG will continue to provide this service. Thus, as recommended by OSC, Sachem CSD has taken the necessary steps to ensure that the claimed projects savings are being monitored and verified.

Sincerely,

Bruce Singer
Associate Superintendent

Attachment