Energy Services Guarantee

Beecher Road School

Woodbridge, Connecticut

Year 2 - Annual Report | June 2018 — May 2019

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INTRODUCTION

Energy Systems Group is pleased to provide the Town of Woodbridge and Beecher Road School with this report, which details the energy cost avoidance portion of our joint project. The Guaranteed Year 2 energy savings for this project are **$ 214,212**. This amount contains savings from Options A, C and Modified Option C. This report covers the Option A, Option C, and Modified Option C savings for the Construction Period and for Guarantee Year 2. Although outside of the scope of the project, this report takes into account the impact of electricity generated by the photovoltaic system at Beecher Road School during Year 2.

During Guarantee Year 2, June 2018 – May 2019, Beecher Road School realized total Year 2 cost savings of **$ 271,418**. Option C Electric cost savings during Year 2 were **$ 124,943**. Cost Savings from Modified Option C fuel switching from #2 fuel oil to natural gas and the new heating system were **$ 139,742**. During this time there were also Option A Water Savings of **$ 6,733**.

As a result, a grand total of $ 1,499,145 in energy savings occurred during the Construction Period and first two Guarantee Years over the past 58 months.

Beecher Road School - Cumulative Savings					
Period	Guaranteed Savings	Actual Electric Savings $	Actual Fuel Switch Savings $	Actual Water Savings $	Total Actual Savings
Construction Period - August 2014 - May 2017	**$ 35,630**	**$ 453,181**	**$ 459,554**	**$ 14,852**	**$ 927,587**
Year 1 - June 2017- May 2018	**$ 210,012**	**$ 144,773**	**$ 148,766**	**$ 6,601**	**$ 300,140**
Year 2 - June 2018- May 2019	**$ 214,212**	**$ 124,943**	**$ 139,742**	**$ 6,733**	**$ 271,418**
Total	$ 459,854				$ 1,499,145

This report explains in detail the process by which cost avoidance was determined. It includes summaries of the base year and current utility bills, weather information and what adjustments were made to the base year utility bills. The sole purpose of adjustments are to make an "apples to apples" comparison by taking today's conditions and applying them to the base year, in order to accurately compare today's utility bills with those of the base year prior to the upgrade projects.

PROJECT BACKGROUND

The Energy Conservation Measures (ECM's) and building upgrades implemented for this project included:

- Lighting and Lighting Sensors Retrofit
- Mechanical Upgrades
  - New chilled water plant providing cooling throughout the school
  - New Pool dehumidification unit
  - Upgrades to air distribution system, including replacement of Roof Top Units, Air Handling Units, Variable Air Volume boxes, and Unit Ventilators
- Building Control Upgrades (Direct Digital Control Building Management System)
- Demand Control Ventilation
- Building Envelope Improvements (weather-stripping, sealing and insulation)
- Plug Load Controls
- Walk-In Freezer and Cooler Controls
- Transformer Replacement
- Water Conservation Measures (installation of low flow fixtures)
- Micro-Turbine that uses Natural Gas to generate electricity and utilizes the waste heat for pool water heating, domestic water heating, and building space heating in the winter time
- Replacement of Curtain Wall
- Roof Replacement
- Casework in ABC and K Wing
- Building Security Upgrade Measures (Includes Security Doors, Visitor Management System, Access Control System, Camera and Intercom System)
- Installation of New Canopy at the North and South Entrances of the School
- Wall Painting
- Equipment Commissioning

These measures enabled Beecher Road School to increase system efficiency and performance, reduce the energy consumption, and improve the indoor environment for occupant comfort and security.

As outlined in the Exhibit B Measurement and Verification Plan for this project, Energy Savings verification for this project was completed using IPMVP Option C and Modified Option C Methodology. This methodology utilizes utility bill analysis in order to calculate Cost Avoidance as detailed in this report. Verification of savings that result from Water Conservation measures was completed using IPMVP Option A Retrofit Isolation: Key Parameter Measurement methodology. The Option A savings were verified through on time pre-and post-retrofit water flow rates in sample fixtures and engineering calculations.

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EXECUTIVE SUMMARY

This comprehensive report shows energy consumption savings for those buildings associated with our joint project. The analysis was accomplished using EnergyCAP® energy accounting software to enhance the quality of the report in conjunction with MS-Excel. EnergyCAP® incorporates weather, billing period length, square footage and utility rate changes to provide the most accurate analysis of energy cost avoidance possible.

Energy Systems Group began the installation of energy saving upgrades to equipment in May 2014, with final acceptance of this project given by Beecher Road School in May 2017. With this project, came a guarantee of energy savings worth **$3,667,462** over 15 years. The following table shows the cost avoidance to date.

Beecher Road School - Cumulative Savings		
Period	Guaranteed Savings	Actual Savings
Construction Period* - August 2014 - May 2017	**$ 35,630**	**$ 927,587**
Year 1 - June 2017- May 2018**	**$ 210,012**	**$ 300,140**
Year 2 - June 2018- May 2019**	**$ 214,212**	**$ 271,418**
Total	$ 459,854	$ 1,499,145

*Note: The Guaranteed Savings for the Construction Period was $35,630 of Agreed Upon Energy Savings. The Construction Savings summary in the Year 1 report is for informational purposes only.

**Year 1 and Year 2 Savings include the impact of electricity generated by the photovoltaic system at Beecher Road School.

Mahalingam Balakrishnan

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Mahesh Balakrishnan, Ph.D., PE
Engineering Manager
Northeast Region

Mary Kaloto, CMVP
Measurement & Verification Analyst

Total Energy Costs (Dollar) - Savings by Methodology of Verification - Year 2: (Jun 2018 - May 2019)				
Month	Option C - Electric Savings	Modified Option C #2 FO to NG Fuel Switching Savings & Energy Efficiency Savings Combined Totals	Annual Option A - Water Savings *Details found in Appendix of this Report	Total Dollars Saved Year 2
January-2019	11,408	46,099		57,507
February-2019	12,225	8,920		21,145
March-2019	9,289	46,255		55,544
April-2019	9,081	3,624		12,705
May-2019	19,125	(1,289)		17,836
June-2018	9,227	(1,468)		7,759
July-2018	3,959	(3,332)		627
August-2018	156	(3,697)		(3,540)
September-2018	10,278	(3,597)		6,681
October-2018	14,705	362		15,067
November-2018	14,995	20,614		35,610
December-2018	10,493	27,252		37,745
Total Option C & Modified Option C	**$ 124,943**	**$ 139,742**		**$ 264,685**
Total Year 1 Option A Water Savings				**$ 6,733**
Grand Total Energy & Water Savings				**$ 271,418**

ELECTRIC - OPTION C

	Heating DD		Cooling DD		$			
Month	Base	Current	Base	Current	Base	Adjusted	Current	*Saved*
Jan-19	913	1039	0	0	$ 26,209	$ 24,227	$ 12,819	*$ 11,408*
Feb-19	766	1046	0	0	$ 24,721	$ 26,844	$ 14,618	*$ 12,225*
Mar-19	575	805	0	0	$ 23,947	$ 23,575	$ 14,286	*$ 9,289*
Apr-19	380	457	3	0	$ 24,383	$ 21,762	$ 12,681	*$ 9,081*
May-19	133	219	38	17	$ 30,355	$ 33,424	$ 14,300	*$ 19,125*
Jun-18	22	35	140	126	$ 26,427	$ 28,016	$ 18,789	*$ 9,227*
Jul-18	0	0	364	336	$ 23,451	$ 23,063	$ 19,104	*$ 3,959*
Aug-18	0	0	264	386	$ 23,133	$ 22,121	$ 21,965	*$ 156*
Sep-18	33	36	137	173	$ 30,792	$ 34,336	$ 24,057	*$ 10,278*
Oct-18	273	307	4	45	$ 32,220	$ 32,411	$ 17,706	*$ 14,705*
Nov-18	472	638	0	0	$ 27,260	$ 26,839	$ 11,843	*$ 14,995*
Dec-18	733	853	0	0	$ 21,923	$ 23,261	$ 12,769	*$ 10,493*
	4300	5435	950	1083	$ 314,821	$ 319,879	$ 194,936	

Total Electric Savings $ *124,943*

MODIFIED OPTION C - FUEL SWITCHING DOLLAR SAVINGS

Month	Base HDD	Current HDD	Base CDD	Current CDD	Base Year Consumption THERMS	Current Year Consumption THERMS	Fuel Switching Dollar Savings
Jan-19	913	1039	0	0	25,330	13,204	$ 17,770
Feb-19	766	1046	0	0	5,200	16,086	$ 21,648
Mar-19	575	805	0	0	20,361	10,020	$ 13,485
Apr-19	380	457	3	0	4,422	8,876	$ 11,945
May-19	133	219	38	17	378	6,590	$ 8,869
Jun-18	22	35	140	126	1,452	6,556	$ 8,823
Jul-18	0	0	364	336	378	6,197	$ 8,339
Aug-18	0	0	264	386	378	6,830	$ 9,192
Sep-18	33	36	137	173	378	6,711	$ 9,032
Oct-18	273	307	4	45	378	4,848	$ 6,525
Nov-18	472	638	0	0	8,742	8,460	$ 11,385
Dec-18	733	853	0	0	16,007	12,870	$ 17,321
	4300	5435	950	1083	83,404	107,248	$ 144,334

Total Fuel Switching Savings $ ***144,334***

MODIFIED OPTION C - ENERGY EFFICIENCY UPGRADE SAVINGS

Month	Base HDD	Current HDD	Base CDD	Current CDD	Base Therms	Adjusted Therms	Current Therms	*Total Efficiency Upgrade $ Saved*
Jan-19	913	1039	0	0	25,330	27,386	13,204	*$ 28,329*
Feb-19	766	1046	0	0	5,200	9,714	16,086	*$ (12,728)*
Mar-19	575	805	0	0	20,361	26,425	10,020	*$ 32,770*
Apr-19	380	457	3	0	4,422	4,710	8,876	*$ (8,321)*
May-19	133	219	38	17	378	1,505	6,590	*$ (10,158)*
Jun-18	22	35	140	126	1,452	1,404	6,556	*$ (10,291)*
Jul-18	0	0	364	336	378	354	6,197	*$ (11,671)*
Aug-18	0	0	264	386	378	378	6,830	*$ (12,889)*
Sep-18	33	36	137	173	378	389	6,711	*$ (12,629)*
Oct-18	273	307	4	45	378	1,763	4,848	*$ (6,163)*
Nov-18	472	638	0	0	8,742	13,080	8,460	*$ 9,229*
Dec-18	733	853	0	0	16,007	17,842	12,870	*$ 9,931*
	4300	5435	950	1083	83,404	104,950	107,248	

Total Energy Efficiency Upgrade Savings $ ***(4,591)***

MEASURING ENERGY SAVINGS THROUGH COST AVOIDANCE

The measurement of energy consumption and the cost savings associated with installed energy management equipment is a comparison between the energy consumed during the current billing period and the respective baseline billing period.

The first step in cost avoidance calculations is the creation of a baseline. The baseline reflects the facility's energy use and energy costs prior to the installation of the energy conservation measures. The baseline calendar period will typically be a consecutive twelve month period for which reliable data exists prior to contract execution. The baseline will consist of all energy bills applicable to the meters in the project. For Beecher Road School, July 2011 – June 2012, was used as the base year.

Once the program is in place, actual energy use is recorded from current utility bills. The costs that the facility incurs after implementation of the measures are compared to the baseline in order to determine if savings projections--and guarantees--have been met.

Baseline Adjustments

Proper analysis and comparison can only be achieved if the environmental and facility parameters are equal to those of the base year. Examples of factors effecting the environment and facility parameters are weather, energy rates, facility schedules and changes in equipment. The baseline may need to be adjusted to equalize the parameters of the current year so that an accurate analysis can be performed and valid savings can be measured. In essence, the adjustment process shows what the costs and usage would have been in the base year under the current conditions for an 'apples to apples' comparison.

These adjustments typically cover:

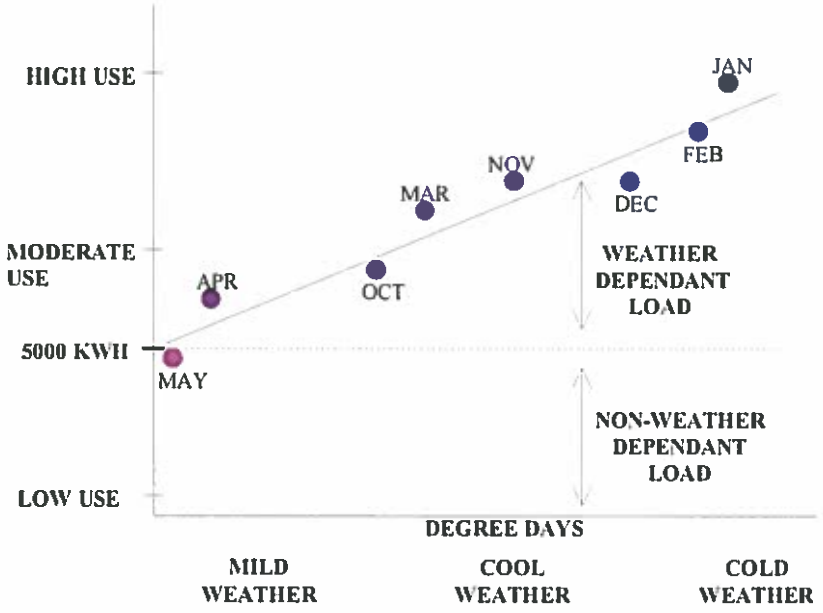
- standardize for the number of days in a billing period
- normalize the differences in outdoor temperature through degree days
- changes in facility occupancy and use
- additions or deletions of energy using equipment
- changes in energy prices and/or rate structures

Auditing Energy Savings

ESG uses EnergyCAP®, a computerized energy accounting database to track cost and consumption during the guarantee period. Once a baseline is established, and entered into the program, EnergyCAP® uses this as the benchmark for contract performance.

EnergyCAP® will automatically adjust for differing number of days in the billing period before calculating performance. The software's processors adjust for weather variations using degree days while still recognizing that not all energy consumption is weather-related.

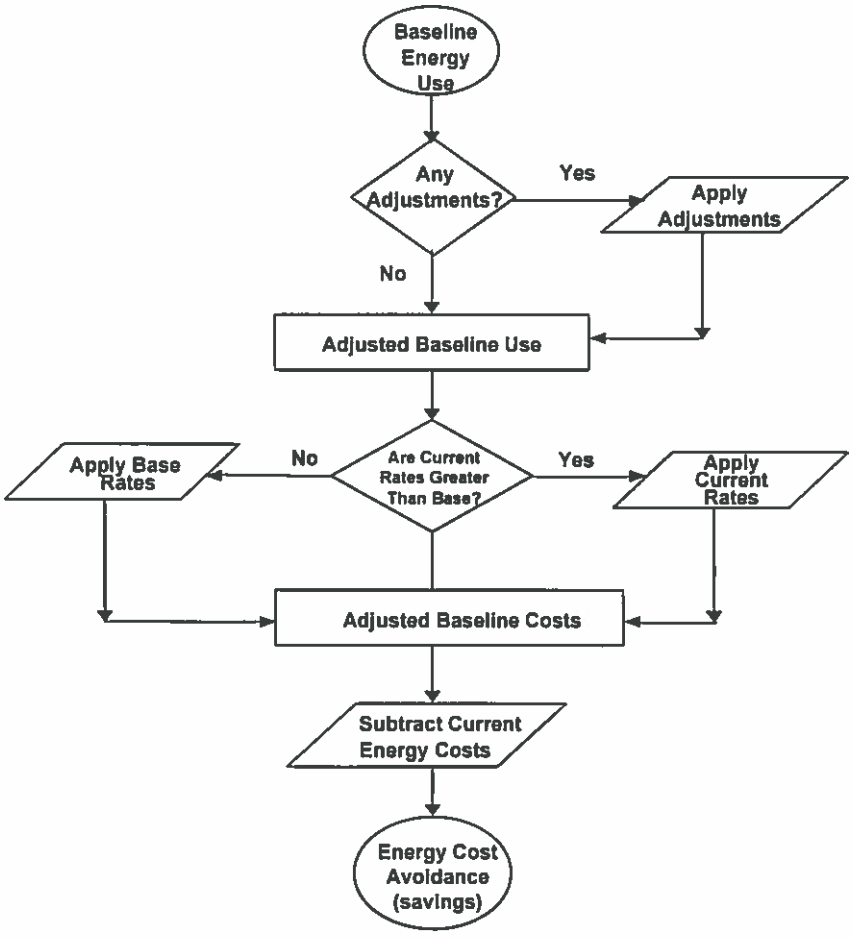
EnergyCAP® WEATHER ADJUSTMENT MODEL SAMPLE



After EnergyCAP® adjusts for weather and billing period, it allows additional adjustments to be made for items such as changes in equipment or occupancy. Changes in equipment can be removal of or an addition to existing equipment or operating hours.

Once all adjustments are taken into account, EnergyCAP® then produces the new baseline units of energy (adjusted baseline). This result is then run through the rate schedule processor to determine what the adjusted baseline cost would be using the meter's rate schedule. The current cost is then subtracted from the adjusted baseline cost and the result is cost avoidance.

A summary of the calculation process for cost avoidance is as follows:



Methodology for Assigning Dollar Values to Savings:

Assigning dollar values to savings will be accomplished by using an average cost per unit of energy. Charges for fuel adjustments, base services, transmission, tariffs, and distributions will be included to ensure an 'apples to apples' comparison. This method also allows for updating savings calculations with changing rate schedules. In the event of a utility rate decrease, the utility rate(s) used to assign dollar cost will not drop below that of the base year. In this project, savings have been guaranteed in dollars, not units of energy, therefore, a lower limit, or floor, must be set to that of the base year rate schedules.

The following pages graphically illustrate the actual energy usage of the base and guarantee years, and the resulting impacts of any adjustments to the base year (adjusted baseline).

Fuel Switching Methodology

Detailed Fuel Switching Modified Option C Methodology may be found in excerpts of Exhibit B, Section 4 of the contract; or at the end of this report.

Fuel Switch Savings $ = (Current Year Consumption or Fuel Oil Equivalent Baseline 83,404 Therms, whichever is greater) x (the Baseline Fuel Cost Savings difference value escalating 2% annually in $/Therm)

	Current Year Therm Consumption	Fuel Oil Equivalent Baseline Therms	Fuel Switch Dollar Savings
Jan-19	13204	25,330	$ 17,769.95
Feb-19	16086	5,200	$ 21,648.27
Mar-19	10020	20,361	$ 13,485.02
Apr-19	8876	4,422	$ 11,944.65
May-19	6590	378	$ 8,869.20
Jun-18	6556	1,452	$ 8,822.73
Jul-18	6197	378	$ 8,339.30
Aug-18	6830	378	$ 9,192.00
Sep-18	6711	378	$ 9,031.93
Oct-18	4848	378	$ 6,524.92
Nov-18	8460	8,742	$ 11,385.15
Dec-18	12870	16,007	$ 17,320.61
Total	107,248	83,404	$ 144,333.73

	Baseline Fuel Unit Cost Difference $1.3194	Escalated Baseline Fuel Unit Cost Difference (Beginning Cost $1.3194)
Jan-19	$ 1.3194	1.3458
Feb-19	$ 1.3194	1.3458
Mar-19	$ 1.3194	1.3458
Apr-19	$ 1.3194	1.3458
May-19	$ 1.3194	1.3458
Jun-18	$ 1.3194	1.3458
Jul-18	$ 1.3194	1.3458
Aug-18	$ 1.3194	1.3458
Sep-18	$ 1.3194	1.3458
Oct-18	$ 1.3194	1.3458
Nov-18	$ 1.3194	1.3458
Dec-18	$ 1.3194	1.3458

Note: The Escalated Baseline Fuel Unit Cost Difference was used in the Fuel Switch Savings calculation.

Energy Efficiency Upgrade Savings $ = (Adjusted Baseline Therms – Current Year Therms) or (Fuel Oil Equivalent Baseline 83,404 Therms – Current Year Therms), whichever is greater x (Avoided Energy Cost escalating 2% annually in $/Therm)

Note: The Escalated Avoided Energy Cost was used in the Efficiency Upgrade Savings calculation.

(tables shown on the following page)

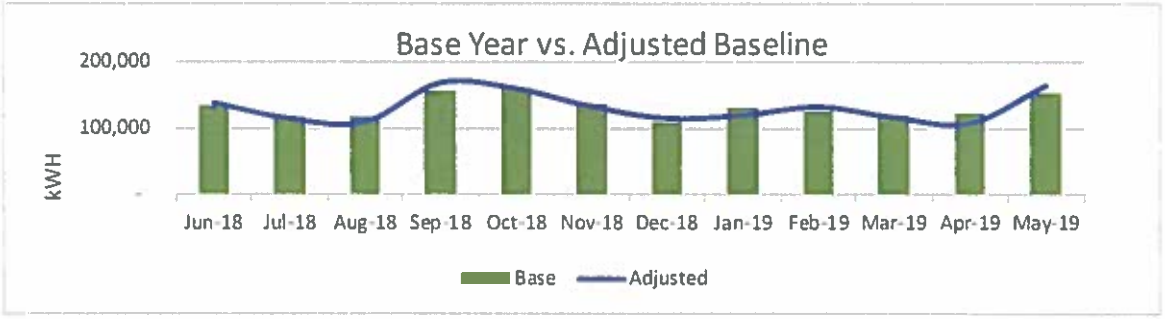
	Adjusted Baseline Therms (83,404 Therms adjusted for weather in EnergyCap regression analysis)	Current Year Therms (Facility Heat and Microturbine Therms)	Fuel Oil Equivalent Baseline Therms From Contract (Facility Heat Only)	Adjusted Baseline -- Current Year Therms = Therms Saved	Baseline (Facility Heat Only) -- Current Year Therms = Therms Saved	Greater of Therms Saved	Energy Efficiency Upgrade Savings Dollars = Greater of Therms Saved x Lower Unit Cost
Jan-19	27,386	13,204	25,330	14,182	12,126	14,182	$ 28,329.27
Feb-19	9,714	16,086	5,200	(6,372)	(10,886)	(6,372)	$ (12,728.39)
Mar-19	26,425	10,020	20,361	16,405	10,341	16,405	$ 32,769.77
Apr-19	4,710	8,876	4,422	(4,166)	(4,454)	(4,166)	$ (8,321.04)
May-19	1,505	6,590	378	(5,085)	(6,212)	(5,085)	$ (10,158.31)
Jun-18	1,404	6,556	1,452	(5,152)	(5,104)	(5,152)	$ (10,291.09)
Jul-18	354	6,197	378	(5,843)	(5,819)	(5,843)	$ (11,670.98)
Aug-18	378	6,830	378	(6,452)	(6,452)	(6,452)	$ (12,888.71)
Sep-18	389	6,711	378	(6,322)	(6,333)	(6,322)	$ (12,629.14)
Oct-18	1,763	4,848	378	(3,085)	(4,470)	(3,085)	$ (6,163.30)
Nov-18	13,080	8,460	8,742	4,620	282	4,620	$ 9,229.08
Dec-18	17,842	12,870	16,007	4,972	3,137	4,972	$ 9,931.43
Total	104,950	107,248	83,404	(2,298)	(23,844)	(2,298)	$ (4,591.39)

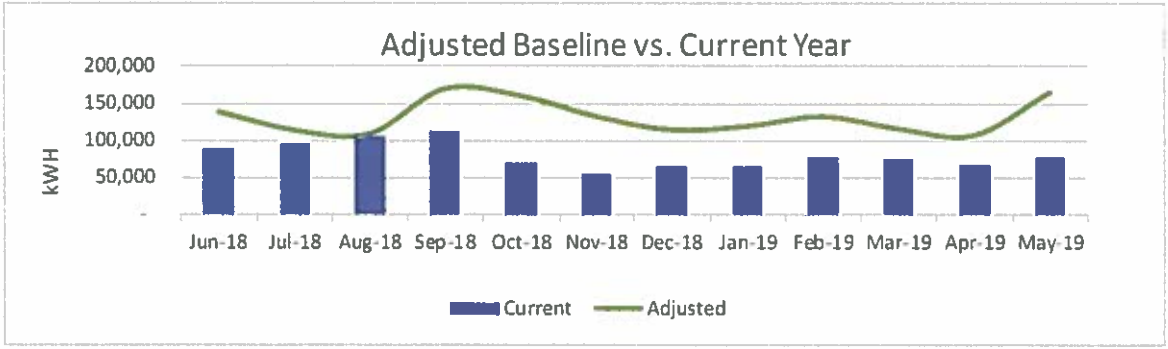
	Baseline Avoided Energy Cost $1.9584	Baseline Avoided Energy Cost escalated 2% Annually beginning July 2012
Jan-19	$ 1.9584	1.9976
Feb-19	$ 1.9584	1.9976
Mar-19	$ 1.9584	1.9976
Apr-19	$ 1.9584	1.9976
May-19	$ 1.9584	1.9976
Jun-18	$ 1.9584	1.9976
Jul-18	$ 1.9584	1.9976
Aug-18	$ 1.9584	1.9976
Sep-18	$ 1.9584	1.9976
Oct-18	$ 1.9584	1.9976
Nov-18	$ 1.9584	1.9976
Dec-18	$ 1.9584	1.9976

ELECTRIC

Month	Heating DD Base	Heating DD Current	Cooling DD Base	Cooling DD Current	kWH Base	kWH Adjusted	kWH Current	kWH *Saved*
Jan-19	913	1039	0	0	132,100	119,716	65,620	*54,096*
Feb-19	766	1046	0	0	124,600	132,647	78,223	*54,424*
Mar-19	575	805	0	0	120,700	116,494	74,969	*41,525*
Apr-19	380	457	3	0	122,900	107,538	68,415	*39,123*
May-19	133	219	38	17	153,000	165,166	78,098	*87,068*
Jun-18	22	35	140	126	133,200	138,442	88,462	*49,980*
Jul-18	0	0	364	336	118,200	113,964	95,116	*18,848*
Aug-18	0	0	264	386	116,600	109,313	104,332	*4,981*
Sep-18	33	36	137	173	155,200	169,670	113,890	*55,780*
Oct-18	273	307	4	45	162,400	160,161	70,764	*89,397*
Nov-18	472	638	0	0	137,400	132,623	56,732	*75,891*
Dec-18	733	853	0	0	110,500	114,946	65,509	*49,437*
Totals	4300	5435	950	1083	1,586,800	1,580,680	960,130	

Total Electric Grid Use Avoidance ***620,550***





Analysis of Year 2 Electric Consumption at Beecher Road School: Grid Use and Use of Solar Production

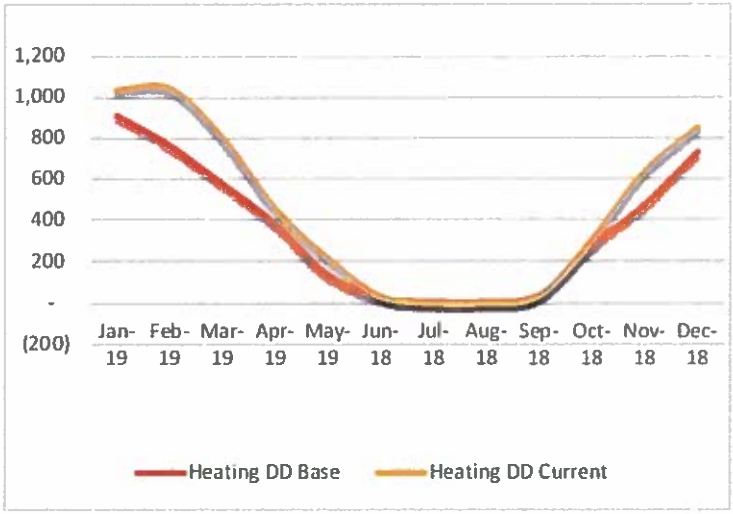
		Total Consumption kWh shown on utility bill as Total on last page = grid consumption from North and South Meter Reads plus solar kWh exported to the grid from South Virtual Meter Reads	Total Metered Grid Consumption =North+South Meter Reads	Total Solar Production kWh (data provided by CT Green Bank)	Solar Production kWh Exported to the Grid (South Virtual Meter Reads)	Difference = Solar Production kWh used by Beecher Road School	Total kWh used by Beecher Road School during Year 2 = Metered Grid Consumption + Solar production kWh used by the school	$ Value of Solar Production used by Beecher Road School during Year 2
12/20/2018-01/18/2019	Jan-19	53,520	52,800	13,540	720	12,820	65,620	$ 2,602
1/17/2019-2/18/2019	Feb-19	63,360	61,440	18,703	1,920	16,783	78,223	$ 3,407
2/16/2019-3/19/2019	Mar-19	56,160	52,800	25,529	3,360	22,169	74,969	$ 4,500
3/20/2019-4/17/2019	Apr-19	55,200	47,040	29,535	8,160	21,375	68,415	$ 4,339
4/18/2019-5/19/2019	May-19	62,640	55,680	29,378	6,960	22,418	78,098	$ 4,551
5/18/2018-6/18/2018	Jun-18	74,880	65,280	32,782	9,600	23,182	88,462	$ 4,706
6/19/2018-7/18/2018	Jul-18	85,680	75,360	30,076	10,320	19,756	95,116	$ 4,010
7/19/2018-8/19/2018	Aug-18	90,480	84,000	26,812	6,480	20,332	104,332	$ 4,127
08/20/2018-09/18/2018	Sep-18	107,280	101,520	18,130	5,760	12,370	113,890	$ 2,511
9/19/2018-10/18/2018	Oct-18	62,640	59,040	15,324	3,600	11,724	70,764	$ 2,380
10/19/2018- 11/18/2018	Nov-18	52,560	50,160	8,972	2,400	6,572	56,732	$ 1,334
11/19/2018-12/18/2018	Dec-18	57,840	57,120	9,109	720	8,389	65,509	$ 1,703
		822,240	762,240	257,890	60,000	197,890	960,130	$ 40,172

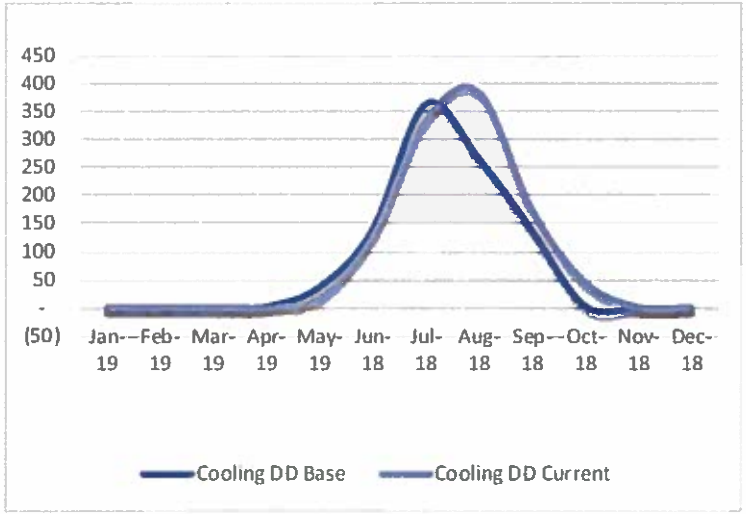
	Total kWh used by Beecher Road School during Year 2 = Metered Grid Consumption + Solar Production used at Beecher Road School
960,130	

Total Year 2 Electric Consumption includes kWh purchased from the utility (grid use) and kWh generated by the solar power system that was used by Beecher Road School. Grid kWh consumption as listed on the utility bills is a sum of the North and South Meter reads. The South Virtual Meter represents the solar production kWh that is sold to the grid. Therefore, in order to determine Year 2 kWh generated by the solar power system that was used by Beecher Road School, the South Virtual Meter kWh exported to the grid were deducted from the total kWh produced by the solar power system. The grid use was then added to the solar production used by the school, resulting in 960,130 total kWh used by Beecher Road School during Year 2. The Year 2 Electric Grid rate is $0.2030/kWh, which was the rate used to calculate the value of the solar production used by Beecher Road School during Year 2.

Degree Days

Month	Heating DD			Cooling DD		
	Base	Current	Difference	Base	Current	Difference
Jan-19	913	1039	-126	0	0	0
Feb-19	766	1046	-280	0	0	0
Mar-19	575	805	-230	0	0	0
Apr-19	380	457	-77	3	0	3
May-19	133	219	-86	38	17	21
Jun-18	22	35	-13	140	126	14
Jul-18	0	0	0	364	336	28
Aug-18	0	0	0	264	386	-122
Sep-18	33	36	-3	137	173	-36
Oct-18	273	307	-34	4	45	-41
Nov-18	472	638	-166	0	0	0
Dec-18	733	853	-120	0	0	0





APPENDIX

Option A

Option A - Water System Savings

Option A "Retrofit Isolation: Key Parameter Measurement" was used in the verification of water system improvements at Beecher Road School. The verification was performed through one-time pre- and post-retrofit water flow rates in sample fixtures and engineering calculations and was presented in the Year 1 Report. The annual cost savings will be carried forward escalating annually as outlined in Section 4.1 of Exhibit B of the contract.

Beecher Road School Option A Water Savings				
	Gallons	Rate ($/kgal)	Achieved Savings $	Guaranteed Savings $
Year 2 Option A Water Savings	1,029,802	$6.54	$ 6,733	$ 3,886

Base Year Electric

yyyy-mm	Start Date	End Date	#Days	Use	Billed Demand	Actual Demand	Cost	Cost / Unit	Cost / Day	Use / Day
Place: [BEECHER ROAD- WOODBRIDGE] Beecher Road - Woodbridge							**Energy Type: Electric - kWh**			
Meter: [EL ACCT 900000000066] El Acct # 900000000066							**Cost Center: [BEECHERROADWOODBRIDGECT] Beecher R**			
Rate: Electric										
Account: [MODIFIED EL - ACCT 900000000066] Modified EL - Acct # 900000000066							**Vendor: [UILLUMINATIONS] United Illuminations**			
2011 - 07	6/18/2011	7/18/2011	30	118,200 KWH			$23,451.00	$0.198	$781.70	3,940.00
2011 - 08	7/18/2011	8/19/2011	32	116,600 KWH			$23,133.00	$0.198	$722.91	3,643.75
2011 - 09	8/19/2011	9/17/2011	29	155,200 KWH			$30,792.00	$0.198	$1,061.79	5,351.72
2011 - 10	9/17/2011	10/17/2011	30	162,400 KWH			$32,220.00	$0.198	$1,074.00	5,413.33
2011 - 11	10/17/2011	11/18/2011	32	137,400 KWH			$27,260.00	$0.198	$851.88	4,293.75
2011 - 12	11/18/2011	12/17/2011	29	110,500 KWH			$21,923.00	$0.198	$755.97	3,810.34
2012 - 01	12/17/2011	1/18/2012	32	132,100 KWH			$26,209.00	$0.198	$819.03	4,128.13
2012 - 02	1/18/2012	2/17/2012	30	124,600 KWH			$24,721.00	$0.198	$824.03	4,153.33
2012 - 03	2/17/2012	3/18/2012	30	120,700 KWH			$23,947.00	$0.198	$798.23	4,023.33
2012 - 04	3/18/2012	4/19/2012	32	122,900 KWH			$24,383.00	$0.198	$761.97	3,840.63
2012 - 05	4/19/2012	5/17/2012	28	153,000 KWH			$30,355.00	$0.198	$1,084.11	5,464.29
2012 - 06	5/17/2012	6/18/2012	32	133,200 KWH			$26,427.00	$0.198	$825.84	4,162.50
Meter [EL ACCT 900000000066] El Acct # 900000000066 Totals:			**366**	**1,586,800 KWH**			**$314,821.00**			

Current Year Electric

yyyy-mm	Start Date	End Date	#Days	Use	Billed Demand	Actual Demand	Cost	Cost / Unit	Cost / Day	Use / Day
Place: [BEECHER ROAD- WOODBRIDGE] Beecher Road - Woodbridge							**Energy Type: Electric - kWh**			
Meter: [EL ACCT 900000000066] El Acct # 900000000066							**Cost Center: [BEECHERROADWOODBRIDGECT] Beecher F**			
Rate: Electric										
Account: [MODIFIED EL - ACCT 900000000066] Modified EL - Acct # 900000000066							**Vendor: [UILLUMINATIONS] United Illuminations**			
2018 - 06	5/16/2018	6/18/2018	33	65,280 KWH			$14,082.82	$0.216	$426.75	1,978.18
2018 - 07	6/19/2018	7/18/2018	29	75,360 KWH			$15,093.44	$0.200	$520.46	2,598.62
2018 - 08	7/18/2018	8/17/2018	30	84,000 KWH			$17,837.67	$0.212	$594.59	2,800.00
2018 - 09	8/17/2018	9/18/2018	32	101,520 KWH			$21,546.09	$0.212	$673.32	3,172.50
2018 - 10	9/18/2018	10/18/2018	30	59,040 KWH			$15,326.39	$0.260	$510.88	1,968.00
2018 - 11	10/18/2018	11/18/2018	31	50,160 KWH			$10,509.12	$0.210	$339.00	1,618.06
2018 - 12	11/18/2018	12/18/2018	30	57,120 KWH			$11,065.71	$0.194	$368.86	1,904.00
2019 - 01	12/18/2018	1/16/2019	29	52,800 KWH			$10,216.29	$0.193	$352.29	1,820.69
2019 - 02	1/17/2019	2/18/2019	32	61,440 KWH			$11,211.18	$0.182	$350.35	1,920.00
2019 - 03	2/18/2019	3/19/2019	29	52,800 KWH			$9,785.55	$0.185	$337.43	1,820.69
2019 - 04	3/20/2019	4/17/2019	28	47,040 KWH			$8,341.67	$0.177	$297.92	1,680.00
2019 - 05	4/18/2019	5/19/2019	31	55,680 KWH			$9,748.76	$0.175	$314.48	1,796.13
Meter [EL ACCT 900000000066] El Acct # 900000000066 Totals:			**364**	**762,240 KWH**			**$154,764.69**			

Base Year Natural Gas

yyyy-mm	Start Date	End Date	#Days	Use	Billed Demand	Actual Demand	Cost	Cost / Unit	Cost / Day	Use / Day
Place: [MAIN CAMPUS] main campus							**Energy Type: Natural Gas - THERM**			
Meter: [MAIN CAMPUS-NAT02] main campus-Nat02							**Cost Center: [BEECHERROADWOODBRIDGECT] Beecher F**			
Rate: natural gas rate base year										
Account: [BASE YEAR NO TURBINE] Base Year No Turbine							**Vendor: [SCG] SCG**			
2011 - 07	7/1/2011	8/1/2011	31	378 THERM			$0.00	$0.000	$0.00	12.19
2011 - 08	8/1/2011	9/1/2011	31	378 THERM			$0.00	$0.000	$0.00	12.19
2011 - 09	9/1/2011	10/1/2011	30	378 THERM			$0.00	$0.000	$0.00	12.60
2011 - 10	10/1/2011	11/1/2011	31	378 THERM			$0.00	$0.000	$0.00	12.19
2011 - 11	11/1/2011	12/1/2011	30	8,742 THERM			$0.00	$0.000	$0.00	291.40
2011 - 12	12/1/2011	1/1/2012	31	16,007 THERM			$0.00	$0.000	$0.00	516.35
2012 - 01	1/1/2012	2/1/2012	31	25,330 THERM			$0.00	$0.000	$0.00	817.10
2012 - 02	2/1/2012	3/1/2012	29	5,200 THERM			$0.00	$0.000	$0.00	179.31
2012 - 03	3/1/2012	3/31/2012	30	20,361 THERM			$0.00	$0.000	$0.00	678.70
2012 - 04	3/31/2012	4/30/2012	30	4,422 THERM			$0.00	$0.000	$0.00	147.40
2012 - 05	4/30/2012	5/30/2012	30	378 THERM			$0.00	$0.000	$0.00	12.60
2012 - 06	5/30/2012	6/29/2012	30	1,452 THERM			$0.00	$0.000	$0.00	48.40
Meter [MAIN CAMPUS-NAT02] main campus-Nat02 Totals:			**364**	**83,404 THERM**			**$0.00**			

Current Year Natural Gas

yyyy-mm	Start Date	End Date	#Days	Use	Billed Demand	Actual Demand	Cost	Cost / Unit	Cost / Day	Use / Day
Place: [BEECHER ROAD- WOODBRIDGE] Beecher Road - Woodbridge							**Energy Type: Natural Gas - THERM**			
Meter: [GAS ACCT 050-0011217-4507] NG Acct # 050-0011217-							**Cost Center: [BEECHERROADWOODBRIDGECT] Beecher F**			
Rate: Natural Gas										
Account: [MODIFIED NG ACCT 050-0011217-4507]							**Vendor: [SOUTHERNCONNECTI] Southern Connecticut**			
Main NG Acct # 050-0011217-4507 SCG										
2018 - 06	5/18/2018	6/18/2018	31	740 CCF			$1,379.23	$1.864	$44.49	23.87
2018 - 07	6/18/2018	7/20/2018	32	740 CCF			$1,371.05	$1.853	$42.85	23.13
2018 - 08	7/20/2018	8/20/2018	31	740 CCF			$1,384.76	$1.871	$44.67	23.87
2018 - 09	8/20/2018	9/20/2018	31	740 CCF			$1,371.05	$1.853	$44.23	23.87
2018 - 10	9/20/2018	10/20/2018	30	150 CCF			$1,401.73	$9.345	$46.72	5.00
2018 - 11	10/20/2018	11/20/2018	31	3,320 CCF			$2,036.59	$0.613	$65.70	107.10
2018 - 12	11/20/2018	12/19/2018	29	8,120 CCF			$2,712.91	$0.334	$93.55	280.00
2019 - 01	12/19/2018	1/18/2019	30	8,460 CCF			$2,753.14	$0.325	$91.77	282.00
2019 - 02	1/18/2019	2/18/2019	31	10,680 CCF			$3,056.60	$0.286	$98.60	344.52
2019 - 03	2/18/2019	3/21/2019	31	5,390 CCF			$2,672.96	$0.496	$86.22	173.87
2019 - 04	3/22/2019	4/19/2019	28	4,410 CCF			$2,186.68	$0.496	$78.10	157.50
2019 - 05	4/19/2019	5/20/2019	31	2,275 CCF			$1,629.37	$0.716	$52.56	73.39
Meter [GAS ACCT 050-0011217-4507] NG Acct # 050-0011217-4507 Totals:			**366**	**4,443 MCF**			**$23,956.07**			

yyyy-mm	Start Date	End Date	#Days	Use	Billed Demand	Actual Demand	Cost	Cost / Unit	Cost / Day	Use / Day
Place: [MAIN CAMPUS] main campus										
Meter: [MAIN CAMPUS-NAT01] main campus-Nat01								**Cost Center: [BEECHERROADWOODBRIDGECT]**		**Beecher F**
Rate: main supply										
Account: [MAIN GAS SUPPLY] Main Gas Supply Spark 5000000589950							**Vendor: [SPARK] SPARK**			
2018 - 06	5/19/2018	6/18/2018	30				$0.00	$0.000	$0.00	
2018 - 07	6/18/2018	7/18/2018	30				$0.00	$0.000	$0.00	
2018 - 08	7/18/2018	8/20/2018	33				$0.00	$0.000	$0.00	
2018 - 09	8/20/2018	9/20/2018	31				$0.00	$0.000	$0.00	
2018 - 10	9/20/2018	10/20/2018	30				$103.76		$3.46	
2018 - 11	10/20/2018	11/19/2018	30				$2,292.67		$76.42	
2018 - 12	11/19/2018	12/19/2018	30				$5,604.12		$186.80	
2019 - 01	12/19/2018	1/18/2019	30				$5,837.07		$194.57	
2019 - 02	1/18/2019	2/18/2019	31				$7,367.97		$237.68	
2019 - 03	2/18/2019	3/20/2019	30				$5,464.22		$182.14	
2019 - 04	3/20/2019	4/19/2019	30				$3,848.32		$128.28	
2019 - 05	4/19/2019	5/20/2019	31				$1,627.95		$52.51	
Meter [MAIN CAMPUS-NAT01] main campus-Nat01 Totals:			**366**				**$32,146.08**			

yyyy-mm	Start Date	End Date	#Days	Use	Billed Demand	Actual Demand	Cost	Cost / Unit	Cost / Day	Use / Day
Place: [TURBINE GAS METER] turbine gas meter										
Meter: [TURBINE GAS METER-02] turbine gas meter-02								**Cost Center: [BEECHERROADWOODBRIDGEGT]**		**Beecher F**
Rate: supply turbine gas										
Account: [TURBINE GAS SUPPLY] Turbine Gas Supply - Spark 5000000599834								**Vendor: [SPARKENERGY] Spark Energy**		
2018 - 06	5/18/2018	6/20/2018	33				$3,848.32		$116.62	
2018 - 07	6/20/2018	7/20/2018	30				$3,610.02		$120.33	
2018 - 08	7/20/2018	8/20/2018	31				$4,033.06		$130.10	
2018 - 09	8/19/2018	9/20/2018	32				$3,953.42		$123.54	
2018 - 10	9/20/2018	10/20/2018	30				$3,240.52		$108.02	
2018 - 11	10/20/2018	11/19/2018	30				$3,339.58		$111.32	
2018 - 12	11/19/2018	12/19/2018	30				$2,961.38		$98.71	
2019 - 01	12/19/2018	1/18/2019	30				$2,948.66		$98.29	
2019 - 02	1/18/2019	2/17/2019	30				$3,333.56		$111.12	
2019 - 03	2/17/2019	3/19/2019	30				$3,056.43		$101.88	
2019 - 04	3/19/2019	4/19/2019	31				$2,881.71		$92.96	
2019 - 05	4/19/2019	5/19/2019	30				$3,043.05		$101.44	
Meter [TURBINE GAS METER-02] turbine gas meter-02 Totals:			**367**				**$40,249.71**			

yyyy-mm	Start Date	End Date	#Days	Use	Billed Demand	Actual Demand	Cost	Cost / Unit	Cost / Day	Use / Day
Place: [TURBINE GAS METER] turbine gas meter							**Energy Type: Natural Gas - CCF**			
Meter: [TURBINE GAS METER-NAT01] turbine gas meter-Nat01							**Cost Center: [BEECHERROADWOODBRIDGECT] Beecher F**			
Rate: turbine gas										
Account: [TURBINEGAS] Turbine Gas 050-0011262-0252 SCG							**Vendor: [SCG] SCG**			
2018 - 06	5/18/2018	6/20/2018	33	5,582 CCF			$615.29	$0.110	$18.65	169.15
2018 - 07	6/20/2018	7/19/2018	29	5,236 CCF			$581.94	$0.111	$20.07	180.53
2018 - 08	7/19/2018	8/20/2018	32	5,847 CCF			$640.77	$0.110	$20.02	182.71
2018 - 09	8/20/2018	9/20/2018	31	5,732 CCF			$629.73	$0.110	$20.31	184.90
2018 - 10	9/20/2018	10/19/2018	29	4,698 CCF			$530.21	$0.113	$18.28	162.01
2018 - 11	10/19/2018	11/20/2018	32	5,017 CCF			$618.65	$0.123	$19.33	156.78
2018 - 12	11/20/2018	12/19/2018	29	4,450 CCF			$557.45	$0.125	$19.22	153.44
2019 - 01	12/19/2018	1/18/2019	30	4,431 CCF			$537.06	$0.121	$17.90	147.70
2019 - 02	1/18/2019	2/20/2019	33	5,011 CCF			$537.06	$0.107	$16.27	151.85
2019 - 03	2/20/2019	3/21/2019	29	4,430 CCF			$1,129.88	$0.255	$38.96	152.76
2019 - 04	3/21/2019	4/20/2019	30	4,302 CCF			$1,056.62	$0.246	$35.22	143.40
2019 - 05	4/20/2019	5/20/2019	30	4,230 CCF			$1,001.67	$0.237	$33.39	141.00
Meter [TURBINE GAS METER-NAT01] turbine gas meter-Nat01 Totals:			**367**	**5,896 MCF**			**$8,436.33**			
Grand Totals:				**13,251.4 MMBTU**			**$259,552.88**			

Guarantee and Modified Option C Metholodology

Table A – Guaranteed Savings
(Please refer to Notes 1 and 2)

Year	Agreed-Upon Annual Energy Savings	Option C	Modified Option C	Option A	Agreed-Upon Annual Operation Savings	Total Annual Savings
Construction	$ 35,630					$ 35,630
1		$ 112,682	$ 93,521	$ 3,810		$ 210,012
2		$ 114,935	$ 95,391	$ 3,886		$ 214,213
3		$ 117,234	$ 97,299	$ 3,964		$ 218,497
4		$ 119,579	$ 99,245	$ 4,043		$ 222,867
5		$ 121,970	$ 101,230	$ 4,124		$ 227,324
6		$ 124,410	$ 103,255	$ 4,206		$ 231,871
7		$ 126,898	$ 105,320	$ 4,290		$ 236,508
8		$ 129,436	$ 107,426	$ 4,376		$ 241,238
9		$ 132,025	$ 109,575	$ 4,464		$ 246,063
10		$ 134,665	$ 111,766	$ 4,553		$ 250,984
11		$ 137,358	$ 114,001	$ 4,644		$ 256,004
12		$ 140,106	$ 116,281	$ 4,737		$ 261,124
13		$ 142,908	$ 118,607	$ 4,832		$ 266,346
14		$ 145,766	$ 120,979	$ 4,928		$ 271,673
15		$ 148,681	$ 123,399	$ 5,027		$ 277,107
Total	$ 35,630	$ 1,948,652	$ 1,617,295	$ 65,884	$ -	$ 3,667,462

Note 1: *The above table lists energy savings values during the M&V term. The actual finance term included in the project cash flow may be longer than the M&V term indicated in the above table and hence the total savings in the project cash flow may be different. The above table simply represents the guaranteed values through the M&V term.*
Note 2: *The Guaranteed Energy Savings is for total cost savings and not by ECM or fuel type.*

4.1 ESCALATION RATES

The minimum annual escalation rates listed below are agreed upon as part of the guaranteed energy savings listed in **Table A** and for M&V and O&M costs listed in the financial section of the proposal. ESG and OWNER agree to the escalation rates listed in **Table A-2** below.

Table A-2 – Escalation Rates

Energy Cost Escalation./year	2.0%
Labor Cost Escalation/year	3.0%
Maintenance Cost Escalation/year	3.0%

The actual escalation of calculated savings that will be applied in the M&V Report will be the *higher of*:

(1) **Table A-2** above
(2) CPI (Consumer Price Index) for the geographical region, or
(3) Actual fuel rate

The escalation rates include the general inflation rates. The escalation of unit utility and maintenance rates begin following the end of the *Baseline Period* for the project.

Table B – Baseline Information

Building	Account Number	Energy Type	Gross Area, sq ft	Base Unit Cost	Baseline Use		
				$/Unit	Units	Use	Cost
Beecher Road School	900000000066	Electric Baseline	150,000	$0.1984	kWh	1,131,238	$ 224,438
		Electric - Modified Adjustment [d]				455,562	$ 90,384
	N/A	Fuel Oil		$2.7300	gallon	59,830 [b, c]	$163,336
	Natural Gas	Natural Gas [e]		$0.6390	therm	83,403 [c]	NA
		Natural Gas - Modified Adjustment		$0.6390	therm	48,585 [e]	NA
	210146991	Water		$3.8400	kgal	3,328	$12,779
		Sewer		$2.5700	kgal		$8,553

a) *As of January through November of 2013, the average natural gas rate is at $0.639 per therm*
b) *#2 Fuel Oil heating value of 139,400 Btu/gallon*
c) *The baseline value includes space heating only and excludes increased fuel purchase for micro turbine*
d) *The energy use values shown in **Table B** include the estimated increase in energy use (i.e., Modified Adjustment) from pool dehumidification, and cooling system. The Modified Baseline values for the school will be the sum of the Baseline (1,131,238 kWh) and the Modified Adjustment (455,562 kWh) values shown in the above table.*
e) *Estimated net gas use of the proposed micro turbine. Modified Baseline value is the total of 83,403 + 48,585 = 131,988 therms/year*
f) *The Modified Baseline values shown in **Table B** include the estimated increase in energy use from pool dehumidification, cooling and the natural gas for the CHP unit. The Modified Baseline values shown above will be the baseline values for the school in the performance period.*

Modified Baseline Monthly Use

The following table provides monthly use of Modified Baseline values of electric, oil and natural gas for information only.

Table B-1. Modified Baseline Monthly Utility Use
(for electric and fossil fuel only)

Baseline Year - 2011 - 2012

Month	ELECTRIC		FOSSIL FUEL			
	Electric Utility Bill Based kWh	Electric Modified Baseline kWh	Oil Utility-Bill Based Baseline gallons	Equivalent Baseline therms	Estimated Micro-Turbine Use therms	Total Modified Baseline Therms
Jul-11	52,775	118,200	271	378	4,126	4,504
Aug-11	80,807	116,600	271	378	4,126	4,504
Sep-11	93,889	155,200	271	378	3,993	4,371
Oct-11	93,779	162,400	271	378	4,126	4,504
Nov-11	97,012	137,400	6,271	8,742	3,993	12,735
Dec-11	109,338	110,500	11,483	16,007	4,126	20,134
Jan-12	95,718	132,100	18,171	25,330	4,126	29,457
Feb-12	94,284	124,600	3,731	5,200	3,727	8,927
Mar-12	107,068	120,700	14,606	20,361	4,126	24,487
Apr-12	101,634	122,900	3,172	4,422	3,993	8,415
May-12	99,514	153,000	271	378	4,126	4,504
Jun-12	105,420	133,200	1,042	1,452	3,993	5,445
Total	**1,131,238**	**1,586,800**	**59,830**	**83,403**	**48,585**	**131,988**

Fuel Switching

As part of the project, ESG has recommended switching the fuel from #2 fuel oil to natural gas. Changing the fuel type will yield savings by significantly reducing the cost per Btu based on current market conditions, as reflected in **Table C.**

Table C – Energy per Dollar Equivalents Guarantee Year One

Energy Type	Dollar per Btu Equivalents			100,000 X $/Btu = $/therm
	Utility Costs per Unit	Btu Content/Unit	$/Btu	$/therm
#2 Fuel Oil	$ 2.7300/gallon	139,400 Btu/gallon	$ 0.000019584/Btu	$ 1.9584/therm
Natural Gas	$0.6390/therm	1,000 Btu/ft³	$ 0.00000639/Btu	$ 0.6390/therm
Difference				$ 1.3194/therm

Savings Calculation

There are two components of savings associated with converting from #2 fuel oil to natural gas. They are the cost (dollars) saved on Fuel Switching by paying less per Btu and the dollars saved from the efficiency of the upgrades. In order to accurately capture both savings components ESG will calculate the Fuel Switching savings utilizing a modified version of IPMVP Option C.

In calculating Fuel Switch savings ESG will collect and enter utility bill invoices from the base year and current year to capture and calculate Fuel Switch savings. These savings will simply be either:

> *the current year consumption or 83403 therms, whichever is greater x the Baseline Fuel Cost Savings (difference) value (escalating) as listed in* ***Tables C and A-2*** *annually, beginning in the Year following Baseline Period.*

The second component of savings associated with the Fuel Switching project comes from the Efficiency Savings from the proposed upgrades. In order to calculate these savings ESG will once again utilize methodology similar to IPMVP Option C by utilizing a utility bill consumption analysis to derive the Therm Savings in each Guarantee Period. The calculation for Efficiency Savings will be:

> *the [(Adjusted Baseline Therms – Current Year Therms) or the (Baseline Therms – Current Year Therms), whichever is greater] x the Baseline Avoided Energy Cost annually escalating beginning in the Year following the Baseline Period as listed in* ***Tables C and A-2*** *or Guarantee Year Average Unit Cost of #2 Fuel Oil converted to $/therms, whichever is lower.*

The fuel switching cost reduction dollars and the efficiency dollars then will be added to other utilities that are utilizing the Option-C methodology to create a total Option-C calculated savings amount.

Below are the equations for the Measurement and Verification Methodology listed above.

Defined Variables
Rate Escalation Defined in **Table A-2**
Baseline Fuel (#2 oil) Cost Savings (difference) as defined in **Table C** at $1.3194/therm
Baseline Avoided Energy Cost as defined in **Table C** at $1.9584/therm
Guarantee Year Average Unit Cost Difference = (Guarantee Year Average CPI of (#2 oil) expressed in $/therm – Guarantee Year Average Cost of natural gas expressed in $/therm)
Projected Calculated Consumption = 83,403 therms/year (baseline use without the micro turbine gas use, please refer to **Table B-1**)

Fuel Switching
The approach discussed above is presented in the following equations.

$$^{(1),(2)}Fuel\ Switch\ Savings = (Current\ Year\ Consumption\ or\ 83{,}403\ Whichever\ is\ Greater)\ x\ ((Baseline\ Fuel\ Cost\ \ Savings\ (difference;\ \$1.3194)\ x(1 + Energy\ Escalation\ Rate)^{(Guarantee\ Year)}),$$

(1) *Consumption value is in therms, and the cost difference is $/therm*
(2) *The First Guarantee Year = 0, then the series will sum +1 for every proceeding guarantee year*

Energy Efficiency Upgrade Savings

$$Therms\ Saved = (Adjusted\ Baseline\ - Current\ Year\ Consumption\ )\ or\ (Baseline\ - Current\ Year\ Consumption), whichever\ is\ greater$$

$$^{(1)}\ Adjusted\ Baseline\ =\ Modified\ Baseline\ \pm\ Routine\ Adjustments\ \pm\ Non\ Routine\ Adjustment$$

(1) *Adjustments are described in* **Section 4.2** *of this contract.*

$$Energy\ Efficiency\ Cost\ Savings = Therms\ Saved\ x\ Guarantee\ Year\ Average\ CPI\ for\ \#2\ fuel\ oil\ or\ (Baseline\ Avoided\ Energy\ Costs\ (\$1.9584)\ x(1 + Rate\ Escalation)^{(Guarantee\ Year)}), whichever\ is\ lower)$$

Total Modified Option-C Savings

$$Total\ Annual\ Dollar\ Savings = Fuel\ Switch\ Savings + Energy\ Efficiency\ Upgrade\ Savings$$

4.2 **Adjustments to the Guarantee.** The Guaranteed Savings will be adjusted to account for material changes, where material is defined as any change or changes that may increase or decrease the energy consumption of the Facilities by more than 1% annually, including, but not limited to the following:

a. Changes in the hours of operation of any buildings constituting any part of the Facilities.
b. Changes in the occupancy of the buildings constituting any part of the Facilities.
c. Changes in the structure of buildings constituting any part of the Facilities, such as architectural features or building components.
d. Modifications or renovations to the buildings constituting any part of the Facilities, which may or may not change the conditioned space.
e. Changes to the ECMs.
f. Changes in utility prices, rate structure, or average unit cost values as listed in this Exhibit
g. Change in utility suppliers or utility type(s)
h. Change in the method of utility billing or purchasing that affects utility costs with respect to the Facilities.
i. Addition or deletion of energy consuming equipment at the site.
j. Weather variance from base year to current year.
k. CUSTOMER's failure to adhere to operating and maintenance responsibilities as defined by the equipment manufacturer.
l. Adjustments necessary to account for lighting burnouts as documented before retrofit.
m. New outside air ventilation needed to bring any buildings constituting any part of the Facilities up to state government code or recommendations after Final Acceptance.
n. Required increases in light levels to bring any buildings constituting any part of the Facilities up to state government code.
o. Any condition, which affects the energy demand or consumption of Facilities, caused by CUSTOMER or its agents.

ESG will be responsible for obtaining from OWNER notice of actual or proposed material changes to the site and its anticipated effect on energy usage and consumption.

OWNER agrees to:

a. Notify ESG of changes to the initial building control's system program upon prior notice from ESG.
b. Not place the building control system in a permanent 'on' status, nor will OWNER manually operate or override any part of the building control system except upon equipment failure or emergency conditions.
c. Provide ESG access to the facility when required to inspect and adjust ECMs to ensure optimal operation and maximum energy savings.

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