

FY 2017

Energy Management Results

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Carlisle Area School District



Initial Energy Savings Efforts

- ✓ **Shut-off 1/2 of the Hallway & Classroom Lights (when possible) During School Day**
- ✓ **Shut-off 1/2 of the Hallway Lights After School**
- ✓ **Shut-off Hot Water Heaters During the Summer Break (except High School)**
- ✓ **Elimination of unnecessary appliances in work areas.**



Continued...

- ✓ **Use an integrated HVAC temperature control system**
 - ✓ **Scheduling after hours building use**
 - ✓ **Shut down on weekends/extended holidays**
 - ✓ **Monitoring HVAC system on a daily basis**
 - ✓ **Raise temperatures in the summer months**



2006 to Date Projects:



- ✓ *Installed Variable Speed Drives (2006)*
- ✓ *T-5 lighting installed in the Gyms at McGowan, Swart CES, LES, and MHES (2007)*
- ✓ *Lighting retrofit at MHES, LES, and CES (2007)*
- ✓ *HVAC upgrade at CES (2007)*
- ✓ *HVAC upgrade at LES and MHES (2008)*
- ✓ *Lighting retrofit at McGowan is ongoing ; (2006-present)*
- ✓ *Computer shut down software (2010)*
- ✓ *Installed Solar Array (2010)*
- ✓ *Domestic Hot Water System upgrade at MHES (2008) and LES (2011)*
- ✓ *Roofing (R value of roof insulation brought to today's standards as we renovate roof systems) (2006-present)*
- ✓ *Installed CO₂ sensors (as Direct Digital Control systems are updated)*

Projects to date (continued):

- ✓ *Installed Vending Machine Misers (2011)*
- ✓ *Installed lighting motion sensors in various locations where appropriate (2012-present)*
- ✓ *Crestview Addition/Renovations (2013)*
- ✓ *Exterior LED Wall Pack replacement LES, MES, HMS, CES, Main Campus (2014)*
- ✓ *Middle School Renovations (2014):*
 - WMS LEED Platinum & LMS LEED Gold*
- ✓ *Hamilton Addition/Renovations (2016)*
- ✓ *Main Campus street light LED retrofit (2017)*
- ✓ *Crestview Elementary street light LED retrofit (2017)*
- ✓ *Bellaire Elementary street light LED retrofit (2017)*
- ✓ *North Dickinson street light LED retrofit (2017)*

Current/Future Projects:

- ▶ Four Day work week for staff over summer months (Monday-Thursday) – seventh year
- ▶ Replacement of inefficient HVAC equipment
- ▶ Continue to improve cultural awareness
- ▶ PPL Act 129 project (Continuous Energy Improvement)
- ▶ ARC Program
- ▶ McGowan LED Lighting project, Approximately 30 classroom



Additional projects to consider:

- Decrease temperature settings in the winter
- Increase temperatures in the summer
 - Savings approximately 2-3% per degree
- Install natural light lighting tubes
- Implement a board policy to turn off all building lights at night
 - all lights are turned off at night, motion sensors are used if someone enters the building (installation of motion sensors has been started to allow for the program)



Baseline Comparison – electricity

	2016-2017	year to year difference	2015-2016
Bellaire	325,200	6%	306,000
Crestview	415,280	-3%	428,320
Hamilton	552,720	22%	453,120
Lamberton	952,000	-3%	983,000
Letort- Main Bldg.	216,826	3%	211,229
Letort - Admin/Classrooms (4)	38703	5%	36,831
Main Campus	5,108,400	-11%	5,716,800
Mooreland	355,200	-9%	388,560
Mt. Holly - MAIN	279450	-5%	295,352
North Dickinson - MAIN	503,000	-9%	552,650
Year/ Year Difference	8,746,779	-7%	9,371,862
Baseline (2006-2007)	10,799,571	-19%	10,799,571

Baseline Comparison – natural gas

	2016-2017 (ccf)	year to year difference	2015-2016 (ccf)
Bellaire - 5391	14,080	11.92%	12,580
Bellaire - 4469	2,947	-16%	3,513
Hamilton - 7722	25,089	17%	21,531
Hamilton -3650	Not in use		896
Lamberton	5,451	-22%	6,985
Letort	17,598	-7%	18,835
Main Campus			
Swartz	67,990	-7%	72,740
Fowler/McGowan 0497	14,962	-10%	16,617
Fowler/McGowan 5235	123,632	2%	120,843
Rental	12279	-18%	15,025
Wilson	1865	3%	1,813
Mooreland	20115	-6%	21,510
Mt. Holly	14576	-1%	14,727
TOTAL	320,584	-2.15%	327,615
Baseline (2006-2007)	320,584	-24.57%	425,001

Utility Use Analysis

Total District Electric Usage Comparison

2007 - 2016: 19% less

Total District Natural Gas Usage

2007 - 2016: 24.57% less

**NOTE: Four (4) additional AC systems
have been added and additional square footage since 2007

Energy Star Building Ratings

Property Name	Current Score	2006/2007
Bellaire	88	65
Crestview	93	57
Hamilton	75	46
Lamberton	98	56
LeTort	90	44
Main Campus	92	47
Mooreland	83	52
Mt. Holly Springs	77	58
North Dickinson	89	45



FY17 Solar Production

Main Campus

- Electric Consumption 5,108,400 KWH
- Solar Generation 452,901 KWH
- Solar Impact 8.9%

Bellaire

- Electric Consumption 325,200 KWH
- Solar Impact 100%



District Wide Totals

- Electric consumption 8,746,779 KWH
- Solar Generation 1,389,331KWH
- Solar Impact 15.9%

Demand Response Revenue

Carlisle Area School District

June 2016 - June 2017

Capacity Payments	\$	38,801.27
Energy Payments	\$	0.00
Adjustments	(\$	9,023.02)
Total Payments	\$	29,778.25
(US only payments)		

Solar Renewable Energy Credits (SREC) Revenue

Creation Summary

SRECs Created		SRECs Sold			SRECs Available	Calendar Year Revenue
SREC Year	Quantity	Quantity	Avg. Price	Total Proceeds	Quantity	Total Proceeds
<u>2018</u>	850	0	\$0.00	\$0.00	850	\$0.00
<u>2017</u>	1477	0	\$0.00	\$0.00	1477	\$0.00
<u>2016</u>	1535	0	\$0.00	\$0.00	1535	\$7,875.36
<u>2015</u>	1532	1532	\$35.78	\$54,808.80	0	\$25,681.92
<u>2014</u>	1438	1438	\$42.34	\$60,879.36	0	\$82,130.88
<u>2013</u>	1444	1444	\$18.83	\$27,192.83	0	\$22,186.08
<u>2012</u>	1650	1650	\$35.89	\$59,222.23	0	\$64,228.98
<u>2011</u>	750	750	\$143.10	\$107,323.20	0	\$107,323.20
<u>2010</u>	0	0	\$0.00	\$0.00	0	\$0.00
Totals	10676	6814		\$309,426.42	3862	\$309,426.42

SREC Revenue continued...

SREC Payment Details

Date	Amount	Quantity	Price	Memo	Item Desc
02/01/2016	\$4,609.44	264	\$17.46	3/15-4/15	2015 PA SREC
01/25/2016	\$3,265.92	189	\$17.28	3/15 - 5/15	2015 PA SREC
04/15/2015	\$25,681.92	608	\$42.24	9/14-2/15	2015 PA SREC
11/17/2014	\$21,251.52	471	\$45.12	6/14 - 8/14	2015 PA SREC
07/24/2014	\$23,412.48	469	\$49.92	3/14 - 5/14	2014 PA SREC
04/11/2014	\$8,985.60	156	\$57.60	12/13 - 2/14	2014 PA SREC
02/06/2014	\$15,924.48	377	\$42.24	9/13 - 11/13	2014 PA SREC
01/16/2014	\$12,556.80	436	\$28.80	6/13 - 8/13	2014 PA SREC
07/30/2013	\$11,512.80	615	\$18.72	1/13 - 5/13	2013 PA SREC
03/26/2013	\$10,673.28	654	\$16.32	7/12 - 12/12	2013 PA SREC
08/16/2012	\$30,352.74	1061	\$28.61	Up to 5/12	2012 PA SREC
08/16/2012	\$5,006.75	175	\$28.61	6/12	2013 PA SREC
03/21/2012	\$4,802.40	87	\$55.20	January 2012	2012 PA SREC
02/23/2012	\$24,067.09	502	\$47.94	6/11 - 8/11	2012 PA SREC
08/03/2011	\$12,110.40	145	\$83.52	6/30/2011	2011 PA SREC
06/20/2011	\$26,208.00	273	\$96.00	2011 PA SREC	2011 PA SREC
04/22/2011	\$8,064.00	56	\$144.00	2011 PA SREC	2011 PA SREC
03/14/2011	\$60,940.80	276	\$220.80	2011 PA SREC	2011 PA SREC
Totals	\$309,426.42	6814	\$57.80		

QUESTIONS...

