

November, 2017

Kim Melander
Energy & Systems Manager

Rock Hill Schools - Energy Management

District Energy Update

For the period of January 1, 2017 - June 30, 2017

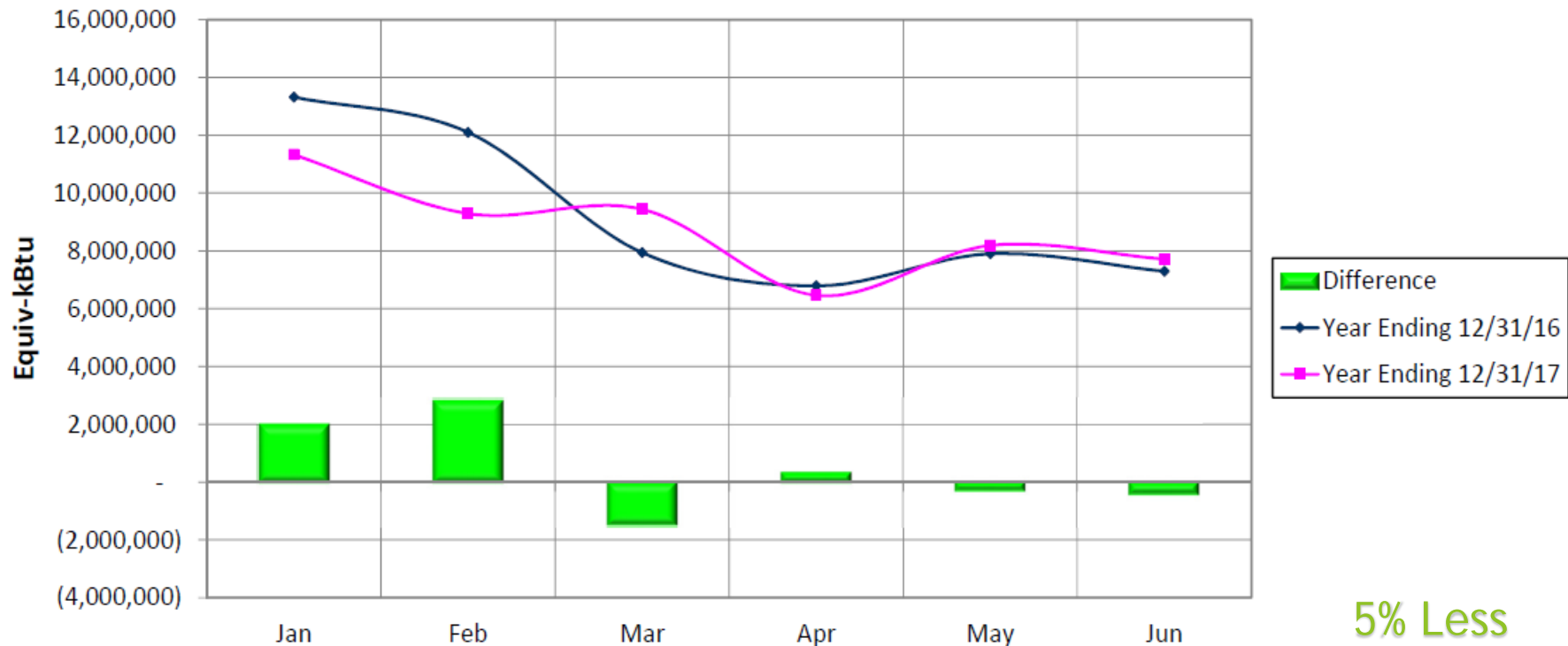
Presented by Kim Melander, Energy & Systems Manager

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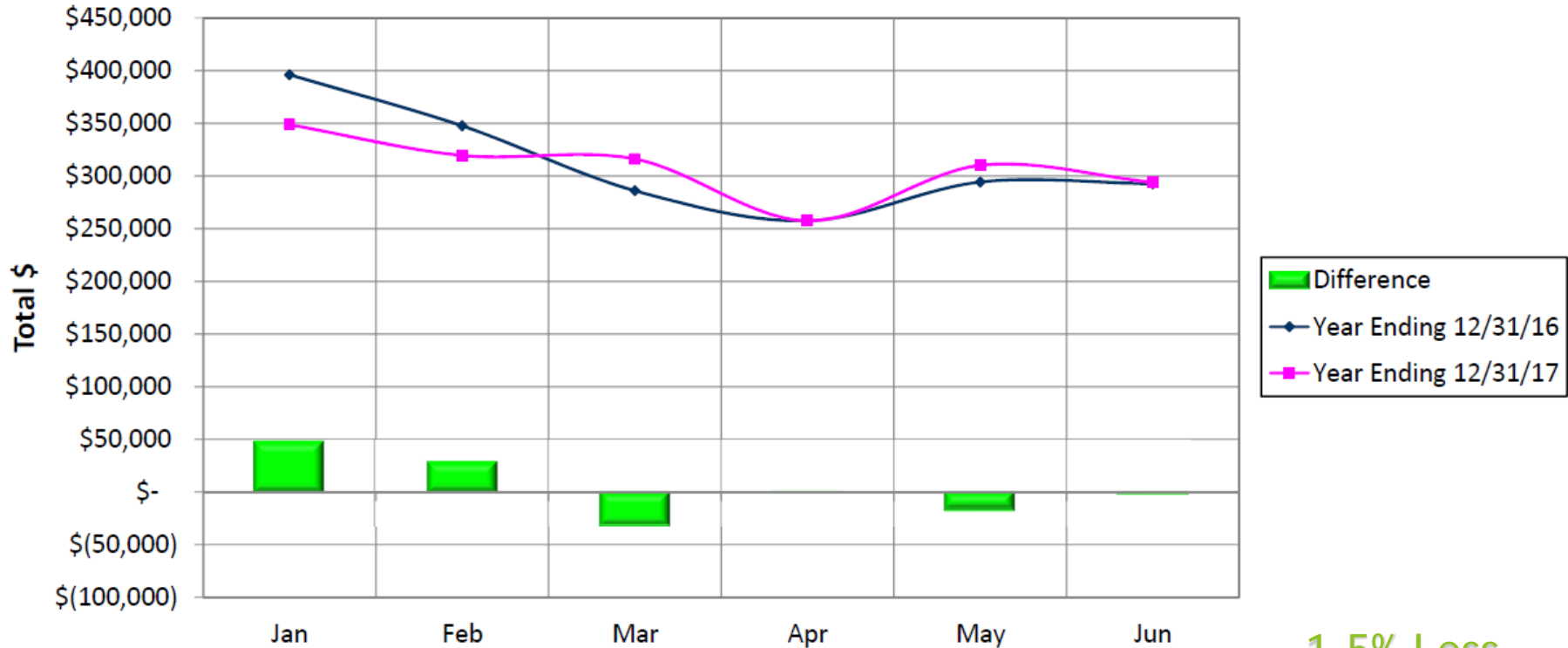
Actual Equiv-kBtu for Rock Hill Schools Project



5% Less

Date	Jan	Feb	Mar	Apr	May	Jun	Total
Year Ending 12/31/16	13,315,157	12,097,462	7,935,711	6,787,803	7,895,369	7,291,939	55,323,441
Year Ending 12/31/17	11,321,158	9,286,745	9,436,207	6,459,787	8,186,774	7,711,965	52,402,637
Difference	1,993,999	2,810,717	(1,500,496)	328,016	(291,405)	(420,027)	2,920,805

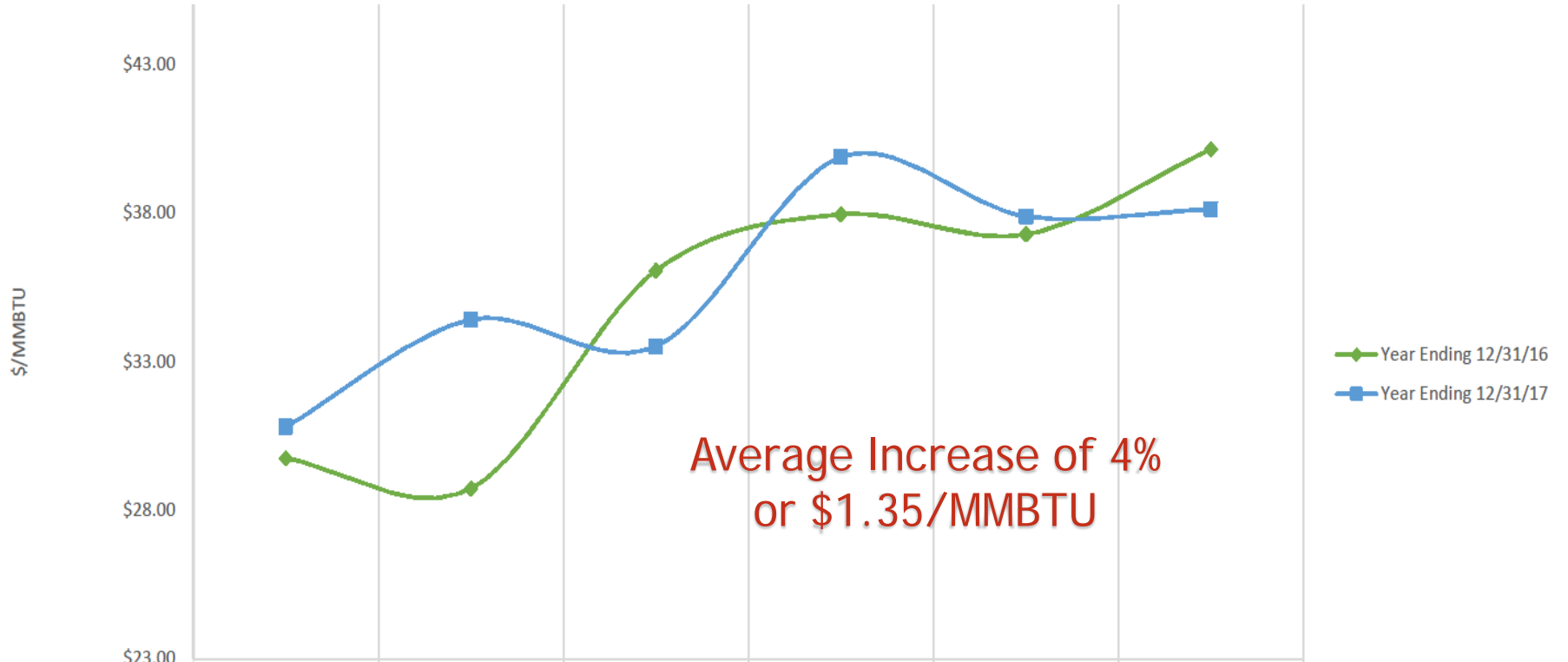
Actual Total \$ for Rock Hill Schools Project



1.5% Less

Date	Jan	Feb	Mar	Apr	May	Jun	Total
Year Ending 12/31/16	\$ 396,141	\$ 347,608	\$ 286,182	\$ 257,600	\$ 294,308	\$ 292,721	\$ 1,874,558
Year Ending 12/31/17	\$ 348,731	\$ 319,535	\$ 316,195	\$ 257,599	\$ 310,107	\$ 294,053	\$ 1,846,221
Difference	\$ 47,409	\$ 28,072	\$ (30,013)	\$ 0	\$ (15,799)	\$ (1,332)	\$ 28,337

COMBINED ENERGY COST/UNIT FOR ROCK HILL SCHOOLS



Average Increase of 4%
or \$1.35/MMBTU

	Jan	Feb	Mar	Apr	May	Jun
Year Ending 12/31/16	\$29.75	\$28.73	\$36.06	\$37.95	\$37.28	\$40.14
Year Ending 12/31/17	\$30.80	\$34.41	\$33.51	\$39.88	\$37.88	\$38.13

Section 1

Actual Use and Cost for Base Period (1/2009 through 6/2009)

<u>Energy Type</u>	<u>Base Use Recorded</u>	<u>Units</u>	<u>Avg Unit Cost</u>	<u>Energy Cost</u>
Electric	17,180,855	kWh	0.1043	\$1,792,325
Natural Gas	192,152	Therm	1.2626	\$242,618
Total Energy:	77,853,458	kBtu	Total Cost	\$2,034,943

Section 2

Actual Use and Cost With Energy Management Program (1/2017 through 6/2017)

<u>Energy Type</u>	<u>Current Use Recorded</u>	<u>Units</u>	<u>Avg Unit Cost</u>	
Electric	12,320,156	kWh	0.1407	\$1,733,017
Natural Gas	103,663	Therm	1.0920	\$113,204
Total Energy:	52,414,992	kBtu	Total Cost	\$1,846,221

Section 3

Energy Saved 2016 Compared to Base Period

<u>Energy Type</u>	<u>Base - Current</u>	<u>Units</u>	<u>Percent Saved</u>	<u>Total Cost</u>
Electricity	4,860,699	kWh	28%	\$59,308
Natural Gas	88,489	Therm	46%	\$129,414
Total Energy Saved:	25,438,465	kBtu	Gross Savings:	\$188,722
Percent Savings:	33%			9%

Cost Avoidance - Without Our Energy Program:

Section 4



Rates: Base period consumption at current period rates would be an additional:	\$591,643
"Load Creep": Additional equipment, operating hours and efficiency lost due to age would cost:	\$24,167
Adjustments for weather, bill period differences & other deviations:	\$213,804
Total Cost Avoidance:	\$1,018,336
Adjusted Savings:	36%

Utilities Budget Update

2016-2017 Utilities

<u><i>Budget</i></u>	<u><i>Actual</i></u>	<u><i>Difference</i></u>
\$4,090,000	\$3,944,363	\$145,637

3.6% budget surplus of about \$146k

Utilities Budget Update

2017-2018 Utilities (10/31/2017)

<u><i>Budget</i></u>	<u><i>YTD</i></u>	<u><i>Balance</i></u>	<u><i>% Remaining</i></u>
\$4,200,000	\$963,900	\$3,236,100	77%

Budget increase of \$110k or 2.7%

10/31/2017-used 23% of funds, SY 33% complete.

Energy News:

- ▶ \$23k in billing corrections
- ▶ Independence ES Solar project under construction
- ▶ Summer projects to replace/upgrade HVAC systems at FRES, RES, OES, RDES, CSES, NES, SMS, RHS and NHS.
- ▶ New Energy Star Labels for 3 schools
- ▶ SC Energy Office video competition

Independence ES Assistant Principal, Mr. Robert Hamm
with new PV Solar Panels partially installed.



Ongoing and planned Energy items:

- ▶ Energy Star certifications for our final 2 schools remaining. Last, but certainly not least.
- ▶ Internal recommissioning effort for buildings.
 - ▶ Upgrade energy management system software and hardware.
 - ▶ Perform database maintenance and enhancements.
 - ▶ Verify proper equipment operation.
 - ▶ Identify future savings opportunities.
- ▶ Green Apple Energy Conservation Program
- ▶ Holiday and Summer shutdowns



- Northwestern High School
- Applied Technology Center
- New Language Immersion (Sullivan)

Designed to Earn the Energy Star



SC State Energy Office video competition.

Created by The Media Technologies Program at Applied Technology Center

Thank you for your support!

- Rock Hill School Board of Trustees:
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 - Mildred Douglas, Vice-Chairman District 3
 - Terry Hutchinson, At Large
 - Helena Miller, District 2
 - Elizabeth "Ann" Reid, District 1
 - Dr. Jane Sharp, District 4
 - Jim Vining, Chairman, At Large
- Dr. Kelly Pew, Superintendent
- Tony Cox, Deputy Superintendent
- Brian Vaughan, Executive Director of Facilities
- District Leadership and Staff
- The Administration, Staff, Teachers and Students of our GREAT Schools
- The Dedicated Women and Men of our Facilities Services Department