



# Energy Accounting and Reporting with Cenergistic



# About Cenergistic

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We are a **technology-driven energy conservation** firm

In 29 years, 1360+ Cenergistic **clients have saved \$3.9B** that otherwise would have been paid to utility companies.

In 2014 alone our clients saved \$300M.

We achieve these results with **zero startup costs** for rapid payback.

We use **industry-standard practices** to **measure and verify savings.**

We train you to use independent, commercially-available **EnergyCAP software** to verify savings.



**Energy costs are typically the second largest budget item — and growing fast.  
How are you controlling costs?**

# Control Energy Costs

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## Energy accounting is complex

- Weather, growth, smart meters, efficiency projects, budgeting variance, disconnect between energy users and accounts payable staff

## Energy costs are more than unit price

- Utility companies charge additional costs and fees on top of unit price

## Cenergistic equips your staff to:

- Accurately forecast energy costs
- Analyze utility bills for errors, appropriate fees, best rate structures
- Identify additional savings opportunities
- Report energy use and energy savings accurately
- Use interval data to mitigate demand fees

Accurate measurement guides effective management.

# Energy Accounting

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## The Measurement and Verification (M&V) Process:

- Gives you control of energy expenses
- Provides **robust reporting capabilities** — ability and knowledge to slice and dice data as needed
- Is **transparent** — let you easily share understandable data with your board, auditors and community
- Delivers **accurate results**
- Allows **fair reporting** and credit for initiatives
- Is **trusted and verified**
- Improves your **budgeting process**
- **Adheres to International Standards**

**Cenergistic's M&V Process is fully transparent.**  
We train you to review and validate your savings information.

# Audit Energy Costs

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## Every bill for every meter — audited and verified

- Physical location verified— no more “phantom” bills, or paying bills for removed meters, sold properties
- Rate structure evaluated
- Costs, taxes, fees evaluated
- Billing factors evaluated — units of measurement, multiplication factors

## Baseline, expected use established

- Flags billing anomalies
- Identify malfunctioning equipment, leaks, stolen utilities
- Identify focus areas for conservation efforts

**Cenergistic's M&V Process —**  
Identifies billing errors, rate adjustments, capture refunds

# Your Business Office and the Energy Program

## CFO typically serves as Program Liaison

- Most programs report to CFO due to financial focus
- CFO champions the energy program and holds Cenergistic accountable

## We help CFOs be accountable for the energy budget

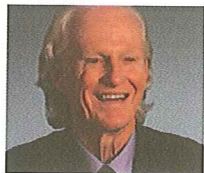
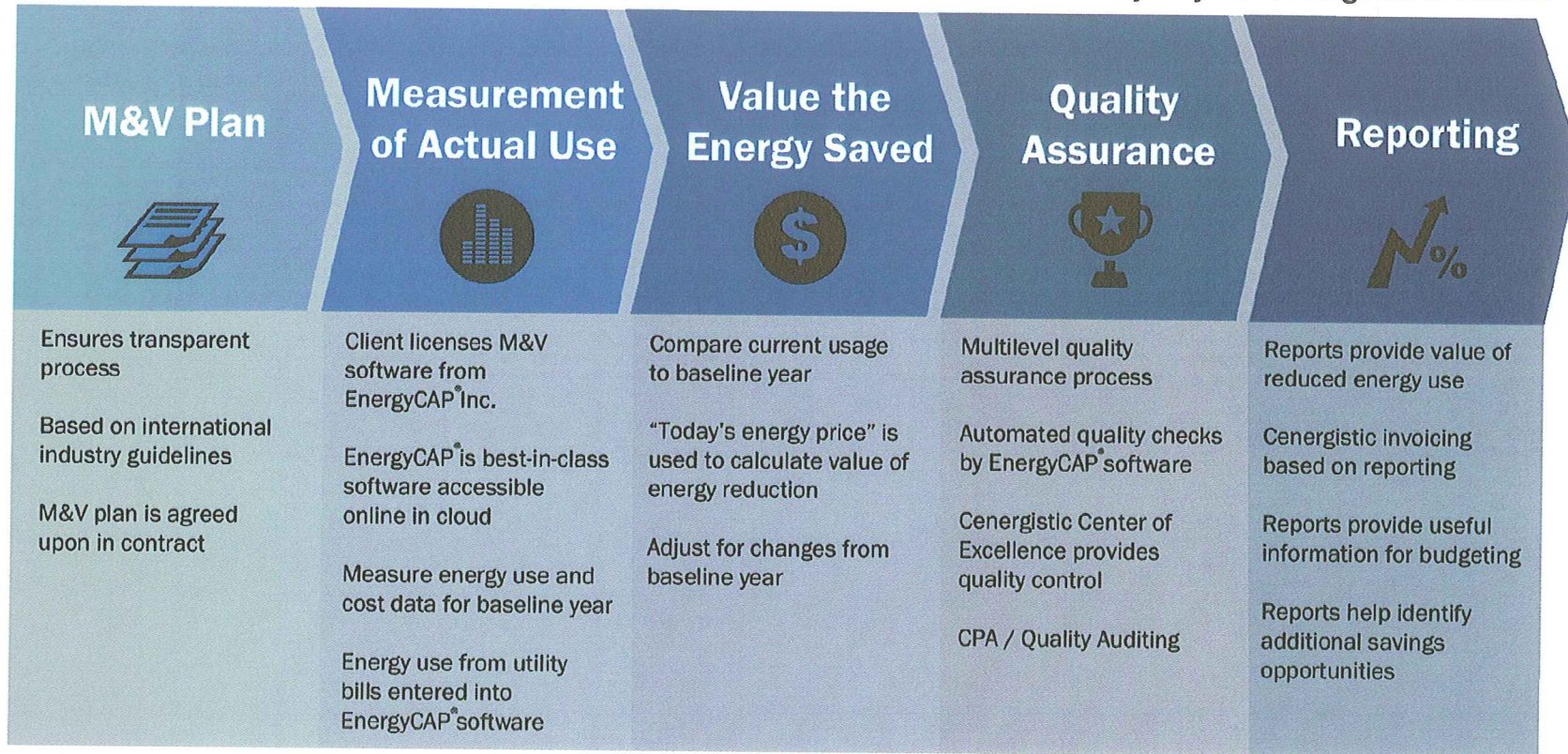
- Budgeting planning sessions held annually to forecast spending
- Advanced budgeting module coming to EnergyCAP software

**Cenergistic's clients saved \$300M in 2014 alone.**

This money would otherwise have been paid to utilities.

# Measurement and Verification

Cenergistic's process to measure and verify your savings is rigorous, transparent and conforms to accepted industry guidelines. The quality checks at every step of the process ensure the accuracy of your savings information.



*"Cenergistic's process of measuring energy savings follows international guidelines that are considered to be best practice. Cenergistic's quality assurance and quality control programs provide the checks and balances needed for a transparent process for its clients.*

*Cenergistic has an energy conservation process that adheres to accepted industry standards and results in reports of energy savings that reflect the actual experience of its customers."*

Wayne C. Turner, Ph.D.  
 Regents Professor Emeritus, Oklahoma State University  
 Fellow, Association of Energy Engineers (Hall of Fame member)  
 Editor-in-Chief, Energy Engineering

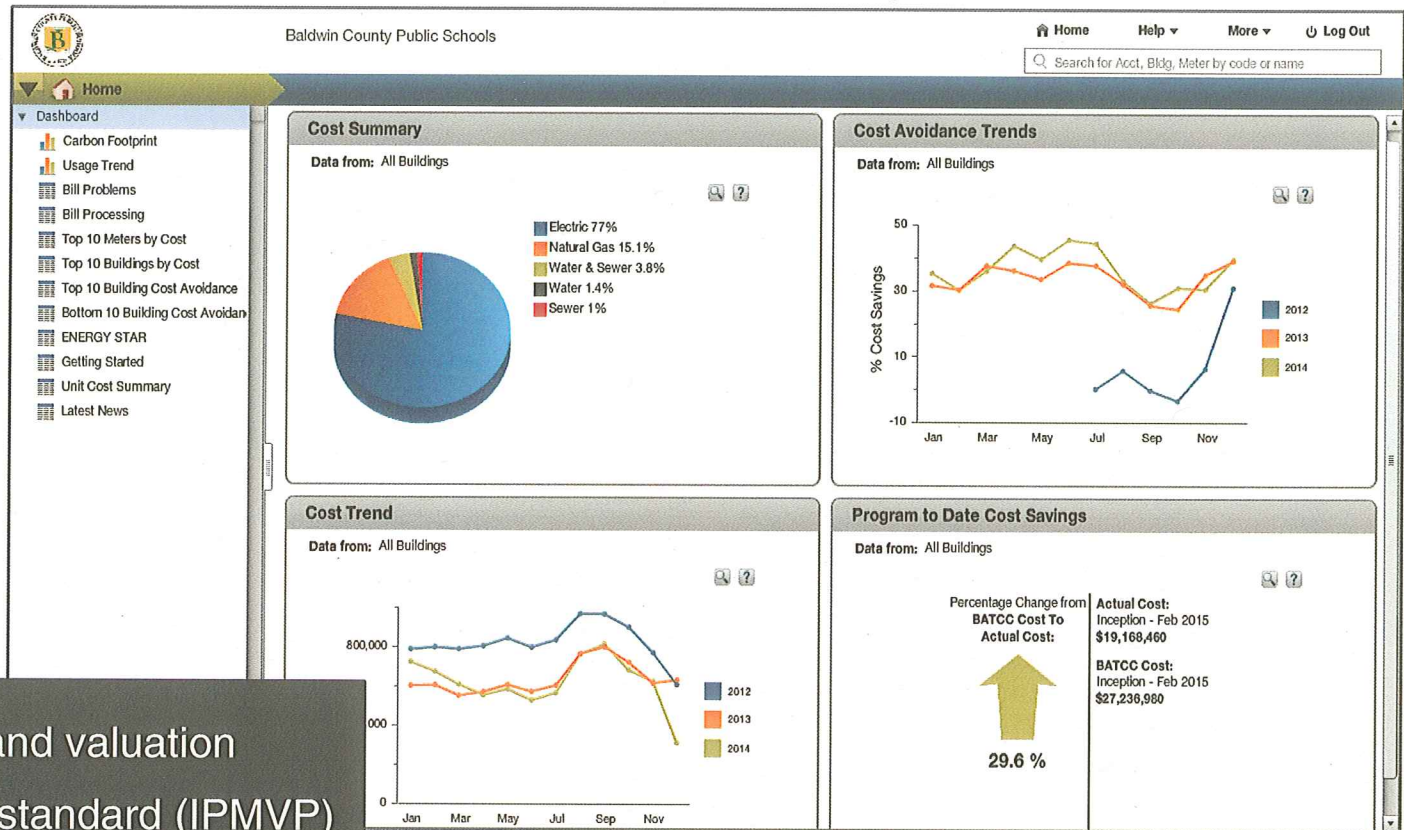


# EnergyCAP®: Performance Monitoring & Reporting

EnergyCAP, the world's leading energy accounting software, compares actual use to pre-program use.



EnergyCAP measures savings accurately & transparently



Energy accounting and valuation  
Adheres to industry standard (IPMVP)  
Independent third party software

# EnergyCAP Clients

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An independent software firm established in 1980, EnergyCAP Inc.'s software adheres to industry standards and is the most respected M&V software in the industry. *Some prominent users include:*

## Government

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## Higher Education

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## Commercial

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# EnergyCAP Reporting

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EnergyCAP displays utility information through more than 250 useful reports, charts, and graphs. Report categories include:

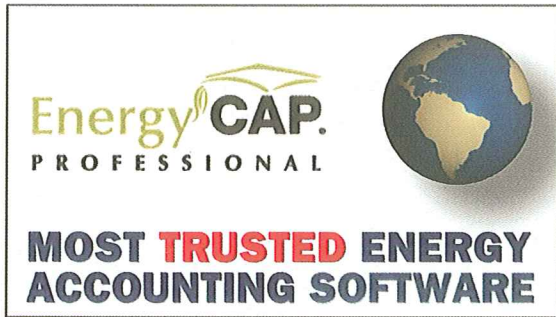
- Analysis
- Billing
- Budget
- Year-to-year
- Invoice
- Cost avoidance
- Weather
- Greenhouse Gas

Export to Excel, PDF, HTML and several other formats.

Each report is customizable through a wide variety of filtering options.

# EnergyCAP Overview Videos

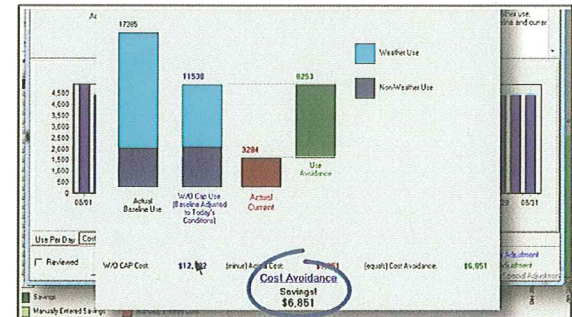
All videos available at [www.cenergistic.com/measurement-verification](http://www.cenergistic.com/measurement-verification)



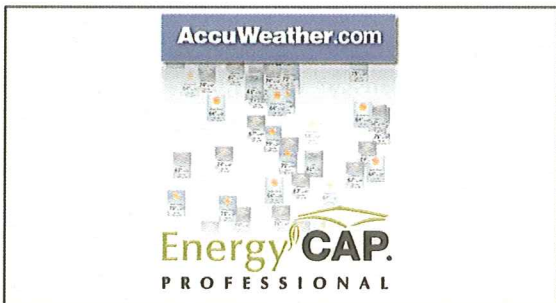
Overview



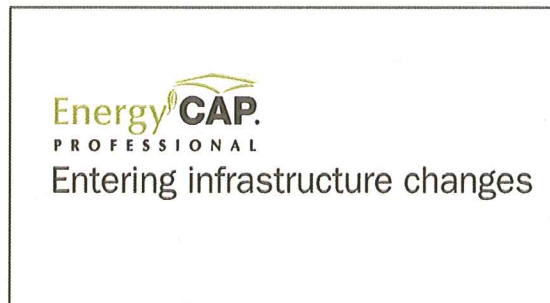
Establishing a Baseline



Cost Avoidance



Weather Adjustment



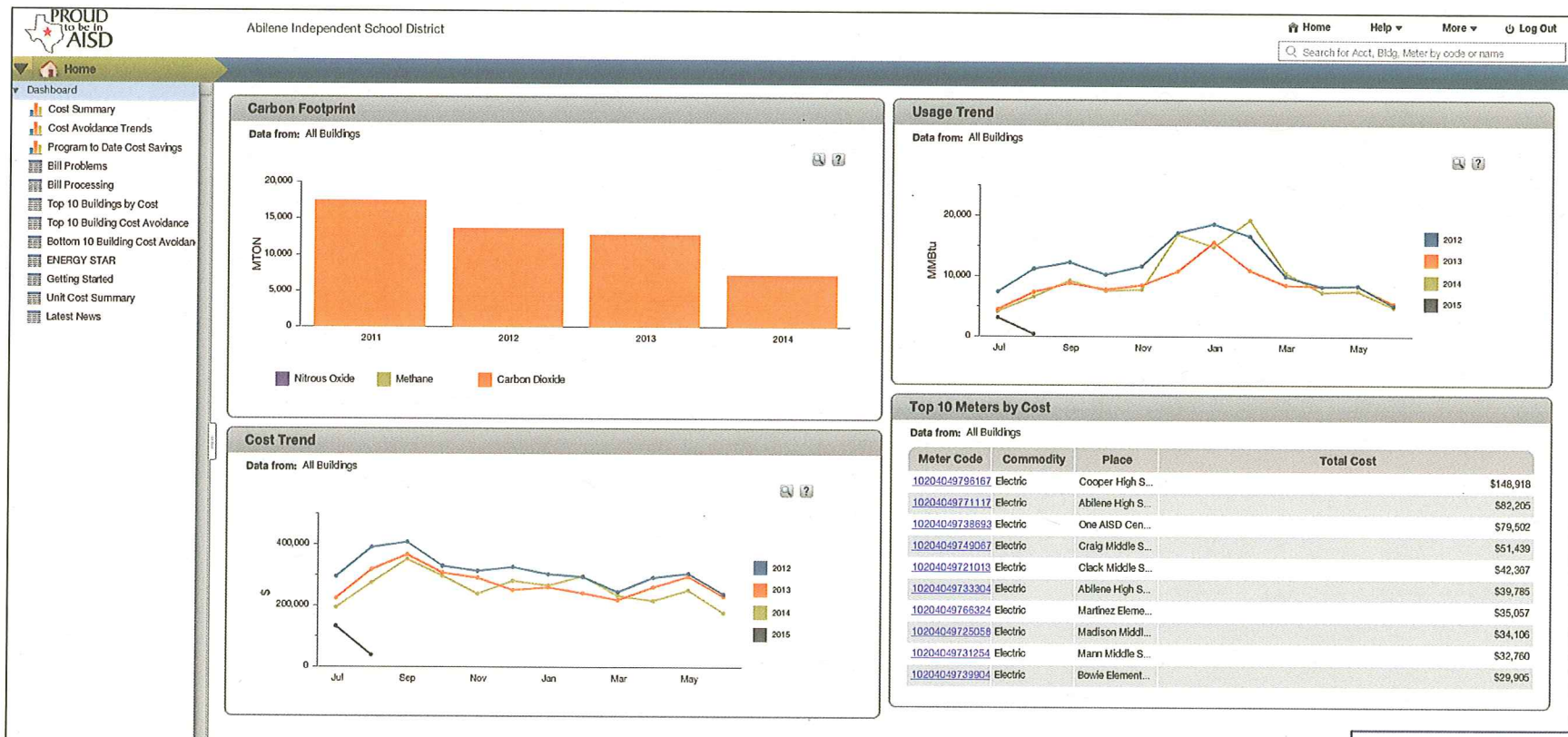
Equipment Upgrades



ENERGY STAR

# EnergyCAP Dashboard

Customizable Dashboard with performance charts and graphs on your home page — easily view key performance indicators that matter most to you.



Actual EnergyCAP  
Report October 2014

# EnergyCAP Dashboard

Analysis Reports — trend and analyze data per building, meter, demand, etc.

**Abilene Independent School District**

**Reports**

- Most Recent Reports
- Recommended Reports
- My Configured Reports
- All Reports
  - Analysis Reports
  - Setup Reports
  - Billing Reports
  - Budget Reports
  - Year-To-Year Reports
  - Invoice Reports
  - Cost Avoidance Reports
  - Weather Reports
  - Greenhouse Gas Reports
  - Calendarized Reports
  - Normalized Reports
- Shared Reports
- Report Export Groups

Code	Name
AN01	Place Cost Profile
AN01PT	Place Cost Profile Summary
AN02	Place Energy Profile
AN03	Demand Profile By Year
AN04	Cost Per Unit of Energy Profile
AN04A	Unit Cost Analysis
AN05	Cost Profile By Year
AN06	Meter Demand Profile
AN06A	Total Demand
AN07	Place Summary
AN08	Energy Index Summary
AN08A	Energy Index Summary
AN09	Energy Profile by Year
AN10	Place Energy Usage Per Area
AN10A	Place Energy Usage Per Area
AN11	Cost Per Area Profile by Year
AN11A	Place Cost per Area
AN12	Load Factor
AN13	Buildings Ranked by Use Per Area
AN13PT	Summary Ranking - Use per Area
AN14	Buildings Ranked by Cost Per Area
AN14PT	Summary Ranking - Cost per Area
AN15	Buildings Ranked by Cost Per Unit
AN15PT	Summary Ranking - Cost per Unit
AN16	Meters Ranked by Cost per Unit
AN17	Buildings Ranked by Annualized Use Per Area
AN17PT	Annualized Use Per Area
AN18	Buildings Ranked by Annualized Cost Per Area
AN18PT	Summary Ranking - Annualized Cost per Area
AN19	Buildings Ranked by Max Watts Per Area
AN20	Monthly Comparison
AN21	Bill Line Item Profile

**Place Cost Profile AN - 01**

Place: [AHS-B] Abilene High School  
2900 N. 6TH ST  
ABILENE, TX 79603

**Place Cost Profile**

Line chart showing monthly cost from Jan to Dec for years 2011, 2012, 2013, and 2014. The Y-axis represents Cost (0 to 45,000). The X-axis represents Month.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$41,007
2012	\$31,633	\$36,274	\$31,568	\$38,439	\$38,463	\$38,463	\$32,315	\$33,652	\$43,105	\$35,395	\$37,418	\$25,555	\$426,758
2013	\$30,353	\$26,150	\$26,587	\$31,585	\$36,910	\$33,291	\$28,155	\$32,618	\$43,352	\$28,242	\$27,765	\$35,941	\$382,739
2014	\$30,533	\$36,041	\$28,163	\$26,309	\$27,639	\$29,572	\$0	\$0	\$0	\$0	\$0	\$0	\$176,462
<b>Totals</b>	<b>\$33,509</b>	<b>\$28,465</b>	<b>\$26,716</b>	<b>\$33,913</b>	<b>\$103,218</b>	<b>\$99,329</b>	<b>\$61,073</b>	<b>\$71,310</b>	<b>\$86,460</b>	<b>\$73,637</b>	<b>\$65,207</b>	<b>\$106,903</b>	<b>\$1,037,811</b>

Actual EnergyCAP Report October 2014

# EnergyCAP Dashboard

Usage Reports — View, analyze and track energy usage.


The screenshot displays the EnergyCAP dashboard for the Abilene Independent School District. The left sidebar lists various report categories such as 'Analysis Reports', 'Billing Reports', and 'Energy Reports'. The main content area shows a report titled 'Place Energy Usage Per Area' for 'Place: [AHS-B] - Abilene High School'. The report includes a line chart showing 'Use in Btu/Sq. Ft.' by month for the years 2011, 2012, 2013, and 2014. Below the chart is a data table with the following structure:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
2011	7,151,606	7,757,326	4,470,737	4,389,835	4,338,762	4,043,521	3,611,261	4,172,635	5,464,000	6,130,275	4,551,435	7,146,977	67,249,377
2012	6,356,309	7,374,627	6,284,281	3,640,267	3,517,149	2,601,554	2,299,721	2,990,454	2,668,492	3,148,870	3,369,769	4,380,197	48,042,000
2013	6,010,592	3,651,929	3,444,565	3,034,678	3,235,472	2,400,199	1,931,161	2,164,803	3,435,886	2,959,353	2,821,775	7,351,801	42,374,118
2014	5,932,477	7,543,904	4,122,565	2,956,304	2,693,121	2,500,972	0.000	0.000	0.000	0.000	0.000	0.000	25,595,654

Actual EnergyCAP Report October 2014

# EnergyCAP Dashboard

Billing Reports — track any commodity, level and type of bill detail.



Abilene Independent School District

Home Help More

Search for Acct, Bldg, Meter by code or name

**Reports**

- Most Recent Reports
- Recommended Reports
- My Configured Reports
- All Reports
  - Analysis Reports
  - Setup Reports
  - Billing Reports**
  - Budget Reports
  - Year-To-Year Reports
  - Invoice Reports
  - Cost Avoidance Reports
  - Weather Reports
  - Greenhouse Gas Reports
  - Calendarized Reports
  - Normalized Reports
- Shared Reports
- Report Export Groups

Code	Name
BL01	Meter Summary by Period
BL01A	Meter Summary with GL
BL01B	Meter Summary by Period
BL01C	Meter Summary with GL
BL01TOU	Electric Meter TOU Details
BL02	Meter Summary by Account
BL02B	Meter Summary by Account
BL02CC	Meter Unit Cost Summary
BL03	Account Summary by Period then Commodity
BL04	Account Summary by Commodity then Period
BL05	Bill Batches
BL06	Bill Batches Summary
BL07	Bill Details
BL07A	Bill Details With Account Charges
BL07AHP	Bill Details With Account Charges
BL07HP	Bill Details
BL08	Gaps Between Existing Bills
BL08C	Billing Periods without Bills
BL08D	No Bill in Specified Billing Period
BL08E	Days Not Included in Any Bill
BL09	Overlapping Bills
BL10	Cost Center Summary by Commodity
BL10A	Cost Center Summary by Commodity with Account
BL11	Account Summary
BL11A	Account Summary by Contract
BL11B	Account Summary with Account Charges
BL12	Executive Summary by Commodity
BL12A	Executive Summary by Commodity with Account
BL13	Executive Cost Profile
BL14	Executive Energy Profile

https://pro.energycap.com/Reports/report.aspx?reportId=61832&reportCode=BL13 - Google Chrome

https://pro.energycap.com/Reports/report.aspx?reportId=61832&reportCode=BL13

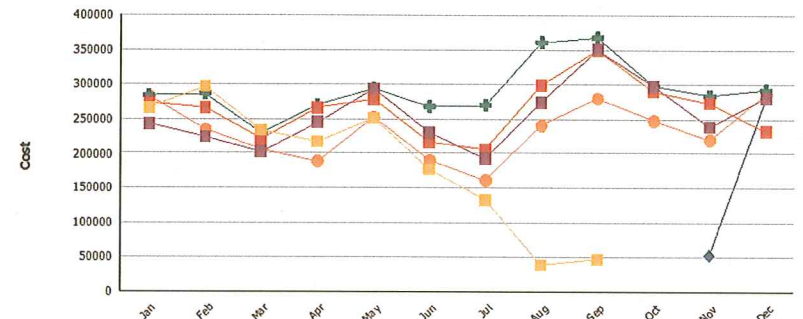
1 of 2 100%

**Main Report**

Abilene Independent School District

Executive Cost Profile BL - 13

**Executive Cost Profile**



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,230	\$280,023	\$333,253
2010	\$292,183	\$234,950	\$205,924	\$186,954	\$252,650	\$190,648	\$181,705	\$240,980	\$279,841	\$247,803	\$220,150	\$286,585	\$2,792,373
2011	\$333,590	\$285,229	\$238,862	\$270,113	\$394,094	\$397,695	\$369,401	\$350,597	\$367,614	\$297,384	\$383,772	\$362,233	\$3,691,268
2012	\$273,034	\$385,841	\$220,584	\$265,641	\$276,083	\$216,482	\$266,320	\$298,573	\$348,838	\$289,439	\$273,064	\$232,433	\$3,165,113
2013	\$242,851	\$224,033	\$202,822	\$244,744	\$293,228	\$230,048	\$193,049	\$273,029	\$349,992	\$296,985	\$239,208	\$280,715	\$3,071,206
2014	\$285,763	\$298,369	\$233,201	\$216,953	\$251,275	\$177,620	\$133,123	\$39,824	\$47,618	\$0	\$0	\$0	\$1,661,777
<b>Totals</b>	<b>\$1,547,212</b>	<b>\$1,300,952</b>	<b>\$1,031,184</b>	<b>\$1,160,400</b>	<b>\$1,369,330</b>	<b>\$1,002,605</b>	<b>\$903,604</b>	<b>\$1,213,904</b>	<b>\$1,393,902</b>	<b>\$1,131,491</b>	<b>\$1,069,424</b>	<b>\$1,311,994</b>	<b>\$14,528,016</b>

Actual EnergyCAP Report October 2014



# EnergyCAP Dashboard

**Savings Reports** — calculates the savings attributable to energy management and cost avoidance measures.

The screenshot displays the EnergyCAP dashboard interface. On the left, a navigation menu lists various report categories such as 'Most Recent Reports', 'My Configured Reports', and 'All Reports'. The main content area shows a list of reports with columns for 'Code' and 'Name'. A detailed report for 'Abilene Independent School District' is open, showing 'Cumulative Cost Savings' for June 2014. The report includes a table comparing 'Expected Energy Cost' (\$8,600,426) and 'Actual Energy Cost' (\$6,545,939), resulting in 'Program Savings' of \$2,254,437 (25.62%). A pie chart illustrates the cost savings breakdown. Below this, a line graph shows 'Cumulative Energy Savings' in HHBTU from 2004 to 2014. The report also includes a 'Cumulative Greenhouse Gas Reduction' section, stating an impact of 66,931 HHBTU, equivalent to 8,305 equiv. metric tons of CO2. The report is requested by 'cen\_jnoelsmith' and is version 11, covering the billing period from April 2012 to June 2014.

Code	Name
CAP01A-1PT	Cost Avoidance By Place Type
CAP01A-2PT	Cost Avoidance By Place Type
CAP01APT	Cost Avoidance By Place Type
CAP01B	Cost Avoidance By Building
CAP01B-1	Cost Avoidance By Building
CAP01B-2	Cost Avoidance By Building
CAP01B-3	Cost Avoidance By Building
CAP01BU	Usage Avoidance By Building
CAP01BU-3	Usage Avoidance Summary by Building
CAP01C	Cost Avoidance By Commodity
CAP01E	Cost Avoidance By Meter
CAP01E-0	Cost Avoidance By Meter
CAP01E-1	Cost Avoidance By Meter
CAP01EU	Use Avoidance By Meter
CAP01F	Cost Avoidance By Vendor
CAP01G	Cost Avoidance By Rate Code
CAP02	Energy Report Card
CAP02B	Building Energy Report Card
CAP03	Cost Avoidance Monthly Trend
CAP03A	Cost Avoidance Monthly Trend
CAP04	Use Avoidance Monthly Trend
CAP04A	Use Avoidance Monthly Trend
CAP05	Meter Adjustment Settings
CAP06	Baseline Report
CAP07	Executive Summary
CAP08	Cost Avoidance Exceptions
CAP09	CAP Manual Adjustments
CAP10	Detailed Meter CAP Analysis
CAP11	Meter Special Adjustments List
CAP13	Savings In Period

Cumulative Cost Savings		June 2014	
Expected Energy Cost	\$8,600,426	Actual Energy Cost	\$6,545,939
Program Savings	\$2,254,437	Percent Savings	25.62%
Other Savings	\$0	Total Savings	\$2,254,437

Expected Energy Cost	Actual Energy Cost	Program Savings
Anticipated expense without energy management.	Actual utility costs for electricity, gas, water, sewer, etc. obtained directly from bills.	The difference between Expected and Actual Costs, calculated in accordance with the International Performance Measurement & Verification Protocol. Does not include savings attributable to reduced equipment maintenance and replacement costs and other outside-of-benefits. These savings can increase the program savings up to 20%.

Cumulative Greenhouse Gas Reduction	
Energy Reduction Impact:	66,931 HHBTU
This is equivalent to the following:	8,305 equiv. metric tons of CO2
Passenger cars not driven for one year:	1,730
Tree seedlings grown for 10 years:	212,500

Actual EnergyCAP Report October 2014

## Free Software for Community Use

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A **GreenQuest Sponsorship** is a unique blend of positive public relations, relevant direct marketing, and practical energy efficiency. GreenQuest is a personal Web-based energy dashboard that enables your community members to track the energy use for their home or business.

Signing up is easy at...

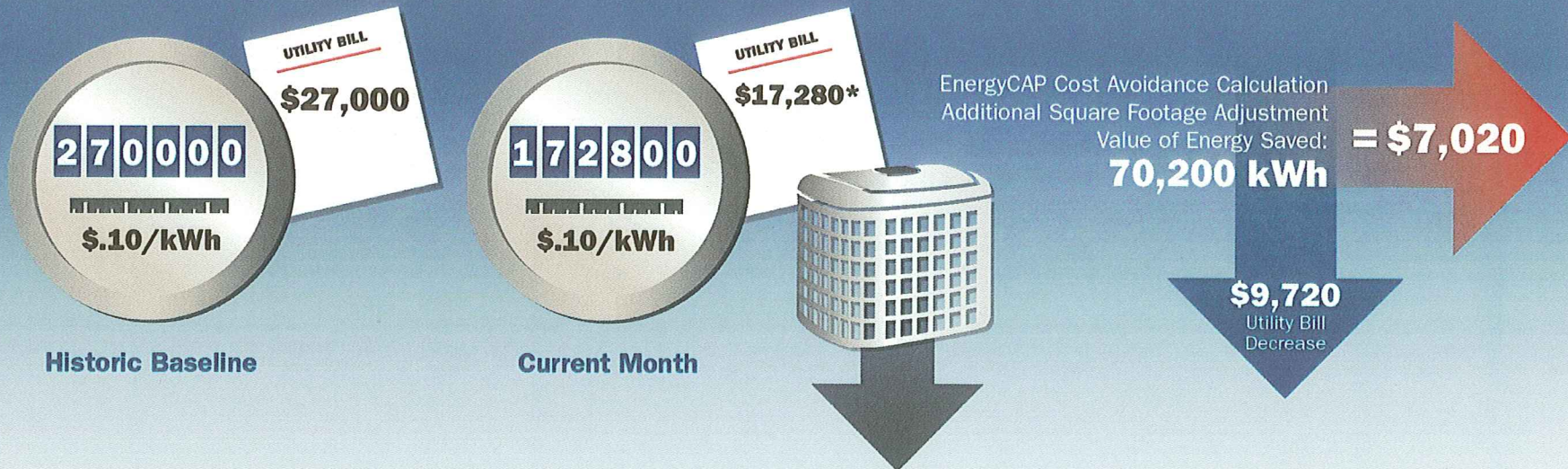
[www.EnergyCAP.com/GQsponsor](http://www.EnergyCAP.com/GQsponsor)

# Measurement and Verification: Adjustments

Example based on a typical monthly bill for a 265,000 square foot education building

EXAMPLE:

## Adjustment for Addition of New Energy Efficient Equipment



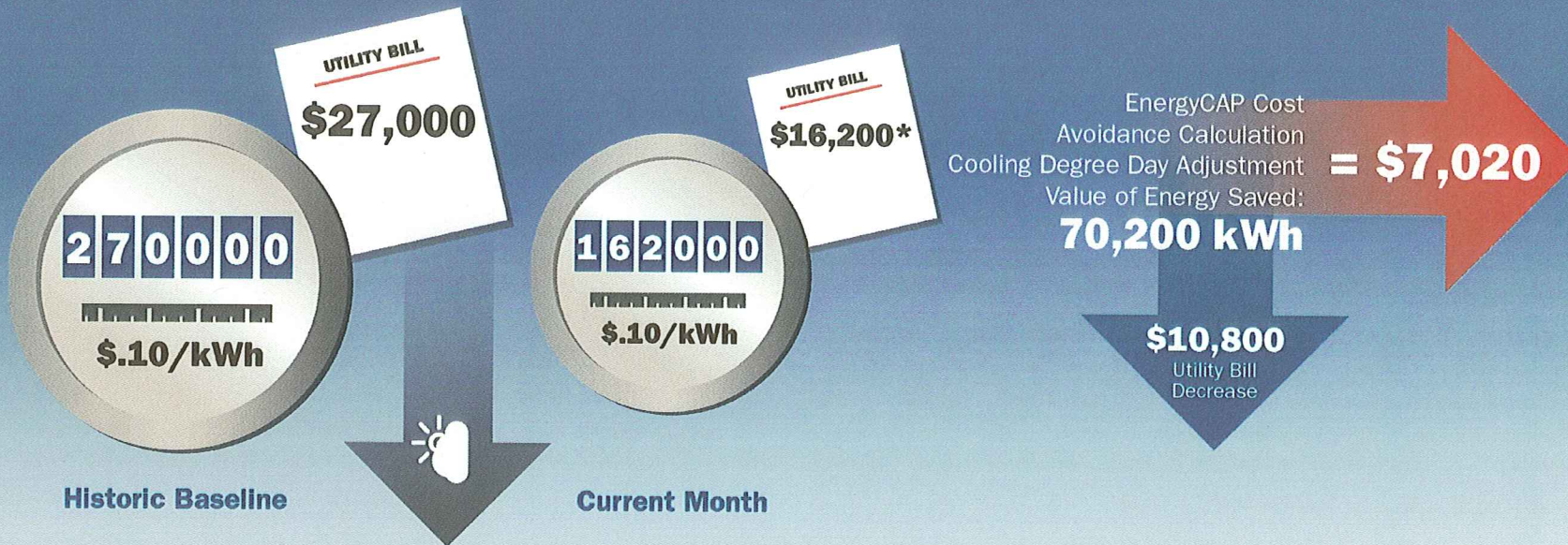
\*Utility bill would have been \$24,300 without Cenergistic program based on 243,000 kWh.

# Measurement and Verification: Adjustments

Example based on a typical monthly bill for a 265,000 square foot education building

EXAMPLE:

## Adjustment for Milder Weather



\*Utility bill would have been \$23,220 without Cenergistic program based on 232,200 kWh.