C O M M E R C I A L

Energy Use Survey

for

Customer Name

Survey Report Date

Service Provided By:

Energy & Resource Solutions
Silicon Valley Power
, Energy Engineer
(408) 615-6652
Survey #

Table of Contents

Energy Survey Summary

1

Silicon Valley Power provides energy surveys to help inform its customers about energy usage and energy costs. The purpose of this survey is to evaluate your overall energy usage and energy-consuming equipment to determine potential energy retrofit measures. With the implementation of the recommended energy measures you will lower your energy and operational costs, increase the asset value of your facility, increase employee productivity, and improve the comfort and appearance of your working environment.

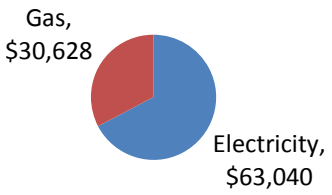
Facility surveyed: Customer Name

Contact:

Survey #:
Account #:
Auditor:
Date of Survey: 21-Apr-2010

Building area (sq.ft.): 60,000
Building end use: Education
Vocational Training

Yearly Energy Cost



Energy Benchmarks, kWh/sf/yr

Silicon Valley Power helps its customers by providing technical assistance and financial incentives for energy efficiency investments. You may be eligible to receive a cash rebate if you implement the measures described in this energy survey.

Financial Summary

Potential energy cost savings	$	10,622
Estimated retrofit costs	$	32,240
Potential SVP rebates	**$**	**4,993**
Net installed costs	$	27,247
Your investment pays for itself in:		2.6 years
Return on Investment:		41%

Recommendation Summary

Measure	Annual kWh savings potential	Annual therm savings potential	Annual cost savings potential	Estimated cost to retrofit
Lighting	86,182		$ 8,152	$ 30,210
HVAC	17,955		$ 1,587	$ 800
Other: Vend Miser	9,880		$ 883	$ 1,230
	114,017		$ 10,622	$ 32,240

Your CO_2 reduction potential is: 82,562 lbs. per year

Facility Description

Customer Name

2

Facility

This facility is a career training school offering programs in construction trades and medical technologies. It occupies a 60,000 square foot single story building that was renovated in 2003. The lighting is primarily T8 and the HVAC includes a central chiller and boiler and several zone air handlers.

Equipment and Operational Characteristics

Occupancy

The facility is occupied Monday through Friday from 7 am to 10:30 pm and Saturday for part of the day. The office areas are typically occupied from 7 am to 8 pm Monday through Friday. Classroom and lab areas are occupied from 8 am to 10:30 pm Monday through Friday and part of the day on Saturday.

HVAC

The HVAC system consists of a central chiller and gas fired boiler serving nineteen zone air handlers that range in cooling capacity from 3 to 6 tons. There is a small packaged system dedicated to cooling the server room. The building is centrally controlled by a Metasys system.

Lighting

Area lighting is primarily T8 fluorescent lighting with electronic ballasts. Lighting is on manual switches except for the exterior lighting which uses timers. Classrooms and offices are often lit when not being used.

Changes over the last 12 months

No changes were reported.

Recommendations

3

Customer Name

This section provides details on our energy saving recommendations for your facility. The first page provides a summary of our key findings and efficiency measure recommendations. The following pages provide detailed information on our retrofit recommendations.

Summary and Overview

Key findings and observations

Because the building's lighting and HVAC systems are relatively new, the recommended efficiency measures are focused on how the systems are operated rather than on replacing equipment with more efficient equipment. Energy savings can be achieved by installing occupancy sensors in many areas, scheduling equipment off during periods that the building is not occupied such as weekends and winter break, and turning off the chilled water pump and hot water pump when there is no demand for cooling or heating.

Recommended measures

Following are the recommended measures. Detailed measure information can be found on the following pages.

1. Replace HID light fixtures with new high bay fluorescent fixtures.
2. Install occupancy sensors in your offices, classrooms, and labs.
3. Optimize the schedule of existing HVAC equipment, including the chilled water and hot water pumps and the boiler.
4. Install new energy efficient outdoor lighting.
5. Install beverage display controllers.

Other measures considered

The following measures were considered, but not evaluated for one or more of the following reasons: a) they are low cost/no cost measures, b) they are recommendations for future equipment purchases, c) there is insufficient information to fully analyze, or d) they are beyond the scope of this survey.

1. Purchase appliances and office equipment with the Energy Star label.
2. Relamp existing T8 700 series lamps with new super T8 lamps.
3. Install photo sensor (daylight) controls for outdoor lighting.

Summary of Recommendations by Measure Type

Recommendation	kWh saved	Therms saved	Cost savings	Cost to retrofit	SVP Rebate & Incentives	Net Cost	Simple payback (yrs)
Lighting							
High bay T5 retrofit	15,262		$ 1,693	$ 5,775	$ 2,100	$ 3,675	2.2
LED retrofits	10,363		$ 1,105	$ 11,430	$ -	$ 11,430	10.3
Occupancy sensors	60,557		$ 5,354	$ 13,005	$ 2,173	$ 10,832	2.0
HVAC							
Optimize equipment schedule	17,955	Unknown	$ 1,587	$ 800	$ -	$ 800	0.5
Other							
Beverage display controller	9,880		$ 883	$ 1,230	$ 720	$ 510	0.6
	114,017		$ 10,622	$ 32,240	$ 4,993	$ 27,247	2.6

Energy savings and cost estimates

Determining potential energy savings is an art as well as a science. The potential energy savings shown in this report have been calculated based upon your actual energy use and costs, standard energy engineering practices, and our engineer's practical experience. Actual results may vary due to a variety of reasons, such as facility usage changes, occupancy changes, weather variations, quality of retrofit installation, operational changes, and others.

The cost to install energy saving measures can be obtained from a variety of sources. Our cost estimates are based on turnkey installations by professional contractors. They are based on typical retrofit costs that may or may not include all of the specifics associated with your particular facility.

Financial Analysis

3

Customer Name

This financial analysis compares the investment performance of each efficiency measure with common financial indicators. They are simple payback, internal rate of return, and net present value. The terms are defined at the bottom of the page.

Assumptions:

Present Value Discount Rate:	4.0%
Cost of Capital:	10.0%
Simple Payback Period Criteria (years):	3.0

Measure	Life (yrs)	Measure Cost	Annual Savings	SPP	SPP< CRIT	IRR	IRR> CC	NPV	NPV> $0
Lighting									
Linear Fluorescent									
Replace 400W metal halide w/ (4) 46" hi-bay T5s & ballast	10	$ 3,675	$ 1,693	2.2	YES	45%	YES	$ 9,668	YES
LED's for Exterior Lighting									
Replace 175W metal halide w/ 71W LED	15	$ 8,280	$ 1,105	7.5	NO	11%	YES	$ 4,423	YES
Other Lighting									
Occupancy Sensors	10	$ 10,833	$ 5,354	2.0	YES	48%	YES	$ 31,336	YES
Lighting Total		$ 22,788	$ 8,152	2.8	YES	34%	YES	$ 45,427	YES
HVAC									
Operation & Maintenance									
Chilled water and heating water pumps	4	$ 800	$ 1,587	0.5	YES	196%	YES	$ 4,770	YES
HVAC Total		$ 800	$ 1,587	0.5	YES	196%	YES	$ 4,770	YES
Other									
Refrigerated Beverage Display Controller	10	$ 510	$ 883	0.6	YES	173%	YES	$ 6,399	YES
Other Total		$ 510	$ 883	0.6	YES	173%	YES	$ 6,399	YES
Combined Total		$ 24,098	$ 10,622	2.3	YES	41%	YES	$ 56,596	YES

SPP = Simple Payback Period: The time it takes (in years) to recoup the initial investment on a project. Simple Payback = Initial Cost/Annual Net Savings.

CRIT = Simple Payback Period Criteria.

IRR = Internal Rate of Return: Annual rate of return a project generates.

CC = Cost of Capital: Interest rate paid by customer when financing a project.

NPV =Net Present Value: Total net present value of cash flow a project generates over its lifetime with discounting applied to cash flows that occur in the future.

High Bay Linear Fluorescent Retrofit

3

Customer Name

Lighting

Retrofit Description

Replace metal halide fixtures in the HVAC Lab with high bay fluorescent fixtures with high output T5 lamps.

Savings Analysis

Retrofit description:	Area:	Qty	Energy savings (kWh)	Demand reduction (kW)	Energy cost savings	Cost to retrofit
1. Replace 400W metal halide w/ (4) 46" hi-bay T5s & ballast	HVAC Lab	21	15,262	4.7	$1,693	$5,775
Existing: Metal halide 400W						
Proposed retrofit: Fluorescent, 46" (4) T5 HO lamps						

Other Lighting Opportunities

3

Customer Name

Occupancy Sensors

Occupancy sensors are best suited for rooms with highly variable and unpredictable occupancy patterns. Sensor selection, positioning, and testing is essential to ensure successful operation of the sensor as well as to ensure occupant acceptance of the control. Passive Infrared (PIR) sensors must "see" heat and are best used for a small room as their range limit is typically fifteen feet. Ultrasonic sensors emit ultrasonic waves to detect motion and are better suited for larger rooms. However, ultrasonic sensors are more suseptible to "false" triggering. Dual technology sensors combine both PIR and ultrasonic technologies to provide optimum performance. It is essential that the sensor be commissioned, or fully tested in place to ensure sensor operation is correct, time delay settings are optimized, and false triggering is minimized or eliminated. Once in place, occupants and maintenance personnel should be trained in the operation and upkeep of the sensor.

Recommendation: Install occupancy sensors in the following areas:

Area served	Lighting to be controlled	Fixture Qty	Sensor Qty	Energy savings (kWh)	Energy cost savings	Cost to retrofit
Offices	Fluorescent, 48" (3) T8 lamps	111	33	11,041	$976	$4,125
Classrooms	Fluorescent, 48" (3) T8 lamps	424	37	49,516	$4,377	$8,880
		535	70	60,557	$5,354	$13,005

LED Exterior Lighting

3

Customer Name

Exterior Lighting

Retrofit Description

LED exterior lighting is a long life, high efficiency solution to replace metal halide wall packs. Use Design Lights Consortium approved fixtures.

Recommendation: Replace the following metal halide fixtures with LED's.

Savings Analysis

	Retrofit description:	Area:	Qty	Energy savings (kWh)	Demand reduction (kW)	Energy cost savings	Cost to retrofit
1.	Replace 175W metal halide w/ 71W LED	Exterior	18	10,363	2.6	$1,105	$11,430

Existing: Metal halide 175W
Proposed retrofit: LED 71W Wall mounted

Operation & Maintenance

Optimize the schedule of the HVAC equipment

Heating and air conditioning equipment that runs at its optimum performance level saves energy and money. After several years in operation, equipment often will require recommissioning to achieve optimum performance.

Recommendation: Change the sequence of operation so that the chilled water pump turns off when the chiller is not operating. The pump is currently operating during periods when the chiller is not operating including during some periods when the facility is closed. Assuming that the chiller turns off when the outside air temperature reaches 60 degrees F, the total number of hours per year that the pump could be turned off is estimated to be 3617 hours.

Recommendation: Change the sequence of operation so that the heating hot water pump turns off when the boiler is not operating. The pump is currently operating during periods when the boiler is not operating including during some periods when the facility is closed. Assuming that the boiler should be off when the outside air temperature reaches 70 degrees F, the total number of hours per year that the pump could be turned off is estimated to be 2481 hours.

Recommendation: Program the boiler to turn off when the outside air temperature reaches 70 degrees F. In addition to the pump electrical savings, you will achieve gas savings that are not calculated for this report.

Pump savings analysis

	Hours closed + pump on	Hours open at/ below 60	Hours open at/ above 70	Motor capacity (kW)	Savings Hours	Energy savings (kWh)	Energy cost savings
Chilled Water Pump	1209	2408		5.6	3617	12,356	$ 1,092
Heating Hot Water Pump	1209		1272	3.7	2481	5,600	$ 495
						17,955	$ 1,587

Refrigerated Beverage Display Controller

3

Customer Name

Retrofit Description

During portions of the daytime hours and much of the night and weekend hours, drink and other refrigerated display, or vending machines, run in order to chill goods that will not be sold for a long time. This waste represents a savings opportunity. Controllers are available that incorporate a timer, an occupancy sensor, and a current sensor to optimally manage vending machine run time. Case studies consistently show savings of 30 to 50 percent. The savings and performance of these controls have been so impressive that starting in 2006, California began requiring manufacturers to provide these controls on all new beverage vending machines.

Savings Analysis

	Existing	Proposed	Savings	
VENDING MACHINES				
Quantity	6	6		
Ave annual kWh per machine	3,573	3,573		kWh
CONTROLLERS				
Quantity		6		
Controller energy savings		40%		
Controller demand savings		-		mo/yr
Material cost		$160		per unit
Replacement time, including ordering and calibration		60		minutes
POWER AND ENERGY				
Machine energy	21,438	12,863	8,575	kWh
Heat displaced	84	50	(33.4)	therms
Peak demand	0.13	0.10	0.03	kW
Cooling load	3,263	1,958	1,305	kWh
ANNUAL OPERATING SAVINGS				
Total power cost:	$39.86	$29.90	$9.97	
Electric energy cost:	$2,184	$1,310	$873	
Total operating cost:	$2,224	$1,340	**$883**	**Savings**

IMPLEMENTATION COST

Materials:	$960	
Labor:	$270	
Overhead and profit (none-assumes owner self installs)	$0	
Less SVP rebate ($-120 /sensor)	($720)	
Total cost:	**$510**	=$85/unit

This analysis excludes O&M savings due to reduced compressor, fan, & lamp operation.
The implementation cost and rates assume the project is completed by facilities staff.
According to the vendor, existing energy use is accurate for most machines within +/- 5% with 95% confidence.

Energy Usage-Building Energy Use History

4

Customer Name

Annual electric use profile

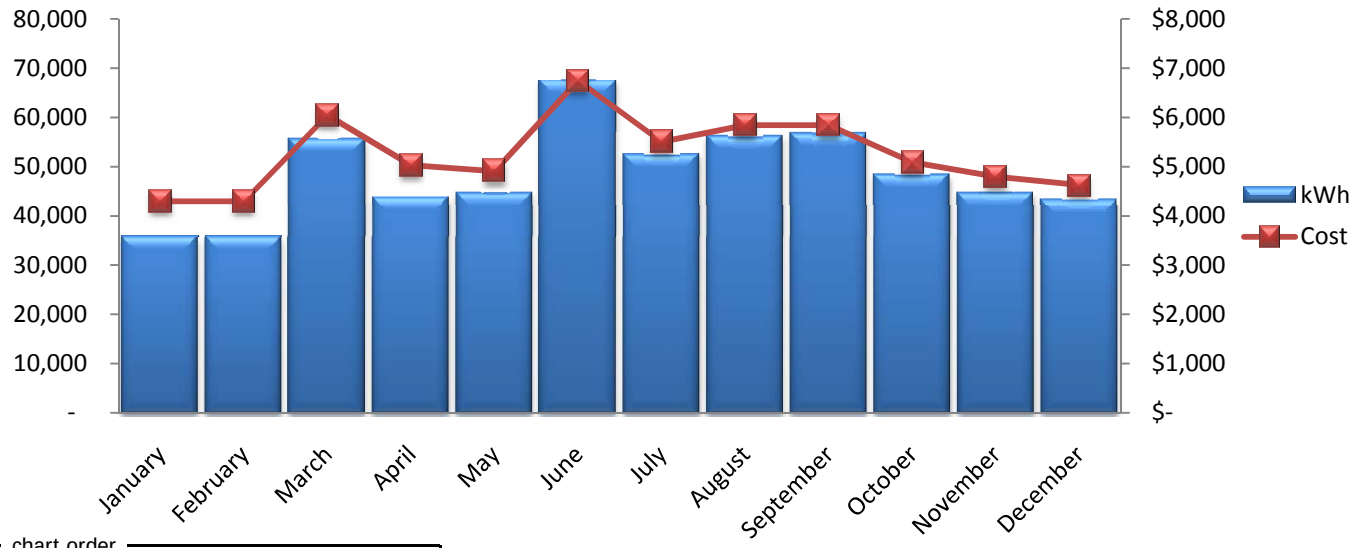
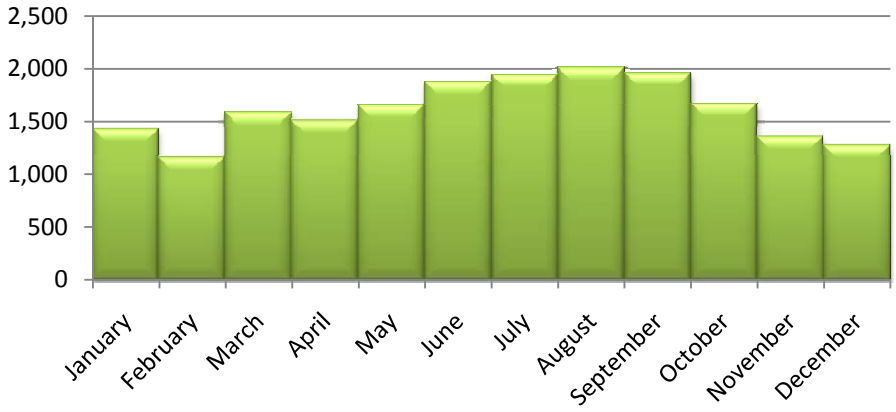


chart order

- (●) Chronological order
- ( ) Calendar year profile

kWh per day



Because the number of days differ in monthly billing data, the monthly profile may be skewed. The chart to the right normalizes the monthly data for usage per day to give a truer picture of the yearly load profile.

Twelve month billing history

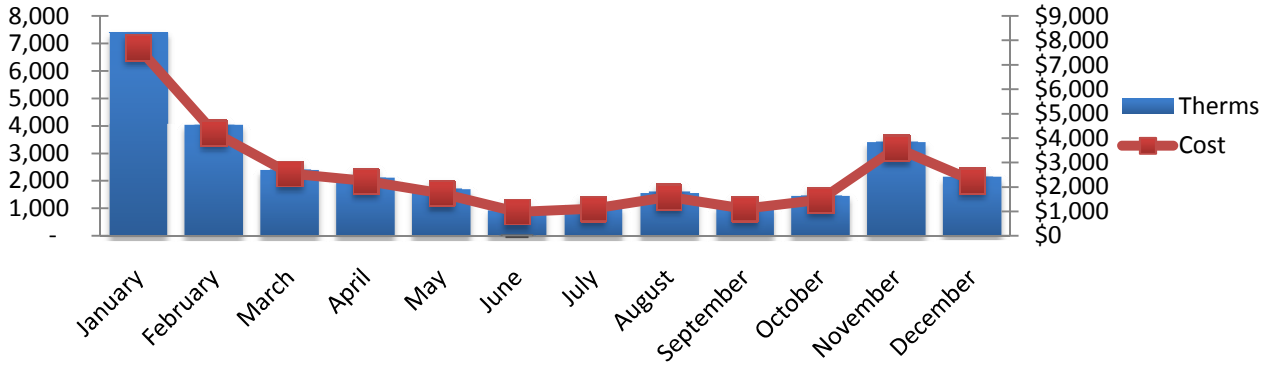
Bill date	Days	Month	kWh		Cost	kWh/day
05/11/10	29	April	43,800	$	5,033	1,510
04/12/10	35	March	55,500	$	6,048	1,586
03/08/10	31	February	35,700	$	4,297	1,152
02/05/10	25	January	35,700	$	4,297	1,428
01/11/10	34	December	43,200	$	4,627	1,271
12/08/09	33	November	44,700	$	4,798	1,355
11/05/09	29	October	48,300	$	5,086	1,666
10/07/09	29	September	56,700	$	5,846	1,955
09/08/09	28	August	56,100	$	5,843	2,004
08/11/09	27	July	52,500	$	5,508	1,944
07/15/09	36	June	67,500	$	6,747	1,875
06/09/09	27	May	44,700	$	4,910	1,656
Totals	363		**584,400**	**$**	**63,040**	**1,610**

Energy Usage-Building Energy Use History

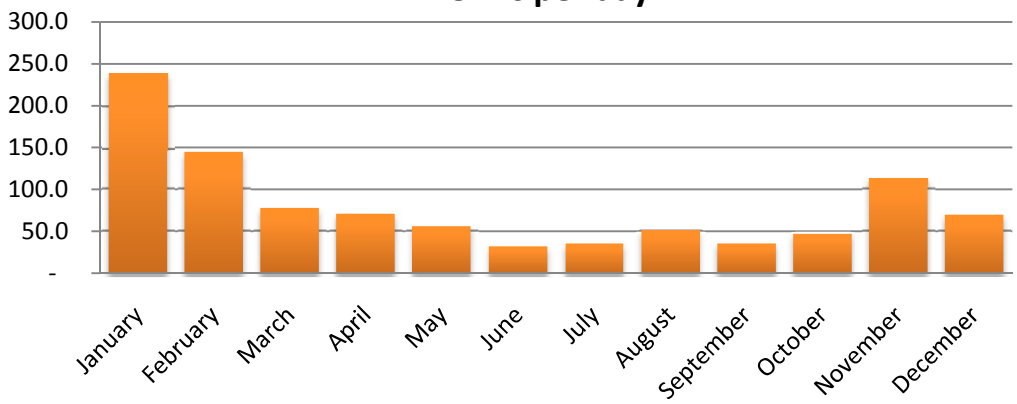
4

Customer Name

Annual natural gas use profile



Therms per day



Twelve month billing profile

End date	Days	Month	Therms		Cost	Th/day
		January	7,408	$	7,715	239.0
		February	4,049	$	4,241	144.6
		March	2,402	$	2,547	77.5
		April	2,118	$	2,251	70.6
		May	1,723	$	1,733	55.6
		June	950	$	983	31.7
		July	1,075	$	1,106	34.7
		August	1,574	$	1,589	50.8
		September	1,078	$	1,107	35.9
		October	1,459	$	1,478	47.1
		November	3,422	$	3,597	114.1
		December	2,142	$	2,279	69.1
Totals			**29,400**	**$**	**30,628**	

○ Natural gas data from PG&E

◉ Natural gas data estimated

Therms/sf: 0.490

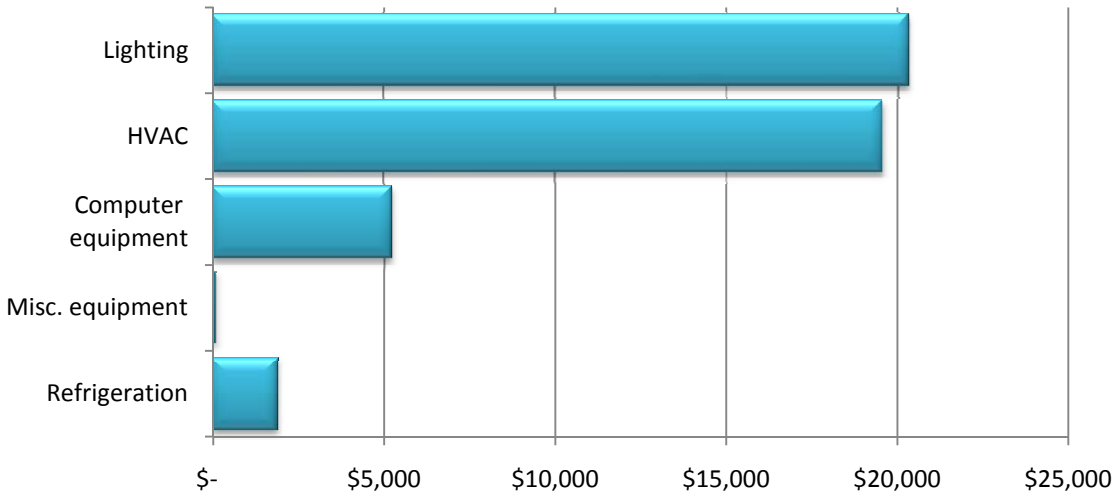
End Use Energy Consumption & Costs

4

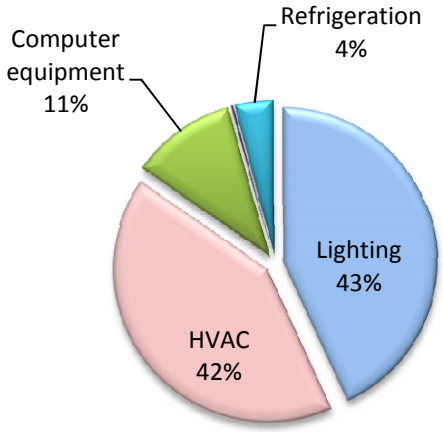
Customer Name

The graphs below show your annual electrical energy usage and cost by equipment type.

Annual electric energy costs



Annual electric energy consumption, kWh



End Use	kWh
Lighting	229,862
HVAC	221,293
Computer equipment	58,893
Misc. equipment	1,280
Refrigeration	21,438

Energy Usage-Benchmarking

4

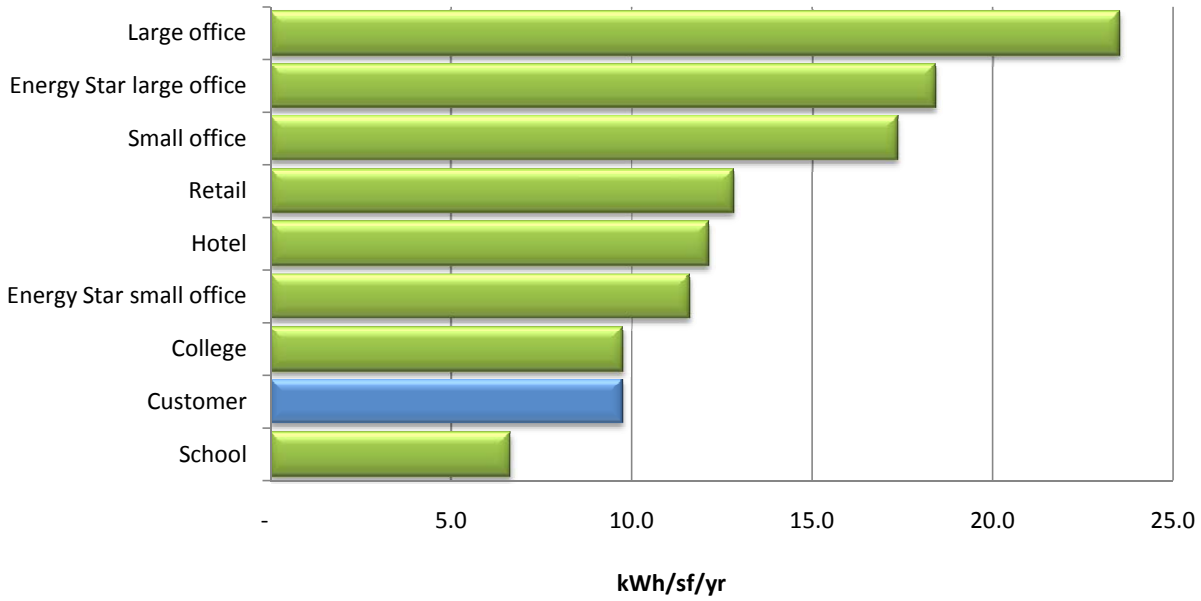
Customer Name

Energy Benchmarking compares a building's annual energy usage per square foot to that of other buildings. Benchmarking is used to help determine whether a building is a good candidate for energy efficiency improvements. Benchmarking can provide a good overall picture of relative energy usage and helps to determine the magnitude of energy savings potential.

Your building's overall energy usage is shown in the chart below. Your building is compared to the annual energy usage of typical California facilities as well as to the target energy usage of similar Energy Star buildings. The information was obtained from your utility bills, our energy survey database, the California Energy Commission, and the Department of Energy's Energy Star Building Label program. The Energy Star Building Label program provides online benchmarking tools that help evaluate a building's energy performance and sets targets for exceptionally energy efficient buildings.

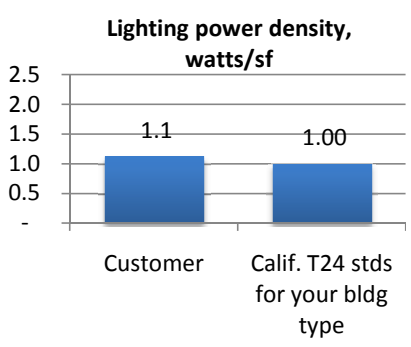
This data indicates that the potential to lower your energy use is moderate. The best comparison for your facility is the "College" category. Your facility's energy use is equal to the average college facility.

Facility energy use comparison chart

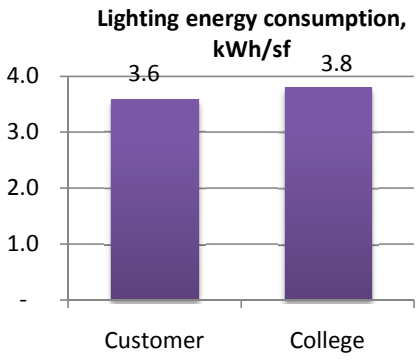


The following graphs show relevant lighting and HVAC energy use comparisons.

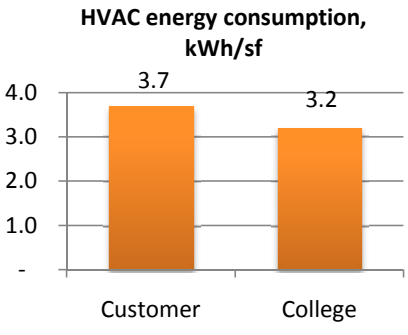
Your lighting power density is slightly higher than the current California energy efficiency standard for new buildings. The majority of your facility has fluorescent fixtures with T8 lamps and electronic ballasts.



Your lighting energy consumption is slightly lower than that of a typical college building. This may be because a part of your building is not cooled.



Your heating, ventilation, and air conditioning energy consumption is higher than a typical college building.



Energy Usage-Rate Schedules

4

Customer Name

Your rate schedule is: CB-1

Your per unit cost of electricity for last 12 mths:	**$0.108**	per kWh
Your per unit cost of nat. gas for the last 12 mths:	**$1.04**	per therm

SVP Electric Rate Schedule Summary

For accounts in excess of 8,000 kWh/mo energy and less than 4,000 kW peak demand.

Charge type	Per kWh	Per kW per month	Fixed
Energy	$0.08576		
Billed Demand		$6.46	
Customer Charge (per mtr per mth)			$53.38
Public Benefits (% excl. GMC & State)	2.85%	2.85%	2.85%
State surcharge	$0.00020		
Total charge	**$0.08840**	**$6.64**	**$54.90**

Monthly billed kW is equal to the average of the actual kW read and the highest kW in the past 12 months.

To see the Rate Schedule in its entirety, go to: http://www.siliconvalleypower.com/bus/?sub=busrates

Applicable Natural Gas Rate Schedule, PG&E, GNR1

	ADU (Highest Average Daily Use over last 12 months)				
	0-5.0	5.1 to 16.0	16.1 to 41.0	41.1 to 123.0	123.1 +
Customer Charge: (per day)	$0.027048	$0.521060	$0.954820	$1.664890	$2.149360

	Per Therm			
	Summer		Winter	
	0 to 4,000	4,001 +	0 to 4,000	4,001 +
Procurement Charge	$0.62395	$0.62395	$0.62395	$0.62395
Transportation Charge	$0.29460	$0.09054	$0.35980	$0.11058
Public Purpose Program Surcharge	$0.04875	$0.04875	$0.04875	$0.04875
Total	**$0.96730**	**$0.76324**	**$1.03250**	**$0.78328**

Current as of: 2/1/2010

Lighting Inventory

5

Customer Name

Lighting Inventory by Lighting Fixture Type

Codes: CFL-compact fluorescent lamp;
Est.-lamp type or quantity estimated.

Fixture type & description	Total qty.	Fixture type	Est.	Watts per fixture	Total kW	Occupancy schedule	hr/yr	kWh/yr
Linear fluorescent lamps and fixtures								
Fluorescent, 48" (3) T8 lamps	116	Troffer		90	10.440	A	2,763	28,841
Fluorescent, 48" (3) T8 lamps	424	Troffer		90	38.160	B	3,244	123,808
Fluorescent, 46" (4) T5 lamps	1	High-bay		128	0.128	B	3,244	415
U-Tube, (2) T8 lamps	95	Troffer		58	5.510	B	3,244	17,877
Fluorescent, 48" (2) T8 lamps	36	Strip		59	2.124	B	3,244	6,891
Fluorescent, 48" (2) T8 lamps	11	Troffer		59	0.649	B	3,244	2,106
Compact fluorescents								
CFL, 18W	34	Can		18	0.612	B	3,244	1,986
High intensity discharge fixtures								
Metal halide 400W	21	High-bay		458	9.618	B	3,244	31,205
Metal halide 175W	18	Wall pack		215	3.870	K	3,998	15,472
Miscellaneous								
Exit Sign, LED, (2) 2W, two lamps	18	Exit		8	0.144	G	8,760	1,261

Total fixtures 774
Ave operating hrs 3,226

Annual energy use (kWh) 229,862
Installed power (kW) 71.3
Estimated building peak demand (kW) 57.0
(Interior lighting) Watts/sf 1.1
(Interior lighting) kWh/sf 3.6

Occupancy schedule table

	Occupancy	Lighting Operating Hrs	Occupied Hrs	Lighting On-time Factor	Occupancy Schedule: Weeks per year	Occupancy Schedule: Weekends per year	Shutdowns & Holidays per year	Weekday Schedule: Start	Weekday Schedule: Stop	Weekday Schedule: Hrs	Weekend Schedule: Start	Weekend Schedule: Stop	Weekend Schedule: # days	Weekend Schedule: Hrs
A	Offices	**2,763**	3,250	85%	52	48	10	7:00 AM	8:00 PM	13.0 hrs				
B	Classrooms	**3,244**	3,817	85%	52	48	10	8:00 AM	10:30 PM	14.5 hrs	8:00 AM	12:00 PM	1	4.0 hrs
C	Empty Office	**153**	3,060	5%	52	48	5	7:00 AM	7:00 PM	12.0 hrs				
D	Task lighting	**1,966**	3,024	65%	52	6	10	6:00 AM	6:00 PM	12.0 hrs	8:00 AM	12:00 PM	1	4.0 hrs
E	Storage	**958**	3,192	30%	52	48	10	7:00 AM	7:00 PM	12.0 hrs	8:00 AM	12:00 PM	1	4.0 hrs
F	Occup Sens	**2,713**	3,192	85%	52	48	10	6:00 AM	6:00 PM	12.0 hrs	8:00 AM	12:00 PM	1	4.0 hrs
G	Continuous	**8,760**	8,760	100%	52	52.5				24.0 hrs			2	24.0 hrs
H	Common	**4,150**	3,192	130%	52	48	10	6:00 AM	6:00 PM	12.0 hrs	8:00 AM	12:00 PM	1	4.0 hrs
I	Bi-level sw.	**2,949**	3,104	95%	52	26	10	6:00 AM	6:00 PM	12.0 hrs	8:00 AM	12:00 PM	1	4.0 hrs
J	Restroom	**1,596**	3,192	50%	52	48	10	6:00 AM	6:00 PM	12.0 hrs	8:00 AM	12:00 PM	1	4.0 hrs
K	Exterior	**3,998**	3,998	100%	52	52		8:00 PM	7:00 AM	11.0 hrs	8:00 PM	7:00 AM	2	11.0 hrs
L	Parking Lot	**692**	692	100%	52	48	10	8:00 PM	10:00 PM	2.0 hrs	8:00 PM	10:00 PM	2	2.0 hrs

Lighting Control Inventory

5

Customer Name

Lighting Controls

Fixture type & description	Total qty.	Location	Bi-level control?	Time clock?	Occupancy sensor?	Notes
	-					
Linear fluorescent lamps and fixtures						
Fluorescent, 48" (3) T8 lamps	116	Offices	No	No	No	
Fluorescent, 48" (3) T8 lamps	424	Classrooms	No	No	No	
Fluorescent, 46" (4) T5 lamps	1	HVAC Lab	No	No	No	
U-Tube, (2) T8 lamps	95	Corridors	No	No	No	
Fluorescent, 48" (2) T8 lamps	36	Tool Crib	No	No	No	
Fluorescent, 48" (2) T8 lamps	11	Restrooms	No	No	No	
Compact fluorescents						
CFL, 18W	34	Restrooms	No	No	No	
High intensity discharge fixtures						
Metal halide 400W	21	HVAC Lab	No	No	No	
Metal halide 175W	18	Exterior	No	Yes	No	

Notes:

1 Bi-level controlled lights have at least (2) manual switches and are capable of shutting off half of the area lights.
2 Time clock is any kind of automated control that turns off the lights per a predetermined schedule.
3 Occupancy sensors automatically shut off lighting when the space is unoccupied.

HVAC Equipment Inventory

5

Customer Name

Unit #	Area served	Unit type	System type	Qty	Unit size	Annual gas energy (therms)	Annual electric energy (kWh)
AC1	Offices	Central plant	Const. volume		tons	1,103	28,782
AC1	Classrooms and Labs	Central plant	Const. volume		tons	13,854	192,511
					Totals	**14,958**	**221,293**

Cooling capacity, tons 125

kWh/sf 3.7

sf/ton 390

Additional Equipment Details

Unit #	Make	Model #	S/N	Thermostat type	Economizer?
AC1	Trane Air Cooled Chiller	RTAA1254XPO1A3D6B6		Programmable, electronic	No
	Trane Air Handlers	BCXC			No

Other Equipment Inventory

5

Customer Name

Computer equipment	Qty	kWea	Total kW	kWh/yr
Computer w/ LCD monitor	97	0.35	34.0	32,253
Copier - medium size	4	1.40	5.6	5,376
Printer, copier	30	0.30	9.0	9,000
Server	10	0.40	4.0	12,264

Refrigeration	Qty	Size	kWh/yr
Beverage vending machine	6		21,438

Misc. equipment	Qty	kWea	Total kW	kWh/yr
Microwave - small	1	0.60	0.6	24
Coffee maker	1	1.73	1.7	1,256

Other equipment energy consumption, kWh/yr: 81,610

Appendix I: Sustainability

Many businesses have shown an interest in reducing their total environmental impact. Below are a number of practices and products that can, in addition to energy efficiency, promote the environmental sustainability of your business.

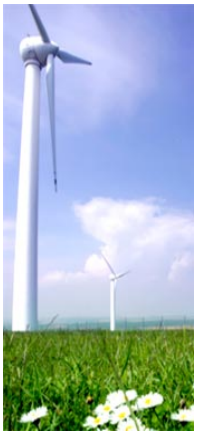
Purchase Renewable Energy - Santa Clara Green Power

SANTA CLARA greenpower

Choose Santa Clara Green Power
100% Renewable Energy

Silicon Valley Power is pleased to offer its commercial and industrial customers the opportunity to purchase renewable energy.

The energy is derived from wind projects in the western U.S. and solar projects in California and is available for only an additional $0.015 per kilowatt-hour for small businesses, or in 1,000 kWh blocks for fifteen dollars/block for large businesses.



Supporting renewable energy generation is an easy way for businesses to build their environmental values, meet sustainability initiatives, and garner valuable community recognition.

Participating in Santa Clara Green Power makes it easy and affordable to achieve dramatic reductions in greenhouse gas emissions. No capital expenditures are necessary.

Contact your Key Customer representative at **408-615-5651** to learn more about the program and the national and local recognition that can result from a renewable energy purchase. You can also find answers to frequently asked questions about Santa Clara Green Power on the SVP web site.

Solar Energy

Most commercial and industrial buildings have flat roofs. A flat roof offers the possibility of a solar installation. Solar panels will supply your facility with electricity, reducing the amount of electricity you purchase from Silicon Valley Power. When the sun is shining, the panels generate electricity.

There are a number of solar panel technologies commercially available. They are: ***1) Monocrystal (high output)*** *– the most efficient,* ***2) Polycrystal (high output)*** *– nearly as efficient as monocrystal),* and ***3) Thin Film/Amorphous (heat and shade tolerant)*** *– not as efficient as the aforementioned technologies.* Each technology has its advantages and disadvantages. Researching each technology to determine which will work best for your business is highly recommended. Refer to the following web page for information on Solar Energy Rebates: www.siliconvalleypower.com/bus/?sub=rebatessolarbus

Appendix I: Sustainability

Water Efficiency

Because California regularly suffers through droughts, water efficiency makes sense. Below are a few ways of increasing water efficiency.

LOW-FLOW TOILETS AND SHOWER HEADS

You can reduce the amount of water used during each flush. There are a number of benefits to using low-flow toilets. Because they reduce the amount of water used, low-flow toilets help to conserve water during times of drought. Additionally, the less water used during a flush means less energy will have to be expended at sewage treatment plants to treat and reclaim the water.

Low-flow showerheads are also recommended for businesses with showers. In addition to the same benefits listed above, low-flow shower heads reduce hot water consumption. By using less water, low-flow showerheads reduce the amount of heating necessary to generate hot water.

FAUCET AERATORS

Faucet aerators mix air into the water stream when you turn on the tap, reducing the amount of water used. They are easy to install and screw onto any faucet tip that is threaded to accept an aerator. They save energy by reducing the amount of water needed for most tasks, the amount of water that must be treated at a sewage treatment plant, and the amount of energy needed to generate hot water.

EFFICIENT LANDSCAPING AND IRRIGATION

Landscaping with native California plants ensures that natural irrigation can be used most of the year. Where possible avoid large expanses of grass – that's one of the most water intensive plants you can grow. Drip irrigation is more efficient than sprinklers because less water is lost to evaporation, but even a standard sprinkler system can be tuned up to be more water efficient.

Inspect sprinkler heads for leaks and damage at least twice a year. Make sure they're adjusted to actually water your plants… rather than your customers or the sidewalk! You can even install systems that are programmed to check the weather and turn off when rain is expected the next day.

Appendix I: Sustainability

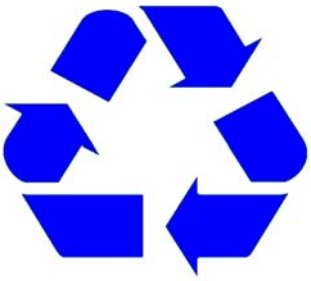
Water Efficiency - continued

SANTA CLARA VALLEY WATER DISTRICT

The Santa Clara Valley Water District offers a wide variety of information on water conservation, including tips, rebates, and classes. Water audits are also available for businesses.

More information about water conservation and the rebates available from the Santa Clara Valley Water District can be found at:
www.valleywater.org/Programs/ConservationForBusinesses.aspx

Encourage Recycling



Make sure recycling bins are placed in the areas where most recyclable material is generated – paper bins next to printers, can and bottle bins in cafeterias and break rooms, cardboard dumpsters near shipping areas. Make sure these are clearly labeled so employees know what to put where.

Recycle used ink cartridges. There are a number of companies that will gladly accept used ink cartridges, even big name ones. Some include a plastic bag with their new cartridges to send the used ones back for recycling. There are also local companies willing to take used cartridges for recycling.

In addition, make an attempt to buy products made from recycled materials – this completes the cycle. Printer paper, toilet paper and paper towels can be obtained in recycled varieties that are virtually indistinguishable from non-recycled varieties. In many cases the cost is even the same.

For more information on recycling hazardous waste, contact the County of Santa Clara's Household Hazardous Waster Program at:
www.hhw.org

Appendix I: Sustainability

Encourage Alternative Transportation

Set up a web page or bulletin board where employees can coordinate car-pools. Make sure bike racks are available so employees can bike to work. Take part in “Bike To Work Day”, which takes place around the bay area every May – employees who try it out on that one day may decide they like it! More information about Bike To Work Day can be found here: http://www.bayareabikes.org/btwd/index.php

Consider joining the Eco-Pass program, which provides VTA annual passes for all employees at a reduced rate dependant on your total number of employees. More information about the Eco-Pass program can be found here: http://www.vta.org/ecopass/ecopass_corp/index.html

Green Business Certification

Consider becoming a certified Bay Area Green Business. Certification will recognize your business for operating in an environmentally friendly manner - conserving energy, water and resources. Green business certification is also great for publicity.

Find more information about the county-sponsored Green Business Program here: http://www.abag.ca.gov/bayarea/enviro/gbus/AboutUs.html

Other Sustainable Practices

There are a number of simple low-cost/no-cost practices businesses can adopt to make their companies more ‘green.’ Among them are:

1) Use as little packaging material as possible. *Make the packaging as recyclable as possible.*
2) Do the dishes: *Provide reusable dishes, silverware and glasses for luncheons.*
3) Use simple cleaning supplies: *Discuss cleaning supplies with your maintenance crew. Ask them to consider using cleaners like baking soda or vinegar instead of commercial products.*
4) Provide filtered water: *Instead of bottled water, provide employees with filtered drinking water and reusable cups.*
5) Buy sugar and cream dispensers: *Avoid paper packets and save waste by offering employees sugar and cream in large dispensers.*
6) Use both sides of paper*: When making copies, set your machine to use both sides of paper and cut your consumption in half.*
7) Shred and reuse unwanted paper*: Instead of throwing away old documents, shred them and reuse them as packing material in shipments.*
8) Reuse boxes*: When you get shipments in, save your boxes so that you can use them again for shipments out.*