

Minutes:
Sustainable Silicon Valley General Meeting
Friday, January 12, 2007
9:00 am – 10:30 am
NETWORK APPLIANCE
 Building 4, Aragorn Conference Room
 1330 Geneva Drive, Sunnyvale, CA 94089

Attending:

Rick Gurney	City of Sunnyvale	Sigalle Michael	BAAQMD
Lee French	SP Biopharma	Bill Farwell	LifeScan
Brandon Tinianov	Quite Solutions	Ryan Stroupe	PG&E Pacific Energy Ctr
Bill Henry	Consulting Engineer	Christine Kohl-Zaugg	EORM
Dave Shroyer	Network Appliance	Robert Cormia	Foothill DeAnza College District
Dan Hoffman	Network Appliance	David Kaneda	IDeAS
Steve Attinger	Acterra	Bill Henry	Energy, Tech, Engineer
Shawn DeAngelo	Agilent Technologies	Chris Brey	CV Therapeutics
Doug Koenig	County of San Mateo	Sonya Casires	PG&E
Steve Nicholson	Network Appliance	Jim Crowley	SCV Water District
David Wright	The Wright Stuff	Sally Tomlinson	SSV
Burt Levinson	SCV Water District	Ben Mehta	QuEST/SVLG/SSV
Deborah Grove	SAP	John Juarez	Carnegie Inst of Washington
Joe Rois	SSV	Shelley Lorentzen	SSV
Adraine Gardner	PG&E	Susan Kulakowski	Stanford
Mark Evanov	Alter-Net		

Announcement: SSV will evaluate new environmental focus in the coming year to add to the CO2 Initiative.

Ryan Stroupe, Pacific Energy Center: PEC Tools and Commissioning

Slides are posted on the Calendar page for the January 2007 monthly meeting, at <http://www.sustainablesiliconvalley.org/presentations/meetings/cx-overview-Ryan.ppt>

Buildings use 40% of energy in US.

- Popular tool: 3-phase day logging meter measures amps and volts, tells you where your energy is going. Need to have an electrician install it, or have staff trained.
- To save energy, decrease wattage or decrease the hours of operation: energy = power x run time

Tools and devices

- Tools for energy savings:
 - Benchmarking: Cal Arch based on CA buildings
 - Building surveys
 - Energy audit
 - Monitoring and trending
 - commissioning

- Building energy use United States:
 - Lighting 24%
 - Space heating 14%
 - Cooling 11% (but can be higher % of cost because middle of the day)
 - Water heating 6%
 - Adjustment to SEDs 13%
- Building energy use Large Office PG&E:
 - Lighting 35%
 - F Pumps 15%
 - Cooling 14%
- Temperature gun can find heating/cooling inefficiencies. Example: in one room found temperature of air coming out of vents on one side was 55 degrees, and 110 on other side of same room.
- Light meter can find over-illuminated areas.
- Monitoring airside economizer: data logger can measure supply air and return air, compare mixed versus outside. If economizer working properly, mixed should use outside air when favorable. This is a common operations and maintenance problem. The Pacific Energy Center has tools to help.
- Runtime monitors tell if equipment is running when it should. This is one of the easiest things to do in a building.
- Check occupancy sensors – they are often not working, or intentionally disabled
- Natural gas is harder to monitor
 - Innovative device measures electric pulse of gas meter to monitor when gas is being used
 - Must be installed by PG&E

Commissioning

- Commissioning: New structure commissioning, retro-commissioning, ongoing commissioning
- Costs: smaller buildings high cost of commission/benefit; larger building more favorable cost/benefit ratio
- New construction benefits can be immediate
 - One study found that 15% of buildings had equipment specified that was not installed
- PEC cut its energy use by 15% by commissioning. Typical energy savings is at least 10%.
- Median payback on commissioning new construction is less than 5 years
- Mean payback on retro-commissioning is about 1 year
- Need to monitor continuously – buildings tend to deviate from the optimum within 3 years

Lots of resources on his slides.

PG&E has a retro-commissioning program in which they will pay. They are looking for 40 candidate facilities.

Dave Shroyer and Dan Hoffman – Network Appliance

Net App has used a lot of the Pacific Energy Center equipment.

Net App is example of commissioning success story. Are part of SVLG/SSV Energy Watch Program for Monitoring-based commissioning.

- 6 buildings totaling 800,000 square feet

- Will add 5 more for 1 million additional square feet
- Each year use 44 MWh, 21 MW, costing \$6 million
- New buildings will be LEED
- Looking for less than 3 year payback
 - Supplies resets
 - Hot water resets
 - Duct resets
 - Chilled water resets
 - Economizer optimization
- Found heating and cooling in same building
- Are part of PG&E demand response – looking at getting on automated demand response
- Last 6 months added 200 employees in Sunnyvale
- Received \$484,000 in incentives for last 9 months

Next meeting Friday, February 16: Location to be determined. Alan Pong, Ferreira Associates:
HVAC fine tuning. Agenda and directions at: www.SustainableSiliconValley.org

These minutes are submitted by Sally Tomlinson.