UC Merced Energy Performance Snapshot: July 2007 - June 2008				Power w/o	1	ı				1			1	l
<b>3</b> ,				TES			Equivalent							
				(months with failed		Peak Chilled		i	Annual			Annual	Annual	Peak Chilled
	Analysis Updated 14-May-10		Floor Area	TES operation)	Building Peak Power	Water at Building	Building and no TES	Annual Electricity	Building Electricity	Annual Ton hours	Annual Gas	Source Energy	Site Energy	Water Raw Observation
			gsf REVOGSF50	W/gsf	W/gsf	tons/kgsf		kWh/gsf/yr	kWh/gsf/yr	ton- hrs/kgsf	th/gsf/yr	kBtu/gsf/yr	kBtu/gsf/yr	tons/kgsf
Campus Benchmark (Aggregate of 2009-10 Buildings)	Incl water pumps				3.87			21.9			0.74			
Campus Feb 2009 - Jan 2010 Campus Feb 2009 - Jan 2010 Relative to Benchmark	Incl water pumps An Andrew And	ctual Plant ctual Plant	904,707		2.22 57%			15.95 73%			0.54 73%		109 73%	
Campus Benchmark (Aggregate of 2007-08 Buildings)	Incl water pumps				3.96	i		22.80			same as below	289	156	
Campus 2007-08 Campus 2007-08 Relative to Benchmark	Incl water pumps Ad Incl water pumps Ad		802,373		2.01 51%			15.30 67%			same as below same as below	198 69%	109 70%	
Campus Benchmark (Aggregate of 2007-08 Buildings) Campus Benchmark (w/o TES)				5.32	3.99 2	l		22.77			0.78	3 287	155	
Campus 2007-08 Campus 2007-08 Relative to Benchmark		ctual Plant ctual Plant	802,373	3.37 63%				14.94 66%			0.57 73%		108 69%	
Campus 2007-08 Campus 2007-08 Relative to Benchmark		est Practice Plant est Practice Plant						14.07 62%			0.54 69%		102 65%	
S&E I Benchmark					6.73	3.74	ı	40.7			1.82	. 557	321	3.74
S&E I 2007-08 S&E I 2007-08 Relative to Benchmark S&E I w/o Area Light or Xfmr Loss 2007-08		ctual Plant ctual Plant ctual Plant	236,989		3.13 46% 2.98	1.85 49% same as above		22.52 55% 21.34	19.61 18.57		1.30 71% same as above	61%	207 64% 203	2.07 55%
S&E I 2007-08 S&E I 2007-08 Relative to Benchmark S&E I w/o Area Light or Xfrmr Loss 2007-08		est Practice Plant lest Practice Plant lest Practice Plant			same as actual same as actual same as actual	same as above same as above same as above		21.43 53% 20.30			1.22 67% same as above	57%	195 61% 191	
COB Benchmark					3.65			15.1			0.196		71	2.03
COB As-Designed * COB As-Designed *			92,596		1.9 52%			7.7 51%		1.66	0.11 56%			
COB 2007-08	A	ctual Plant	103,006		1.75	1.72	2]	9.03	7.41	1.73	0.15	98	45	2.25
COB 2007-08 Relative to Benchmark COB w/o Area Light or Xfmr Loss 2007-08	Stand Alone Case A	ctual Plant ctual Plant			48% 1.67	85% same as above		60% 8.48	6.94	1.73	75% same as above		64% 44	111%
COB 2007-08		est Practice Plant			same as actual	same as above		8.49	]		0.13		42	
COB 2007-08 Relative to Benchmark COB w/o Area Light or Xfmr Loss 2007-08	Stand Alone Case Bo	est Practice Plant est Practice Plant			same as actual same as actual	same as above same as above	2.70	56% 7.97	j		67% same as above		59% 40	
Source Energy Conversion (Cal-Arch)	0.215.5	ourceRtu/k\Mh	Uncertainty	Campus			Utility Meters			1				
* From TE Energy Analysis Report			Estimates	Building Electricity, Power			±5% of value (95% confidence)			•				
Building peak power and equivalent chiller at building power combined Building electric measurement downstream from 12kV/480V xfrmrs at buildings.								+10% of value (95% confidence) +15% of value (95% confidence)						
The benchmark-referenced numbers reflect loads at 12kV. For buildings,				SAE I CIIII	ieu water, Gas,	Steam	<u>-</u> 13/0 01 value	(95 % COIIIIC	derice)	J				
measurements are typically at 480V and increased by a loss factor to reflect transformer and distribution losses. The numbers include a proration of central														
plant energy attributable to the building and a proration of site lighting energy.		2kV to 480V loss												
The Stand Alone Case numbers reflect loads at 480V and include a proration of central plant energy attributable to the building. Site lighting is excluded.														
Annual Building Electricity numbers exclude the proration of central plant energy.														
This instead appears as Annual Ton-hours of chilled water.  HW distribution losses included in District/Plant Efficiency. CHW distribution														
losses negligible/not observable in temperature measurements for COB and S&E I on main loop.														
Observed HW "District/Plant" Efficiency	76% Actual Plant													
Observed CHW Plant Performance (kW/ton) varies because proration of electricity is by month with plant performance varying month-to-month and the month-to-monh distribution of chiled water use varying among buildings. All values round to 0.9														
COB		ctual Plant												
S&E I Overall (Used for Equivalent Peak Power Conversions)		ctual Plant ctual Plant												
Best Practice HW District/Plant Assumption	85% B	est Practice Plant												
Best Practice CHW Plant Assumption	0.6 B	est Practice Plant	j											