



California Utility Allowance Calculator (CUAC)

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CUAC Overview

This presentation will cover the
Who?, What?, Where?, When?,
Why? and How?
of using the CUAC



What does the CUAC do?

- Using the output from Energy Commission certified building modeling software, and internal calculations, the CUAC creates a utility allowance estimate that more accurately reflects the building and unit energy efficiency measures incorporated into an affordable housing project



Who should use the CUAC?

- Energy Analysts

Although anyone download the tool, only energy analysts have the necessary training to accurately and professionally use the tool effectively

And when we say “Energy Analysts”
we mean . . .



Who should use the CUAC?

- Energy Analysts who are:
 - ✓ California Association of Building Energy Consultants' (CABEC) Certified Energy Plans Examiners (CEPE) or Certified Energy Analyst (CEA)
- AND
- ✓ Either a California Licensed Mechanical or Electrical Engineer or a certified Home Energy Systems (HERS) Rater



How does the CUAC work?

- An Energy Analyst models the affordable housing units separate from the common space areas using Commission approved energy efficiency compliance software
- Currently includes just Energy Pro, Micropass and the CECPV Calculator



ENERGY USE AND COST SUMMARY ECON-1

PROJECT NAME: _____ DATE: 1/25/2010

Rate: SCE TOU-8 (Above 50kV) Fuel Type: Electricity

	STANDARD			PROPOSED			MARGIN		
	Energy Use (kWh)	Peak Demand (kW)	Cost (\$)	Energy Use (kWh)	Peak Demand (kW)	Cost (\$)	Energy Use (kWh)	Peak Demand (kW)	Cost (\$)
Jan	350	18	386	204	13	389	146	5	17
Feb	327	18	370	201	14	362	126	5	8
Mar	183	14	362	99	10	358	64	4	4
Apr	290	17	359	186	13	355	101	4	4
May	677	32	363	502	28	359	175	5	4
Jun	829	33	7,943	523	28	5,094	306	5	2,849
Jul	2,661	38	29,168	2,050	30	22,586	610	9	6,583
Aug	2,619	47	31,520	1,970	38	23,904	649	9	7,616
Sep	2,812	65	33,414	2,043	54	24,708	769	11	8,706
Oct	477	34	778	286	27	447	191	6	330
Nov	263	23	309	146	17	356	118	6	12
Dec	152	12	368	101	7	362	51	5	6
Year	11,619	65	105,401	8,313	54	79,281	3,306	11	26,140

Rate: SoCal Gas GN-10 Fuel Type: Natural Gas

	STANDARD			PROPOSED			MARGIN		
	Energy Use (therms)	Peak Demand (kBtu/hr)	Cost (\$)	Energy Use (therms)	Peak Demand (kBtu/hr)	Cost (\$)	Energy Use (therms)	Peak Demand (kBtu/hr)	Cost (\$)
Jan	974	850	725	805	778	605	169	73	120
Feb	825	854	620	704	845	534	121	109	86
Mar	748	794	565	653	648	497	95	146	67
Apr	671	885	510	589	527	452	82	58	58
May	612	424	468	541	413	418	70	11	50
Jun	576	154	443	508	141	395	68	13	48
Jul	585	150	449	515	138	400	69	12	49
Aug	578	148	444	509	136	395	69	12	49
Sep	559	148	431	492	136	383	67	12	48
Oct	583	150	448	514	136	398	70	12	49
Nov	672	513	611	576	519	443	96	6	68
Dec	887	815	684	737	740	557	149	75	108
Year	8,269	854	6,278	7,143	845	6,478	1,125	109	800

Annual Totals	Energy	Demand	Cost	Cost/sqft	Virtual Rate
Electricity	8,313 kWh	54 kW	\$ 79,281	\$ 2.07/sqft	\$ 9.53/kWh
Natural Gas	7,143 therms	845 kBtu/hr	\$ 6,478	\$ 0.14/sqft	\$ 0.77/therm
Total			\$ 84,737	\$ 2.21/sqft	

The values shown here are based upon the results of an EnergyPro Compliance energy analysis that uses Title 24 profiles as specified in the Residential ACM manual.
 EnergyPro 4.4, by EnergySoft User Number: 2288 Job Number: 090668 Page 31 of 31



How does the CUAC work?

- Energy Analyst completes the CUAC data entry process by adding data on utilities, unit configuration and appliances, Commission software estimates of energy use and/or any PV generation
- The CUAC calculates additional lighting and plug load energy use



UTILITY Allowance Calculation Tool

Start New Project | Instructions | Copy To This Project

Tool Version: 7/22/2009
Lookup Table Version: 10/5/2009 1:30:00 PM

QC and Save | Change Printer | Print Draft | Print Final | Print Annual

Project Name:

Selected Printer: Canon MP530 Series Printer

Data Input
 Calculated Output
 Final Already Printed

Editing has been disabled for this project!

Project Info | Utility Info | Apartment Details | ACM Cooling | ACM Heating | ACM DHW | Lighting | Appliances | CEC-PV | Electric End-Use Summary | Gas End-Use Summary

Site			
Address	City	Zip	Affordable Housing
<input type="text" value="Test Address 1"/>	<input type="text" value="Site City"/>	<input type="text" value="22222"/>	<input checked="" type="checkbox"/>
Owner: <input type="text" value="John Owner"/>			
Address	City	State	Zip
<input type="text" value="Owner Addr"/>	<input type="text" value="Owner City"/>	<input type="text" value="C-"/>	<input type="text" value="22222"/>
Contact: <input type="text" value="John Contact"/>			
Contact Email	Contact Phone		
<input type="text" value="contact@email.com"/>	<input type="text" value="(312) 344-5555"/>		
APN	Other Project Identifier		
<input type="text" value="FPI"/>	<input type="text" value="OtherID"/>		



Allowances for Tenant-Furnished Utilities and Other Services

Generated by TCAC Approved California Utility Allowance Calculator (CUAC)

Draft Submittal

Software Version Date: 3/26/2009
 Lookup Tables Version Date: 4/27/2009 4:00:00 PM
 Print Timestamp: 6/4/2009 4:04:30 PM

Property Address:	Developer Signature:	CUAC Project ID*: 15
	Qualified Consultant Signature:	
Locality:	Unit Type: Affordable Housing	Date: 6/4/2009

Utility or Service	Monthly Allowance						
	0 Bdrm	1 Bdrm	2 Bdrm	3 Bdrm	4 Bdrm	5 Bdrm	6 Bdrm
Heating							
Electric		\$0.30	\$0.51				
Natural Gas		\$8.01	\$14.70				
Cooking							
Electric		\$0.00	\$0.00				
Natural Gas		\$6.61	\$7.97				
Lighting							
Electric		\$3.80	\$4.40				
Other							
Electric		\$15.34	\$18.33				
Natural Gas		\$0.00	\$0.00				
Air Conditioning							
Electric		\$2.22	\$2.23				
Water Heating							
Electric		\$0.00	\$0.00				
Natural Gas		\$17.67	\$18.55				
Water							
Water	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sewer							
Sewer							
Trash							
Trash	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Rental							
Microwave							
Refrigerator							



What Projects should use the CUAC?

- New projects built to 2005 or later energy efficiency standards
- OR
- Projects for which affordable housing agencies are willing to accept the CUAC's output



When should the CUAC be used?

- As early as possible in the development process and then iteratively throughout the project's development as necessary
- When the project has been completed and begins leasing up
- Annually thereafter



What are the disadvantages of using the CUAC?

- May not be cost effective for smaller projects
- May not work well for high-rise residential projects
- May not be cost effective for projects in areas with Energy Efficiency Based Utility Allowances
- At present, not intended for use with older affordable housing
- Your utility allowance schedules will reflect reasonably current energy pricing



What are the advantages of using the CUAC?

- The CUAC will offer you the best method of capturing the impact of energy efficiency and renewable generation measures on tenant utility costs, and translating that into cash flow
- Appropriately implements virtual net metering (VNM) for projects using PV to offset tenant energy use – at the project level
- Allows for the use of CARE rates



Wrap Up

Questions?

Resources:

http://www.gosolarcalifornia.org/affordable_housing/index.html

OR

http://www.gosolarcalifornia.org/affordable_housing/cuac.html