

Much Ado About Utility Allowances

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Utility Allowances An Energy Efficiency Financing Tool





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Presentation Topics

- **Energy Efficiency in Affordable Housing**
- **Utility Allowances and Housing Costs**
- **Energy Efficiency-Based Utility Allowances**
 - **Application**
 - **Barriers to adoption**
 - **Use and efforts to date**
 - **Impact on projects**
- **Lessons Learned**
- **Next Steps**



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Affordable Housing Development

Driving Factors for Energy Efficiency

- Increased funding for energy efficiency (LIHTC) competitive points and basis boost
- Create comfortable housing (equitable)
- Create affordable housing with lower utility costs
- Community driven missions
- NOFA/Other funding requirements, benefits, or points
- Permitting benefits (fast-tracking, reduced fees)



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Affordable Housing Development

Barriers to Energy Efficiency

- Non-profit, competing for very limited funds
- Almost always a gap in funding
- Energy efficiency at risk for one of first costs to be eliminated through value engineering
- Artificially high utility allowances
- Split incentives
- Lack of expertise
- Inexperienced energy consultants



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Utility Allowance Reform

Utility Allowance Provides Opportunity Reduce Barriers

- Minor regulation arena
- Increases monthly cash flow
- Helps pay back investment in energy efficiency
- Generate more money in permanent loan financing
- Corrects artificially high utility allowances (common in areas with a high percentage of older housing stock)
- Helps to address split incentive issue



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Standard Utility Allowance Schedule

Average Utility Costs Used in Calculating Total Housing Costs (Housing Burden)

- Averages across varying vintages (1950s, pre-energy code, and new construction) and considers consumption, price, and unit size
- Established based on formula/usage but does not consider energy efficiency
- Are established for affordable housing and subtracted from the total cost of housing amount a tenant pays
- (Rent + Utilities = Housing Burden = 30% Income)



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Standard Utility Allowance (SUA) Schedule

\$500/month Housing Burden



Standard Utility Allowance

Total Housing Burden \$500/mo

Utility Allowance \$100/mo

Developer Rent \$400/mo

Tenant Utility Costs \$100/mo



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Energy Efficiency-Based Utility Allowance Schedule

So, it makes sense that if a project is energy efficient, it should be entitled to a lower utility allowance.

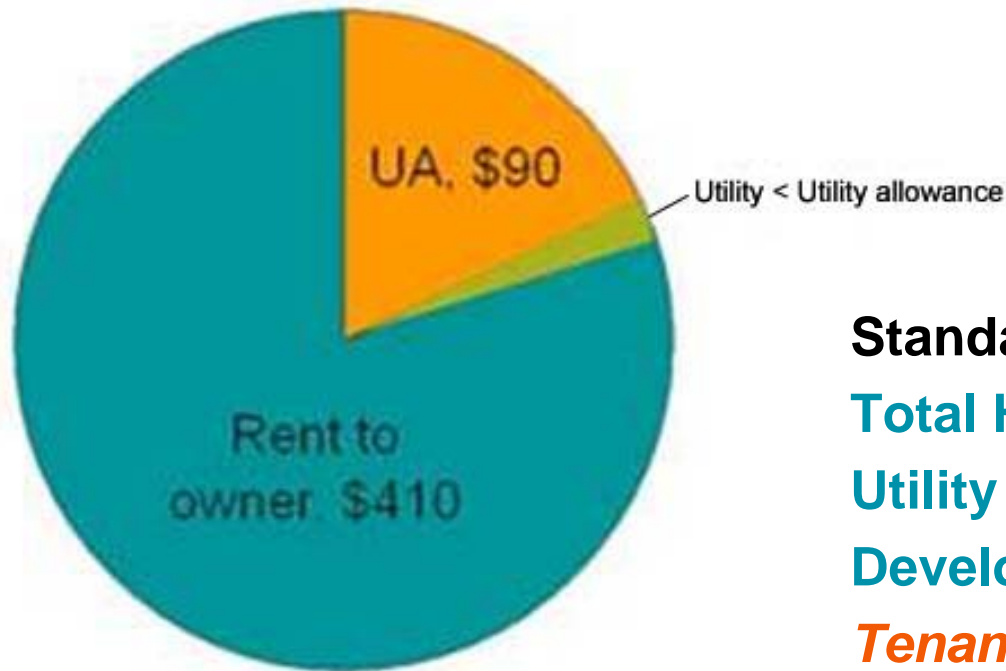
Energy Efficiency-Based Utility Allowances:

- Lower the amount of the utility allowance and shifts it back to the developer to pay back investment in energy efficiency
- Not a substitute for Standard Utility Allowance
- An added energy efficiency category



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Energy Efficiency-Based Utility Allowance (EEBUA) Schedule



Standard UA

Total Housing Burden	\$500/mo
Utility Allowance	\$ 90/mo
Developer Rent	\$410/mo
Tenant Utility Costs	\$88/mo

Safety factor in favor of tenant

Owner's rent increases \$10/mo and tenant's net utility costs decrease \$2/mo without changing total housing burden



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About the EEBUA Tool

Methodology:

- Like SUA – represents average energy use for energy efficient projects
- Lower adjustment of the numbers of SUA
- Retrofit – 20% improvements corresponds to a 20% reduction in energy costs
- New Construction – Building simulation - develop a ratio of energy use in energy efficient new construction (15% above code) compared to a typical existing building (pre 1980 building practices). Ratio applied to SUA



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About the EEBUA Tool

Methodology:

- Considers only allowances for space heating, cooling, and water heating for each unit type (multifamily low-rise, high-rise, and single family)
- Water, sewer, trash, and plug load not modeled
- “Safety factor” in favor of tenant (75% of savings to developer 25% to tenant) - PHA can choose otherwise
- Provide tool to PHAs to update when rates change or SUAs are updated - BUT, tool needs to be updated to reflect energy code changes (every few years)



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EEBUA Applications

EEBUA Can Apply to:

- New construction projects that exceed California's Title 24 energy code by 15% - mostly adopted, easily accepted
- Potentially apply to rehab construction projects that improve efficiency by 20% over existing conditions – trickier, but area in which EEBUA is most needed and yields highest energy savings (more about rehab/retrofit)
- Up to adopting body to set performance thresholds
- Be applied it consistently with utility incentive programs and TCAC funding requirements



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EEBUA Process and Verification

How it works for financing packages:

- PHA grants *conditional* EEBUA use approval for financing package based on
 - *Title 24 calculations indicating level of energy efficiency*
- PHA grants *final* EEBUA use approval upon completion based on:
 - *HERS Completion Report confirming installation of measures indicated in Title 24*



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Impact on Tenant's Utility Bills From Energy Efficiency-Based Utility Allowance

Housing Authority of the County of Monterey				
	SUA		EEBUA	
UTILITY OR SERVICE	2-BR	3-BR	2-BR	3-BR
Gas Space Heating	\$15	\$17	\$9	\$11
Space Cooling	\$0	\$0	\$0	\$0
Gas Water Heating	\$7	\$8	\$6	\$7
Basic Allowances	\$11	\$13	\$11	\$13
Cooking	\$5	\$7	\$5	\$7
Water	\$18	\$21	\$18	\$21
Garbage Collection	\$12	\$12	\$12	\$12
Sewer	\$9	\$9	\$9	\$9
Range/Microwave	\$9	\$9	\$9	\$9
Refrigerator	\$13	\$13	\$13	\$13
Microwave	\$2	\$2	\$2	\$2
TOTAL	\$101	\$111	\$94	\$104
Delta			\$7	\$7



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Increased Cash Flow From Energy Efficiency-Based Utility Allowance

Mortgage Amount	\$963,000	Rental Income (Tier 1)	\$274,637	Other Income	\$4,800					
Upgrade Cost	\$5,000	Rental Income (Tier 2)	\$279,063	Operating Expense	\$105,000					
Mortgage Rate	4.50%	Vacancy Rate	5.00%	Expenses	3.50%					
				Rent and other Rates	2.50%					
Standard Schedule										
Year	1	2	3	4	5	6	7	13	14	15
Rental Income	\$274,637	\$281,503	\$288,541	\$295,754	\$303,148	\$310,727	\$318,495	\$369,356	\$378,590	\$388,055
Other Income	\$4,800	\$4,920	\$5,043	\$5,169	\$5,298	\$5,431	\$5,567	\$6,455	\$6,617	\$6,782
Gross Income	\$279,437	\$286,423	\$293,584	\$300,923	\$308,446	\$316,157	\$324,061	\$375,812	\$385,207	\$394,837
Vacancy	\$13,972	\$14,321	\$14,679	\$15,046	\$15,422	\$15,808	\$16,203	\$18,791	\$19,260	\$19,742
Effective Gross Income	\$265,465	\$272,102	\$278,904	\$285,877	\$293,024	\$300,350	\$307,858	\$357,021	\$365,947	\$375,095
Operating Expense	\$105,000	\$107,625	\$110,316	\$113,074	\$115,900	\$118,798	\$121,768	\$141,213	\$144,744	\$148,362
Net Operating Income	\$160,465	\$164,477	\$168,589	\$172,804	\$177,124	\$181,552	\$186,090	\$215,808	\$221,203	\$226,733
Debt Service	\$89,669	\$89,669	\$89,669	\$89,669	\$89,669	\$89,669	\$89,669	\$89,669	\$89,669	\$89,669
Residual Cash	\$70,797	\$74,808	\$78,920	\$83,135	\$87,455	\$91,883	\$96,422	\$126,139	\$131,535	\$137,065
Cumulative Residual	\$70,797	\$145,605	\$224,525	\$307,660	\$395,115	\$486,998	\$583,420	\$1,263,823	\$1,395,357	\$1,532,422
Energy Efficiency-Based New Construction Schedule										
Year	1	2	3	4	5	6	7	13	14	15
Rental Income	\$279,063	\$286,040	\$293,191	\$300,521	\$308,034	\$315,735	\$323,628	\$375,309	\$384,692	\$394,309
Other Income	\$4,800	\$4,920	\$5,043	\$5,169	\$5,298	\$5,431	\$5,567	\$6,455	\$6,617	\$6,782
Gross Income	\$283,863	\$290,960	\$298,234	\$305,690	\$313,332	\$321,165	\$329,194	\$381,765	\$391,309	\$401,091
Vacancy	\$14,193	\$14,548	\$14,912	\$15,284	\$15,667	\$16,058	\$16,460	\$19,088	\$19,565	\$20,055
Effective Gross Income	\$269,670	\$276,412	\$283,322	\$290,405	\$297,665	\$305,107	\$312,735	\$362,676	\$371,743	\$381,037
Operating Expense	\$105,000	\$107,625	\$110,316	\$113,074	\$115,900	\$118,798	\$121,768	\$141,213	\$144,744	\$148,362
Net Operating Income	\$164,670	\$168,787	\$173,007	\$177,332	\$181,765	\$186,309	\$190,967	\$221,463	\$227,000	\$232,675
Debt Service	\$90,134	\$90,134	\$90,134	\$90,134	\$90,134	\$90,134	\$90,134	\$90,134	\$90,134	\$90,134
Residual Cash	\$74,536	\$78,653	\$82,872	\$87,198	\$91,631	\$96,175	\$100,833	\$131,329	\$136,865	\$142,540
Cumulative Residual	\$74,536	\$153,189	\$236,061	\$323,259	\$414,890	\$511,065	\$611,897	\$1,321,435	\$1,458,300	\$1,600,841
Yearly Difference	\$3,739	\$7,584	\$11,536	\$15,599	\$19,775	\$24,066	\$28,477	\$57,612	\$62,943	\$68,419



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Housing Authorities Adopted EEBUA

- Long Beach Housing Authority
- Monterey County Housing Authority
- Riverside County Housing Authority
- Marin County Housing Authority
- San Diego County HCD
- San Diego Housing Commission (NOFA)
- Yolo County Housing Authority
- Contra Costa Housing Authority
- Norwalk Housing Authority
- The City of Anaheim Housing Authority
- The Housing Authority of the County of Kern
- Sonoma County Housing Authority
- City of Santa Rosa Housing Authority
- San Francisco Housing Authority (scheduled for adoption)
- San Joaquin Housing Authority (scheduled for adoption)
- Sacramento Housing Authority (scheduled for adoption)



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EEBUA: In Practice

PHA Receptivity – Motivated:

- Helping PHAs fund energy efficiency
- Correcting artificially high utility allowances in relations to energy efficient projects
- Creating more sustainable housing
- Sense of partnership with developers in facilitating new projects and energy efficiency/green
- City/County commitments to energy efficiency/green



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EEBUA: In Practice

PHA Receptivity – Barriers:

- Lack of understanding of EEBUA concept, utility allowances and energy efficiency
- Lack of expertise/interest to review energy calculations or verification documents
- No financial benefit to PHA
- Not interested in helping developers – no sense of partnership
- Limited PHA resources – lack of staff
- Lack of explicit HUD endorsements
- Inconsistent program funding



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EEBUA: In Practice

Program Solutions to Barriers

- Lack of explicit HUD endorsements
 - ***HUD agreed to:***
 - Add an energy efficiency category to their utility allowances
 - Revise their utility allowances guidelines to include an energy efficiency category
 - Endorse and encourage EEBUA adoption
 - Granted waiver from the regulations until policy changes



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U.S. HUD Public Housing Energy Conservation Clearinghouse News Deems EEBUA a “Best Practice”

“Housing Authority of the County of Riverside, California Property owners and tenants alike are benefiting from an Energy Efficiency-Based Utility Allowance schedule developed by the Housing Authority of the County of Riverside, California. The new allowance schedule encourages multifamily owners to increase the energy efficiency of their units. By doing so, owners can increase the value and marketability of their properties while reducing utility bills. And, taking lower subsidies into account, the potential cost savings to a housing authority can be substantial. There are advantages to residents, as well, including lower energy costs and increased comfort.”



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Unintended Consequence: OGUA

On-Site Generation Utility Allowance (OGUA)

San Diego and Monterey – “Go beyond energy efficiency and address on-site generation in utility allowances”

- Adopted EEBUA and OGUA
- Developer installed PV/Solar which addresses tenant’s energy use, then if the developer agreed to pay the electric portion of the utility bills, they could eliminate it completely
- Looking at various levels of meeting demand (25, 50% etc.) to eliminate corresponding percentage of electric portion of utility allowance



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OGUA and SOLARA



**141 kW PV system designed to meet
90% of tenant electricity demand**

**Eliminated electric portion of utility
allowance**

**Resulted in \$130,000 in additional
loans**

**Affordable Housing – 56 apartments
2-story, six buildings**





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San Clemente Place

**79 Affordable One, Two
and Three Bedroom Units**

**Corte Madera, CA
Marin County**

**15% Above code/EEBUA
application resulted in \$100,000
additional permanent mortgage**

**EAH Housing
Chris Lamén + Associates, Inc**





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Pacific Grove Senior Housing Project

**49 Affordable-Senior Units
3-Story**

**Pacific Grove, CA
Monterey County**

**Energy Efficiency: 35.6% >
Title 24/EEBUA application
resulted in \$37,418
additional permanent loan
financing**



**South County Housing
Flesher + Foster Architects**



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Pacific Grove Senior Housing Project

Project Features:

- High performance windows –
SHGC: 0.39 U-Factor 0.33
- Central boilers with demand controls
- Time and temp controls





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Lessons Learned

Reality

- PHAs need help in implementing EEBUAs
- EEBUA tool should be expanded to consider all levels of energy efficiency and Solar/Photovoltaics
- Developers keen interest and key drivers in influencing governing bodies to adopt
- HUD to revise their utility allowance guidelines



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Rehab/Retrofit Opportunities

Opportunities

- Target/reward upgrades for existing multifamily buildings
- California's AB549 – directed CEC to “develop a plan to decrease energy consumption in existing buildings...state should improve existing energy efficiency policies and procedures among utilities and state energy housing agenda to improve energy efficiency of affordable housing..”
- Provides a whole-building approach to identifying the best energy efficiency options to improve by understanding how the systems work together



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Rehab/Retrofit Issues

Issues to be Addressed

- PHAs/HUD skeptical about applying to rehab/retrofit because:
 - *Tenant increase in rent, but lower utility bills – perceived increase in total housing costs*
 - *Wanted measured proof of decreased energy use*
 - *Inconsistent baseline due to varying building vintages*



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Moving Forward on Utility Allowance Reform

- Continue with EEBUAs when appropriate - standardized, easy-to-use process for projects that are 15% above code
- Develop Project Specific Utility Allowance (PSUA) tool
- Address rehab/existing project - utility allowance
- Develop review and verification protocols
 - Request to insert into existing utility new construction programs where expertise lies and programs requires same plan check and HERS verification) – so far California utility buy in
 - Train energy consultants and HERS raters
 - Could act as an energy efficiency compliance mechanism for TCAC projects (for projects that receive competitive points or additional funding for energy efficiency)



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Multifamily Buildings: High Performance Design Training

Free Training

Topics Include

- Energy Efficiency Incentive Programs
- California Building Energy Standards (Title 24) overview
- Multifamily energy efficiency design concepts
- Overview of energy efficiency measures (Site, HVAC, envelope, water heating, verification/inspections, etc)
- Case Studies
- Cost/benefit analysis approaches
- Financing for multifamily buildings: Utility, CEC , DOE, EPA, TCAC, Enterprise Communities and other possible funding
- Energy efficiency resources list



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Multifamily Buildings: High Performance Design Training

June 19, 2008

9:00 a.m. to 4:00 p.m.

Edison AGTAC

4175 South Laspina

Tulare, CA 93274

800-772-4822 or 559-625-7126

To register, please visit our website

<http://www.h-m-g.com/multifamily/Training/default.htm>

**For more information, please contact
Julieann Summerford at 760-436-7002**



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Multifamily Buildings: High Performance Design Training

May 6, 2008

9:00 a.m. to 4:00 p.m.

Camden Community Center

San Jose, CA 93274

800-772-4822

Sacramento Region Training June/July Date TBD

To register, please visit our website

<http://www.h-m-g.com/multifamily/Training/default.htm>

For more information, please contact

Sohpia Hartkopf at 916-962-7001



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Affordable Housing Energy Efficiency Handbook

FREE

- Provide your card or full contact information for a hardcopy today

or

- Download at www.h-m-g.com/multifamily/aheea
- Basic concepts of energy efficiency and integrated design
- Details on various energy saving measures
- Possible funding sources and assistance
- All about Energy Efficiency-Based Utility Allowance Schedules

...and more





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