

Energy Efficiency-Based Utility Allowance – Increasing the Affordability of Affordable Housing

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ABSTRACT

This paper describes and addresses the unique barriers to energy efficiency existing in the Affordable Housing market. This paper also defines Energy Efficiency-Based Utility Allowance schedules (EEBUA) and how it addresses these barriers as well as present case studies of the financial and energy savings impact on specific projects throughout the state. Finally, the paper will provide an update on HUD's plans to support adopting EEBUA nationwide.

Definition of the Issue

The affordable multifamily housing market is considered “hard to reach” because of unique and challenging market and institutional barriers. The political and economic climate changes swiftly, leaving the market with a priority of keeping people in homes and not on energy efficiency, which makes homes more affordable. Since 2002, California housing authorities have been adopting EEBUAs in order to improve the economic equation for energy efficiency in the affordable housing sector.

Issue Approach

This paper will elaborate on the EEBUA concept and its impact on market barriers such as:

- Fundamental economic disincentives: Many types of affordable housing have standard utility allowances (UAs). The standard UA schedule assumes that all similar size housing units, despite vintage, are equally energy-efficient and assign the same utility allowance. This removes incentive for developers and property owners to invest in energy efficiency improvements because all of the benefits of the reduced utility expenses flow to the tenant.
- Financial barriers: Funding, or lack thereof, is a fundamental issue for most non-profit affordable housing developers. Because the funding process is so competitive and labor intensive, developers are prone to minimizing the costs that need to get funded.
- Knowledge and institutional barriers: Fundamental knowledge and institutional barriers due to funding cuts and staffing shortages get in the way of housing authorities adopting EEBUAs to favor energy efficient projects.
- HUD endorsement of the EEBUA concept has been slow in coming which has initially deterred some PHAs from adopting EEBUA.

Issue Importance

EEBUA helps to overcome the above barriers. By working with housing authorities to adopt, implement, and market EEBUA, a California ratepayer funding program intended to provide housing authorities with staff training on how to implement the EEBUA and even administered the EEBUA on behalf of short-staffed PHAs. EEBUA offers affordable housing owner-developers not only the shared savings benefits of the EEBUA but also increased cash flow to help pay back their investment in energy

efficiency.

Policy Implications

After discussing this innovative and intricate program theory, the paper will discuss the progress in working with housing authorities to adopt the EEBUA, the financial and energy savings impact of EEBUA on specific projects and HUD's plans to endorse EEBUA nationwide.

INTRODUCTION

To respond to the growing multifamily housing development trend, in 2000, I was the residential new construction program manager at SDG&E and working with the Heschong Mahone Group (HMG), initiated the first multifamily new construction program in the state of California. Affordable housing developers quickly became the most responsive sub sector as they had several driving factors: 1) increased funding for energy efficiency through Low Income Housing Tax Credit (LIHTC) competitive points and, 2) the desire to create comfortable housing, 3) adhering to their community driven missions, and 4) creating affordable housing which includes lower utility bills. Despite these drivers, the nature of most affordable developers being non-profit and competing for limited funds always left a gap in the costs of developing high performance projects and building a project with as little funds as possible oftentimes left energy efficiency upgrades out of the funding loop. We (SDG&E and HMG) then discovered a relatively simple way to help fill that funding gap through tweaking the utility allowances that would favor energy efficient projects, better reflect the energy usage of a high performance project and provide a pay-back mechanism for investments in energy efficiency all the while not impacting the tenant's total housing burden (rent and utilities). We called this new category of utility allowances the Energy Efficiency-Based Utility Allowance (EEBUA). EEBUA intended to correct two issues: 1) artificially high utility allowances and 2) the classic split incentive whereby developers invest in energy efficiency and the tenant benefits. This minor tweaking of the utility allowance schedule became the Energy Efficiency-Based Utility Allowance (EEBUA) schedule and through a largely grassroots effort, became the focus of an effort in San Diego, then in Los Angeles, and then statewide. Housing authorities in California have adopted the EEBUA and developers in other states have expressed interest in such a policy. This resulted in getting the attention of the U.S. Department of Housing and Urban Development (HUD), who governs the way utility allowances are developed at the public housing authority level, has slowly embraced this concept and continues to pursue the mechanics of adding an energy efficiency category to their utility allowance guidelines. An unintended, but positive consequence resulting from this effort is that some housing authorities have expanded the EEBUA to apply to efforts beyond energy efficiency to include solar electric and water efficiency. Currently, the California Energy Commission is spearheading an effort to develop a Solar Utility Allowance tool that will help fill the funding gap for affordable housing developers to invest in energy efficiency and solar electric systems through their New Solar Homes Partnership (NSHP).

This paper describes the concept of the EEBUA, the methodology in which EEBUAs are developed, discusses the evolution, successes, and challenges of implementing programs promoting the adoption and use of EEBUA over the course of four programs, lessons learned from the evaluation process, HUD's involvement to date, the current status of efforts to embrace the concept, and recommendations for future success and applicability on a national basis.

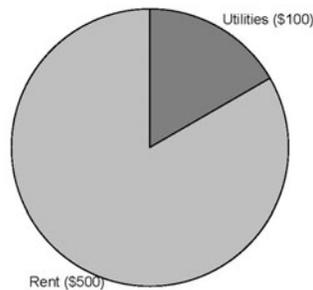
STANDARD UTILITY ALLOWANCES

For low-income tenants, housing costs are called “housing burden” and the sum of rent and utilities. The housing burden is set at a certain percentage of the tenant’s income level – typically 30% of area median income. For example, 30% of a household with an income of 24,000/year would be \$600 per month. This housing burden would be capped at \$600/month. However, this is not the amount of rent that the owner-developer could receive. The amount of rent is determined by the housing burden minus the utility allowance for that unit. For example, if the housing burden is \$6500 for a 2 bedroom unit and the utility allowance is \$100, then the owner-developer could charge no more than \$500 per month in rent. The Standard Utility Allowance (SUA) is set by the local housing authority.

The SUA is the utility costs averaged across a public housing authorities’ housing stock with vintages varying between 1940s buildings to new construction and varying unit sizes. High SUAs may be a disincentive for developers to build new projects or invest in energy efficiency upgrades. In California, a majority of the housing stock was built before 1980, therefore utility allowances tend to be higher than the actual energy usage in new construction or energy efficient projects.

The standard utility allowance (SUA) is a factor in calculating low-income tenant’s housing costs, called the “housing burden.” The housing burden is capped at a percentage of the tenant’s income and is a sum of rent and utilities. In the example in figure x below, the total housing burden is capped at \$600 per month based on 30% of the tenant’s income. The standard utility allowance for this unit is \$100 per month; therefore the developer/owner can charge \$500 per month for rent.

Standard Utility Allowance



Standard Utility Allowance	
Developer Rent	\$500
+ Utility Allowance	\$100
Housing Burden	\$600

Calculating Utility Allowances

The U.S. Department of Urban Development (HUD) provides guidelines on developing utility allowances through two methods:

1. **Engineering-Based Methodology.** Allowances are based on engineering calculations, standardized consumption tables, and/or in-house information; or
2. **Consumption-Based Methodology.** Allowances are developed using actual consumption data from dwelling units in the PHA's portfolio

Advantages of the Engineering-Based Methodology. The energy requirements of an "energy-conservative household" can be estimated using this methodology. They should be recalculated whenever major changes are made to the developments. The PHA does not need to obtain actual consumption data for its residents to use this methodology

Disadvantages of the Engineering-Based Methodology. PHAs must have certain technical information available, such as heat loss calculations, efficiency of appliances and equipment, and weather data. The allowances are not linked to actual consumption and may be far off from actual consumption patterns.

Advantages of the Consumption-Based Methodology. This methodology is familiar to most PHAs. For smaller PHAs with a homogeneous housing stock and readily-available consumption data, this methodology may be simpler than the engineering-based methodology.

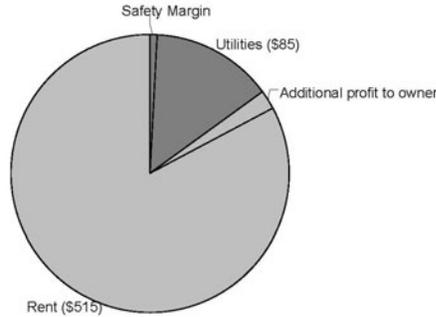
Disadvantages of the Consumption-Based Methodology. This method does not provide insight into what proportion of usage may be attributed to wasteful consumption, so there is no guarantee that the average consumption for a given allowance category is representative of an "energy-conservative household." When the three-year rolling base approach is used, consumption data must be obtained every year and allowances must be recalculated annually. Where utilities are individually metered (resident-paid), obtaining the consumption data from the local utility can be a burdensome and expensive process.

Energy Efficiency-Based Utility Allowances

The Energy Efficiency-Based Utility Allowance (EEBUA) schedule is based on the Standard Utility Allowance (SUA) and is a lower utility allowance for energy efficient projects. EEBUA corrects a long-standing, split-incentive problem by bringing utility allowances more in line with utility costs for projects that are energy efficient. The rationale for this schedule is that developers who build energy efficient affordable housing (or owners who improve the efficiency of existing properties), to reduce utility costs to the tenants, should be allowed to reap some (not all) of the economic benefit of their investments. A lower utility allowance, resulting in slightly higher rents, allows the owner to receive a portion of the money that the utility company would otherwise have collected – without increasing the tenants' total housing burden (rent plus utilities). Further, the model that is used to calculate the lowered (energy efficiency-based) utility allowance ensures that the tenant saves as well. EEBUA thus provides a long-term mechanism to provide a pay-back for investments in energy efficiency.

In the example below, the total housing burden is capped at \$600 per month based on 30% of the tenant's income. The energy efficiency utility allowance for this unit is \$85 per month, which is \$15 less per month than the SUA; therefore the developer/owner can charge \$515 per month for rent. The owner gets additional income without increasing the tenants housing burden - \$600 per month.

Energy Efficiency-Based Utility Allowance



Energy Efficiency-Based Utility Allowance	
Developer Rent	\$515
+ Utility Allowance	\$85 (Tenant Utility Cost \$80)
Housing Burden	\$600
Owner's rent increases \$15/mo and tenant's net utility costs decrease \$5/mo without changing total housing burden.	

EEBUA Applicability to New Construction and Rehabilitation Projects

The concept of EEBUA is easily applied to new construction. However, it is equally as (if not more) important to be applied to older housing to encourage energy efficiency in rehabilitation projects where energy savings may be substantial. A PHA can establish a performance threshold for both new construction (typically 15% better than code) and rehabilitation (typically a 20% improvement over existing conditions). The threshold for retrofit is higher than for new construction because the baseline for existing conditions is much lower than the baseline for new construction.

Energy Efficiency-Based Utility Allowance Schedule Methodology

The methodology used to develop an Energy Efficiency-Based Utility Allowance (EEBUA) schedule is not a substitute for creating a utility allowance schedule, but rather builds upon it. The Energy Efficiency-Based Utility Allowance involves two paths, one for new construction built to 15% better than the current standards, and one for existing construction that has been retrofit to improve energy performance by 20%. In both cases, the existing utility allowance schedule is used as the representation for *average* energy use. With this as the baseline, the Energy Efficiency-Based Utility Allowance schedules are produced by adjusting the numbers in the Standard Utility Allowance schedule to represent energy efficient versions. Below is a summary the methodologies used to develop both the Energy Efficiency-Based Utility Allowance schedules for retrofit and new construction.

Energy Efficiency-Based Utility Allowance for Retrofit. Adjusting the Standard Utility Allowance schedule for energy efficient retrofit projects is very straightforward. A 20 percent improvement in energy efficiency will correspond to at least 20 percent reduction in energy costs. However, a “cushion” is built into the adjustment to ensure that the tenant benefits by reducing the utility allowance benefit by only 15 percent. The Standard Utility Allowance schedule is proportionately reduced to produce the Energy Efficiency-Based Utility Allowance schedules for retrofit buildings.

Energy Efficiency-Based Utility Allowance for New Construction. The process for adjusting the standard utility schedule for energy efficient new construction is more complex. We used computer modeling to develop a ratio of energy use in efficient new construction compared to typical existing construction. We analyzed the performance of a set of typical buildings with a set of features representing an average of building vintages (e.g., 1980 building practices). We then used these results to create a ratio between the energy performance of the “existing construction” models and the performance of those same buildings as if they were built to a standard 15 percent better than the current energy standards. That resulting ratio is then applied to the existing utility allowance schedule to generate the Energy Efficiency-Based Utility Allowance schedule for new construction.

The “Safety” Factor. For both of the methods used to develop the Energy Efficiency-Based Utility Allowance schedules, further “safety factor” was applied to the adjustment factors. Within our tool, only 75% of the savings from energy efficiency actually goes to reducing the utility allowance. This serves the dual process of providing a built-in cushion to protect the tenants and passes some of the economic benefit directly to the tenants.

The Energy Efficiency-Based Utility Allowance Schedule Tool. A relatively simple Microsoft Excel spreadsheet tool can be used by the Housing Authorities to update the Energy Efficiency-Based Utility Allowance schedules. The tool requires the user to input the following information:

- Standard allowances for space heating, space cooling, and water heating for each unit type.
- Percentage of existing housing stock by type (multifamily, high rise, and single family).

The tool’s output is the adjusted set of allowances for an Energy Efficiency-Based Utility Allowance schedule for new construction and retrofit buildings based on the updated Standard Utility Allowance schedule.

EEBUA: In Practice

A two-year, statewide program with the intent to promote, calculate, and implement EEBUA was launched in 2004. The program aimed to work with PHA’s to develop an EEBUA, based on their existing SUA, provide EEBUA policy adoption assistance, market EEBUA to area developers, and provide technical implementation assistance during the funding cycle. Specifically, the program offered informational materials, customized EEBUA schedules for each PHA, technical assistance, and a technical report, policy language and adoption assistance and implementation assistance.

The developer would apply for the EEUBA by providing energy calculations proving that the project was designed to be energy efficient. The PHA would review the energy calculations to determine the compliance margin and grant “conditional” approval so that the developer could demonstrate the increased cash flow in their financing package. Upon completion of the project, the developer would submit verification documentation (proving that the measures in the energy calculations were indeed installed – by a certified Home Energy Rating System (HERS) rater) for the PHA review. Upon verifying the HERS completion report, the PHA would grant final approval for the developer to begin using the EEBUA.

Encouraging PHAs to adopt an EEBUA proved to be more of a challenge than anticipated. Program implementers encountered numerous barriers to PHA adoption. These barriers are discussed in the subsequent section. Several program mid-course corrections helped to steer the effort more successfully, however, numerous barriers remain that are in the process of being addressed – post program.

Despite these barriers, the program met its EEBUA adoption goals and by the end of funding cycle (December 2005), 14 PHAs have adopted, or are in the process of adopting 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	San Francisco Housing Authority (scheduled)
San Joaquin Housing Authority (scheduled)	Sacramento Housing Authority (scheduled)

Evaluation (Kema Services, Inc.) efforts found PHAs were motivated to adopt EEBA for various reasons: 1) PHAs were committed to finding a solution to helping affordable housing developers fund energy efficiency, 2) correcting artificially high utility allowances in relation to energy efficient projects, and 3) to creating more sustainable housing. Participants were satisfied with the program services; however, a few PHAs cited some reasons for delays in adopting EEBUA or for not adopting at all. These barriers are discussed below.

Barriers to EEBUA Adoption

Barriers to adopting EEBUA were primarily focused on PHA staff’s lack of understanding of EEBUAs and energy efficiency and their lack of expertise in comprehending the documents that verify energy calculations and verification. This lack of expertise is due in part because it is generally not a priority or expected of the PHAs to become familiar with energy efficiency but also due to the lack of PHA staffing resources in accomplishing their priorities of providing housing. The barriers to easier adoption and implementation are summarized below and include lack of PHA resources, understanding, expertise, HUD support, and continued funding to provide technical and implementation support.

PHA Lack of Understanding the EEBUA Concept, Utility Allowances, and Energy Efficiency. Most PHA staff had difficulty in understanding the EEBUA concept and some did not understand the methodology in developing their own SUAs. There was a general lack of understanding of energy efficiency and its impact on lowering utility bills and making homes more affordable.

PHA Lack of Expertise. Equally as important is that the PHA staff does not have the technical expertise, or the interest, to review energy calculations or verification documents no matter how streamlined the program intended to make it. Also PHAs thought that having an additional utility allowance schedule unnecessary level of complexity.

No Financial Benefit to PHA. Most housing authorities embraced the concept that an EEBUA could help encourage more new development in their jurisdictions. Other housing authorities claimed that did not want to implement a new program unless there was a direct financial benefit for them. One PHA claimed that they did not care that it benefited their affordable housing developers.

Limited PHA Resources – Lack of Staff. Most PHAs were understaffed and spent most of their resources lobbying against Federal funding cuts for Section 8 housing subsidies, dealing with the impacts of those cuts, and subsequent staff layoffs. Their focus was to “keep people in homes” rather than adopting and implementing energy efficiency benefit program - which seemed like a “luxury item.” Further, many PHAs were concerned about the administrative burden of implementing EEBUA.

Lack of Explicit HUD Endorsement. Because of past experiences with HUD audits, many PHA’s will not adopt innovative policy unless it is endorsed by HUD. HUD was very slow in responding to PHAs request and would give a verbal nod to adopting EEBUA and even included a PHA’s adoption of EEBUA in

their newsletter deeming it a “best practice” but could not provide the PHAs with a written approval. Therefore, some PHAs would not adopt without it.

EEBUA Applicability to New Construction and Rehabilitation Projects. Some PHAs were leery of adopting EEBUA for existing projects slated for rehabilitation because it would be perceived as an increase in their housing costs (in particular, rent) and not as a rebalancing of the rent and utilities equation. In many cases, PHAs only adopted EEBUA for new construction because the rent would be set at the different rate, rather than changed during the course of the tenant’s lease. In one case, a PHA brought in various tenant’s rights groups and Legal Aid Society to vet the idea before considering adoption. After several discussions, the tenant’s agreed that having a more efficient and comfortable home was worth the restructuring of the utility allowance – just as long as there was a safety factor and the total housing burden did not increase. That PHA subsequently adopted EEBUA.

Also, HUD had agreed to support EEBUA for new construction, but asked that the program no longer promote EEBUA for existing rehab projects until they were more comfortable with a methodology for calculating the energy savings. The rehab market provides the greatest opportunity for energy savings as well as to improve comfort and value in existing affordable housing. As a result of California’s AB 549 which directs the California Energy Commission (CEC) to “investigate options and develop a plan to decrease wasteful peak load energy consumption in existing residential and nonresidential buildings,” the CEC response recommendation that “By 2010, the State should improve and coordinate existing energy efficiency policies and procedures among utilities and State energy and housing agencies to improve the energy efficiency of affordable housing¹,” EEBUA would be a valuable solution to targeting the affordable existing market and is discussed under the “Emerging Opportunities” section.

Inconsistent Program Funding. Since the program funding cycle ended, many PHAs, who had adopted late in the funding cycle, or have now decided to adopt, have been left without technical assistance.

The program created momentum whereby PHAs and developers are seeking assistance in adopting EEBUA, but the funding cycle ended and the opportunities lost. PHAs were also leery of adopting a policy that the program would support during the funding cycle, but once the funding ended that they would be left to their own to implement. Since the program ended, many PHAs have approached the implementers with interest to adopt an EEBUA, but with no program funding there was no support for PHAs.

During the course of the program, mid-course corrections were made to address barriers encountered along the way. Some of the issues required a solution that either would have taken longer than the program funding cycle, or required larger policy decisions at the state or national level. Below is a summary of the solutions implemented to address those feasible within the program scope.

Program Solutions to Barriers

Two barriers addressed during the program are the limited PHA resources, lack of expertisem and lack of HUD endorsement. The remaining barriers are being addressed through other programs and are summarized in the policy recommendations section.

Addressing Limited PHA Resources. The program stepped up to provide a higher level of service to the PHAs in adopting the policy and implementing EEBUA. By writing board policy, presenting at board meetings to adopt EEBUA, and by acting as an extension of the PHA staff in marketing EEBUA to area developers by holding EEBUA workshops and by reviewing incoming applicants, their documentation (calculations and verification), helped to reduce the burden on the PHAs. However, with the funding cycle

¹ Options for Energy Efficiency in Existing Buildings – California Energy Commission Report: December 2005 CEC-400-2005-039-CMF.

ending and PHA staff turn over, implementation of previously adopted EEBUA policies have fallen by the wayside in several cases.

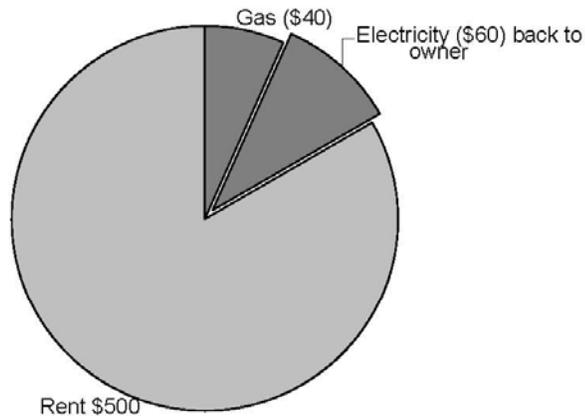
PHA Lack of Expertise. For most of the PHAs, the program staff had to review the energy calculations and HERS Rater inspection reports. The PHA staff does not have the expertise to understand that energy calculations and verification process, so the program compensated by reviewing these documents for them. However, when the program funding ended, the PHAs struggled with this issue.

Lack of Explicit HUD Endorsement. Not until the end of the program funding cycle, did HUD come through with a solution to the PHAs who requesting written endorsement to adopt EEBUA. HUD did so by way of a “waiver from the regulations,” which stated that the PHA could deviate from the HUD regulations and adopt EEBUA. This did not appear to be a positive endorsement and those PHAs that requested approval have not moved forward with adoption. HUD has repeatedly indicated that they are committed to changing the Utility Allowance Guidelines to include an energy efficiency category, but that they must go through their formal rulemaking process which has not yet begun after several years and is quite a lengthy process. So, the short term fix did not prove fruitful, but at least HUD is paying attention now.

An Unintended Consequence: The On-Site Generation Utility Allowance (OGUA)

One unintended, but positive, consequence was that that City of San Diego suggested going beyond energy efficiency and including an element to address solar, photovoltaics, and on-site generation. As a result, the County of San Diego Housing and Community Development department adopted an EEBUA and an On-Site Generation Utility Allowance schedule. This schedule indicated that if a developer installed an on-site generation system which addresses the tenant’s electric energy use, then if the developer agreed to pay the electric portion of the utility allowance, then they could eliminate the electric portion of the utility allowance. For example, one developer installed a system aimed at meeting 90% of the tenant’s electricity demand and was able to subtract out the electric portion of the utility allowance. While this is not ideal for projects that install systems that meet less demand, the goal was to encourage developers to size the system properly, to meet a greater portion of demand, and to eliminate the risk to the tenant. This effort has now evolved into a greater statewide effort that is described in the “Emerging Opportunities” section.

On-Site Generation Utility Allowance



On-Site Generation Utility Allowance	
Developer Rent	\$500
Utility Allowance Gas	\$40
+ Utility Allowance Electric	\$60 (Back to the developer)
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Housing Burden	\$600

Owner's monthly income increases \$60/mo without changing the total utility allowance or the overall housing burden on the tenant.

Big Picture: Lessons Learned

Several fundamental lessons emerged from implementing EEBUA and trying to navigate the politics of local and national housing sponsors.

- PHAs are not an ideal entity to implement an EEBUA. Given their lack of expertise, staff, and resources, PHAs should not be burdened with the EEBUA verification. Given this additional task to their already full workload, the PHAs would not have the time to promote and implement EEBUA and the quality and integrity of the EEBUA review and approval process would be compromised.
- EEBUA should be evolved to be project-based and should be expanded to consider solar and photovoltaics. While the idea of a general EEBUA that addresses projects that qualify for TCAC funding and utility programs is easily implemented, a market-driven interest in a project-based utility allowance is in motion. This effort is driven by the market that desires to go beyond 15% or to install PV/solar systems.
- Developers can be key drivers in emphasizing the relevance of an EEBUA to their projects. Developers have reported that artificially high utility allowances, or utility allowances that do not consider energy efficiency or new standards prevent them from developing new affordable housing projects in their area. With the concept of a lower utility allowance that more accurately reflects being circulated among decision and policy makers, developers have a forum to support the EEBUA concept.
- While HUD governs how utility allowances are developed, they are too far removed from the PHAs to encourage adoption and their promised support is slower in coming than the market naturally

moving forward without their guidelines. However, HUD Regional Energy Advisors are becoming increasingly involved in the California effort (that is moving much faster than HUD); HUD may more quickly response to updating their utility allowance guidelines to include and energy efficiency category or some alternative energy guidelines.

MOVING FORWARD

In California, it turns out that the solar market is now driving the evolution of the utility allowance reform concept. The California Public Utilities Commission, through its California Solar Initiative, provides over \$2 billion in incentives over the next decade for existing residential homes and existing and new commercial, industrial, and agricultural properties. The California Energy Commission manages a 10-year, \$350 million program to encourage solar in new home construction through its New Solar Homes Partnership. As part of the New Solar Homes Partnership, the CEC is creating an additional incentive for affordable housing developers to install solar electric systems. The CEC created an Affordable Housing Committee (AHC) to address issues specific to affordable housing. To date, a large portion of the discussion has surround utility allowances and how they can more accurately reflect the actual usage of energy efficient projects and projects with solar. To this end, the AHC has suggested that the CEC take the following actions:²

- The CEC should develop spreadsheet tool that can take inputs from the Energy Pro, eQUEST or MICROPAS software used in Title 24 energy calculations, the CEC's PV production software and determine, using the appropriate utility tariffs, an accurate estimate of tenants' utility costs.
- That the CEC lead a coalition of interested parties in development of the tool. At a minimum the coalition should include the California Tax Credit Allocation Committee (TCAC), the investor owned and municipal utilities (IOUs and Munis), associations representing California's PHAs, associations representing affordable housing developers, U.S. Housing and Urban Development (HUD), and the California Public Utilities Commission (CPUC).
- That the process whereby the tool would be applied, and the results used for specific projects, be made as simple and straightforward as possible (e.g., use the same plan check contractors that the utilities hire for verifying the Energy Pro, eQUEST or MICROPAS results in their new construction programs) with oversight procedures established by the CEC.

While this effort is driven by solar, it will also encourage and benefit developers to better estimate the utility costs of projects that are energy efficient and do not consider solar as an option. At the time of this paper, the following efforts are underway:

The AHC has identified that the utility allowance model should be developed to:

- Be project-specific
- Consider energy efficiency and solar
- Ensure that the utility allowance benefits are shared by tenants and project owners
- So that the utility allowance methodology and process should minimize administrative burdens on PHAs, utility companies, the CEC, and agencies administering State housing tax credit and financing programs

² New Solar Homes Partnership, Affordable Housing Advisory Committee: *"Utility Allowance Options"* presented to California Energy Commission.

- Calculate accurate, project-specific utility consumption and cost estimates for new multifamily residential projects (accounting for measures used to exceed Title 24) and/or that have solar PV systems
- Be verified for accuracy and reliability based on post-construction project evaluation (e.g., after one and two years of tenants' bills can be collected)

Currently, the CEC and the AHC has taken the lead on the following:

- Evaluating who should develop this tool. Further, the Title 24 software authors (MicroPas and EnergyPro) have agreed that their existing software could be expanded to include a utility allowance mechanism.
- Determining the best course for implementing by presenting the idea to the IOU and munis to incorporate the implementation and verification into their existing residential new construction programs. A majority of the IOUs have agreed that this is a valuable tool in addressing the energy efficiency/solar funding gap in affordable new construction and could easily be incorporated as an additional step in their residential new construction plan check and verification process.

The CEC and AHC presented the concept to the IOUs. PG&E and SCE were very receptive to the idea of the utilities adding the utility allowance layer to their existing residential new construction programs, but indicated that they would need to address liability concerns with their respective legal departments. The same documents reviewed and approved to qualify projects for their performance-based new construction programs would be reviewed for the utility allowance. SDG&E had some liability concerns and are further investigating this issue.

Once these issues are addressed by the utilities and the CEC-funded utility allowance tool is created and incorporated into energy modeling software, the next step is developing a system/program whereby this tool can

- Help to promote utility programs to the affordable housing development community
- Provide a mechanism that utilities can claim energy savings from use of the tool
- Establish a consistent measurement and verification mechanism for energy efficiency for utility programs, PHAs granting utility allowances, Low Income Housing Tax Credit (LIHTC) funding, and other entities that provide additional benefits (permitting or funding) to energy efficient projects

At present, the utility allowance issue is gaining tremendous momentum in California and hopefully by the IEPEC conference, there will be more progress and success to report.