

Energy & Affordable Housing in California: Lessons Learned from the Field

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Executive Summary

This paper was created to share the lessons learned from Bay Area Local Initiative Support Corporation's (LISC) work to bring energy efficiency and renewable energy technology to multifamily affordable housing properties in Northern California. From 2002 – 2006, LISC participated in a partnership which created the Energy Action program, funded by California ratepayers under the auspices of the California Public Utilities Commission (CPUC). Energy Action provided engineering services, technical assistance, trainings, project implementation assistance, and financial incentives to help hundreds of publicly-funded, multifamily affordable housing properties become more energy efficient.

LISC's role within the Energy Action partnership was to be the liaison and coordinate services to nonprofit affordable housing owners, and as such, we experienced first hand the challenges affordable housing properties face in trying to implement energy efficiency upgrades. Challenges range from tight budgets requiring multiple approvals for expenditures, to overburdened staff unfamiliar with the technologies and leery of utility and third party programs. LISC's interaction with affordable housing properties also uncovered the challenges to installing renewable energy systems in this sector

Despite the challenges, upon the program's completion in March 2006, Energy Action had provided over \$350,000 in rebates, enabling affordable housing properties to achieve the following energy savings:

Demand Savings (kW)	Energy Savings (kWh)	Gas Savings (Therms)
309.75	1,534,215	77,406.72

While these savings fall short of Energy Action program goals by about one-third, we learned valuable lessons that could lead to more successful programs and more sizable savings in the future.

Lessons Learned:

LISC has analyzed the strengths and difficulties of our experience in bringing energy efficiency to the affordable housing sector, and draw the following conclusions:

- Successful interaction with the affordable housing sector requires a portfolio of services involving all stakeholders in the process of improving energy efficiency.
- Active engagement of the affordable housing sector requires intensive account management.
- The nature of the affordable housing sector and the disparity between existing incentive programs and the needs of affordable housing often act as barriers to successful energy efficiency implementation.
- Direct install program designs are most successful for implementing energy efficiency measures in the affordable housing sector.

- Providing mechanisms for project implementation are only as successful as the additional resources that are provided for knowledge transfer, therefore ensuring that the measures are properly and efficiently maintained over time.
- The “free rider” issue pertaining to the general administration of ratepayer funds is not relevant in the affordable housing sector, and therefore should not be applied when working with this community.

Policy Recommendations:

LISC believes that it *is* possible to successfully bring energy efficiency resources to the affordable housing sector. This requires effective engagement of the sector, knowledge transfer and field building, project management, financial incentives, direct install measures, and a true understanding of how the sector operates. The following is a list of LISC’s primary recommendations for creating energy efficiency resources for the affordable housing sector:

1. Restore hard-to-reach markets as a main priority for the administration of PGC funds.
2. Acknowledge the anomaly that is affordable housing and customize resources to meet its specific needs.
3. Require that funds be earmarked specifically for providing incentives for energy efficiency upgrades in affordable housing.
4. Encourage the “direct install” design for programs serving affordable housing.
5. Partner with the trusted advocates and intermediaries in affordable housing.
6. Streamline marketing.
7. Expand the CARE program to ensure greater market reach.
8. Support the adoption of energy efficient utility allowances.

Additional recommendations for bringing solar to the affordable housing sector include:

1. Provide multiple types of funding for solar installations.
2. Reduce timeline for approval processing.
3. Create regulatory changes that allow all areas in properties to connect to solar installations.

Introduction

In late 2002, Bay Area Local Initiatives Support Corporation (LISC) formed a partnership with five nonprofit and consulting organizations to provide energy efficiency resources for multi-family affordable housing properties. This effort, known as Energy Action, was funded by California ratepayers under the auspices of the California Public Utilities Commission (CPUC), and serviced affordable housing properties with five units or more throughout Pacific Gas and Electric's (PG&E) service territory (see Page 5 for more information about this program). Originally an information-only program, after the first funding cycle the program was renewed for an additional two years (2004 – 2005), at which point it expanded its services to include rebates and financing resources. Attempts to secure additional funding for the next generation of the program were unsuccessful, and as a result, the program ended in early 2006.

Upon the program's completion, more than 265 multifamily properties – representing a total of more than 25,000 units of affordable housing – participated in Energy Action. Based on energy audits and other engineering analyses conducted at the sites, the energy efficiency recommendations provided for these properties identified total annual savings of more than 3.8 million kilowatt hours, 1,500 kilowatts, and 123,000 therms. The majority of these recommendations were extremely cost effective, with simple paybacks of three years or less. As incentive to implement the energy savings identified by building energy audits, the program provided more than \$350,000 in rebates, leading to total annual savings from installed measures of: 1.68 million kilowatt hours, 554 kilowatts, and 77,407 therms.

While Energy Action achieved relative success at its completion, it was not without many challenges. LISC's experience with the program uncovered substantial barriers inherent to working with the affordable housing sector, specifically with respect to energy issues. Since LISC had the most contact with program participants, and because LISC's mission is to advance the community development field, we felt it pertinent to articulate the issues and barriers, share lessons learned, and recommend new and effective ways of bringing energy efficiency and renewable energy resources to the affordable housing sector in the future.

In addition to our experience with Energy Action, LISC's experience with both the Green Affordable Housing Coalition and involvement in financing new affordable housing projects exposed us to the impacts of solar energy issues on the affordable housing field. As the CPUC and California Energy Commission (CEC) design the affordable housing set-aside resources under the California Solar Initiative, and as these agencies grapple with meeting the state's energy needs, information pertaining to the inclusion of affordable housing in these strategies is both timely and crucial.

The purpose of this paper is to describe lessons learned from LISC's experience in the field, comment on the recent energy efficiency resources offered both statewide and in PG&E's territory for affordable housing, articulate the challenges, and recommend alternative future strategies for effectively working in this sector with regards to energy issues.

Affordable Housing¹ and Energy Use

At the beginning of this decade, Californians experienced collective shock when energy prices skyrocketed and rolling “brown outs” ensued. This energy crisis headlined in the national media, caused significant economic losses, and ultimately led to lawsuits, bankrupted utilities, and major reform for the energy industry in California.

Lost on the awareness of most Californians was the impact of the energy crisis on the affordable housing community. In the months immediately following the crisis, many affordable housing developers and providers were forced to increase the projected utility costs in their operating budgets by 25 to 150 percent². This immediate cost increase required owners to either dip into reserve accounts to pay for utility bills (thus increasing a project’s risk of insolvency) or rely on additional government subsidies (thus constraining the already limited amount of available funding for affordable housing, and jeopardizing the number of future new low-income housing units developed).

A variety of resources were made available immediately following and in the years since the California energy crisis that assisted many existing affordable housing developments in becoming more energy efficient. However, because of the various constraints inherent to this sector – restricted rents, regulated procedures, overburdened staff, lack of reserves, etc. – a substantial portion of the existing affordable housing stock in California did not access these resources and continues to operate with antiquated and inefficient equipment. These barriers will be discussed in more detail beginning on Page 18 of this report.

According to a recent report submitted by the California Energy Commission to the State Legislature, multifamily affordable housing comprises seventeen percent of California’s total housing stock³, and represents 17 – 35 gigawatt hours of potential energy savings⁴. The question is: How can state agencies and utilities design programs and resources to effectively reach the affordable housing sector and capture these significant savings?

¹ For the purposes of this paper, affordable housing is defined as housing that is publicly-assisted and regulated.

² “The Energy Crisis and Affordable Housing,” Mike Herald (Housing California) and Doug Shoemaker (Non-Profit Housing Association of Northern California), May 2001.

³ This number includes all multifamily housing in which low-income renters are living, and not necessarily just publicly assisted housing. LISC is hoping to create an unduplicated list of all publicly assisted housing in the state, but presently we know the numbers of two big components of the affordable housing resources: 1) HUD, which provides project-based subsidies to 130,000 units in 1,700 properties, and 2) the California Tax Credit Allocation Committee, which has allocated low income housing tax credits to an additional 89,000 units in over 2,500 plus properties. Once properties that are financed by the State Department of Housing & Community Development and the California Housing Finance Agency are added to the count, we expect to show that there are well over a quarter million publicly supported affordable housing units in California.

⁴ “Options for Energy Efficiency in Existing Buildings”, California Energy Commission Efficiency Committee, November 2005.

Public Goods Charge

Perhaps the greatest mechanism currently available to help the affordable housing sector become more energy efficient is the California Public Goods Charge (PGC). Originally established by the California Legislature in 1996 and then extended in 2000 through 2011, the PGC is a surcharge (around three percent) on ratepayers' utility bills. The funds collected from the surcharge support public interest programs, such as energy efficiency, low-income services, renewable energy and energy-related research and development. Approximately \$228 million is available annually from the PGC funds for energy efficiency programs, \$135 million for renewables, and \$23 million for low-income energy programs. Most affordable housing properties are eligible for all three of these funding categories.

The California Public Utilities Commission (CPUC) is the agency responsible for distributing the energy efficiency PGC funds. Originally, the CPUC allowed the four major utility companies in the state (Pacific Gas & Electric, Southern California Edison, San Diego Gas & Electric, and Southern California Gas) to coordinate appropriate programs using the PGC funds in their service territories. However, after the energy crisis, the CPUC took greater control of administering the funds and segregated 20 percent of the annual funding stream to be available for third party contractors. Many new programs were developed by third party contractors, which brought innovative program designs to the field and provided competition to the utility companies for attaining savings.

Recently, the CPUC opted to return to its preferred role of regulator and restored the task of administering the PGC funds back to the utilities. Thus, for the current funding cycle of 2006 – 2008, the utility companies (using a public process as well as advisory groups) have been responsible for selecting the programs using 80 percent of the total PGC funds within their own portfolios, as well as determining the third party contracts for the remaining 20 percent of the PGC funds. The CPUC reviews the utilities' program decisions and gives final approval.

Another recent policy shift with regard to the PGC funds is that language included in the application criteria in years past listed "hard-to-reach markets" (which incorporated affordable housing) as a high priority. Program applications which actually targeted these hard-to-reach markets received bonus points in the selection process. Unfortunately, despite efforts by advocates – including LISC, the focus on hard-to-reach markets eventually waned, such that the current 2006 – 2008 funding cycle does not list it as a top priority. This target was instead replaced by a focus on cost-effectiveness and savings – which, as will be later explained, are not easy to attain when working with hard-to-reach markets.

The next section will describe Energy Action – the program that LISC was involved with – which is an example of a third party contracted PGC program.

Energy Action Program: Lessons Learned

As aforementioned, Bay Area LISC created a partnership in 2002 with ICF Consulting, Non-Profit Housing Association of Northern California (NPH), Strategic Energy Innovations (SEI),

Association of Housing Management Agents (AHMA), and the Center for Energy and Environment (CEE). The group was named the Partnership for Energy and Affordability in Multi-family Housing, and sought to address the rising energy costs in affordable housing properties owned by nonprofit organizations, largely as a result of the energy crisis. Utilizing the CPUC's recently announced opportunity for third party contractors to bid for PGC funds, the partnership submitted a program proposal and was awarded funding in late 2002. The successfully funded program was branded as Energy Action.

Energy Action: 2002 – 2003 Program Design

During its first funding cycle, Energy Action focused on providing technical assistance, trainings and services to owners and managers of privately owned, multi-family affordable housing in the San Francisco Bay Area. The primary objective was to address the severe impact that rising energy costs had on the capacity of these owners and managers, by building an infrastructure (i.e. technical assistance, engineering analyses, and training) that could sustain long-term energy efficiency investments.

Considered an “information-only” program – meaning that Energy Action served as an information clearinghouse and did not include specific implementation and savings metrics – its first funding cycle (2002 – 2003) program design included the following objectives⁵:

1. **Reduce energy consumption and peak demand in multi-family affordable housing to reduce energy costs.** These savings will be realized through increased participation in programs such as the Statewide Multi-Family program, energy efficiency investments made using non-Public Goods funds to implement savings upgrades identified in audits, and improved building operations resulting from our training efforts.
2. **Enhance the overall equity of the California Public Utilities Commission (CPUC) program portfolio by ensuring the multi-family affordable housing market segment has efficient access to resources.** Energy Action will offer technical assistance and services to a hard-to-reach market segment, helping affordable housing providers provide adequate housing for community members that would be unable to afford housing on their own.
3. **Build the foundation for sustainable energy savings by strengthening the affordable housing technical assistance infrastructure.** Energy Action will provide training and ongoing technical assistance to help providers of affordable housing build an infrastructure that can continue to offer energy efficiency support long after this program ends.

The program channeled both large and small housing providers into existing financial programs and provided the following portfolio of services: facility energy audits, training for the organizations

⁵ PY 2002 – 2003 *The Partnership for Energy Affordability in Multi-Family Housing (Energy Action)*, submitted as a proposal to the CPUC by ICF Consulting, 2002.

owning and managing affordable housing, Peer-to-Peer Forums, a contractor referral service, a financing clearinghouse, energy performance contracting support, tenant education and training, and diagnostics, measurement and verification support.

The Partnership agreed on delegating implementation of program goals by creating specific roles for each program partner. ICF Consulting served as the project lead, coordinating all back-office tasks, including creation of collateral materials, meeting monthly and quarterly reporting requirements, serving as the program liaison to PG&E and the CPUC, monitoring progress, and subcontracting to the other partners. NPH, AHMA, and SEI assisted with marketing the program's services to its member and partner organizations. Additionally, NPH hosted the program's website and SEI coordinated the program's Peer Forum trainings. The Center for Energy and Environment's role was to perform the on-site engineering analyses for participating properties, including energy audits, technical assistance, and estimating costs and potential energy savings from its recommendations.

LISC served as the "public face" of the program. In early 2003, we hired a Program Officer (PO) to manage our role in Energy Action. The PO acted as the primary liaison between program and property staff. Specifically, the PO coordinated all program outreach and intake, explained audit results to property staff, referred properties to appropriate program resources – as well as contractors to perform the work outlined in the audit reports, trained property staff in the identification of energy efficiency opportunities and optimal building operation and maintenance, trained tenants in energy conservation and smart energy use, developed implementation plans for property staff, and referred property staff to appropriate funding opportunities, such as rebate programs.

Energy Action's approach was innovative, in that it utilized credible program partners with history and legitimacy in working with the affordable housing community, and provided continued intensive engagement with properties. This, coupled with sound technical information, structured follow-up, skill building, and knowledge transfer, were all designed to create not just energy savings, but a sustained energy efficiency infrastructure within the affordable housing community.

Energy Action: 2002 – 2003 Program Results

The 2002 – 2003 version of the Energy Action program targeted nonprofit-owned, multifamily affordable housing facilities that were either master metered (where the property owner paid for all of the utilities) or in the property's common areas (paid for by the property owner). The program achieved the following results:

- ✓ Conducted detailed energy audits for 47 properties, representing 219 buildings and 5,949 units;
- ✓ Presented four Energy Efficiency for Operations and Maintenance trainings to organizations representing more than 7,000 units;
- ✓ Presented ten Energy Efficiency for Property and Asset Managers trainings to organizations representing more than 7,000 units;
- ✓ Presented twelve Energy Efficiency for Tenants trainings to properties representing 3,000 units;
- ✓ Facilitated four Peer Forums and created a Peer Network, including a monthly newsletter, to allow affordable housing managers and owners to share information and resources;

- ✓ Completed technical assistance services for forty properties, representing more than 6,000 units;
- ✓ Provided rebate referral information, including one referral that resulted in more than \$14,000 in rebates for one property.

The program identified more than \$600,000 in potential energy savings throughout the 47 properties it analyzed. In addition, it met or exceeded all of its program goals (which included metrics for trainings, energy audits, technical assistance, etc.), with the exception of one: helping properties submit financial assistance applications to implement recommended projects. Indeed, the program managed to help only one property out of its total goal of 25 to get rebates and implement a project. This reality struck at the heart of the valuable lessons learned from the 2002 – 2003 Energy Action program.

Energy Action: 2002 – 2003 Program Lessons Learned

Through the first funding cycle, Energy Action was successful in laying the groundwork for increased energy efficiency in affordable housing. However, the challenges in helping properties actually implement the recommendations provided by the program resulted in significant insights into working on energy issues with the affordable housing sector. Ultimately, the partnership learned the following lessons at the conclusion of the first funding cycle⁶:

Lesson #1: Successful interaction involves meeting the affordable housing sector on its own terms. By involving partners with roots in the affordable housing sector in the program’s design and services – such as AHMA, LISC, and NPH – Energy Action gained legitimacy, enjoyed immediate rapport with program participants, and gained access to a variety of properties and staff.

Lesson #2: Successful knowledge transfer requires a portfolio of services involving all stakeholders in the process of improving energy efficiency. Energy Action approached properties comprehensively – targeting services to the property managers, who made the investment decisions; operations and maintenance staff, who maintained the functionality of the buildings; and tenants, who consumed energy in the buildings. Although very few properties implemented recommendations, it was clear that an inclusive approach that included all of the actors in a property in the process to improve the efficiency of the building would ensure the long-term success of maintaining efficiency improvements.

Lesson #3: Active engagement of the affordable housing sector requires intensive account management. Because affordable housing staff tends to be overburdened with tasks, providing the LISC PO as the central point of contact for all program elements allowed program participants to have assistance in navigating through program services and resources and streamlined their participation.

Lesson #4: Properties did not move forward with implementing program recommendations because of the nature of the affordable housing sector and the disparity between existing incentive programs and the needs of affordable housing. The following observations support this lesson learned:

⁶ PY 2004 – 2005 *The Partnership for Energy Affordability in Multi-Family Housing (Energy Action)*, submitted as a proposal to the CPUC by ICF Consulting, September 23, 2003.

- Statewide program funds, such as PG&E’s Multifamily Rebate Program, were quickly oversubscribed. Affordable housing properties are not able to turn applications and projects around fast enough to compete with market rate housing.
- Several measures recommended through Energy Action with substantial energy savings were not eligible for rebates under any PG&E programs. These included T-8 linear fluorescent lighting as well as outdoor reset/cutout boiler controls (the program recommended these to fifteen properties, which would have had a combined annual savings of at least \$140,000)⁷.
- Upfront costs prevent affordable housing properties from investing in energy efficiency upgrades. Because they have constrained resources, restricted rents, and firm budget allocations, affordable housing properties are not able to move forward with implementing energy efficiency projects, even when a project is very cost-effective. By the time funding has been secured, these properties often have lost the opportunity to take advantage of incentive programs.

The Partnership took these lessons to heart and in September 2003, a new funding proposal was submitted to the CPUC for an improved Energy Action program for the 2004 – 2005 PGC funding cycle.

Energy Action: 2004 – 2005 Program Design

Our 2004 – 2005 proposal to the CPUC was approved and funding began in March 2004. The program entailed similar services as the 2002 – 2003 version, with a few exceptions. The first is that the partner mix shifted. The Association of Housing Management Agents (AHMA) left the partnership, due to lack of involvement. Similarly, the Center for Energy and Environment (CEE) shifted its role from primary engineering and technical services provider to solely the trainer for Operations and Maintenance trainings. In addition, the program brought on three new partners – Generating Renewable Ideas for Development (GRID) Alternatives, which became the primary engineering and technical services provider; kW Engineering, which became the primary provider of detailed and customized engineering analyses; and the California Coalition for Rural Housing (CCRH), which assisted with marketing the program’s services to the Central Valley.

The second version of Energy Action shifted the program from being “information only” to a savings-based program, which meant that the program was responsible for achieving specific savings metrics through the implementation of energy efficiency projects. The program objectives expanded the original Objective 1 from the 2002 – 2003 proposal to include⁸:

- **Reduce energy consumption and peak demand in multi-family affordable housing to reduce energy costs.** These savings will be identified through no-cost facility energy surveys, and prescriptive and customized rebates and no-interest financing will support

⁷ Ibid.

⁸ Ibid.

investment in energy efficiency measures. Specific program targets are 1.6 million kWh and 200,900 therm savings per year, and slightly over 1 MW in peak demand reduction. The sustainability of energy savings will be enhanced by a combination of operations and maintenance training, property manager training and continued building of the peer network developed under the 2002-2003 Energy Action Program.

In addition to savings metrics, the program also expanded its geographic scope to include the Central Valley, targeted smaller nonprofit organizations (in addition to the larger ones that were already participating in the 2002 – 2003 program), and included the following services:

- Incentives: more than \$500,000 in rebates for energy efficient products appropriate for multi-family affordable housing properties;
- Financing: \$200,000 in short-term, zero-interest loans to help owners implement energy efficiency improvements (this service was underwritten by LISC – which has extensive experience in financing affordable housing projects. The interest was bought down to zero percent using contract funds.);
- Group Purchasing: aggregation of properties to create lower prices for purchasing energy efficiency improvements;
- Audits and Technical Assistance⁹: detailed engineering analyses of necessary efficiency upgrades;
- Trainings and Peer Networks: trainings for operations and maintenance staff, as well as property managers, to continue creating industry knowledge base and professional networks.

Energy Action: 2004 – 2005 Program Results

Energy Action's 2004 – 2005 program cycle was fraught with challenges. While properties were continually eager to participate in the energy audits, technical assistance, and trainings, they also continually struggled to implement the recommendations outlined in the reports. This was even despite the fact that Energy Action had a plethora of set-aside rebates exclusively available to the sector. Additional struggles included the fact that the housing stock in the Central Valley did not meet expectations (i.e. there were fewer than expected air conditioning systems, and fewer stacked facilities with central systems). A few properties participating in the Energy Action program implemented the program's recommendations using PG&E's Multifamily Rebates instead of Energy Action's because the same measures were available for higher rebates with PG&E's program, which also enabled contractors to install with no out-of-pocket expense to the properties.

The Partnership revisited the program design several times in an attempt to eliminate unnecessary procedures, streamline processes, and generate greater implementation of recommendations. These changes included eliminating caps on lighting equipment (originally capped at \$500 per property) and energy audits per organization (originally capped at two energy audits per organization) – both of which were originally strategies to ensure equitable distribution of resources. Further, the Partnership eliminated paperwork associated with detailed engineering services, decreased outreach to the Central Valley, and reduced the number of trainings offered in all areas.

⁹ See Sample Audit – Attachment A.

Of all the program design changes that were made, there were three that involved formal Change Orders with PG&E and the CPUC. The first two occurred simultaneously in early 2005 (one year into the program), one of which expanded the program's focus from strictly privately-owned, master-metered facilities or common metered areas to include all public and privately-owned facilities, including tenant metered areas. This change was enacted with the expectation that a greater variety of properties (including Housing Authority sites) would be served by the program and therefore a greater chance of implementation would result. The second, very important, formal change allowed Energy Action's rebates to be increased to the same amount as those included in PG&E's Multifamily Rebate Program. This meant that Energy Action would no longer cultivate program participants, only to lose them to higher incentives available through PG&E.

The final formal program change occurred in May 2005, when the Partnership realized that a more effective way to ensure implementation was to target program services not to site staff (who are often positioned at the bottom of a chain of supervisors that all must weigh in for decisions to be made – ultimately delaying the process), but to more senior staff members, and to facilitate a portfolio approach to dealing with affordable housing organizations. A strategy was created in which three large affordable housing organizations were approached: EAH, East Bay Asian Local Development Corporation (EBALDC), and The John Stewart Company. Energy Action staff formed Energy Management Teams within each organization, comprised of key facility and senior staff, and began meeting regularly with these groups to identify properties needing engineering analyses, target appropriate implementation projects, acquire funding and contractor resources, and successfully implement efficiency upgrades.

Ultimately, these changes streamlined processes and facilitated increased project implementation. After these strategies were incorporated, Energy Action staff began outreach to qualified, licensed contractors who could assist with installing recommended measures. Upon screening several contractors, three were selected and were referred to a variety of properties interested in acting on the recommendations they received from the audit reports.

As a result, rebate reservations began to flow into the program and projects were implemented. However, since other concurrently-running third party contractor programs also obtained formal Change Orders to expand their strategies to serve all affordable housing stock, Energy Action lost a few properties that had received recommendations in energy audits to such programs as Designed for Comfort and Energy Partners. Despite this loss, Energy Action continued to persevere.

Energy Action was extended until March of 2006 and in the final months of the program a total of \$545,000 in rebates was either reserved or paid out through the program. This represented 98 percent of the program's dollar amount goal for rebates. Unfortunately, as luck would have it, Energy Action experienced a last-minute barrier in that two of the contractors it was working with were unable to complete several properties' installations in time for the program's deadline¹⁰. This ultimately prevented the program from providing approximately \$200,000 in rebates to qualified properties that had reserved funds and reduced its achieved dollar amount goal for the rebates by 35 percent. In addition, the zero-interest financing available through the program was not used. In the

¹⁰ As of this writing, these properties have been assured of receiving rebates from PG&E's Multifamily Rebate Program upon installation of energy efficiency measures.

end, Energy Action was relatively successful, achieving the following outcomes through projects implemented by its rebates:

Demand Savings (kW)	Energy Savings (kWh)	Gas Savings (Therms)	Rebate \$	% of Demand Goal (kW)	% of Energy Savings Goal (kWh)	% of Gas Savings Goal (therms)	% of Rebate Goal (\$)
309.75	1,534,215	77,406.72	\$351,359.82	65.49%	72.04%	32.58%	63.38%

Energy Action: 2004 – 2005 Program Lessons Learned

In addition to the lessons learned from the 2002 – 2003 Energy Action program, the 2004 – 2005 version of the program elucidated the following lessons, which are more specific to implementation issues, reflecting the savings-based nature of the 2004 – 2005 program:

Lesson #1: Direct install program designs are most successful for implementing energy efficiency measures in the affordable housing sector. While most PGC-funded programs tend to shy away from the direct install model, it is particularly relevant to the affordable housing sector, where resources and staffing are strapped. Once Energy Action successfully engaged contractors to participate in the program, and increased the rebate amounts to cover the majority of project costs, most of the burden was lifted from property staff's shoulders, therefore allowing projects to move forward in a timely manner. Unlike the standard PG&E Multifamily Rebate Program, Energy Action was required to verify 100 percent of completed installations through inspections, thereby ensuring quality control. While the Energy Action program design was not entirely a direct install model, the elements of it that were incorporated clarified that future attempts to work with this sector will be poised for success if a direct install model is incorporated.

Lesson #2: Providing mechanisms for project implementation are only as successful as the additional resources that are provided for knowledge transfer, therefore ensuring that the measures are properly and efficiently maintained over time. Knowing how often staff turn over in affordable housing, it would have been pointless for Energy Action to merely provide energy efficient upgrades without providing training to property staff in how to maintain the measures efficiently. Comprehensive and ongoing training is therefore key to working with this sector.

One additional note on this is with respect to solar energy. During the 2002 -2003 version of Energy Action, the engineers visited several properties where solar hot water panels had been installed on the roofs ten years earlier. Despite the fact that these properties had maintenance contracts with servicing companies, the current property staff were never trained in how to maintain the systems. As a result, several solar hot water systems were either disconnected and in danger of sliding off of buildings or, in one case, the system was connected but was operating at such a low temperature that the engineers feared the property was in great danger of Legionella bacteria. Again, even the most well-intentioned energy saving projects could easily fall into disrepair if on-site staff is not given the tools to keep them operating appropriately and efficiently.

Lesson #3: The “free rider” issue pertaining to the general administration of PGC funds is not relevant in the affordable housing sector, and therefore should not be applied when working with this community. The “free rider” issue (which is an economic term that refers to customers who would have proceeded with installing energy efficiency measures without financial incentives offered by any program) is often a concern with PGC funds. Since public money is involved, it is important not to waste it on projects that would have already been installed without the intervention of an energy efficiency program. However, the affordable housing sector operates in an entirely different context. In this context, investment decisions are made less on the basis of return on investment and more on the owner’s ability to secure funding and approvals from public lenders. Thus, decisions for costly projects (such as boiler and window replacements) must be planned well in advance in order to schedule the projects into the budget cycles and ensure that reserves are prepared to absorb the expense. This process also typically involves facility managers to call upon engineers for initial project design, which also assists in estimating project budgets and costs. (The consulting engineer could provide similar efficiency recommendations as a PGC-funded program. However, the fact that this is possible should not disqualify the property from a rebate.) Further, because affordable housing is so highly regulated, large-scale projects which might include energy efficiency upgrades can often take several years in advance to plan before the project is ready to proceed with installation. This coupled with the fact that most affordable housing properties are not-for-profit entities controlled and financed by (severely constrained) public resources, makes it unreasonable to apply the same free rider standard to this sector. Since affordable housing is already a public investment, providing public energy efficiency incentives only enhances the initial public investment by leveraging resources and creating efficiencies. In short, energy efficiency incentives make affordable housing a savvy public investment. Thus free rider issues should be considered irrelevant.

We witnessed this conflict with several properties participating in Energy Action, which were planning boiler replacement projects. Although they received recommendations from program engineers and actually decided to pursue those recommendations for the most efficient boilers available, the program opted not to provide rebates for these projects because it was feared that, since they were already in the planning stages of the projects, the incentives might be perceived as a free rider conflict. LISC protested this decision at the time, but was overruled. We continue to believe that this is an unfair standard to apply to the affordable housing sector, which unnecessarily prevents valuable projects from receiving much-needed incentives.

Additional PGC – Funded Programs Benefiting Affordable Housing

Energy Action is just one of several programs funded by the PGC that benefit affordable housing. The following is a summary of existing incentive programs and other resources and our observations about how effective each has been in reaching the affordable housing market. As of March 2006, the current programs for the PGC funding cycle of 2006 – 2008 have not yet been announced. Further, our experience is primarily focused on Pacific Gas & Electric’s (PG&E) service territory. Thus, we will focus the discussion on programs in PG&E’s service territory that existed in the 2004 – 2005 funding cycle: California Alternate Rates for Energy (CARE), PG&E’s Multifamily Program, Designed for Comfort, Energy Partners, LightWash, and Energy Action.

California Alternate Rates for Energy (CARE) Program

The CARE program allows qualified low-income customers to receive a 20 percent discount on their electric and natural gas bills. In addition, these customers are shielded from certain rate hikes. An individual tenant can apply for CARE, but nonprofit owners of qualified multifamily affordable housing properties are also eligible for a CARE discount on master-metered facilities. The CARE program is an effective way of maintaining low utility rates for low-income customers.

The following chart summarizes the income requirements of the CARE program¹¹:

Income limits are effective June 1, 2005, through May 31, 2006.

Household Size	Care Income Limit
1 to 2	\$27,700
3	\$32,500
4	\$39,200
5	\$45,900
6	\$52,600
Each additional	\$6,700

Despite its benefits, there are certain aspects of CARE that prevent the program from being as effective as it could be. Our experience with several master-metered affordable housing properties was that many of these nonprofit owners who wanted to apply for CARE rates found that their property was ineligible because 100 percent of their tenants did not qualify under the income requirements. In a few cases, only a handful of tenants – who were by all means still low-income – had incomes just barely above the threshold and therefore prevented the entire property from qualifying. This further taxed the nonprofit property owners, who were trying to stay ahead of expensive utility bills. We recommend expansion of the CARE program to ensure greater market reach (see Page 22 for additional information).

PG&E’s Multifamily Rebate Program

PG&E’s Multifamily Rebate Program is designed for residential properties with five or more units to increase the property’s energy efficiency in tenant units and common areas. This program serves both market rate and affordable multifamily properties.

An extremely popular program, the Multifamily Rebate Program provides varying amounts of cash incentives for a number of energy efficiency upgrades, including efficient lighting, appliances, and HVAC equipment. Since it is available to both market rate and affordable housing properties, the program is highly competitive and is typically oversubscribed within the initial months of each calendar year.

¹¹ <http://www.cpuc.ca.gov/static/energy/care.htm>

There are a number of challenges that this program presents to affordable housing. Because the affordable housing sector operates with multiple constraints (e.g. overburdened staff, highly regulated rents and administrative processes, etc.), it is often difficult for the typical affordable housing property to act quickly with implementing projects – especially projects that entail upfront costs and require significant staff involvement. This results in very few affordable housing properties being able to compete with market rate properties (which typically have greater financial and administrative resources) for the Multifamily Rebates.

An additional problem is quality control. While not technically a “direct install” program (where the incentive includes installation services), PG&E relies on contractors to market the program and install the measures. The contractor is thus designated as the “payee” and, in many cases, is able to install the measures at the rebate price, resulting in zero out of pocket expense to the property. Because the program is competitive, most contractors are interested in quick turnarounds. This often results in little contractor oversight, especially since PG&E does not consider it to be a direct install program. This reality can often be particularly problematic for affordable housing properties, whose property managers typically have little understanding of the technical issues involved with electrical projects and do not have the time to directly oversee the installation¹². While not all contractor installations through this program are problematic, we have heard several complaints over the years from affordable housing properties that the contractor installed measures were not to the specification, were defective, and/or that the property manager felt cut out of the process and had little or no recourse.

Finally, an additional constraint for affordable housing properties is the relevancy of the incentive measures provided by the Multifamily Rebate Program. In other words, the rebates provided by the program do not always match the particular needs of affordable housing properties. For example, as noted in the lessons learned discussion of the 2002 – 2003 Energy Action program, in 2003, the Multifamily Rebate Program did not provide rebates for T-8 linear fluorescent lighting. But most of the affordable housing properties involved with our Energy Action program in 2003 received recommendations from the energy audits that included T-8 lights. In short, the need for the T-8 lighting was there, but the incentives offered by the Multifamily Rebate Program did not match the need. Fortunately, in 2004, the Multifamily Rebate Program began offering rebates for T-8 fixtures and has continued to do so through 2006.

While that particular rebate measure issue has been rectified, it does speak to the greater problem of the fact that the affordable housing sector is often in need of specific measures not always covered by the Multifamily Rebate Program. A current example of this is with refrigerators. PG&E has offered rebates for refrigerators in the past. However, because rebates are designed to stimulate demand for energy efficient technologies, they are only available until the market “catches up” and begins providing energy efficient technologies as a standard. With refrigerators, the market has matured to the point that most new refrigerators are now being sold as either Energy Star qualified or significantly energy efficient. PG&E recognized this development, and ceased providing rebates for energy efficient refrigerators. Unfortunately, many affordable housing properties were unable to take advantage of the previously available refrigerator rebates, and are still plagued with old, inefficient refrigerators. With constrained budgets and restricted rents, these properties are most in need of rebates.

¹² Quality control may also be a problem with market rate housing, but this is beyond our realm of expertise.

PG&E has not provided statistics on how many affordable housing properties access their Multifamily Rebate Program each year, but we estimate that the aforementioned barriers, particularly the timing issue – applying for the programs before all funds are committed – results in the program being effective in very few affordable housing properties.

Designed for Comfort Program

This program was offered by a third party contractor, Heschong Mahone Group (HMG). It provided design assistance, and incentives to upgrade multifamily affordable housing properties in all four utility company territories to either 20 percent better than existing energy use, 15 percent better than 2001 Title 24 standards, or in compliance with 2005 Title 24 standards. Additionally, the program offered services to single family affordable housing properties and provided assistance to Housing Authorities for structuring energy efficient utility allowances.

Designed for Comfort's approach was innovative and comprehensive. It was targeted at deeper savings opportunities – such as windows, space heating and cooling, building envelope, and water heating measures – and did not assist with “low hanging fruit” measures, such as lighting or appliances. For these measures, building owners would have to apply to other programs for assistance. Further, for multifamily affordable housing properties, the program required that pre and post installation inspections be conducted on the site, verifying that the property had significant potential savings opportunities (in the case of the pre-inspection) and actually achieved significant savings (in the case of the post-inspection). While incentives were available to defray these inspection costs, the property would not be reimbursed for these costs if its inspections did not identify savings or prove achieved savings 20 percent beyond Title 24. This program was thus most effective for multifamily affordable housing properties already in need of replace-on-fail measures for significant systems (such as boilers, windows, etc.), as well as with sizable reserves and current budget projections that included the replace-on-fail projects.

Energy Partners

This is another PG&E program offered to low-income customers, also known as the Low Income Energy Efficiency Program. The program provides weatherization and energy efficient measures to decrease the amount of customers' utility bills. We experienced many tenant units having received assistance from Energy Partners. However, there were very few common areas in multifamily affordable housing properties that were able to access the program. Further, since the program focused on specific weatherization measures, many of the additional commonly needed efficiency measures (such as lighting) were not included in the resources, or were only included in certain geographic locations.

LightWash

This program was offered by a third party contractor, Energy Solutions. Initially, it provided rebates for replacement of commercial washers with energy efficient frontloading machines. Eventually, the program also offered rebates for energy efficient lighting and water heaters.

LightWash offered resources to market rate and affordable multifamily properties as well as to commercial laundromats. It was helpful for multifamily affordable housing properties because, in the case of energy efficient washing machines, the rebate was paid directly to the water user. Since most affordable housing properties lease their washing machines, this design assured that the incentive was provided directly to the site and not to the leasing contractor. However, LightWash was only effective in multifamily affordable housing when the properties were at the end of their contracts with the leasing contractors. Since most of these contracts span several years, it was sheer luck if the program coincided with the expiring contract. It is important to note that most of the properties audited by our Energy Action program had some recommendation with regards to washing machines – as most facilities did not have energy efficient machines. So, while the need was present for these machines, this particular program only scratched the surface in the affordable housing sector. Hopefully it will continue to be available and affordable housing owners will be made aware of the program at the time their leasing contracts come up for renewal.

Solar Rebates

The California Energy Commission (CEC) administered the Emerging Renewables Program from 2002 - 2005, which was also funded by the PGC funds. The program provided rebates for new installations of photovoltaic (PV) solar panels and other renewable technologies on residential and commercial properties throughout the state. The rebates included an additional 25 percent boost for affordable housing projects. However, this program recently exhausted its rebate funds and will soon be replaced by the newly-approved California Solar Initiative – which will also provide rebates for solar PV installations and will include set-aside funds for affordable housing properties (the specifics of which are yet to be determined).

While we are aware of several newly constructed affordable housing projects that were able to take advantage of the rebates offered through the Emerging Renewables Program, at least one project – Citizen Housing's Folsom-Dore Apartments – experienced significant challenges with the program that are noteworthy. Folsom-Dore Apartments is a new construction project located in San Francisco. In June 2004, the project applied for a rebate of \$4.00 per watt (an amount that included a special boost because the project was affordable) from the CEC. The project moved forward with the planned installation of the 13.1 kilowatt rooftop system that would serve the property's common areas. However, in April 2005, when the project was about to install the system, the CEC finally responded with approval for \$3.20 per watt – a sum that did not recognize the affordable housing boost – and explained that the project was not eligible for the boost because the system would be serving the common meter and not the individual tenant meters. This issue was never outlined in the CEC's guidebook for the rebates. Thus, the project appealed and eventually received the full rebate payment of \$4.00 per watt for the system. Although satisfied with the result, the project

manager suggested that future solar rebate programs should explicitly allow incentives that cover common area meters and that the CEC should streamline its internal systems to reduce processing time (which can pose a major risk for projects waiting for approval, as the longer it takes to get word, the higher the threat of having to scramble for additional funding if the application ends up being rejected at the end of the process).

Additional Programs Benefiting Affordable Housing

Two additional energy-related resources for affordable housing include the Low Income Home Energy Assistance Program (LIHEAP) and the State of California's Tax Credit Allocation Committee's (TCAC) Sustainability Credits. Neither of these programs is funded by the PGC funds.

LIHEAP is a federal program, funded by the Department of Health and Human Services. The program provides financial assistance to help low-income residents offset the costs of heating and cooling their homes. In addition, the program offers weatherization services to increase the energy efficiency of eligible program participants' homes. Residents participating in the CARE program typically also qualify for LIHEAP. While we did not notice LIHEAP's presence in every property, we did observe impacts of the program in several properties.

TCAC is the state agency responsible for allocating federal low income housing tax credits in California. It establishes minimum construction standards and through its scoring system ensures that sustainable building methods are incorporated in developments that receive tax credits. In addition, additional boosts to the amount of tax credits awarded are available if the project incorporates certain green building and energy efficient measures into its design. Since the demand and competition for tax credits is extremely high, to be successful an affordable housing development must meet the minimum threshold as well as include certain green building methods. This has resulted in the construction of many new affordable housing properties with such characteristics as tankless water heaters, radiant floor heating, energy efficient lighting, solar PV panels, and other energy efficient features. The success of the program is proving that sustainably-built, affordable housing is possible in California.

Policy Recommendations

Since both the CEC and the CPUC have recently expressed interest in finding more effective ways to provide future support to the affordable housing sector – specifically through the PGC funds and the recently approved California Solar Initiative – we want to utilize our experience and lessons learned with respect to the intersection of energy issues and affordable housing to provide helpful policy recommendations. However, before delving into the specific recommendations, we will provide a brief overview of the general challenges that arise when dealing with energy in affordable housing.

General Challenges with Implementing Energy Efficiency in Affordable Housing

Below is a list of what, in our experience, are the general barriers to implementing energy efficiency upgrades in the affordable housing sector:

1. **Scarce financial resources.** Affordable housing properties have restricted rents, which means that they cannot just impose rent increases when costs increase or capital improvement needs arise. What little replacement reserves they have can often be quickly exhausted by unforeseen emergencies. Thus, what might seem to others as a reasonable investment cost for the property to incur for energy efficiency upgrades can often be too costly for the property to actually consider.
2. **Overburdened staff.** This applies to all levels within an organization, but particularly to property and asset managers (those who make the budget decisions and project approvals), as well as maintenance staff (who are often relied upon to either install or maintain systems). This results in reactionary behavior, where only the most immediate issues are given priority, and leaves little time for project management and/or installation of projects not considered a priority. Despite the fact that most energy efficiency projects involve financial savings, even these are often not prioritized because of more pressing concerns.
3. **Layered bureaucratic processes.** Affordable housing is a highly regulated field, such that paperwork, specific procedures, and several approvals are often required before a project can move forward. This results in slow responses, delayed projects, and a general attitude of “if it ain’t broke, don’t fix it”.
4. **Untrained staff and unfamiliarity with technologies.** Lack of training and staff turnover make it difficult for staff to maintain the installed upgrades efficiently. It also makes it difficult for staff to provide contractor oversight, in the event that measures are not installed by in-house staff.
5. **Split incentives.** This is a term referring to the fact that, in most properties, the tenants pay their own utility bills but the property owner owns the energy-using equipment. Because the property owner does not pay the bills for the tenant units, s/he has no financial incentive to make energy efficiency upgrades because s/he will not realize any of the direct cost savings. While many nonprofit, mission-driven owners still choose to make the financial investment in tenant-metered units because they believe in benefiting tenants, the majority of properties lack the capital to make upgrades throughout their properties, especially if they are not going to directly benefit from that investment.
6. **Timeline of budget cycles.** The budgets for affordable housing properties are often approved by multiple regulators, well in advance of the budget year, such that they have a very limited ability to respond to unforeseen costs during the middle of a budget cycle. Further, since most operating budgets are on an annual cycle, if an energy efficiency project is proposed during the middle of the cycle, properties must often wait until the following

cycle year to schedule any costs related to the project into the budget. This often prevents properties from taking advantage of incentive programs with brief application windows.

7. **Distrust of utility and third party programs.** Many affordable housing properties have experienced customer service problems, as well as rate issues and problematic energy efficiency upgrades provided by utilities. Further, the plethora of PGC-funded third party contractor programs in recent years often creates a bombardment of property staff and administrators. With so much information, and so little time to digest and research resources, affordable housing staff is often overwhelmed and distrustful of being contacted by utilities and third party contractors marketing new services.
8. **Lack of reliable contractors.** While this seems to be an issue relevant in any sector, affordable housing properties are particularly vulnerable to unprofessional contractors. If the work is not done correctly, staff becomes additionally distrustful and increasingly unlikely to want to engage in future upgrade projects. In our experience, the biggest complaints with regards to contractors were that the installations were not performed according to specifications, the products were defective, and/or the contractor crews were unprofessional, offensive, and disruptive to the tenant community.
9. **Verification challenges.** Because of the highly regulated nature of affordable housing, it is often very difficult to gain access to tenant units, particularly for conducting on-site verification of installed measures. Further, any program attempting to gain tenant information (e.g. utility account information) to verify services and/or conduct double-dipping checks is often exposed to limited data, either because tenants are distrustful of providing personal information or are completely unresponsive to the requests. This makes it extremely difficult to proceed with services and/or verify installed measures¹³.

General Challenges with Implementing Solar in Affordable Housing

In addition to the aforementioned barriers to implementing energy efficiency in affordable housing, in our experience, there are particular issues with regards to implementing solar that are noteworthy. The following list elucidates these issues:

1. **Sub-metering.** The aforementioned split incentive issue is also relevant to solar installations. Many new construction affordable housing projects have utilized solar only for the common areas (operating on the house meter). To our knowledge, no project has yet installed solar on the tenant-metered portions of a property. This is because of the split incentive issue for tenant-metered facilities, as well as regulatory issues that currently prevent a property owner (even if s/he was to overcome the split incentive) from generating power from a solar installation and then directing or sub-metering it to individual tenant-metered units. For solar installations to truly have a direct impact on tenants, this regulatory challenge must be overcome.

¹³ While it is possible that some of these verification challenges are not exclusive to affordable housing, it is likely that for-profit owners of market rate housing would not typically undertake upgrades that benefit tenants only, therefore alleviating them from the challenges of verifying within tenant units.

2. **Barriers for installation in existing properties.** While new construction properties can often integrate the solar installation costs into their overall financing package, existing properties are unable to carry additional new debt to finance the solar installations. Further, as aforementioned, existing properties have very limited reserve funds and are hard-pressed to incur high first costs.
3. **Maintenance issues.** As aforementioned, our experience with the engineering analyses conducted at several existing properties through Energy Action demonstrated that properly maintaining solar installations on affordable housing properties is a challenge. Similar to energy efficiency upgrades, on-site staff need to be trained in solar systems' technologies and procedures need to be formally institutionalized within the organizations to ensure that knowledge continually transfers to staff in the event that they turn over.

Policy Recommendations – Energy Efficiency

Despite the challenges, we believe that it *is* possible to successfully bring energy efficiency resources to the affordable housing sector. This requires effective engagement of the sector, knowledge transfer and field building, project management, financial incentives, direct install measures, and a true understanding of how the sector operates. The following is a list of our primary recommendations for creating energy efficiency resources for the affordable housing sector:

1. **Restore hard-to-reach markets as a main priority for the administration of PGC funds.** There are tremendous resource conservation opportunities that can be obtained from hard-to-reach markets, particularly within the multifamily affordable housing sector. Since affordable housing is already controlled and financed by public resources, it only makes sense to leverage additional public resources to ensure that the properties are operating as efficiently as possible. Currently, with the priority being focused primarily on cost effectiveness and savings, programs like Energy Action are unable to compete for funds because they do not pencil out as cost effective. It is difficult for any to achieve a high cost effectiveness ratio, because they provide indirect savings services (such as project management and training resources) – which are crucial to supporting this sector, but do not easily equate to firm savings metrics. Reconnecting hard-to-reach markets as a priority of how PGC funds are allocated would allow programs serving affordable housing to actually compete and would demonstrate the State's commitment to achieve savings in this sector.
2. **Acknowledge the anomaly that is affordable housing and customize resources to meet its specific needs.** Many of the standard tests and procedures relevant to other markets do not apply to affordable housing because of the highly regulated and constrained context in which it operates. Thus, issues such as free riders, double dipping, short deadlines, and others are particularly problematic and irrelevant to this sector. Exceptions should be made and special criteria should be applied to affordable housing.
3. **Require that funds be earmarked specifically for providing incentives for energy efficiency upgrades in affordable housing.** Setting aside funds in all utility service areas

specifically for affordable housing would ensure that this sector had needed resources at its disposal on an ongoing basis. Providing flexibility – e.g. customized rebates, prescriptive rebates and even low-interest loans – would assist in reaching the various types of housing stock throughout the state. Earmarked funds must also be available for training and knowledge transfer for this sector.

4. **Encourage the “direct install” design for programs serving affordable housing.** The more that developed resources are comprehensive and do not impose additional burdens on property staff, the greater the likelihood that projects will be completed in timely and effective ways. At the same time, provide a mechanism for quality control presently missing from standard programs.
5. **Partner with the trusted advocates and intermediaries in affordable housing.** Effectively engaging this sector requires working with the organizations that have historically supported its development. In particular, advocates and intermediary community development organizations with extensive expertise in affordable housing financing, training, and management should be partnered with programs to ensure market reach and credibility. More significant partnerships could include an intermediary or advocacy organization providing direct services – such as trainings, capacity building, underwriting of financing, contractor oversight, verification, and account management. Intermediaries and advocacy organizations can also serve in an advisory role, informing the State and utilities on what is happening in the field and any changes and challenges occurring (such as when there is a mismatch between resources and needs).
6. **Streamline marketing.** As aforementioned, one barrier the field is currently experiencing is bombardment by piecemeal and competing efficiency programs. Affordable housing properties deserve the best resources but lack the time to research all of the options and deal with competing pitches. Thus, programs should coordinate services and marketing such that properties are not inundated with multiple contacts.
7. **Expand the CARE program to ensure greater market reach.** This expansion should include increasing the income brackets to higher levels and eliminating the 100 percent tenant income eligibility requirement for nonprofit-owned facilities. The CARE program discount formula should be structured such that if a building is 80 percent low income, the nonprofit owner could obtain the CARE discount on 80 percent of its usage¹⁴.
8. **Support the adoption of energy efficient utility allowances.** Energy efficient utility allowances are the only way to overcome the split incentive barrier for tenant-metered facilities. Standard utility allowances are deducted from allowable rent, and in most jurisdictions the utility allowance is not adjusted for energy efficient buildings. But energy efficient utility allowances, adopted by public housing authorities (with HUD approval), create an incentive (i.e. higher collectable rents) for the property owner that allows s/he to invest in energy efficiency upgrades in tenant units. Additionally, they also provide direct savings (lower utility bills) to tenants. A win-win for all stakeholders, widespread efficiency in multifamily affordable housing will only be realized when these policies are in place.

¹⁴ This threshold is similar to the standard used to determine if a property is eligible for property tax exemption.

Policy Recommendations – Solar

Many of the recommendations for bringing energy efficiency to affordable housing also apply to bringing solar to the sector. Strategies such as earmarked incentives, partnering with trusted intermediaries, trainings, and streamlined marketing are also applicable to solar resources for affordable housing. Our additional recommendations for solar resources are the following:

1. **Provide multiple types of funding for solar installations.** Because of the complexity and cost of solar installations for affordable housing, multiple funding sources will ensure the greatest effectiveness. A combination of housing tax credits, rebates, and low-interest financing are crucial for projects. By partnering with intermediaries, the State could utilize existing underwriting expertise and infrastructure and create low-interest loans for solar installations in this sector. Intermediaries could also work with lenders for existing properties to create policies that would allow additional debt to accrue to properties for solar and energy efficient projects.
2. **Reduce timeline for approval processing.** Most affordable housing projects – whether rehabilitation and capital improvements on existing properties or new construction projects – take several years to plan and execute. These projects are also highly complex to fund. Thus, any delayed or long approval processes for funding resources can cause significant problems for a project – especially if the approved amount is less than what was requested. Fast tracking affordable housing funding for solar installations is crucial to the financial well being and feasibility of these projects.
3. **Create regulatory changes that allow all areas in properties to connect to solar installations.** While solar installations for house-metered areas in affordable housing properties are helpful, projects that include tenant-metered areas would be significantly beneficial. Regulatory changes allowing widespread connection, coupled with utility allowances – that are tiered not only for energy efficiency but also renewables – would overcome the split incentive and sub-metering issues.

Conclusion

While the affordable housing sector can be challenging and complex, it also represents hundreds of thousands of units and is a dynamic and vital part of our community. Our experience in working for the past four years with the intersection of energy issues and affordable housing has proven that, despite the immediate barriers, this is a sector in which savings are both necessary and possible. To date, the available resources have not adequately considered the particular needs and context of affordable housing. But we remain confident that with the right mix of understanding, attention, collaboration, and creativity, appropriate and effective resources will soon be available for promoting energy efficiency and solar in affordable housing.