

Proposal to Local Governments

Programmatic Integration of Climate Action Planning, Federal Stimulus Response, Utility Initiatives, and Energy Efficiency Retrofit Programs for Existing Homes

Elise Hunter, Government Relations Project Manager

Build It Green

1434 University Avenue

Berkeley, CA 94702

510/845-0472 ext. 110

Elise@BuildItGreen.org

Table of Contents

Table of Contents	1
Introduction	2
Regulatory Context for Local Government	2
Why the existing home market?	3
Why Home Performance with ENERGY STAR?	3
Why GreenPoint Rated?	4
An Integrated Response	4
About Build It Green	4
Approach	6
Consistency with Local Government Priorities	7
Ease of Program Implementation	7
Economic Development and the Stimulus Package	7
Climate Change Action and Utility Incentives	7
Consistency with CPUC Strategic Plan and Utility Resources	9
Leverage currently funded activities	9
Leverage Utility Resources	9
Work Plan	10
Task 1. Gain participation of key strategic partners	10
Task 2. Design Program	10
Task 3. Recruit and train Home Performance Contractors	11
Task 4. Launch Home Performance retrofits	12
Task 5. Market the program	12
Task 6. Evaluate program, develop case study, and publicize	12
Appendix A: Leveraging AB 811 Financing Districts for Home Energy Retrofit Programs	14
Introduction	14
Rater Eligibility	14
Financing Eligibility	14
Application Process	15
Quality Assurance	16
Project Tracking	17
Appendix B: Using Neighborhood Stabilization Program and Other Stimulus Funding to Create Sustainable Local Housing	18
The Need	18
The Opportunity	18
Developing a Program to Meet the Needs of the Community	18

Introduction

Build It Green is pleased to submit this proposal to [insert local government name] for a municipal program design model that will integrate new utility initiatives, Federal Stimulus opportunities and emerging finance models to spur widespread retrofits of existing homes, which will help governments meet their climate action and economic revitalization goals.

To ensure a lasting local market transformation, we will train and certify contractors and technicians to deliver home performance services, using Home Performance with Energy Star (HPwES) program model and Building Performance Institute (BPI) accreditation standards. An optional, advanced tier of the program will be to retrofit homes to GreenPoint Rated Existing Home, a comprehensive green home retrofit program developed by Build It Green.

The program will help local governments leverage the Stimulus funding available to rehabilitate vacant properties. The program will also help local governments to leverage emerging financing mechanisms for energy efficiency retrofits of owner-occupied properties through property tax assessment districts, as authorized by California's Mello-Roos Community Facilities Act, Assembly Bill 811, pending Senate Bill 279.

Regulatory Context for Local Government

Recent policy developments have put local governments at the center of California's efforts to achieve large-scale energy efficiency retrofits in the existing housing stock. These economic and political developments have made California a testing ground of policy innovation. This confluence of factors includes but is not limited to:

- The California Air Resources Board (CARB), pursuant to its mandate under California Assembly Bill 32 (AB32) known as the California Global Warming Solutions Act of 2006, has set strong targets for local and statewide reductions of greenhouse gases and will require local governments to submit climate action plans to the state. CARB continues to develop tools and resources to assist local governments in addressing climate change. Cities anticipate strong new mandates to tackle climate change more aggressively in the future. It is important for local governments to begin developing Climate Action Plans including strategies to reduce Greenhouse Gas.
- The American Recovery and Reinvestment Act of 2009 (ARRA) allocates substantial resources to local governments to create jobs and drive investments in more sustainable business practices. Local governments in California are slated to receive more than \$300 million in Energy Efficiency and Conservation Block Grants. ARRA programs \$1.98 billion in competitively awarded Neighborhood Stabilization Program funds nationwide, in addition to NSP funds awarded via formula through the Housing and Economic Recovery Act of 2008 (HERA). California received \$530 dedicated NSP funds through HERA. In applying for Energy Efficiency Conservation Block Grant Funds, with an eye for receiving additional funds in the future, local governments must address jobs generated, energy saved, renewable energy installed, existing funds leveraged, and Greenhouse Gas emissions reduced.
- The California Public Utilities Commission's long-term strategic plan outlines ambitious goals for both the rehabilitation of existing homes and for local government programs targeting this market:
 - By 2020, 25% of existing homes have a 70% decrease in purchased energy from 2008 levels; 75% of existing homes have a 30% decrease in purchased energy from 2008 levels; and 100% of existing multi-family homes have a 40% decrease in purchased energy from 2008 levels
 - At least 5 percent of California's local governments (representing at least 5 percent of CA total population) each year adopt "reach" codes. By 2020, the majority of local governments have adopted incentives or mandates to achieve above-code levels of energy efficiency (or DSM) in their communities

- By 2015, 50 percent of local governments have adopted energy efficiency/sustainability/climate change action plans for their communities and 100 percent by 2020, with implementation and tracking of achievements
- California’s investor-owned utilities have programmed \$647 million for residential-sector energy efficiency programs for 2009–2011 and an additional \$329 million for Local Government Partnerships over the same period. The municipal utilities have earmarked additional resources in these areas.
- California Assembly Bill 811 (AB-811) passed in September 2008, gives cities and counties authority to create benefit assessment districts in which property owners can decide to “finance” energy efficiency and renewable energy upgrades. Owners can enter a “loan” contract with a local government and pay it back via an item on their property-tax bills that would be passed from one owner to the next over 10 or 20 years. This legislation gives local governments a very powerful new policy tool to offer financing for building energy efficiency and renewable energy investments, easily repayable on semi-annual property tax bills.. Additional tools are being developed to address issues beyond those addressed in AB 811.

Why the existing home market?

According to the California Air Resources Board, 70% of the 13 million existing single-family homes were built prior to 1978, before the advent of modern energy codes. Many existing homes have excessive air infiltration, no wall insulation, and inefficient heating, air conditioning, water heaters, lighting, and appliances. The existing California home market provides a huge opportunity to significantly reduce energy demands and related impacts from housing. The Energy Information Administration surveys show that homes built before 1960 have the highest average energy usage, even though they tend to be smaller than newer homes. Typical improvements can result in 30% energy savings.

The existing home market sector represents the biggest “bang for the buck” in energy savings, and regional aggregation of these savings will be significant enough to help local governments reach their climate action goals mandated by the state. The California Public Utility Commission Strategic Plan has set ambitious goals for the rehabilitation of existing homes.

The sharp economic downturn has virtually eliminated residential new construction activity. According to the California Building Industry Association, the number of permits for new construction statewide dropped 66% within the past year, and the estimated number of new homes built in 2009 will be the lowest on record. Policymakers are looking to existing homes to reach goals in GHG emissions savings.

Additional benefits of improving existing housing stock include saving resources compared to building new housing, taking advantage of existing infrastructure, reducing utility bills for homeowners, increasing resale value, and improving health and comfort.

Why Home Performance with ENERGY STAR?

Home Performance with ENERGY STAR, a national program from the U.S. EPA and U.S. DOE, offers a comprehensive, whole-house approach to improving energy efficiency and comfort at home, while helping to protect the environment. The program incorporates both a national and a regional dimension. At the national level, EPA and U.S. DOE have established minimum requirements, recommendations, and templates for:

- Initial diagnostic assessment of a home’s energy performance
- Diagnostic and visual inspections to be completed upon project completion
- Summary reporting requirements to the home owner
- Quality assurance protocols, including reporting and inspection protocols, customer feedback, contractor feedback, recommended corrective action protocols

Build It Green would be the Home Performance with ENERGY STAR sponsor (a State Energy Office, utility, or nonprofit energy efficiency organization), the entity responsible for program implementation. This regionally focused delivery model provides the flexibility needed to accommodate local market conditions and offers the grass-roots infrastructure required to effectively deliver services to individual home owners.

Sponsors recruit and train home improvement contractors and consultants who are qualified to perform home performance assessments. Participating contractors make an initial assessment of home energy performance and offer solutions to solve home comfort problems and reduce energy usage while decreasing the carbon footprint of the home. Upon project completion, contractors assess home performance again to document that specified improvements were properly installed to achieve the promised energy savings. The sponsor is responsible for ensuring that participating contractors maintain high standards for quality. This typically includes providing specialized training for contractors and conducting quality assurance inspections to verify that Home Performance with ENERGY STAR projects get done right.

Why GreenPoint Rated?

GreenPoint Rated is Build It Green's consumer-oriented label for new and existing single- and multi-family homes in California. The label is designed to stimulate market demand for green homes, similar to ENERGY STAR for appliances and USDA Organic for food. Home Performance with ENERGY STAR is the recommended pathway for improving home energy efficiency to meet GreenPoint Rated standards.

GreenPoint Rated expands the market for home performance contracting and Home Performance with ENERGY STAR while providing a third-party verification process to document energy efficiency measures, quantify the associated benefits, and report those benefits to the utilities for inclusion in their portfolio accomplishments. Lenders are also considering GreenPoint Rated as a platform for green loans.

An Integrated Response

Reflecting these policy developments, the centerpiece of this proposal is technical assistance to local governments and regional coordination efforts across jurisdictions. Build It Green will help local governments intervene effectively in the existing home market in ways that advance their climate action goals, deliver value to their constituents, create new jobs, and leverage the aforementioned tools and resources. Local government benefits from working with Build It Green include:

- Guidance for integrating their climate action goals to reduce GhG into their response to stimulus funding and economic challenges
- A program model that aligns with consumer acceptance criteria related to long-term home affordability, health, comfort, safety, durability, and ease of maintenance
- Plug-and-play access to contractor training and certification on home performance and building science, field verification, tracking, and quantification for energy efficiency retrofits and green home improvements, with measured progress toward climate action goals
- Programmatic consistency across jurisdictional boundaries, which enables participation for the private sector
- Access to currently available tools, including training resources and Build It Green's Local Government Roadmap

About Build It Green

Build It Green is a membership supported non-profit organization whose mission is to promote healthy, energy- and resource-efficient homes in California. Established in 2003, we offer a comprehensive package of local government support, professional training, collaboration forums, consumer education, and green product marketing to a range of stakeholders. Three strategic objectives guide our work:

1. **Drive policy development**—we partner with government to establish credible and accessible green building policies that promote private sector innovation and provide consistent guidelines statewide.
2. **Increase supply of green homes**—we train building professionals on latest best practices and connect green product suppliers with consumers.

3. **Stimulate consumer demand**—we build awareness of the benefits of green building by providing GreenPoint Rated as a trustworthy, recognized consumer label for green homes, backed by third-party verification.

Build It Green's greatest strength is in offering programs that not only encourage policy, but also increase supply and stimulate consumer demand for green homes—all essential, interdependent contributors to the green building marketplace.

- In 2006 Build It Green launched GreenPoint Rated, a consumer-oriented label designed to stimulate market demand for single- and multi-family green homes in California. GreenPoint Rated aligns with public-sector policy initiatives such as Assembly Bill 32, the California Global Warming Solutions Act, by helping cities measure the success of their climate change initiatives. The GreenPoint Rated tracking system includes a Carbon Calculator to quantify climate change benefits for each green building measure. In developing GreenPoint Rated, Build It Green has demonstrated its ability to (1) maintain program policies and procedures, verification protocols, forms, templates, guidebooks, and other resources necessary for program implementation; (2) build a tracking system that documents program activities and results, including participating projects, Raters, builders, contractors, lenders, realtors, and other stakeholders; (3) implement quality assurance procedures to verify rating results, including random audits of Raters and rated homes; and (4) review Rater reports and supporting documentation and issue GreenPoint Rated Certificates of Evaluation.
- In addition to addressing new homes, Build It Green recently launched GreenPoint Rated Existing Home, the first comprehensive green building rating system for existing homes in the nation.
- Of the 95 local government residential green building initiatives in California, 71 currently reference Build It Green's Green Building Guidelines or GreenPoint Rated program. Participants include large influential cities such as Oakland, San Jose, San Francisco, Stockton, Anaheim, and Costa Mesa. GreenPoint Rated has also earned key market-sector endorsements from the Building Industry Association's Northern California and Central California chapters.
- Build It Green has trained and certified over 2,000 building professionals throughout California. Building professionals work intimately with consumers and are uniquely poised to educate them and influence their decisions.

Approach

Build It Green will leverage long-standing relationships with local governments, utilities, and contractors to build a coalition for community-scale solutions that span multiple jurisdictions. In doing so, we will

- Help Local governments identify their path to green building as a component of their overall climate action plan
- Help local governments to respond to climate change by integrating home energy with a comprehensive green building program that delivers measurable reductions in residential greenhouse gas emissions in support of the community's climate action goals
- Help contractors apply their hands-on experience with home construction and in-home sales in new high-paying, skilled jobs that cannot be outsourced offshore
- Address financial pressures on local governments by offering a turn-key program that imposes minimal demands on agency staff, providing contractor training and certification on home performance and building science, field verification, tracking, and quality assurance
- Enhance peer-to-peer support amongst jurisdictions, honing best practices and lessons learned.

We will help leverage multiple sources of funding including:

- New financing tools available through AB 811 and subsequent legislation to bring substantial private capital into this market and eliminate remaining cost barriers to home energy retrofits
- Seek possible matching funds from California Energy Commission for communities that pool a portion of their Energy Efficiency and Conservation Block Grant funds to support regional-scale home energy retrofit programs
- Optimize Neighborhood Stabilization Program grants to integrate home energy retrofits into the rehab of hundreds of vacant homes and perfect delivery methods for retrofitting large numbers of similar tract homes
- Integrate Utility incentives and tax credits to reduce financing costs
- Retrofit for Energy and Environmental Performance incentives for water conservation and renewable energy that may be forthcoming through the American Clean Energy and Security Act

Consistency with Local Government Priorities

The integrated program design for local governments is consistent with priorities that local governments are striving to balance: ease of program implementation, economic development and climate change action planning and implementation. While the incentives driving these priorities are the product of State and Federal agencies, the convergence of these events occurs predominantly at the local level. Build It Green's integrated program design will address these priorities with minimal burden on staff and resources.

Ease of Program Implementation

Meeting mandates and harnessing available opportunities is a daunting challenge for local governments, and it comes at a time when many jurisdictions are struggling with reduced staff and resources. Build It Green's integrated program design presents a turnkey approach that will require minimal extra staff time. Build It Green will take the lead on program planning, implementation and evaluation, and the main role of the jurisdiction will be to provide direction and feedback as necessary.

Economic Development and the Stimulus Package

Since some California jurisdictions are facing foreclosure rates as high as 13% and the entire state has an elevated unemployment rate of 10.5%, economic development and revitalization is becoming a growing priority of local governments. As governments determine how to use their Stimulus funds and develop climate action plans, they will be striving to secure viable housing, get rid of blight and spur job growth. Our integrated design for local governments will leverage NSP and EECBG funds to support strategic program design in energy efficiency, rehabilitate blighted homes for habitability and efficiency, and will create jobs by training building professionals to rate and verify Home Performance with Energy Star and GreenPoint Rated homes.

Developing a base of trained home performance contractors will stimulate the economy directly through the creation of home performance jobs and indirectly through increased demand for support jobs and dollars spent on local goods and services. A recent National Association of Homebuilders' study estimates that \$100,000 spent on home remodeling creates 1.11 construction-related jobs and funnels \$30,217 to local governments in taxes and fees¹. If each home remodeling project cost \$20,000, then one hundred projects would create twenty-two full-time jobs. According to the U.S. Department of Commerce's Regional Input-Output Modeling Handbook², every construction job creates 1.988 direct jobs in related industries. Thus, if this program creates twenty two full-time construction jobs, then the total number of jobs created in the community would be forty-four jobs.³

Climate Change Action and Utility Incentives

Local governments throughout California are in various stages of developing or implementing their climate action plans, as mandated by the 2006 Global Warming Solutions Act, or AB 32. The climate action plans must establish a baseline for GHG emissions, a GHG reduction plan based on the jurisdiction's actions, and a tracking and verification system for AB 32 compliance. California state agencies recognize the imperative to improve efficiency of housing stock, so local governments are including improvements to existing homes prominently in their climate action plans. The GreenPoint Rated toolkit for local governments provides a plug-and-play verification and tracking system with Build It

¹ Liu, H.F. and Emrath, P. "The Direct Impact of Home Building and Remodeling in the U.S. Economy." www.HousingEconomics.com, October 7, 2008

² Daley, W.M "Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System" U.S. Dept of Commerce, Third Edition, March 1997. Data taken from Kansas, MO region.

³ Daley, M. "Regional Multipliers, a User Handbook for Regional Input-Output Modeling System: RIMS II" U.S. Department of Commerce. March 1997. Base case: Jackson County, MO.

Green's climate calculator to quantify GHG reductions from retrofitting existing home stock, and minimum administrative and transaction costs to local governments.

Build It Green recognizes that local governments are in different stages of climate action planning, so our design will be custom-fitted to meet the unique needs of the jurisdictions, while promoting regional consistency. Our approach will be tiered, with increasing levels of rigor:

- Home Performance with Energy Star
- GreenPoint Rated Existing Home Elements
- GreenPoint Rated Existing Home Whole House

In order for local governments to realistically attain these goals, they must develop strategies to seek support through the investor-owned utilities and their affiliates. Build It Green will help local governments harness utility support in ways that meet local government mandates as well as utility goals in residential energy efficiency and local government partnerships. To promote long-term financial viability of these programs as well as ongoing performance and results, Build It Green will assess opportunities to use district financing authorized by Assembly Bill 811.

Consistency with CPUC Strategic Plan and Utility Resources

Build It Green's integrated program design for local governments aligns with the CPUC's overarching Strategic Plan, as well as utility programs for residential energy efficiency and local government partnerships.

In addition, the revised implementation plans from the investor-owned utilities are consistent with the statewide Energy Action Plan and with AB 32 goals, so by aligning with the implementation plans, Build It Green is ensuring coordination and relevancy of its program design work.

Leverage currently funded activities

Build It Green's plan will leverage currently funded activities through the utility partnership programs, as well as our 2009 grant from the Energy Foundation, designated to help local governments design and implement energy efficiency and green building programs. The goals of this grant are to facilitate the sharing of information between jurisdictions, spur action in green policy development and promote region-wide consistency.

Build It Green has also obtained funding from the Environmental Protection Agency (EPA) Region 9 to provide technical training to local governments to design effective and attainable green building policy. The technical training will be piloted in the San Francisco Bay Area, and has potential for statewide expansion. This funding capitalizes on the Home Builders' Association of Northern California's (HBANC) recent endorsement of GreenPoint Rated.

Leverage Utility Resources

Statewide coordination with tailored, regional approaches is the best way to ensure success and meet the diverse needs of constituents. Build It Green values a customized approach as well, and has been strengthening its relationships with local governments for the past six years.

Build It Green's integrated program design will help jurisdictions leverage utility resources where appropriate, including:

- **Energy Efficiency Incentives** Utilities offer an array of incentives for individual energy efficiency technologies in order to manage demand for energy throughout the region. Build It Green's integrated program design will help customers take advantage of these incentives to help defray the cost to the participant.
- **Customized Strategic Plan Support:** Build It Green's integrated program design will assist your local government at your particular stage in climate action and energy efficiency planning, helping to establish baselines and reduction targets. Build It Green will leverage the utility toolkits, ICLEI protocols, ILG tools and Build It Green's climate calculator to help local governments quantify GHG reductions, and utilize existing resources.

Work Plan

Task 1. Gain participation of key strategic partners

The Build It Green Team will convene an advisory committee consisting of participating departments in the local government, utilities, building science experts, trainers, and home performance contractors. The committee will review and comment on program design and implementation issues and assist in expanding community support for the program. To the extent that exterior parties contribute financial resources to the program, they will also be engaged in financial oversight and monitoring program accomplishments.

Task Lead: Build It Green

Deliverables: Advisory committee roster, progress reports, meeting minutes

Task 2. Design Program

The Build It Green Team and its government, utility and building professional partners will collaborate in program design. The unique marketplace conditions in California will provide a platform to test how Home Performance with Energy Star and BPI standards can best mesh with California's unique Title-24 HERS Phase 2 Energy code standards and software. The program design will reflect the following goals:

- Establish a self-sufficient home performance industry capable of retrofitting five percent of the local housing stock annually
- Provide accessible and convenient financing for 100% of the energy efficiency improvement costs
- Integrate home energy efficiency and green home improvements into rehabilitation of foreclosed homes through the Neighborhood Stabilization Partnership (NSP).
- Support the climate action planning goals of participating local governments
- Deliver cost-effective energy savings in support of utility energy efficiency portfolio goals
- Deliver comfort, health, and economic benefits to residents in a credible and verifiable manner

Program design efforts will involve the advisory committee and successful home performance contractors to ensure program viability. Key program design issues to be addressed include:

- Scope of professional training activities to ensure the availability of qualified service providers
- NSP program design issues, including financing mechanisms, funding eligibility, rehab standards, quality assurance, tracking and reporting systems
- Finance district design issues, including financing mechanisms, funding eligibility, application process, quality assurance, tracking and reporting systems
- Verification and quality assurance protocols to ensure quality service to the program participants. The HERS phase 2 protocols as well as GreenPoint Rated have complementary verification and QA protocols that will be integrated into the program design.
- Quantifying, tracking and reporting of greenhouse gas reductions for purposes of documenting achievement of climate action plan goals. The GreenPoint Rated program currently uses a climate calculator that provides greenhouse gas footprints and savings for each rated project. Build It Green's tracking system can aggregate savings by region in order to enable local governments to meet their climate action goals.
- Incentive structure, including alignment of program design with utility incentive programs

Task Lead: Build It Green

Deliverables: Program implementation plan, policies and procedures manuals, program application forms and contractual documents

Task 3. Recruit and train Home Performance Contractors

Rapid launch of a robust professional training and mentorship program is essential to program success. The Community-Scale Retrofit Program will train a workforce of home performance contractors to provide services in your community. Core professional qualifications include full training on Home Performance with Energy Star guidelines, Building Performance Institute (BPI) certification, and training and certification as a California Whole House Home Energy Rater under the California Energy Commission's HERS 2 protocols. The California Energy Commission's HERS 2 software will provide the analysis platform for documenting home performance improvements, preparing reports for the consumer, generating documentation for AB 811 financing, and generating the energy efficiency inputs to quantify greenhouse gas reductions. Professionals will be encouraged to obtain additional training and certification as a GreenPoint Rater for Existing Homes. The Build It Green Team will also offer technical and programmatic training to local government staff to assist them in understanding and carrying out their roles. The training curriculum will enable contractors in your area to support the overall program, and will provide lasting jobs for the participants, bolstering "green jobs" goals in your community.

The training program will include a strong field mentorship component to ensure that trainees are truly capable of applying the training principles on the job. Contractors will then be given additional training to market their services and address customer service issues. Build It Green will leverage our current training capacity in California to bring in more clients and expand our reach to all targeted areas for program design. Our training capacity currently includes the following:

- **Base of Certified Green Building Professionals** Build It Green offers the CGBP training as an introductory course for those interested in launching or enhancing a green building career. There are now over three thousand CGBPs trained and certified statewide, and the majority of them are already in the building field, as architects or contractors. The extended network of CGBPs and ongoing demand for the training upholds Build It Green's reputation as the preeminent certifying entity for green building professionals.
- **Base of Certified GreenPoint Raters:** Since the inception of GreenPoint Rated three years ago, Build It Green has been training a base of GreenPoint Raters within the building community. Our comprehensive trainings enable qualified building professionals to recognize and document green building measures in homes, acting as third-party verifiers on the projects. There are now over 350 GreenPoint Raters practicing all over California.
- **Geographic Range:** Our Professional Training Department holds a training roughly every two weeks to respond to the growing demand for GreenPoint Rated homes statewide. Trainings now occur frequently in the Bay Area, Sacramento, the LA Basin, San Diego, Fresno and Truckee, with new trainings added quarterly

Our history of delivering robust, rigorous trainings makes Build It Green an ideal entity to deliver a home performance training. The Build It Green Team has strong relationships with and/or has contracted with the best home performance contracting, energy and green building trainers in California such as Rick Chitwood of Chitwood Energy Management, Gary Wollin of Doug Beaman Associates, Marc Richmond of Practica Consulting, John Shipman of Energy Efficient Management Inc., and Kevin Beck of Building Performance Services. We will engage them to help design the most practical training program, to train the professionals, and to provide ongoing mentorship to graduates in order to best develop and expand the region's cadre of home performance contractors.

The Build It Green Team also has relationships with a number of home energy efficiency firms in the region who would add skills as mentors and will provide the nucleus of technical skills on the ground that is required for rapid program launch: GreenHomes America, Hartman-Baldwin, Energy Efficiency Management Inc., Energy Inspectors, Ponizil Energy Management, Residential Energy Assessment Services, Grupe Homes, and Healing Spaces by Design

Task Lead: Build It Green

Deliverables: Training and mentorship implementation plan, curricula, course schedules, marketing materials, and professional certification results

Task 4. Launch Home Performance retrofits

The Build It Green Team will work with staff program implementers to integrate performance-based energy efficiency and green building criteria into their home rehab protocols and practices. A comprehensive green home improvement program not only covers performance-based energy efficiency retrofits but could address broader objectives of occupant health and safety, durability and ease of maintenance. According to a recent study, retrofitting a 1960s home with \$10,000 in improvements could save 8.5 tons of carbon. Program launch will be coordinated with implementation of district finance programs where appropriate.

Task Lead: Build It Green and local home performance network

Deliverables: implementation plan for green rehabs, including policies and procedures manuals, rehab specifications, contractual documents, and financial plans; rehab a predetermined number of homes to Home Performance with Energy Star guidelines

Task 5. Market the program

Build It Green and local partners will implement a community-scale social marketing campaign to foster widespread adoption of energy efficiency and green home improvement practices. The campaign will focus on known drivers of socially responsible behavior, including methods to elicit personal commitments; visible community norms; and positive word of mouth. The campaign strategies may include the use of incentives and special events as well as standard communication strategies. Finally, the campaign will incorporate an evaluation plan to be carried out concurrently with implementation.

Task Lead: Build It Green and local partners and community leaders

Deliverables: Marketing campaign

Task 6. Evaluate program, develop case study, and publicize

Track Results

Regular and ongoing evaluation is a key requirement for providing the feedback loops necessary for adaptive management. The data collection plan supporting a sound evaluation strategy can also double as the information source for disseminating lessons learned to a broader audience.

This documentation will report on all benchmarks identified including:

- General program progress
- New or partnerships developed or strengthened
- Analysis of marketplace adjustments occurring
- Number of homes upgraded and their details of specific upgrades undertaken
- Number of contractors and technicians trained and green jobs created
- Greenhouse gas savings compared to a baseline
- Other climate calculator outputs: water saved, waste diverted, Kwh saved and therms saved

The total number of projects, total square footage and environmental results will be tracked through Build It Green's tracking system. The tracking system can easily be modified to unique regional needs.

Develop Case Studies

Throughout the program, the team will compile comprehensive documentation on program development and implementation, including lessons learned. Build It Green will lead the writing of a case study that analyzes the technical and policy actions, accomplishments and lessons learned from this program as well as guidance on the scalability to other regions of the country. This case study will be presented on the jurisdiction's website, the Build It Green web site as well as being presented at various professional

conferences. It will serve as the basis for technology transfer to emerging programs throughout the country.

Publicize Success

The results from the case study will be publicized at the discretion of your jurisdiction to local media, state entities, the CEC and other entities. An integrated program incorporating green building and energy efficiency will be a flagship program for other jurisdictions to emulate, and will enable the jurisdiction to attain more accolades and grant funding in the future.

Task Lead: Build It Green

Deliverables: Data collection and evaluation plan, tailored regional tracking system, monthly progress reports, and program case studies

Build It Green has identified several key partners with the complementary skill sets required for program success.

Appendix A: Leveraging AB 811 Financing Districts for Home Energy Retrofit Programs

Introduction

This proposal outlines the implementation process for integrating a performance-based home energy retrofit component into property tax districts, as authorized by the Mello-Roos Community Facilities District Act or Assembly Bill 811. A viable performance-based home energy retrofit pathway would contain the following qualities:

- **Streamlined:** simple to administer
- **Transferable:** scalable to communities throughout California and potential for expansion from pilot projects
- **Well-defined:** criteria for home energy upgrades should be clear and apparent
- **Accessible:** work scope for home energy upgrades should be understood by local workforce, or should be easily conveyed to the workforce through trainings
- **Effective:** home energy upgrades should deliver significant benefits, both on utility bills and greenhouse gas savings
- **Quantifiable:** results from home energy upgrades should be quantified and tracked regionally to help governments to comply with state mandates and receive utility incentives

Rater Eligibility

In order for a rater or contractor to do quality work, they must be familiar with home energy auditing, and ideally, home performance. For each project, there will be at least one Home Energy Rating System (HERS)-certified rater who will conduct the initial home energy audit and provide the final score using HERS II software. This designated HERS rater will possess a valid class B license under the California Contractors State Licensing Board and be certified through a HERS provider in one of the following ways:

- California Whole House Home Energy Rater
- Building Performance Contractor, trained by an Energy Commission-approved building performance training program and certified by the Building Performance Institute (BPI)

There may be other contractors and subcontractors who conduct some of the work scope of the home energy upgrade. All other contractors must possess a valid California Contractors State Licensing Board license for the work they are assigned. Only the HERS-certified rater (or “rater”) in one of the categories above shall interface with Build It Green regarding financing and documentation.

Financing Eligibility

The provisions of Assembly Bill 811 dictate that all work must be permanent and fixed to the property. Funding shall not be used for temporary or portable improvements that the homeowner could take with them at change of ownership, including small appliances and non-dedicated lighting. The parameters for appliances and non-dedicated lighting shall remain constant in the test-in and the test-out software runs.

To qualify for funding, projects must show a 20% estimated improvement in home energy performance. The minimum loan amount will be \$5000. The maximum loan amount will be based on house size and the rigor of the upgrade, calculated as follows:

Funding cap = (\$10 x home sq. ft.) + (\$0.5 x home sq. ft.)(# percentage points above 20%)

Using this methodology, a 2,000 square foot home achieving a 20% energy improvement could reserve up to \$20,000. The same 2,000 square foot home achieving a 30% energy improvement could reserve \$30,000. A 1,500 square foot home achieving a 25% energy improvement could reserve \$18,750.

Application Process

The application process for a home energy upgrade must be easy for the rater or homeowner to administer, result in credible upgrades and reduce the lag time in payment between completion of the work and reimbursement of the rater.

Since the homeowner is embarking on a project that aims to make dramatic improvements to utility bills, the financing eligibility should be tied to quality standards. A minimum of 20% improvement will be required, as modeled and documented through a performance pathway, based on HERS II protocols.

In order to allow flexibility and accommodate existing workforce, there will be two options. Both will include a test-in and test-out by a certified HERS rater.

1. In the case where the HERS rater is also a HERS-certified Building Performance Contractor, the HERS rater may conduct the test-in, do the work and perform the test-out on his or her own work. Note that any work subject to verification by a HERS rater under the 2008 Building Energy Efficiency Standards must still be verified by a third-party California Field Verification and Diagnostic Testing Rater and not the Building Performance Contractor.
2. If the rater is a California Whole House Home Energy Rater and not a Building Performance Contractor, the upgrade work will be done by other licensed contractors or subcontractors, as described in the Credentials section, and the rater will perform the test-in and test-out as a third party, as defined by the HERS II manual Section 1673(j)(3). In this case, the rater may help develop the scope of work and contract, but will not perform the actual work.

Step 1: Test In

The initial home diagnostic test will be performed by a California Whole House Home Energy Rater or Building Performance Contractor in conformance with the HERS II Technical Manual protocols. The test-in will produce the following:

- California Home Energy Audit Certificate
- A Custom Approach report of recommended improvements to yield at least a 20% HERS index reduction. The report shall include the components outlined in Chapter 6 of the HERS II manual. The cost-benefit analysis shall include the interest rate and loan terms determined by the financing district rather than the default mortgage numbers.
- Energy Consumption Analysis Report as described in Chapter 5 of the HERS II manual, if bills are available for the 12 months prior to the audit
- Greenhouse gas emissions of the home prior to upgrade
- Combustion safety test per Building Performance Institute standards

The results of the testing and data gathering will be the basis for the scope of the home energy retrofit. Once the initial test-in has been done, the HERS rater will work with the homeowner and any contractors and subcontractors to come up with a scope of work.

Step 2: Reserve Funds

The initial application to reserve funds will consist of the full test-in documentation from Step 1, plus the project scope of work and cost estimate. Any aspects of the scope of work that are inconsistent with the HERS II report recommendations should be noted and explained. Build It Green will review the preliminary application, ensure the bid is below the maximum funding cap, approve it, and submit it Renewable Funding to reserve funds. Renewable Funding will notify the project proponent and Build It Green when funds have been reserved.

Step 3: Sign Contract

After the home has been audited to HERS II standards and a scope of work is developed by the homeowner, rater and any contractors, all parties involved will sign a contract outlining the upgrades and establishing an exact price for the entire upgrade.

Optional Step: Submit Contract and Receive a Reimbursement Advance

Applicants may request up to 50% of the total project cost upon execution of the contract. Before upgrade is performed, the contractor may submit the signed contract and a request for funding advance fee to Build It Green, who will review it. If the contract is deemed reasonable, Build It Green will approve the request and contact Renewable Funding for an advance on the reserved funds for the project.

Step 4: Conduct Work

The rater or a designated contractor will conduct the work outlined in the signed contract. If there is any change to the scope of work, the change in work order and cost will be documented in the final payment request.

Step 5: Test Out

After the work has been conducted, the rater will conduct a Whole House Home Energy Rating according to the protocols outlined in Chapter 4 of the HERS II manual. The same suite of diagnostic tests conducted in the California Home Energy Audit will be used to gather data for the HERS software.

Step 6: Request Payment

The rater must submit documentation to Build It Green to request final payment. The documentation will consist of the following:

- Final contract and invoice with complete scope of work and cost
- HERS II Whole House Home Energy Rating Certificate
- Revised HERS report if the actual scope of work deviates from the planned scope in the initial report, as developed in Step 1.
- Authorization signed by the homeowner allowing Build It Green access to utility bills for 12 months going forward
- All applicable building permits for the scope of work

Build It Green will review the final documentation, and if approved, Build It Green will submit the approved documentation to Renewable Funding to release the final funds to the rater. If the documentation is incomplete or incorrect, Build It Green will work with the rater to remedy the deficiencies. The funding will then be released to the rater, who will reimburse the contractor or any subcontractors if necessary.

Quality Assurance

In order to assure high quality, appropriate work and customer satisfaction, the property tax finance district must have a third-party quality assurance protocol. Build It Green will administer Quality Assurance (QA) audits of the contractors. The Build It Green QA protocols will be based on a “strike” system, similar to the California Solar Initiative QA protocols for solar contractors.

Build It Green will maintain and publish an updated list of certified raters who are in compliance with QA protocols for potential customers to reference before they sign up with the program.

Rater Audits

Build It Green will conduct a QA audit on the rater’s first five projects under the program. In addition, Build It Green will conduct audits on a reasonable number of projects for each rater annually for continued participation in the financing district.

There will be three Tiers of QA audits for raters, with decreasing levels of supervision. Once raters graduate from one tier, they may move on to the next. Completion of Tier 2 will consist of successful performance of 100 projects with no QA fails. Build It Green will conduct field QA audits of the raters according to the following Tiers:

1. The first five projects of the rater
2. 15% of the rater's projects
3. 5% of the rater's projects annually, regardless of whether the rater is a Building Performance Contractor or a California Whole House Home Energy Rater.

The QA protocol for field audits will be a repeat of the rating, as described in Section 1673 (a) 6 of the HERS II manual. The audits will be conducted after the home energy upgrade work and final test-out has been done. The QA auditor will note any errors or inaccuracies in the initial audit, quality of work and final test-out and score.

The auditor will note whether the error is *material* or *immaterial*. A material error is a major mistake or oversight in testing or installation, and will result in an automatic strike. An immaterial error is minor and does not threaten the overall quality of the work. If an immaterial error is found, it must be fixed within 30 days or the rater will be given a strike. The QA auditor will return in 30 days to see that the immaterial error has been fixed.

Build It Green will document the QA status of each rater. Each time a rater gets a strike, he or she will move up a Tier in the QA audit frequency. If a rater accrues three strikes in one year, he or she will be banned from participating in the program for one year.

Customer Feedback

Customer satisfaction is key to the success of an opt-in AB 811 financing district. Build It Green will institute a customer feedback process. If Build It Green receives a complaint about a rater, that rater will be audited for that project, or the next project of that rater. If a strike results from the audit, the rater will be moved up one Tier in the QA audit frequency.

Project Tracking

Local governments are looking to AB 811 financing districts to boost the number of improvements to existing homes in their jurisdiction, which will garner greenhouse gas emissions savings that will count towards compliance with AB 32 and their climate action goals.

Build It Green is poised to help local governments track and aggregate GHG savings through our climate calculator and tracking system. The climate calculator provides a GHG emissions saving calculation for every measure on the project checklist, and is based on HERS II software. The GHG savings are aggregated into a total GHG savings calculation for each project. When entered into the tracking system, the GHG savings by project can be aggregated for the region, packaged, and sent to local governments for their reporting purposes

Appendix B: Using Neighborhood Stabilization Program and Other Stimulus Funding to Create Sustainable Local Housing

The Need

Local governments are faced with the immediate community impact of foreclosed and abandoned properties. Local governments are also charged with the inventory and action plans to reduce Greenhouse Gas based on AB 32. Local governments can design programs that will utilize federal funds to repurchase foreclosures and upgrade community housing stock.

The Opportunity

Given that 70% of the housing stock in California predates the State energy standards (Title 24, Chapter 6), there is a tremendous opportunity to make great strides in meeting California's Climate Action AB32 goals through energy efficiency upgrades of existing homes. Funding from HUD's Neighborhood Stabilization Program (NSP) will enable local governments to renovate foreclosed, vacated and blighted properties to resell habitable structures. More importantly, NSP and additional state and federal programs can facilitate a comprehensive approach to the renovation and create an environmental impact with improved energy efficiency, water conservation, indoor air quality and conservation of resources, going far beyond merely rolling over foreclosures. Furthermore, they can assist in creating healthier homes that are more cost effective to operate and maintain.

Nearly all foreclosed and abandoned homes can be classified as existing and if they have been abandoned, they need repair. The older the home, the more repair is likely to be needed. If the community's approach is to do cosmetic repair, it will not provide an enduring upgrade to their housing stock or reduction of greenhouse gas in response to AB 32.

Developing a Program to Meet the Needs of the Community

Program Strategies

Strategies for renovation of existing homes call for the addressing of health and safety issues as well as the integrity / durability of the home. Moisture related issues, pest control, hazardous waste control and electrical, plumbing and mechanical systems, should be reviewed and corrected. Upgrading homes for energy and resource efficiencies should coincide with the renovation.

The GreenPoint Rated Existing Home program is uniquely designed as a model for implementing baseline green building measures, while at the same time prescribing the minimum scope of work for the construction repairs required to meet local conditions and qualify to participate in the NSP. The attached GreenPoint Rated Checklist (Appendix A), Guidance for GreenPoint Rated (Appendix B) and Sample Addendum (Appendix C) together distinctively form a construction strategy for implementing a successful Neighborhood Stabilization Program; integrating rehabilitation and resale needs with utility incentive programs and a comprehensive environmental strategy of energy efficiency, water conservation, indoor environmental quality, and durability (resource conservation).

Use of the GreenPoint Rated Existing Home checklist and accompanying documents can facilitate builders and developers to the implementation of comprehensive green building strategies. Additional information about GreenPoint Rated Existing Home and the GreenPoint Rated Existing Home checklist can be found at: www.builditgreen.org/greenpoint-rated.

Build It Green Toolkit

Build It Green offers a toolkit to assist local governments in creating a pathway for effective energy efficient and green upgrades and quantifying the environmental benefits of those upgrades. This occurs through the identification of "green upgrades" that are practical, accessible, credible, cost effective, and suited to the community. A minimum number of measures are needed to qualify.

GreenPoint Rated Existing Home is modeled after the successful GreenPoint Rated New Home program. Based upon national, state and industry expert accepted standards and criteria. This program is successful due to careful standards substantiated by third party verification. Third party verification gives the assurance of implementation of the reported environmental practices and actions. Verification is provided by an Existing Home credential.

The Climate Calculator builds on the GreenPoint Rated system administered through the third party verification process to quantify the environmental benefits such as green house gas emission avoided through energy efficiency and vehicle miles traveled. Also captured are energy savings in Kilowatt hours and therms, gallons of water saved and tons of waste diverted from the landfill.

Qualification for GreenPoint Rated Existing Home requires third party verification of measure-specific criteria by a Certified GreenPoint Rater with an Existing Home credential. Additional information about GreenPoint Rated Existing Home and the GreenPoint Rated Existing Home checklist can be found at: www.builditgreen.org/greenpoint-rated. The GreenPoint Rated Existing Home Manual outlines specific verification protocols for each measure and can be purchased by calling the GreenPoint Rated Department at Build It Green; 510/845-0472 ext 604.

Additional Sources of Funding

1) Energy Efficiency and Conservation Block Grants (Source: CEC). Activities to achieve purposes of the program include:

- Developing/implementing an “energy efficiency and conservation strategy”
- Conducting residential and commercial building energy audits
- Establishing financial incentive programs for energy-efficiency improvements
- Grants to non-profits and government organizations to perform energy efficiency retrofits
- Developing/implementing programs to conserve energy used in transportation
- Developing/implementing building codes and inspection services to promote building energy efficiency
- Energy efficiency and conservation programs for building and facilities within the communities jurisdiction
- Energy distribution technologies that significantly increase energy efficiency
- Increasing participation and efficiency rates for material conservation programs
- Other community-wide programs

2) State Energy Program (Source: CEC) The Energy Commission will use these funds to implement various energy programs that include:

- Implementing building and industrial energy efficiency programs
- Establishing and expanding financial incentives or loans for energy efficiency
- Expanding renewable distributed generation programs
- Promoting regional cooperation
- Facilitating sharing of best energy practices
- Increasing coordination with utilities including promulgation of measurement and verification methodologies

3) Weatherization Assistance Program (DOE, Dept. of CSD, local govts)

For use of most cost-effective efficiency activities including: “attic insulation, caulking and weather stripping of doors and windows, furnace efficiency modifications”

4) Utility Incentives and partnerships

There are many incentive programs with specific requirements in local areas.

Previous programs are undergoing review at the CPUC.

Table A – GreenPoint Rated Checklist - Columns have been added to the GreenPoint Rated Checklist in order to highlight best practices for; 1) property renovation under the column “Required Renovation Practices (NSP) and 2) “Cost Effective Practices” for environmental benefit.

Table B – Guidance for Required Renovation Practices – This document further describes requirements to the participating contractors in NSP.