

Richmond, California



Photo: Solarthon

Richmond

CASE STUDY

**SOLAR
OUTREACH**



PARTNERSHIP

City of Richmond, California: Encouraging Residential Solar

The city of Richmond, California (2013 est. pop. 107,571), sixteen miles north of San Francisco in western Contra Costa County, occupies 30.1 square miles in the Bay Area. A seven-member city council, including an elected mayor and an appointed city manager, provide local governance. As of June 2013 the city employs 806 full-time individuals. Major city departments include engineering and wastewater, finance, housing, planning and building services, port operations, public safety, public works, recreation, and the Richmond Community Redevelopment Agency.

Incorporated in 1905, Richmond became a charter city in 1909 and boasts an industrial history still evident today. It contributed to World War II shipbuilding operations and was active in fifty-five other wartime industries. Today Richmond is an important oil refining, industrial, commercial, transportation, shipping, and government center.¹

Project Overview

Promoting and adopting solar technologies can be challenging, but in Richmond, a multipronged, sustained approach has created success in some unusual areas—most notably, low-income residential com-

munities. According to the 2013 census, 18.5 percent of the population was below the poverty line and per capita income was estimated at \$25,722. In 2013, the city estimated the unemployment rate in Richmond at 12.5 percent.¹

To increase access to cost-saving, energy-efficient upgrades and affordable solar photovoltaic (PV) installations, as well as to promote large-scale renewable energy generation, the city has used a range of strategies. These include providing or promoting financial incentives, establishing nonprofit partnerships, and joining regional clean energy efforts.

The city's commitment to this work has resulted in measurable and significant benefits, most notably a steadily increasing residential solar market. In 2007, there were six installations; by 2008, the number had grown to eighteen, and in 2009 to forty-four. In 2010, Richmond was presented with two awards from the Northern California Solar Energy Association: first place for most watts installed per capita and second place for total watts installed.²

Incentives are Key

Richmond's residential solar initiatives rapidly expanded following a 2010 program, [Richmond Recovery Rebates \(R3\)](#). The R3 program provided residents with rebates for home energy assessments, energy efficiency upgrades, and solar installations. Developed using Energy Efficiency and Conservation Block Grant (EECBG) funds that the city received through the 2009 American Reinvestment and Recovery Act, the program successfully leveraged additional financial tools, including existing state incentives, to create a significant (5:1) economic multiplier, demonstrating the market demand for solar.

R3 targeted two energy-saving strategies: improving residential energy efficiency and increasing opportunities for solar installations. The energy efficiency strategy had two components for which rebates were offered: home energy assessments and home energy upgrades. Through home energy assessments, homeowners were provided with detailed





GRID Alternatives volunteers secure the final panel on the roof during the installation for the Bazaldua family in Richmond.

information regarding potential areas of energy loss in their homes and opportunities to increase efficiency, and were given rebates to cover up to \$250 of these initial assessments. They were then given rebates of \$1,500 for upgrades expected to generate a 20 percent increase in efficiency, and for each additional upgrade expected to increase efficiency by 5 percent, homeowners could receive \$500 more, up to a maximum of \$5,000 per household. According to the [R3 final report](#), eighty-three homes elected to conduct an assessment, 70 percent of which used additional rebates to move ahead with recommended improvements. The average rebate given was \$3,064 and resulted in approximately 35 percent improvement in energy performance.

Similar financial incentives were available to support solar installations. The first option provided \$1.50/watt (W) rebate to households installing solar PV. By combining this rebate with existing state and federal incentives, the overall cost of installations for homeowners was reduced by about 50 percent. The second strategy focused directly on making solar affordable and accessible to low-income households through a partnership with GRID Alternatives (see below), a nonprofit solar installer and program manager for the [Single-Family Affordable Solar Homes Program \(SASH\)](#). SASH is a ratepayer-funded program through the California Public Utilities Commission that provides up-front rebates to help low-income homeowners access the benefits of solar power. For homeowners meeting income requirements, the SASH program typically covers an average of 85 percent of the total costs of solar. The R3



Richmond resident Jesus Tirado admires the inverter of his solar system installed by GRID Alternatives.

program issued additional rebates (\$2,500 on average) to cover remaining costs for these installations. Forty-eight households in Richmond took advantage of these rebates and installed systems that reduced energy use by at least 70 percent. As of September 2014, 138 homes in Richmond have benefited from solar installations as a result of the SASH program.³

EECBG funds were available to municipalities only until 2012. However, as the popularity of the R3 program signaled a market demand for these services, the city sought strategies to continue the momentum. The primary source of financial incentives to support solar came from the state-administered [California Solar Initiative \(CSI\)](#). Authorized in 2006, CSI provides a range of incentives for customers of investor-owned utilities in the state to install solar.

Whereas SASH seeks to encourage solar as an affordable and attractive option for low-income homeowners, the [Multifamily Affordable Solar Homes Program \(MASH\)](#) ensures that solar benefits can be realized by low-income renters within affordable multifamily housing properties. Incentives are divided into two tracks. The first track provides fixed, up-front incentives for solar PV systems that offset either common areas (\$1.90/W) or tenant load (\$2.80/W). The second track rewards installations that provide “quantifiable direct tenant benefits” such as cost savings, which are passed on to tenants. Track 2 incentives are awarded to projects through a competitive statewide application process.⁴ MASH is directed to local developers and administered by Pacific Gas & Electric Company (PG&E), Southern California Edison, and the California Center for Sustainable Energy.

Training for a Bright Future

In addition to energy savings and environmental benefits, solar installations in Richmond provide jobs for residents. Through workforce agreements and a local employment ordinance, project teams installing solar in the city must include at least one graduate of the [RichmondBUILD](#) program. Established in 2007, this workforce development program has become a nationally recognized provider of construction skills and green building training. Training equips underserved residents with desirable job skills and provides specialized training in areas such as energy efficiency and solar installation. Over 700 Richmond residents, including 107 YouthBUILD students, have been trained for careers and employment in construction, green building industry, solar installation, and environmental remediation. RichmondBUILD has placed nearly 76 percent of its graduates in jobs with an average starting wage of \$17 an hour.

[GRID Alternatives](#) is also a leading provider of solar workforce training programs, training approximately 2,000 individuals per year. Its programs, which consist of two 8-hour days of classroom and hands-on experience, are available to workforce development groups as well as to interested citizens. One advanced training class results in a “team leader” certification, a highly desirable qualification sought after by area for-profit companies. GRID Alternatives has become recognized as a “go-to” source for quality, experienced workers. Across the state, it has served over 4,500 families and installed 13 megawatts of solar on low-income homes. In Richmond alone, it has installed 138 systems, representing a total of 336 kilowatts and over 21,000 training hours. RichmondBUILD has actively partnered with GRID Alternatives to provide solar technology training and hands-on work experience and employment opportunities for Richmond residents.

Partner with and Promote the Professionals

Another strategy that Richmond has used to promote residential solar is partnerships with local nonprofits such as [GRID Alternatives](#), which is headquartered in Oakland, California. The primary mission of GRID Alternatives is to make renewable energy technology and job training accessible to underserved communities, which it accomplishes through education and community outreach, training, workforce development, and direct installation. The City of Richmond and GRID Alternatives regularly partner to offer community events to raise awareness about solar benefits. The city also provides meeting space for the nonprofit to use for outreach support. Two particularly effective, low-cost outreach strategies have been the approved use of city letterhead for GRID Alternatives communications, and city support to identify and reach out to residents who may qualify for GRID Alternatives services.

Working with Richmond’s housing department, GRID Alternatives provides free assessments of low-income homes to determine whether solar is a feasible and appropriate option. Through these assessments, it has noticed that much of Richmond’s older housing stock has aging roofs and/or outdated electric wiring that may not structurally support solar. In these cases, it may direct the homeowner to the city’s [Housing and Community Development’s Rehabilitation Program](#), which

offers a range of financial support and volunteer services to assist owners of aging properties in making needed repairs. Similarly, to homeowners of properties repaired through these services, the city may recommend that they look into GRID Alternatives for options to improve overall energy efficiency as well as for solar technologies.

GRID Alternatives works directly with eligible homeowners on all aspects of solar installation—from filling out applications for state rebates and permitting, to following up on any warranty issues. Historically, solar has been widely seen as an option available only to those able to pay a premium for expensive panels and installation. As such, it is not uncommon for low-income homeowners to assume that the program will be financially burdensome or overly complicated; others have expressed that “affordable solar” seems too good to be true. Together, GRID Alternatives and the City of Richmond have made over 100 solar installations possible for low-income families, resulting in nearly \$3 million in long-term energy savings.⁵

The city’s support for solar and its endorsement of GRID Alternatives as a trusted and reputable deliverer of energy services has helped to counter any apprehension of potential clients. Over time, and mostly through word of mouth, the nonprofit has established itself as a trusted community advocate and partner. As Mary Biasotti, regional director for GRID Alternatives, points out, these programs, which were designed specifically to assist



Photo courtesy of City of Richmond



Photo courtesy of City of Richmond

RichmondBUILD students receive training in construction and green building including solar installation.

low-income residents best manage their energy, provide a “way in” to a wider range of cost-saving options not previously available to them. They also increase the overall impact that solar can have in a community. Whereas previous attempts to promote residential solar have focused only on middle- to upper-income households, programs like SASH and the partnership between Richmond and GRID Alternatives bring these opportunities to a larger demographic.

Community Choice Aggregation

Recognizing that some homes may not be suitable for solar, and that even homes that have solar installed may still need to purchase supplemental energy and not want to rely on fossil fuels, the City of Richmond partnered with Marin County in July 2013 to offer a Community Choice Aggregation (CCA) program, the [MCE Clean Energy Program](#). Through MCE, a joint powers authority currently comprising thirteen member jurisdictions, residents and businesses can choose to obtain their electric energy from renewable sources such as solar, wind, biogas, geothermal, or hydroelectricity.

Electricity customers can choose MCE’s “Light Green” service option, which consists of 50 percent renewable energy, or its “Deep Green” service option, which consists of 100 percent renewable energy. In accordance with state legislation (AB 117),⁶ MCE has been structured for customers to automatically participate at its Light Green level unless they choose to opt out, in which case they receive energy generated by PG&E, the only investor-owned utility in the service area. Thus far, prices offered by MCE are comparable to—and at times lower than—those offered by the local

utility (PG&E), and the program has maintained a nearly 85 percent participation rate. Of those participants, 98.8 percent are enrolled in the Light Green option, and 1.2 percent have upgraded to Deep Green.

Customers who upgrade to Deep Green pay a premium of \$0.01 per kilowatt hour (kWh) over retail price. Revenue generated by these upgrades has contributed to MCE’s local renewable development fund, which will be used to build MCE-owned generation assets within its service area. The first project will be built in Richmond.

While MCE provides competition in energy generation, all electricity, regardless of its source, is distributed using PG&E transmission lines. Customer accounts also continue to be managed by PG&E. As MCE rates have remained equal to or lower than those of PG&E, the City of Richmond, an MCE Light Green customer, expected to save nearly \$60,000 on its energy bill in 2014. Collectively, MCE ratepayers were expected to save about \$5.9 million in 2014.

MCE Clean Energy was the first CCA in California and the only public energy option allowing customers to choose whether they want to obtain their energy from renewable sources. Prior to joining MCE, the City of Richmond invested approximately \$55,000 in consulting fees and feasibility studies; however, the investment has had no impact on the city’s general fund as these expenses have been met and exceeded by the energy savings of participation in this program.

Future Plans

The most recent initiative contributing to the advancement of solar technology in Richmond has come from an unlikely source. In July 2014, the city

approved an [Environmental and Community Investment Agreement](#) (ECIA) with the Chevron Company to renovate and modernize a century-old oil refinery, the largest in California. The ECIA outlines the conditions of this renovation, including how resulting revenue (to be awarded over ten years) will be distributed to directly benefit the community. Notable for the city's solar efforts is a commitment by the company to lease sixty acres of land for the development of a 2 megawatt (MW) solar field, with future plans to increase capacity to 12 MW. A community-based greenhouse gas reduction program was also established, committing \$6.25 million to supporting rooftop solar and energy efficiency retrofits within the city.

Lessons Learned

Richmond has taken several approaches to not only encourage solar adoption, but also make solar accessible to as many residents as possible. An examination of the elements that have contributed to this success reveals many of the same critical aspects that have contributed to successful local initiatives across the country. The city boasts a history of strong political leadership committed to advancing renewable energy, knowledgeable and determined city staff, active nonprofit and industry partnerships, and broad community support. Its solar programs have also benefited from a range of strategies, including financial incentives, workforce development, and regional partnerships. The following lessons learned provide insights from Richmond's experience into ways that other cities, towns, and counties may consider approaching solar initiatives:

1. When financial resources are available, build upon on existing state programs by filling funding gaps or making state programs more incentivizing.
2. Require that solar installation jobs include opportunities for workforce development programs. R3 required that graduates of the RichmondBUILD Academy meet a certain percentage of on-site work.
3. Provide electricity options to residents who have not installed solar in order to improve accessibility to all electricity consumers, not just those who solarize their rooftops.

Individuals Contacted

Adam Lenz
Environmental Manager
City of Richmond, CA
510-620-5537
adam_lenz@ci.richmond.ca.us

Chris Castancho
Planning & Building Services
City of Richmond, CA
Tel: 510-620-6764, Fax: 510-620-6858
chris_castancho@ci.richmond.ca.us

Mary Biasotti
Regional Director

Note: Was original contact interviewed for this case study but is no longer at GRID Alternatives. The new point of contact is listed below.

GRID Alternatives Bay Area
1171 Ocean Avenue, Suite 200
Oakland, CA 94608
Office: 510-731-1325, Cell: 510-326-5598, Fax: 510-225-2585
mbiasotti@gridalternatives.org

Mara Ervin
Development Officer
GRID Alternatives Bay Area
Office: 510-731-1186
mervin@gridalternatives.org

Ben Choi
MCE Account Manager
415-464-6038
bchoi@mcecleanenergy.org

Endnotes

1. City of Richmond, California, Adopted Biennial Operating Budget FY 2013 – 14 to 2014 – 15 (June 25, 2013), <http://www.ci.richmond.ca.us/DocumentCenter/View/27797>.
2. Veronica Moscoso, "Richmond Leads the Bay Area in Solar Power Wattage per Capita," Richmond Confidential, June 23, 2010, <http://richmondconfidential.org/2010/07/23/richmond-leads-the-bay-area-in-solar-power-wattage/>.
3. "CSI Single-Family Affordable Solar Homes (SASH) Program," <http://www.cpuc.ca.gov/PUC/energy/Solar/sash.htm>.
4. "CSI Multifamily Affordable Solar Housing (MASH) Program," <http://www.cpuc.ca.gov/PUC/energy/Solar/mash.htm>.
5. Grid Alternatives, "Impacts in Richmond," [GridAlternatives_Impacts.pdf](#).
6. http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/42389.pdf

Author

Tammy Zborel

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