



California Interfaith Power & Light

## **Solar Resource Guide: An Overview for Congregations**



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## **Introduction**

Welcome to the world of solar power! The purpose of this guide is to give a short overview of solar/photovoltaic (PV) power and financing as it suits the needs of California congregations in the California Interfaith Power & Light (CIPL) network. As non-profits with unique cash-flow concerns, congregations often face challenging questions when investigating the possibilities of installing a PV system. This packet will share with you some of the experiences of our congregational partners in their transitions to solar energy usage. Please note that this short guide is not meant to be expert advice, but as adjunct to information that you receive from solar professionals and your own research. In addition, the leadership of specific faith traditions or denominations may have policies regarding solar and other energy efficiency measures, and should be consulted as well before moving ahead with a solar installation.

This short guide explores both potential financing options and financial models our congregations are already using. It provides recommendations of solar installers and auditors based on researched, documented, and/or first-hand information. Please note that the ideal situation for any congregation is to have a project manager or solar task force to gain as much information as possible, and to manage the bidding, sizing and solar installation process at every step of the way.

We want to help empower you as you shift to solar energy. As you consider, plan, and implement a solar energy system for your congregation, please call us. We are happy to work with you to address any problems specific to your congregation's needs. Thank you for your interest in solar and your involvement with CIPL.

## **The Faith Case for Going Solar...It's More than Money**

Often, when a congregation is considering solar energy, the overriding concern is financial. It is crucial to explore the area of financing and to ensure that the decision to move ahead with a solar system is feasible. But the conversation ought not to stop there. There are several other important reasons to make such an investment.

First, opting for renewable energy indicates that your house of worship is caring for the local and global community. Your carbon emissions will decrease, making a positive impact in the air quality in your local region, while decreasing the harmful emissions that contribute to global climate instability.

Second, you are looking ahead and making a commitment to treat the planet and future generations with respect and care by reducing your carbon footprint.

Third, your congregation is taking faith principles of environmental stewardship seriously. All major religions include teachings on caring for the Earth, from the *tikkun olam* of the Torah, to the *hadith* of the Prophet Muhammad, to the call to love our neighbor in the New Testament. You are enacting the *religious* understanding of conservation; being a steward of Earth's resources not because they are *limited*, but because we are mandated by our faith to live in life-giving harmony with all of Earth's inhabitants.

Fourth, you are in solidarity with the global interfaith community. There is a growing recognition within the faith community that all of Earth's inhabitants and resources are interconnected. This solidarity of understanding is leading to practical commitments by world faiths in terms of carbon reduction, green strategies and environmental education.

Finally, your solar system will be an example to your congregational members as well as to your larger community. Your congregation will be truly a light to all, a statement of hope for a cleaner, healthier world, now and for future generations.

## **A Congregational Checklist for Going Solar**

### **I. UNDERSTAND YOUR CONGREGATION'S ENERGY USE AND REDUCE!**

The first step to going solar is to reduce your energy consumption through energy efficiency (EE) measures, such as changing out lighting for more efficient CFL and LED light bulbs, upgrading old heating/ventilation/air-conditioning (HVAC) systems, and replacing older refrigerators and dishwashers with Energy Star rated appliances. If you are going to invest in solar, you want to ensure that you are doing everything possible to reduce energy usage, and thus, to size your system according to your needs.

**You can use the following resources** to assess your current energy usage and to start the process of energy efficiency:

- To assess your current energy usage, go to **[www.coolcongregations.org](http://www.coolcongregations.org)**. This tool was designed specifically for the national Interfaith Power & Light (IPL) for houses of worship. It is important to understand your congregation's starting point of energy usage. After energy efficiency retrofits and a solar installation, you may use the calculator again to compare your new energy usage with the original.
- **Do a self-audit on your facility(ies):** A self-audit may, in some cases, be just as good as a professional audit. This method may work especially if you have a congregational member who is trained in energy issues and who is willing to do the audit with you. Cool Congregations, mentioned above, also has a self-audit form. Go to CIPL's website, [www.interfaithpower.org](http://www.interfaithpower.org) and look under the Resources tab to find self-audit forms from IPL/Cool Congregations and Kansas IPL.
- Your **local utility company** may provide free walk-through or discount energy audits. Call your local energy provider and ask for the audit they provide to small businesses and be sure to ask for an "in-person" audit. Contacts for some utilities are as follows:
  - Southern California Edison – Mi-ling McFall, Account Executive; (626) 812-7590; information on audits, rebates and retrofit programs; [www.sce.com](http://www.sce.com)
  - San Diego Gas & Electric – Call the Energy Information Center; 800-644-6133; information on audits, rebates and general energy conservation measures; [www.sdge.com](http://www.sdge.com)
  - Pacific Gas & Electric – Business Customer Service Department; 800-468-4743; website includes useful resources; [www.pge.com](http://www.pge.com)
  - Sacramento Municipal Utility District – on-site energy audits: 1-877-622-SMUD (7683); [www.smud.org](http://www.smud.org)
  - Los Angeles Department of Water & Power – Valley Field Support; Darryl Gordon; 818-902-3486; [www.ladwp.com](http://www.ladwp.com)
  - Please note that your local water utility may also provide a water audit and may have important information regarding water reduction measures, such as low-flow toilets. Call your water district for more information.

- **Get a professional audit:** A professional energy auditing company may give you a more thorough picture of your congregation's energy use in terms of electricity and natural gas. Practice smart consumer habits by asking for references, as well as contacting the Better Business Bureau to check business records. The CIPL website has some referrals based on previous work with faith communities. [www.energysavers.gov](http://www.energysavers.gov) and [www.energystar.gov](http://www.energystar.gov) provide information on finding an auditor in your area.

2. The next step will be the analysis of the property and roof for the bid process. You should begin by putting together a Request for Proposal (RFP.) This will be sent to various solar companies in your area and they will check out your location, roof and property to determine a bid/proposal for your installation. It is highly recommended that you get at least three bids and follow up on references from the solar companies. Make sure that possible installers are licensed and insured by checking with the California Solar Energy Industries Association (CALSEIA) – [calseia.org](http://calseia.org). You may also check with the Better Business Bureau.

3. Financing options – the financing section of this guide offers some overview of various forms of financing. Your congregation will need to make decisions about the best process for your particular situation. See pages 12 and following.

4. Rebates and Incentives – federal incentives are not available to non-profits/congregations because of their tax-free status. However, there may be state and local incentives available to you. The Database for State Incentives and Rebates at [www.dsireusa.org](http://www.dsireusa.org) is a comprehensive source of information on state, local, utility and federal incentives. See page 11 of this guide for more information.

5. Stay in touch with CIPL through your process. We like to keep a record of which congregations are installing solar so that we can provide assistance where possible and share your story with other congregations who are going through the process. We may also want to nominate your congregation for an Energy Oscar, our annual event in which we honor congregations working to care for the Earth. Contact CIPL's Northern California Outreach Director at 415-391-4214 or Southern California Outreach Director at 626-396-9052.

## **How Solar Energy Works**

**How Solar Energy is Produced:** When sunlight hits the photovoltaic cells, direct current (DC) runs to an inverter, which converts the sunlight power (DC) to alternating current (AC). The AC power either flows directly into the building if there is demand or to the grid. When the electricity is sent back to the utility grid, the electricity meter runs backward, and you are credited for the value of that electricity. Solar energy sounds complicated to many folks, but compared to other kinds of power systems, maintenance for solar systems is fairly easy; in most cases, all the upkeep needed is keeping the panels clean and free of dirt and dust. You can also include a monitoring system that will alert you immediately to any failure in the systems. The electricity meter on a solar system measures the system's efficiency (i.e., power produced.) Solar panels lose about 0.5% of their efficiency every year, so after 20 years they should still be producing at least 90% of their original output.

**Net Metering on an Annual Basis:** Over the course of one year, your utility company will track the amount of electricity your solar power system has sent to the company's electricity grid and credit this contribution to offset your costs of purchasing power from them when your system does not generate enough electricity to meet your needs, such as during cloudy days or at night. At the end of the year, the utility will factor together how much electricity it provided to you, and compare it to how much your system fed back to the utility grid. If you produced more than you consumed, your bill will be close to zero. If you used more electricity than you generated, you will only pay the difference.

*Note:* Utility rates have increased steadily at an estimated 6.7 percent per year over the past thirty years.<sup>1</sup> Thus, installing solar will theoretically lock in how much energy usage your congregation pays for over the course of one year. Therefore, with rising energy prices, this may prove to be a worthwhile long-term investment.

**Time of Use (TOU) Savings:** Electricity is either billed to customers on a flat-rate schedule where electricity costs the same all day, or on a TOU schedule, where cost is gauged by the time of day and year, respectively. A solar customer on a TOU schedule, producing power at a peak time period, will theoretically sell power back to the utility during peak periods (for example, during sunny summer months) at a high rate and buy back during off-peak hours (for example, when it is cloudy, or during the evening). The customer gets charged or credited for the value of the electricity when it buys or sells electricity, respectively. According to solar expert Andy Black, "The customer gets more value for the same kilowatt hour (kWh) produced, and therefore needs a smaller system to offset their electricity bill," – another perk of investing in solar!

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<sup>1</sup> Andy Black, "Payback and Other Financial Tests for Solar Electric Systems" in *NorCal Solar's 2006-2007 California's Solar Energy Resource Guide* (Hayward: Northern California Solar Energy Association, 2006), 14.

## **CIPL Member Testimonials**

In 2010 **Episcopal Camp Stevens in Julian** installed its fourth solar array, an 8kW system for the roof of their new Lax-Sadler Lodge. The system cost \$52,265.51, but with their \$1.82 per watt non-profit state rebate they paid a net total of \$37,280.00 (keep in mind that they are not entitled to federal tax credits or the depreciation value of their system.) The system should produce at least \$4,500.00 per year in energy savings, including an estimated \$1100.00 per year from selling their anticipated average excess production to SDG&E. As of January 1, 2011, California law requires utilities to purchase excess power from private solar installations. They funded their systems creatively, by finding individual donors to sponsor panels.

From Peter Bergstrom, Director of Camp Stevens, “Our system has 40 panels, so we sought 40 donors who would each make a gift of \$900 to sponsor a panel. Some people sponsored two or four panels, and there were others who got together to sponsor one panel. We’ll have a plaque by the display to identify the donors and their memorials. We invited donors to join us in helping to reduce carbon emissions while at the same time providing an endowment for Camp Stevens through the annual savings in our operating expenses.”

Nestled in the Santa Lucia mountain range, inland from Big Sur, lies **Tassajara Zen Mountain Center**, the winter monastery, retreat center, and hot springs resort of the San Francisco Zen Center. The natural hot springs supply not only water for the baths, but all the hot water and heating for the facility, which hosts thousands of visitors a year. Being off the grid, electricity production and use has been an on-going issue and a major focus, as Tassajara has endeavored to shrink its carbon footprint. Initially dependent on diesel and propane generators combined with a small PV array, the monastery spent the last several years educating its community in conservation, taking measures like turning off the ice machine and investing in efficient lighting. Soon, they were able to reduce consumption by 22%.

In 2010, in conjunction with Sun Light & Power, a PV system comprised of 51 panels was mounted 300 feet off the valley floor to maximize sun exposure, with only 6 footings in order to minimize the impact on the ecosystem. Because of the center’s remote location, engineers, residents and workers had to carry and install 5000 pounds of steel, 340 bags of concrete, and 2000 pounds of cabling by hand up the winding mountain steps to the site. Now, with its 21 kilowatt-strong system, Tassajara generates 100% of its electricity from the sun – and is a visible inspiration for the people who live, practice, and pass through the center throughout the year.

Tassajara Zen Mountain Center is completely off the energy grid and was therefore not eligible for the state rebates distributed through the utility companies. The Zen Center is also a religious non-profit and so is not eligible for the 30% federal tax rebate. As a result, the project was completely self-financed with a fundraising drive to the community and donors.

In **Fremont, Christ the King Lutheran Church’s** system cost over \$80,000 before rebates available in 2004 and they paid the remaining \$45,000 owed by refinancing the church’s mortgage. This benefited (and continues to benefit) the congregation in two ways: the

refinanced loan allows for lower mortgage payments monthly, and the power the system produces lowers the church's electricity costs. Christ the King's system has produced about 31,000 kWh in the last two years. The church has been able to meet half its energy needs from the system, saving about \$2,250 per year, and since the system locks in utility costs at current prices, it may end up saving them even more as energy prices rise. The congregation expects to pay off the system within 15 years. Meanwhile, the church has increased its cash flow, which now goes to support other community programs that were previously underfunded.

With three separate rows of panels that feed into one energy storage unit, Pastor Nielsen has tracked high performances of 65 kWh per day in summer and lower winter performances of 15 kWh on cloudy days. Christ the King has made their solar energy system a visible part of their community, placing in the church's entry a panel with readouts of the system's daily and cumulative energy production. The inverter also lives in the entry, slightly higher overhead but still audible as it does its job of converting energy currents. This serves as an educational tool, encouraging members to consider solar for their own homes and businesses. The panels themselves are visible from the courtyard, placed on the roof of the parish hall building to catch the sun. Pastor Nielsen sees the solar power system as a gift to the congregation's children and grandchildren: not only will they inherit a cleaner world, but they will also be left with cheaper energy costs. For him, the long-term value of a church's solar system is not just in the financial savings but also in the benefit to the wider Earth community.

With a generous donor and state solar rebate, solar energy can provide big savings, as exemplified by **Congregation Shir Hadash in Los Gatos**. A member of the congregation donated \$40,000 for the purpose of installing solar panels, and the synagogue made the most of that donation by doubling its power with state rebates that were available then. They used the funding opportunity to spend roughly \$10,000 on regular roof improvements, including installing a "cool roof" for greater efficiency. The Shir Hadash system contains 140 photovoltaic modules and is a 9.9 kW system. The system provides about a quarter of the congregation's energy needs, for a savings of at least \$3-4,000 per year, and even more as energy costs rise. With these savings, Shir Hadash paid off the roof maintenance expenses within three years.

Executive Director Art Scher sees the investment in solar as an easy choice: it has proven significant financial savings, and it is part of the congregation's ongoing discussion about conservation issues. He sees it as an extension of the culture of the synagogue, a part of the community's faithful engagement with the environment and their surrounding community. Los Gatos neighbors stop by to get tips for their private solar projects, and Art is always happy to talk with folks interested in moving to solar.

Reverend Richard Rubin will be happy to tell you about how **Christ Church of Ontario** installed 108 solar panels (11.1 kW faceplate) in 2002. The church keeps reference materials about the process they underwent to set up their system, to share with anyone, from interested neighbors to publications such as *Guidepost* magazine, which featured the church in its June issue on green living.

The congregation did the installation themselves, savings tens of thousands of dollars on labor costs by utilizing the know-how of their own congregants. Half of their \$76,000 system was paid for by state rebates, and the rest was covered by reserves from an investment account, which they are repaying from their energy savings. Saving at least \$5,000 per year on energy costs, the church has almost fully paid back the investment account, while being able to go years at a time without purchasing any electricity from their utility company.

Besides the cost savings, the members of Christ Church Ontario have been very satisfied with their system. Rev. Rubin attests that, besides washing the panels every few months, the system requires no significant maintenance. Further, the solar panels reflect the parish's sense of responsibility about social and environmental concerns. The congregation is happy to know that they are not contributing to greenhouse gases and proud when they raise awareness about the low environmental impact of their church's operations.

**A solar situation in progress:** St. Mark's Episcopal Church in Berkeley's Social Justice Committee got excited about pursuing the possibility of solar energy for St. Mark's when they hosted a CIPL Solar Information night in January 2011. Inspired by presentations from CIPL, Sun Light & Power, Luminalt, and St. John's in Berkeley, an expanded solar/social justice committee met with Sun Light & Power to get a first bid. The bid was developed by looking at St. Mark's energy bill and looking at aerial photos of the Church's roof. With St. Mark's current energy usage, a 27 kW system could be placed on the south roof of the sanctuary and produce enough power to meet 97% of the church's energy needs. This preliminary bid for a system of this size would cost \$187,000.

But now the hard work – how is St. Mark's going to finance it? St. Mark's looked at the financing structure of a sister church – St. Paul's Episcopal Church in Walnut Creek (described on p. 13). The chair of St. Mark's Social Justice committee had a preliminary meeting with a solar financing consultant from another sister church, St. John's Episcopal Church in Montclair. In the meantime, St. Mark's parish treasurer rightly suggested that the committee consider investing in energy efficiency measures first. By reducing the parish's energy use, a smaller solar PV system would provide enough energy. Using a referral from another CIPL member, First Unitarian Church in Oakland, the Solar Committee found an energy efficiency consultant, Ben Thompson from Peralta Energy Group. He came and did a preliminary walk-through audit of St. Mark's in March 2011, and gave a presentation to the Solar Committee on ways to reduce energy consumption.

At this point, the discussion is on-going. St. Mark's is involved in some energy efficiency measures and plans to re-visit the issue of solar later this year. The parish's Social Justice Committee chair, Kirsten Snow Spalding, said about the project, "This is really exciting for St. Mark's. We've been thinking about greening our church for a long time. People are interested in learning about solar and energy efficiency because it's good for the church, but also because it suggests possibilities for their own homes and businesses. In fact, it seems that the excitement about solar and energy efficiency is attracting new members, energizing our longstanding members and engaging some folks who don't generally participate in social justice projects. It's also interesting that this has so quickly become a real multi-church project with congregations sharing resources and experiences." Stay tuned – St. Mark's has promised to update CIPL on their progress.

## **Tax Incentives for Installing a System**

**Federal Tax Credits:** There are several government incentives to promote the use of solar energy in commercial, industrial, and residential systems. Unfortunately, those which are tax-based incentives do not benefit religious organizations. Congregations enjoy non-profit status and thus **are not eligible for federal tax credits** or the federal tax grant.

A comprehensive list of federal incentives and state programs can be found at the website:  
**[www.dsireusa.org](http://www.dsireusa.org)**

*A note on depreciation:* The Internal Revenue Service (IRS) allows depreciation for solar systems owned by tax-paying entities.

In addition, solar systems are exempt from California property taxes (already-tax-exempt non-profits do not reap this benefit), yet the value of a solar system adds to the appraised value of a property.

**State Tax Rebates:** California has offered solar rebates as part of its California Solar Initiative, administered through utilities. Unfortunately, this rebate is exhausted and no longer available for non-residential systems in PG&E and SDG&E territory. The rebate is still available for SCE customers. Solar advocates are currently working for the continuation of solar rebate incentives. Systems that are smaller than 30kW (i.e. most of CIPL member congregations) receive incentive payments up-front, based on their expected performance. Systems under 30kW can opt for either the Performance-Based Incentive (PBI) or the Expected Performance-Based Buy-Down (EPBB) rebate. The rating and rebate of systems takes into account equipment evaluations and installation factors, such as geographic location, tilt, and shading. Please note that utilities that are not investor-owned have their own schedule of rebates. Further, some utilities have stopped guaranteeing California Solar Initiative rebates for non-residential customers because they have run out of rebate money.

California's 'GO SOLAR' website explains more: [www.gosolarcalifornia.ca.gov](http://www.gosolarcalifornia.ca.gov)

**Local Incentives and Rebate Programs:** Many local municipalities have similar incentive programs; it would be impossible to list them all here. There are many innovative programs out there, such as Go Solar San Francisco. For a comprehensive listing, check out [www.dsireusa.org](http://www.dsireusa.org) and click on California on the map to see all of the current local programs.

Many local incentive programs have great components such as Go Solar SF's workforce development program, where you can get several thousand dollars back for employing graduates of green job programs. These local incentives not only add up to significant savings, they also help fulfill congregational goals of social justice. Check out [www.dsireusa.org](http://www.dsireusa.org) and get in touch with your city and county government staff to find out more.

## **Financing Your Solar Energy System: Models for Non-Profits**

**Solar Endowment:** One model proposed by Peter Bergstrom at Camp Stevens, and echoed by *PV Financing for Non Profits: A Solar Endowment*<sup>2</sup> sees investing in a solar system as a creative way to approach a congregational endowment. With the net savings in electricity costs per year, solar systems may return on an initial investment at a rate higher than that of an already-established endowment fund. If a congregation already has a fund, it can withdraw the principal to pay for the installation of the solar system and use the net savings in electricity costs to pay back the fund over 20-25 years, depending on the size of the system. If the net savings on energy bills yield a higher rate of return than the interest earned on the permanent endowment, the solar system could pay back the principle investment *and* interest lost as a result of liquidating the fund.

**Split-Interest Gift:** A wealthy member of a congregation may be interested in pursuing a Charitable Lead Trust to help a congregation install solar. Under this model, the donor gives an asset (i.e. a given amount of appreciated stock valued at the amount the congregation requires to complete the solar deal after state rebate) and the congregation sells the stock to purchase the solar system. The congregation tallies its electricity savings in a given amount of years. When it reaches the initial cash value of the 'gifted' stock, it returns the 'gift' to the donor (i.e. the initial cash value of the stock.) This option benefits both parties: the donor avoids a capital gains tax on the sale of the appreciated securities and receives a tax deduction for the value of the interest/dividends he or she could have made on the investment; the congregation now has a solar array, has paid off its 'gift,' and owns the system outright.

**Sponsor a Panel:** This model draws from the Camp Stevens example, where a donor or group of donors makes a gift that pays for the system. Plaques or memorials to family members involved in the congregation may encourage participation in such fundraising campaigns.

**Refinance a Mortgage:** This model draws from the example of Christ the King Lutheran Church, where a congregation refinances the mortgage on their building and uses the freed-up capital to invest in a solar system. The longer payoff on the mortgage increases cash-flow for the congregation to use for other programs, and the energy savings may, in fact, pay for the repayment on the refinanced mortgage.

**Power Purchase Agreements (PPAs):** A Power Purchase Agreement (PPA) is a contract between a solar power company and a congregation, where the solar power company agrees to install a solar system at the congregation and sell the electricity the system generates to the church, and the congregation agrees to buy the electricity generated on a monthly basis over the long term. Essentially, a house of worship is able to pay for solar as a service, rather than paying the high upfront costs of the solar panels themselves. Power purchase agreements have not been widely used by congregations yet, but the possibilities of this model should be noted. Under a power purchase agreement, the solar power company is responsible for providing the upfront capital to fund the installation of the solar array. It serves as the owner-

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<sup>2</sup> Rabbi Daniel Greybar and Joseph Lichy, 'PV Financing for Non Profits: A Solar Endowment' found at [www.solar2006.org/presentations/tech\\_sessions/t03-m009.pdf](http://www.solar2006.org/presentations/tech_sessions/t03-m009.pdf).

operator of the system, covering insurance and fees for operations and maintenance, and offers a money-back guarantee that the system will produce the contracted amount of electricity over the long term. The solar power company receives the federal investment tax credit (ITC) and accelerated depreciation as a for-profit entity, and is thus able to pass on significant savings to the congregation over the long term vis-à-vis an outright system purchase or low-interest financing, where the ITC and depreciation cannot be utilized by a non-profit entity.

**\*\*NEW: Internal Congregational LLC PPA's:** This exciting new model has been successfully implemented at member congregation St. Paul's Episcopal Church in Walnut Creek, CA. Media about this church's success can be found here:

<http://sanfrancisco.bizjournals.com/sanfrancisco/stories/2007/12/17/focus3.html>

**Explanation of the LLC PPA financing model:** St. Paul's Episcopal Church in Walnut Creek and a self-employed tax consultant/C.P.A. (also a parishioner) set up a system that takes advantage of the availability in the private sector of tax credits and depreciation (see PPA model above). The upfront capital to purchase the system was entirely gathered through a congregationally-based financing method: third party ownership through a group of parishioners setting up a limited liability corporation (LLC).

This LLC was able to capture the significant tax/depreciation benefits otherwise not available to a church because of its non-profit status. All congregant LLC shareholders worked on a series of projects – for example, digging a ditch a few hours on a Sunday – into which the solar installer placed the conduit that serviced the power supply monitor next to the church. Activities such as this ditch digging met the IRS tax code “active ownership” requirement. The LLC shareholders each “invested” enough to purchase the system outright, and from the federal tax credit and state rebate, they each got an immediate return on their investment in proportion to the total amount they originally paid into the LLC. This return is further augmented by the Five-Year Accelerated Depreciation value of the system (also a tax credit) – an amount paid yearly for five years – to each shareholder. These original shareholders thus have the option of getting paid back on their initial investment at a much higher rate of return than say, stock options or other low-yield investment options, AND many of them instead opted to forego their tax savings, funneling the money back to the congregation as a tax-deductible donation. Many of them used their LLC participation (credits, rebates, depreciation value) to lower their yearly tax payments, with the hope that the energy savings the system produces will pay them back over a 30 year period (the average life of the system).

The parishioner tax consultant, David Mattern, is willing to serve as an informal consultant on a similar project for your congregation. If you are interested in contacting David please talk to California Interfaith Power & Light staff.

**\*\*NEW: Solar Lease Financing:** Some solar companies offer the option (based on a successful credit check and a series of other prerequisites like system size, etc.) of leasing the solar system back to a congregation. Under this model, the solar installation company pays for the upfront capital required to install and maintain the system, and the congregation pays a fixed monthly price to the solar installer over the course of the lease agreement. The

congregation should be able to save money as utility rates rise while the lease payments should be locked in at a lower rate. It is important that the system be sized correctly to serve the congregation's energy needs so that the congregation is not paying a large power bill to its utility in addition to the lease payment to the solar installer. A few of our congregations have installed solar through a lease program and CIPL staff will be able to refer you to contacts at these congregations. See the list of solar installers on page 16 for those that offer lease options to congregations.

## **Solar Job Growth: Strengthening the Economy, the Environment and Local Communities**

**Community stewardship:** The advantages of installing solar power are not only financial and environmental. Going solar also supports community development and job growth. According to a recent study by Navigant Consulting, 440,000 permanent jobs in the U.S. could be generated by the solar energy industry by 2016. Of these new jobs created in the next seven years, 214,000 will likely be in California alone – more than a 200% increase in employment in the industry.<sup>3</sup>

Jobs in solar are prime “green-collar” positions in that they pay family-supporting wages, provide a career path of upward mobility, and benefit the environment. Solar jobs require education beyond high school, a promising career option for many hard-working low-income workers as long as they can gain access to quality training and get experience on the rooftop with employers. Your congregation can advocate for green-collar jobs by asking if your solar installer employs trained workers, especially from green jobs training programs, such as Solar Richmond, Homeboy Industries in Los Angeles or Neighborhood Design in San Francisco. If not, you can ask them to do so.

**St. Paul’s Episcopal Church in Walnut Creek’s** approach to solar is innovative not only because of their unique LLC PPA model, but also because they combined the desire to go green with a social justice component. They partnered with **Solar Richmond**, a nonprofit solar installation training program, to ensure that their solar initiative would help the community as well as the environment. Graduates of Solar Richmond’s training program performed the labor portion of their 28 kW system. As part of their training, the graduates first installed a 2 kW system on a Richmond home.

“I learned to install solar on my neighbor’s roof and now I’m out in Walnut Creek working on a system ten times as large. I’m excited to be giving back to my community, the planet, and making a good living at the same time,” said Angela Greene, a Solar Richmond graduate who later became the training manager for the organization. The installation at the church provided experience for these workers on a large array with other professionals from Real Goods Solar, the company awarded the installation contract. Setting up the system was an opportunity for these graduates to move the interview with a potential employer from the desktop to the rooftop, where they could earn a living wage and their technical skills could shine.

St. Paul’s Reverend Sylvia Vásquez saw the partnership as an important part of the solar installation, stating, “We are proud to have these folks from Richmond working on our solar system. We are committed to being good stewards of the Earth and that is not just about caring for nature, but also caring for our neighbors who struggle with the realities of a challenging urban life. We want to inspire our church members and our community to look for creative ways of showing our love for God’s Earth and one another.”

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<sup>3</sup> By Navigant Consulting, as shown on Google Earth Outreach and the Solar Energy Research Education Foundation (SEREF)’s solar jobs map in Google Earth, found at <http://blog.google.org/2009/03/us-job-growth-powered-by-sun.html>.

## **Solar Installation and Auditing Companies**

The following companies have worked directly with CIPL congregations and/or come highly recommended. Ask about solar financing and/or leases offered.

### **Solar installation companies:**

Luminalt Solar, San Francisco (Grace Tabernacle San Francisco and First UU San Francisco)  
Jeanine Cotter, (415) 641-4000; mobile (415) 740-8082  
Jeanine@luminalt.com  
www.luminalt.com

Sun Light & Power, Berkeley (Tassajara Zen Mountain Center and St. John's Oakland)  
Eric Nyman, (510) 845-2997  
www.sunlightandpower.com

Borrego Solar, San Diego (Camp Stevens, Julian)  
(619) 562-7183; (510) 843-1113  
www.borregosolar.com

PermaCity, Los Angeles (Saints Peter & Paul School, Wilmington)  
Patrick Hubbard, (323) 692-9264 x216; mobile (310) 736-5682  
www.permacity.com

Broadstreet Energy, Stevenson Ranch (MCC in the Valley, North Hollywood)  
(661) 259-4786; (818) 638-5775  
www.broadstreetsolar.com

Solar Convergence, Valencia (Real Life Church, Santa Clarita)  
Mark Figaro, (661) 294-9999  
www.greenconvergence.com

Solar City, statewide (Campbell United Church of Christ)  
888-SOL-CITY – ask about SolarLease  
www.solarcity.com

Solar Universe, statewide  
925-455-4700 – ask about solar lease options  
www.solaruniverse.com

SunRun, statewide (Prince of Peace Lutheran, Saratoga)  
855-4SUNRUN – ask about SunRun Total Solar – their lease program  
www.sunrunhome.com

**Auditors:**

The Building Doctors, Los Angeles (Mary Immaculate Church, Pacoima)  
Dan Thomsen, (323) 646-2534  
[www.thebuildingdoctors.com](http://www.thebuildingdoctors.com)

Peralta Energy Group, Oakland (St. Mark's Episcopal Church, Berkeley and First Unitarian Church, Oakland)  
Ben Thompson (510) 459-0827  
[www.PeraltaEnergy.com](http://www.PeraltaEnergy.com)

The purpose of this guide is to give a short overview of solar/photovoltaic (PV) power and financing as it suits the needs of California congregations in the California Interfaith Power & Light (CIPL) network. Please note that this short guide is not meant to be expert advice, but as adjunct to information that you receive from solar professionals and your own research. In addition, the leadership of specific faith traditions or denominations may have policies regarding solar and other energy efficiency measures, and should be consulted as well before moving ahead with a solar installation.

As you consider, plan, and implement a solar energy system for your congregation, please call us. We are happy to work with you to address any problems specific to your congregation's needs. Thank you for your interest in solar and your involvement with CIPL.

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