



# Going Solar for Congregations

(Created March 2016)

Thanks for being one of many good folks in our region who are working to get more of your congregation's energy from heaven! Going solar is a wonderful way to lower your environmental impact by lighting your sanctuary with cleaner energy generated renewably in your own community.

This guide walks you through the process of going solar:

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*Interfaith Power & Light (DC.MD.NoVA) works with hundreds of congregations of all faiths, across Maryland and the DC area, to support them in saving energy, going green, and responding to climate change.*

## Going Solar Checklist

### Understand how congregations go solar.

- Are you ready to be a solar champion at your congregation? Congregational solar projects only happen when a dedicated member of the community steps up to follow the process through to the end. Are you ready to be that person in your congregation? **Look over our solar discernment page on page 5** to reflect on that question.
- Almost all of the congregations that have successfully gone solar in our region did so by finding a third-party company that installed the solar panels at no cost to the congregation, owns the solar equipment, and sells the power to the congregation under the terms of a Power Purchase Agreement (PPA).

Perhaps the most important first step to taking your congregation solar is to understand how these arrangements work and why they make financial sense for both the congregation and the company. **Particularly if you're just getting started, please turn to page 6 now and read through the solar financing basics for congregations.** To go solar at your congregation, you'll need to be able to confidently explain these financial arrangements to leaders and decision-makers in your congregation.

- Already, over two dozen congregations in our region have successfully gone solar. Read through Interfaith Power & Light's "Learning from Solar Congregations Booklet" to learn from their stories. Download the booklet free at our website: [gwipl.org/go-green/solar/](http://gwipl.org/go-green/solar/)
- We host a listserv for those who have completed congregational solar projects or are in the process of doing so. To join the IPL-DMV solar listserv to hear about other congregational solar projects and to seek assistance and support, send a blank email to [gwipl\\_solar\\_coop+subscribe@googlegroups.com](mailto:gwipl_solar_coop+subscribe@googlegroups.com). Subsequently, you can post to the group by emailing: [gwipl\\_solar\\_coop@googlegroups.com](mailto:gwipl_solar_coop@googlegroups.com).

### Assess your facility's solar potential.

Is your organization's roof or grounds a good fit for solar? (The guidance below comes from our friends at the Community Power Network: <http://www.dcsun.org/resources/solar-evaluation/>.)

- Are you interested in a roof-mount or ground-mount system?
- If roof-mount, is the roof in good condition and less than 15 years old? Are there plans to replace it in the next 5-10 years? If your roof is more than 15 years old or you plan on replacing the roof, you may want to consider replacing the roof and installing solar panels at the same time. Most solar vendors recommend using roofing material that will last as long as the system, which is about 25 to 30 years.
- Is the roof flat or South-facing? If your roof is flat, you're all set! If your roof is pitched, you need to have a section that faces south to maximize the solar energy that your panels can utilize. If your roof faces east or west, it is still possible to go solar, but the panels would produce about 75% of the energy that a south-facing roof would produce.
- Is the roof unshaded throughout the day? The section of the roof where solar panels will be installed should be unshaded between 9 am and 3 pm as shade can significantly reduce electricity production.

- Does the roof have a sizeable section of open space where the panels can go? Air conditioning units, chimneys, skylights, vents, and dormer windows can all decrease the amount of available roof space.
- How much space on the roof or ground is available?

Get a ballpark figure of the available space on the roof or ground that would be suitable for a solar system using a tool like the PVWatts Calculator (<http://pvwatts.nrel.gov>). Later on in the process, an installer can look at your site more closely to determine the system size more precisely.

## **Understand how your congregation makes decisions and talk with the decision-makers about the basics of solar equipment and solar financing.**

Before you seek proposals, it is **critical** that every person at your congregation who will weigh in on the decision understands solar financing, has had their concerns and questions addressed, and feels ready to enter a Power Purchase Agreement (PPA) to go solar. Doing this diplomatic groundwork is critical to the success of your project and can only be done by you and the other solar champions inside your congregation. **Fill out the Worksheet on page 11 to keep track of each person who is part of the decision-making process.**

After listing the people who will be part of the decision-making process and figuring out some dates when those people can meet, feel free to contact Interfaith Power & Light at [solar@gwipl.org](mailto:solar@gwipl.org) to arrange a time when we can meet with the decision-makers, explain the process of going solar, and answer any questions.

## **Solicit solar proposals.**

- In order to get a PPA that is competitive with your current energy costs, solar companies will want to see your current electricity usage and rate. Make sure to **obtain a scanned copy of at least one month of your congregational facility's electricity bill**. If your congregation has more than one meter, obtain a bill from each meter.
- **Contact IPL-DMV for names of solar companies.** Once you've completed the Worksheet (p.11) and have a copy of your congregation's electricity bill, contact IPL-DMV at [solar@gwipl.org](mailto:solar@gwipl.org). We'll offer recommendations for solar companies from whom to request proposals.
- **Contact solar companies.** Call each of the companies to request a proposal. You'll want to share your estimate of the desired solar capacity and request both a prepaid and conventional "no money down" Power Purchase Agreement (PPA). If your community already knows the length of PPA that is desired or has other requested specifications (for example, for American-made panels), make sure to specify these at this time.

Depending on your congregation's financial situation, you may want cost estimates for different financing options including zero money down, fully prepaid PPA, or partially paid PPA. For congregations in Virginia where the solar market is less favorable, your best option is to ask for a fully prepaid PPA.

If more than one company wants to do a site visit, you may want to arrange them to come on the same day.

## Review the proposals and select one.

Once you've met with three installers and received your bids, contact IPL at [solar@gwipl.org](mailto:solar@gwipl.org) to coordinate a time when your congregation's solar team can meet together with someone from Community Power Network (CPN) for up to an hour to go over the estimates and review the options. CPN has a lot of experience reviewing and comparing proposals and can help make sense of the technical and financial language and ensure that you're getting a good deal. Once you've reviewed your options, it's time to select a company!

**\*\*Most congregations wish to have a lawyer represent them in the contract signing process.** Some congregations have found a lawyer with relevant experience who is a member of the congregation and is willing to donate their time. If not, IPL-DMV has secured *pro bono* legal representation from lawyers at Steptoe & Johnson for several previous congregational solar projects and we'd be happy to make an introduction; email [solar@gwipl.org](mailto:solar@gwipl.org).

## Sign a contract and begin installation.

Once you've made the final decision to move forward, your congregation will sign a contract with a company and schedule an installation date. Small or medium sized projects (5-20 kW) usually don't take more than a few days for installers to put up on your roof. Once the panels are put in place on your roof, it usually takes 4-6 weeks for the company that owns the panels to finalize all of the permitting inspections and interconnection agreements with the electric utility, and to turn the system on.

## Celebrate!

It's important to celebrate our solar successes! Invite clergy to bless the panels and encourage them to speak to the congregation about how solar energy shows care for the planet. Throw a party, show off your congregation's lower electricity bills and your lower carbon footprint, and talk about how your congregation's members and neighbors can go solar at home. IPL-DMV can share liturgy and creative solar blessing ideas from previous congregations' projects. Please invite IPL-DMV to celebrate with you – we love a good party! And send us a picture of a completed project to [solar@gwipl.org](mailto:solar@gwipl.org) so we can celebrate your success with the entire Interfaith Power & Light community.

## Discernment: Are You Ready to Take Your Congregation Solar?

It's exciting to envision our congregational buildings lighting their sacred spaces with solar power. The power of that vision will need to sustain you through what may be a daunting process with many details and possible setbacks. Before you get started on an ambitious congregational solar project, it may be helpful to reflect on your own motivation and level of commitment.

Congregational solar projects require champions who are prepared to take the time to persevere through all the obstacles and concerns that people raise and to navigate the details of the financing and logistics.

- Why are you motivated to take your congregation solar?  
What will keep you going when the process becomes difficult?  
What impact will going solar have on your congregation ... on your community ... on the planet?
- Taking on solar for your congregation is a big project!  
Depending on the congregation, some projects can take a year or more. Are you willing to commit approximately 60-100 hours of your time over the next 4-12 months to make this happen?  
If not, could you assemble a solar team that could make that commitment together?
- Congregational solar projects usually need the approval of several people or committees in the congregation. Are you willing to meet with each of these people to hear their concerns and address them?
- How will you address the potential concerns that decision-makers in your community may express:
  - "Solar panels cost too much and put the congregation at financial risk!"
  - "The roof is too old to bear the weight of solar panels."
  - "Technology is always improving. Let's wait for better panels."
  - "Our PPA provider could take advantage of us or go out of business."
  - "Solar panels are a distraction from the core mission of our congregation."
  - "Solar panels are not a priority given all the things we're working on."
  - "Solar panels will make our congregation look ugly."

Answers to some of these questions can be found in our FAQ section on page 13.

## Financing Congregational Solar Projects

Solar photovoltaic technology is widely used around the world today, and our region is blessed with many capable and experienced solar installers. For local congregations, the greatest challenge in “going solar” has not been about the physical equipment — it has been to figure out how to finance the project.

Of the local congregations which have gone solar in our region, it’s worth noting that, with only a few exceptions, *they did not purchase the equipment themselves, and they do not own the equipment now.*

***Almost all solar congregations pay a private entity, which owns the panels on their roofs, for the use of the power the panels are generating.*** In other words, these systems went up with no money down from the congregations themselves. The congregations are paying only for the power provided by the panels.

There are two reasons that congregations are choosing to use panels installed and owned by someone else rather than purchasing solar panels themselves:

The first reason is that solar panels are very costly up-front, and then generate power that’s nearly free for over two decades. Paying the full cost of a solar electricity system up-front would be daunting to many nonprofit organizations. But if a large initial outlay were the only concern, then congregations could theoretically take out a loan to pay for the panels over time, just as they might take out a mortgage to pay for a building.

The second—and more significant—reason that congregations are not choosing to purchase the panels themselves is that federal and some state incentives, as well as the opportunity to benefit from depreciation, are all tax-based:

- The 30% federal tax credit for solar electricity systems, for example, can only be given to private entities and not to nonprofit organizations. So nonprofit organizations like congregations that do not owe any taxes would have to pay 30% more than a private entity would pay for the same system.
- Some state incentives are tax-based as well. In DC, Maryland, and Virginia, solar equipment is exempt from state property taxes.
- Private entities can claim the depreciation of the panels’ value over 5 years against their tax liability. This is a major perk that tax-exempt nonprofits cannot enjoy.

In short, private entities can recoup their investment in solar equipment more rapidly than nonprofit entities. In our area, congregations that want to go solar are finding private entities to install and own the systems on their roofs because the projects are a much better deal for the private entities than they are for the nonprofit congregations.

### **Why would a private company be willing to put up solar panels on my congregation at no upfront cost?**

It can seem a little “too good to be true” that there are companies out there that are willing to put expensive solar panels on your congregation at no net cost, and then sell your congregation the power at a rate similar to or less than what you were paying for that portion of your energy bill before. And yet over a dozen congregations in our region have gone solar in this way.

**Why do these solar companies do it?** We know they're not primarily motivated by the sacred mission that drives our congregations. So let's enumerate how these companies are making their money back on Power Purchase Agreement (PPA) deals:

1. The company can take the **30% federal tax credit** in the first few months.
2. The company can take any **state incentive** in the first year.
3. The company can **depreciate the full value of the panels** over 5 years against their eligible tax liability.
4. The company can sell **Solar Renewable Energy Credits (SRECS)** to the local utility or to an aggregator.

In DC and in MD, utilities are required by law to purchase a certain number of Solar Renewable Energy Credits (SRECs) from solar generators in the state. (And in VA, solar projects may be able to sell SRECs — at a much lower price — to a state with an SREC requirement that doesn't restrict the projects to their own state.)

How much utilities will be willing to pay for SRECs is determined by the laws with which they are complying — SRECs are most valuable in DC, slightly less so in MD, and much less valuable in VA. Because the value of SRECs generated by a solar electricity system depend on the state laws in force, their worth in ten or twenty years is very uncertain. There are now SREC aggregator firms which will reduce risk for solar developers by purchasing upfront all of a system's SRECs to be generated over its lifetime, paying less than they'll probably be worth in exchange for the certainty of money-in-hand today. So companies can usually sell all of the expected SRECs to be generated by a solar electricity system to an aggregator in the first year.

5. Finally, the company makes a small stream of income through the **congregation's energy payments** under the terms of the PPA, which usually lasts for 10-20 years.

It's also important for congregations to be mindful that the company will have largely made its money back in the first ten years, even though the solar panels may well produce energy for the congregation for much longer, from 20-30 years.

### **What about forming our own LLC with congregation members as investors?**

Several innovative projects have placed regular folks — neighbors and congregants — in the role of the private entity that installs and owns the panels.

In a community project, a group of interested investors form a new Limited Liability Corporation (LLC), and it is this new company that hires installers, owns the solar equipment, and signs a Power Purchase Agreement (PPA) with the congregation. These projects, including University Park Church of the Brethren, Florida Avenue Baptist Church, Greenbelt Baptist Church, Washington Ethical Society, and St. Alban's Episcopal Church in Salisbury — required tremendous volunteer energy. Individuals who have formed LLCs for these congregational solar projects had to learn how to replicate the many functions that professional solar financing firms provide. They have had to navigate applicable securities laws in recruiting investors and forming the company, to make decisions about hiring installers, to draft the terms of the PPA with the congregation, to purchase insurance, to apply for government incentives, to sell Solar Renewable Energy Credits (SRECs), to arrange for hook-up with the local utility, to bill the congregation for the power, and to share revenue and tax guidance with their investors.

**Most importantly, though, forming a community LLC is a strategy — like finding a company with whom to sign a PPA — that is designed to enable a private entity to enjoy the tax benefits of owning a solar electricity system on a nonprofit facility since the nonprofit could not otherwise enjoy them.**

We no longer encourage congregations to form community LLCs because there is real doubt as to whether an LLC formed with ordinary congregants would be able to enjoy these very tax-based benefits that this creative mechanism was invented to capture:

Starting in January 2012, the federal tax incentive reverted to a credit, which investors can only take against taxes owed on eligible income. (Three of the five successful community solar projects in our region went through before January 2012, when the federal tax incentive came as a cash grant and could more easily be divvied out to investors.)

Now, the federal tax credit and depreciation both can only be taken by the investors *against taxes owed on passive income*, which most people don't have. You have passive income if you're a landlord collecting rent, or own and profit from a business in which you don't work. (IPL has obtained several lawyers' opinions about this, and they all reached the same conclusion.) Of course, there may be a few such folks in some congregations who own rental properties or a business.

Since the whole point of creating an LLC is to secure the tax credits and depreciation as a private entity that the congregation as a nonprofit cannot enjoy, it doesn't make sense to us — and is a whole lot of trouble — to gather a group of investors who actually don't have the "tax appetite" to benefit from those very tax benefits or depreciation.

### **What if there are members of our congregation who want to contribute personally to the solar project?**

Classically, a Power Purchase Agreement (PPA) charged the congregation for energy over time as the energy was generated by the solar panels, parallel to the congregation's monthly energy bills from the utility for energy used from the grid. We encourage congregations to ask PPA providers to quote them both such a "zero-down" PPA proposal as well as a "pre-paid" option, in which the congregation would purchase all of the electricity to be generated by the panels up-front.

Because a solar company takes less of a risk if it doesn't need to wait for payment for the solar electricity its system generates over the course of a decade or more, a pre-paid PPA may be a way to get a much better offer from the company.

There may be two ways a congregation could pay the up-front cost of a pre-paid PPA even if that kind of capital is not readily available:

1. If there are members of the congregation who are prepared to make a significant contribution towards the solar project, they could **donate the cost of the pre-paid PPA** to the congregation. They'd enjoy the tax deduction in that year that comes with a donation to a nonprofit organization, and the congregation could use the gift to purchase the solar panels' electricity, gifting the congregation with "free" energy from the solar panels for two decades or more. While the full cost of a solar electricity system is often in the tens of thousands of dollars, pre-paying for solar electricity generated by such a system at the cost of a few thousand dollars might be a scale on which some congregations could realistically fundraise from "angels" in their membership.

2. Many congregations have access to below-market loans from denominational building funds or community banks. If a PPA over a decade is essentially a loan from a solar company, and a not very favorable one at that, some congregations might feel better — and do better financially — by **pre-paying for the PPA with a loan** from a denominational building fund or community bank or another lender which feels more like a “part of the family.”

### **What about a community solar project, where congregants could each own one panel on the roof?**

Both DC and Maryland have recently passed “virtual net metering” laws that would make it possible for the first time for people to get credit on their home energy meters for solar energy generated by panels they own in another location.

IPL sees the promise of such arrangements for simplifying and democratizing congregational solar projects because it would eliminate the need for a PPA provider, instead enabling multiple members of a congregation to each own one panel in a large array on the congregation’s roof. We advocated on behalf of the faith community for both of these laws to be passed.

As this booklet was going to press, the Maryland program was set to launch in May 2016 and the DC regulations were still under development. We are in conversation with a number of companies and organization that are planning to develop and seek investors for the first community solar projects in Maryland; please contact [solar@gwipl.org](mailto:solar@gwipl.org) for more information about whether such an arrangement might be a good option for your congregation.



## Worksheet: Preparing to Champion a Solar Project at Your Congregation

### What is the history of the idea of going solar at your congregation?

Has your congregation attempted to go solar before? Yes / No

If so, what obstacles got in the way of completing the project? \_\_\_\_\_

\_\_\_\_\_

Have you been in conversation with any other organization or company about going solar at your congregation? What is the status of those conversations?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Who will make the decision to go solar at your congregation?

Before you seek proposals, it is critical that every person at your congregation who will weigh in on the decision understands solar financing, has had their concerns and questions addressed, and feels ready to enter a PPA to go solar.

This may require setting up individual conversations or presenting at a committee meeting. *Doing this diplomatic groundwork is critical to the success of your project and can only be done by a solar champion inside your congregation. No one else can do this work but you.*

Different congregations make decisions in different ways. Who will need to understand and agree to the solar proposal for your congregation? Consider each of the following:

- Clergy
- Board members
- Executive director
- Buildings/Facilities Committee
- Finance committee
- Denominational staff
- Other green leaders

## Worksheet, continued

Fill in the table below with *each* person who is part of the decision-making process.

Name	Title/Position	Understands solar PPA financing	Questions and concerns have been addressed	Ready to approve solar PPA!
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**What are three dates when all the people listed above can learn about the basics of going solar for your congregation?**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Who will be the main point of contact with the solar company?**

This might be you or this might be the buildings and grounds person or facilities manager.

\_\_\_\_\_

**Is there a pre-scheduled board meeting at which a solar contract would have to be approved? If so, what are the dates of the next 3 such meetings?**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

## Frequently Asked Questions

### **How much will a solar system cost our congregation? Isn't solar expensive?**

Solar panels are fairly expensive (less than \$5/watt), but congregations in our region are mostly going solar at no cost by signing Power Purchase Agreements (PPAs) with companies that put up the panels at their own expense, own and maintain the panels, and sell the congregations the power for a little bit less than what the congregation was paying for that power previously. So how much will a solar system cost your congregation? Almost nothing, aside from the volunteer and staff time it will take to solicit proposals and get a contract signed.

### **How much will a solar electricity system save our congregation in energy costs?**

If your congregation were to *own* solar panels on your roof that were generating clean energy for free every day, that would certainly save you a bundle on your energy bills. But as described above, most congregations don't own the panels on their roofs – rather, they contract with an outside company to put up panels that *the company* owns, and the congregation purchases the solar power from that company. Most Power Purchase Agreements (PPAs) can achieve electricity rates that are slightly less than what your congregation was paying before, and can lock in escalation rates over time so that you save quite a bit over what your congregation *would have been paying* for grid energy otherwise. That said, it would be a mistake to pursue a solar energy project *primarily* for energy bill savings. There are much better ways to save on your facility's energy bills, namely by getting an energy audit and undertaking energy efficiency upgrades. Contact IPL at [program@gwipl.org](mailto:program@gwipl.org) for energy efficiency resources.

### **Will our historic roof hold the weight of solar panels?**

Because solar is a relatively new technology, congregational leaders sometimes get anxious that the weight of the panels may compromise historic sanctuary roofs. Solar panels are not particularly heavy and their weight is spread out across a wide area (compared to an air conditioning unit which has all its weight concentrated in a single spot).

In addition, solar companies will do their due diligence before undertaking a project. First, they'll do an initial assessment to see if the roof is generally in good condition. After you sign a contract and before the company can install the system, they'll need to get approval from a permitting office, which requires an engineering plan that demonstrates the roof's ability to support the weight of the panels. If the installer determines at that point that the roof is not in good enough condition, all parties can walk away from the contract at no risk.

### **Will we still have electricity at night when the sun isn't shining?**

Your solar electricity system will be grid-tied; whenever you're generating solar power that your facility isn't using, it will be fed onto the grid. On the other hand, whenever your facility is using more energy than the panels are generating, at night for example, or on a cloudy day, you'll seamlessly get energy from the grid the way you do now.

### **Will we still have electricity during a power outage?**

Many people with solar panels were surprised after Hurricane Sandy to realize that having solar panels did not provide them power during an outage. Having a solar system that is tied to the electricity grid means that everything goes down at once to give workpeople a chance to safely repair the lines.

If your congregation wishes to be able to generate power from solar panels during a power outage, you would have to obtain a battery back-up system. Such batteries are available and getting more affordable, but will certainly add to the cost of the project.

### **What kinds of insurance does a Power Purchase Agreement (PPA) company carry in case panel installation damages our roof, or the panels hurt someone?**

Solar installers are required to carry liability insurance when they're doing the installation, just as any other company that does building or construction would. Because the installer owns the solar panels through the term of the PPA, the installer carries insurance on the system and has responsibility for fixing and maintaining the system. If the solar system causes any leaks or problems to the roof, the installer is responsible for fixing the problem within a certain number of days. In the very unlikely situation that the panels hurt someone, the installer would be held responsible on account of negligence. All of these should be spelled out in the contract.

### **What happens if the solar company goes out of business during the course of Power Purchase Agreement (PPA)?**

Your PPA contract with a solar company is legally binding and stays in force even if the company goes out of business. The contract's obligations might transfer to a bank or to another company, but your congregation will be protected by the same terms of the PPA regardless of what happens to the company with whom you originally signed it.

Another company might purchase and take over the PPA and then they'll be responsible for maintenance. Some contracts say that if the PPA is not purchased by anyone, ownership of the system automatically reverts to the congregation. You'll decide on these terms as part of your contract.

### **What happens at the end of the Power Purchase Agreement (PPA)?**

During the terms of a PPA agreement, usually 15-20 years, the solar company is responsible for all of the maintenance. At the end of the contract term, the congregation has the option to purchase the panels, have them removed, or to renew the contract. If you choose to purchase the panels, we recommend that you specify in the contract that the price will be at "fair market value" to be determined by an appraiser who will be agreed upon by both the company and the congregation.

Because it's hard to anticipate what will make the most sense in 15-20 years, it's best to wait until the contract is about to end to make a decision about what to do. We simply don't have enough information about how solar technology, energy prices, and the clean energy market will change over the coming decades.