



Financing a Solar Photovoltaic System:

Choose the method that is best for your house of
worship.

By Jim Nail and Joy Yamigawa

Executive Summary

This guide helps houses of worship evaluate solar photovoltaic systems in Massachusetts as of summer 2026. Key takeaways:

- Example system:
 - A 25 kW system costs \$75,000 (\$3.00/watt), or \$52,500 after the federal “direct pay” incentive.
 - Payback period: Typically 6-8 years, with 20+ years of free electricity after that.
 - Utility costs avoided: Buying electricity over 20 years will cost \$225,000-\$320,000, depending on inflation and utility rate increases.
 - Federal incentive: “Direct Pay” rebates can pay for 30 - 40% of the cost of a solar installation but are required to have a fully installed and operational system by the end of 2027.
 - State incentives:
 - Net metering provides credits for excess generation for the typical house of worship system. This allows for “banking” credits during peak generations periods(summer) for use year round(typically winter).
 - SMART programs pays \$0.03/kWh for 20 years for systems under 25 kw, worth potentially up to \$16,500(ex).
 - Class 1 Renewable Energy Credits (RECs): An alternative to SMART 3.0, RECs are the embodiment of the environmental benefits of renewable energy that utilities purchase to comply with the state's Renewable Portfolio Standard. Prices are set through a quarterly auction, thus are not guaranteed but under certain circumstances RECs may be more beneficial than SMART 3.0. Your solar installer will help determine which is best for your HOW.
 - Financing options: Direct purchase (highest savings), low-interest denominational loans, or power purchase agreements (zero upfront).

Since it will take a number of months for a congregation to evaluate a solar photovoltaic project, select a solar partner, install the system, and receive the utility company’s approval to connect the system to

the grid, congregations that are interested in solar panels should get started **ASAP** to ensure they can qualify for the Federal “direct pay” incentive. MassIPL and our solar partners have helped more than 50 houses of worship install solar. Contact us at solar@massipl.org.

Background

Solar panels provide a renewable source of electricity that emits no climate-change-causing emissions. This is reason enough for people of faith to consider installing solar but, of course, there are financial realities that houses of worship (HOW) face.

On the one hand, solar panels require a significant investment. On the other hand, prices for gas and oil continue to rise and are highly volatile due to geopolitical events such as the wars in Ukraine and Iran; this creates challenges for house of worship budgets. One way to think about an investment in solar panels is that they pre-purchase the next 20 - 25 years of electricity at a fixed price. The good news is that the cost of solar photovoltaic systems (solar panels that produce electricity) has dropped significantly over the past decade, making solar an increasingly attractive investment for many congregations. Depending on system size, electricity usage, and site conditions, many projects can achieve payback periods of eight years or less. In the past, financing options have been the most popular, but direct purchase has become more feasible due to the “direct pay” provision of the Inflation Reduction Act enacted in August 2022.

Baseline: Buying electricity from the utility will cost \$200,000 or more over the next 20 years

Since solar panels will last at least 20 years, a HOW considering installing them should compare the economics of solar to the business-as-usual case of continuing to buy electricity from their utility over this time period.

The example HOW can expect to spend from \$200,000 (if prices moderate and annual rate increases are modest) to \$320,000 (if current prices remain and rate increases continue at the average annual rate of 5.7% seen since 2014). This compares quite favorably to the \$75,000 cost of the system even if no state or federal incentives are available.

There are three financial benefits to consider in evaluating the financial aspect of solar panels:

1. **Reduced electricity costs.** Because the panels are producing electricity, the house of worship no longer needs to buy it from a utility such as Eversource, National Grid, WMECO, etc. Under Massachusetts’ “net metering” policy, in months when your solar panels produce less than your

SOLAR EXAMPLE

To illustrate the different financing options, this paper will use the following example, based on MassIPL’s experience and approximate costs as of summer 2026.

House of worship total annual electricity use:
30,000 kilowatt hours (kwh)

Electricity cost 2026: \$.28/kwh

20-year cost of buying electricity from utility:
At 3% annual inflation: \$225,000,
at 5.7% annual inflation:
\$320,000

Solar panel system size: 25 kilowatts DC

Annual estimated solar electricity production: 27,500 kwh

System cost: \$75,000 (\$3/watt)
System cost after “direct payment” (30%): \$52,500

Annual savings:
Avoided electricity cost: \$7700
SMART 3.0 payment: \$825

building uses, you are billed only for the amount of electricity that exceeds what your panels produced. In months when you produce more electricity than your building uses, your account is credited with the value of the excess. (Note: Systems larger than 60 kW may receive different credit rates depending on system size and utility rules. Because most houses of worship install systems well under 60 kW (often under 25 kW), they typically qualify for the higher credit rate.)

2. **State incentives: SMART 3.0** The Solar Massachusetts Renewable Target (SMART) program pays solar system owners a fixed incentive based on the electricity their system produces.
 - **Systems 25 kW AC or smaller:** \$0.03 per kWh produced (higher rates may apply for certain qualifying projects). Our example house of worship will receive \$825 in SMART 3.0 payments per year. (Note: Larger systems may receive less, depending on their location in the state and their utility provider. Proposals from solar installers include details about the SMART incentives your system would qualify for.)
 - **Term:** 20 years. Over this term, the house of worship will receive \$16,500 in SMART 3.0 payments.
 - **Eligibility:** Available to customers of Eversource, National Grid, and Unitil. Not available in communities served by municipal electric utilities.
 - **Land use policy:** SMART 3.0 imposes mitigation fees on certain large ground-mounted projects built on undeveloped land. Rooftop and parking-canopy solar installations, common for houses of worship, are generally exempt.
 - **Current rates:** SMART rates and program rules may change over time. Your installer can provide current incentive details for your project.
3. **State incentives: Class 1 Renewable Energy Credits (RECs).** An alternative to the SMART program is to participate in the Renewable Portfolio Standard (RPS) by qualifying for Class 1 Renewable Energy Credits (RECs). New systems can qualify for either SMART or Class 1 RECs but not both; in areas where the SMART incentive is limited, Class 1 RECs may be more lucrative. Unlike SMART which pays a fixed amount per kilowatt hour, RECs are sold at auction and so the price varies but are generally around \$.03/kwh. The example HOW might receive between \$800 - \$1000 annually in REC income.

Is Solar a Good Investment Without Any Incentives?

In many cases, yes. For our example house of worship, the electricity savings alone (assuming a modest 3% annual increase in electricity costs) would pay back the \$75,000 cost of the system in year 9. Because solar panels are typically warranted for 20–25 years and will continue producing power beyond that, the house of worship will realize years of reduced energy costs after recovering their initial investment. For this reason, solar may remain worth considering even if incentive programs are reduced or eliminated, though the exact economics will vary by site and electricity usage.

A Word About “ROI”

In many of our discussions with HOWs about solar, we hear the objection that a breakeven period as long as 8 years is not a good ROI. MassIPL respectfully disagrees. Often in our private or business lives, we judge investments on shorter time horizons, looking for a 4-5 year breakeven, but we feel HOWs should take a different perspective for 3 reasons:

1. An 8-year payback is roughly comparable to earning a strong return on an investment. For comparison, as of June 2026, 10-year Treasury notes yield approximately 4.53%, while bank CDs offer rates of 3.5-4.0%. A well-designed solar project can provide long-term savings that compare favorably with many traditional low-risk investments, while also reducing a congregation's environmental impact. Solar panels are a safe investment because as long as the sun shines, you are guaranteed to get your "dividends"!
2. HOWs have a longer time horizon than businesses. Many of our faith communities have been around 50, 100, 150 years or longer. In this context, an 8-year breakeven is quite reasonable.
3. Our mission is to live out our beliefs. While we must be good stewards of our congregations' finances, we don't judge our success by quarterly or annual profit and loss statements. We meet and worship in community to bring to the world the values expressed in our scriptures and traditions. Solar panels contribute to our communities being better stewards of God's Creation and lessen our contribution to climate change and the suffering it causes.
4. Ask your solar contractor to calculate the ROI for your specific project. To get an apples-to-apples comparison between proposals, specify the following assumptions to the contractor: utility inflation rate (Massachusetts historically averages 3-5% annually), annual maintenance costs (typically minimal, but include inverter replacement estimated at \$1,500-\$2,500 around year 12-15), and solar production decrease with age (standard industry assumption is 0.5% annual degradation). A qualified installer can provide a full financial model including internal rate of return (IRR) and net present value (NPV) based on your congregation's specific electricity usage and site conditions.

There Are Many Options For Installing Solar Panels

For many HOWs, raising \$50,000 - \$100,000 for solar panels is somewhat daunting. Fortunately, purchasing the panels directly is only one of several options available today. Determining the right way to finance a solar panel system is often the hardest part of the project: No single financing approach works for every HOW and considering which approach is best for your HOW's situation is important. We review the most common options below and are happy to consult with our members as they evaluate them.

The Inflation Reduction Act (IRA) Makes Purchase Feasible for More HOWs

Solar panels have been eligible for tax credits for many years but, as tax-exempt organizations, HOWs have not been able to take advantage of this – until now. The IRA specifies that tax-exempt entities can now receive a “direct payment” for 30% of the cost of the solar panels – i.e., the US Treasury will send a check for \$22,500 to our example HOW, reducing the cost of the system from \$75,000 to \$52,500. (Note: the Internal Revenue Service uses the term “elective pay” but it is the same provision.) The HOW will be required to register their system through their account on the IRS web site (or create an account if you don't already have one) when it is installed and receive a registration number, then file a tax return for that tax year, even if they don't normally file a tax return. Your solar installer will likely help guide you through this process. You can also refer to the following resources:

- IRS Form 5817-D – Elective Pay for Tax Exempt Organizations:
<https://www.irs.gov/pub/irs-pdf/p5817d.pdf>

- Lawyers for Good Government – a non-profit with an excellent set of guidance documents, annotated tax forms, and webinars on how to take advantage of elective pay: <https://www.lawyersforgoodgovernment.org/elective-pay-ira-tax-incentives>
- MassIPL February 2023 Solar Open Forum webinar with two houses of worship who are using direct pay: <https://www.youtube.com/watch?v=IH5h8IvuE4>

There are two other potential incentives that can further increase the direct pay amount, if you can qualify:

- Low Income “adder” – If you live in a designated low income area, the federal government will pay an additional 10% of the cost. There is a limited allocation available each year and you must apply and be approved for it before the system is put into service. The organization Lawyers for Good Government has an excellent fact sheet providing the details: <https://l4gg.docsend.com/view/kb3tr5wuvibj3xmk>
- Domestic content “adder” – If a sufficient percentage of the cost of the system uses parts and components made in America, you can qualify for another 10% rebate. With the increasing availability of American-made panels and inverters, this additional incentive is becoming more common.

Note: Federal incentive programs are subject to change. As part of the proposal process, our solar partners will help you understand current eligibility requirements and project timelines.

Purchase: The Greatest Savings, Easiest Process

The easiest, and in the long run, most financially beneficial approach, is to purchase the system. Our example house of worship which receives full net metering, 30% Federal “direct pay” rebate, and \$.03/kwh SMART 3.0 incentive would see the system break even in year 6.

Houses of worship with an endowment should first evaluate borrowing from these funds to install the system and use the savings and SMART or REC payments to repay the endowment. As noted above, conservative investments like government bonds or certificates of deposit likely pay 5% or less while an investment in a solar system will likely generate the equivalent of 9% or more.

Advantages: Highest savings, simplest to understand and execute.

Factors to consider: Requires money upfront, either by congregational donations, borrowing from the endowment or taking out a loan (see below). As owner of the system, the congregation is responsible for maintenance of the system, but this should not be a major obstacle. Solar panels require very little maintenance; the major maintenance item that can be expected is replacing a component called an inverter after about 15 years, which may cost \$3000 - \$5000 depending on the size of the system and the future changes in pricing for this piece of equipment; consider setting up a reserve fund to anticipate this replacement and fund it from the energy savings. You may want to pay for an annual inspection, as you do for a heating system or other major piece of equipment, and your solar installer will likely offer you an annual service contract at a modest cost.

Loan: Low Interest Rates May Be Available

The purchase of a system may be financed by a loan. The combination of electricity savings and the SMART or REC incentive is likely to provide enough income to cover the monthly payments on a 15-year loan carrying up to a 7% interest rate, meaning this loan would not affect the annual budget. Using the Direct Pay rebate of \$22,500 as a prepayment of the loan in Year 2 would result in paying off the loan in 9 ½ years instead of 15. Some denominations offer reduced-rate loans, often 4% or lower; at this rate, your house of worship could save around \$1000 per year, depending on the term of the loan – see the Resources section for a list of denominational loan sources.

Advantages: Simpler to understand and execute than methods involving additional parties (such as a power purchase agreement explained below) and long term likely provides greater savings. After the loan payoff, 100% of the savings belong to the house of worship for the remainder of the 25+ year life of the system.

Factors to consider: The interest rate limits savings in the initial years and the interest rate will determine how long it will take to pay off the loan.

Power Purchase Agreement (PPA): No Cost Upfront, but Lower Savings and 15 – 20 Year Contract is Required

If a HOW is not able to purchase the panels, various models known as “third party ownership” or “power purchase agreement” have evolved where a financing company owns the system for the period of time specified in the contract.

This remains a common approach for houses of worship that prefer little or no upfront cost. The house of worship pays nothing upfront: An outside company owns and installs the system, takes advantage of state and federal incentives, and the house of worship only pays for the electricity the system produces. Typically, the cost of the electricity is guaranteed to be 10% (sometimes as much as 15%) below the going utility rate for the 15 – 20 year life of the agreement. The important terms to evaluate are the starting cost per kwh, what if any inflation adjustment is included (and whether this adjustment is a set annual rate (usually 1% - 3%) or is tied to increases in the electricity rate of your utility), and terms for buying the system prior to the end of the contract. MassIPL’s solar partners offer PPAs, if a system meets their size requirements.

Advantages: Immediate savings, no money required upfront, the PPA company has responsibility for maintenance of the system. The PPA company has one or more installers that they work with regularly, so the congregation does not need to seek their own installer. Ability to own the system, either at the end of the contract or earlier.

Factors to consider: Requires a 15 – 20-year contract with the PPA company and results in lower savings than owning the system; these contracts are long and require careful review. Requires a relatively large system, at least 30 kw, and often 40 kw or more. These contracts often allow you to buy the system at a depreciated price, often as early as year 6 following installation, providing the HOW a path to ownership of the system.

Batteries: An Up-and-Coming Option

As batteries come down in price, more HOWs are considering installing them with their solar panels. We won't cover them in detail here but they are worth discussing with solar installers who provide proposals to you. While they will add significant cost to the project, there are additional incentives that will offset part of this cost:

- Additional SMART incentive: The SMART program provides an additional “Energy Storage adder” incentive that must be calculated by the installer.
- Higher net metering value: If your system does not earn full net metering credits in months when you produce more energy than you use, batteries allow you to store and use electricity rather than pull it from the grid.
- Earn payments for supplying “peak power”. The MassSave ConnectedSolutions program allows your utility to draw power in your battery during “peak electricity events” (eg, a very hot summer day) and pays you. The program estimates a typical battery installation enrolled in the program could earn \$1375 per year.

Let MassIPL Help Your House of Worship Go Solar!

Given the urgency of climate change today, it is imperative that faith communities do all they can to address climate change and installing solar panels makes a significant contribution. With this range of financing options available, houses of worship have choices that will enable them to find one that fits their circumstances. Massachusetts Interfaith Power & Light has advised over 50 members on their solar projects and will help you! Contact solar@massipl.org.

RESOURCES

Below are links and contacts to MassIPL solar partners and the organizations mentioned above:

Solar installers

MassIPL partners with five solar firms and a solar marketplace provider. If you work with one of these providers, be sure to mention you heard of them through MassIPL and they will make a donation to support our work if you sign a contract with them:

621 Energy: <http://www.621energy.com>; contact Bob Clarke, clarker@621energy.com

Resonant Energy: <http://www.resonant.energy>; contact Madeleine Barr, madeleine@resonant.energy

New England Clean Energy: <https://newenglandcleanenergy.com/>, contact David Kleinschmidt, david.kleinschmidt@newenglandcleanenergy.com

ReVision Energy: <https://www.revisionenergy.com/>, contact Jen Stevenson Zepeda, jstevenson@revisionenergy.com

SmartRoof Capital: <https://smartroofcapital.com/>, contact Kevin O'Grady, kevin@smartroofcapital.com

Energy Sage: www.energysage.com/mipl

This is a solar marketplace: an online site where you set up a free account, list your property, put in some information about your electric utility and monthly/annual kilowatt hours and subscribing installers contact you if they are interested in the project. An easy way to find multiple installers and get multiple quotes.

Sources of loans

Many denominational organizations offer loans for building projects, often at below-market rates. MassIPL is aware of the following denominational loan program but if your denomination isn't listed, do some research to see if they offer one.

United Church of Christ Cornerstone Fund

<https://www.cornerstonefund.org/churches/borrowing/mortgage-loans/energy-improvements/>

Episcopal Diocese of Massachusetts Green Loan

<https://www.diomass.org/resources/grants-loans/creation-care-initiative>

Unitarian Universalist Association Building Loan Program

<https://www.uua.org/finance/grants/buildings/loans>

Episcopal Church Building Fund (will make loans to churches of other denominations)

<https://www.ecbf.org/loans-parishes-ministries/>

Wesleyan Investive (Available to United Methodist churches, boards, and organizations)

<https://www.wesleyaninvestive.org/loans>

Financing partners

Collective Sun

<https://www.collectivesun.com/>

Re-Volv

<https://re-volv.org/>