



Solarize Philly

Installer Manual

August 2023



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1. Introduction

The Philadelphia Energy Authority (PEA) is an independent municipal authority established in 2010 focused on issues of energy affordability and sustainability for Philadelphia's government and its citizens. In 2016, PEA and City Council President Darrell Clarke launched the Philadelphia Energy Campaign, a \$1 billion, 10-year investment in energy efficiency and clean energy projects to create 10,000 jobs. Since 2016, PEA has launched over \$380 million in projects, and created over 3,275 jobs. PEA's goal is to make Philadelphia a national model for implementing energy strategies that improve the health and well-being of the community and local economy, including the City's most vulnerable residents.

Energy efficiency and clean energy projects employ more local workers per dollar of expenditure than traditional electricity, natural gas, coal and oil industries, and the number of clean energy jobs in Pennsylvania already outpaces the number of fossil fuel jobs. These are living wage jobs in a booming industry that will need skilled employees for decades to come. By reducing the consumption of fossil fuels through energy efficiency and clean energy, the Campaign will reduce carbon emissions and other environmental pollutants, which will have both immediate and long-term impacts on public health and the environment in Philadelphia.

Given the unique role of solar in both climate mitigation and job creation, PEA developed Solarize Philly, a discount program to help Philadelphians go solar at home. Philadelphia is the poorest big city in the country, with 23% of residents living in poverty.¹ A report from the Center for Neighborhood Technology showed that a 25% reduction in poverty was possible in Philadelphia through a combination of household expense reduction and job creation.² PEA recognizes that residential solar photovoltaic installation has the potential to reduce household electricity expenses and creates local jobs at a higher rate than any other energy investment.³

Since the launch of Solarize Philly in 2017, over 38,000 homeowners expressed interest in the program, and over 1,900 homeowners (including approximately 600 low-and moderate-income households) signed contracts to install solar. The program has led to an investment of over \$36 million in the region and over 250 direct jobs have been created.

PEA is committed to including all communities in Philadelphia in the transition to solar energy. PEA completed the pilot round of the Solar Savings Grant Program (SSGP), the City's first rooftop solar initiative for low-and moderate-income households, in 2020. SSGP facilitated 50 LMI households to go

¹ <https://www.phila.gov/2022-08-19-how-the-philadelphia-upward-mobility-plan-can-boost-our-efforts-to-help-residents-thrive/#:~:text=Philadelphia%27s%20poverty%20rate%20is%20about,and%20demands%20continued%20aggressive%20action>

² <https://www.cnt.org/blog/new-economic-development-framework-shows-how-cities-can-reduce-poverty-by-25-percent-with>

³ Calculated using job creation tool developed for PEA by the American Council for an Energy-Efficient Economy

solar from across the city's 26 zip codes.

PEA's installer partners have experienced an increase in demand as a result of their participation in Solarize Philly. To meet this and general employer demand in the region, PEA launched the Bright Solar Futures (BSF) program to train young Philadelphians for solar jobs. The program now exists as a Career and Technical Education (CTE) program at Frankford High School in Philadelphia and a Fellowship for Opportunity Youth in partnership with PowerCorpsPHL. PEA also created the Green Immersive Retrofit Training program (GRIT) to support the Built to Last (BTL) program. Built to Last is a repair and comprehensive whole home energy efficiency program for low-income homeowners. GRIT is providing a pipeline of trained graduates to the growing need of workers to facilitate the green retrofit of these houses as well as commercial buildings.

Despite being the largest single solarize campaign in the nation, Solarize Philly has not yet resulted in the scale of market growth required by the City's climate goals. The Total Addressable Market is significant and far greater than the numbers needed to reach the City's climate goals. Given the urgency of the climate crisis and the enormous solar potential in Philadelphia, PEA is rolling out several program design changes for Solarize Philly with the goal of significantly scaling up the program's impact to help achieve the following 2-year goals:

1. **10 MW of contracted residential solar capacity**, nearly double the amount contracted between 2021 and 2022, the largest Solarize Philly enrollment period to-date.
2. **Including 750 more LMI households**, building on the success of the solar lease offering, and advancing PEA's goal of solarizing 1,000 LMI households by 2026.
3. **5 MW of contracted commercial solar capacity**, with increasing capacity additions in future years. Commercial solar is a new focus for Solarize Philly. Commercial projects may be rooftop, canopy, or ground-mounted.

PEA developed this Solarize Philly Installer Manual to provide more specific guidance for the Solarize Philly installers and to delineate requirements in a more specific manner. The terms of this edition of the Solarize Philly Installer Manual apply to all contracts signed during the 2024-2025 contract term.

2. Required Timing for Solarize Philly Activities

PEA requires that Solarize Philly Installers act on a prompt and professional timeline when interacting with customers and completing installations. PEA believes these response times are necessary in order to maintain a positive customer experience. The following timing requirements are specified in the Solarize Philly Installer contract and are included here for reference:

Activity	Timing Requirement
Respond to inquiries from PEA	Within 3 business days. If it is not commercially feasible to respond in three days, the Contractor may request and PEA will not unreasonably withhold PEA's consent to a longer period not to exceed 10 days.
Status updates in Installer's CRM or directly in PEA's Salesforce (new sales, contracting, or installation activity related to the Customer)	Within 1 business day of new activity
Uploading documents in Salesforce (Customer Proposals and signed Customer Contracts)	Within 3 business days of new activity. If it is not commercially feasible to upload said information in three days, the Contractor may request and PEA will not unreasonably withhold PEA's consent to a longer period not to exceed 10 days.
Contact new leads	Within 3 business days of opportunity assignment
Present lead with a proposal and quote (if viable)	Within 15 business days of opportunity assignment
Respond to inquiries from customers	Within 3 business days of inquiry
Commission the solar array	Within 120 days of contract signing
Participate in Installer Check-in Calls	Bi-weekly, every other Friday
Submit 2024 Q1 Jobs Report	April 16, 2024
Submit 2024 Q2 Jobs Report	July 16, 2024
Submit 2024 Q3 Jobs Report	October 15, 2024
Submit 2024 Q4 Jobs Report	January 14, 2025
Submit 2025 Q1 Jobs Report	April 15, 2025

Submit 2025 Q2 Jobs Report	July 15, 2025
Submit 2025 Q3 Jobs Report	October 14, 2025
Submit 2025 Q4 Jobs Report	January 13, 2026

3. Joint Marketing and Lead Generation

PEA will provide the installers/solar developers with graphics describing them as a Solarize Philly-approved installer/solar developer and will name the pre-approved installers/solar developers in press and social media about the program. Installers are encouraged to submit creative recruitment and marketing plans, such as joint marketing with PEA or other Installers. Installer may use its commercially reasonable discretion in determining an effective marketing program, which may include but is not limited to door-to-door campaigns, paid advertising, prior customer referrals, or other outreach methods. The Installer will be expected to make a demonstrable effort to market Solarize Philly and recruit Customers into the program. Contractors are expected to generate at least approximately the same number of leads as assigned to them by Solarize Philly.

Alongside installers' recruitment and marketing efforts, PEA will be building on its successful track record of lead generation from the prior phases. PEA plans to recruit leads using earned media coverage, social media, webinars, Facebook and Google ads (in partnership with installers/solar developers), and engagement with partners across the city including Philadelphia City Council, the Office of Sustainability, PECO, community-based organizations, Chambers of Commerce and other business associations. PEA will also work with installers/solar developers to re-engage leads from prior Solarize Philly phases that did not move forward with a project.

PEA will provide Installer with copies of the Solarize Philly brochure, poster, and stickers. Other than already approved program outreach materials, if the Installer develops new communication, marketing, or advertising materials, then the use of PEA and Solarize Philly's name and logos must be done with prior approval from PEA. PEA will endeavor to turn around these approvals within 3 business days.

Installer will provide incentive payments to Solarize Philly Customers for referring other Customers to Solarize Philly, regardless of whether the original installation was completed by Installer or another company. These incentive payments should be equivalent to the incentive that Installer offers to other similarly situated customers for comparable Work performed by Installer.

Installer's website must provide a link to the Solarize Philly website (www.solarizephilly.org).

4. CRM

PEA uses Salesforce as the Customer Relationship Management (CRM) software to track the progress of a customer from the moment a customer submits the first online interest form to the final commissioning of the solar array. The Solarize Philly Installers are required to share the customer data in their own CRMs on a weekly basis and, when relevant, update Opportunities in PEA's Salesforce within one business day of any new activity with a Solarize Philly customer. Installers will be given a license to

access PEA’s Salesforce and to be notified when new opportunities are assigned. Data to be shared includes but is not limited to:

- Data to be updated in Installer CRM, and shared weekly with PEA (or updated directly in PEA’s Salesforce account if Installer does not have their own CRM)
 - Name, Address, Email, Phone Number.
 - Opportunity’s Unique ID in Installer’s CRM.
 - Customer’s stage.
 - Marking stage as Lost/Abandoned and selecting the appropriate Lost Reason.
 - If applicable, LMI-Verified status whether by verification of household income under 80% AMI or residence in a QCT.
 - Entering relevant data into all fields, including but not limited to:
 - Description
 - Project Type (single-family, small multi-family (2-4 units, large multi-family (4+ units), commercial)
 - System Price
 - kW system Size
 - Module and inverter selection
 - Adders and Adder Value
 - Electric Supplier and Current Electric Rate (\$/kWh)
 - Yr 1 kWh production
 - Financing Method (cash, financing, or lease)
 - If leased, monthly lease amount
 - If financed, monthly loan payment
 - Initial PECO Response (Approved, Approved as Revised, Engineering Study, Denied)
 - Contract Signed Date and Installed Date
 - Key dates of milestones in the Permitting and Interconnection processes including:
 - Interconnection Application Sent
 - Initial PECO Response Date
 - Interconnection Approved
 - Permits Submitted
 - Inspection Complete
 - Part II Interconnection Submitted
 - PTO Received
 - Interconnected
- Data to be updated directly in PEA’s Salesforce account:
 - Adding notes in the Chatter tab on the right of the Opportunity.
 - Uploading the most up-to-date versions of relevant documents within three business days of new activity, including:
 - Customer Proposal, including Solarize Philly cover sheet (Appendix A)
 - Signed Customer Contract, including Solarize Philly cover sheet (Appendix A)
 - Checking off the boxes for “Proposal Uploaded” and “Contract Uploaded” once these documents are uploaded

Note: PEA acknowledges that Installer has requested confidential treatment for all data and documents

uploaded to the CRM, including without limitation all data and documents constituting (i) trade secrets of the installer, (ii) personal identifying information of any Customer, (iii) building plans and infrastructure records, such as electrical system plans, (iv) appraisals, engineering and feasibility estimates relating to construction, or (v) proposals prior to award of a contract. PEA intends to protect the confidentiality of all data and documents uploaded by the Installer to the CRM to the fullest extent of the law and will not voluntarily share this material with other installers or third parties, except in aggregate form or as required by the Installer Contract. PEA may share data with other agents involved in the program (such as third-party inspectors) or with other contractors if Installer does not enter into a Customer Contract during the Enrollment Period, the Customer Contract is terminated for any reason, or the Contractor is in default of its obligations under the Customer Contract or the Installer Contract.

5. Customer Proposals

PEA aims for Solarize Philly customer proposals to have some standardization, so that customers see they are part of a larger initiative and understand the basic information contained in the proposal. Installers must include the Solarize Philly cover sheet, included in Appendix A, on top of all customer proposals. If Installer is also offering a Power Purchase Agreement or lease, Installer must include the Solarize Philly PPA or lease cover sheet, on top of all proposals. For residential projects, Installers must use the assumptions and calculations in the accompanying spreadsheets to generate the inputs for the coversheet to ensure that the approach is standardized.

Solarize Philly customer proposals should:

- Include a Price Escalation of Grid-based Electricity of no greater than 3% annually.
- Include a Solar Production Degradation consistent with the modules specified in the proposal.
- Include current electricity data that are based on the customer's **actual** annual electricity consumption and costs or a load calculator.
- List the reasons and amounts of any adders that increase the total price beyond standard system pricing.
- Not taking into account the property value increases, when communicating net cash flow to the customer (since this data has not yet been verified in the Philadelphia market and can be misleading).
- Include a proposed financing option in addition to the option to purchase the system upfront for customer-owned installations
- Include the percentage of electric usage off-set by solar PV system
- Not highlight \$/watt pricing
- Include a description of the Share the Sun SREC donation program
 - Share the Sun is an SREC donation program managed by PEA's green bank affiliate, the Philadelphia Green Capital Corp. Customers can decide to donate their SRECs to PGCC through the Share the Sun program to support solar installations within LMI communities and homes in Philadelphia.
 - Customer proposals should include a description of the Share the Sun program, and a Customer's next steps to sign up, and a link to the sign up form (shown in Appendix F).

6. Equipment

To ensure quality for Customers, PEA must approve the modules, inverters, and optimizers used for

solar PV systems installed for Solarize Philly. If the Contractor desires to change its equipment offerings to Solarize Philly Customers, Contractor must secure PEA approval for the new equipment.

7. Customer Contracts

Contracts to purchase or lease a system between the Installer and their Solarize Philly customers must be signed by the end of each Enrollment Period. All customer contracts must include the following:

- A. Right of Rescission allowing the Customer to cancel the Contract without penalty within three (3) business days.
- B. Registration Verification allowing the Customer to verify the registration of the Contractor.
- C. Insurance Coverage, in line with the coverage requirements of the Contractor Agreement.
- D. Description of warranties or performance guarantees, in line with the requirements of this Agreement
- E. PPA or Lease Only - An option for the Customer to purchase the system at the end of the PPA or lease
- F. Insurance Coverage, in line with the coverage requirements of the installer contract.
- G. Description of warranties, in line with the warranty requirements of the installer contract.
- H. The following waiver of liability printed in all caps to ensure that it is prominent and conspicuous in the Customer Contract: "WAIVER OF LIABILITY—THE PARTIES ACKNOWLEDGE AND AGREE THAT THE PHILADELPHIA ENERGY AUTHORITY AND THE CITY OF PHILADELPHIA, ITS OFFICERS, EMPLOYEES, AND VOLUNTEERS WORKING ON BEHALF OF SOLARIZE PHILLY ARE NOT PARTIES TO THIS CONTRACT AND WILL NOT BE LIABLE IN ANY CIRCUMSTANCES FOR ANY DAMAGES OR LOSSES ARISING OUT OF OR IN CONNECTION WITH INSTALLER’S PERFORMANCE OF THIS CONTRACT OR THE EQUIPMENT INSTALLED PURSUANT TO THIS CONTRACT. TO THE FULLEST EXTENT PERMITTED BY LAW, THE PARTIES WAIVE ALL CLAIMS, DEMANDS, SUITS, AND LIABILITY THAT MAY BE ASSERTED AGAINST THE PHILADELPHIA ENERGY AUTHORITY OR THE CITY, THEIR RESPECTIVE OFFICERS, EMPLOYEES, AND VOLUNTEERS WORKING ON BEHALF OF SOLARIZE PHILLY TO THE EXTENT SUCH CLAIMS, DEMANDS, SUITS, AND LIABILITY ARISE OUT OF OR IN CONNECTION WITH INSTALLER’S PERFORMANCE OF THIS CONTRACT OR THE EQUIPMENT INSTALLED PURSUANT TO THIS CONTRACT.
- I. Contractor will provide the form of any Customer Contract (installation, Lease or PPA) for use in the Solarize Program to PEA for review and approval and shall not enter into any Customer Contract except using an approved form.

8. Solarize Philly Program Fee

PEA will be collecting a program fee from every Solarize Philly installation at \$0.10/watt for residential installations and \$0.05/watt for commercial installations. The program fee for LMI Verified Customers is waived. PEA may elect to revise the program fees for other reasons, including whether a Contractor is a Philadelphia [Certified Local Business Entity](#) (LBE). Within 45 days after an installation is complete, PEA will send a report of Program Fees owed by the Installer. This Program Fee Report will specify the total amount the Installer is expected to transfer, based on the total number of watts specified in Salesforce. This report will not constitute a final payment due amount, and may be adjusted for contracts canceled by the customer, rejected by PECO, or any other reason communicated with and approved by PEA. The Installer will transfer the Program Fee owed to the Philadelphia Energy Authority for each installation within 30 days of being invoiced in batches by PEA.

Interest on the program fee shall start to accrue thirty (30) days from the agreed upon due date of the Program Fee at 1.5% per month (18% per annum) or at the maximum legal rate permitted by law. If legal proceedings are required to collect an unpaid balance, all costs including actual attorney fees shall be added to the unpaid balance.

9. Permitting

The Department of Licenses + Inspections (L+I) process permit applications through their online Electronic Commercial Licensing, Inspection and Permitting Services Enterprise (eCLIPSE) platform.

Solar permits that comply with the Solar PV Standard (Appendix B) qualify for a 3-business day EZ Permit turnaround by L+I. All Solarize Philly EZ Permit applications must include a completed Solarize Philly Permitting Cover Sheet (included in Appendix C).

The Installer is responsible for submitting Solarize Philly permit applications with a high attention to detail and accuracy. If recurring issues with permit applications are revealed, Installer's ability to have access to this process may be revoked. See Appendix D for Tips on Opening and Closing a Permit shared by L+I and a sample single line drawing that demonstrates best practices.

When calculating your L+I Permit Fees, do not include the PEA program fee as part of your total construction cost. See the Solarize Philly Permitting Cover Sheet for additional guidance on how to calculate the permit fees.

10. Standard of Care

The Contractor shall install each Project in accordance with the Standard of Care. As used herein "**Standard of Care**" means performance of the Work in compliance with all of the following standards:

- Specific standards, methods and requirements set forth in the Agreement
- All laws and legal requirements, including all building and electrical codes and any requirements related to COVID-19 or other health and safety concerns, applicable to the Work associated with a Project;
- The requirements of all manufacturer's warranties;
- The application of professional engineering judgment; and
- Industry best practices and NEC 2017 guidelines
- If a discrepancy arises between any of these standards, the most stringent standard will apply.

In cases where the Installer must create a penetration of any kind through the exterior of a customer home, the installer will take all reasonable measures to keep those penetrations as discreet in location and small in size as possible and will ensure that any penetrations are properly sealed.

11. Quality Assurance Assessments

To assure quality to Solarize Philly customers, PEA will conduct Quality Assurance Assessments (QAA) of a sample of Solarize Philly projects to provide additional consumer protections. These QAAs may include:

1. Review of the construction plan set, system layout and electrical drawings; and review of estimated solar generation.
2. Post-installation quality field inspection.
3. Other analysis related to customer satisfaction and system performance.

Installer must cooperate with all Quality Assurance Assessments, and provide all requested documentation which may include: shading analysis, estimated solar generation, wiring diagrams, and actual production reports and photos of the following system components: junction box, inverter, A/C combiner, A/C disconnect, and the main panel tie-in. *Installers are required to correct any errors revealed through this process.

* PEA intends to protect the confidentiality of all materials provided by Installer for the QAA to the fullest extent of the law and will not voluntarily share these materials beyond the selected inspectors, except in aggregate format or as required by the contract.

12. Job Creation and Hiring

Local job creation is a priority of the Philadelphia Energy Campaign. Toward this goal, PEA will support the Solarize Philly installers to find diverse candidates, build relationships with local, diverse pipelines of trainees and hire Philadelphia residents into internships and full-time positions. Solarize Philly Installers should share any new job postings with PEA within 3 business days of their public posting.

The posting must include:

- Job Title
- Job Location
- About the Company
- Key responsibilities
- Required Experience and Education (if any)
- Desired qualities
- Compensation
- How to apply
- Close Date

Installer is required to submit to PEA a quarterly Jobs Report* outlining the number of new jobs created and percentage of Installer’s current workforce that can be classified as a minority, woman, disabled, resident of Philadelphia, returning citizen, or veteran including specific metrics for new hires. These Jobs Reports must conform to the template in Appendix E. These reports should be submitted to PEA on the following dates:

Report	Due Date
2024 Q1	April 16, 2024
2024 Q2	July 16, 2024
2024 Q3	October 15, 2024
2024 Q4	January 14, 2025

2025 Q1	April 15, 2025
2025 Q2	July 15, 2025
2025 Q3	October 14, 2025
2025 Q4	January 13, 2026

* PEA intends to protect the confidentiality of all materials provided by Installer in the Jobs Report to the fullest extent of the law and will not voluntarily share these materials beyond the selected inspectors, except in summary or aggregate format or as required by the contract.

Appendix A: Customer Proposal Cover Sheet

Residential installers must use the assumptions and calculations in the accompanying spreadsheet to generate the inputs for the coversheet to ensure that the approach is standardized.

Commercial installers must provide a (i) summary of project financials that includes system size and pricing along with forecasted savings and (ii) list of Frequently Asked Questions (FAQ).

[COVER SHEET FOR OWNERSHIP/LOAN MODEL]

[insert Installer logo]

Solar Proposal for 1400 JFK Blvd		
19	6.1 kW	97%
Solar Panels	System Size	Solar Powered in Year 1¹

Welcome to Solarize Philly!

Congratulations! Your free solar assessment showed that your home is a good fit for rooftop solar. You now have the opportunity to go solar through Solarize Philly. Your solar proposal is summarized here. It includes a financing option proposed by your installer, but you are free to secure outside financing on your own.

YOUR CASH QUOTE		YOUR FINANCED QUOTE	
Standard Price	\$15,328	Proposed Loan Product	Service
Adder #1: [Description]	+ \$0	Loan Term (years)	20
Adder #2: [Description]	+ \$0	Interest Rate ⁴	4.79%
Upfront Cost	\$13,328	Upfront Cost	\$0
30% ITC ²	- \$3,998	Net Financed Cost³	\$17,096
Net Cost	\$9,330	Net Financed Cost applying 30% ITC⁵	\$12,651.04
Your Estimated Average Monthly Electricity Expenses³		Monthly Payment ³	\$72
Without Solar	\$77	Your Estimated Average Monthly Electricity Expenses³	
With Solar	\$1	Without Solar	\$77
		With Solar	\$73

¹ This is the portion of your electric usage that is estimated to be offset by solar, based on your current usage and the size of your solar system.
² Consult a tax professional to see if you can take advantage of the 30% ITC incentive. The Monthly Loan Payment is calculated assuming that you receive the 30% ITC after Year 1 and apply it toward the loan.
³ Your monthly electricity expense estimates are based on current electric rates and may change over time. Your monthly electric expenses with solar are calculated based on the estimated savings on your PECO bill and estimated income from the sale of Solar Renewable Energy Credits (SRECs) (based on year 1 production and assuming a sale price of \$40 per SREC).
⁴ The interest rate and loan fees may vary based on your personal financial situation.
⁵ The Net Financed Cost includes interest and fees over the term of the loan.

Frequently Asked Questions

Why go with Solarize Philly? The Philadelphia Energy Authority administers Solarize Philly to help all Philadelphians go solar. We leverage Philadelphians' group buying power to ensure pricing discounts and consumer protections. Going solar through Solarize Philly supports our high school solar training program and special solar financing for low-income households.

How long do I have to make a decision? There is no deadline to sign up for Solarize Philly, but we encourage you to sign a contract as soon as possible so you can start saving on your utility bills.

What are my financing options? Your installer has included financing options in this proposal. Most loans proposed by the installer include a dealer fee that increases the cost. We encourage you to consider lower-cost financing options to cover the cost of your installation, such as a home equity loan. If you are interested in comparing this proposal with the lease option of the Solarize Philly program, please reach out to us at solarize@philaenergy.org.

How long until my home is solar-powered? Once you sign a contract, your installer will apply for a permit from the City and permission from PECO to connect to the electric grid. Occasionally, PECO requires changes to the system before it can be approved. After receiving these permits, your installer will complete your solar installation and then PECO will give the final go-ahead for you to turn on your solar array! Our goal is for your solar to be powering your home within 120 days from when you sign a contract.

How will solar change my electric bill? The solar energy produced will flow into your home and any extra electricity will flow out onto the electricity grid. PECO will credit your bill for this excess production, through a process known as "net metering." When your solar array is not producing (e.g. at night), your house will consume electricity from the grid and your bill credits will be applied toward the cost of this grid-based power. PECO keeps track of this back-and-forth and any positive balance rolls over from month to month until it's paid out every May.

What is an SREC? A Solar Renewable Energy Credit ("SREC") is an attribute that represents 1,000 kWh of electricity generated by solar, 1 SREC = 1,000 kWh. The sale of SRECs from a solar project is unrelated to PECO's net-metering.

Who owns the SRECs generated by my solar system? The installer owns the

[insert Installer logo]

SRECs if you lease the system. With the ownership model (loan, cash) you own the SRECs generated by the system.

Can I donate the SRECs generated by my system to help other

Philadelphians go solar? Yes, you can! PEA's Share the Sun is a program to support solar installations within low- and moderate-income communities and homes in Philadelphia by using donated SRECs from people like you who install solar on their homes and businesses. You can fill out the Share the Sun form at phillygreencapital.org/sharethesun/ to donate your SRECs to PEA. Please email sharethesun@phillygreencapital.org for more information.

How long will my solar panels last? The solar panels installed as part of Solarize Philly are warrantied to produce for 25 years. Your installer will also offer at least a 10-year workmanship warranty on their installation.

We're here to help!

[Installer contact]

215-686-4483
solarize@philaenergy.org

Solarize Philly Team

[insert Installer logo]

[COVER SHEET TO COMPARE LEASE AND OWNERSHIP MODEL]

[Installer contact]

We're here to help!

215-686-4483
solarize@philaenergy.org

Solarize Philly Team

[insert Installer logo]

Solar Proposal for 1400 JFK Blvd

19

Solar Panels

6.1 kW

System Size

97%

Solar Powered in Year 1¹

Welcome to Solarize Philly!

Congratulations! Your free solar assessment showed that your home is a good fit for rooftop solar. You now have the opportunity to go solar through Solarize Philly. Your solar proposal is summarized here and describes your lease terms if you choose to move forward.

QUOTE FOR LEASING THE SYSTEM		FINANCED QUOTE	
Proposed Financing Product	Lease	Proposed Loan Product	Service
Lease Term (years)	20	Loan Term (years)	20
Annual Escalator Over 20-year Term	0%	Interest Rate ³	4.79%
Upfront Cost	\$0	Upfront Cost	\$0
Monthly Lease Payment	\$XX	Net Financed Cost⁴	\$17,096
Net Cost Over 20-year Term	\$XX,XXX	Net Financed Cost applying 30% ITC⁵	\$12,651.04
Your Estimated Average Monthly Electricity Expenses²		Monthly Payment ⁶	\$72
Without Solar	\$XX	Your Estimated Average Monthly Electricity Expenses⁶	
With Solar	\$XX	Without Solar	\$77
		With Solar	\$73

¹ This is the portion of your electric usage that is estimated to be offset by solar, based on your current usage and the size of your solar system.
² Your monthly electricity expense estimates are based on current electric rates and may change over time. Your monthly electric expenses with solar are calculated based on the estimated savings on your PECO bill. With the lease model the installer owns the SRECs and retains the 30% ITC.
³ The interest rate and loan fees may vary based on your personal financial situation.
⁴ The Net Financed Cost includes interest and fees over the term of the loan.
⁵ Consult a tax professional to see if you can take advantage of the 30% ITC incentive. The Monthly Loan Payment is calculated assuming that you receive the 30% ITC after Year 1 and apply it toward the loan.
⁶ Your monthly electricity expense estimates are based on current electric rates and may change over time. Your monthly electric expenses with solar are calculated based on the estimated savings on your PECO bill and estimated income from the sale of Solar Renewable Energy Credits (SRECs) (based on year 1 production and assuming a sale price of \$40 per SREC).

[Installer contact]

We're here to help!

215-686-4483
solarize@philaenergy.org

Solarize Philly Team

Frequently Asked Questions

Why go with Solarize Philly? The Philadelphia Energy Authority administers Solarize Philly to help all Philadelphians go solar. We leverage Philadelphians' group buying power to ensure pricing discounts and consumer protections. Going solar through Solarize Philly supports our high school solar training program and special solar financing for low-income households.

How long do I have to make a decision? There is no deadline to sign up for Solarize Philly, but we encourage you to start saving on your utility bills as soon as possible.

What are my financing options? Your installer has included a lease (\$0 down with an escalator of X) and a financing option in this proposal. Most loans proposed by the installer include a dealer fee that increases the cost. We encourage you to consider lower-cost financing options to cover the cost of your installation, such as a home equity loan.

How long until my home is solar-powered? Once you sign a contract, your installer will apply for a permit from the City and permission from PECO to connect to the electric grid. Occasionally, PECO requires changes to the system before it can be approved. After receiving these permits, your installer will complete your solar installation and then PECO will give the final go-ahead for you to turn on your solar array! Our goal is for your solar to be powering your home within 120 days from when you sign a contract.

How will solar change my electric bill? The solar energy produced will flow into your home and any extra electricity will flow out onto the electricity grid. PECO will credit your bill for this excess production, through a process known as "net metering." When your solar array is not producing (e.g. at night), your house will consume electricity from the grid and your bill credits will be applied toward the cost of this grid-based power. PECO keeps track of this back-and-forth and any positive balance rolls over from month to month until it's paid out every May.

How long will my solar panels last? The solar panels installed as part of Solarize Philly are warranted to produce for 25 years. Your installer will also offer at least a 10-year workmanship warranty on their installation.

What is an SREC? A Solar Renewable Energy Credit ("SREC") is an attribute that represents 1,000 kWh of electricity generated by solar, 1 SREC = 1,000 kWh. The sale of SRECs from a solar project is unrelated to PECO's net-metering.

[insert Installer logo]

Who owns the SRECs generated by my solar system? The installer owns the SRECs if you lease the system. With the ownership model (loan, cash) you own the SRECs generated by the system.

Can I donate the SRECs generated by my system to help other Philadelphians go solar? Yes, you can! PEA's Share the Sun is a program to support solar installations within low- and moderate-income communities and homes in Philadelphia by using donated SRECs from people like you who install solar on their homes and businesses. If you choose to purchase your system, you can fill out the Share the Sun form at phillygreencapital.org/sharethesun/ to donate your SRECs to PEA. Please email sharethesun@phillygreencapital.org for more information.

[Installer contact]

We're here to help!

Solarize Philly Team

215-686-4483
solarize@philaenergy.org

[insert Installer logo]

[COVER SHEET FOR LEASE MODEL]

[Installer contact]

We're here to help!

215-686-4483
solarize@philaenergy.org

Solarize Philly Team

Solar Proposal for 1400 JFK Blvd

19	6.1 kW	97%
Solar Panels	System Size	Solar Powered in Year 1 ¹

Welcome to Solarize Philly!

Congratulations! Your free solar assessment showed that your home is a good fit for rooftop solar. You now have the opportunity to go solar through Solarize Philly. Your solar proposal is summarized here and describes your lease terms if you choose to move forward.

QUOTE FOR LEASING THE SYSTEM	
Proposed Financing Product	Lease
Lease Term (years)	20
Annual Escalator Over 20-year Term	0%
Upfront Cost	\$0
Monthly Lease Payment	\$XX
Net Cost Over 20-year Term	\$XX,XXX
Your Estimated Average Monthly Electricity Expenses ²	
Without Solar	\$XX
With Solar	\$XX

¹This is the portion of your electric usage that is estimated to be offset by solar, based on your current usage and the size of your solar system.
²Your monthly electricity expense estimates are based on current electric rates and may change over time. Your monthly electric expenses with solar are calculated based on the estimated savings on your PECO bill. With the lease model the installer owns the SRECs and retains the 30% ITC.

Frequently Asked Questions

Why go with Solarize Philly? The Philadelphia Energy Authority administers Solarize Philly to help all Philadelphians go solar. We leverage Philadelphians' group buying power to ensure pricing discounts and consumer protections. Going solar through Solarize Philly supports our high school solar training program and special solar financing for low-income households.

How long do I have to make a decision? There is no deadline to sign up for Solarize Philly, but we encourage you to start saving on your utility bills as soon as possible.

What are my financing options? Your installer has included a lease (\$0 down with an escalator of X) in this proposal. If you are interested in comparing this proposal with the ownership option of the Solarize Philly program, please reach out to us at solarize@philaenergy.org.

How long until my home is solar-powered? Once you sign a contract, your installer will apply for a permit from the City and permission from PECO to connect to the electric grid. Occasionally, PECO requires changes to the system before it can be approved. After receiving these permits, your installer will complete your solar installation and then PECO will give the final go-ahead for you to turn on your solar array! Our goal is for your solar to be powering your home within 120 days from when you sign a contract.

How will solar change my electric bill? The solar energy produced will flow into your home and any extra electricity will flow out onto the electricity grid. PECO will credit your bill for this excess production, through a process known as "net metering." When your solar array is not producing (e.g. at night), your house will consume electricity from the grid and your bill credits will be applied toward the cost of this grid-based power. PECO keeps track of this back-and-forth and any positive balance rolls over from month to month until it's paid out every May.

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[insert Installer logo]

Who owns the SRECs generated by my solar system? The installer owns the SRECs if you lease the system. With the ownership model (loan, cash) you own the SRECs generated by the system.

Can I donate the SRECs generated by my system to help other Philadelphians go solar? If you choose to move forward with the ownership option, you can! PEA's Share the Sun is a program to support solar installations within low- and moderate-income communities and homes in Philadelphia by using donated SRECs from people like you who install solar on their homes and businesses. You can fill out the Share the Sun [form](#) to donate your SRECs to PEA.

[Installer contact]

We're here to help!

215-686-4483
solarize@philaenergy.org

Solarize Philly Team

[insert Installer logo]

Appendix B: Solar PV System Standard



CITY OF PHILADELPHIA
 DEPARTMENT OF LICENSES & INSPECTIONS
 Construction Services Division
 Municipal Services Building - Concourse Level
 1401 John F. Kennedy Boulevard
 Philadelphia, Pennsylvania 19102

SOLAR PV SYSTEM STANDARD
 For installations made on One or Two-Family Dwellings. This document shall be submitted with the Electrical Permit application.
 Revised 11/18

SOLAR PV SYSTEM INSTALLATIONS

If the proposed Solar PV System fully meets the standards below, the project requires an Electrical Permit only. All other projects will require the submission of construction plans and a Building Permit.

The Licensed Electrical Contractor must meet the following installation conditions, limitations, and requirements regarding the installation of the Solar PV System for the Department to allow the full installation to proceed under the electrical permit. Note: The Electrical Contractor must accept responsibility for the structural installation of the roof-top equipment.

CONDITIONS

- Installation must fully comply with the requirements of the 2015 IRC, 2018 IBC, and the NEC 2014.
- Systems are limited to a maximum of 10 kW or less in size.
- Installation must be on the roof of a one- or two- family dwelling.
- An Interconnection Application/Agreement – Part 1 (Level 1) has been submitted to PECO for their approval.
- The following are not eligible for use of this standard:
 - o Installation on roof systems comprised of engineered trusses. (Exception: the applicant shall provide a letter from a professional engineer stating that the roof framing has been inspected and that the proposed solar PV system evaluated and has determined that the roof framing system can withstand the additional loads applied by the solar PV system.)
 - o Installation on a sloped roof with more than one layer of shingles in place.
 - o Property is designated historical by the Philadelphia Historical Commission.
 - o Solar PV systems that include an energy storage system.

INSTALLATION LIMITATIONS AND REQUIREMENTS

- Installation shall not commence until Contractor has obtained Level 1 approval from PECO.
- Installation shall be in accordance with manufacturer's instructions.
- The Contractor, by signing this form below, confirms that the existing roof structure will effectively accept the PV Module (Panel) mounting hardware, safely support the combined weight of the PV Modules and future snow loads of 25 pounds per square foot (psf), and safely withstand wind uplift loads.
- Equipment shall impose no more than a 45 psf point load in any location.
- Equipment shall weigh less than 5 psf.
- The height of the system shall be less than 18 inches above the adjacent roof.
- Installation shall include a pre-engineered ballasted or mounting structure with attachments both designed for a wind load of 115 miles per hour (mph).
- Roof mounts with integrated flashing shall be used for mounting the PV Modules to the roof structural members of non-metal sloped roofs. Penetrating roof mounts (with EPDM rubber gasket seals, or equivalent), and/or non-penetrating clamps shall be used on all sloped metal roofs.
- Ballasted systems can be utilized for mounting PV Modules to flat roofs.
- A three (3) foot clearance (minimum of one side) must be provided on roof for equipment maintenance.

ELECTRICAL REQUIREMENTS

- PV System Components, such as Modules, Strings, Arrays, Combiners, and Inverters must be listed for Solar PV application per NEC 690.4(D).
- All PV System components shall be properly grounded and bonded.
- A PECO required AC disconnect switch, per NEC 690.13 requirements, shall be located on the exterior of the building.
- All PV System disconnect switches, panel boards, and related equipment shall be labeled in accordance with NEC 690 and NEC 705 requirements.
- The maximum voltage of PV system dc circuits shall be 600 volts or less.
- PV system dc circuit and inverter output conductors shall be protected against overcurrent.
- Arc-fault circuit protection shall be provided for PV systems operating at 80 volts dc or greater between any two conductors.

[insert Installer logo]



CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Construction Services Division
Municipal Services Building - Concourse Level
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102

SOLAR PV SYSTEM STANDARD
For installations made on One or Two-Family Dwellings. This document shall be submitted with the Electrical Permit application.
Revised 11/18

- PV system circuits installed on or in buildings shall include a rapid shutdown function to reduce shock hazard for emergency responders. An initiation device shall initiate the rapid shutdown function of the PV system, and shall be located at a readily accessible location outside the building.

PROJECT SUBMISSION REQUIREMENTS

- The Contractor shall provide a signed copy of the Interconnection Application/Agreement – Part 1 (Level 1) that has been submitted to PECO.
- The Contractor shall provide three (3) sets of the following information:
 - o "Single Line Diagrams" (minimum 11" x 17" paper) showing the layout of the PV Modules, AC & DC Disconnect Switches, Inverters or Micro-inverters, Meters, Conductors (type, size and color), and Grounding Detail. Panel board and disconnect switch labeling details shall be included on plans.
 - o Equipment manufacturer specification sheets for all equipment, which shall include manufacturer's Model No., and Installation Instructions.

AP# _____

Licensed Electrician's Name _____

Licensed Electrician's Signature _____

[insert Installer logo]

Appendix C: Electrical Permit Application Cover Sheet

[insert Installer logo]

Installer: _____
Contact name and Phone: _____
Property Address for Permit: _____

Solarize Philly Permitting Cover Sheet

This solar installer is part of Solarize Philly, the Philadelphia Energy Authority’s citywide program to help all Philadelphians go solar. Installer must include this cover sheet with all Solarize Philly permit applications.

Expedited Permitting Process:

All solar projects (regardless of their inclusion in Solarize Philly) qualify for expedited review based on the Solar PV Standard only require an electrical permit. All approved electrical permits will be issued within 5 business days.

Standard Permitting Process

All solar projects (regardless of their inclusion in Solarize Philly) that do not qualify for expedited review based on the Solar PV Standard must receive both an electrical permit and a building permit. All approved building permits will be issued within 15 business days for 1-2 family dwellings and within 20 business days for all other properties.

Installer must select which of following options describes this Solarize Philly permit application:

- This project qualifies for expedited review based on the Solar PV Standard but Installer has already submitted 5 other permits through the Streamlined Permitting Process this week. This application is being submitted through the **Expedited Permitting Process**.
- This project does not qualify for expedited review based on the Solar PV Standard. This application is being submitted through the **Standard Permitting Process**.

Electrical Permit Fee Calculation

Installer must complete the table below to depict the electrical permit fee. Note: the minimum Permit Fee Subtotal is \$50 and the maximum fee is \$15,000.

	Item	Amount
1	Total Construction Cost <i>(includes all equipment, labor, overhead & profit, does not include the Solarize Philly program fee)</i>	\$
2	Subtract Cost of Modules and Inverters <i>(equipment only)</i>	\$
3	Electrical Construction Cost <i>(Line 1- Line 2)</i>	\$

4	Permit Fee Subtotal <i>(\$25 per \$1,000 of Electrical Const. Cost)</i>	\$
5	Add State Surcharge	+ \$4.00
6	Add City Surcharge	+ \$3.00
7	Add Scanning Fee <i>(\$4.00/page larger than 8.5" x 11")</i>	+ \$
8	Electrical Permit Fee	\$

Additional Fees:

- **Filing Fee:** A non-refundable filing fee of \$100 will be due at the time of each application. Installer may submit a single \$100 filing fee for a batch of up to 5 permit applications through the Streamlined Permitting Process. The filing fee will be credited to the final permit fee.
- **Resubmission:** There is an extra \$100 review fee for each resubmission starting with the third submission of an application.
- **Returned Checks:** If your check is returned unpaid for insufficient or uncollected funds, you authorize The City of Philadelphia or its agent to make a one-time electronic fund transfer from your account to collect a fee of \$20.

The Department of Licenses & Inspections reserves the right to request an itemized breakdown of the project cost for each solar PV system that is installed.

All projects that are submitted through the Standard Permitting Process (see previous page) also require a building permit. See the [L+I website](#) for information on calculating building permit fees. Building permit fees for solar projects were capped at \$200 by [legislation](#) passed by City Council in 2019.

[insert Installer logo]

Appendix D: L+I Best Practices

Tips to Open and Close an Electrical Permit

Refer to the Electrical Permit Check-list: <https://business.phila.gov/media/ElectricalPermitChecklist.pdf>

Refer to the updated Solar PV Standard: <https://business.phila.gov/media/Solar-PV-System-Standard.pdf>

Refer to the summary sheets about solar permitting developed by the Office of Sustainability and L+I:

- <https://business.phila.gov/media/Standard-Solar-Permitting-Process.pdf>
- <https://business.phila.gov/media/Expedited-Solar-Permitting-Process.pdf>

Common Missing Information:

The following information is often missing from the submittal documents that an applicant provides the Department of Licenses + Inspections when applying for a solar PV system permit.

1. Junction Box – required to be a “listed” Solar Combiner Box
2. Meter Taps – required to be a “listed” Tap Connector; such as MILBANK K4977-EXT
3. Circuit Breaker – required to be a “listed” Back-fed Breaker Secured in Place
4. Junction Box Taps at Service – required to be a “listed” Tap Connector

Closing Permits:

The Department of Licenses + Inspections does not close out a permit until they have received the “certificate of inspection.” It is important that contractors ensure their permits are closed as quickly as possible. Contractors can ask the inspector for a copy of the certificate of inspection to ensure that it can be transferred to L+I.

[insert Installer logo]

[Sample Single Line Drawings]

[insert Installer logo]

Appendix E: Quarterly Jobs Report

A customized job report template will be sent over email at the end of each quarter to be filled out by the deadlines listed in Section II.

[insert Installer logo]

[insert company logo here]

Solarize Philly Jobs Report

Date Submitted: _____

Quarter/Date Range: **202X QX (X to X, 202X)**

Job Growth and Loss over the Quarter

FTE Employees	Count
Count of Full-Time Equivalent (FTE) employees at the start of the quarter	
Count of FTE employees removed	
Count of FTE employees added	
Count of FTE employees at the end of the quarter (Net Job Count)	

Staff Demographics

Total FTE Staff at the end of the Quarter: _____

Demographic	Number of Full-Time Staff
Minority (non-white)	
Women	
Disabled	
Resident of Philadelphia	
Returning Citizens*	
Veterans	

Total New Hires over the Quarter: _____

Demographic	Number of New Hires
Minority (non-white)	
Women	
Disabled	
Resident of Philadelphia	
Returning Citizens*	
Veterans	

*As defined in Code Section 19-2604(9): "Returning Citizen. A person previously convicted of a felony, or who was incarcerated for any conviction, or who is currently on probation or parole for any conviction."

[insert Installer logo]



I certify that the information provided in the Solarize Philly Quarterly Jobs Report is accurate to the best of my ability.

Signature of Authorized Representative

Print name

Company

Date

Appendix F: Share The Sun Sign-Up Form



The Share the Sun program uses donated SRECs to support solar installations for low- and moderate-income communities and homes in Philadelphia!

What is an SREC?

Solar Renewable Energy Credits (SRECs) are performance-based incentives that create economic benefits from solar generation. In Pennsylvania, one SREC is equivalent to one MWh of energy. Each year, the average home produces 4 to 5 SRECs.

What is an SREC worth?

The price of an SREC varies based on supply and demand in the Pennsylvania SREC market. As of August 2021, one SREC in Pennsylvania was valued at \$41.

How do donated SRECs support solar?

The Philadelphia Green Capital Corp (PGCC) will manage and sell your SRECs. Sale proceeds will be used to expand solar access in low- and moderate-income communities and households in Philadelphia.

Sign up form:

1 Name: _____

2 Address: _____

3 Sign Up:

Yes! I'd like to donate my SRECs to support LMI solar.

Not sure. Can you share more information?

No. I do not want to donate my SRECs.

If you checked "Yes" or "Not sure", we will be in touch with more information and next steps.

About the Philadelphia Green Capital Corp.

The Philadelphia Green Capital Corp. (PGCC) is the recently-formed "green bank" affiliate of the Philadelphia Energy Authority (PEA). PGCC's mission is to connect projects to capital to drive a robust, equitable, clean energy market in Philadelphia, support PEA, and respond to the local challenges of climate change.

Philadelphia Green Capital Corp. • Philadelphia City Hall, Room 566, Philadelphia, PA 19107 • phillygreencapital.org