



Commonwealth of Massachusetts
EXECUTIVE OFFICE OF HOUSING &
LIVABLE COMMUNITIES

Maura T. Healey, Governor ◆ Kimberley Driscoll, Lieutenant Governor ◆ Edward M. Augustus, Jr., Secretary

PHN 2023-13

TO: All Local Housing Authorities
FROM: Ben Stone, Director, Division of Public Housing
RE: On-Site Solar Power: Opportunities for Cost Savings and Clean-Energy Production
DATE: August 22, 2023

Need to know:

- On-site solar at LHAs is feasible and has many benefits.
- LHAs can procure on-site solar, and doing so comes with significant benefits but potential challenges.
- **EOHLC encourages LHAs to participate in [PowerOptions'](#) Solar program.**
 - Simplified, accelerated procurement process.
 - Locked-in, below-market electric rate for 20 years.
 - Solar developer responsible for installing, maintaining, operating, and insuring the system.
 - No up-front cost to LHAs.
 - LHAs in Municipal Light Departments (MLD) should check with their MLD early in the process to ensure that interconnection is permissible.
- Site components (typically roofs) where Solar will be installed should be less than 5 years old.
 - LHAs may also consider solar when designing roof replacements for roofs near end of their useful life.
- Virtual net metering contracts can coexist with on-site solar, depending on specific circumstances.
- There are many subsidies available through the Inflation Reduction Act and other federal programs, presenting a time-sensitive opportunity for favorable solar contracts.
- **Housing Authorities interested in participating in the PowerOptions solar program should contact Greg Abbe at gregory.abbe@mass.gov and Katie Moffitt at katie@sunwealth.com.** Greg will coordinate sending an LHA's site details to the Sunwealth team.

Background

The Massachusetts Legislature and Executive Branch have, over the last decades, set increasing greenhouse gas (GHG) emissions reduction goals. [Chapter 8 of the Acts of 2021](#), "An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy" set a net-zero GHG emissions goal by 2050 for the

Commonwealth, with incremental goals every five years. [Executive Order 594](#) encourages state agencies to 'Lead by Example' in the GHG emissions reduction effort.

LHAs may reduce GHG emissions principally by reducing energy consumption (efficiency) and adding renewable energy on-site (generation). LHAs take advantage of well-established programs which focus on energy efficiency, like the Mass Save Income-Eligible program and internal [EOHLC Sustainability initiatives](#). Many LHAs also take advantage of Virtual Net-Metering Contracts for off-site solar, but to date relatively few have participated in renewable energy generation on housing authority property.

Procurement

Procurement Options for Solar

LHAs have two options to procure solar for their properties:

1. Ownership:
 - a. The LHA procures solar panels for their site or building just like any other capital project.
 - i. Pros: The LHA receives 100% of the benefits. All utility savings, net metering credits, SMART credits (MA state-level incentives), and/or tax incentives go directly to the LHA.
 - ii. Cons: The LHA must pay for 100% of the up-front costs and assumes all risk. LHA must follow all relevant public procurement law and processes. The LHA must purchase, install, operate, maintain, and insure the system themselves.
2. Solar + Power Purchase Agreement (PPA)
 - a. In this model:
 - i. An LHA enters into an agreement with a solar developer where the developer owns the panels installed on the LHA property or building.
 - ii. The LHA buys electricity generated by the solar array, but at a lower rate than from their utility. This is accomplished through a PPA.
 1. Pros: No up-front cost for equipment to the LHA, LHA does not own, operate, maintain, or insure the panels, and has a fixed 20-year electric rate. Much faster procurement process.
 2. Cons: As compared to ownership, LHA does not receive 100% of the benefits generated by the solar photovoltaic (PV) system, as the developer keeps some benefits to operate their business.
 - 3.

If LHAs want to enter into a Solar + PPA arrangement, they may procure a project themselves or work through an entity like [PowerOptions](#).

Procuring a Solar + PPA through an LHA is very complex. A public entity like an LHA must procure the solar PV installation via M.G.L. c. 149 construction procurement law while the lease agreement (i.e., PPA) must be procured via M.G.L. [Ch. 30B](#) following procurement law for disposition of real property. **The alternative is to work with PowerOptions, a non-profit independent organization.** Created in 1998, PowerOptions now offers programs to their members on behalf of MassCEC (Clean Energy Center). LHAs who are members may participate in PowerOptions' programs, including their solar program, without doing [their own competitive procurement](#) because PowerOptions already procured a vendor on behalf of their members.

Important Note: Those LHAs in Municipal Light Department towns should be aware that MLDs may refuse to connect a solar array to the grid. Public Utilities cannot do this, but MLDs can. Solar Developers should check with the local MLD early in the design process to determine if this will be an issue.

Site Considerations

Viable on-site solar installations require placement on relatively new building components. Rooftop solar should be installed on roofs which are five-years old or newer. Removing panels halfway through a contract to replace a roof is not cost-effective, and most developers will not install panels on roofs older than 5 years. The 5-year limit is the same for canopy solar installations over parking lots; the parking lots need to be recently repaved within the last 5 years to be considered. LHAs should consider solar following recent or upcoming roof/paving projects.

PowerOptions may pay for roof replacements and incorporate the cost of the new roof through the PPA rate. PowerOptions and their consultant [Sunwealth](#) would either give an LHA funds to pay for a roof, procured by the LHA through the routine publicly bid capital project processes, or Sunwealth may procure and finance the work themselves. LHAs may also program roof replacements in their CIP and contact PowerOptions for installation as the work approaches completion.

LHAs may also consider the installation of solar projects on vacant land, particularly land difficult to use economically for affordable housing due to access, ledge, or other reasons.

Insurance Considerations

While Interconnection Agreements typically require the host to maintain general liability insurance coverage, PowerOptions and Sunwealth have **agreed to release the responsibility for LHAs to procure liability insurance** for them when entering an Interconnection Agreement at state-aided LHA developments. **If your proposed contract was received before the date of this PHN, please contact Katie Moffitt at katie@sunwealth.com for the updated contract** with modified insurance language.

LHAs who choose to purchase and install solar PV as part of a LHA-funded capital project may be required to obtain this insurance in order to connect with the grid. The LHA should obtain insurance quotes early in the design process to ensure the cost savings are sufficient to meet the cost of a policy. LHAs can contact Greg Abbe at gregory.abbe@mass.gov and Sarah O'Leary at sarah.oleary@mass.gov if they have further questions regarding insurance procurement around solar.

Differences between Virtual Net Metering and On-Site Solar

Many LHAs have taken advantage of virtual net metering agreements in recent years. Solar developers building large arrays in Massachusetts contact LHAs and ask whether they would like to buy into a portion of the array in exchange for virtual net metering credits. Many LHAs have taken advantage of these deals, resulting in substantial cost savings and helping to bring more solar onto the grid.

Virtual net metering agreements and on-site solar can coexist for the same development, depending on existing conditions:

- [Development already has a net-metering agreement.](#)
 - Most agreements stipulate that an LHA must purchase a certain number of kWh of electricity. LHAs can contact Sustainability Program Developer Greg Abbe at gregory.abbe@mass.gov if they have questions regarding net-metering agreements.
 - The LHA may consume less electricity from the grid if on-site solar is installed and thus violate their existing net metering agreement.

- If the on-site solar developer anticipates this may occur, the LHA should contact their net-metering provider and ask about transferring a portion of their net metering agreement-credits to another LHA. **This is a common practice.**
- *Development does not have a net-metering agreement.*
 - The LHA should install on-site solar first. This will help determine how much electricity needs to be purchased from the grid once the solar array is active.
 - The power purchased from the grid may be contracted into a virtual net metering agreement with an off-site solar developer.

Reimbursement for PPA Savings

Beginning with the FY2024 Budget Cycle, EOHLC will permit deficit LHAs to retain 100% of electricity cost savings created by on-site solar purchased through a PPA agreement. In these deals, an LHA executes both a lease agreement and a PPA with a solar developer, giving them permission to build a solar array on LHA property and committing the LHA to purchase electricity at a reduced rate. The monetary savings from these deals is simply the cost difference between normal utility rates and the lower electricity rate of the PPA.

To calculate the savings, LHAs will estimate savings at the beginning of their Fiscal Year. The solar developer should provide estimates for annual cost savings for each array, and the LHA may use this estimate. At the end of FY during “true up”, the LHA should compare the cost savings between what they would have spent on electricity versus what they spent on the PPA agreement, and how that real value compares to the earlier estimate. The LHA may keep the savings as a budget exemption.

Example: An LHA’s PPA estimates they will save \$10,500 in 2024. The LHA would request a \$10,500 budget exemption for this estimated amount when submitting budgets at the start of their FY. At the end of the FY, the LHA reviews the output of the solar array and sees that it produced 142,000 kWh. The LHA then multiplies this production by their utilities’ rate, which establishes what the LHA would have paid if they bought this electricity from the grid. In this case, the utility rate is \$0.20/kWh, which multiplied by 142,000 kWh is \$28,400. The LHA paid the solar developer \$17,400, and so the actual cost savings is $\$28,400 - \$17,400 = \$11,000$. \$11,000 is the final budget exemption value, slightly higher than the estimated \$10,500. The LHA must provide backup for these figures in order to receive the budget exemption at end-of-year subsidy reconciliation.