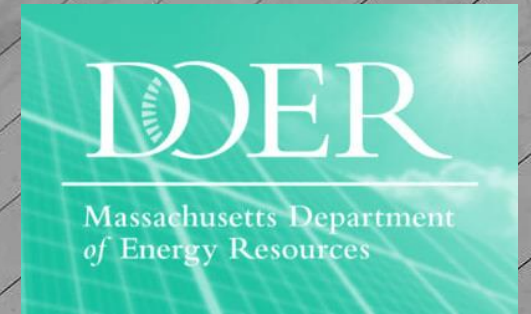
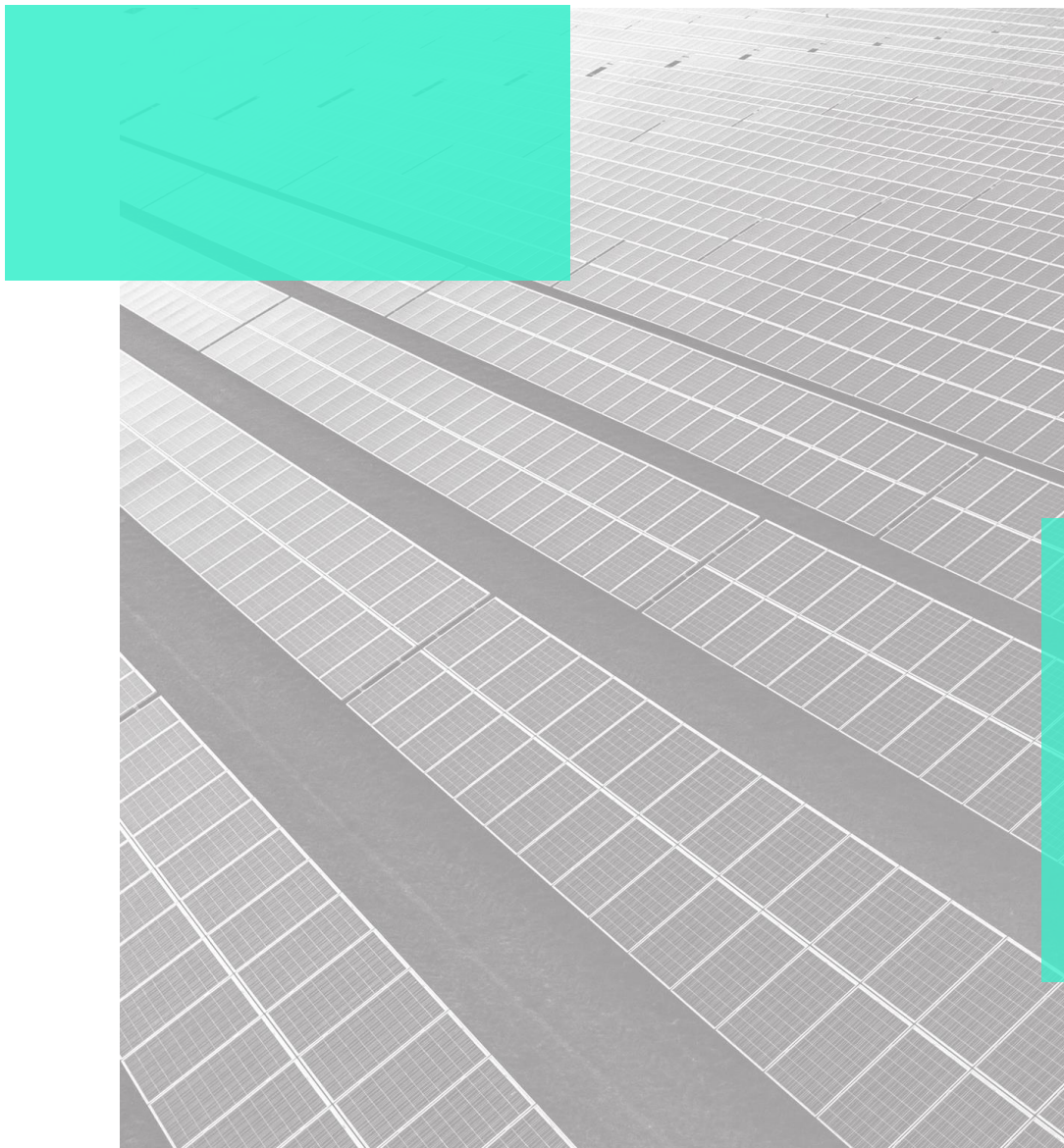


LEADING BY EXAMPLE

SOLAR- DECARBONIZATION GRANT PROGRAM

October 1st, 2024





AGENDA

Program Objectives

Program Overview

- Administrative Details
- Requirements and Funding Amounts

Application Process

Q&A



PROGRAM OBJECTIVES

How? Provide enhanced incentives for new state solar PV deployment, battery energy storage, electric vehicle charging, and decarbonization efforts



OBJECTIVES

- Support to state entities in **meeting Executive Order 594 directives** by providing the necessary funding to enable project viability
- Leverage solar installations to **advance broader statewide and LBE goals** beyond electricity generation

SOLAR DEPLOYMENT

STRONG SOLAR PRESENCE

To date, there is ~33 MW of solar installed across 47 state properties, 80% of which is on previously developed parking lots and building rooftops

THE PUSH FOR ADDITIONAL SOLAR

- Contribute to a greener electric grid
- Opportunity to lead by example
- Operational benefits (e.g., cost certainty, electricity cost and demand charge savings)
- Ancillary benefits (e.g., mitigating heat island impacts)
- Integrated decarbonization



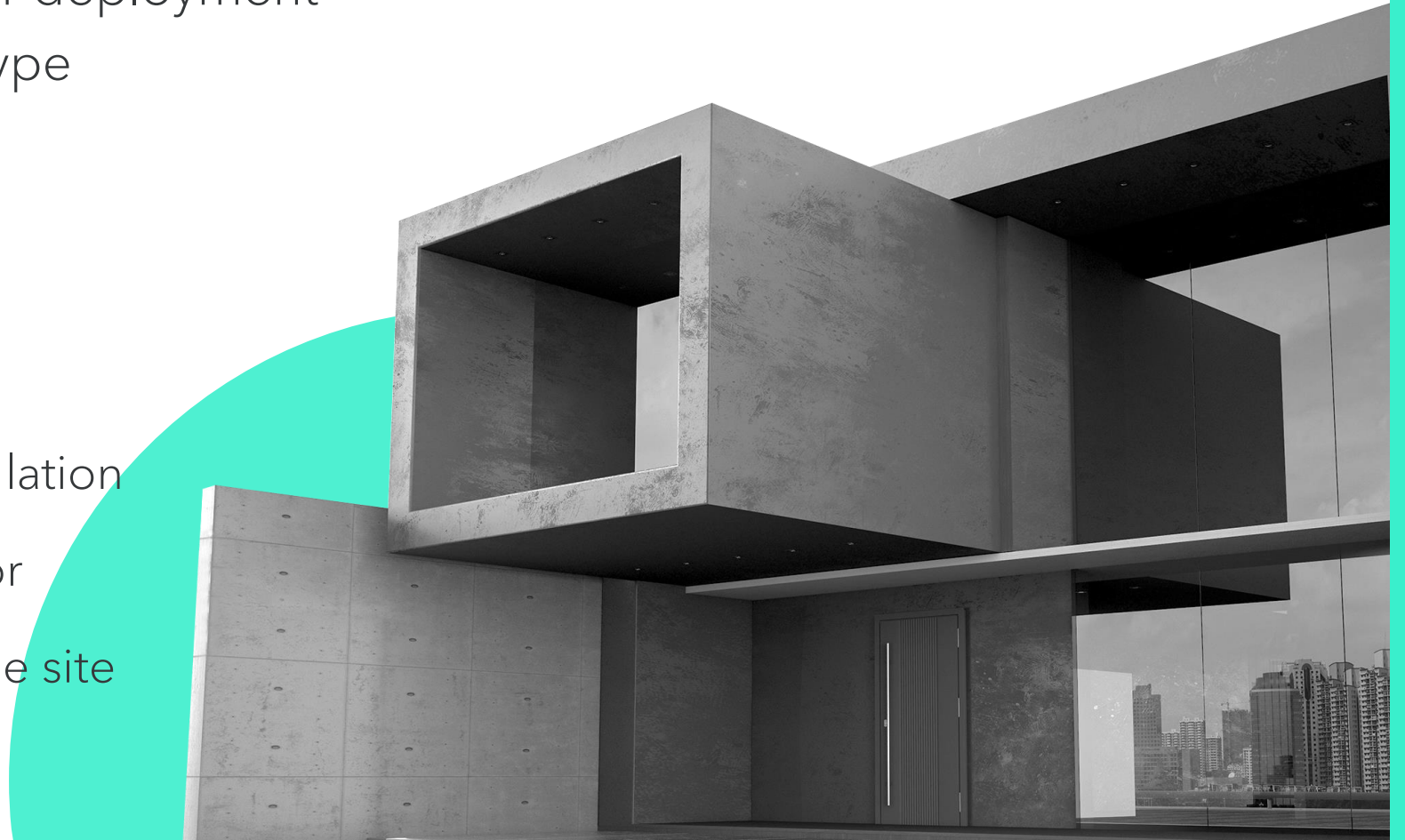
A MODULAR FUNDING STRUCTURE

Incentives for new state solar deployment
that vary based on project type



Stackable funding for:

- Battery energy storage installation
- EV charging build-out and/or
- Decarbonization efforts at the site





PROGRAM OVERVIEW

ADMINISTRATIVE DETAILS

AVAILABLE FUNDING

- \$25,000,000 total

ELIGIBLE APPLICANTS

- Executive Branch agencies
- Public higher education
- Quasi-public authorities

APPLICATION PROCESS

- Applications received, reviewed, and awarded on a rolling basis through June 30, 2027

AWARD MAXIMUM

- \$2,500,000 per project including any add-on funding



EXTERNAL FUNDING

Projects must take advantage of applicable solar incentives to maximize cost-effectiveness

- E.g., SMART incentives, Class I REC market
- Limited exemptions may be granted by DOER in cases with substantial environmental claims requirements or negligible cost-effectiveness

Decarbonization projects must pursue applicable Mass Save incentives

- Incentives will be deducted from the total project cost when verifying grant amount

State-owned projects must pursue any applicable federal elective pay tax credits

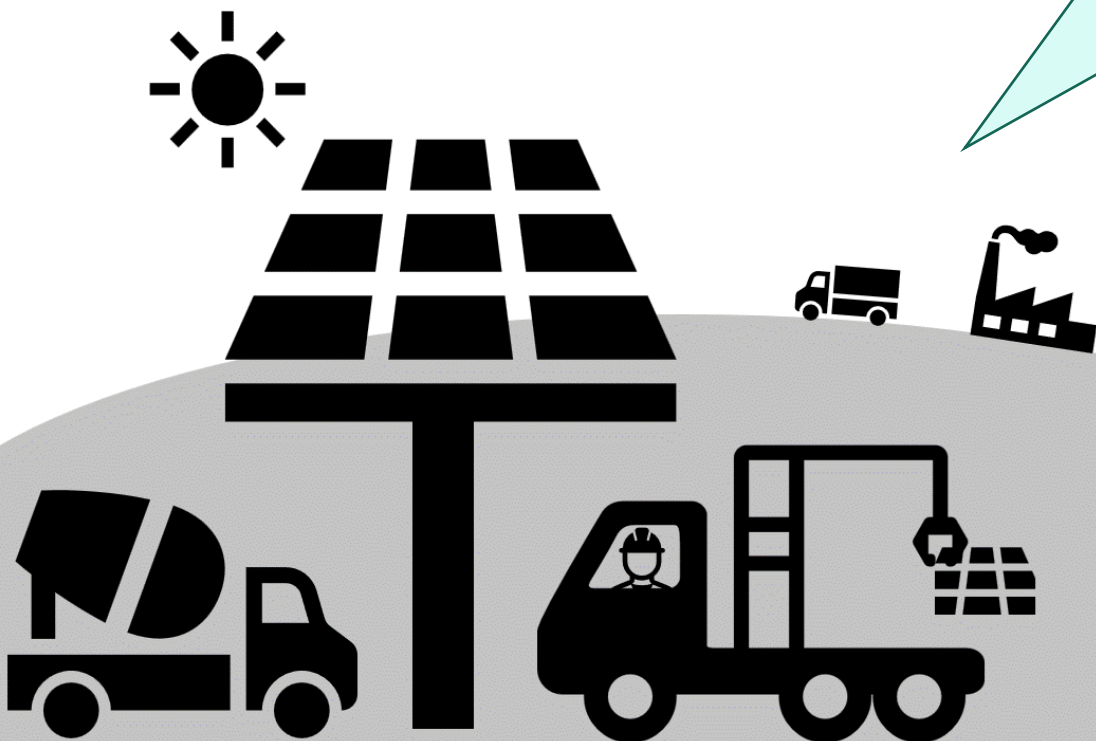
PREVENTIVE MAINTENANCE REQUIREMENT (ALL PROJECTS)

Any solar PV, EV charging, and battery energy storage projects funded through the grant program will be required to demonstrate that the grantee has a plan for preventive maintenance measures



EMBODIED CARBON REQUIREMENT (ALL SOLAR)

Grant recipients are required to offset the estimated embodied carbon of the project (e.g., *from the production of PV panels and/or steel*)



Embodied Carbon = the amount of GHG emissions associated with upstream stages of a product's life including extraction, production, transport, and manufacturing

([US EPA](#))

EMBODIED CARBON OFFSETS

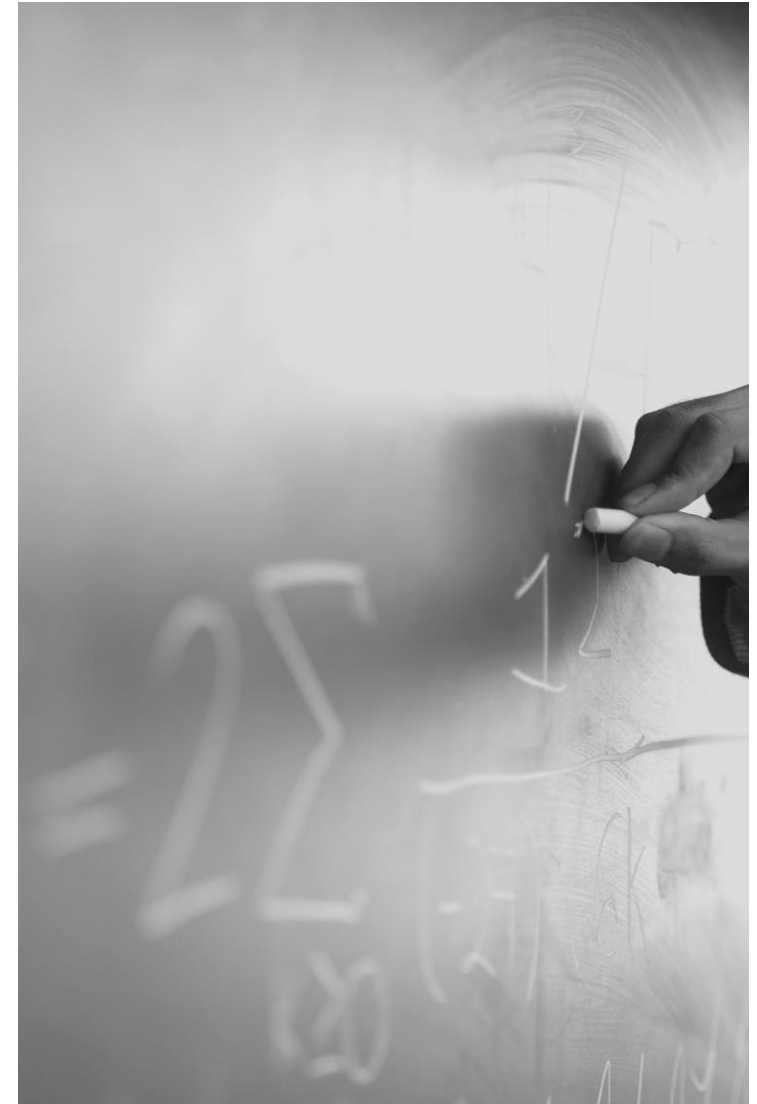
	Rooftop or Ground-Mount	Canopy
Projects Participating in Class I REC Market		
Option 1	Retire 8% of RECs annually for 20 years	Retire 20% of RECs annually for 20 years
Option 2	Retire 55% of RECs in Y1, Y2	Retire 75% of RECs in Y1, Y2
Option 3	Purchase Class I RECs equal to 55% of est. Y1 production	Purchase Class I RECs equal to 150% of est. Y1 production
Projects Enrolled in SMART Program	Purchase Class I RECs equal to 55% of est. Y1 production	Purchase Class I RECs equal to 150% of est. Y1 production

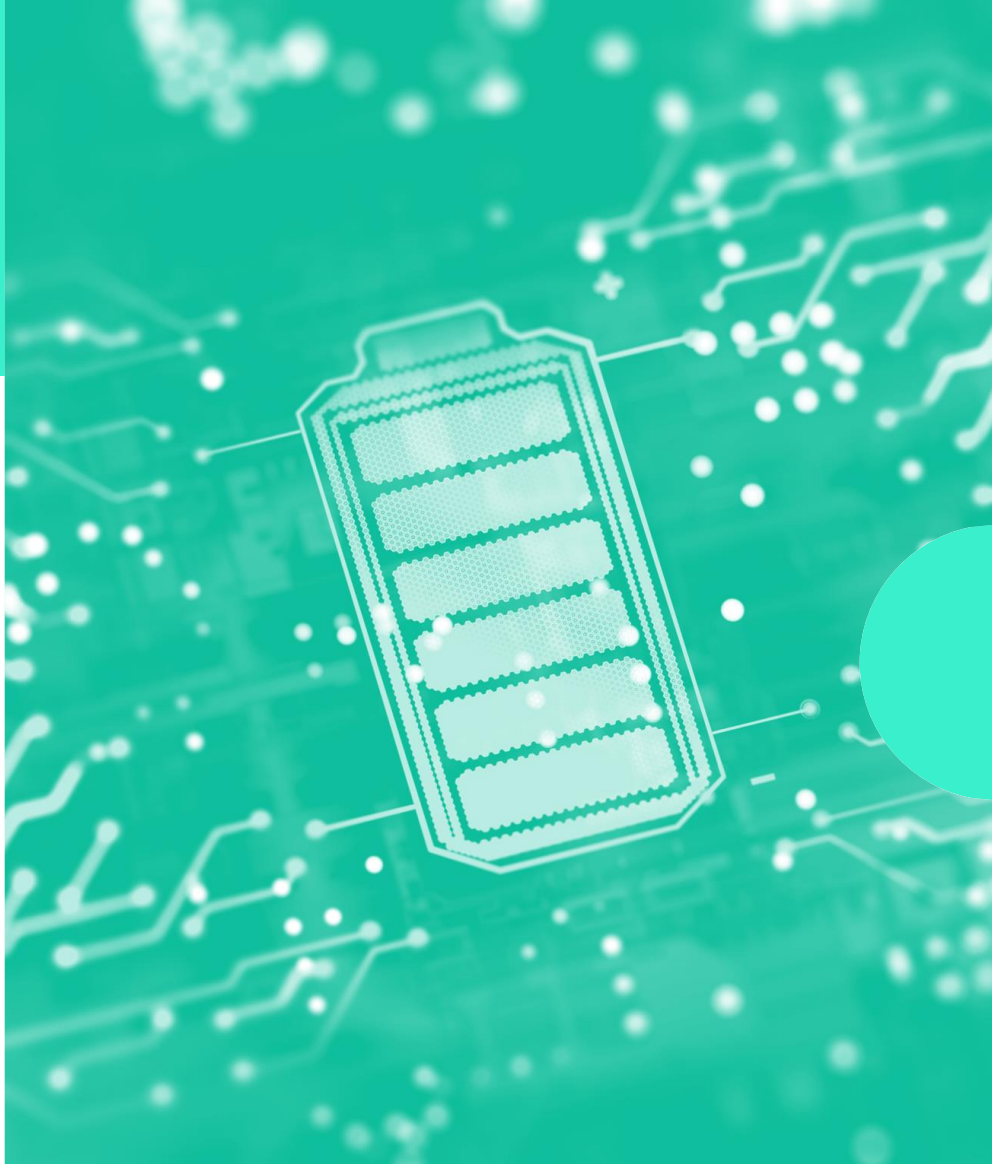
OFFSETTING EMBODIED CARBON: NOT AS DAUNTING AS IT SOUNDS!

REC purchasing or retirement strategies can be addressed by working through the project PPA provider or developer

OR

Through the statewide contract for Renewable and Alternative Energy Portfolio Standards and Services (currently [ENE57](#))





BATTERY ENERGY STORAGE REQUIREMENT (ALL SOLAR)

In alignment with the current SMART requirements, solar projects of any type ≥ 500 kW AC must evaluate and include battery energy storage unless not technically or fiscally feasible

More on this later!

SOLAR REQUIREMENTS: ROOFTOP

Eligible rooftop solar, also referred to as building-mounted, is a solar PV installation for which 100% of the nameplate capacity of the modules used for generating power are **installed on a building**

- Rooftop solar installations comply with all applicable **Massachusetts building code requirements**



SOLAR REQUIREMENTS: GROUND

The grant aims to promote siting of solar away from greenfield and open space land uses

The scope of eligible ground-mount solar PV must **align with the current SMART program requirements** at the time of application

- Projects ≥ 250 kW DC must be sited on **previously developed land**
- **Pollinator habitat** creation required 🌸

"having pre-existing paving, construction, or altered landscapes, and does not include altered landscapes resulting from current agricultural use, forestry, or use as preserved natural area"



SOLAR REQUIREMENTS: GROUND

Projects must **deploy and maintain pollinator habitat**



Grantees are encouraged to receive [Pollinator-Friendly Solar PV Certification](#)



In lieu of certification, grantees must agree to leverage current [CEE Best Management Practices and Recommended Plant Species](#) list when planning, creating, and maintaining the habitat

- Habitat funding may be available along with new battery electric landscaping equipment via the separate [LBE Decarbonization Grant](#)
- Limited good cause exemptions may be granted at DOER's sole discretion



SOLAR REQUIREMENTS: CANOPY

Canopies must be **sited on top of already developed property** in a way that maintains the function of the area beneath (e.g., parking lots or pedestrian walkways)

Projects must be sized **at least 200 kW DC**

Applicants must agree to install a **minimum number of EV charging ports** (any use type) and maintain them for at least 5 years

The project must **pre-wire for future EV charging**

- Level 2 charging ports installed for at least 5% of parking spaces (Level 1 may be substituted at a 3:1 ratio) up to 10 ports
- 20% of parking spaces must have installed charging ports or be EV-ready per the building code



SOLAR REQUIREMENTS: INNOVATIVE

EO594 directs state entities to prioritize the strategic advancement of **innovative renewable energy technologies** and to pilot innovative solutions

Projects may utilize emerging solar technologies or mounting strategies not seen in conventional canopy, roof- or ground-mounted projects

- Seeking projects that effectively address challenges not solved by business-as-usual practices or technologies



SOLAR REQUIREMENTS: INNOVATIVE

Is it a technology or strategy that is not widely available?

Is the project using new technology or approaches to address challenges that conventional solar is unable to?

Does the technology allow a site to utilize solar where otherwise it's not possible?

- Seeking projects that effectively address challenges not solved by business-as-usual practices or technologies



DCR, Murphy Rink

SOLAR INCENTIVES PER WATT

Ownership and Metering	Rooftop Solar	Ground-Mount with Pollinator Habitat	Solar Canopy with EV Charging	Innovative Solar PV
State-owned, behind the meter	\$0.75	\$0.75	\$2.00	\$2.00
Third party-owned, behind the meter	\$0.60	\$0.60	\$1.50	\$1.50
State-owned, front of meter	\$0.75	\$0.75	\$2.00	\$2.00
Third party-owned, front of meter	\$0.60	\$0.60	\$1.50	\$1.50

GRANT FUNDING ADD-ONS

Along with increasing deployment of solar at state facilities over the next five years, the grant aims to **decrease onsite fossil fuel emissions** from buildings and vehicles in alignment with EO 594, **bolster grid and resilience benefits** from energy storage, reduce state **electricity and/or operational costs**, and prioritize efforts at facilities located in **Environmental Justice communities**

Add-on funding is available in the amounts below in the following categories:

Battery Energy
Storage

\$500 per kWh

Decarbonization

Up to value of solar grant
amount

EV Charging
(EVSE)

Up to \$5,000 per
charging port

Environmental
Justice
Communities

Additional 10% of total solar,
storage, EVSE, and/or
decarbonization funding

BATTERY ENERGY STORAGE

Solar PV projects of any type that are **≥500 kW AC** capacity must evaluate and **include battery energy storage** unless it is not technically or financially feasible

Already have solar? DOER may also approve funding for new battery energy storage to be paired with existing solar arrays at state facilities

Project Pathway	Requirements
Installed battery energy storage	Meet requirements of and enroll in at least one program: SMART, Clean Peak Standard, or ConnectedSolutions
Storage-ready <i>(if granted exemption by DOER)</i>	Provide documentation demonstrating that the project design ensures future energy storage compatibility

DECARBONIZATION

Projects that are awarded grants for solar projects may be eligible to receive up to an **equivalent amount of funding for building/facility decarbonization** projects on the same parcel that may be occurring around the time of the solar deployment

Grant funding can support decarbonization at any range of project stages

These funds are not intended to circumvent or replace master planning or decarbonization roadmap efforts

There are no cost sharing requirements, but grant funding cannot account for more than 100% of project costs when combined with other incentives

E.g., projects that support

- Implementation of roadmaps where timing works
- Preparing for future decarbonization projects such as increasing building efficiency



DECARBONIZATION

Projects that are awarded grants for solar projects may be eligible to receive up to an **equivalent amount of funding for building/facility decarbonization** projects, such as:

Examples

air sealing, window replacements

electrical infrastructure upgrades,
geo-exchange wells with heat pumps

site surveys, system design, building system conversions

building retrofits, heat pump installations

- Building envelope improvements
- Site electrification preparation
- Projects that facilitate future decarbonization
- Actual decarbonization conversions

*Projects must initiate within a reasonable
timeframe of receiving funding*

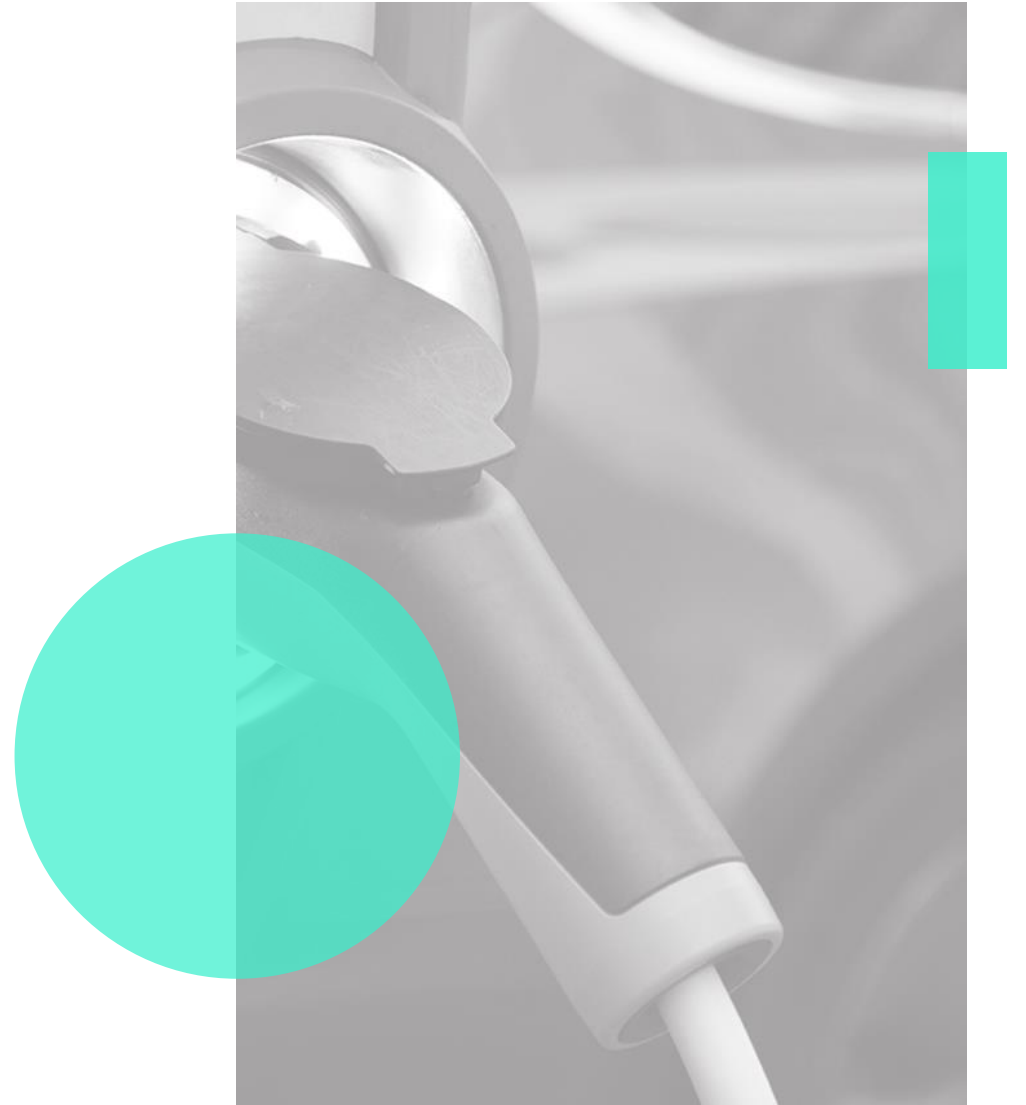
EV CHARGING

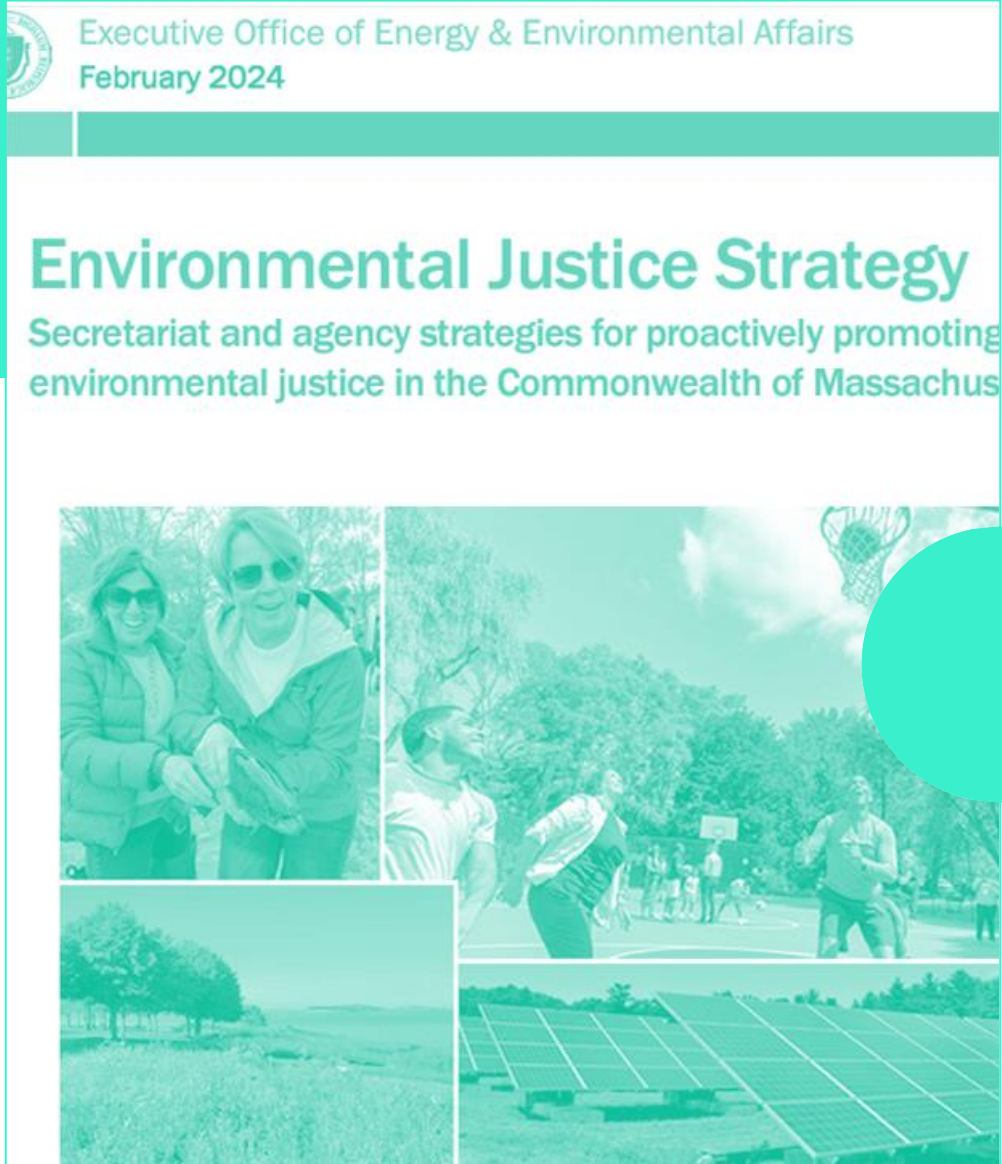
Grant funding can be requested for **installed EV charging beyond the minimum requirement** for solar canopies

◆ **Public access, workplace, or campus charging is eligible** (funds for fleet charging can be pursued via the [LBE Fleet EVSE Deployment Grant](#))

◆ Eligible costs include:

- Level 1 or Level 2 equipment
- Networked or non-networked
- Site assessment costs
- Installation and commissioning costs
- Prepaid maintenance, warranty, and data packages





ENVIRONMENTAL JUSTICE ADDER

Throughout the transition to a clean energy economy, the Healey-Driscoll administration is prioritizing environmental justice populations that face disproportionate negative impacts from climate change

10% additional grant funding is available if the project site address falls into at least one of two designations:

- [Environmental Justice Population](#)
- [Federal Low-Income or Disadvantaged Community \(LIDAC\)](#)

Incentive Calculations

\$2.00 per watt solar grant (state-owned, innovative)	\$260,000
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Site in an EJC, +10% of total grant	\$26,000
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Grant request	\$286,000
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PROJECT EXAMPLE #1

130 kW of state-owned innovative solar that qualifies for the Environmental Justice adder based on the site address

Incentive Calculations

\$0.60 per watt solar grant
(third-party, FTM, rooftop)

\$1,110,000

\$500 per kWh energy
storage

\$450,000

Grant request

\$1,560,000

PROJECT EXAMPLE #2

1,850 kW DC third party-owned, front-of-meter rooftop array with 900 kWh installed energy storage (storage required based on project size)

Project Requirements	
Min. installed Level 2 EVSE ports (parking lot is 100 spaces)	5
Number of pre-wired EVSE spaces to meet 20% threshold	15
Energy storage? (≥500 kW AC)	No

Incentive Calculations	
\$1.50 per watt solar grant (third-party, BTM, canopy)	\$937,500
Matching decarbonization funds (= solar grant)	\$937,500
Grant request	\$1,875,000

If the grantee decided to install more than 5 EVSE ports, they would be eligible to request up to \$5,000 per port in grant funds for those additional installations

PROJECT EXAMPLE #3

625 kW DC (490 kW AC) third party owned, behind-the-meter solar canopy with 5 Level 2 public access EVSE ports, 15 pre-wired spaces, and a decarbonization project on the same parcel

Note: solar grant portion of funding would get transferred from the applicant to the PPA developer in this case; the applicant would use decarbonization funds for approved projects directly

Project Requirements	
Min. installed Level 2 EVSE ports (parking lot is 120 spaces)	<div> <div>6</div> <div>Applicant is installing more than min. required ports</div> <div>18</div> </div>
Number of pre-wired EVSE spaces to meet 20% threshold	
Energy storage? (≥500 kW AC)	Yes

Incentive Calculations	
\$1.50 per watt solar grant (third-party, BTM, canopy)	\$1,500,000
\$500 per kWh energy storage	\$250,000
Matching decarbonization funds (= solar grant)	\$1,500,000
Site in an EJC, +10% of total grant	\$325,000
Grant request	<div> <div>\$3,575,000</div> <div>➤</div> </div>

PROJECT EXAMPLE #4

1 MW DC third party-owned solar canopy in an EJ Community that is behind-the-meter with 500 kWh energy storage, 8 dedicated Level 2 fleet EVSE ports, 16 pre-wired spaces, and a decarbonization project on the same parcel

Note: in this case, the applicant could seek funding for fleet EV charging stations separately through the LBE Fleet EVSE Deployment Grant

\$2,500,000 (maximum grant per project)



APPLICATION PROCESS

FUNDING OVERVIEW

This grant provides funding based on size, metering, and ownership type of the solar project



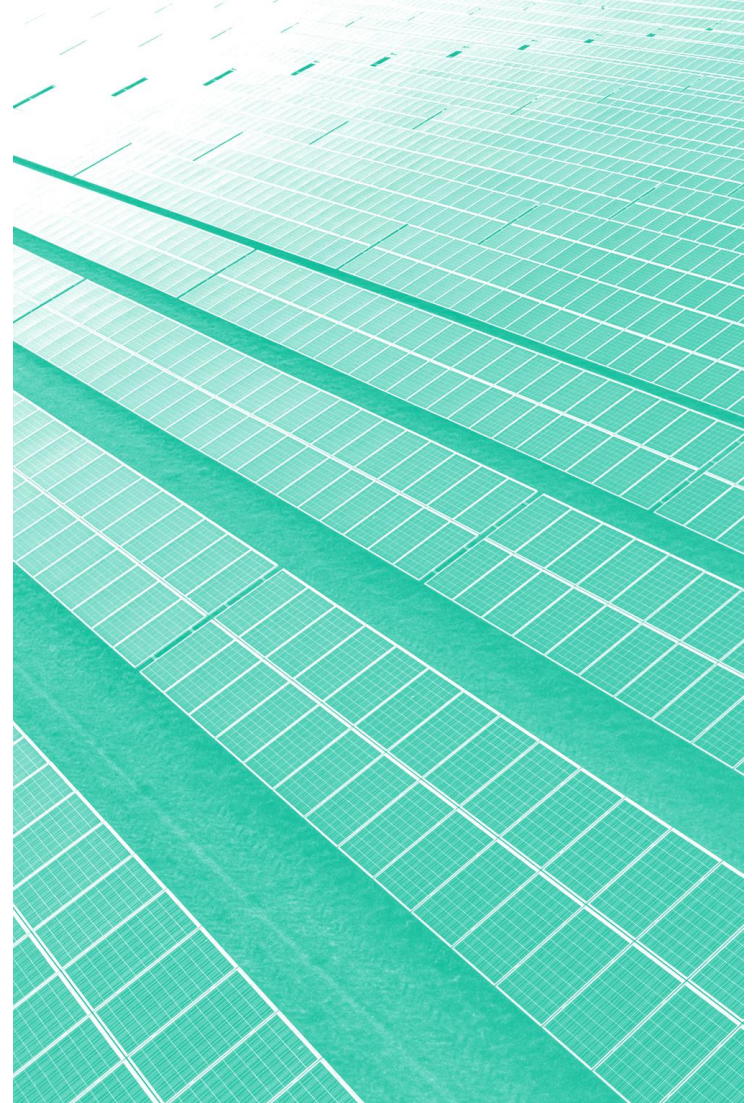
Additional eligible funding areas:

- Battery storage
- EVSE (beyond minimum with canopy)



Optional funding area:

- Decarbonization



1)

Applicant Contact Information	
Applicant Name:	
Agency/Campus:	
Title:	
E-mail:	
Phone:	
New Application or Update to Existing Application:	<input type="checkbox"/> New Application <input type="checkbox"/> Update to Existing Application
Date of Submission (whether new or update):	
Project Title:	
Project Location (include specific lot or building, where applicable):	
Will project be located in an Environmental Justice (EJ) community or Low-income Disadvantaged Community (LIDAC)?	Please select from dropdown
Search the EEA statewide Environmental Justice Map here to determine if in an EJ community	Search the federal Climate and Economic Justice Screening Tool here to determine if in a LIDAC

2)

Solar PV Project, Metering, and Ownership Type	
Please select from dropdown:	Please select type

4)

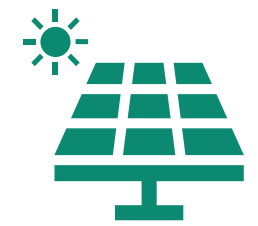
Project Details	
A. Technology:	Please select from dropdown
B. Size/Capacity (kW AC):	
C. Size/Capacity (kW DC):	
D. Size/Capacity (watts) (autopopulates):	0
E. Projected Generation Year 1 (kWh) (autopopulates):	0
i. Projected Generation over 20 Years (kWh) (autopopulates):	
F. Percentage of Generation to be Used Onsite:	
G. Total Site Electricity Consumption/Year (kWh):	
H. Electric utility, service area, and rate class:	
I. Utility basic service rate (\$/kWh):	
J. Does this project include <u>energy storage</u> ? If yes, please answer the following questions:	Please select from dropdown
i. Nominal rated power capacity (kW)	
ii. Nominal useful energy capacity (kWh)	
iii. Please describe how the agency intends to use the energy storage system, including expected cycling per year	
iv. Please describe any expected benefits from the energy storage system, such as type and amount of economic impacts, added resiliency, etc.	

GETTING STARTED

✓ Confirm Eligibility: Potential applicants are encouraged to contact LBE-Grants@mass.gov prior to submitting a grant application to confirm eligibility and availability of funds

✓ Submit Application: Application forms and attachments must be submitted to LBE-Grants@mass.gov

APPLICATION FORM: SOLAR



To consider...

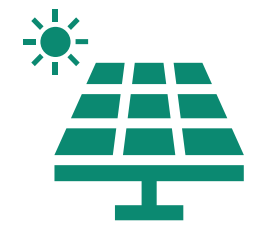
- Apply for applicable external incentives (i.e., SMART) early in the process
- Obtain estimated PPA rate or AOBC credit if applicable with estimated LBE grant included
- DOER can conditionally pre-approve applications that have not yet received final interconnection agreement
 - Before DOER can submit a formal grant award for GOV approval and award, the applicant must provide a signed interconnection agreement and finalized project details (size, cost, PPA rate, etc.)

Obtain vendor proposal(s) for applicable project costs

Complete grant application form (linked [here](#))

Email form and documentation to LBE-Grants@mass.gov

APPLICATION FORM: SOLAR



Information needed to apply...

- Location
- Ownership, metering, tech. type
- Size
- Estimated total project cost
- Total site electricity consumption
- Plans for any exported electricity (e.g., net-metering)
- Expected interconnection costs and/or challenges
- Procurement plans & expected timeline
- Estimated energy savings, cost savings, & revenue

Obtain vendor proposal(s) for
applicable project costs

Complete grant application form
(linked [here](#))

Email form and documentation to
LBE-Grants@mass.gov

APPLICATION FORM: FUNDING ADD-ONS

Information needed to apply

EV Charging



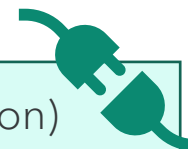
- Level of charging (Level 2 preferred)
- # of ports to be installed
- # of ports to be pre-wired

Energy Storage



- Rated power & useful energy capacity
- Projected benefits from storage
- Resilience impacts of storage

Decarbonization



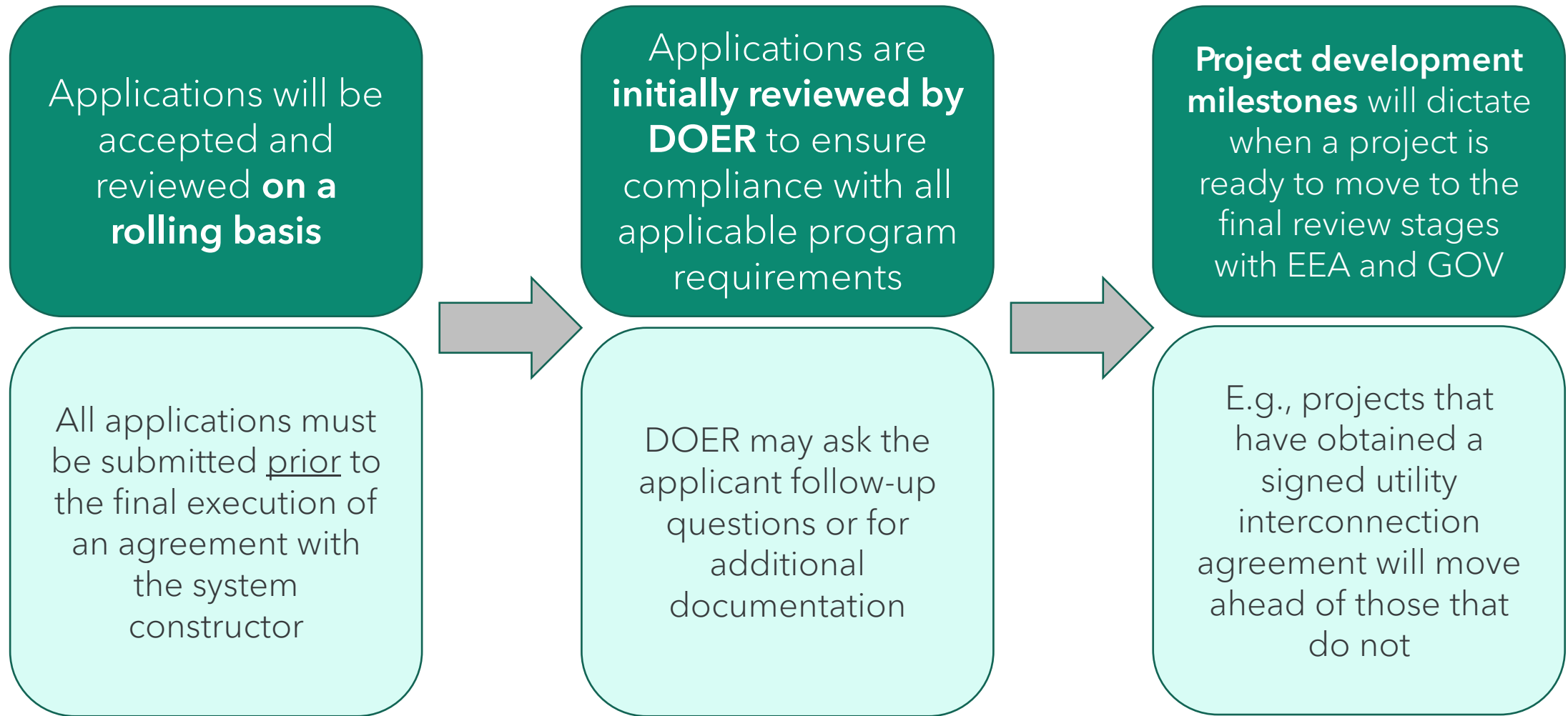
- Project type & size (e.g., site electrification)
- Total project cost
- Estimated annual energy & cost savings
- Estimated annual emissions reduction
- Estimated external incentives (e.g., Mass Save)

Obtain vendor proposal(s) for applicable project costs

Complete grant application form (linked [here](#))

Email form and documentation to LBE-Grants@mass.gov

SUBMISSION REVIEW PROCESS



PROJECT DEVELOPMENT MILESTONES

After initial application submission, there are certain project development milestones that will move an application up in the grant queue

To be prioritized in the DOER review queue:

- ✓ Signed MOU or LOI between applicant & solar developer showing intent to proceed with project (PPAs)
- ✓ Bid documentation (state-owned projects)
- ✓ Proof of submission of utility interconnection application
- ✓ Proof of application submission to the SMART program, if applicable

To be recommended for final EEA/GOV review, to determine if grant is approved:

- ✓ Final SMART statement of qualification (SOQ), if applicable
- ✓ Signed utility interconnection agreement

To receive a signed grant agreement to award funding:

- ✓ Notification that grantee and developer have reached final agreement on the project, including interconnection costs and grant value

POST-AWARD REQUIREMENTS

Periodic Reporting

Quarterly Reporting:

- Current project status
- Total amount of grant funds expended to-date and amount remaining
- Anticipated schedule of major milestones and completion
- Any deviations in the project which may or may not require changes to an existing grant agreement
- Other updates as pertinent

Final Report:

- DOER to provide guidance on the final report requirements in the finalized grant agreement

Other Reporting

- Federal elective pay: Notify DOER within 18 months of project completion if elective pay credit has been applied for and/or approved
- For ground-mount projects receiving Solar-Decarbonization Program funding, provide updates on habitat creation and maintenance





Q & A

AUDIENCE QUESTIONS

- *What is the expected average grant amount?* It will greatly depend on the project type and size; as shown in the project examples, grants could be in the \$100K range (e.g., small rooftop) up to the maximum \$2.5M (e.g., large canopy with storage).
- *Can solar-powered lighting be considered under the innovative category?* Yes.
- *Can funding be used for existing solar array repairs?* If the entire system is being replaced, it would likely fall into this grant. However, DOER is in the process of approving a grant that will specifically fund repair costs for state-owned solar; it is expected this grant will launch later this fall.
- *Does pollinator habitat for ground-mount solar require installing beehives?* No; pollinator habitat can support myriad species including birds and other pollinators. The inclusion of a beehive is up to the project proponent.

AUDIENCE QUESTIONS

- *Is there a maximum grant amount per agency?* No, the funding is only limited to \$2.5M on a per project basis.
- *For rooftop solar over 500 kW AC that must include battery storage, what technical limitations would warrant an exemption?* In these cases, LBE would consult with the DOER Renewables Division to understand how the specific project would be treated under the SMART program and whether the project would receive exemption under SMART.
- *How would adding storage to an existing solar project work?* It will depend on the specifics of the existing array; the host site would need to confer with an industry expert to understand the complexities, costs, and potential benefits of adding a storage system. However, DOER has the ability to provide grant funding at the \$500 per kWh value for new storage being added to existing solar.

AUDIENCE QUESTIONS

- *If a project is currently in design, can a grant be applied for?* The grant must be applied for prior to an executed agreement with the system constructor.
- *Do applications need to be on the individual project basis versus a portfolio of projects?* Yes, in order to determine the requirements specific to that project type are met and that the maximum funding amounts per project are in alignment with the PON, projects must be submitted on an individual basis. However, separate applications could be submitted at the same time and awarded as a single grant to the applying entity.
- *Our agency has had some challenges with finalization of interconnection agreements; if interconnection is still in process, can we receive a grant?* Project applications can be (and are encouraged to be!) submitted and reviewed prior to receiving an interconnection agreement but will not be able to move to the final stages of grant review and approval with EEA and GOV until an interconnection agreement is attained.

THANK YOU

Catie Snyder & Sophia Vitello

LBE-grants@mass.gov

www.mass.gov/leading-by-example-grants

EVALUATION CRITERIA

When uncommitted funding falls below \$5M, DOER will evaluate and rank responses using these criteria to help ensure that higher ranked projects can receive funding to move forward

- Projects that can be installed earlier
- Projects that demonstrate a commitment of funds to move the project forward.
- Plans to use generation onsite consumption
- Inclusion of energy storage
- Elements to reduce capital costs
- Plans for education & outreach on benefits of solar
- Systems that will provide resilience benefits
- Emerging technologies or innovative strategies to reduce energy costs with solar
- Decarb projects that will directly result in decarbonization (not site prep) and on a relatively quick timeframe