Maryland Energy Administration

Larry Hogan, *Governor*
Boyd K. Rutherford, *Lt. Governor*
Mary Beth Tung, *Director*

Funding Opportunity Announcement

FY22 Resiliency Hub Grant Program

Program Description: This program provides funding for the development and construction of solar plus energy storage systems to serve as "Resiliency Hubs." During periods of grid outage, the solar plus energy storage system (with or without emergency generator), will provide a no-cost resiliency center for the surrounding Low and Moderate Income (LMI) residents. At a minimum, Resiliency Hubs provide emergency heating and cooling; refrigeration of temperature sensitive medications; plug power for charging of cell phone and computer batteries; ventilation and emergency lighting. While fossil fuel emergency generators may be included in the final system design, grant funding may not be used for the purchase, installation, or integration of a fossil fuel generator system. Although it is assumed that funding will be used to retrofit existing buildings with solar and energy storage systems, new building installation is also allowable.

Type of Grant Program: Competitive – statewide

Application Deadline: Monday, December 6, 2021, at 11:59 p.m.

Eligible Applicants: Businesses, non-profits, state agencies and local governments (to include public universities, community colleges, and public schools) may apply. Individual residents are ineligible for this program.

Proposed projects are eligible where the same entity owns the system and the project, and where a different entity owns the system and the site. In any case, both the site owner and the system owner must be an applicant (sign the application) and a grantee (sign the grant agreement). With the exception of when a grantee is a state or local government entity, MEA will provide funding directly to the entity requested to receive funding in the application (i.e., either the site owner or the system owner).

Eligible Activities: Design, install and operate a resiliency hub (defined below) for a period of at least 5 years.

Program Budget: $500,000.00 The funding is from the Strategic Energy Investment Fund (SEIF).

Evaluation Criteria: MEA will rate each complete application received based on the value of the proposed project to the taxpayer. A sample of the Checklist can be found on the program website.

The primary element for evaluation is the need of the neighborhood(s) being served. This value is derived by dividing $100,000 by the median income of the area being served.

Additional evaluation criteria include:

- Does the proposal guaranty more than 14 hours of operation per day (1 point for 15-23 hours, 2 points for 24 hour per day operation)
- Does the resiliency hub bring new power where there was no backup power before? (1 point for yes),
- Is the resiliency hub expected to be completed in less than 18 months? (1 point for yes),
- Does the application include a reasonable plan for the operation of the resiliency hub? (1 point for yes).

Due to the complexity of the selection process, MEA may request additional information after all applications have been submitted to facilitate the evaluation process.

MEA reserves the right to adjust project standings to obtain reasonable geographic diversity of projects or to provide a reasonable distribution of project types.

Review Process: The MEA Program Manager will assemble a Review Team of at least 3 qualified program managers, energy specialists or other professionals. Individuals from outside MEA may be included at the Program Manager's discretion. All team members will review each application using the Application Review Checklist. Projects are ranked from highest to lowest. Despite the ranking, the review team members may still recommend against an award. Any recommendation against an award will be discussed by all team members during an in-person (or virtual) meeting. A majority vote of the team members will be required to disqualify an application for cause. Any disqualification for cause will be documented in the award recommendation memo to the Director (MEA). The review team will recommend applications for funding based on the amount of funding available. The review team may, at its sole discretion, recommend one or more additional projects (in order) for funding, if funding becomes available before the end of the fiscal year. The Program Manager will make recommendations to the Director, incorporating input from the Review Team. In the event of a disagreement, the dissenting concerns will be included in the recommendation memo to the director.

Award Formula: MEA will provide up to $3,000 per kW of new solar installation required to fulfill the functions of a resiliency hub.

Partial awards: Partial awards may be awarded under the Program. Full grant awards will be made for approved projects, based on ranking, from highest to lowest. If sufficient funds are not available to fully fund a project, the applicant will be given an option to accept partial, based on funding availability. (Please note that the requirement to fulfill the grant obligation will not be reduced in such a case.) If the applicant agrees, then the project will be funded with the remaining funds. If the applicant does not accept partial funding for the project, MEA will offer the remaining funding to approved, but unfunded, applicants in order of ranking (highest to lowest). MEA will follow this process until all funding has been expended or all remaining projects have rejected the offer.

Required Application Documents: The following documents are required as part of the application package: (See proposal content for further information)

1. A Completed application Workbook (Excel),
2. Resiliency hub sizing modeling computation (or model printout). Solar Resilient, or other modeling software is acceptable.
3. Application Narrative which discusses site selection, building location, city/county acceptance, sizing information/technical specifications, grant funding request, discussion of system design, timeline, total cost estimate, and hours of operation.
4. Letter of intent/support from financial sponsor,
5. Letter of interest from the Site owner,
6. Letter of interest from the Site operator,
7. Estimate of solar system annual output (PVWatts, Helioscope, PVSYST, etc.),
8. Statement of acceptance to the terms of the FOA,
9. Copy of the Maryland State Department of Assessments and Taxation (SDAT) Certificate of Good Standing for the site owner, the solar system installer, and the system owner,
10. W-9 for the organization to receive grant funding. **Note that if a state or local government entity is the site owner, site operator or system owner, MEA will only provide grant funding directly to that government entity.**
11. Evidence of the Site Owner's control of the project site, for at least 25 years post-project completion in the form of a recorded deed (or other appropriate documentation accepted by MEA).
12. A basic electrical schematic of the facility's electrical system (a one-line diagram is acceptable) and where/how the solar array and battery connects to it.
13. For a purchased system, a calculation of the simple payback period (show your work). For a 3rd party owned system, provide the expected cost savings to the site owner over a 25- year period (show your work).

Note: The following applies to an application for a project where a State Agency or Local Government entity is serving as the system owner. Provide evidence of

the state agency or local government entity's commitment to the project in the form of a signed contract with an installer, OR a letter of commitment signed by an authorized representative (e.g., a senior level official). When a letter of commitment is provided, include an overview of the state agency or local government's procurement process (summarize steps, required approvals, and an approximate timeline for each step of the process). Also, at a minimum, include the location and estimated capacity of the solar system being contemplated in the commitment letter. If a Power Purchase Agreement is being considered by the State or Local Government entity that must still go through a procurement process, the government entity must state that their electricity price expectations should be available on the open market (and provide their basis for this expectation).

Submission Instructions: MEA encourages the use of electronic applications to streamline processing and reduce environmental impacts. If you cannot apply electronically, please contact MEA no later than seven (7) days prior to the application deadline to identify an alternative method to submit the application.

The application spreadsheet and required documents should be submitted electronically to MEA via email to: **solar.mea@maryland.gov.**

If specifically authorized by MEA, an applicant should mail the supporting documents to:

Maryland Energy Administration
Attn: Public Facility Solar Grant Program
1800 Washington Blvd. Suite 755
Baltimore, MD 21230

Grant Program General Provisions: MEA grant programs are covered by general requirements that will be made part of the grant agreement between MEA and a grantee. A copy of the General Provisions document is available on MEA's website at [Grant Agreement General Provisions Attachment A]; these General Provisions will be incorporated into each FY22 grant agreement issued by MEA.

- **MEA reserves the right to obligate some, all, or none of the FY22 Public Facility Solar Grant Program budget, based on the quality and eligibility of applications submitted to MEA.**

Program-specific Requirements:

Definitions: For the purpose of this program:

- Resiliency Hub: A venue where solar PV and battery energy storage are designed to provide electricity to meet important community needs during extended electric grid outages. Resiliency hubs are required to include emergency heating and cooling; refrigeration of temperature sensitive medications; plug power for charging of cell phone and computer batteries; ventilation

and emergency lighting. A Resiliency Hub may also be identified as a designated location (by the city, county, or state) for the distribution of emergency services during extended grid outages. Resiliency hubs are NOT replacements for emergency shelters as they are not required to be designed to survive extreme weather. Also, they are not required to have food service capabilities, nor are they required to have showers and locker rooms, but they must have restrooms with sinks. Resiliency hubs must meet basic requirements necessary for occupancy, including health and sanitation. Resiliency hubs are expected to remain open day and night, whenever the grid is down.

- Walking distance: A distance within a ½ mile along a public conveyance or along a well-established path (i.e., not as the crow flies). Shorter distances may be proposed when appropriate. A geographic barrier (rivers, freeways, etc.) should be considered a limiting barrier, as appropriate. This is not an absolute distance limit and may be modified, at MEA's discretion, when provided with appropriate justification.
- Maryland Community Solar Pilot Program ("Community Solar"): A virtual net energy metering pilot program authorized by Maryland statute (see Public Utilities Article, §§2-113, 2-121, 7-306, 7-306.1, and 7-306.2 Annotated Code of Maryland) and implemented by the Maryland Public Service Commission and its regulations (COMAR 20.62.01.01 et seq.).
- Low Income: A household whose annual adjusted gross income is at or below 175 percent of the federal poverty level.
- Moderate Income: A household whose annual adjusted gross income is at or below 80 percent of the local median income (as determined by the latest Maryland Department of Housing and Community Development (DHCD) "Income Limits" document).
- Extended Grid Outage: Planned or unplanned grid outages lasting more than four (4) hours.
- Solar plus Energy Storage System: A system consisting of a solar PV array and an energy storage system where the solar system can charge the energy storage system while it is being used when the resiliency hub is islanded from the electrical grid.

Application Content: Applicants should submit an unformatted cover letter[1], the application spreadsheet, and a detailed proposal that includes the following information (in addition to other required documents listed above)

1) Site justification: Provide the method used to identify the community population to be served (that are located within walking distance). Identify base documents used. Describe the limits of the neighborhood expected to be served and an educated estimate of the LMI population to be served (moderate income, low income). Use maps and tables, as needed.
2) Building Location: Identify the specific building to be used as the resiliency hub. Explain the rationale for its selection. Provide documentation that the building owner is interested in hosting a solar plus energy storage system for daily use and is willing to open the building as a resiliency hub when the grid is down. The commitment to serve as a resiliency hub will be for a period of at least five (5) years. Documentation may be a contract, a letter of intent, a letter of interest, etc.
3) City/County Acceptance: Provide documentation showing that the appropriate local officials (including their office of emergency planning) of the city/county where the system will be located

[1] An authorized representative of the building owner and the project development organization must sign the cover letter.

have been notified of the proposed location of the resiliency hub. If possible, provide documentation that the applicant(s) (or system developer) has opened communications and that the concept of a resiliency hub is not rejected out of hand. Please note that, while final approval is not required at the time of application, MEA will not provide a grant to a project if the relevant county/city has determined the site to be unacceptable or has communicated that it will not approve a necessary permit or other local requirement.

4) System sizing information: Provide a listing of the proposed loads to be provided during grid outage, to include kW and estimated kWh/day. Describe the process used to size the solar system and the energy storage system. Provide a listing of the loads and time of day for each of their use. Provide the size of the solar system (kW) and the energy storage system (kW and kWh).[2] If a fossil fuel generator is included in the system design, provide its maximum power output, its fuel supply (including estimated time of operation available at various power levels), and proposed mode/strategy of operation. Verify and document that sufficient roof/ground space is available to accommodate both the solar system and energy storage system. Indicate what modeling tool was used and provide key system printouts that show loads, system and storage sizing. Tools such as SolarResilient[3], REopt or REopt Lite[4], and System Advisor Model (SAM)[5] should be considered. Other established modeling tools may also be used but must be specified.
5) Provide grant request amount as follows: Multiply the required solar system size by $3,000/kW. The maximum grant amount is $500,000.
6) System design: Provide a one-line diagram of the system showing major equipment, panels, breakers, etc. If a backup or emergency fossil fueled generator will be included, explain how it will be hooked into the system, to include a one-line diagram showing energy flow during generator operation. Show what equipment and wiring is new and what is existing.
7) Timeline: Provide information showing estimated dates for the project's start, completion, commissioning, interconnection, and Permission to Operate (PTO).
8) Total Cost: Provide estimated total project cost, as well as the cost for the minimum necessary equipment (solar modules, inverters, energy storage device, charge controller, system controller).
9) Provide a statement that the applicant(s) has reviewed this Funding Opportunity Announcement and agrees to follow its requirements.
10) Ongoing operation: Provide a plan for the operation of the Resiliency Hub during an extended grid outage. Identify who (which organization) will be responsible for managing access to the resiliency hub during a grid outage, and what the expected costs will be. Provide a plan for the operations and maintenance of the system, including the name of the responsible party and the minimum schedule of inspection and preventive maintenance.
11) Operating Hours: Discuss the hours of operation for the hub during an extended grid outage. The resiliency hub must be open a minimum of 14 hours per day. These hours may be continuous or non-continuous. Explain the rationale for the hours proposed. Longer hours

[2] Preliminary designs indicate a ratio of 3 kWh of energy storage per 1 kW of solar PV would provide 50% probability of meeting the 3-day requirement. Proposals must show the actual modeling used to achieve the system sizing.
[3] https://solarresilient.org
[4] https://reopt.nrel.gov/tool
[5] https://sam.nrel.gov

receive more points than the minimum of 14 hours per day. (Hours or operation may shift based on feedback from users and the needs of the community.

Restrictions and Limitations:

- When a city, county or state government entity is a grantee (the site owner, site operator or system owner), the government entity will be required to attest to its compliance with Sections 14-416 and 17-303 of the State Finance and Procurement Article (as applicable) **and** MEA will only provide grant funds directly to the government entity and not to any other grantee.
- At least one person certified as a Solar PV Installer by the North American Board of Certified Energy Practitioners ('NABCEP') must be involved in the design and/or installation of the community solar array. Each applicant will be required to provide the name and certification number of this individual(s).
- The grantee receiving funding will be responsible for submitting all reporting documents, including invoices, to MEA.
- Only one MEA grant may be awarded per project[6].
- Each project will be given up to 2 years to be completed. When necessary, an extension may be requested from MEA but must be made at least two months prior to the expiration of the existing grant,
- The property owner of the building where the project will be located must agree to maintain the building as a resiliency hub for at least 5 years.
- The grant is available, regardless of the ownership structure, provided the site owner, the building owner and the system owner all agree to the project (including the installation of the resiliency hub at that particular site.)
- Energy generated and used at the resiliency hub during a grid outage shall be provided at no cost to those in the community using the hub, although the resiliency hub operator may impose reasonable limits on energy use to ensure the system lasts the required period.
- A project with a solar array supplying power as part of the Maryland Community Solar Pilot Program must be individually coordinated with MEA, who will consider the project as a whole.
- No grant funding may be used to support the installation of a fossil fueled generator (with the exception of installing a single breaker in the applicable switchboard).
- The solar plus storage system may be used to provide solar energy to the facility, as well as peak shaving to reduce demand charges. Attempts to use the system for other purposes (such as frequency regulation) are not precluded by this grant if the system is operating under an authorized utility tariff. Regardless of the routine system use, the battery shall reach and maintain at least a 90% charge prior to any known storm or weather condition that might be expected to cause a power outage (hurricane, ice storm, derechos, etc.). Normal operation may resume after the threat to the grid has passed.
- The grantee(s) is responsible for identifying and purchasing heating, cooling, refrigeration, lighting, and plug load charging equipment. This equipment must be installed and/or available on-site when the solar plus energy storage system is completed. A refrigerator of adequate size

[6] MEA encourages grantees to consider energy efficiency in concert with a PV project. A grantee may also apply for, and receive an MEA Commercial, Industrial and Agricultural (CI&A) grant for energy efficiency or a Lawton Loan. Developers may use multiple energy efficiency or renewable energy grants from other State or Federal agencies to fund this project.

to meet the calculated need is required to be available and operating on-site. Resiliency Hub grant funding may NOT be used to pay for this equipment or its installation.

- A Maryland Historical Trust review must be completed without an adverse finding before grant funding may be paid,
- The solar system must meet minimum system requirements as specified in IEEE 1547 and the National Electric Code,
- Energy storage systems must be installed in compliance with all local building, fire, and electrical codes.
- For each solar and energy storage system, all components must be listed or labeled by a recognized national testing laboratory.

Grant Funding and Payment:

- Upon receipt of grant agreement signed by both the grantee and MEA, MEA will encumber (set aside) funding for the proposed project specified in the grant agreement.
- No costs incurred by a Grantee prior to execution of a Grant Agreement will be reimbursed by MEA for a Project.
- Up to $10,000 may be invoiced after the completion of detailed design (if not already paid through a Resilient Maryland grant). Up to 55% of the total grant funding may be invoiced at the time of ordering all required solar and battery materials. Remaining funds may be invoiced after the solar plus energy storage system is placed in service.
- The grantee will inform MEA when the project is placed in service (all zoning requirements met, all permit inspections passed and permits closed, all commissioning tests satisfactorily completed, and permission to operate received from the utility). MEA will then perform a site visit (or may waive the site visit at its discretion). Upon completion of the site visit, the grantee will submit a Final Invoice and Completion Report. Upon receipt of a complete and accurate invoice and completion report, MEA will submit the grant for payment.
- For any project that is inspected by MEA, all major deficiencies (as specified by MEA) must be corrected before MEA will make grant funds available. Minor deficiencies should be addressed/corrected, but distribution of grant funds will not be delayed.

Reports: MEA will require quarterly progress reports commencing with the grant award and ending with the Completion Report. Progress reports should be made by e-mail no later than the 10th day of the months of January, April, July, and October. Progress reports are unformatted and should include design and construction progress, as well as any problems that would impede completion of the project.

Within the first three years of operation, an additional report will be required describing the actual usage of the solar plus energy system both during grid operation and grid outages. "Lessons learned" and program recommendations are appropriate for this report.

Solar Renewable Energy Credits (SRECs): Projects must register for and receive Solar Renewable Energy Certificates (SRECs). Each grantee will be required to verify the successful registration of projects with the Maryland Public Service Commission and with PJM Interconnection. For

information concerning SREC registration, consult the PJM EIS website at https://www.pjm-eis.com/

Program Changes: MEA reserves the right to modify or change any requirement or characteristic of the Resiliency Hub Grant Program at any time as needed for legal, financial, or programmatic reasons. Changes will be available on the MEA Resiliency Hub Grant Program webpage. Changes made after the application deadline will be communicated directly to applicants or grantees, as applicable, by letter and/or e-mail. Also, MEA reserves the right to determine the final grant amount for each grantee after review of all proposals received and consistent with funding availability for the Program at that time.

Questions can be directed to:

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