Notice of Grant Availability for the FY21 Resiliency Hubs Grant Program (Grant Program)

Program Description:

This program provides funding to governments, community organizations and solar/microgrid developers to offset costs incurred in the development and construction of solar plus energy storage systems of at least 10 kW or larger, to serve as "Resiliency Hubs." During periods of grid outage, the solar plus energy storage system (with or without emergency generator) will be used to provide a no-cost resiliency center for the surrounding community. During grid operation, the solar and energy storage resources may be operated to reduce the cost of electricity to the hosting site. 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 allowed. At a minimum, City/County Emergency Planning Departments (or equivalent) will be notified of proposed resiliency hub locations.

Program Goal:

The goal of the Program is to encourage development of resiliency hubs within Maryland communities. MEA anticipates funding projects that have at least a 50% probability of lasting a full 3 days. The hubs would serve as heating centers and cooling centers when the grid is down. They would allow cell phones and other small battery rechargeable devices to be recharged to allow for communications and comfort. They would be able to refrigerate temperature sensitive medications as well as provide power to durable medical equipment (such as oxygen concentrators). They would provide a nucleus of stability within the community during an extended grid outage. Resiliency Hubs will typically be within walking distance of the community they serve.

Program Budget:

Up to $1,000,000 of funding is available in fiscal year 2021 (July 1, 2020 – June 30, 2021), subject to funding availability. AOI 1 applications will be considered first. If funding remains, AOI 2 applications will be considered.

Area of Interest I (AOI I): LMI Communities

Area of Interest II (AOI II): Community/Public Buildings

Grant Award Amount:

Approved resiliency hub projects may receive up to $3,000/kW for installation of new solar modules, new energy storage capacity, wiring, meters, panels and breakers needed to allow islanding from the electric grid and for proper coordination of system components.

Eligible Applicants:

For systems that will be owned by the site owner, the site owner must be the applicant and will sign the grant agreement. For systems that will be owned by a 3rd party owner, both the site owner and the ultimate system owner must sign the application and the grant agreement. In the

case of 3rd party ownership, funding will be sent to either the site owner or the system owner, as specified in the project application.

Application Deadline: Applications for AOI 1 and AOI 2 must be received no later than close of business on Monday, March 1, 2021. All grants agreements must be signed by all parties no later than June 1, 2021.

Type of Grant Program: Project grants are competitive. All grants are subject to funding availability and funding restrictions.

Definitions: For the purpose of this program:

- Resiliency Hub: A Resiliency hub is 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 phones, durable medical equipment 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.
- Walking distance: For the purposes of this Program, the term "walking distance" shall be 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 MEA may modify it or take the impact of barriers into account at its 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: Low Income means a household whose annual adjusted gross income is at or below 175 percent of the federal poverty level.
- Moderate Income: Moderate Income means 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 is able to charge the energy storage system while it is being used when the resiliency hub is "islanded" (operating independently) from the electrical grid.

Proposal Content: **Project Development Grants**: Eligible applicants (which may also include cities or counties developing Resiliency Hubs) should apply by submitting an unformatted cover letter, the application spreadsheet, and a detailed proposal that includes the following information:

1. Site justification: 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 city/county where the system will be located (including their office of emergency planning) has been notified of the proposed location of the resiliency hub. If possible, provide documentation that the applicant (or system developer) has opened communication with a representative of the city/county and that it does not reject the concept of a resiliency hub out of hand. Final approval is not required at this time, however, note that 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).[1] 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[2], REopt or REopt Lite[3], and System Advisor Model (SAM)[4] should be considered. Other established modeling tools may also be used but must be specified.
5. Provide the grant request amount as follows: Multiply the required solar system size by $3,000/kW. **The maximum grant is capped at $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 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.
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 the Notice of Grant Availability and agrees to follow its requirements
10. Ongoing operation: Provide a plan for the operation of the Resiliency Hub during an

[1] 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.
[2] https://solarresilient.org
[3] https://reopt.nrel.gov/tool
[4] https://sam.nrel.gov

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.

Proposal Submittal:

At time of submission, a proposal must have completed steps 1 through 9. Step 10 must be completed before submitting a completion report/final invoice. Proposals (electronic or paper) must arrive by the deadline. Proposals shall be sent by email (preferred) to solar.mea@maryland.gov. If files are too large, send a copy in the US mail to:

Resiliency Hub Program
C/O Maryland Energy Administration
1800 Washington Blvd, Suite 755
Baltimore, MD 21230

Evaluation Criteria:

Each proposal meeting the program requirements will initially be ranked based on the ratio of the cost of the grant divided by the number of people served. Subsequently, MEA will rank each of these proposals based on the following criteria: the services rendered (lighting, cell phone recharging capability, refrigeration, etc.), the likelihood of long term support (city/county operational support, etc.), and the proposal completeness. Please note, a system must be able to achieve the required period of operation. Longer operation will not increase a proposal's initial ranking, but could be the determining factor in the unlikely event of a tie. MEA also reserves the right to select applications that allow for a broader diversity in the project portfolio to achieve geographic diversity. MEA reserves the right to modify the required period of operation on a case by case basis.

Due to the complexity of the proposal, MEA may request additional information during project consideration to provide clarity and to facilitate the evaluation process

Restrictions and Limitations:

- All applicants will be required to submit an IRS Form W-9 to MEA with the application. In the case of a 3rd party owner, the W-9 is only required for the organization receiving grant funds.
- To receive grant funding for a project, the successful applicant must enter into a Grant Agreement with MEA by June 1, 2021, unless an extension is given in writing by MEA.
- At least one North American Board of Certified Energy Practitioners (NABCEP) PV Installation Professional or PV Design Specialist must be employed and involved in the design and/or construction of the project.
- Non-governmental project developers, site owners and system owners must be in good standing in the State of Maryland. A screenshot of the Maryland State Department of Assessment and Taxation webpage showing that the project/company is in good standing is sufficient. Certificates of Good Standing are also acceptable from the State Department of Assessment and Taxation[5] or the Comptroller of Maryland.[6]
- An authorized representative of the building owner and the project development organization must sign the cover letter (application).

[5] See https://egov.maryland.gov/BusinessExpress/EntitySearch, input business name and search.
[6] See https://comptroller.marylandtaxes.gov/Vendor_Services/Accounting_Information/General_Information/Good_Standing_Certificate.shtml

- Only one MEA renewable energy grant may be awarded per project. Each grantee may also submit for, and receive a Commercial and Industrial (C&I) grant or a Maryland Smart Energy Communities (MSEC) grant to improve building energy efficiency. Developers may use multiple grants from different Maryland state or federal agencies to fund this project.
- 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 installation of the resiliency hub at that site.
- Projects should be completed by June 1, 2023. Extensions may be requested from MEA at least one month prior to the expiration of the existing grant.
- 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 (i.e. finishes all commissioning tests, has received its Permission to Operate from the local utility, and has passed all permitting inspections).
- Energy generated and used at the resiliency hub during a grid outage shall be provided at no cost, although the resiliency hub operator may impose reasonable limits on energy use to ensure the system lasts the required period.
- Projects with solar arrays supplying power under the Maryland Community Solar Pilot Program must be individually coordinated with MEA, who will consider the project as a whole.
- The project must not have an adverse effect as determined by the Maryland Historic Trust.
- 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).
- Solar systems smaller than 10 kW will not be considered.
- 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.

Grant Process:

Project Development Grants

- An applicant should complete the following steps (as a minimum) before submitting a proposal for a Resiliency Hub Grant.
  - Identify hub location
  - Identify energy load, solar array size, energy storage size, added equipment needed to island from the grid.
  - Identify approximate total project cost and proposed grant amount (using criteria provided in “Proposal Content” above)
  - Identify all permits required and zoning actions needed.
  - Begin coordination with the local planning authority to identify potential zoning concerns. Although not mandatory, it would be preferable that any zoning issues be resolved before submitting a proposal.
  - Begin coordination with the local utility.
  - Develop a one-line diagram of the proposed system
- Applicants submit the proposal, along with supporting documentation and W-9, to MEA.

- MEA will rank proposals that meet the minimum requirements using the criteria described above. Projects not meeting the minimum requirements will not be considered.
- MEA will determine the amount of potential grant funds to be awarded to each applicant in the order determined by the competitive ranking until the complete Program funding amount is fully obligated, or there are no more qualified projects.
- Upon completion of the project (all zoning requirements met, all permit inspections passed and permits closed, all commissioning tests satisfactorily completed, and permission to operate received from the utility), the developing organization will submit a completion report with all required documentation and will invite MEA to conduct an inspection.
- MEA may conduct an inspection of the project site or may simply accept the project and process for payment. Additionally, the Maryland Energy Administration showcases selected projects to demonstrate how MEA programs are benefiting Maryland residents and businesses. If selected for award, note that the MEA grant agreement will require participation in project showcasing (if requested by MEA).
- For projects that are inspected, all major deficiencies (as specified by MEA) must be corrected before MEA provides grant funds. Minor deficiencies must be addressed/corrected, but distribution of grant funds will not be delayed.

Timeline

- Notice of Grant Availability Posted – October 1, 2020
- Grant Application Deadline – Monday, March 1, 2021.
- Grant Agreement Execution Deadline – June 1, 2021
- Construction and Commissioning Deadline – May 1, 2023
- Final Inspection and Document Submission Deadline – June 1, 2023

Additional Information

Historic Review

In order to comply with the State historic preservation requirements, each building, included in a project funded by a Resiliency Hub grant, must first be reviewed to assure that the proposed grant project will not have any adverse effects on the historical significance of a historic property or district. MEA will submit each project details to its in-house historic professional for review in consultation with Maryland Historic Trust, as necessary. As such, **an applicant is strongly encouraged to submit its project to MEA for historic property screening as early in the proposal development project as possible** in order to avoid rejection of a project due to adverse effects on a historic property where alternative options could be available. Please note that a prominent installation of clean energy systems on historic properties, or properties within historic areas, will be considered an adverse effect and will not qualify for this Program.

Solar and Energy Storage Installation Certifications

To be eligible for a Resiliency Hub Grant, at least one North American Board of Certified Energy Practitioners (NABCEP) PV Installation Professional or PV Design Specialist must be employed and involved in the design and/or construction of the resiliency hub project. Energy storage systems must be installed in compliance with all local building, fire, and electrical codes.

Solar Renewable Energy Certificates (SRECs)

Projects must be connected to the distribution grid serving Maryland and must register for Solar Renewable Energy Certificates. For information concerning SREC registration, consult the PJM EIS website at https://www.pjm-eis.com/

Resiliency Hub Equipment

The applicants are 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 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.

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 report design and construction progress, as well as any problems that would impede completion of the project.

An additional report will be requested within the first three years of operation describing the actual usage of the solar plus energy system, both during grid operation and during grid outages that may have occurred. Lessons learned and program recommendations are appropriate for this report.

Program Changes

This is the second iteration of the Resiliency Hubs Program. MEA reserves the right to modify or change the grant program and/or incentive as needed for legal, financial or programmatic reasons. Changes will be found on the MEA Resiliency Hub webpage. Changes made after proposals have been submitted will be provided to grantees by letter and/or e-mail.

For more information or assistance, please visit www.energy.maryland.gov or contact:

David Comis, Energy Program Manager
David.Comis@Maryland.gov
410-537-4064

Last Modified September 30, 2020