

An Open E-Mail Concerning Resiliency Hubs

I am writing this e-mail to bring attention to the Resiliency Hubs Grant Program, a new incentive program being offered for the first time by the Maryland Energy Administration (MEA), the State of Maryland's energy office. A Resiliency Hub is a facility where a solar plus energy storage system has been installed with the goal of providing electricity to meet important needs, including emergency heating and cooling, refrigeration, cell phone charging, etc. during a period of extended grid outage. Information on the new Resiliency Hub Program is available on the Maryland Energy Administration website at <https://energy.maryland.gov/Pages/Resiliency-Hub.aspx>.

The goal of the new Program is to encourage the development of resiliency hubs within areas where a significant portion of residents meet the definition of low or moderate income (LMI). By installing solar photovoltaics coupled with energy storage (solar plus energy storage), the proposed resiliency hubs would serve as heating and cooling centers when the grid is down for an extended period. The resiliency hubs would also allow cell phones and other small devices to be recharged to allow for communication while the grid is down. In this way, the resiliency hubs are envisioned to be able to provide a nucleus of stability within the community during an extended grid outage. Of greatest importance, the resiliency hub will always be within walking distance of the community they serve.

Proposal Content Requirements

- Site Justification: Many cities and counties have demographic information that may be of help. The U.S. Census also has helpful information that provides income levels in a particular county, city, or town (see https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_DP03&src=pt, then choose "Add/Remove Geographies", and enter the name of the city or town.) In addition, some data provided by the Maryland Department of Planning will be made available (on the website). Regardless of what data is used, you need to show that the neighborhood being served has a high density of low and moderate income households. During this first year, MEA is seeking geographic diversity (where appropriate) to allow lessons to be learned from different resiliency hub deployment scenarios.
- System Location: The Resiliency Hub Grant Program is available for eligible projects within primarily LMI neighborhoods. The selected building must be opened to the public during a grid outage, but does not need to be a public building. Possible candidate buildings include social halls associated with religious institutions, service organization halls (such as an American Legion hall), job training centers, as well as many others. Government sponsored buildings are also eligible and could possibly include public schools, libraries, senior centers, community centers, and public rooms in high-rise public housing units.

The best potential resiliency hub sites will have the ability to fully utilize the incentivized solar energy plus storage systems for the resulting economic advantage during the vast majority of time when there is reliable grid operation. The most favorable economic scenario is anticipated to occur if a building has a high demand charge or energy rates; however, ideal project economics is not a requirement to receive a grant as buildings that have the best economic payback may not be the best buildings to support the community during a grid outage.

- Project acceptance by the City/County: There are at least four parties involved in any resiliency hub: the building owner, the building operator, the solar plus energy storage system owner, and the city/county. It is possible that one or more of these functions may be covered by a single

party. To be successful, the submitted proposal must show that there is consensus and a clear understanding of the project scope between all four parties. During this first year, it is not required that all zoning and permitting be completed at time of application, or even started. However, documentation of agreement between the building owner, operator and system owner will be expected, as will a statement that discussions have started with the city/county authority having jurisdiction (AHJ) and that the AHJ has not already rejected the concept of a resiliency hub or the location being proposed. If the city/county AHJ rejects the concept of the resiliency hub, or a particular resiliency hub location, MEA will not issue an award under the Resiliency Hub Program.

- System sizing: The sizing of a solar plus energy storage system is easy in concept but can be more difficult to implement in practice. The Resiliency Hub award amounts are designed to cover the functions required for the resiliency hub only. However, if other funds are available from entities other than MEA, you can consider combining a potential Resiliency Hub grant award with other funding to provide additional functions (such as a county approved emergency shelter). Sizing considerations should include:
 - Lighting needs. This is typically a relatively straightforward calculation.
 - Plug loads should assume people will recharge cell phones and other small battery supported devices in series, rather than in parallel (i.e., a building may need several plugs to be shared amongst multiple individuals rather than one plug per person).
 - Refrigeration: The size of the refrigerator should be sized based on the number of people that will use the center. The refrigerator should only be used to preserve temperature sensitive medications and for baby formula/milk when needed, not to avoid food spoilage.
 - HVAC: Provide necessary ventilation and keep the indoor temperature in a zone to prevent temperature-related injury.
- Energy storage sizing should ensure at least a 50% probability of lasting 5 days. Please document your assumptions for the energy calculations to ensure this outcome. The Notice of Grant Availability provides some possible modeling tools. These are not the only tools available, however, any tool used must be equally reputable.
- Grant Request Amount: The grant incentive amount is not designed to cover the entire cost of the system therefore the solar plus energy storage system must provide economic value during the periods of non-grid outage that make up the majority of the time.
 - Applicants will need to clearly identify their grant request and how the requested amount was calculated. See guidance in paragraph 5 of the *Proposal Content* section of the Notice of Grant Availability for more information on the maximum possible incentive. As an example, while all buildings will require solar and energy storage systems, not all buildings will require a critical equipment panel and rewiring.
 - While there is \$1,000/project potentially available for project review, this funding will only be reimbursed if the City/County Office of Emergency Management (or equivalent) sets a fee for project review. It is NOT to be used for zoning and permitting fees that would be charged for any similar project.

Additional Guidance:

- Back-up/emergency generators: Emergency generators can be included in the resiliency hub as long as it is truly a backup/emergency piece of equipment that will be used only when the solar plus energy storage system cannot provide the required energy. Please note that including a backup fossil fuel generator complicates system design and may increase the cost of the system. Resiliency Hubs funding may NOT be used for the backup/emergency generator, or for the added installation/permitting/interconnection agreement charges. The funding for this Program can only be used for renewable energy systems, hence it cannot be used for fossil fuel systems or energy efficiency. Other funds may be available from other programs or sources to support these objectives.
- As you get started, talk to the local utility so that they are not surprised when you apply for an interconnection agreement.
- If you are a non-governmental organization (NGO) seeking to provide support to the LMI community, you should consider partnering with solar and storage technical experts. Similarly, if you are a developer, consider teaming with a local NGO who intimately knows the local community. Finally, if you are a city/county, consider being a resiliency hub developer, or work with those who are interested to help bring this concept to fruition. Cities and counties have unique knowledge and expertise that can help guide the siting and development of these hubs to best serve the local community.

This e-mail is not meant to add any additional requirements not mentioned in the Notice of Grant Availability. If there is a conflict, the Notice is the controlling document. Please send me an e-mail, or give me a call if you have a question.

V/R

David L. Comis