



## **TECHNICAL ASSISTANCE REQUEST**

The Sesame Solar Nanogrid Solutions have been successfully deployed in several regions. To further develop this technology and increase its usability and durability in various humanitarian relief situations such as wildfires, hurricanes, and other natural disasters it will be important they be able to be ruggedized and have the ability to be remotely monitored and deployed. Being able to pre-position these for severe weather events such as a hurricane would allow for the Sesame Solar Nanogrids to be ready to deploy and begin power generation immediately once dangerous weather conditions have ended.

### **Technical Assistance for Ruggedization of Nanogrids**

To remotely monitor the Sesame Solar Nanogrids, rugged industry standard sensors that can withstand austere and inclement conditions need to be installed to monitor the perimeter of the Sesame Solar Nanogrids. These sensors will enable identification of conditions requiring closure of the Sesame Solar Nanogrid walls and prompt the user to ensure an unobstructed opening and closing of the solar panel walls. We would also work to integrate these sensors with the current reporting technology in our data collection framework. Technical studies will be done to conduct wind resistance analysis, finite element analysis and stress analysis for the two form factors to increase the useable life of the Nanogrids.

### **Technical Assistance to Synchronize Electronic Motion Controllers**

All Sesame Solar Nanogrids have a patent pending innovative and proprietary technology, including their opening and closing mechanisms. To make opening and closing operate in an autonomous way, these mechanisms will need to be further refined as they are currently not electronic. Synchronizing electronic motion controllers, will allow the remote monitoring and operation of the Sesame Solar Nanogrids. The ability to switch over from a manual opening and closing mechanism to an electronic motion controller will be studied. In addition to extending research on the opening and closing mechanisms.

### **Technical Assistance to Implement More Efficient Energy Storage**

Collaborate with partners from within the American Made Solar network to implement a new, more efficient energy storage technology with longer life cycles, longer shelf lives, lower cost per kWh, more rugged, non-inflammable and lighter in weight. This new more efficient energy storage technology will extend the lifecycle of the Sesame Solar Nanogrids and reduce the overall cost.

### **Technical Assistance to Develop Smart Phone/Tablet Application**

By using a smart tablet or smart phone, the operator would be able to monitor the status of the system and deploy the solar panels remotely, generating power within fifteen minutes.