



# SEED-POD

Power On Demand

Solar SEED Team

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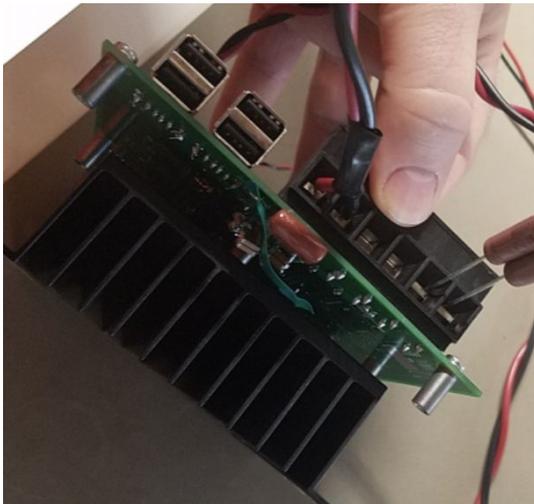
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American-Made Challenges: Solar Prize

## Technical Assistance Request



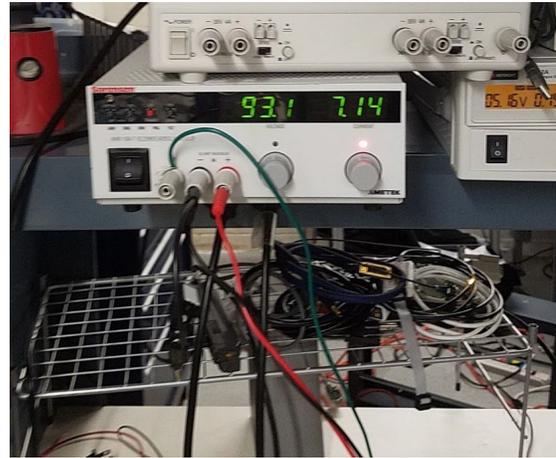
Throughout the process of developing the Solar SEED-POD, we have been focused on keeping a balance between manufacturing cost, performance, and durability as our product will be utilized in harsh and austere environments. Working with James Bonanno at Atlantix Engineering have benched testing the Solar SEED controller circuit design and have explored the competitive landscape, in addition, to completing teardowns of charge controllers with similar power capacities, manufactured by well-established brands, like Morningstar,

Renogy, Victron Energy, and Blue Sky Energy. James also purchased a Bluetti AC 200 solar generator to perform a detailed competitive analysis.

There are specific needs we foresee having to further develop the device into a marketable consumer product, therefore design, engineering, and manufacturing assistance will be required to resolve and define how SEED-POD should best function, and be fabricated while keeping in mind manufacturing and mass production. We would be interested in partnering with the Pacific Northwest National Laboratory to develop SEED-POD with the latest in lithium-ion battery technology. Their Battery500 program is an exciting innovation frontier in solar technology and partnership with their organization would allow for effective, low-cost, and easy field testing for them and access to revolutionary battery technology for victims of natural disasters as well as first responders.

**Testing and Certification** is another critical part of the design and production process. This ensures the product operates safely and is suitable for the masses. The team does have considerable experience with fabricating prototypes and product design, but this will be an amazing learning experience. And something we will pay close attention to from start to finish. We have initiated conversations with UL and ETL regarding performing a Preliminary Investigation of our technology prior to full Certification. Presently our circuit is being tested at Typhoon HIL by Dr. Edwin Fonkwe and we have

connected with Dr. Andy Walker at the Energy Systems Integration Facility at NREL, as well as meeting with Bruce Norman and colleagues at Lawrence Berkeley National Labs earlier this year. Any partner with the capacity to do accelerated life-cycle testing would be hugely useful in analyzing how Solar SEED-POD performs in real-world conditions. We believe that Washington's Clean Energy Testbeds have this capability and are looking for more partners.



Our Li-Ion modular battery pack and enclosure design are of particular importance regarding safety, therefore technical assistance with battery experts would ensure SEED-PODs battery design will meet all UL and NEMA certification requirements. *PHOTO: Testing circuit to 93VDC input*

**Business Plan Development & Marketing** will be an ongoing process which is something the team has the least amount of experience with, so finding a partner who will work with us to grow this fledgling operation is very important to the success of this endeavor. As tenants at NY Designs incubator in Queens, NY, we are presently receiving business development, legal, and IP advice.

A few key American-Made Network members we would be interested in working with include Elemental Excelerator, Powerhouse, and Greentown Labs. It is of utmost importance that whoever we partner with understands our goals in developing this device for not only the consumer market but also humanitarian and expeditionary applications. Our initial focus area is developed markets (off-grid, emergency power), disaster relief, and first responders (portable power), but other future opportunities lie in emerging markets (basic access to power), in addition to potentially addressing the needs of populations of displaced individuals.