



The American-Made Solar Prize Round 5 Hardware Track is designed to accelerate and sustain American solar innovation through a series of contests, leveraging a diverse and powerful support network of national laboratories, energy incubators, and other resources across the United States.

**READY! – SET! – GO!**

## Submission Summary



### *ExoSolar and the Rapid Deployment Hybrid MicroGrid (RDHM)*



**Project Summary:** Integrate our accordion-style ExoSolar PV arrays with solar inverters, battery energy storage systems, power electronics, controllers, distribution panels, generators, and energy management controls to form hybrid multi-source transportable power plants.

**Project Goal:**

Current TRL: 5 (Potential TRL: 7 and beyond) Go! Stage Objective: Build a full-scale RDHM in a 20' ISO container and conduct demonstration testing and integration validation for both grid-tied as well as grid-detached use cases

**Key Attributes:**

- Designed for portability, quick deployment, retraction, and lock-down for protection or re-deployment
- Modular as well as scalable for expansion as may be desired
- Heightens energy resiliency, predictability & security
- Reduces GHG emissions and carbon footprint
- Increases self-sufficiency, distributed power is co-located with need
- Diversifies, integrates, harmonizes, and optimizes energy assets
- Forms a distributed energy system for standalone utilization or as grid-attached resource
- Lessens diesel fuel supply constraints/interruptions/volume versus genset-only power
- Extends generator lifetime and allows genset repair without power disruption
- Increases power quality and power system stability



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**Potential Impact:**

- Disaster Relief: Post natural catastrophe event impacting critical infrastructure such as hospitals, airports, shelters, water and waste treatment systems, relief command and control centers
- Remote/rural electrification: Power supply for hard to reach/serve communities and projects
- Humanitarian: Round-the-clock service for refugee camps, field hospitals, emergency services
- Temporary Power/Resiliency: Power for communications, mobile phones, field radios, re-charging equipment and tools necessary for relief activity, perishable supplies refrigeration, basic medicine and pharmaceutical storage (cold chain), water generation, water purification
- Infrastructure Building Block: Capable to serve long term as distributed energy resource (DER)

