

ReJoule Team's challenge details for challenge:

Solar Prize Round 6

Generated at Tue Oct 04 2022 10:41:05 GMT-0700 (Pacific Daylight Time)

Explanation

ReJoule's innovation makes it possible to convert an increasingly prevalent source of hazardous waste into storage for solar power.

The source of that toxic waste is an unfortunate consequence of the clean transportation revolution. The lithium batteries that power electric vehicles have a finite life: in the years to come, millions of them will need to be decommissioned. The relevance of this to solar is that, even when no longer able to offer the range or acceleration required on the road, retired lithium batteries can still meet the less stressful demands of stationary storage. In other words, they can store solar energy and power our homes, businesses, and grid for years to come. Rather than prematurely recycling them, decommissioned electric vehicle batteries—which typically retain about 80% of their initial capacity—can be repurposed for stationary storage.

For a battery to be repurposed, it must first be accurately tested for safety and state of health (SOH). The principal technological challenge holding back the industry is that today's battery diagnostics and grading are prohibitively slow, expensive, and environmentally punishing. With commercially available technology, battery packs must be shipped to a central location and then cycled on expensive machinery. We eliminate those emissions, because our suitcase-size device can be dispatched to wherever used batteries are found. Furthermore, cycling large batteries can take more than 10 hours. ReJoule's technology achieves comparable results in as little as 30 seconds.

The assistance we are requesting concerns our goal of moving from hand-built prototypes to low-rate initial manufacturing. For this, we would like to work with partners who can help us to:

- Develop a quality control plan
- Design work stations and a factory layout
- Source critical tools and equipment
- Develop factory safety protocols
- Develop inventory controls and manage logistics

In addition, would like to partner with workforce development specialists in order to advance our JEDI goal of creating opportunities for workers with barriers to entry in the workforce.

Key Needs

- Procurement of Raw Materials (4 / 5): With today's supply shortages, it is challenging to source the parts we need. Having specialized advice in this terrain would facilitate our work.
- Manufacturing (5 / 5): We aim to move from hand-built prototypes to low-rate initial manufacturing. We need assistance at the early planning and execution stages of this transition.
- Testing and Validation (5 / 5): The existing UL standard governing the use of repurposed batteries for stationary storage requires that they be cycled, which can take up to 10 hours. Our solution offers comparable results in as little as 30 seconds. But deploying batteries tested with our technology requires a modified UL standard based on our technology and method. Preparing for that certification requires considerable preparation and planning.
- Robotics (4 / 5): We aim to make jobs for people not for robots. But there are certain spheres in which robotics are essential in contemporary manufacturing. Identifying those spheres with an eye to balancing them with the talents of workers is essential to us.

- Legal, Insurance, and Public Policy (4 / 5): Advice on insurance and legal regulations regarding manufacturing and human resources, would advance our manufacturing goals.

Matches

1. [mHUB](#): 84.24%
2. [Circuit Launch](#): 84.24%
3. [Weldlogic Inc.](#): 82.56%
4. [Georgia Institute of Technology](#): 82.53%
5. [Positive Deviancy](#): 82.52%
6. [GoSun](#): 80.87%
7. [Larta Institute](#): 80.84%
8. [BlochSoft Technologies Inc](#): 80.83%
9. [Solar Inventions](#): 80.83%
10. [New Mexico Clean Energy Resilience and Growth](#): 80.83%