

TECHNICAL ASSISTANCE REQUEST (2 pages, including images, will be made public)

Provide a two-page description of the unique challenges and needs a national lab, private facility, and/or member of the American-Made Network could potentially help you resolve. The Prize Administrator will make this request broadly available so members of the American-Made Network can understand your needs and assist you through the voucher program or otherwise.

Rise Energy Systems (RES) is developing a novel approach to solar panel cleaning in order to combat soiling. Soiling occurs when dust, dirt, or other particulates build up on panels, resulting in reduced efficiency. Current manual cleaning solutions are inefficient and costly, while automated systems are inflexible. We are designing an automated solution that can clean varying panel arrangements without the need to install additional hardware on the panels. This improved flexibility will allow for increased cleaning cycles for utility-scale solar, which in turn will reduce power losses due to soiling. We look forward to collaborating with the American-Made Network. There are several main categories in which the American Manufacturing Network could assist RES in this venture.

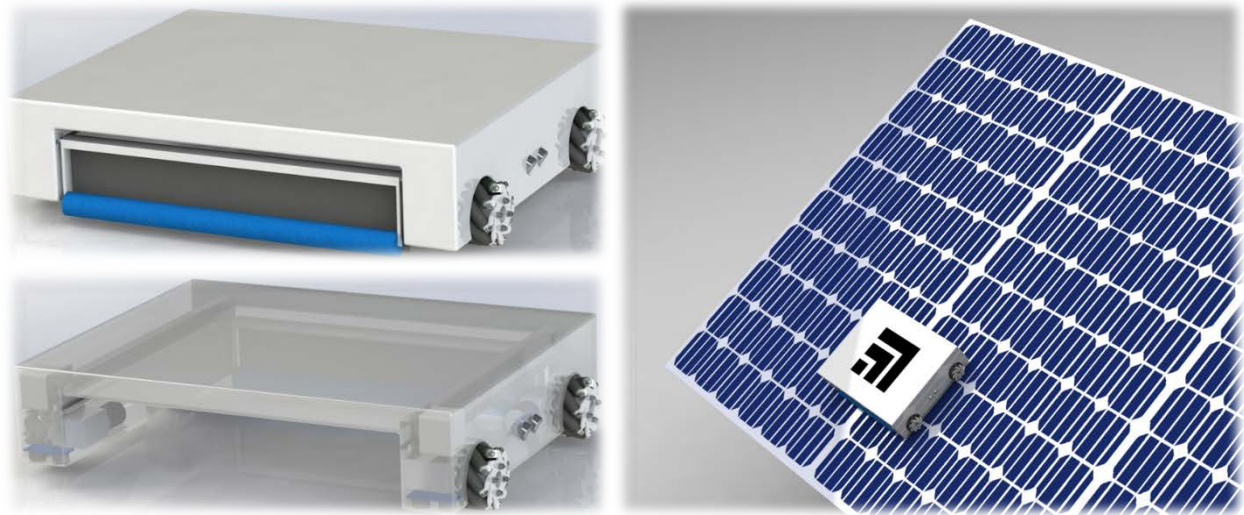


Figure 1: Proposed Robotic Cleaner Design

Renu Robotics

We are excited about the potential for a working partnership with Renu Robotics. We were very impressed with their automated tractor demonstrations during Solar Prize Round 3. Our current design plan is to use a modified Renu Robotics Tractor as the Transportation Module for our Automated Cleaning Systems. Overlap between our two systems would

reduce the startup cost barrier for solar array owners planning to reduce their maintenance budget in both solar panel cleaning and vegetation management. Renu Robotics is producing state-of-the-art automated systems, and we would appreciate learning from their experience.

Prototyping and Manufacturing

RES would benefit from reduced-cost access to the following materials for prototyping: DC gear motors and motor controllers, sensors, welding equipment, and various electrical supplies. Access to a makerspace at or below cost would be invaluable for prototyping. Later in the development process, access to a small-scale manufacturing line, aid in designing for large-scale manufacturing, and assistance in researching manufacturing partners would significantly improve the timeline of our venture.

UL Testing

RES's units will need to undergo UL testing before being introduced into the market. Assistance from national labs that can perform UL testing would be very helpful in our venture. Lacking that, advice and information about the UL process from other members of the American Made Network would be very helpful.

Business Plan Development

Our team leans heavily towards design, fabrication, and prototyping, without a wealth of experience in business development. We would appreciate technical assistance in the following areas: business plan development, marketing, and market research.

Networking

Contacts with owners/managers of utility-scale solar installation would be invaluable as we solicit feedback about industry needs and move forward with real-world prototype testing.