

Urban Energy Solar Canopy

Technical Assistance Request

Direct funding, vouchers, and technical assistance from the American-Made Solar Prize can provide valuable resources required to help the Urban Energy Solar Canopy bridge the pre-commercial gap.

Over the past 18 months, without a significant competitor in the New York City multifamily building space, we have handily secured ~6 MW of committed customer contracts including four multi-building portfolio clients plus single-building customers.

Our efforts to-date have been bootstrapped through smaller project revenues and personal savings as well as through a working capital line of credit. While this has allowed us to secure a strong customer base and complete engineering for our first product iteration, we require a capital injection to commercialize the product and rapidly deploy over the next 12 months. Given that our current line of credit is tied up for working capital, winning the Ready! prize would help fund our early innovation efforts while we work to raise the additional capital needed.

Urban Energy is working towards a canopy 2.0 design that improves scalability and installability while reducing the overall system cost. More specifically, we are aiming to reduce our canopy racking material costs from \$1.20/W to under \$1.00/W and to reduce installation timelines from 4 weeks to 2 weeks. To meet this goal, we are looking to better understand our bill of materials, supply chain, and installability. As part of this process, we need to perform various testing on our models and materials to warrant reduction in material volume and reduce costs. We also hope to improve our material selection process and standardize our parts to reduce installation timelines and improve quality.

We see the following activities as important, but currently unfunded. These are critical development areas that we can hope to fund through Prize awards and vouchers, or currently uncommitted grants and investor funding:

- 1. Supplier identification and bill of materials optimization**

We are looking for partners to help us connect to quality suppliers, manufacturers, and consultants to help us choose materials and develop designs that can reduce weight, costs, and time to install.

- 2. Complete wind tunnel testing to justify a 15% reduction in materials by weight**

Due to the ASCE wind load standards in New York City, our current design is over-engineered because we have not yet been able to secure costly wind-tunnel testing to justify reduction in materials. We are looking for a partner to help us secure this testing at a reasonable cost.

- 3. Complete stress-strain testing and structural finite element analysis on standardized components to justify further reduction of material weight by 10%**

We are looking for partners to help us secure this testing at a reasonable cost and to select the testing that will be most effective to justify these weight reduction measures.

We are looking for assistance in analyzing the cost-benefit of various additions and reductions as it relates to our larger bill of materials.

4. Identify commercially-viable supplier for primary racking material to reduce cost by 10%

As we develop a second iteration of our solar canopy, we are looking for support in analyzing materials to select the lightest, lowest cost materials for our application. We are also looking for connection to quality and cost-effective fabricators and suppliers of these materials.

5. Identify and develop material connections and installation tools needed to reduce installation time by at least 1 week; Redesign canopy for mass production of standardized parts with flexible applications; reduce SKU count per system by 5X

Furthermore, we are looking for assistance in identifying and evaluating more appropriate fabrication partners who can help us develop standardized parts, particularly material connections that improve installability such as multiple-use parts with flexible installation applications. We are also looking to develop custom installation tools such as a derrick crane to reduce cost and increase installation speed. We are looking for installation tool fabricators to help us with this process.