Technical Assistance Request

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With the goal of bringing this proposed device to market there are major categories of technical assistance needed. This product already has a draft design based on working prototypes.

Product design.

A selection from two designs is to be made. One production prototype exists but will need to be revised for new pot weight and width changes. The chosen design will then have rotation and seasonal adjustment assemblies added. .

Motion Control

Motion control involves 15° rotation with a simple on/off switch with both limit switching and temperature rotation shut-off. Freewheeling/ clutch release and engagement will be designed for resetting. A simple seasonal adjustment assembly will need to be refined. As this moves so little over the entire year, this should be by manual operation.

Target and Concentrator Components

Dish and Fresnel concentrators for prototypes are available from the shelf. Amazon sells dish concentrators, but Fresnel lenses must be imported from China. The PCM-filled Sunbucket pot is available at $1500 each for prototype models. The eventual cost target is around $200.

Anchoring

Some sort of anchoring is necessary. Stakes, earth anchors, bolting into existing pavements are options.

Testing and Output Analysis

It may be necessary to travel with prototypes to a sunny region for reliable testing, The pot has been thoroughly tested, the stand, showing multiple charges of multiple pots in a given day is the goal. Speed of charging is relevant but cost, simplicity of operation are also important metrics.

Product Development, Sales and Distribution, Acquisition

As mentioned, a possible major component that might be worthy of developing in the US is the Fresnel lens. Smaller versions than what has been used are manufactured using an inexpensive stamping method. R & D are necessary for this component. 3M once developed a large (1-meter) lens though inquiries did not result in identifying anyone associated with the past effort. Wisconsin-based Phillips Plastics will be invited to assist if this version shows the best promise. MIT component work, now nearly a decade old, however, concluded the cost of the lens could drop to $15 when mass produced with recycled materials.

Product development assistance is needed in all areas of branding, market analysis, marketing, networking, manufacturing, distribution, and support services. Besides some demonstrated mechanical interests and abilities, Solar Prize 7 applicant has 15 years of marketing experience for a regional performing arts venue and nationally distributed radio show. Skillset includes the ability to create all submission elements of this application. The applicant also has some trade-show experience, internet savvy and 38 years of professional on-stage experience. See attached broad job description. Some understanding of how to license or sell this technology is desired.

Badger Technologies will provide product development support through commercialization. They have decades of broad avionics, flight simulation, and energy storage experience. With many areas of operation, they are also currently testing with the UW Milwaukee, a SBIR Phase 2, Hybrid Energy Storage System for the US Air Force.