Technical Assistance Request (2 pages PDF, including images, Will Be Made Public)

TG Recycling is dedicated to solar panel recycling. The total market potential is to cross $1B by 2028 and $15B by 2045. The market will continue to grow for decades following the trajectory of today's solar industry, which saw a 43% increase between 2022 and 2021. There are no established incumbents in this emerging industry, but several startup companies. Their technologies are primitive, generating only about $3/panel from the recovered materials.

TG is the only team with a proprietary technology to recover 90% of the materials in solar panels including silver, thus tripling the recycling revenue to over $10/panel.

Our advantages also include: (1) a new business model to minimize the recycling cost; and (2) removal of toxic lead from solar panels, eliminating a liability for recyclers and owners of solar panels.

Our proprietary silver recovery process also presents another major opportunity in the $4B/year silvery recycling industry. Today's silver recycling requires 1,500˚C with a low silver recovery rate of about 70%. Our process provides a room-temperature alternative with a high silver recovery rate of 99%.

However, we need technical assistance to achieve our goals:

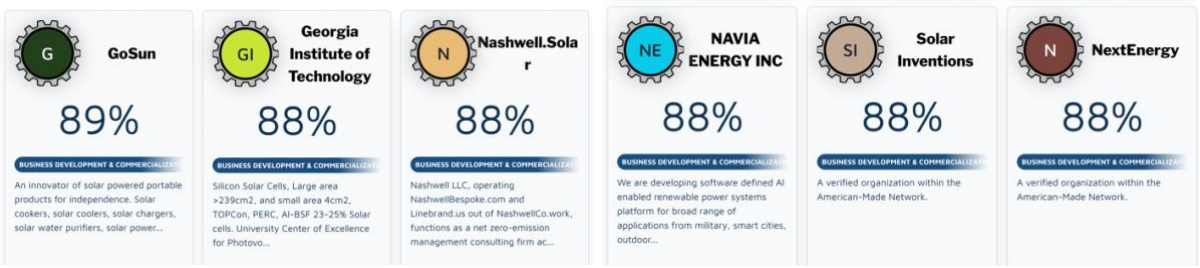
- SCIENCE, RESEARCH AND DEVELOPMENT. Our technology was started as a research idea, and we have been developing in since then. The process is protected by two pending US patents. But our plan is to develop a pilot plant with this we will be able to process large batches of waste materials.

- BUSINESS DEVELOPMENT & COMMERCIALIZATION. The biggest challenge we have faced is on the business side. We are good engineers as judged by the federal funding we have secured and the most financially and environmentally sound technologies we have developed for solar recycling. However, we are new to the business world. There is a gap in our knowledge and experience to turn a good technology into a prosperous business.

- SYSTEM DESIGN. We know there are risks involved in process scale-up. The equipment for commercial-scale recycling needs to be developed. Process optimization needs to be redone as benchtop experiments do not necessarily apply. Throughput matching between different steps needs to be achieved. With the large quantities of often hazardous chemicals, redundant safety measures need to be implemented.

- FUNDING & INVESTMENTS. We also must work and secure private investment and to construct a pilot plant for solar recycling. Achieving these goals will allow us to process larger batches of solar waste and demonstrate the commercial viability of our technology. A successful pilot plant will not only position us as the leader in the new solar recycling industry but also contribute to a more financially and environmentally sustainable solution to solar panel waste.

Matches:



Conclusions:

TG Recycling is ready for significant growth in the emerging solar panel recycling. With the right technical support, we are confident in our ability to lead in these industries and contribute to a more sustainable future. For that reason, we request technical assistance during the development of our idea, thanks to the tools provided like the Network to find potential partners, we were able to find some matching companies, laboratories that can help us out such as: GoSun, Georgia Institute of Technology, Nashwell.Solar, NAVIA ENERGY INC, Solar inventions and NextEnergy for mentioning few.